



EMC TEST REPORT	
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TEST REPORT DATE	08 <sup>th</sup> May 2015
TEST REPORT VERSION	1.0
MANUFACTURER	Gemtek Electronics (ChangSHU) Co.
PRODUCT NAME	5GHz ePMP Integrated Radio and 5GHz ePMPCconnectorized Radio
PRODUCT MODEL NO.	C058900P072A, C058900C072A, C058900P062A, C058900C062A
PART NO.	142000001193A
REV	0B
CONDITION OF EUT WHEN RECEIVED	GOOD and in working condition
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## AMENDMENT HISTORY

Amendment Number	Amendment Date	Author of Amendment	Previous Report Version	Previous Report Date
Amendment Details				



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## TABLE OF CONTENTS

<b>1</b>	<b>TEST REPORT SUMMARY.....</b>	<b>16</b>
<b>2</b>	<b>GENERAL INFORMATION .....</b>	<b>18</b>
2.1	TEST DETAILS.....	18
2.2	TEST FACILITY DETAILS .....	18
2.3	MEASUREMENT UNCERTAINTY .....	18
<b>3</b>	<b>INSTRUMENTATION AND CALIBRATION .....</b>	<b>19</b>
3.1	TEST AND MEASURING EQUIPMENT.....	19
3.2	EQUIPMENTS USED .....	19
<b>4</b>	<b>PRODUCT INFORMATION .....</b>	<b>20</b>
4.1	DESCRIPTION OF THE PRODUCT .....	20
4.2	SOFTWARE AND FIRMWARE DETAILS .....	20
4.3	LIST OF PRODUCT CABLES .....	21
<b>5</b>	<b>TEST DETAILS.....</b>	<b>22</b>
5.1	PRODUCT AND TEST SETUP .....	22
5.1.1	Product Configuration.....	22
5.1.2	Test Setup Details .....	22
5.1.3	Accessories .....	22
5.2	APPLICABLE TESTS .....	23
5.3	TEST RESULT .....	24
5.3.1	26 dB Emission Bandwidth measurement .....	24
5.3.2	99 Percent Occupied Bandwidth measurement.....	45
5.3.3	Maximum Conducted Output Power .....	66
5.3.4	Peak Power Spectral Density .....	80
5.3.5	Peak Excursion ratio .....	101
5.3.6	Unwanted Emissions levels-Conducted Band edge .....	121
5.3.7	Undesirable emission outside the Intentional band.....	147
	<b>APPENDIX I – ACRONYMS.....</b>	<b>312</b>



## LIST OF FIGURES

Figure 1: Block Diagram of the EUT test setup during the tests .....	22
Figure 2: Typical test setup for Conducted RF Test setup .....	24
Figure 3: 26dB Bandwidth measured at ch0 .....	26
Figure 4: 26dB Bandwidth measured at ch1 .....	26
Figure 5: 26dB Bandwidth measured at ch0 .....	27
Figure 6: 26dB Bandwidth measured at ch1 .....	27
Figure 7: 26dB Bandwidth measured at ch0 .....	28
Figure 8: 26dB Bandwidth measured at ch1 .....	28
Figure 9: 26dB Bandwidth measured at ch0 .....	29
Figure 10: 26dB Bandwidth measured at ch1 .....	29
Figure 11: 26dB Bandwidth measured at ch0 .....	30
Figure 12: 26dB Bandwidth measured at ch1 .....	30
Figure 13: 26dB Bandwidth measured at ch0 .....	31
Figure 14: 26dB Bandwidth measured at ch1 .....	31
Figure 15: 26dB Bandwidth measured at ch0 .....	32
Figure 16: 26dB Bandwidth measured at ch1 .....	32
Figure 17: 26dB Bandwidth measured at ch0 .....	33
Figure 18: 26dB Bandwidth measured at ch1 .....	33
Figure 19: 26dB Bandwidth measured at ch0 .....	34
Figure 20: 26dB Bandwidth measured at ch1 .....	34
Figure 21: 26dB Bandwidth measured at ch0 .....	35
Figure 22: 26dB Bandwidth measured at ch1 .....	35
Figure 23: 26dB Bandwidth measured at ch0 .....	36
Figure 24: 26dB Bandwidth measured at ch1 .....	36
Figure 25: 26dB Bandwidth measured at ch0 .....	37
Figure 26: 26dB Bandwidth measured at ch1 .....	37
Figure 27: 26dB Bandwidth measured at ch0 .....	38
Figure 28: 26dB Bandwidth measured at ch1 .....	38
Figure 29: 26dB Bandwidth measured at ch0 .....	39
Figure 30: 26dB Bandwidth measured at ch1 .....	39
Figure 31: 26dB Bandwidth measured at ch0 .....	40
Figure 32: 26dB Bandwidth measured at ch1 .....	40
Figure 33: 26dB Bandwidth measured at ch0 .....	41
Figure 34: 26dB Bandwidth measured at ch1 .....	41
Figure 35: 26dB Bandwidth measured at ch0 .....	42
Figure 36: 26dB Bandwidth measured at ch1 .....	42
Figure 37: 26dB Bandwidth measured at ch0 .....	43
Figure 38: 26dB Bandwidth measured at ch1 .....	43
Figure 39: Typical test setup for Conducted RF Test setup .....	45
Figure 40: 99 Percent OBW measured at ch.0 .....	47
Figure 41: 99 Percent OBW measured at ch.1 .....	47
Figure 42: 99 Percent OBW measured at ch.0 .....	48
Figure 43: 99 Percent OBW measured at ch.1 .....	48
Figure 44: 99 Percent OBW measured at ch.0 .....	49
Figure 45: 99 Percent OBW measured at ch.1 .....	49
Figure 46: 99 Percent OBW measured at ch.0 .....	50
Figure 47: 99 Percent OBW measured at ch.1 .....	50
Figure 48: 99 Percent OBW measured at ch.0 .....	51



Figure 49: 99 Percent OBW measured at ch.1 .....	51
Figure 50: 99 Percent OBW measured at ch.0.....	52
Figure 51: 99 Percent OBW measured at ch.1 .....	52
Figure 52: 99 Percent OBW measured at ch.0.....	53
Figure 53: 99 Percent OBW measured at ch.1 .....	53
Figure 54: 99 Percent OBW measured at ch.0.....	54
Figure 55: 99 Percent OBW measured at ch.1 .....	54
Figure 56: 99 Percent OBW measured at ch.0.....	55
Figure 57: 99 Percent OBW measured at ch.1 .....	55
Figure 58: 99 Percent OBW measured at ch.0.....	56
Figure 59: 99 Percent OBW measured at ch.1 .....	56
Figure 60: 99 Percent OBW measured at ch.0.....	57
Figure 61: 99 Percent OBW measured at ch.1 .....	57
Figure 62: 99 Percent OBW measured at ch.0.....	58
Figure 63: 99 Percent OBW measured at ch.1 .....	58
Figure 64: 99 Percent OBW measured at ch.0.....	59
Figure 65: 99 Percent OBW measured at ch.1 .....	59
Figure 66: 99 Percent OBW measured at ch.0.....	60
Figure 67: 99 Percent OBW measured at ch.1 .....	60
Figure 68: 99 Percent OBW measured at ch.0.....	61
Figure 69: 99 Percent OBW measured at ch.1 .....	61
Figure 70: 99 Percent OBW measured at ch.0.....	62
Figure 71: 99 Percent OBW measured at ch.1 .....	62
Figure 72: 99 Percent OBW measured at ch.0.....	63
Figure 73: 99 Percent OBW measured at ch.1 .....	63
Figure 74: 99 Percent OBW measured at ch.0.....	64
Figure 75: 99 Percent OBW measured at ch.1 .....	64
Figure 76: Typical test setup for Conducted RF Test setup.....	67
Figure 77: Maximum Conducted Output power measured at ch.0& ch.1 .....	68
Figure 78: Maximum Conducted Output power measured at ch.0 & ch.1 .....	68
Figure 79: Maximum Conducted Output power measured at ch.0 & ch.1 .....	69
Figure 80: Maximum Conducted Output power measured at ch.0 & ch.1 .....	69
Figure 81: Maximum Conducted Output power measured at ch.0 & ch.1 .....	70
Figure 82: Maximum Conducted Output power measured at ch.0 & ch.1 .....	70
Figure 83: Maximum Conducted Output power measured at ch.0 & ch.1 .....	71
Figure 84: Maximum Conducted Output power measured at ch.0 & ch.1 .....	71
Figure 85: Maximum Conducted Output power measured at ch.0 & ch.1 .....	72
Figure 86: Maximum Conducted Output power measured at ch.0 & ch.1 .....	72
Figure 87: Maximum Conducted Output power measured at ch.0 & ch.1 .....	73
Figure 88: Maximum Conducted Output power measured at ch.0 & ch.1 .....	73
Figure 89: Maximum Conducted Output power measured at ch.0 & ch.1 .....	74
Figure 90: Maximum Conducted Output power measured at ch.0 & ch.1 .....	74
Figure 91: Maximum Conducted Output power measured at ch.0 & ch.1 .....	75
Figure 92: Maximum Conducted Output power measured at ch.0 & ch.1 .....	75
Figure 93: Maximum Conducted Output power measured at ch.0 & ch.1 .....	76
Figure 94: Maximum Conducted Output power measured at ch.0 & ch.1 .....	76
Figure 95: Typical test setup for Conducted Test setup.....	80
Figure 96: Power Spectral density measured at Ch. 0 .....	82
Figure 97: Power Spectral density measured at Ch. 1 .....	82



Figure 98: Power Spectral density measured at Ch. 0 .....	83
Figure 99: Power Spectral density measured at Ch. 1 .....	83
Figure 100: Power Spectral density measured at Ch. 0 .....	84
Figure 101: Power Spectral density measured at Ch. 1 .....	84
Figure 102: Power Spectral density measured at Ch. 0 .....	85
Figure 103: Power Spectral density measured at Ch. 1 .....	85
Figure 104: Power Spectral density measured at Ch. 0 .....	86
Figure 105: Power Spectral density measured at Ch. 1 .....	86
Figure 106: Power Spectral density measured at Ch. 0 .....	87
Figure 107: Power Spectral density measured at Ch. 1 .....	87
Figure 108: Power Spectral density measured at Ch. 0 .....	88
Figure 109: Power Spectral density measured at Ch. 1 .....	88
Figure 110: Power Spectral density measured at Ch. 0 .....	89
Figure 111: Power Spectral density measured at Ch. 1 .....	89
Figure 112: Power Spectral density measured at Ch. 0 .....	90
Figure 113: Power Spectral density measured at Ch. 1 .....	90
Figure 114: Power Spectral density measured at Ch. 0 .....	91
Figure 115: Power Spectral density measured at Ch. 1 .....	91
Figure 116: Power Spectral density measured at Ch. 0 .....	92
Figure 117: Power Spectral density measured at Ch. 1 .....	92
Figure 118: Power Spectral density measured at Ch. 0 .....	93
Figure 119: Power Spectral density measured at Ch. 1 .....	93
Figure 120: Power Spectral density measured at Ch. 0 .....	94
Figure 121: Power Spectral density measured at Ch. 1 .....	94
Figure 122: Power Spectral density measured at Ch. 0 .....	95
Figure 123: Power Spectral density measured at Ch. 1 .....	95
Figure 124: Power Spectral density measured at Ch. 0 .....	96
Figure 125: Power Spectral density measured at Ch. 1 .....	96
Figure 126: Power Spectral density measured at Ch. 0 .....	97
Figure 127: Power Spectral density measured at Ch. 1 .....	97
Figure 128: Power Spectral density measured at Ch. 0 .....	98
Figure 129: Power Spectral density measured at Ch. 1 .....	98
Figure 130: Power Spectral density measured at Ch. 0 .....	99
Figure 131: Power Spectral density measured at Ch. 1 .....	99
Figure 132: Typical test setup for Conducted Test setup.....	101
Figure 133: Peak Excursion Ratio plot measured at Ch. 0 .....	102
Figure 134: Peak Excursion Ratio plot measured at Ch. 1 .....	102
Figure 135: Peak Excursion Ratio plot measured at Ch. 0 .....	103
Figure 136: Peak Excursion Ratio plot measured at Ch. 1 .....	103
Figure 137: Peak Excursion Ratio plot measured at Ch. 0 .....	104
Figure 138: Peak Excursion Ratio plot measured at Ch. 1 .....	104
Figure 139: Peak Excursion Ratio plot measured at Ch. 0 .....	105
Figure 140: Peak Excursion Ratio plot measured at Ch. 1 .....	105
Figure 141: Peak Excursion Ratio plot measured at Ch. 0 .....	106
Figure 142: Peak Excursion Ratio plot measured at Ch. 1 .....	106
Figure 143: Peak Excursion Ratio plot measured at Ch. 0 .....	107
Figure 144: Peak Excursion Ratio plot measured at Ch. 1 .....	107
Figure 145: Peak Excursion Ratio plot measured at Ch. 0 .....	108
Figure 146: Peak Excursion Ratio plot measured at Ch. 1 .....	108



Figure 147: Peak Excursion Ratio plot measured at Ch. 0 .....	109
Figure 148: Peak Excursion Ratio plot measured at Ch. 1 .....	109
Figure 149: Peak Excursion Ratio plot measured at Ch. 0 .....	110
Figure 150: Peak Excursion Ratio plot measured at Ch. 1 .....	110
Figure 151: Peak Excursion Ratio plot measured at Ch. 0 .....	111
Figure 152: Peak Excursion Ratio plot measured at Ch. 1 .....	111
Figure 153: Peak Excursion Ratio plot measured at Ch. 0 .....	112
Figure 154: Peak Excursion Ratio plot measured at Ch. 1 .....	112
Figure 155: Peak Excursion Ratio plot measured at Ch. 0 .....	113
Figure 156: Peak Excursion Ratio plot measured at Ch. 1 .....	113
Figure 157: Peak Excursion Ratio plot measured at Ch. 0 .....	114
Figure 158: Peak Excursion Ratio plot measured at Ch. 1 .....	114
Figure 159: Peak Excursion Ratio plot measured at Ch. 0 .....	115
Figure 160: Peak Excursion Ratio plot measured at Ch. 1 .....	115
Figure 161: Peak Excursion Ratio plot measured at Ch. 0 .....	116
Figure 162: Peak Excursion Ratio plot measured at Ch. 1 .....	116
Figure 163: Peak Excursion Ratio plot measured at Ch. 0 .....	117
Figure 164: Peak Excursion Ratio plot measured at Ch. 1 .....	117
Figure 165: Peak Excursion Ratio plot measured at Ch. 0 .....	118
Figure 166: Peak Excursion Ratio plot measured at Ch. 1 .....	118
Figure 167: Peak Excursion Ratio plot measured at Ch. 0 .....	119
Figure 168: Peak Excursion Ratio plot measured at Ch. 1 .....	119
Figure 169: Typical test setup for Conducted Test setup.....	121
Figure 170: Band edge measured at Ch. 0-Avg .....	123
Figure 171: Band edge measured at Ch. 0-Peak .....	123
Figure 172: Band edge measured at Ch. 1-Avg .....	124
Figure 173: Band edge measured at Ch. 1-Peak .....	124
Figure 174: Band edge measured at Ch. 0-Avg .....	125
Figure 175: Band edge measured at Ch. 0-Peak .....	125
Figure 176: Band edge measured at Ch. 1-Avg .....	126
Figure 177: Band edge measured at Ch. 1-Peak .....	126
Figure 178: Band edge measured at Ch. 0-Avg .....	127
Figure 179: Band edge measured at Ch. 0-Peak .....	127
Figure 180: Band edge measured at Ch. 1-Avg .....	128
Figure 181: Band edge measured at Ch. 1-Peak .....	128
Figure 182: Band edge measured at Ch. 0-Avg .....	129
Figure 183: Band edge measured at Ch. 0-Peak .....	129
Figure 184: Band edge measured at Ch. 1-Avg .....	130
Figure 185: Band edge measured at Ch. 1-Peak .....	130
Figure 186: Band edge measured at Ch. 0-Avg .....	131
Figure 187: Band edge measured at Ch. 0-Peak .....	131
Figure 188: Band edge measured at Ch. 1-Avg .....	132
Figure 189: Band edge measured at Ch. 1-Peak .....	132
Figure 190: Band edge measured at Ch. 0-Avg .....	133
Figure 191: Band edge measured at Ch. 0-Peak .....	133
Figure 192: Band edge measured at Ch. 1-Avg .....	134
Figure 193: Band edge measured at Ch. 1-Peak .....	134
Figure 194: Band edge measured at Ch. 0-Avg .....	135
Figure 195: Band edge measured at Ch. 0-Peak .....	135





Figure 196: Band edge measured at Ch. 1-Avg .....	136
Figure 197: Band edge measured at Ch. 1-Peak .....	136
Figure 198: Band edge measured at Ch. 0-Avg .....	137
Figure 199: Band edge measured at Ch. 0-Peak .....	137
Figure 200: Band edge measured at Ch. 1-Avg .....	138
Figure 201: Band edge measured at Ch. 1-Peak .....	138
Figure 202: Band edge measured at Ch. 0-Avg .....	139
Figure 203: Band edge measured at Ch. 0-Peak .....	139
Figure 204: Band edge measured at Ch. 1-Avg .....	140
Figure 205: Band edge measured at Ch. 1-Peak .....	140
Figure 206: Band edge measured at Ch. 0-Avg .....	141
Figure 207: Band edge measured at Ch. 0-Peak .....	141
Figure 208: Band edge measured at Ch. 1-Avg .....	142
Figure 209: Band edge measured at Ch. 1-Peak .....	142
Figure 210: Band edge measured at Ch. 0-Avg .....	143
Figure 211: Band edge measured at Ch. 0-Peak .....	143
Figure 212: Band edge measured at Ch. 1-Avg .....	144
Figure 213: Band edge measured at Ch. 1-Peak .....	144
Figure 214: Band edge measured at Ch. 0-Avg .....	145
Figure 215: Band edge measured at Ch. 0-Peak .....	145
Figure 216: Band edge measured at Ch. 1-Avg .....	146
Figure 217: Band edge measured at Ch. 1-Peak .....	146
Figure 218: Typical test setup for Conducted Test setup.....	147
Figure 219: Spurious emission measured from 9 kHz to 150 kHz at Ch. 0-Peak.....	149
Figure 220: Spurious emission measured from 150 kHz to 30 MHz at Ch. 0-Peak .....	149
Figure 221: Spurious emission measured from 30 MHz to 1GHz at Ch. 0-Peak .....	150
Figure 222: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Peak .....	150
Figure 223: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Average .....	151
Figure 224: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Peak .....	151
Figure 225: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Average .....	152
Figure 226: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Peak .....	152
Figure 227: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Avg .....	153
Figure 228: Spurious emission measured from 9 kHz to 150 kHz at Ch. 1-Peak.....	153
Figure 229: Spurious emission measured from 150 kHz to 30 MHz at Ch. 1-Peak .....	154
Figure 230: Spurious emission measured from 30 MHz to 1 GHz at Ch. 1-Peak .....	154
Figure 231: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Peak .....	155
Figure 232: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Average .....	155
Figure 233: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Peak .....	156
Figure 234: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Average .....	156
Figure 235: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Avg .....	157
Figure 236: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Peak .....	157
Figure 237: Spurious emission measured from 9 kHz to 150 kHz at Ch. 0-Peak.....	158
Figure 238: Spurious emission measured from 150 kHz to 30 MHz at Ch. 0-Peak .....	158
Figure 239: Spurious emission measured from 30 MHz to 1 GHz at Ch. 0-Peak .....	159
Figure 240: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Peak .....	159
Figure 241: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Average .....	160
Figure 242: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Peak .....	160
Figure 243: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Average .....	161
Figure 244: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Average .....	161





Figure 245: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Peak .....	162
Figure 246: Spurious emission measured from 9 kHz to 150 kHz at Ch. 1-Peak .....	162
Figure 247: Spurious emission measured from 150 kHz to 30 MHz at Ch. 1-Peak .....	163
Figure 248: Spurious emission measured from 30 MHz to 1 GHz at Ch. 1-Peak .....	163
Figure 249: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Peak .....	164
Figure 250: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Average .....	164
Figure 251: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Peak .....	165
Figure 252: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Average .....	165
Figure 253: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Average .....	166
Figure 254: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Peak .....	166
Figure 255: Spurious emission measured from 9 kHz to 150 kHz at Ch. 0-Peak .....	167
Figure 256: Spurious emission measured from 150 kHz to 30 MHz at Ch. 0-Peak .....	167
Figure 257: Spurious emission measured from 30 MHz to 1 GHz at Ch. 0-Peak .....	168
Figure 258: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Peak .....	168
Figure 259: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Average .....	169
Figure 260: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Peak .....	169
Figure 261: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Average .....	170
Figure 262: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Peak .....	170
Figure 263: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Average .....	171
Figure 264: Spurious emission measured from 9 kHz to 150 kHz at Ch. 1-Peak .....	171
Figure 265: Spurious emission measured from 150 kHz to 30 MHz at Ch. 1-Peak .....	172
Figure 266: Spurious emission measured from 30 MHz to 1 GHz at Ch. 1-Peak .....	172
Figure 267: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Peak .....	173
Figure 268: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Average .....	173
Figure 269: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Peak .....	174
Figure 270: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Average .....	174
Figure 271: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Average .....	175
Figure 272: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Peak .....	175
Figure 273: Spurious emission measured from 9 kHz to 150 kHz at Ch. 0-Peak .....	176
Figure 274: Spurious emission measured from 150 kHz to 30 MHz at Ch. 0-Peak .....	176
Figure 275: Spurious emission measured from 30 MHz to 1 GHz at Ch. 0-Peak .....	177
Figure 276: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Peak .....	177
Figure 277: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Average .....	178
Figure 278: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Peak .....	178
Figure 279: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Average .....	179
Figure 280: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Peak .....	179
Figure 281: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Average .....	180
Figure 282: Spurious emission measured from 9 kHz to 150 kHz at Ch. 1-Peak .....	180
Figure 283: Spurious emission measured from 150 kHz to 30 MHz at Ch. 1-Peak .....	181
Figure 284: Spurious emission measured from 30 MHz to 1 GHz at Ch. 1-Peak .....	181
Figure 285: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Peak .....	182
Figure 286: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Average .....	182
Figure 287: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Peak .....	183
Figure 288: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Average .....	183
Figure 289: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Average .....	184
Figure 290: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Peak .....	184
Figure 291: Spurious emission measured from 9 kHz to 150 kHz at Ch. 0-Peak .....	185
Figure 292: Spurious emission measured from 150 kHz to 30 MHz at Ch. 0-Peak .....	185
Figure 293: Spurious emission measured from 30 MHz to 1 GHz at Ch. 0-Peak .....	186

Figure 294: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Peak .....	186
Figure 295: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Average .....	187
Figure 296: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Peak .....	187
Figure 297: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Average .....	188
Figure 298: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Peak .....	188
Figure 299: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Average .....	189
Figure 300: Spurious emission measured from 9 kHz to 150 kHz at Ch. 1-Peak .....	189
Figure 301: Spurious emission measured from 150 kHz to 30 MHz at Ch. 1-Peak .....	190
Figure 302: Spurious emission measured from 30 MHz to 1 GHz at Ch. 1-Peak .....	190
Figure 303: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Peak .....	191
Figure 304: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Average .....	191
Figure 305: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Peak .....	192
Figure 306: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Average .....	192
Figure 307: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Average .....	193
Figure 308: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Peak .....	193
Figure 309: Spurious emission measured from 9 kHz to 150 kHz at Ch. 0-Peak .....	194
Figure 310: Spurious emission measured from 150 kHz to 30 MHz at Ch. 0-Peak .....	194
Figure 311: Spurious emission measured from 30 MHz to 1 GHz at Ch. 0-Peak .....	195
Figure 312: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Peak .....	195
Figure 313: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Average .....	196
Figure 314: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Peak .....	196
Figure 315: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Average .....	197
Figure 316: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Peak .....	197
Figure 317: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Average .....	198
Figure 318: Spurious emission measured from 9 kHz to 150 kHz at Ch. 1-Peak .....	198
Figure 319: Spurious emission measured from 150 kHz to 30 MHz at Ch. 1-Peak .....	199
Figure 320: Spurious emission measured from 30 MHz to 1 GHz at Ch. 1-Peak .....	199
Figure 321: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Peak .....	200
Figure 322: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Average .....	200
Figure 323: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Peak .....	201
Figure 324: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Average .....	201
Figure 325: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Average .....	202
Figure 326: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Peak .....	202
Figure 327: Spurious emission measured from 9 kHz to 150 kHz at Ch. 0-Peak .....	203
Figure 328: Spurious emission measured from 150 kHz to 30 MHz at Ch. 0-Peak .....	203
Figure 329: Spurious emission measured from 30 MHz to 1 GHz at Ch. 0-Peak .....	204
Figure 330: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Peak .....	204
Figure 331: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Average .....	205
Figure 332: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Peak .....	205
Figure 333: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Average .....	206
Figure 334: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Peak .....	206
Figure 335: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Avg .....	207
Figure 336: Spurious emission measured from 9 kHz to 150 kHz at Ch. 1-Peak .....	207
Figure 337: Spurious emission measured from 150 kHz to 30 MHz at Ch. 1-Peak .....	208
Figure 338: Spurious emission measured from 30 MHz to 1 GHz at Ch. 1-Peak .....	208
Figure 339: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Peak .....	209
Figure 340: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Average .....	209
Figure 341: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Peak .....	210
Figure 342: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Average .....	210



Figure 343: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Average .....	211
Figure 344: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Peak .....	211
Figure 345: Spurious emission measured from 9 kHz to 150 kHz at Ch. 0-Peak .....	212
Figure 346: Spurious emission measured from 150 kHz to 30 MHz at Ch. 0-Peak .....	212
Figure 347: Spurious emission measured from 30 MHz to 1 GHz at Ch. 0-Peak .....	213
Figure 348: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Peak .....	213
Figure 349: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Average .....	214
Figure 350: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Peak .....	214
Figure 351: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Average .....	215
Figure 352: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Peak .....	215
Figure 353: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Average .....	216
Figure 354: Spurious emission measured from 9 kHz to 150 kHz at Ch. 1-Peak .....	216
Figure 355: Spurious emission measured from 150 kHz to 30 kHz at Ch. 1-Peak .....	217
Figure 356: Spurious emission measured from 30 MHz to 1 GHz at Ch. 1-Peak .....	217
Figure 357: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Peak .....	218
Figure 358: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Average .....	218
Figure 359: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Peak .....	219
Figure 360: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Average .....	219
Figure 361: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Average .....	220
Figure 362: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Peak .....	220
Figure 363: Spurious emission measured from 9 kHz to 150 kHz at Ch. 0-Peak .....	221
Figure 364: Spurious emission measured from 150 kHz to 30 MHz at Ch. 0-Peak .....	221
Figure 365: Spurious emission measured from 30 MHz to 1 GHz at Ch. 0-Peak .....	222
Figure 366: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Peak .....	222
Figure 367: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Average .....	223
Figure 368: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Peak .....	223
Figure 369: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Average .....	224
Figure 370: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Peak .....	224
Figure 371: Spurious emission measured from 26.5GHz to 40 GHz at Ch. 0-Average .....	225
Figure 372: Spurious emission measured from 9 kHz to 150 kHz at Ch. 1-Peak .....	225
Figure 373: Spurious emission measured from 150 kHz to 30 MHz at Ch. 1-Peak .....	226
Figure 374: Spurious emission measured from 30 MHz to 1 GHz at Ch. 1-Peak .....	226
Figure 375: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Peak .....	227
Figure 376: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Average .....	227
Figure 377: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Peak .....	228
Figure 378: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Average .....	228
Figure 379: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Average .....	229
Figure 380: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Peak .....	229
Figure 381: Spurious emission measured from 9 kHz to 150 kHz at Ch. 0-Peak .....	230
Figure 382: Spurious emission measured from 150 kHz to 30 MHz at Ch. 0-Peak .....	230
Figure 383: Spurious emission measured from 30 MHz to 1 GHz at Ch. 0-Peak .....	231
Figure 384: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Peak .....	231
Figure 385: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Average .....	232
Figure 386: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Peak .....	232
Figure 387: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Average .....	233
Figure 388: Spurious emission measured from 26.5GHz to 40 GHz at Ch. 0-Peak .....	233
Figure 389: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Average .....	234
Figure 390: Spurious emission measured from 9 kHz to 150 kHz at Ch. 1-Peak .....	234
Figure 391: Spurious emission measured from 150 kHz to 30 MHz at Ch. 1-Peak .....	235



Figure 392: Spurious emission measured from 30 MHz to 1 GHz at Ch. 1-Peak .....	235
Figure 393: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Peak .....	236
Figure 394: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Average .....	236
Figure 395: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Peak .....	237
Figure 396: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Average .....	237
Figure 397: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Average .....	238
Figure 398: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Peak .....	238
Figure 399: Spurious emission measured from 9 kHz to 150 kHz at Ch. 0-Peak .....	239
Figure 400: Spurious emission measured from 150 kHz to 30 MHz at Ch. 0-Peak .....	239
Figure 401: Spurious emission measured from 30 MHz to 1 GHz at Ch. 0-Peak .....	240
Figure 402: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Peak .....	240
Figure 403: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Average .....	241
Figure 404: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Peak .....	241
Figure 405: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Average .....	242
Figure 406: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Peak .....	242
Figure 407: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Average .....	243
Figure 408: Spurious emission measured from 9 kHz to 150 kHz at Ch. 1-Peak .....	243
Figure 409: Spurious emission measured from 150 kHz to 30 MHz at Ch. 1-Peak .....	244
Figure 410: Spurious emission measured from 30 MHz to 1 GHz at Ch. 1-Peak .....	244
Figure 411: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Peak .....	245
Figure 412: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Average .....	245
Figure 413: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Peak .....	246
Figure 414: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Average .....	246
Figure 415: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Average .....	247
Figure 416: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Peak .....	247
Figure 417: Spurious emission measured from 9 kHz to 150 kHz at Ch. 0-Peak .....	248
Figure 418: Spurious emission measured from 150 kHz to 30 MHz at Ch. 0-Peak .....	248
Figure 419: Spurious emission measured from 30 MHz to 1 GHz at Ch. 0-Peak .....	249
Figure 420: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Peak .....	249
Figure 421: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Average .....	250
Figure 422: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Peak .....	250
Figure 423: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Average .....	251
Figure 424: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Peak .....	251
Figure 425: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Average .....	252
Figure 426: Spurious emission measured from 9 kHz to 150 kHz at Ch. 1-Peak .....	252
Figure 427: Spurious emission measured from 150 kHz to 30 MHz at Ch. 1-Peak .....	253
Figure 428: Spurious emission measured from 30 MHz to 1 GHz at Ch. 1-Peak .....	253
Figure 429: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Peak .....	254
Figure 430: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Average .....	254
Figure 431: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Peak .....	255
Figure 432: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Average .....	255
Figure 433: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Average .....	256
Figure 434: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Peak .....	256
Figure 435: Spurious emission measured from 9 kHz to 150 kHz at Ch. 0-Peak .....	257
Figure 436: Spurious emission measured from 150 kHz to 30 MHz at Ch. 0-Peak .....	257
Figure 437: Spurious emission measured from 30 MHz to 1 GHz at Ch. 0-Peak .....	258
Figure 438: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Peak .....	258
Figure 439: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Average .....	259
Figure 440: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Peak .....	259





Figure 441: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Average .....	260
Figure 442: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Peak .....	260
Figure 443: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Avg .....	261
Figure 444: Spurious emission measured from 9 kHz to 150 kHz at Ch. 1-Peak .....	261
Figure 445: Spurious emission measured from 150 kHz to 30 MHz at Ch. 1-Peak .....	262
Figure 446: Spurious emission measured from 30 MHz to 1 GHz at Ch. 1-Peak .....	262
Figure 447: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Peak .....	263
Figure 448: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Average .....	263
Figure 449: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Peak .....	264
Figure 450: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Average .....	264
Figure 451: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Average .....	265
Figure 452: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Peak .....	265
Figure 453: Spurious emission measured from 9 kHz to 150 kHz at Ch. 0-Peak .....	266
Figure 454: Spurious emission measured from 150 kHz to 30 MHz at Ch. 0-Peak .....	266
Figure 455: Spurious emission measured from 30 MHz to 1 GHz at Ch. 0-Peak .....	267
Figure 456: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Peak .....	267
Figure 457: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Average .....	268
Figure 458: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Peak .....	268
Figure 459: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Average .....	269
Figure 460: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Peak .....	269
Figure 461: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Average .....	270
Figure 462: Spurious emission measured from 9 kHz to 150 kHz at Ch. 1-Peak .....	270
Figure 463: Spurious emission measured from 150 kHz to 30 MHz at Ch. 1-Peak .....	271
Figure 464: Spurious emission measured from 30 MHz to 1 GHz at Ch. 1-Peak .....	271
Figure 465: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Peak .....	272
Figure 466: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Average .....	272
Figure 467: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Peak .....	273
Figure 468: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Average .....	273
Figure 469: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Average .....	274
Figure 470: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Peak .....	274
Figure 471: Spurious emission measured from 9 kHz to 150 kHz at Ch. 0-Peak .....	275
Figure 472: Spurious emission measured from 150 kHz to 30 MHz at Ch. 0-Peak .....	275
Figure 473: Spurious emission measured from 30 MHz to 1 GHz at Ch. 0-Peak .....	276
Figure 474: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Peak .....	276
Figure 475: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Average .....	277
Figure 476 : Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Peak .....	277
Figure 477: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Average .....	278
Figure 478: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Peak .....	278
Figure 479: Spurious emission measured from 26.5GHz to 40 GHz at Ch. 0-Average .....	279
Figure 480: Spurious emission measured from 9 kHz to 150 kHz at Ch. 1-Peak .....	279
Figure 481: Spurious emission measured from 150 kHz to 30 MHz at Ch. 1-Peak .....	280
Figure 482: Spurious emission measured from 30 MHz to 1 GHz at Ch. 1-Peak .....	280
Figure 483: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Peak .....	281
Figure 484: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Average .....	281
Figure 485: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Peak .....	282
Figure 486: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Average .....	282
Figure 487: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Average .....	283
Figure 488: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Peak .....	283
Figure 489: Spurious emission measured from 9 kHz to 150 kHz at Ch. 0-Peak .....	284



Figure 490: Spurious emission measured from 150 kHz to 30 MHz at Ch. 0-Peak .....	284
Figure 491: Spurious emission measured from 30 MHz to 1 GHz at Ch. 0-Peak .....	285
Figure 492: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Peak .....	285
Figure 493: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Average .....	286
Figure 494: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Peak .....	286
Figure 495: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Average .....	287
Figure 496: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Peak .....	287
Figure 497: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Average .....	288
Figure 498: Spurious emission measured from 9 kHz to 150 kHz at Ch. 1-Peak .....	288
Figure 499: Spurious emission measured from 150 kHz to 30 MHz at Ch. 1-Peak .....	289
Figure 500: Spurious emission measured from 30 MHz to 1 GHz at Ch. 1-Peak .....	289
Figure 501: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Peak .....	290
Figure 502: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Average .....	290
Figure 503: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Peak .....	291
Figure 504: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Average .....	291
Figure 505: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Average .....	292
Figure 506: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Peak .....	292
Figure 507: Spurious emission measured from 9 kHz to 150 kHz at Ch. 0-Peak .....	293
Figure 508: Spurious emission measured from 150 kHz to 30 MHz at Ch. 0-Peak .....	293
Figure 509: Spurious emission measured from 30 MHz to 1 GHz at Ch. 0-Peak .....	294
Figure 510: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Peak .....	294
Figure 511: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Average .....	295
Figure 512: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Peak .....	295
Figure 513: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Average .....	296
Figure 514: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Peak .....	296
Figure 515: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Average .....	297
Figure 516: Spurious emission measured from 9 kHz to 150 kHz at Ch. 1-Peak .....	297
Figure 517: Spurious emission measured from 150 kHz to 30 MHz at Ch. 1-Peak .....	298
Figure 518: Spurious emission measured from 30 MHz to 1 GHz at Ch. 1-Peak .....	298
Figure 519: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Peak .....	299
Figure 520: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Average .....	299
Figure 521: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Peak .....	300
Figure 522: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Average .....	300
Figure 523: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Average .....	301
Figure 524: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Peak .....	301
Figure 525: Spurious emission measured from 9 kHz to 150 kHz at Ch. 0-Peak .....	302
Figure 526: Spurious emission measured from 150 kHz to 30 MHz at Ch. 0-Peak .....	302
Figure 527: Spurious emission measured from 30 MHz to 1 GHz at Ch. 0-Peak .....	303
Figure 528: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Peak .....	303
Figure 529: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Average .....	304
Figure 530: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Peak .....	304
Figure 531: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Average .....	305
Figure 532: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Peak .....	305
Figure 533: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Average .....	306
Figure 534: Spurious emission measured from 9 kHz to 150 kHz at Ch. 1-Peak .....	306
Figure 535: Spurious emission measured from 150 kHz to 30 MHz at Ch. 1-Peak .....	307
Figure 536: Spurious emission measured from 30 MHz to 1 GHz at Ch. 1-Peak .....	307
Figure 537: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Peak .....	308
Figure 538: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Average .....	308



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Figure 539: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Peak .....	309
Figure 540: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Average .....	309
Figure 541: Spurious emission measured from 26.5 GHZ to 40 GHz at Ch. 1-Average .....	310
Figure 542: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Peak .....	310





## 1 TEST REPORT SUMMARY

<b>Applicant</b>	Cambium Networks			
<b>Manufacturer</b>	Gemtek Electronics (ChangSHU) Co.			
<b>Equipment Under Test</b>	5GHz ePMP Integrated Radio and 5GHz ePMP Connectorized Radio			
<b>Model</b>	C058900P072A, C058900C072A, C058900P062A, C058900C062A			
<b>Serial number</b>	<b>Type of test</b>	<b>Serial no.</b>	<b>Wi-Fi MAC</b>	<b>Ethernet MAC</b>
	<b>Radiated &amp; Conducted</b>	AE50013161	000456F802FD	000456F802FC
<b>Date of Submission</b>	12 <sup>th</sup> Mar 2015			
<b>Date of Test</b>	12 <sup>th</sup> Mar 2015 to 28 <sup>th</sup> Apr 2015			
<b>Venue of Test</b>	Tarang Lab			




<b>Applicable Standard</b>	<b>FCC Section</b>	<b>Description</b>	<b>Results</b>
47 CFR Ch. I (10–1–14 Ed), Part 15, Subpart C;  RSS-Gen, Issue 4, Nov 2014  RSS-210, Issue 8, Dec 2010	§15.403 (h) (i)	26 dB Emission Bandwidth measurement	NA
	NA	99 Percent Occupied Bandwidth	NA
	§15.407 (a) (2)	Maximum Conducted Output Power	PASS
	§15.407 (a) (2)	Peak Power Spectral Density	PASS
	§15.407 (a) (6)	Peak Excursion Ratio	PASS
	§15.407 (b) (3)	Unwanted emission levels-Conducted Band edge	PASS
	§15.407 (b) (3) & §15.407 (b) (6)	Undesirable emission outside the Intentional band	PASS



**5GHz ePMP Integrated Radio and 5GHz ePMP Connectorized Radio** was tested by Tarang Lab as per the standards that are listed in the table above. Based on the observations during the test and interpretations by Tarang lab, results have been indicated. The test results produced in this report shall apply only to the above sample that have been tested under the specific conditions and modes of testing as described in the report. Other similar equipment may not necessarily reproduce same result due to production tolerances and measurement uncertainties. Any measurement uncertainties listed in this report are for information purpose only.

The results shall stand invalid, in case there are any modifications / additions / removals to the hardware or software or end use atmosphere to the product tested. This report shall not be modified or in any way revised unless it is expressly permitted and endorsed by Tarang lab, through a duly authorized representative. Particulars on Manufacturer / Supplier / Product configuration / performance criteria, given in this report, are based on the information given by the customer, along with test request. Tarang does not assume any responsibility for the correctness of such information for the above mentioned equipment under test.

Customer acknowledges that this is a test report and not a certificate to gain market access for the product. To gain market access, Customer needs appropriate clearance from the Government or authorized agency for the target market. For markets that allow self-declaration, customer needs to follow the procedure defined by the target market.

Prepared by	Reviewed by	Approved by
		
Harsha K S	Subhendu	Rajneesh R
Test Engineer	Test Engineer	Functional Head

## 2 GENERAL INFORMATION

### 2.1 TEST DETAILS

The tests documented in this report are performed according to the following standards:

- ANSI C63.10-2013
- 47 CFR Ch. I (10–1–14 Ed), Part 15, Subpart C
- RSS-Gen, Issue 4, Nov 2014
- RSS-210, Issue 8, Dec 2010

### 2.2 TEST FACILITY DETAILS

All the tests were carried out at Tarang –Product Qualification and Compliance Planet located at Wipro Limited, SJP2, Dodda Kanelli, Sarjapur road, Bangalore, Karnataka, India. 560035.

Following are the accreditation and listing details for Tarang.

Accreditation / Listing body	Registration / Company / Certificate Number
ISO 17025 Accreditation	Certificate Number :T-1533 and T-1534(NABL) <a href="http://www.nabl-india.org">http://www.nabl-india.org</a>
FCC (Federal Communications Commission)	Registration Number: 799247 <a href="http://www.fcc.gov/">http://www.fcc.gov/</a>
IC (Industry Canada)	Company Number: 9023A <a href="http://www.ic.gc.ca">http://www.ic.gc.ca</a>
TEC Approval	Certificate Number: TEC/MRA/CAB/IND-D/3 CAB Identification: IND003
DGAQA Approval	1415/F-15/DGAQA/Aircraft
CEMILAC approval	Certificate Number: F-07-22 Reference Number: CEMILAC/6042/TH-13/TC & S

### 2.3 MEASUREMENT UNCERTAINTY

The following measurement uncertainties are applicable to the relevant tests that are mentioned below:

Test performed	Measurement Uncertainty
Radiated Emission from 9 kHz to 30MHz at 3meter	$\pm 3.968\text{dB}$
Radiated Emission from 30MHz to 1GHz at 3meter	$\pm 5.173\text{dB}$
Radiated Emission from 1 GHz to 18 GHz at 3meter	$\pm 4.112\text{dB}$
Radiated Emission from 18 GHz to 40 GHz at 3meter	$\pm 4.878\text{dB}$
Conducted Emission from 150kHz to 30MHz	$\pm 2.194\text{dB}$

### 3 INSTRUMENTATION AND CALIBRATION

#### 3.1 TEST AND MEASURING EQUIPMENT

The list of following measuring equipment used for this testing conforms to the applicable standards. Performance of all test and measuring equipment including any accessories are checked periodically to ensure accuracy.

#### 3.2 EQUIPMENTS USED

Name of Equipment	Manufacturer	Model No	Serial No	Calibration Due
EMI Test Receiver	R&S	ESIB40	100306	07 <sup>th</sup> Oct 2015
Hybrid Log Periodic Antenna	TDK	HLP-3003C	130334	25 <sup>th</sup> Jul 2015
Pre-Amplifier	SONOMA	310	270817	31 <sup>st</sup> May 2015
V-LISN	SME	NNLK 8128	8128-243	08 <sup>th</sup> Aug 2015
Double Ridged BB Horn	SME	BBHA 9120D	9120D 688	05 <sup>th</sup> Aug 2015
Broadband Horn Antenna	SME	BBHA 9170	9170 336	11 <sup>th</sup> Nov 2015
Preamplifier	TDK RF solutions	PA 02	100008	31 <sup>st</sup> May 2015
Preamplifier	TDK RF solutions	Preamp	2007331	10 <sup>th</sup> Nov 2015
Preamplifier	TDK RF solutions	Preamp	2007332	10 <sup>th</sup> Nov 2015
Spectrum Analyzer	Agilent Technologies	E4407B	MY45112948	02 <sup>nd</sup> Apr 2016
X-Series USB Peak & Average Power Sensor	Keysight Technologies	U2021XA	MY55050002	08 <sup>th</sup> Feb 2016
X-Series USB Peak & Average Power Sensor	Keysight Technologies	U2021XA	MY55050001	08 <sup>th</sup> Feb 2016
Tunable Band reject/Notch filter	Wainwright Instruments GmbH	WTRCJV8-5150-5850-40-160-50SSK	01	NA

## 4 PRODUCT INFORMATION

### 4.1 DESCRIPTION OF THE PRODUCT

EUT is a Point to point & Point to Multipoint Fixed outdoor Transceiver.

<b>Product Category / Type of Equipment</b>	TEL (Telecom)
<b>EUT Operating AC Voltage</b>	120V AC
<b>Max EUT AC Operating Current</b>	0.5A
<b>Max EUT AC Power Rating</b>	60W
<b>EUT Operating DC Voltage</b>	30V DC
<b>Max EUT DC Operating Current</b>	0.5A
<b>Max EUT DC Power Rating</b>	12W

### 4.2 SOFTWARE AND FIRMWARE DETAILS

The 5GHz ePMP Integrated Radio and 5GHz ePMP Connectorized Radio was configured with test software and configured to have the following settings during the course of testing:

- 40MHz modulation bandwidth for low, mid & high channels
  - Rate - HT40,
  - 54Mbps OFDM, MCS15:270Mbps
  - Interframe spacing is tx100
  - Tx gain is 65 for 2.15dBi antenna configuration
  - Tx gain is 40 for 17dBi antenna configuration
  - Tx gain is 22 for 24dBi antenna configuration
- 10MHz modulation bandwidth for low, mid & high channels
  - Rate – HT20,
  - 54Mbps OFDM, MCS15:130Mbps
  - Interframe spacing is tx100
  - Tx gain is 65 for 2.15dBi antenna configuration
  - Tx gain is 40 for 17dBi antenna configuration
  - Tx gain is for 24dBi antenna configuration

The unit was continuously monitored for transmission using an auxiliary antenna during the radiated tests



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### 4.3 LIST OF PRODUCT CABLES

Cable No.	Cable Name	Cable Length	Power / Interconnection cable	Shielded / Unshielded
Cable - 1	Cat. 5E_Ethernet cable	0.5 meter	Interconnection	Unshielded
Cable - 2	Cat. 5E_Ethernet cable	2 meter	Interconnection	Unshielded
Cable - 3	RF cable (50 $\Omega$ )	0.125 meter	Interconnection	Shielded
Cable - 4	Power Cord	0.8 meter	Power	Unshielded

## 5 TEST DETAILS

### 5.1 PRODUCT AND TEST SETUP

#### 5.1.1 PRODUCT CONFIGURATION

The EUT was powered through AC power supply (120VAC / 60Hz). The EUT was connected to Ethernet switch by using RJ45 cable. Figure 1 shows the product configuration during the tests. Following power supply module was used during the test to power ON the EUT.

Name of the Equipment	Manufacturer	Model Number	Serial Number
Switching Power Supply Gigabit Compatible	PHIHONG	PSA15M-300 (AP)	N000900L001A

#### 5.1.2 TEST SETUP DETAILS

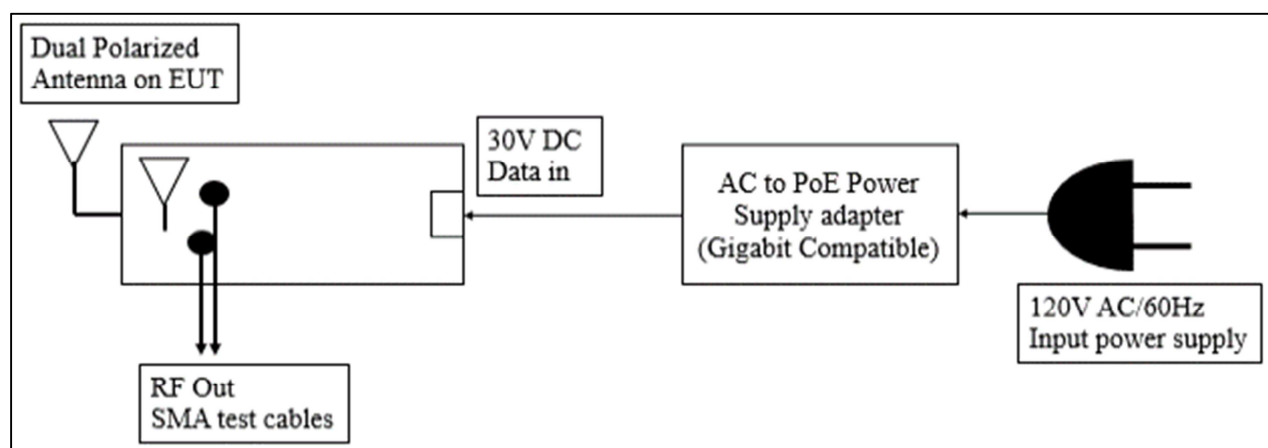


Figure 1: Block Diagram of the EUT test setup during the tests

#### 5.1.3 ACCESSORIES

Name of the Equipment	Manufacturer	Model Number	Serial Number
Laptop	Wipro Technologies Ltd	WLG7E1100	1221





## 5.2 APPLICABLE TESTS

Applicable Standard	Description	Test level / Test Voltage	Applicability
47 CFR Ch. I (10–1–14 Ed), Part 15, Subpart C;  RSS-Gen, Issue 4, Nov 2014  RSS-210 Issue 8, Dec 2010	26 dB Emission Bandwidth measurement	NA	Antenna port
	99 Percent Occupied Bandwidth	NA	Antenna port
	Maximum Conducted Output Power	Refer <a href="#">Section 5.3.3.2</a>	Antenna port
	Peak Power Spectral Density	Refer <a href="#">Section 5.3.4.2</a>	Antenna port
	Peak Excursion ratio	Refer <a href="#">Section 5.3.5.2</a>	Antenna port
	Unwanted Emissions levels-Conducted Band edge	EIRP of < -27dBm/MHz	Antenna port
	Undesirable emission outside the Intentional band-Conducted	EIRP of < -27dBm/MHz	Antenna port

## 5.3 TEST RESULT

### 5.3.1 26 dB EMISSION BANDWIDTH MEASUREMENT

#### 5.3.1.1 TEST SPECIFICATION

Test Standard	47 CFR Ch. I (10–1–14 Ed), Part 15, Subpart C RSS-Gen, Issue 4, Nov 2014	
Test Procedure	ANSI C63.10-2013	
Modulation Bandwidth	40MHz	10MHz
Resolution Bandwidth	300 kHz	100 kHz
Video Bandwidth	1MHz	300 kHz
Sweep Time	100ms	
Attenuation	Auto	
Test Mode	Conducted	
Detector	Peak	
Input Voltage	120V AC	
Input Frequency	60 Hz	
Temperature	22.0°C	
Humidity	56.0%	
Tested By	Harsha K	
Test Date	12 <sup>th</sup> Mar 2015 to 28 <sup>th</sup> Apr 2015	

#### 5.3.1.2 LIMITS

Standard	Reference section	Frequency range	Limit
47 CFR Ch. I (10–1–14 Ed), Part 15, Subpart C  RSS-Gen, Issue 4, Nov 2014	15.403 (h) (i)	5470MHz to 5725MHz	NA

#### 5.3.1.3 TEST SETUP

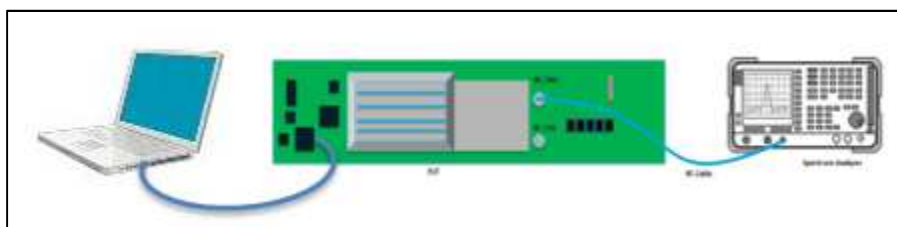


Figure 2: Typical test setup for Conducted RF Test setup



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#### 5.3.1.4 TEST PROCEDURE

The Conducted test was performed using the Spectrum analyzer. Measurements were done as per Section C of “789033 D01 General UNII Test Procedures Old Rules v01r04”. The RF output of the EUT was connected to the input port of Spectrum analyzer using an attenuator. Captured the data from spectrum analyzer and compared with the limits specified in the standard.

### 5.3.1.5 RESULT (SUPPORTING GRAPHS / DATA) FOR BASIC CONDITION

#### 5.3.1.5.1 40MHz MODULATION BW-LOW CHANNEL\_5495MHz

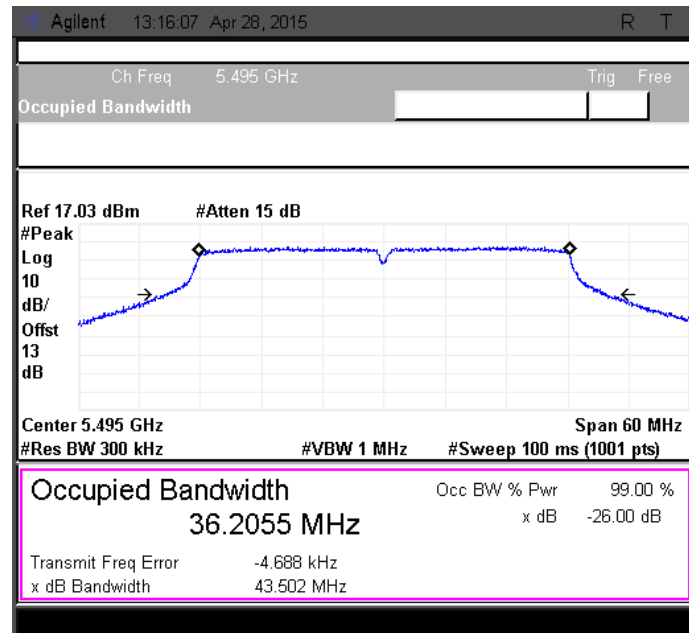


Figure 3: 26dB Bandwidth measured at ch0

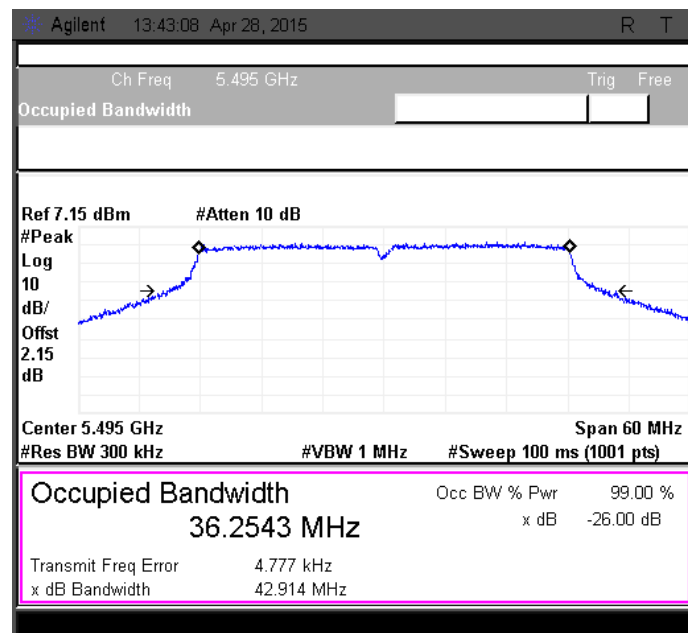


Figure 4: 26dB Bandwidth measured at ch1

### 5.3.1.5.2 40MHz MODULATION BW -MID CHANNEL\_5550MHz

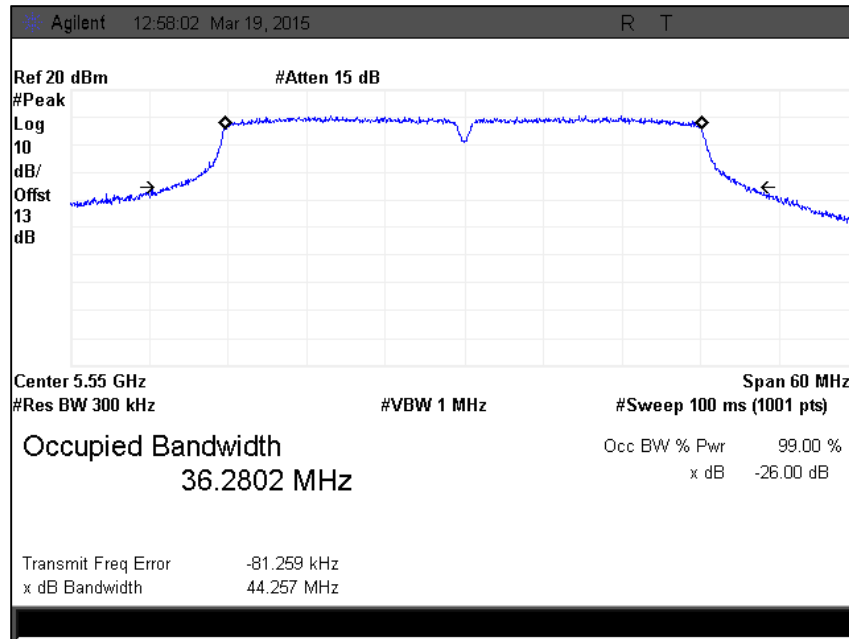


Figure 5: 26dB Bandwidth measured at ch0

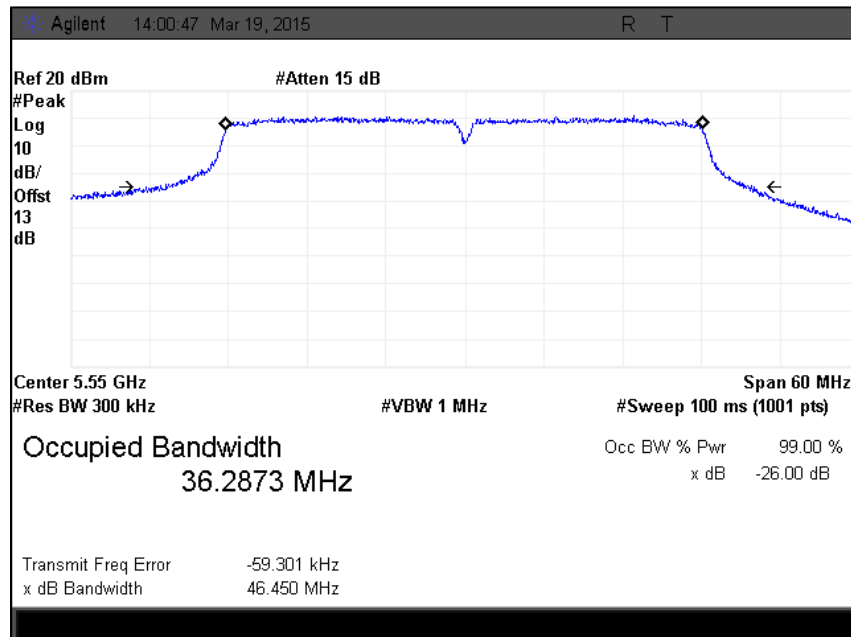


Figure 6: 26dB Bandwidth measured at ch1

### 5.3.1.5.3 40MHz MODULATION BW -HIGH CHANNEL\_5700MHz

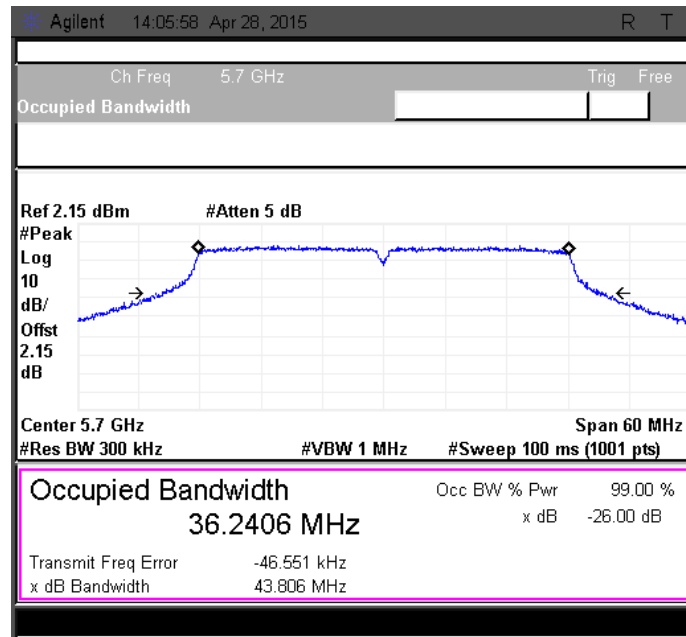


Figure 7: 26dB Bandwidth measured at ch0

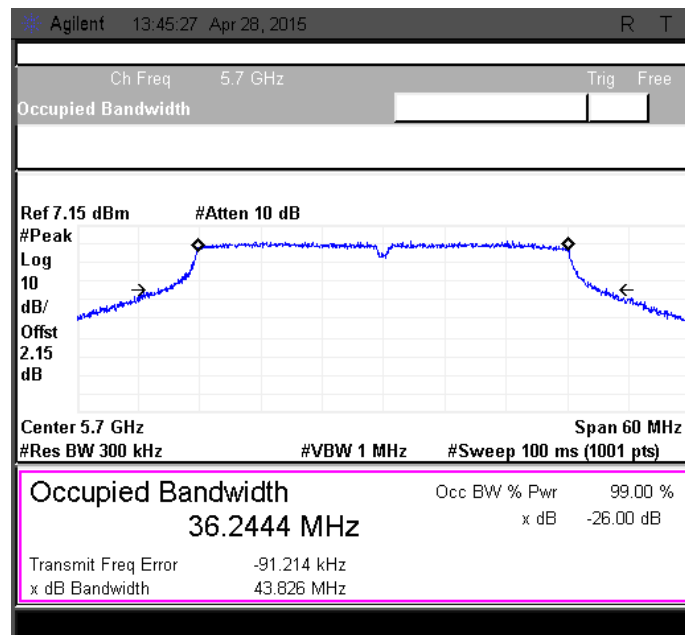


Figure 8: 26dB Bandwidth measured at ch1

### 5.3.1.5.4 10MHz MODULATION BW-LOW CHANNEL\_5485MHz

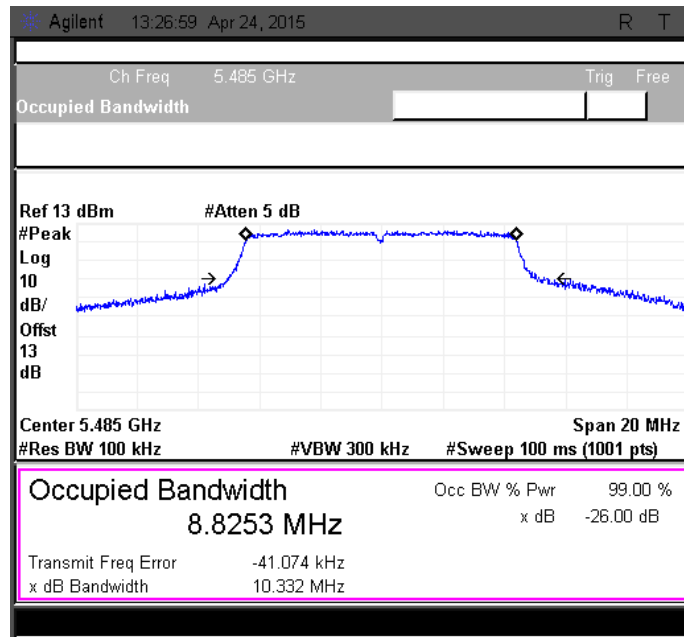


Figure 9: 26dB Bandwidth measured at ch0

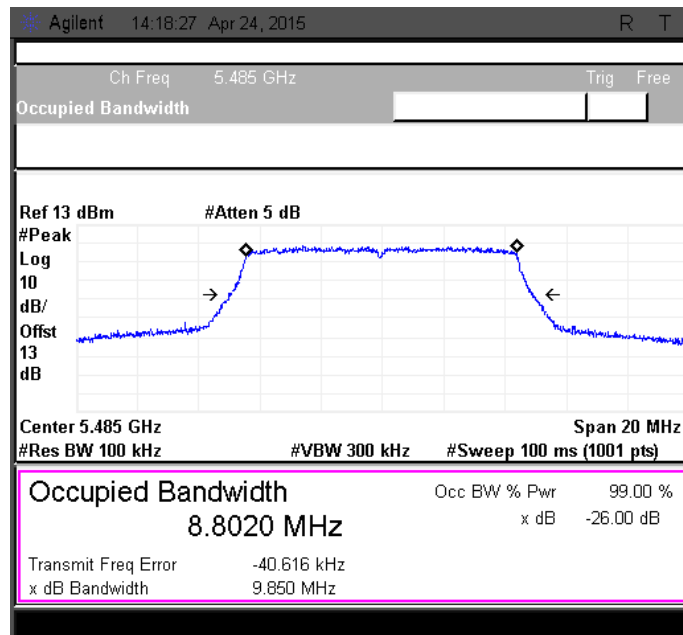


Figure 10: 26dB Bandwidth measured at ch1



### 5.3.1.5.5 10MHz MODULATION BW-MID CHANNEL\_5550MHz

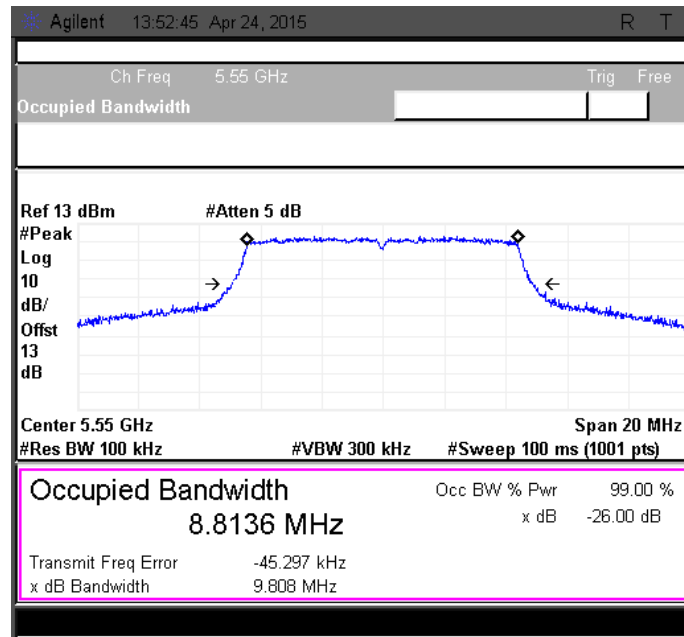


Figure 11: 26dB Bandwidth measured at ch0

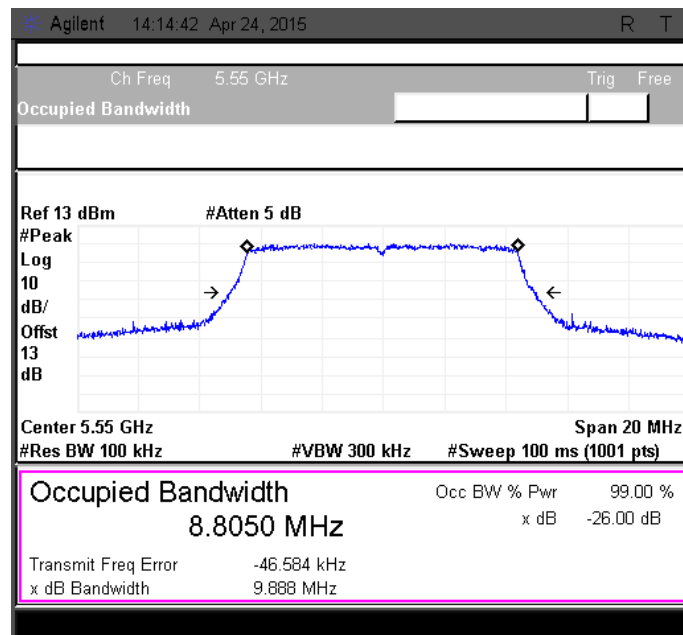


Figure 12: 26dB Bandwidth measured at ch1

### 5.3.1.5.6 10MHz MODULATION BW-HIGH CHANNEL\_5710MHz

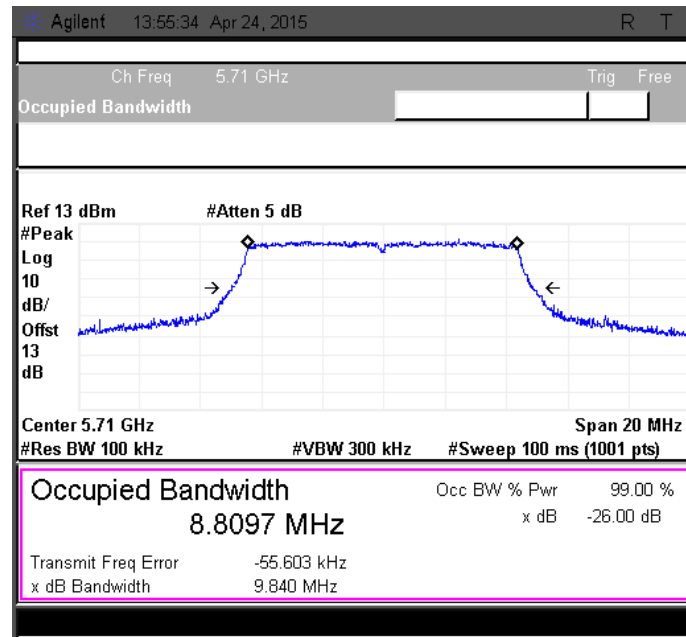


Figure 13: 26dB Bandwidth measured at ch0

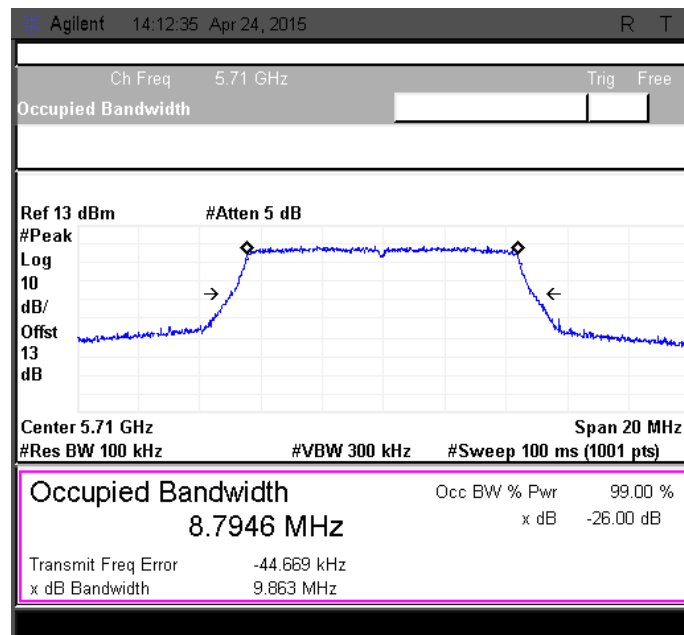


Figure 14: 26dB Bandwidth measured at ch1

### 5.3.1.6 RESULT (SUPPORTING GRAPHS / DATA) FOR 17DBI ANTENNA CONDITION

#### 5.3.1.6.1 40MHz MODULATION BW-LOW CHANNEL\_5495 MHz

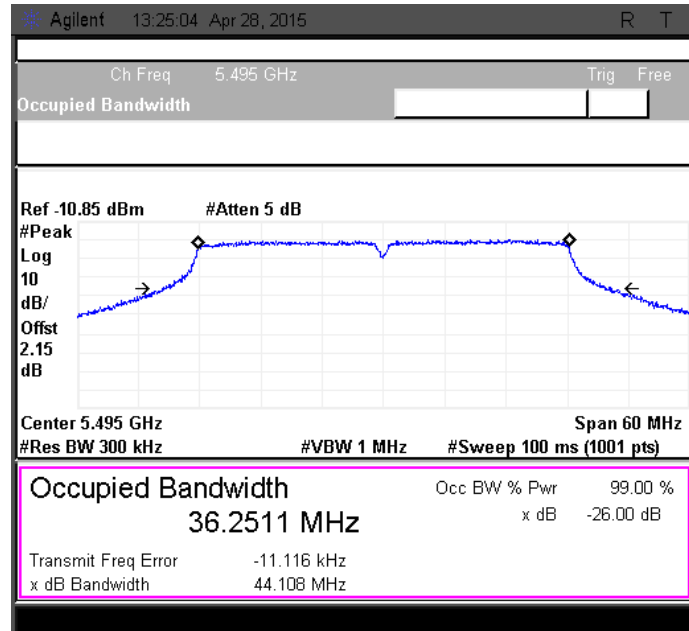


Figure 15: 26dB Bandwidth measured at ch0

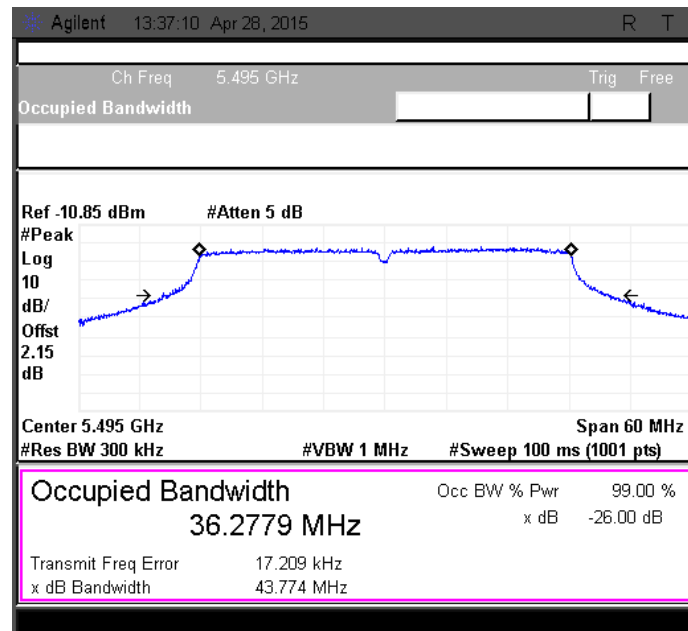


Figure 16: 26dB Bandwidth measured at ch1

### 5.3.1.6.2 40MHz MODULATION BW -MID CHANNEL\_5550 MHz

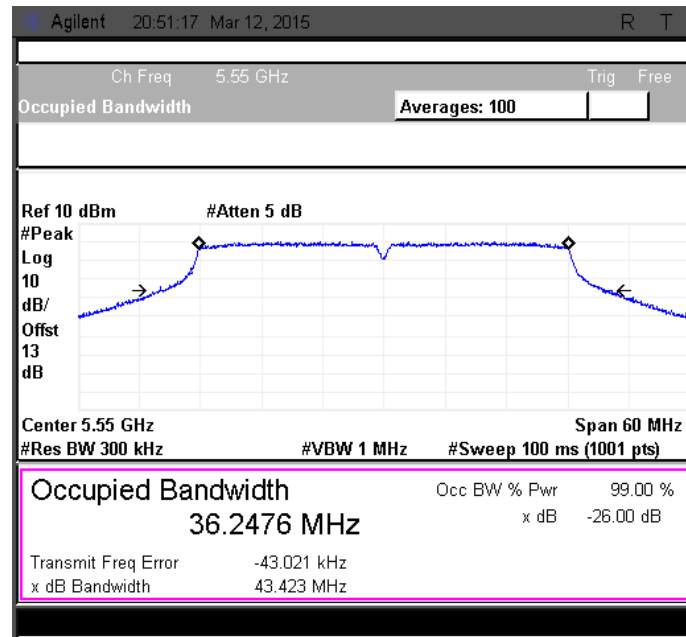


Figure 17: 26dB Bandwidth measured at ch0

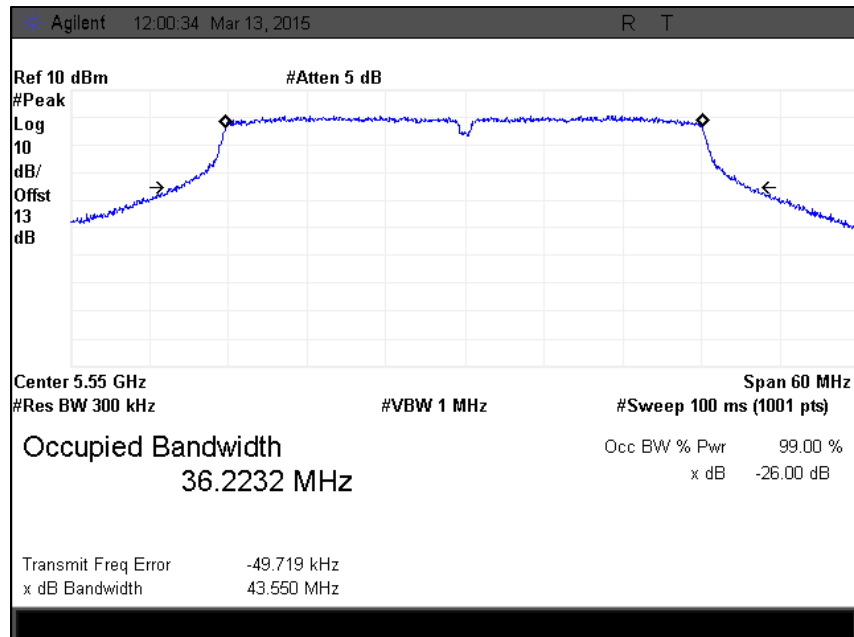


Figure 18: 26dB Bandwidth measured at ch1

### 5.3.1.6.3 40MHz MODULATION BW -HIGH CHANNEL\_5700MHz

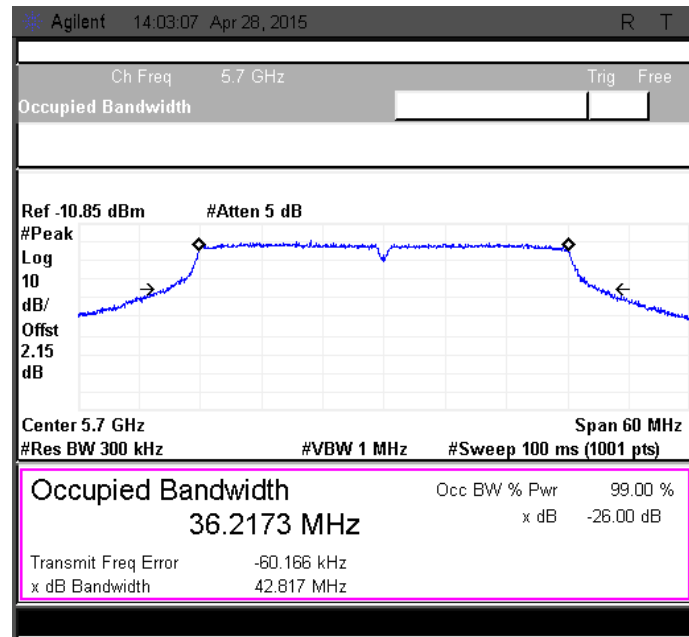


Figure 19: 26dB Bandwidth measured at ch0

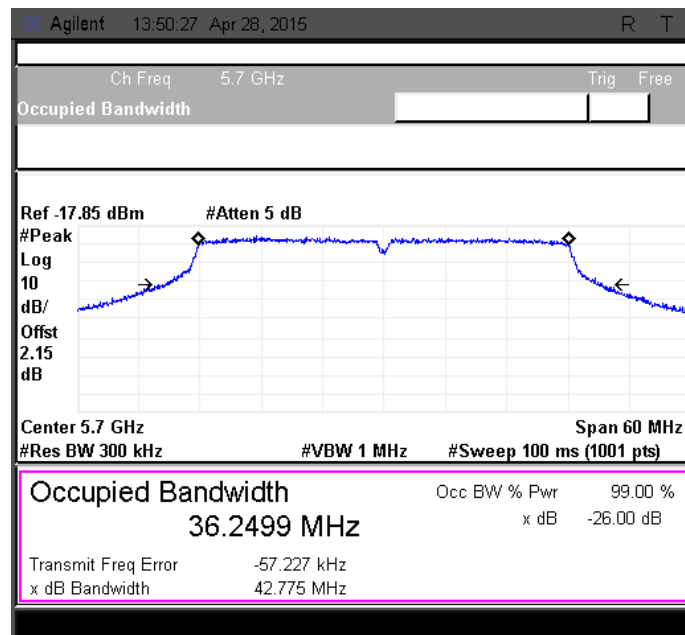


Figure 20: 26dB Bandwidth measured at ch1

### 5.3.1.6.4 10MHz MODULATION BW-LOW CHANNEL\_5485 MHz

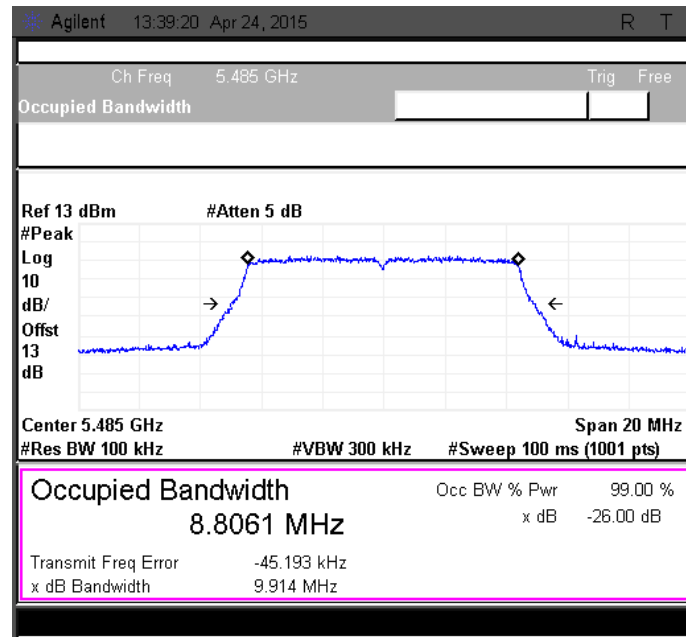


Figure 21: 26dB Bandwidth measured at ch0

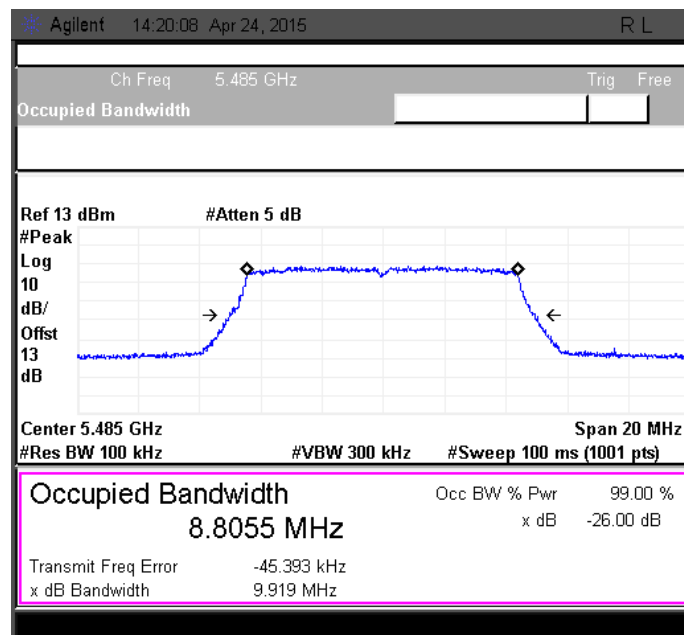


Figure 22: 26dB Bandwidth measured at ch1

### 5.3.1.6.5 10MHz MODULATION BW-MID CHANNEL\_5550 MHz

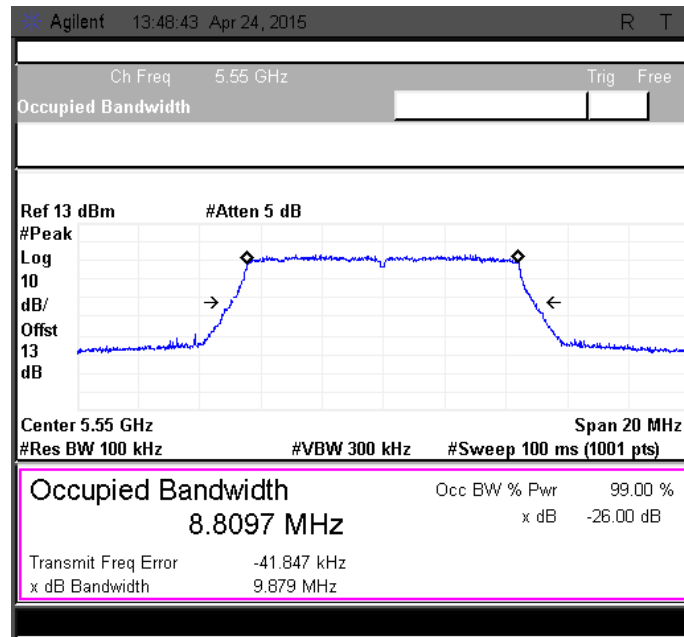


Figure 23: 26dB Bandwidth measured at ch0

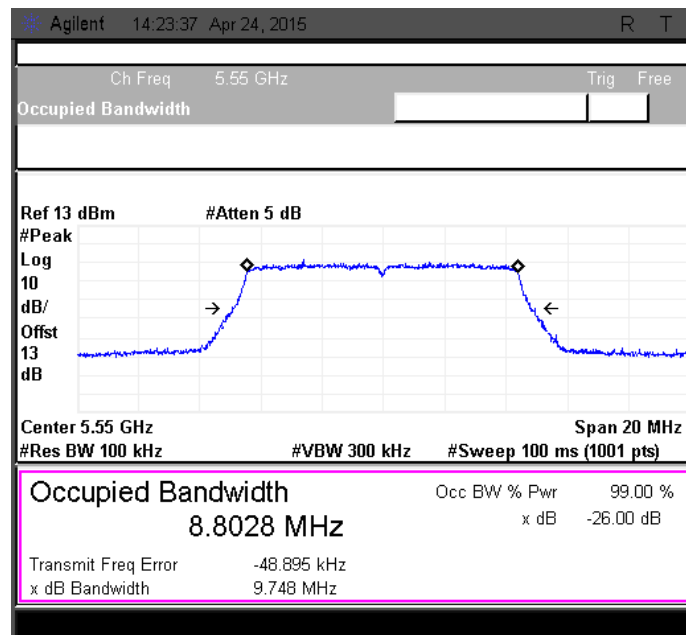


Figure 24: 26dB Bandwidth measured at ch1



### 5.3.1.6.6 10MHz MODULATION BW-HIGH CHANNEL\_5710 MHz

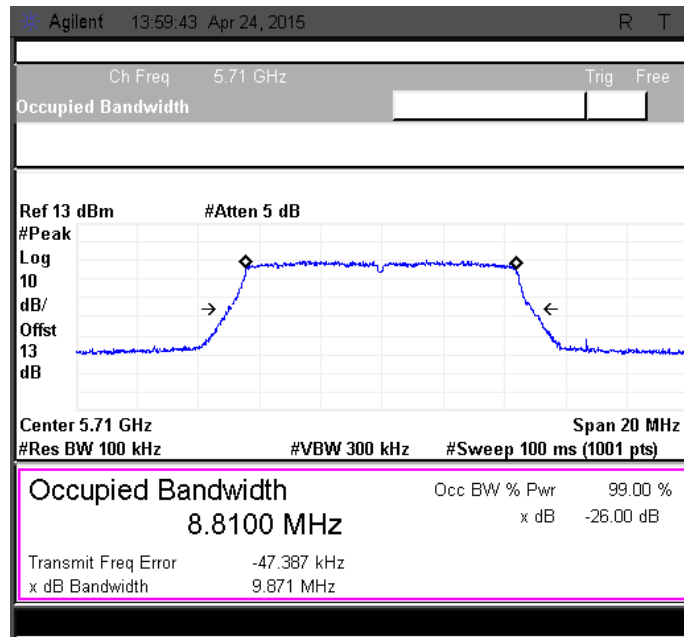


Figure 25: 26dB Bandwidth measured at ch0

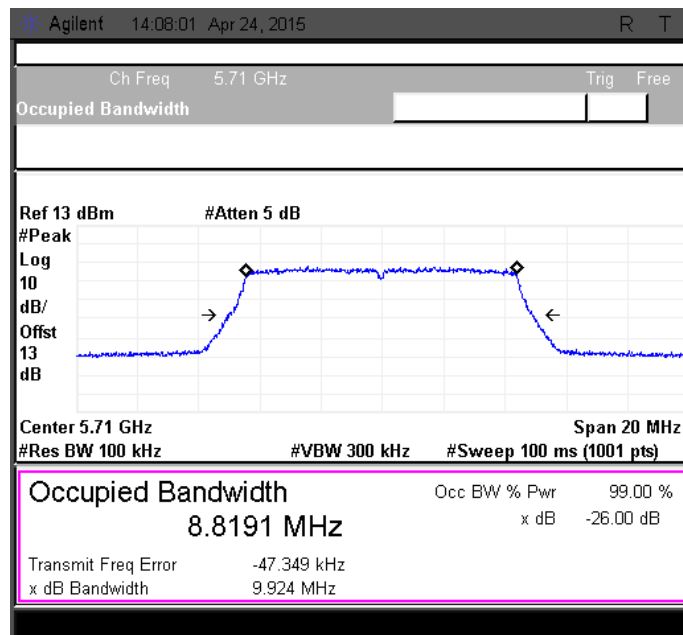


Figure 26: 26dB Bandwidth measured at ch1

### 5.3.1.7 RESULT (SUPPORTING GRAPHS / DATA) FOR 24DBI DISH CONDITION

#### 5.3.1.7.1 40MHz MODULATION BW-LOW CHANNEL\_5495 MHz

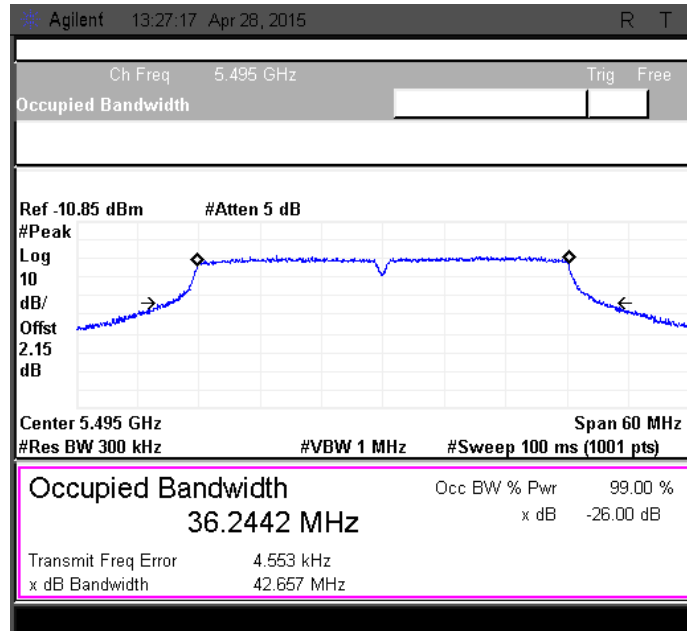


Figure 27: 26dB Bandwidth measured at ch0

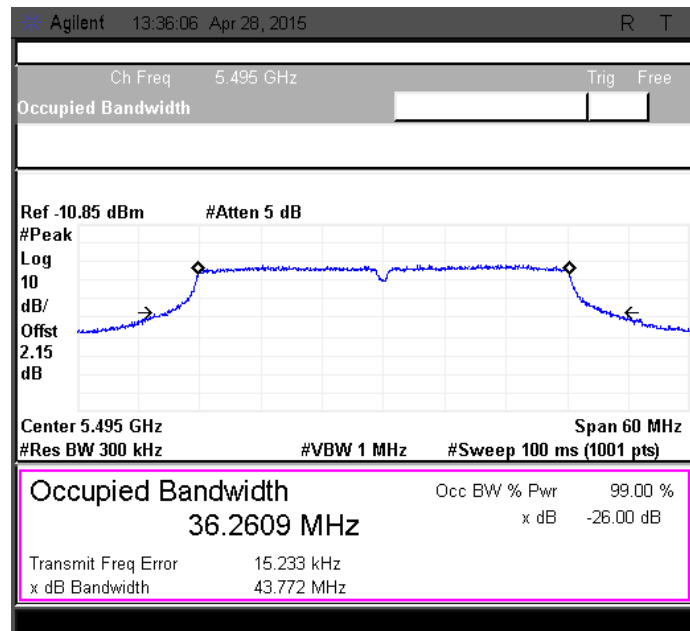


Figure 28: 26dB Bandwidth measured at ch1

### 5.3.1.7.2 40MHz MODULATION BW -MID CHANNEL\_5550 MHz

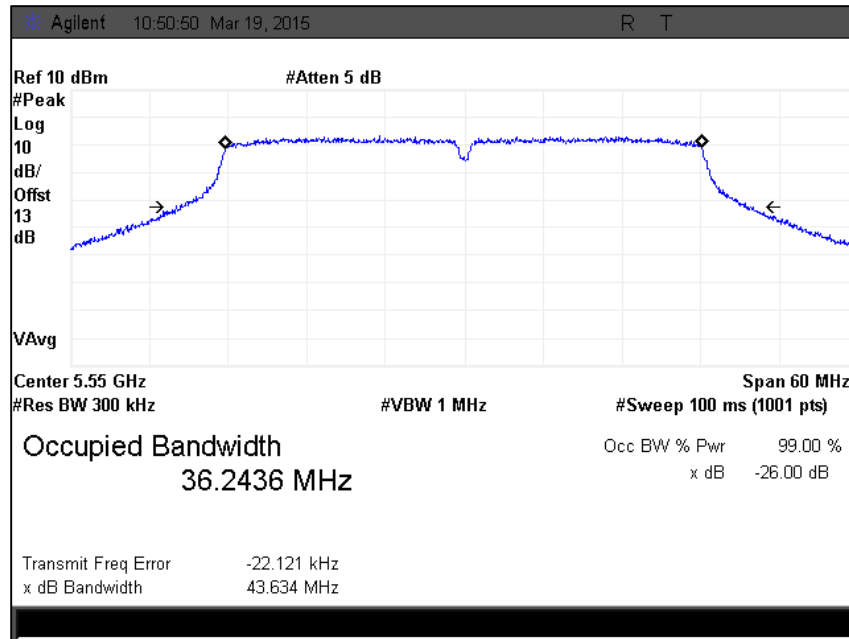


Figure 29: 26dB Bandwidth measured at ch0

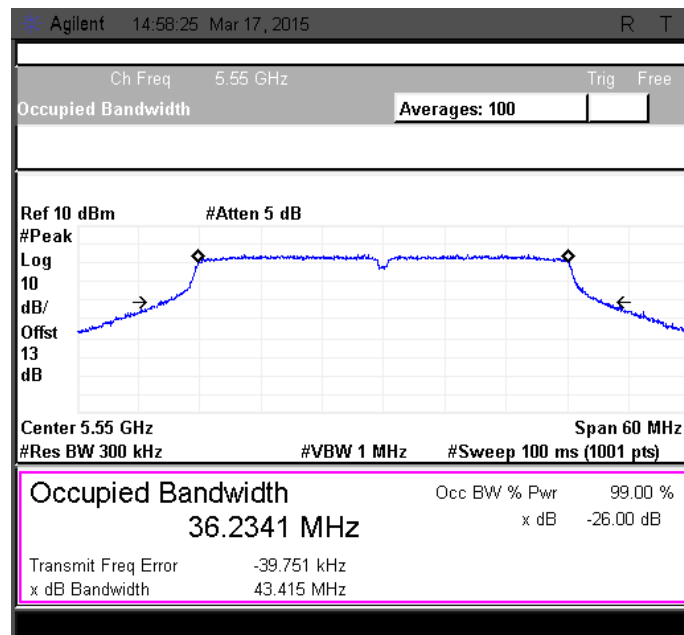


Figure 30: 26dB Bandwidth measured at ch1

### 5.3.1.7.3 40MHz MODULATION BW -HIGH CHANNEL\_5700MHz

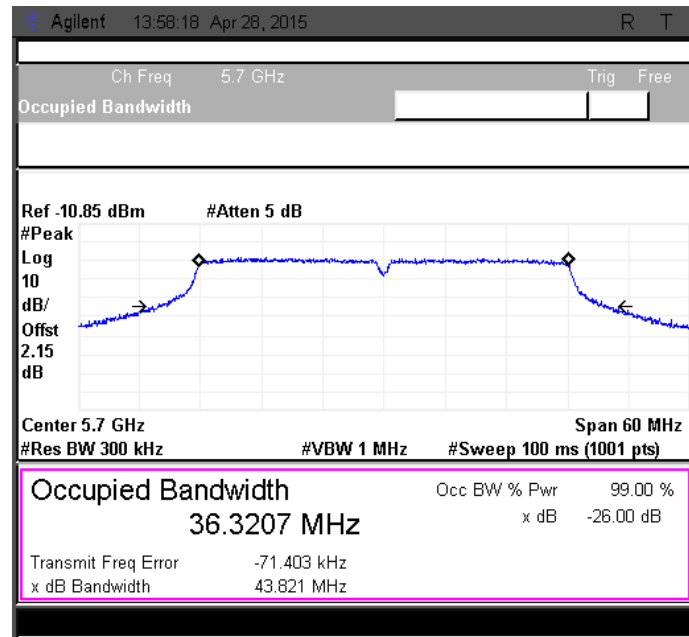


Figure 31: 26dB Bandwidth measured at ch0

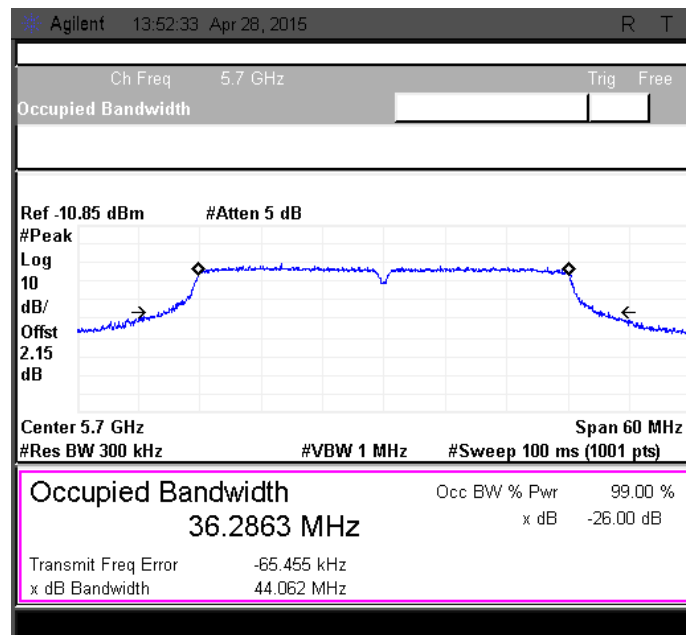


Figure 32: 26dB Bandwidth measured at ch1

### 5.3.1.7.4 10MHz MODULATION BW-LOW CHANNEL\_5485 MHz

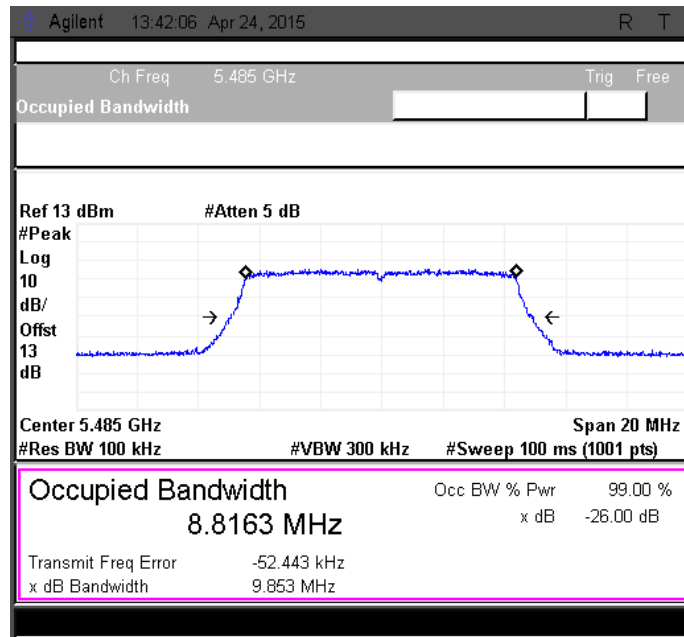


Figure 33: 26dB Bandwidth measured at ch0

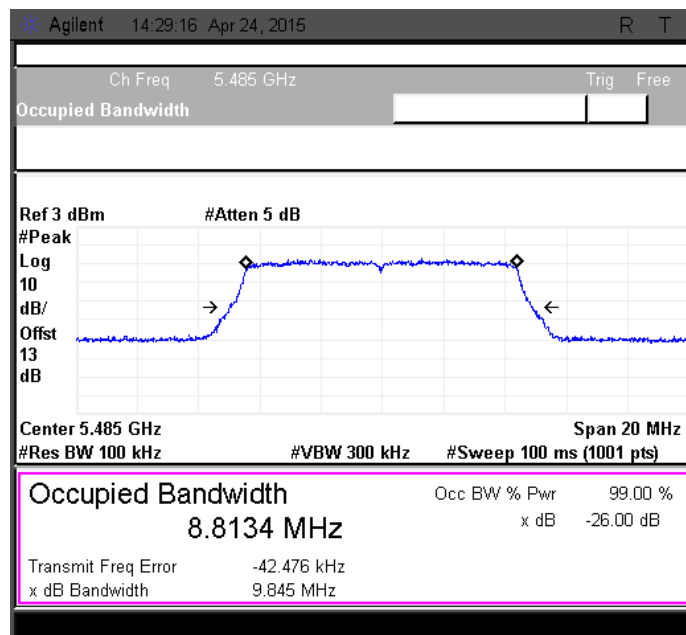


Figure 34: 26dB Bandwidth measured at ch1

### 5.3.1.7.5 10MHz MODULATION BW-MID CHANNEL\_5550 MHz

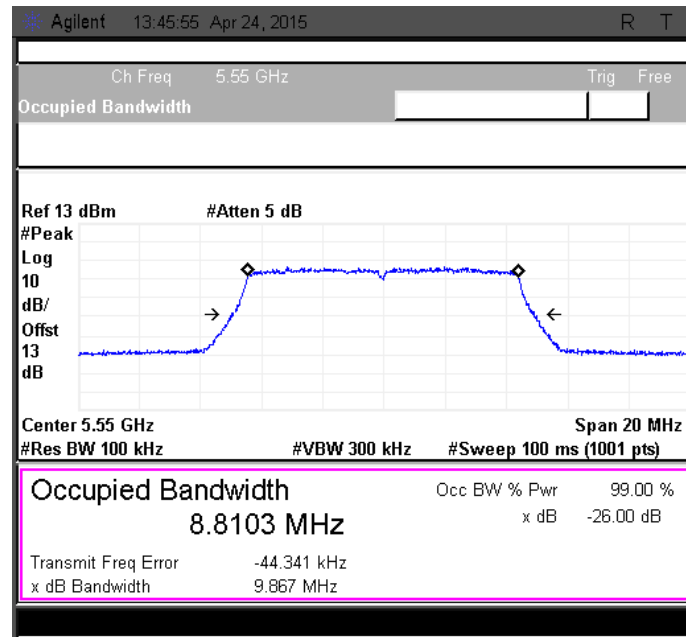


Figure 35: 26dB Bandwidth measured at ch0

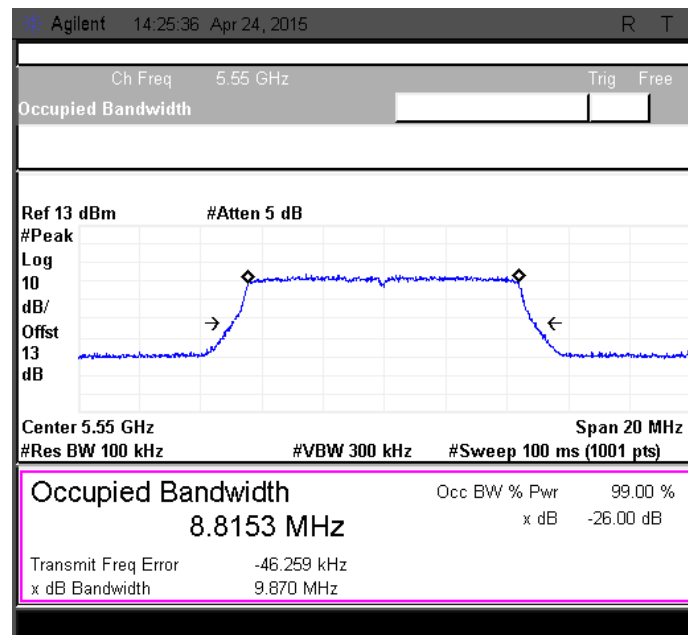


Figure 36: 26dB Bandwidth measured at ch1

### 5.3.1.7.6 10MHz MODULATION BW-HIGH CHANNEL\_5710MHz

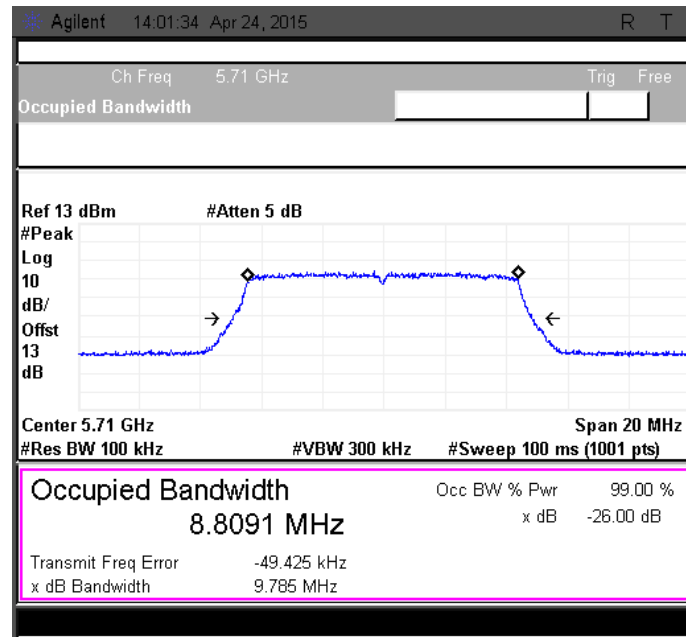


Figure 37: 26dB Bandwidth measured at ch0

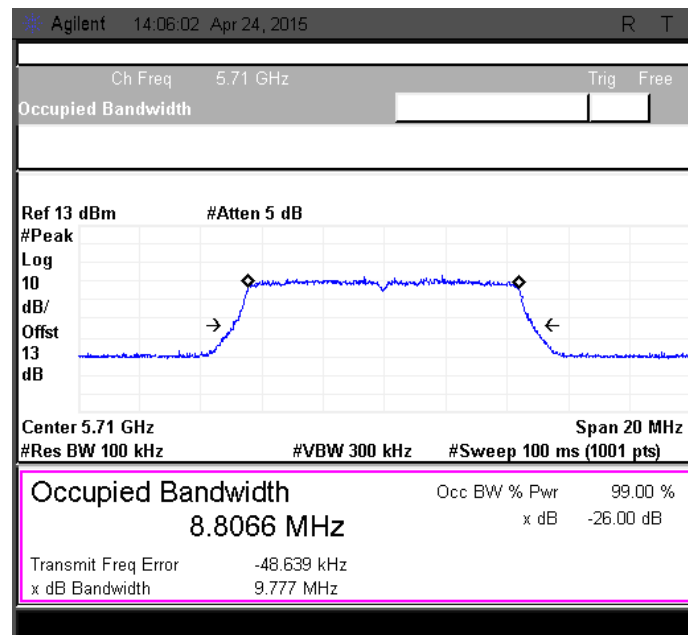


Figure 38: 26dB Bandwidth measured at ch1

### 5.3.1.8 RESULT

26dB Bandwidth for all channels in both 40MHz & 10MHz Modulation Bandwidths has been measured and tabulated in below table.

Test Condition	Modulation Bandwidth (MHz)	Antenna path	Channel Frequency (MHz)	Recorded value (MHz)
Basic	40	Ch. 0	5495	43.502
Basic	40	Ch. 0	5550	44.257
Basic	40	Ch. 0	5700	43.806
Basic	40	Ch. 1	5495	42.914
Basic	40	Ch. 1	5550	46.45
Basic	40	Ch. 1	5700	43.826
Basic	10	Ch. 0	5485	10.332
Basic	10	Ch. 0	5550	9.808
Basic	10	Ch. 0	5710	9.840
Basic	10	Ch. 1	5485	9.850
Basic	10	Ch. 1	5550	9.888
Basic	10	Ch. 1	5710	9.863
17dBi Antenna	40	Ch. 0	5495	44.108
17dBi Antenna	40	Ch. 0	5550	43.423
17dBi Antenna	40	Ch. 0	5700	42.817
17dBi Antenna	40	Ch. 1	5495	43.774
17dBi Antenna	40	Ch. 1	5550	43.550
17dBi Antenna	40	Ch. 1	5700	42.775
17dBi Antenna	10	Ch. 0	5485	9.914
17dBi Antenna	10	Ch. 0	5550	9.879
17dBi Antenna	10	Ch. 0	5710	9.871
17dBi Antenna	10	Ch. 1	5485	9.919
17dBi Antenna	10	Ch. 1	5550	9.748
17dBi Antenna	10	Ch. 1	5710	9.924
24dBi Dish	40	Ch. 0	5495	42.657
24dBi Dish	40	Ch. 0	5550	43.634
24dBi Dish	40	Ch. 0	5700	43.821
24dBi Dish	40	Ch. 1	5495	43.772
24dBi Dish	40	Ch. 1	5550	43.415
24dBi Dish	40	Ch. 1	5700	44.062
24dBi Dish	10	Ch. 0	5485	9.853
24dBi Dish	10	Ch. 0	5550	9.867
24dBi Dish	10	Ch. 0	5710	9.785
24dBi Dish	10	Ch. 1	5485	9.845
24dBi Dish	10	Ch. 1	5550	9.87
24dBi Dish	10	Ch. 1	5710	9.777



## 5.3.2 99 PERCENT OCCUPIED BANDWIDTH MEASUREMENT

### 5.3.2.1 TEST SPECIFICATION

Test Standard	47 CFR Ch. I (10–1–14 Ed), Part 15, Subpart C RSS-Gen, Issue 4, Nov 2014	
Test Procedure	ANSI C63.10-2013	
Modulation Bandwidth	40MHz	10MHz
Resolution Bandwidth	1MHz	300 kHz
Video Bandwidth	3MHz	1MHz
Sweep Time	100ms	
Attenuation	Auto	
Test Mode	Conducted	
Detector	Peak	
Input Voltage	120V AC	
Input Frequency	60 Hz	
Temperature	22.0°C	
Humidity	56.0%	
Tested By	Harsha K	
Test Date	12 <sup>th</sup> Mar 2015 to 28 <sup>th</sup> Apr 2015	

### 5.3.2.2 LIMITS

Standard	Reference section	Frequency range	Limit
47 CFR Ch. I (10–1–14 Ed), Part 15, Subpart C  RSS-Gen, Issue 4, Nov 2014	NA	5470MHz to 5725MHz	NA

### 5.3.2.3 TEST SETUP

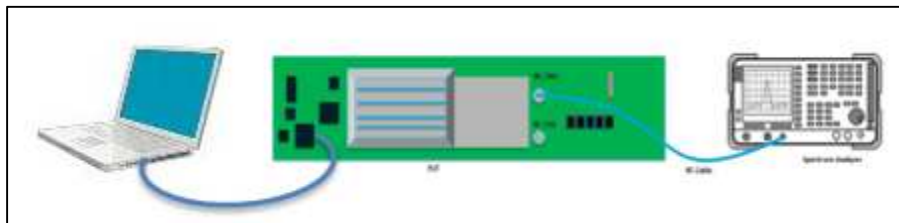


Figure 39: Typical test setup for Conducted RF Test setup



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#### 5.3.2.4 TEST PROCEDURE

The Conducted test was performed using the Spectrum analyzer. Measurements were done as per Section D of “789033 D01 General UNII Test Procedures Old Rules v01r04”. The RF output of the EUT was connected to the input port of Spectrum analyzer using an attenuator. Captured the data from spectrum analyzer and compared with the limits specified in the standard.

### 5.3.2.5 RESULT (SUPPORTING GRAPHS / DATA) FOR BASIC CONDITION

#### 5.3.2.5.1 40MHz MODULATION BW-LOW CHANNEL\_5495MHz

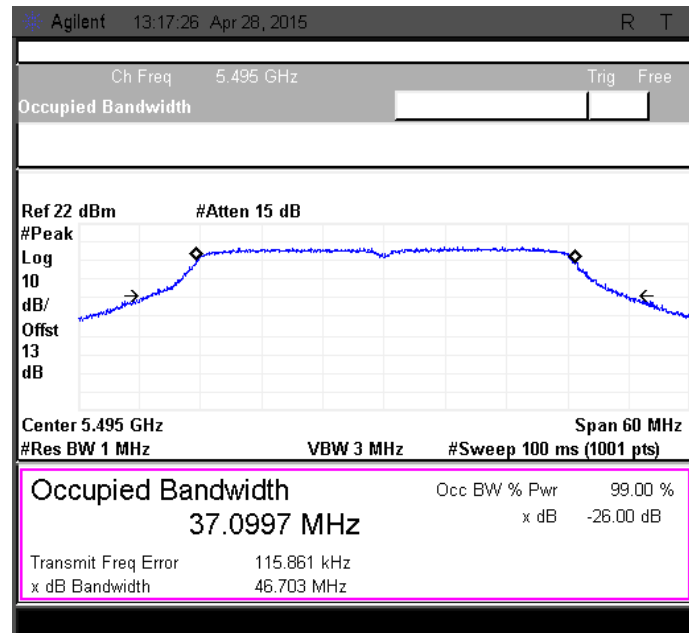


Figure 40: 99 Percent OBW measured at ch.0

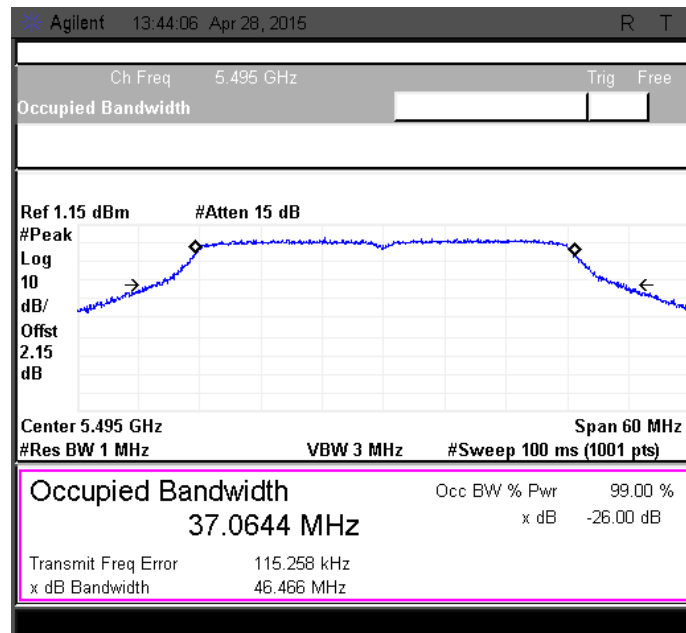


Figure 41: 99 Percent OBW measured at ch.1

### 5.3.2.5.2 40MHz MODULATION BW -MID CHANNEL\_5550MHz

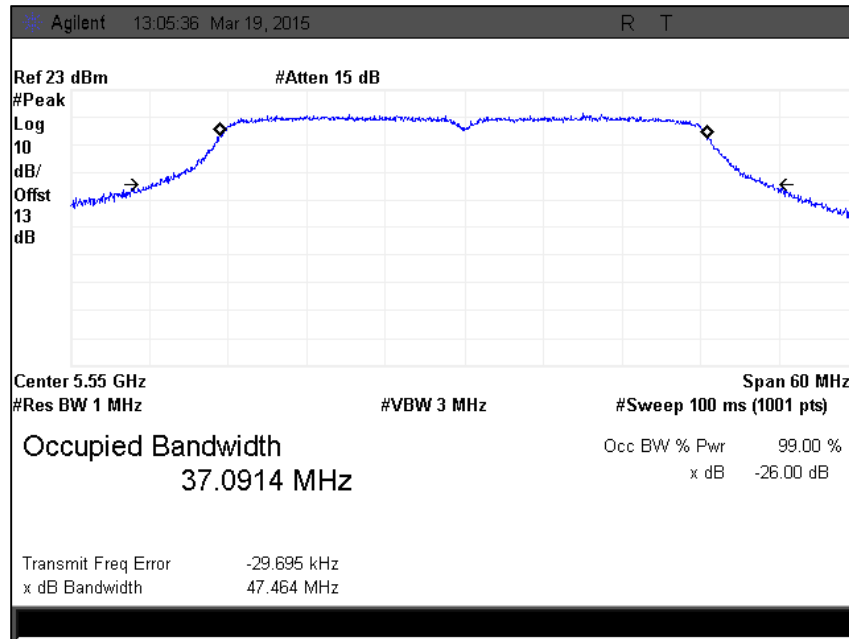


Figure 42: 99 Percent OBW measured at ch.0

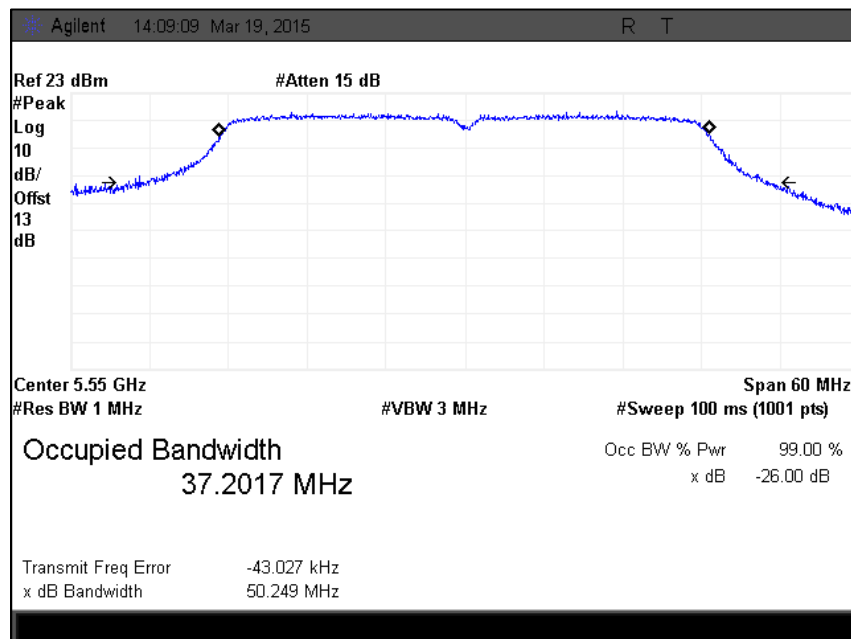


Figure 43: 99 Percent OBW measured at ch.1

### 5.3.2.5.3 40MHz MODULATION BW -HIGH CHANNEL\_5700MHz

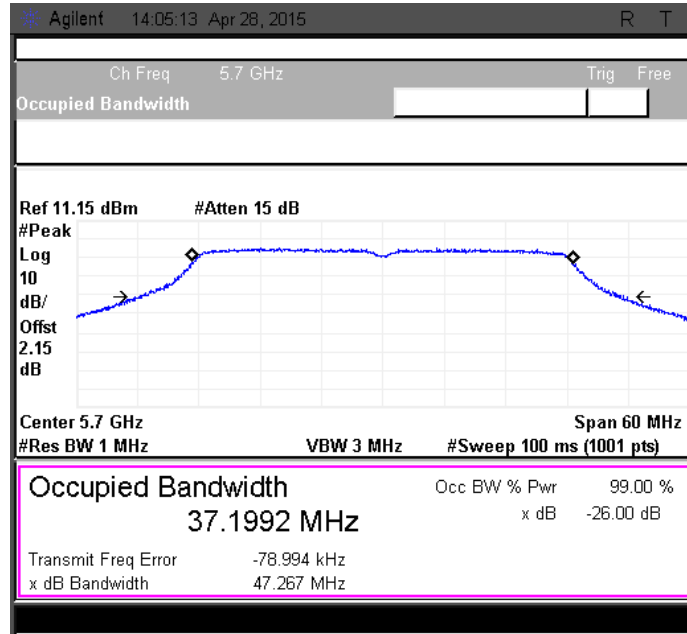


Figure 44: 99 Percent OBW measured at ch.0

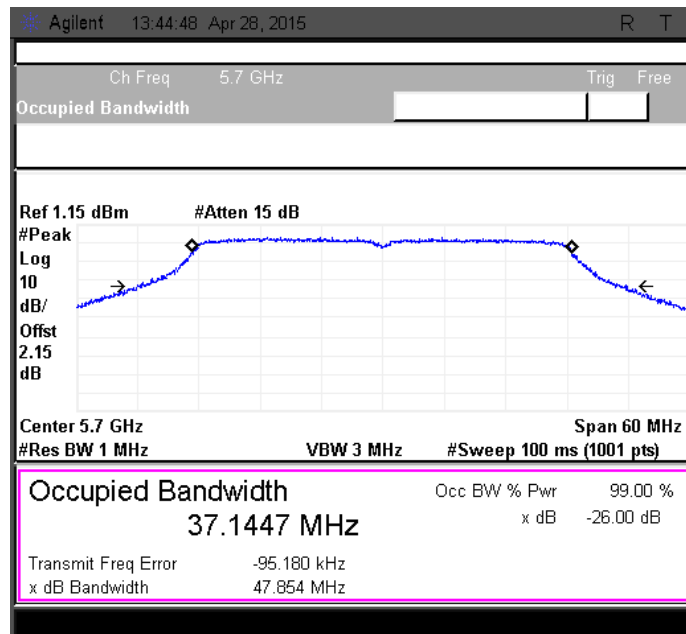


Figure 45: 99 Percent OBW measured at ch.1

### 5.3.2.5.4 10MHz MODULATION BW-LOW CHANNEL\_5485MHz

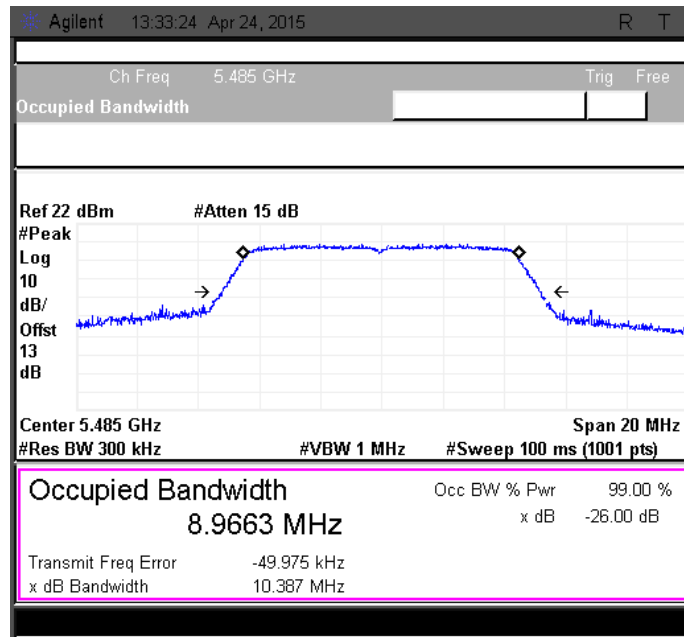


Figure 46: 99 Percent OBW measured at ch.0

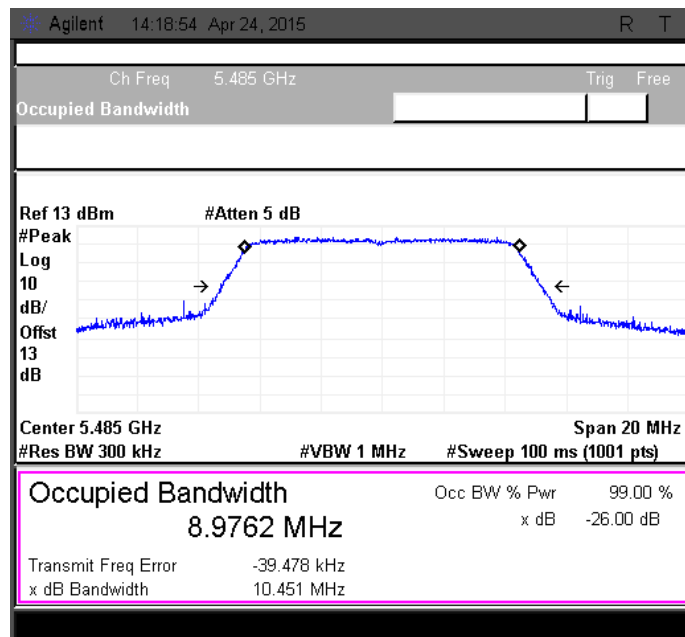


Figure 47: 99 Percent OBW measured at ch.1

### 5.3.2.5.5 10MHz MODULATION BW-MID CHANNEL\_5550MHZ

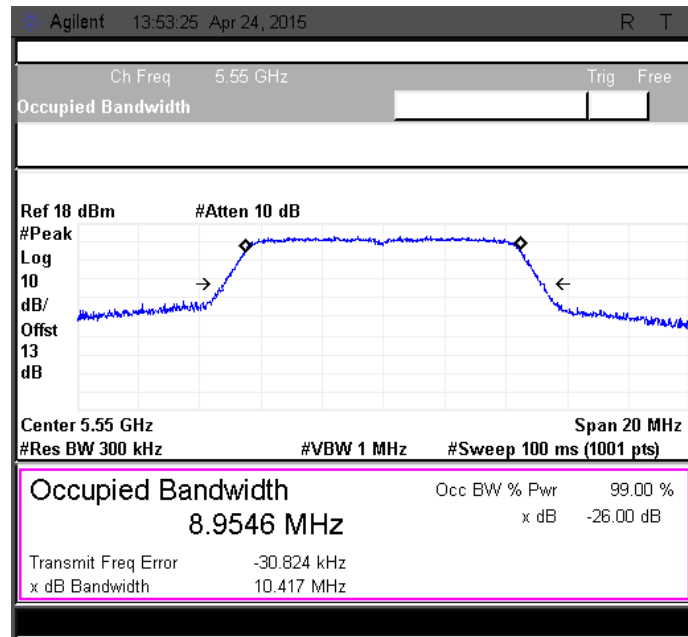


Figure 48: 99 Percent OBW measured at ch.0

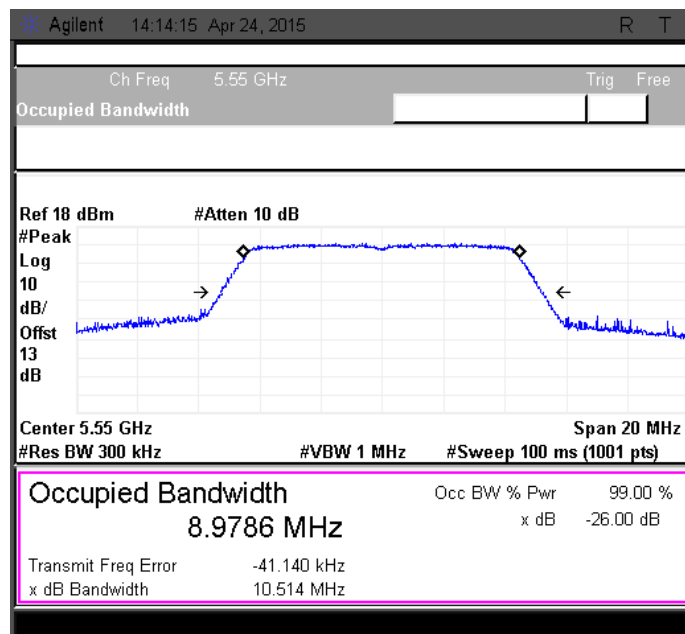


Figure 49: 99 Percent OBW measured at ch.1

### 5.3.2.5.6 10MHz MODULATION BW-HIGH CHANNEL\_5710MHz

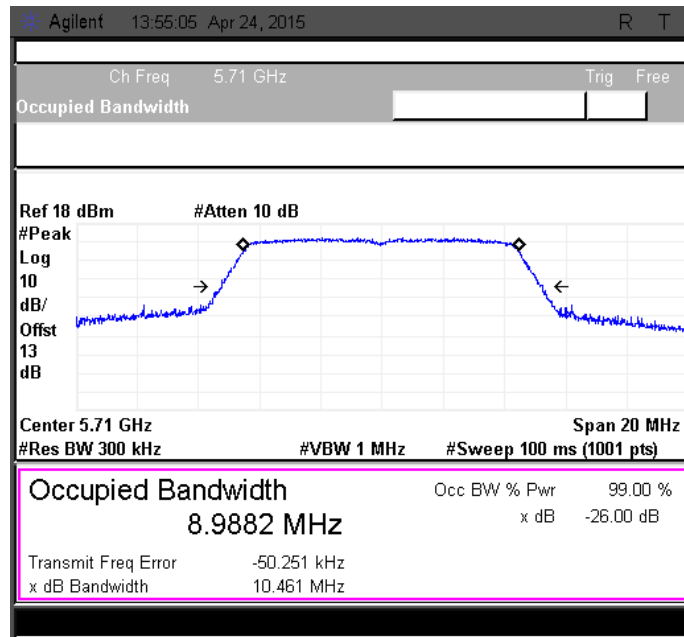


Figure 50: 99 Percent OBW measured at ch.0

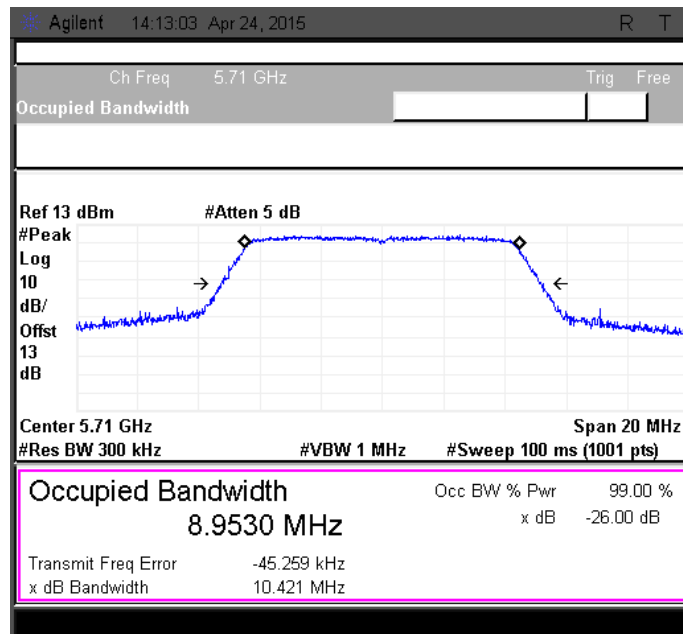


Figure 51: 99 Percent OBW measured at ch.1



### 5.3.2.6 RESULT (SUPPORTING GRAPHS / DATA) FOR 17DBI ANTENNA CONDITION

#### 5.3.2.6.1 40MHz MODULATION BW-LOW CHANNEL\_5495 MHz

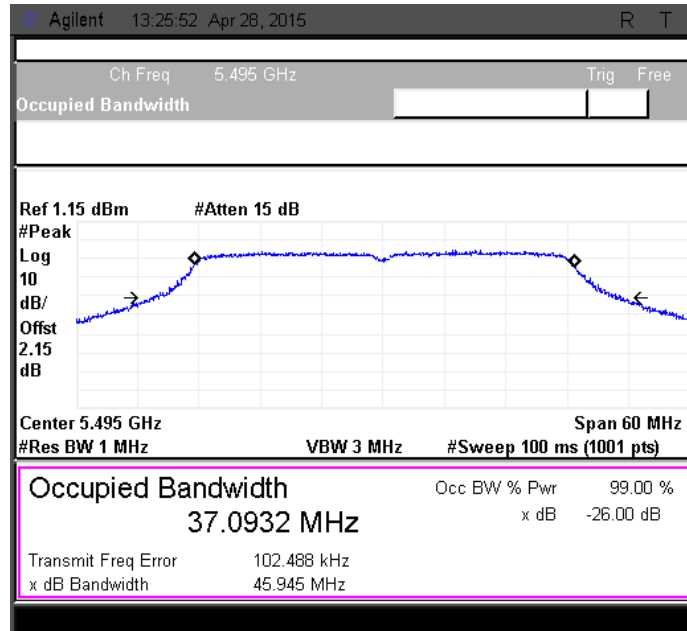


Figure 52: 99 Percent OBW measured at ch.0

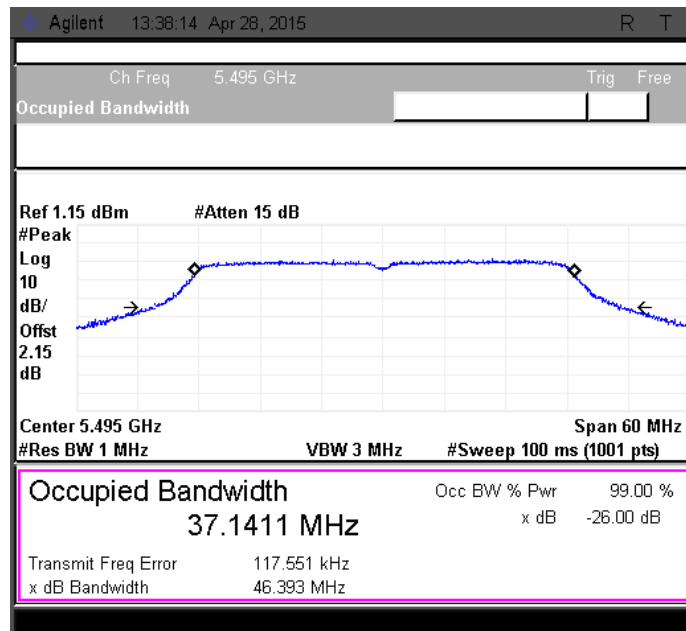


Figure 53: 99 Percent OBW measured at ch.1

### 5.3.2.6.2 40MHz MODULATION BW -MID CHANNEL\_5550 MHz

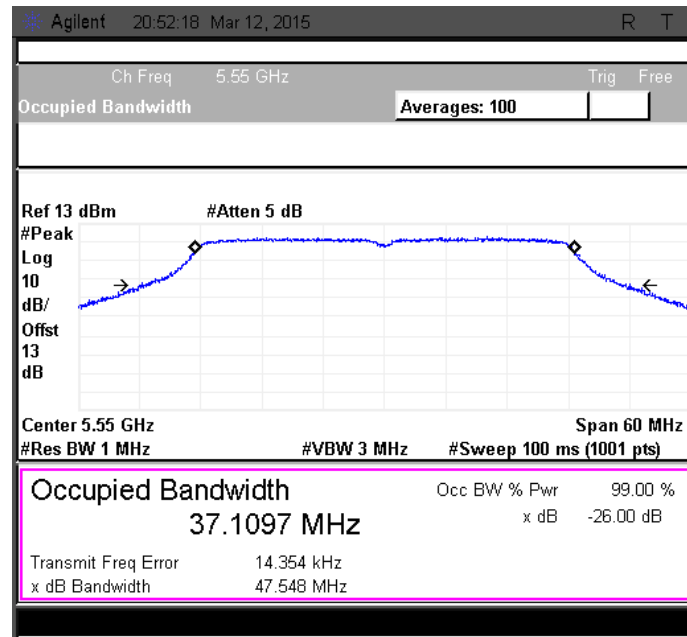


Figure 54: 99 Percent OBW measured at ch.0

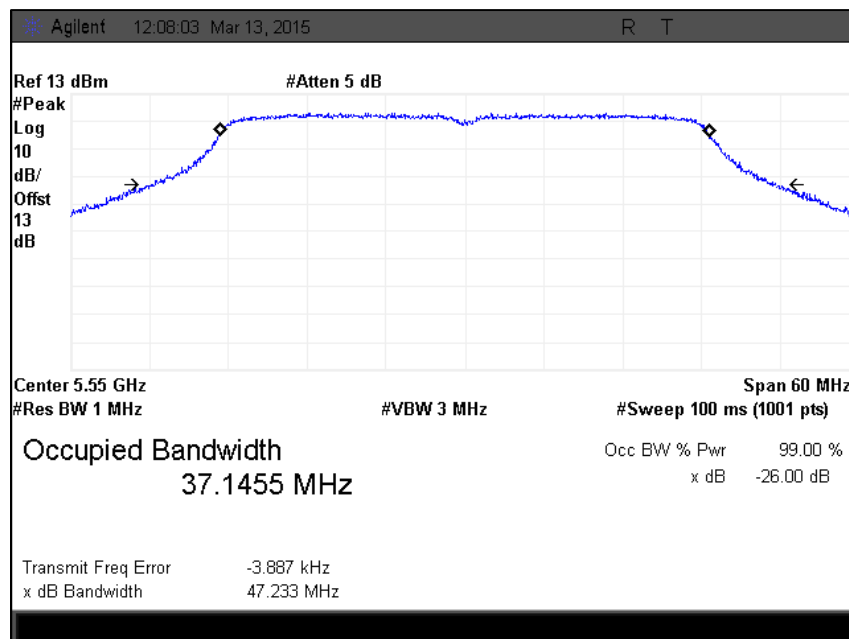


Figure 55: 99 Percent OBW measured at ch.1

### 5.3.2.6.3 40MHz MODULATION BW -HIGH CHANNEL\_5700MHz

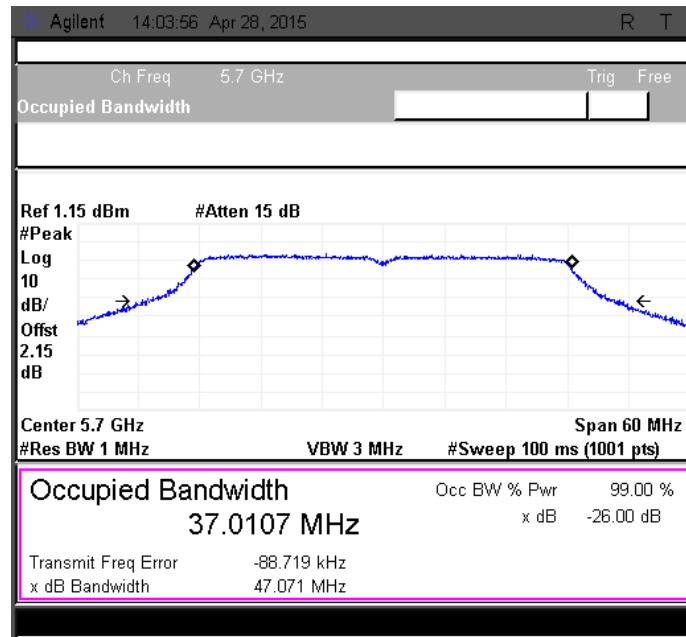


Figure 56: 99 Percent OBW measured at ch.0

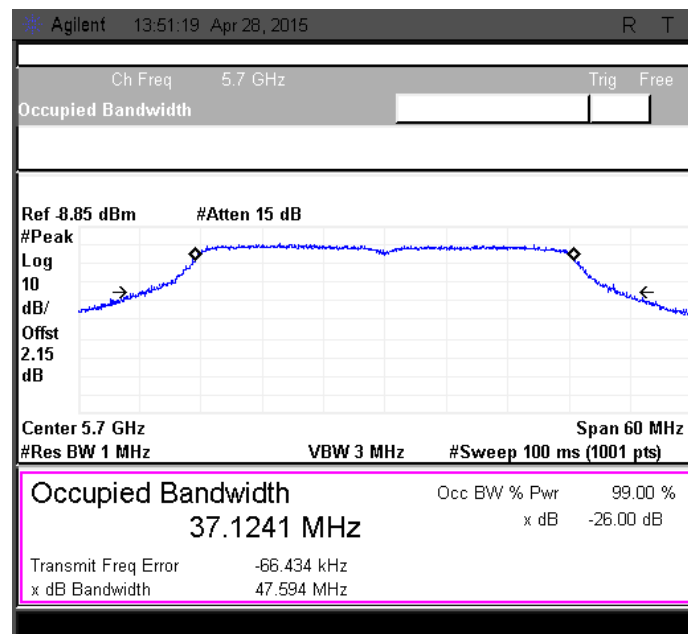


Figure 57: 99 Percent OBW measured at ch.1

### 5.3.2.6.4 10MHz MODULATION BW-LOW CHANNEL\_5485 MHz

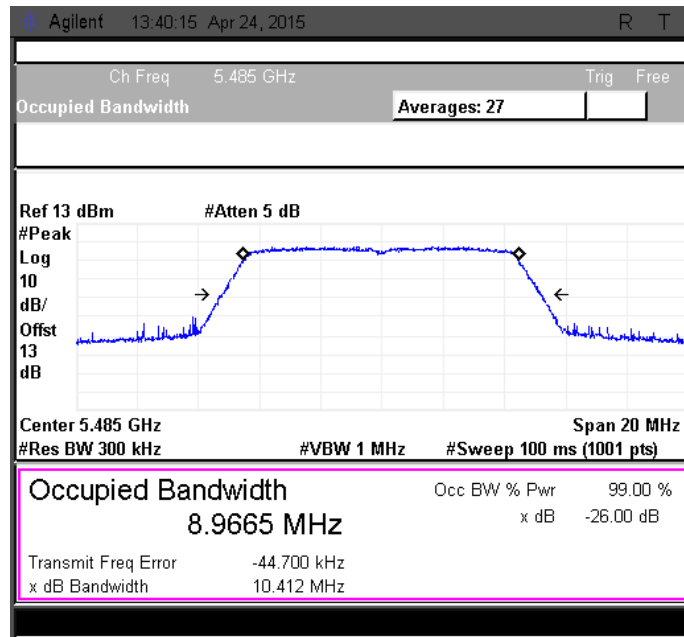


Figure 58: 99 Percent OBW measured at ch.0

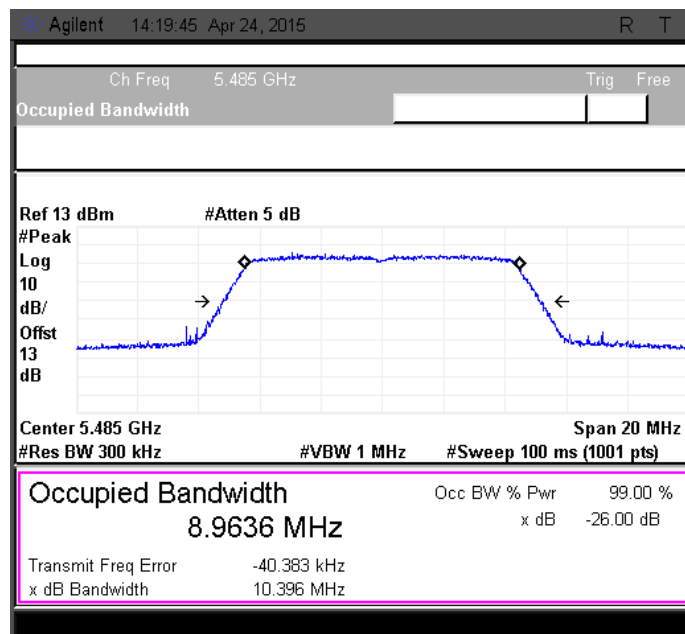


Figure 59: 99 Percent OBW measured at ch.1

### 5.3.2.6.5 10MHz MODULATION BW-MID CHANNEL\_5550 MHz

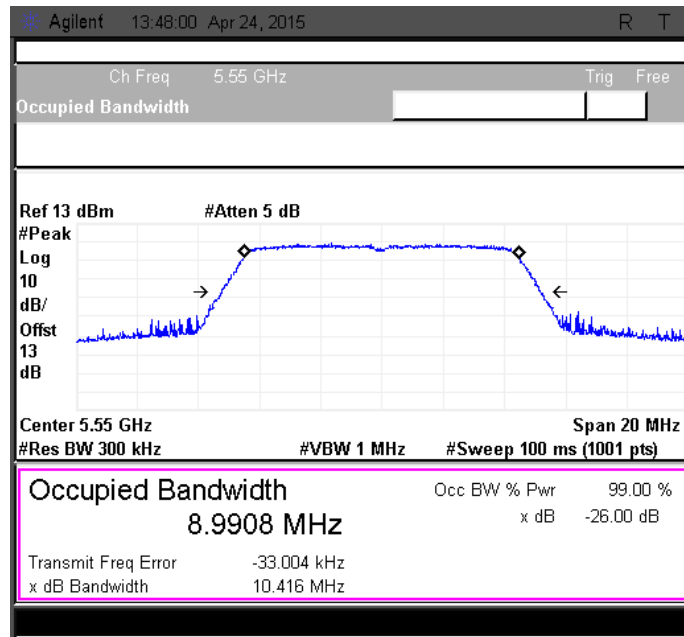


Figure 60: 99 Percent OBW measured at ch.0

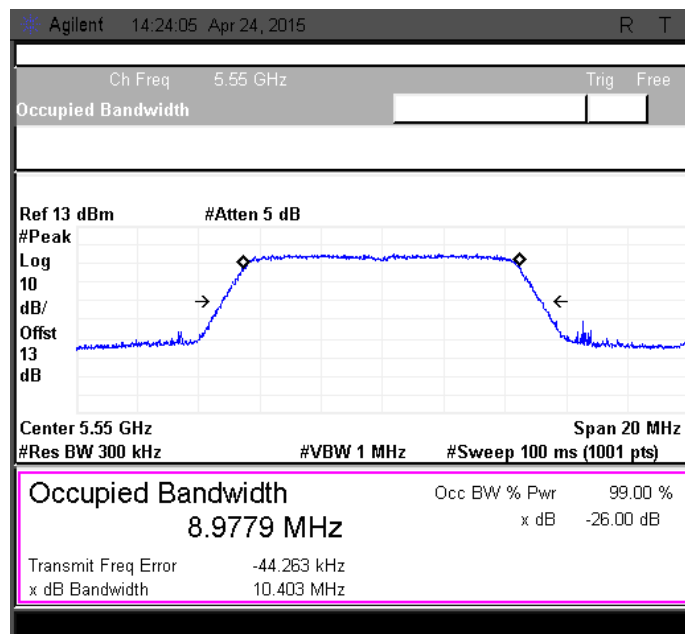


Figure 61: 99 Percent OBW measured at ch.1

### 5.3.2.6.6 10MHz MODULATION BW-HIGH CHANNEL\_5710 MHz

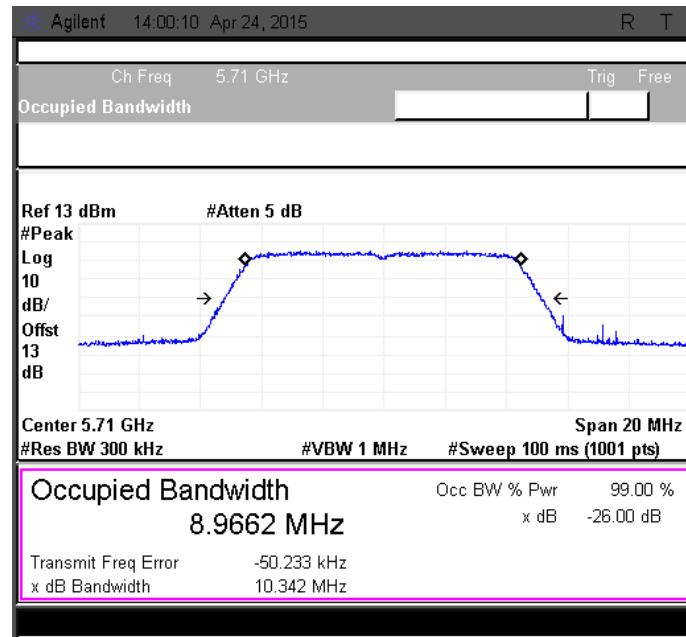


Figure 62: 99 Percent OBW measured at ch.0

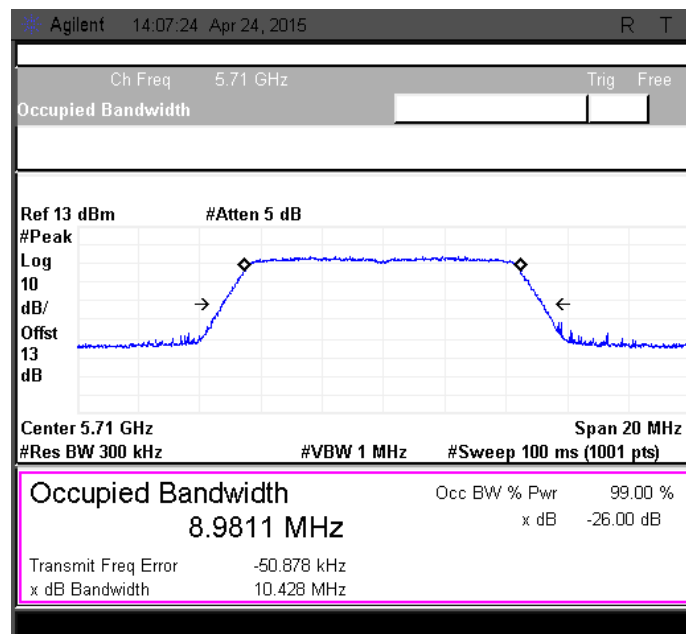


Figure 63: 99 Percent OBW measured at ch.1

### 5.3.2.7 RESULT (SUPPORTING GRAPHS / DATA) FOR 24DBI DISH CONDITION

#### 5.3.2.7.1 40MHz MODULATION BW-LOW CHANNEL\_5495 MHz

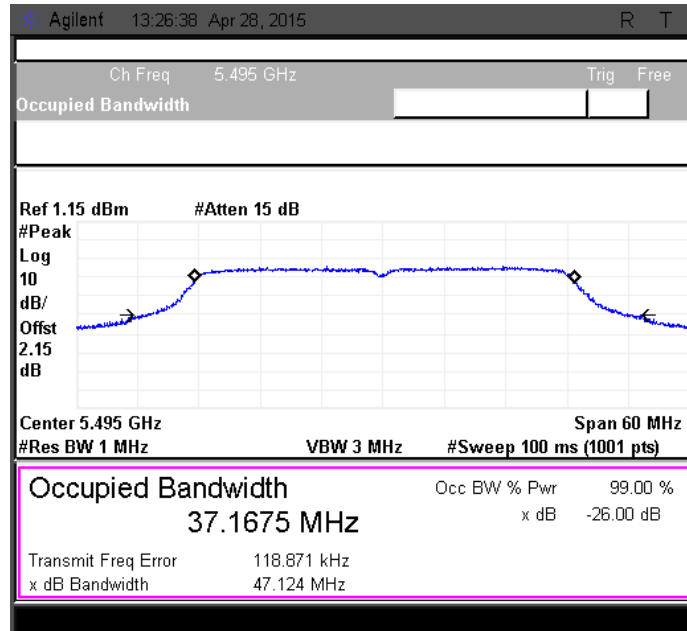


Figure 64: 99 Percent OBW measured at ch.0

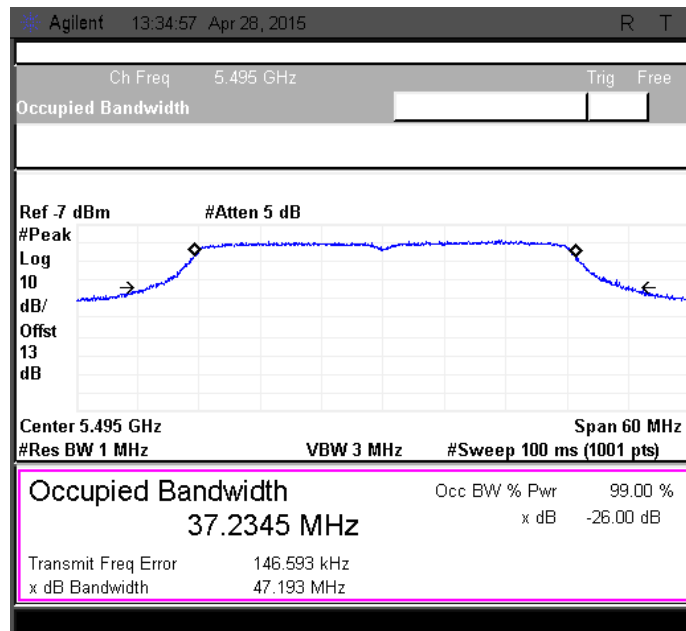


Figure 65: 99 Percent OBW measured at ch.1

### 5.3.2.7.2 40MHz MODULATION BW -MID CHANNEL\_5550 MHz

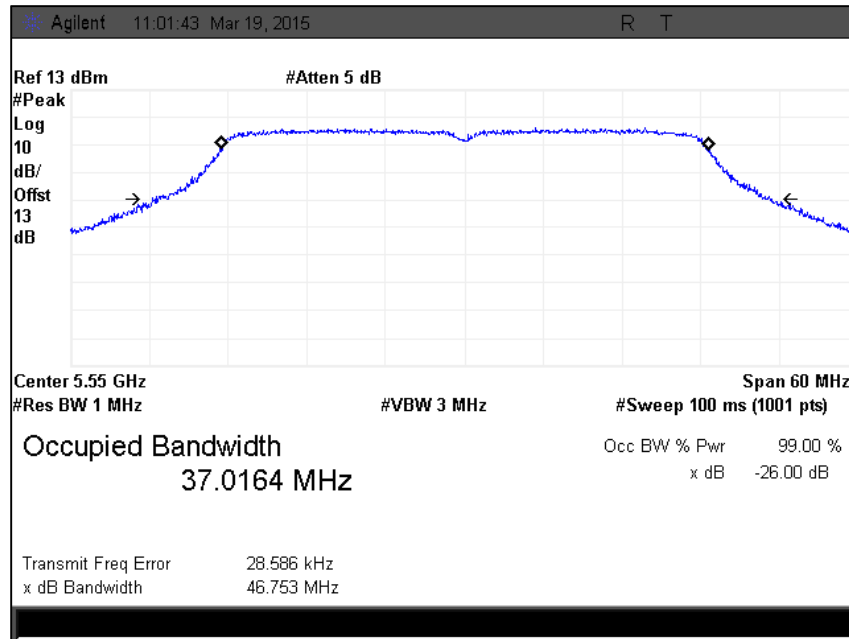


Figure 66: 99 Percent OBW measured at ch.0

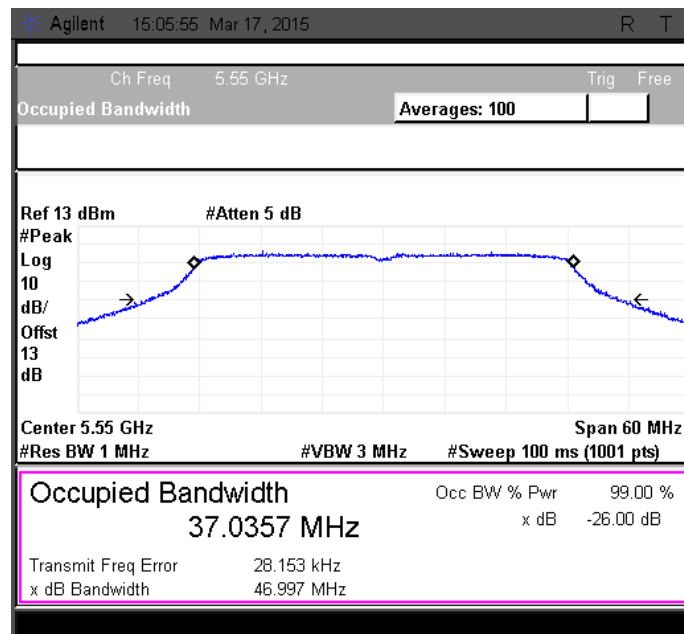


Figure 67: 99 Percent OBW measured at ch.1



### 5.3.2.7.3 40MHz MODULATION BW -HIGH CHANNEL\_5700MHz

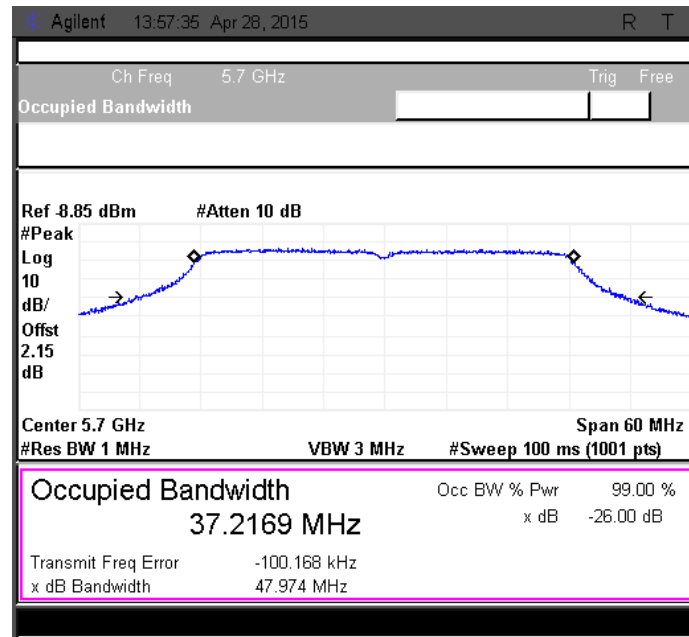


Figure 68: 99 Percent OBW measured at ch.0

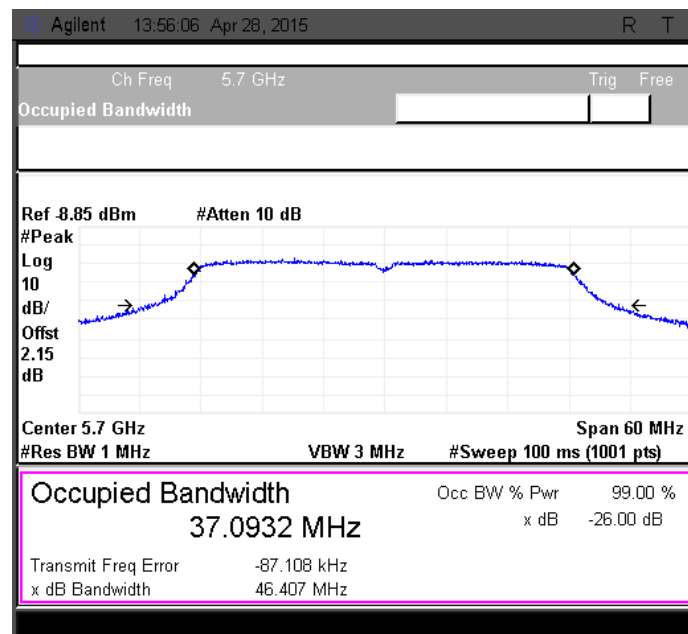


Figure 69: 99 Percent OBW measured at ch.1

### 5.3.2.7.4 10MHz MODULATION BW-LOW CHANNEL\_5485 MHz

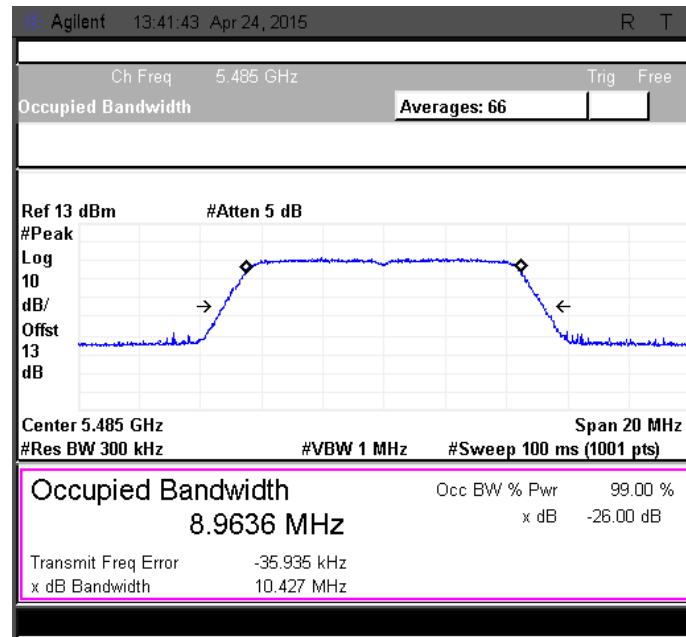


Figure 70: 99 Percent OBW measured at ch.0

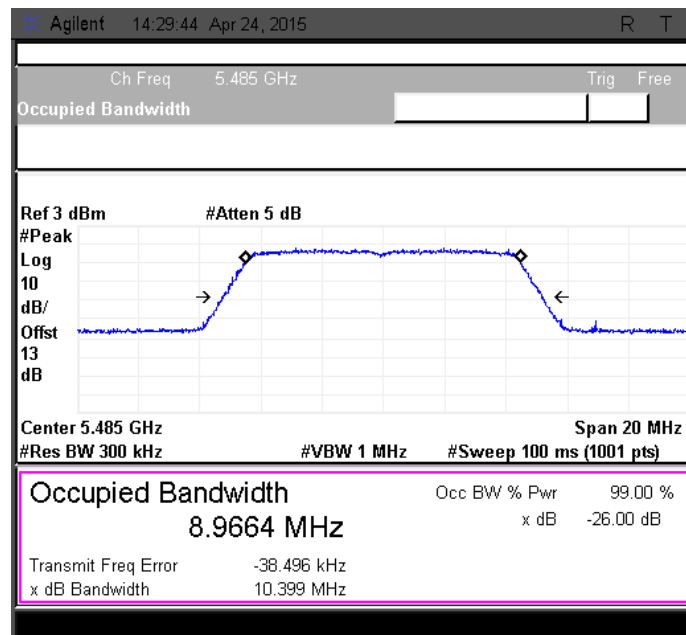


Figure 71: 99 Percent OBW measured at ch.1

### 5.3.2.7.5 10MHz MODULATION BW-MID CHANNEL\_5550 MHz

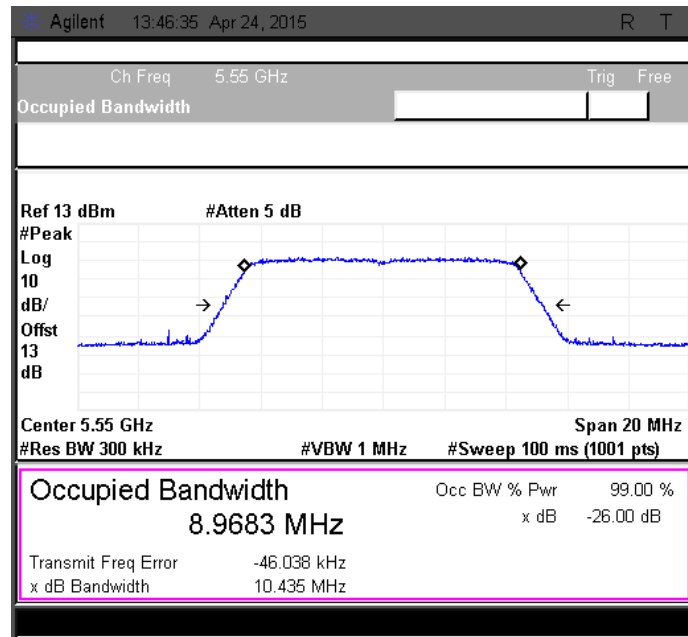


Figure 72: 99 Percent OBW measured at ch.0

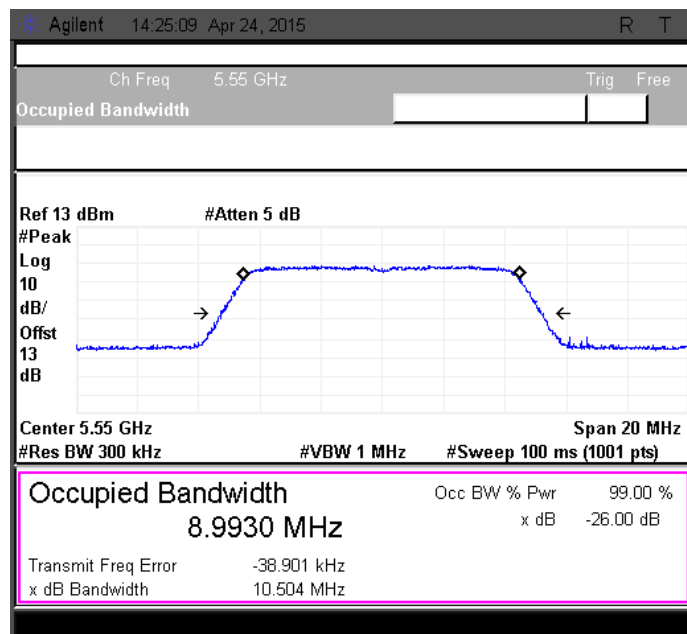


Figure 73: 99 Percent OBW measured at ch.1

### 5.3.2.7.6 10MHz MODULATION BW-HIGH CHANNEL\_5710 MHz

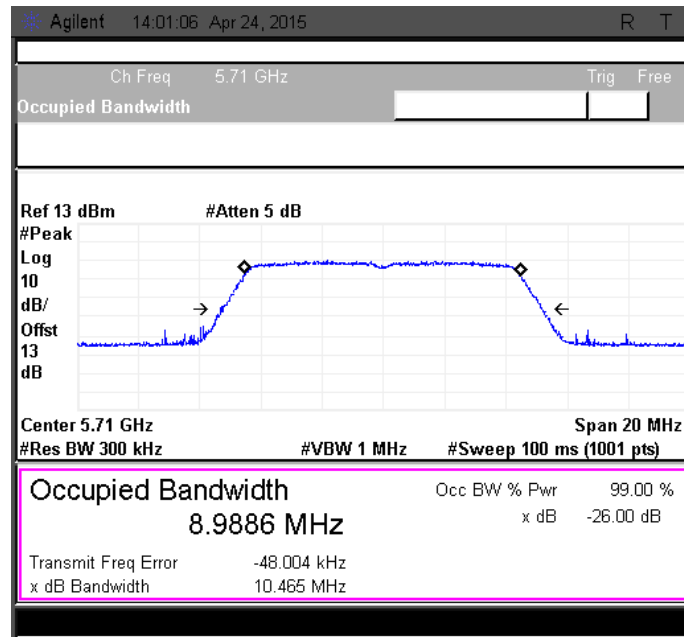


Figure 74: 99 Percent OBW measured at ch.0

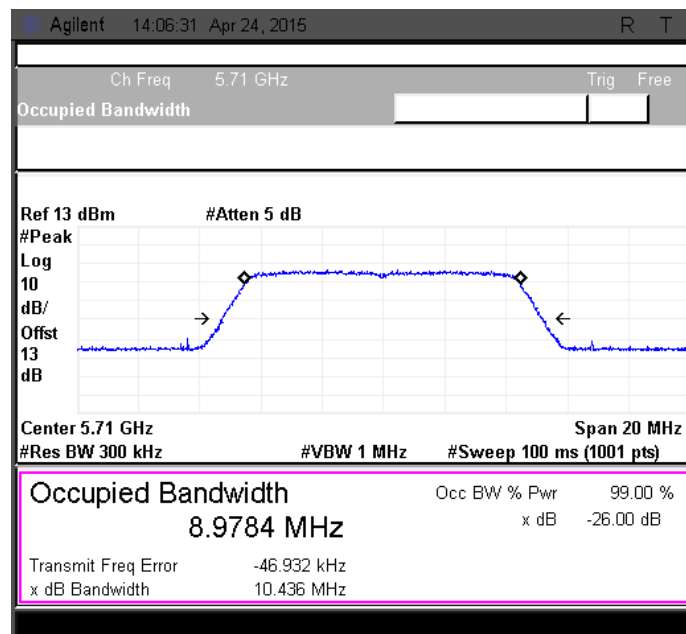


Figure 75: 99 Percent OBW measured at ch.1

### 5.3.2.8 RESULT

99 Percent Occupied Bandwidth for all channels in both 40MHz & 10MHz Modulation Bandwidths has been measured and tabulated in below table.

Test Condition	Modulation Bandwidth (MHz)	Antenna path	Channel Frequency (MHz)	Recorded value (MHz)
Basic	40	Ch. 0	5495	37.0997
Basic	40	Ch. 0	5550	37.0914
Basic	40	Ch. 0	5700	37.1992
Basic	40	Ch. 1	5495	37.0644
Basic	40	Ch. 1	5550	37.2017
Basic	40	Ch. 1	5700	37.1447
Basic	10	Ch. 0	5485	8.9663
Basic	10	Ch. 0	5550	8.9546
Basic	10	Ch. 0	5710	8.9882
Basic	10	Ch. 1	5485	8.9762
Basic	10	Ch. 1	5550	8.9786
Basic	10	Ch. 1	5710	8.9530
17dBi Antenna	40	Ch. 0	5495	37.0932
17dBi Antenna	40	Ch. 0	5550	37.1097
17dBi Antenna	40	Ch. 0	5700	37.0717
17dBi Antenna	40	Ch. 1	5495	37.1411
17dBi Antenna	40	Ch. 1	5550	37.1455
17dBi Antenna	40	Ch. 1	5700	37.1241
17dBi Antenna	10	Ch. 0	5485	8.9665
17dBi Antenna	10	Ch. 0	5550	8.9908
17dBi Antenna	10	Ch. 0	5710	8.9662
17dBi Antenna	10	Ch. 1	5485	8.9636
17dBi Antenna	10	Ch. 1	5550	8.9779
17dBi Antenna	10	Ch. 1	5710	8.9811
24dBi Dish	40	Ch. 0	5495	37.1675
24dBi Dish	40	Ch. 0	5550	37.0164
24dBi Dish	40	Ch. 0	5700	37.2169
24dBi Dish	40	Ch. 1	5495	37.2345
24dBi Dish	40	Ch. 1	5550	37.0357
24dBi Dish	40	Ch. 1	5700	37.0932
24dBi Dish	10	Ch. 0	5485	8.9636
24dBi Dish	10	Ch. 0	5550	8.9683
24dBi Dish	10	Ch. 0	5710	8.9889
24dBi Dish	10	Ch. 1	5485	8.9664
24dBi Dish	10	Ch. 1	5550	8.9930
24dBi Dish	10	Ch. 1	5710	8.9784

### 5.3.3 MAXIMUM CONDUCTED OUTPUT POWER

#### 5.3.3.1 TEST SPECIFICATION

Test Standard	47 CFR Ch. I (10–1–14 Ed), Part 15, Subpart C RSS-Gen, Issue 4, Nov 2014
Test Procedure	ANSI C63.10-2013
Resolution Bandwidth	1 MHz
Video Bandwidth	3 MHz
Sweep Time	100ms
Attenuation	Auto
Test Mode	Conducted
Detector	Average
Input Voltage	120V AC
Input Frequency	60 Hz
Temperature	22.0°C
Humidity	56.0%
Tested By	Harsha K
Test Date	12 <sup>th</sup> Mar 2015 to 28 <sup>th</sup> Apr 2015

#### 5.3.3.2 LIMITS

As per 15.407 (a) (2) we need to select 250nW (24dBm) limit or  $11+10\log(B)$ dBm whichever is lower.  
Where, B is 26dB emission bandwidth

Below limit is used if the transmit antenna gain is less than 6dBi

Modulation Bandwidth (MHz)	Fixed Limit as per standard (dBm)	Calculated Limit (dBm)	Limit to be considered (2 chains) (dBm)	Limit to be considered (1 chain) (dBm)
40	24	27.02059991	24	21
10	24	21	21	18

For Cambium, we have 17dBi External antenna. So limits to be considered as per below table

Modulation Bandwidth (MHz)	Limit as per above table (dBm)	Limit to be considered (2 chains) (dBm)	Limit to be considered (1 chain) (dBm)
40	24	13	10
10	21	10	7

Here the limit is reduced by 11dBm as per clause given in standard that if antenna gain is more than 6dBi, the limit should be reduced by the amount in dB that the gain of the antenna exceeds 6dBi.

Also we have 24dBi dish. So limits to be considered as per below table

Modulation Bandwidth (MHz)	Limit as per above table (dBm)	Limit to be considered (2 chains) (dBm)	Limit to be considered (1 chain) (dBm)
40	24	6	3
10	21	3	0

Here the limit is reduced by 18dBm as per clause given in standard that if antenna gain is more than 6dBi, the limit should be reduced by the amount in dB that the gain of the antenna exceeds 6dBi.

### 5.3.3.3 TEST SETUP

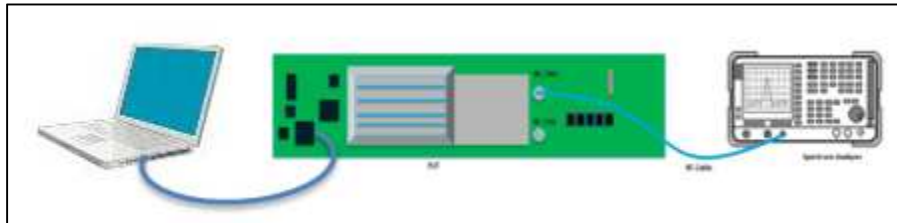


Figure 76: Typical test setup for Conducted RF Test setup

### 5.3.3.4 TEST PROCEDURE

The Conducted test was performed using the Spectrum analyzer. Measurements were done as per the “**789033 D01 General UNII Test Procedures Old Rules v01r04**”. The RF output of the EUT was connected to the input port of Spectrum analyzer using an attenuator. Captured the data from spectrum analyzer and compared with the limits specified in the standard.

### 5.3.3.5 RESULT (SUPPORTING GRAPHS / DATA) FOR BASIC CONDITION

#### 5.3.3.5.1 40MHz MODULATION BW-Low CHANNEL\_5495MHz



Figure 77: Maximum Conducted Output power measured at ch.0 & ch.1

#### 5.3.3.5.2 40MHz MODULATION BW-Mid CHANNEL\_5550MHz



Figure 78: Maximum Conducted Output power measured at ch.0 & ch.1



### 5.3.3.5.3 40MHz MODULATION BW-HIGH CHANNEL\_5700MHz



Figure 79: Maximum Conducted Output power measured at ch.0 & ch.1

### 5.3.3.5.4 10MHz MODULATION BW-LOW CHANNEL\_5485 MHz



Figure 80: Maximum Conducted Output power measured at ch.0 & ch.1

### 5.3.3.5.5 10MHz MODULATION BW-Mid CHANNEL\_5550 MHz



Figure 81: Maximum Conducted Output power measured at ch.0 & ch.1

### 5.3.3.5.6 10MHz MODULATION BW-HIGH CHANNEL\_5710 MHz

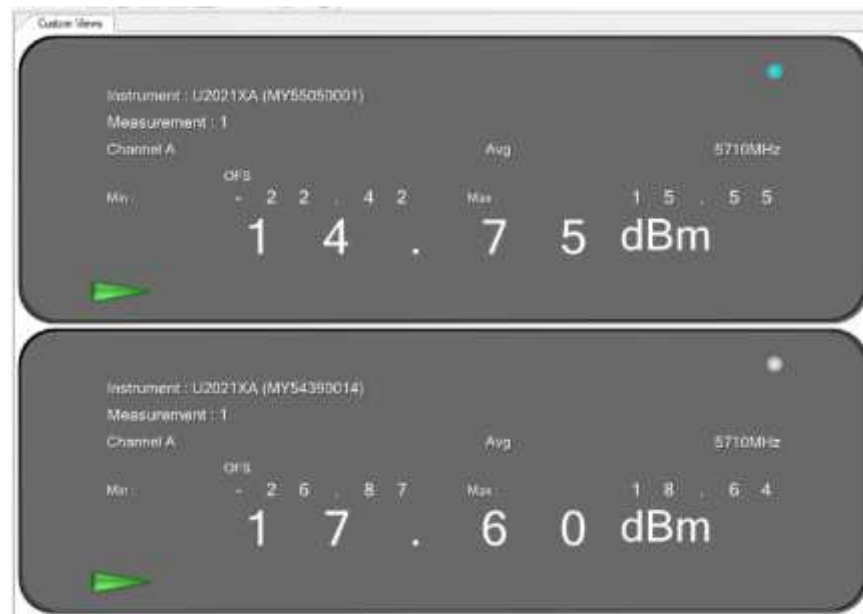


Figure 82: Maximum Conducted Output power measured at ch.0 & ch.1

### 5.3.3.6 RESULT (SUPPORTING GRAPHS / DATA) FOR 17DBI ANTENNA CONDITION

#### 5.3.3.6.1 40MHz MODULATION BW-Low CHANNEL\_5495 MHz

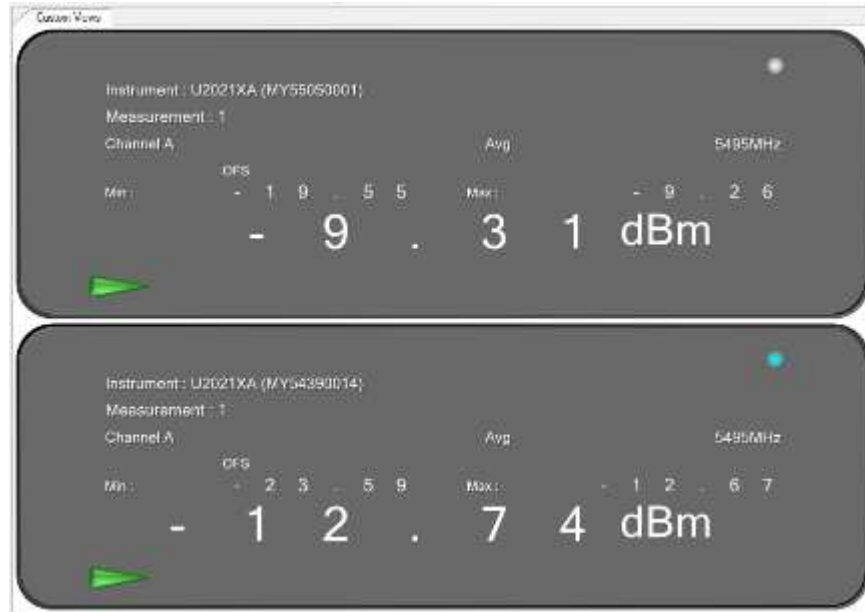


Figure 83: Maximum Conducted Output power measured at ch.0 & ch.1

#### 5.3.3.6.2 40MHz MODULATION BW-Mid CHANNEL\_5550 MHz

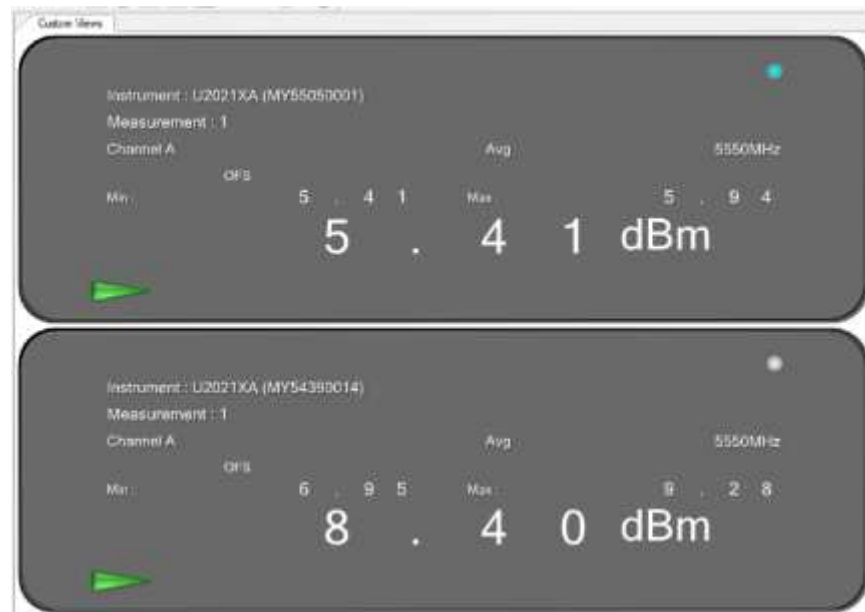


Figure 84: Maximum Conducted Output power measured at ch.0 & ch.1

### 5.3.3.6.3 40MHz MODULATION BW-HIGH CHANNEL\_5700MHz

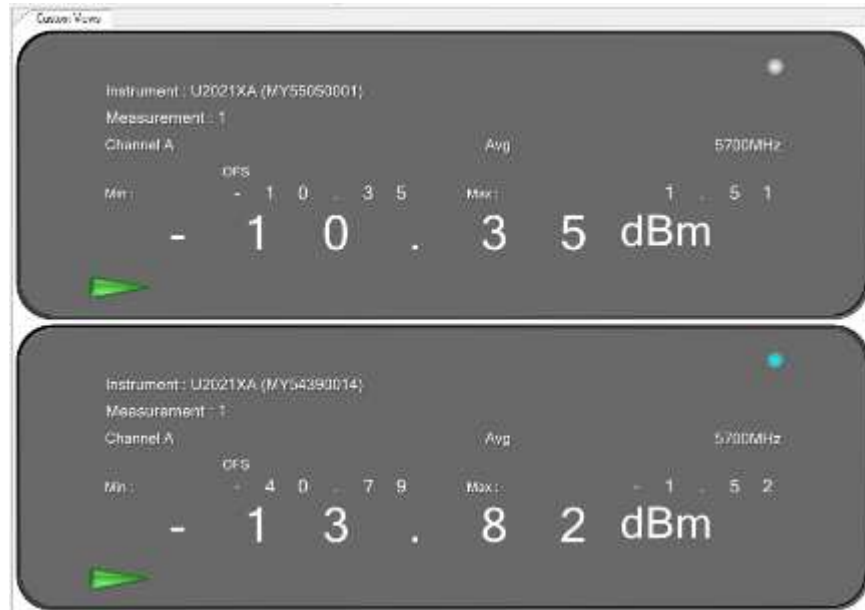


Figure 85: Maximum Conducted Output power measured at ch.0 & ch.1

### 5.3.3.6.4 10MHz MODULATION BW-LOW CHANNEL\_5485MHz



Figure 86: Maximum Conducted Output power measured at ch.0 & ch.1

### 5.3.3.6.5 10MHz MODULATION BW-Mid CHANNEL\_5550MHZ

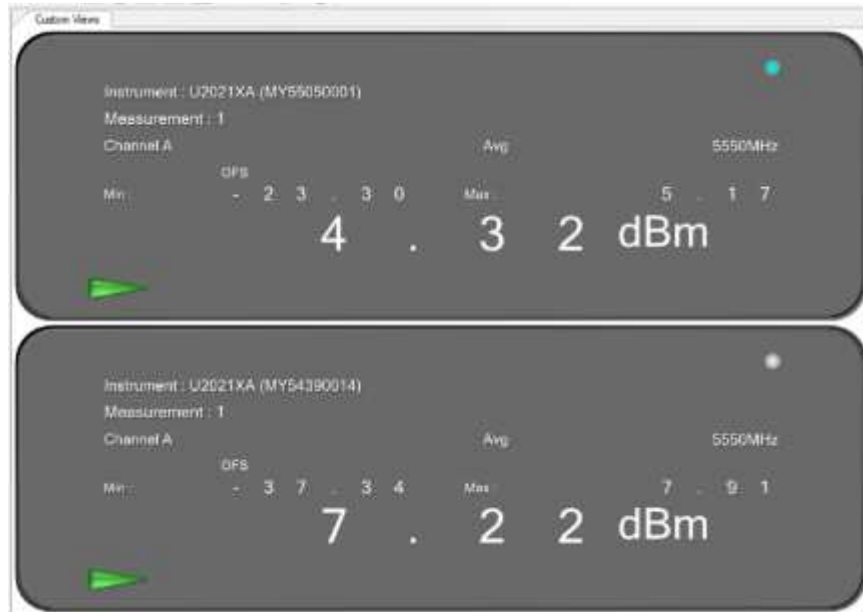


Figure 87: Maximum Conducted Output power measured at ch.0 & ch.1

### 5.3.3.6.6 10MHz MODULATION BW-HIGH CHANNEL\_5710MHZ



Figure 88: Maximum Conducted Output power measured at ch.0 & ch.1

### 5.3.3.7 RESULT (SUPPORTING GRAPHS / DATA) FOR 24DBI DISH CONDITION

#### 5.3.3.7.1 40MHz MODULATION BW-Low CHANNEL\_5495 MHz

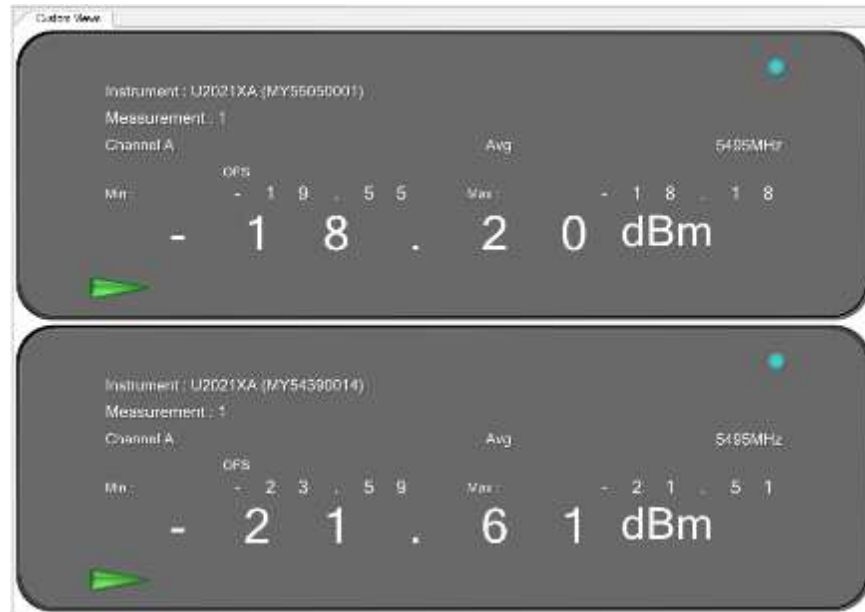


Figure 89: Maximum Conducted Output power measured at ch.0 & ch.1

#### 5.3.3.7.2 40MHz MODULATION BW-Mid CHANNEL\_5550 MHz

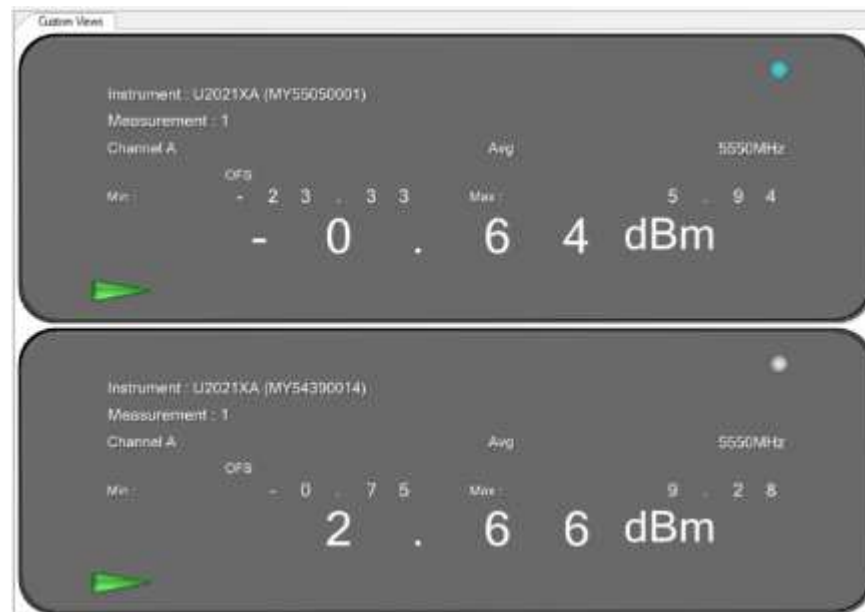


Figure 90: Maximum Conducted Output power measured at ch.0 & ch.1

### 5.3.3.7.3 40MHz MODULATION BW-HIGH CHANNEL\_5700MHz

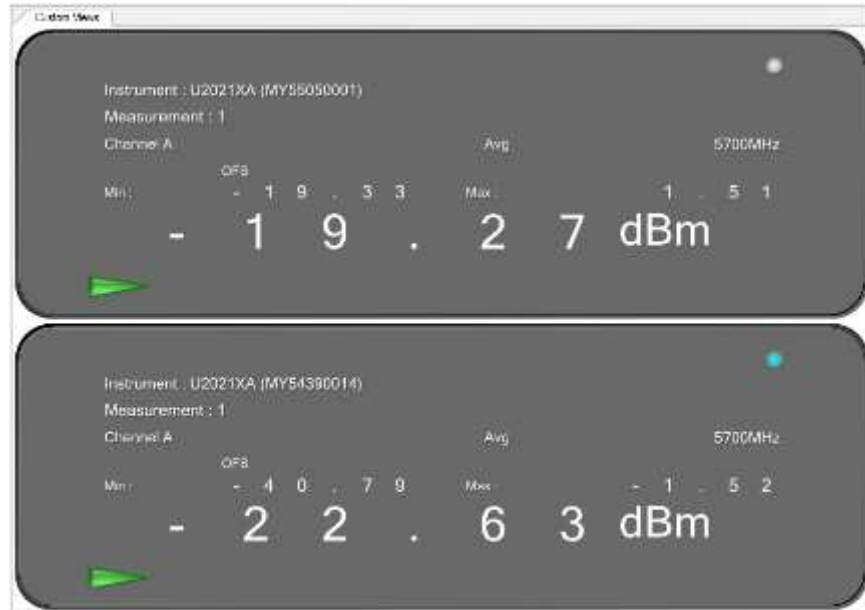


Figure 91: Maximum Conducted Output power measured at ch.0 & ch.1

### 5.3.3.7.4 10MHz MODULATION BW-LOW CHANNEL\_5485 MHz



Figure 92: Maximum Conducted Output power measured at ch.0 & ch.1

### 5.3.3.7.5 10MHz MODULATION BW-Mid CHANNEL\_5550 MHz

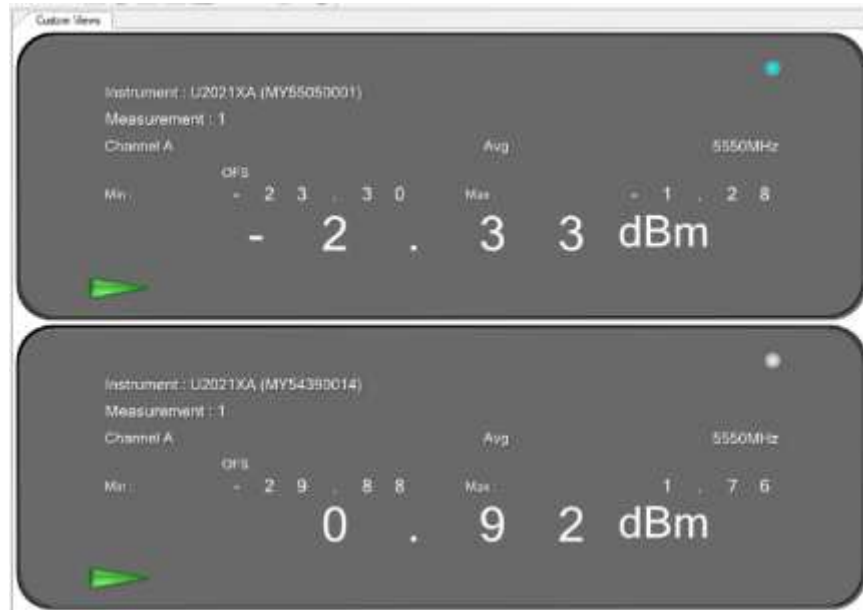


Figure 93: Maximum Conducted Output power measured at ch.0 & ch.1

### 5.3.3.7.6 10MHz MODULATION BW-HIGH CHANNEL\_5710 MHz



Figure 94: Maximum Conducted Output power measured at ch.0 & ch.1



### 5.3.3.8 RESULT

Maximum Conducted Output power for all channels in both 40MHz & 10MHz Modulation Bandwidths is within the specified limit. Refer below table for consolidated data.

#### 5.3.3.8.1 BASIC CONDITION

Modulation Bandwidth (MHz)	Antenna path	Channel Frequency (MHz)	Recorded value (dBm)
40	Ch. 0	5495	2.41
40	Ch. 0	5550	17.55
40	Ch. 0	5700	1.37
40	Ch. 1	5495	-0.81
40	Ch. 1	5550	20.27
40	Ch. 1	5700	-1.69
10	Ch. 0	5485	17.08
10	Ch. 0	5550	17.9
10	Ch. 0	5710	17.6
10	Ch. 1	5485	13.89
10	Ch. 1	5550	15.3
10	Ch. 1	5710	14.75

#### Consolidated values across channels and Final Power

Modulation Bandwidth (MHz)	Antenna path	Channel Frequency (MHz)	Consolidated Power (dBm)	Limit (dBm)	Result
40	Ch. 0 & Ch. 1	5495	4.102	24	PASS
40	Ch. 0 & Ch. 1	5550	22.12	24	PASS
40	Ch. 0 & Ch. 1	5700	3.11	24	PASS
10	Ch. 0 & Ch. 1	5485	18.78	21	PASS
10	Ch. 0 & Ch. 1	5550	19.8	21	PASS
10	Ch. 0 & Ch. 1	5710	19.41	21	PASS

### 5.3.3.8.2 17DBI ANTENNA CONDITION

Modulation Bandwidth (MHz)	Antenna path	Channel Frequency (MHz)	Recorded value (dBm)
40	Ch. 0	5495	-9.31
40	Ch. 0	5550	8.4
40	Ch. 0	5700	-10.35
40	Ch. 1	5495	-12.74
40	Ch. 1	5550	5.41
40	Ch. 1	5700	-13.82
10	Ch. 0	5485	7.35
10	Ch. 0	5550	7.22
10	Ch. 0	5710	6.56
10	Ch. 1	5485	3.97
10	Ch. 1	5550	4.32
10	Ch. 1	5710	3.54

#### Consolidated values across channels and Final Power

Modulation Bandwidth (MHz)	Antenna path	Channel Frequency (MHz)	Consolidated Power (dBm)	Limit (dBm)	Result
40	Ch. 0 & Ch. 1	5495	-7.684	13	PASS
40	Ch. 0 & Ch. 1	5550	10.16	13	PASS
40	Ch. 0 & Ch. 1	5700	-8.73	13	PASS
10	Ch. 0 & Ch. 1	5485	8.99	10	PASS
10	Ch. 0 & Ch. 1	5550	9.01	10	PASS
10	Ch. 0 & Ch. 1	5710	8.317	10	PASS

### 5.3.3.8.3 24DBI DISH CONDITION

Modulation Bandwidth (MHz)	Antenna path	Channel Frequency (MHz)	Recorded value (dBm)
40	Ch. 0	5495	-8.2
40	Ch. 0	5550	2.66
40	Ch. 0	5700	-19.27
40	Ch. 1	5495	-21.61
40	Ch. 1	5550	-0.64
40	Ch. 1	5700	-22.63
10	Ch. 0	5485	0.63
10	Ch. 0	5550	0.92
10	Ch. 0	5710	0.28
10	Ch. 1	5485	-3.02
10	Ch. 1	5550	-2.33
10	Ch. 1	5710	-3.3

#### Consolidated values across channels and Final Power

Modulation Bandwidth (MHz)	Antenna path	Channel Frequency (MHz)	Consolidated Power (dBm)	Limit (dBm)	Result
40	Ch. 0 & Ch. 1	5495	-16.58	6	PASS
40	Ch. 0 & Ch. 1	5550	4.32	6	PASS
40	Ch. 0 & Ch. 1	5700	-17.62	6	PASS
10	Ch. 0 & Ch. 1	5485	2.18	3	PASS
10	Ch. 0 & Ch. 1	5550	2.602	3	PASS
10	Ch. 0 & Ch. 1	5710	1.85	3	PASS

## 5.3.4 PEAK POWER SPECTRAL DENSITY

### 5.3.4.1 TEST SPECIFICATION

Test Standard	47 CFR Ch. I (10–1–14 Ed), Part 15, Subpart C RSS-Gen, Issue 4, Nov 2014
Test Procedure	ANSI C63.10-2013
Frequency Range	5470MHz to 5725MHz
Resolution Bandwidth	1MHz
Video Bandwidth	3MHz
Sweep Time	100msec
Attenuation	Auto
Test Mode	Conducted
Detector	Average
Input Voltage	120V AC
Input Frequency	60 Hz
Temperature	22.0°C
Humidity	56.0%
Tested By	Harsha K
Test Date	12 <sup>th</sup> Mar 2015 to 28 <sup>th</sup> Apr 2015

### 5.3.4.2 LIMITS

Test condition	Limit (dBm/MHz) – 2 chains	Limit (dBm/MHz) – 1 chain
Basic limit	11	8
17dBi External antenna limit	0*	-3*
24dBi dish	-7*	-10*

\*: As per standard if antenna gain is more than 6dBi, then the limit should be reduced by the amount in dB that the gain of the antenna exceeds 6dBi

### 5.3.4.3 TEST SETUP

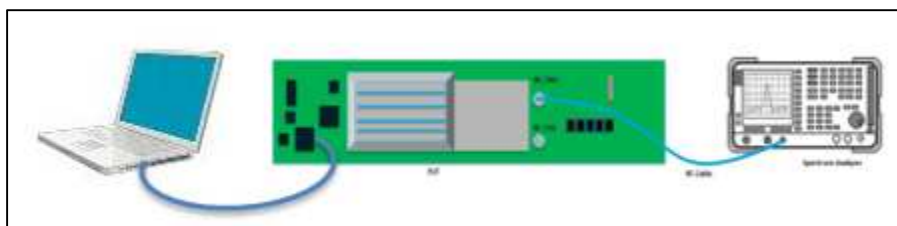


Figure 95: Typical test setup for Conducted Test setup



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#### 5.3.4.4 TEST PROCEDURE

The Conducted test was performed using the Spectrum analyzer. Measurements were done as per Sections F & E (2) (b) of **“789033 D01 General UNII Test Procedures Old Rules v01r04”**. The RF output of the EUT was connected to the input port of Spectrum analyzer using an attenuator. Captured the data from spectrum analyzer and compared with the limits specified in the standard.

### 5.3.4.5 RESULT (SUPPORTING GRAPHS / DATA) FOR BASIC CONDITION

#### 5.3.4.5.1 40MHz MODULATION BW-Low CHANNEL\_5495MHz

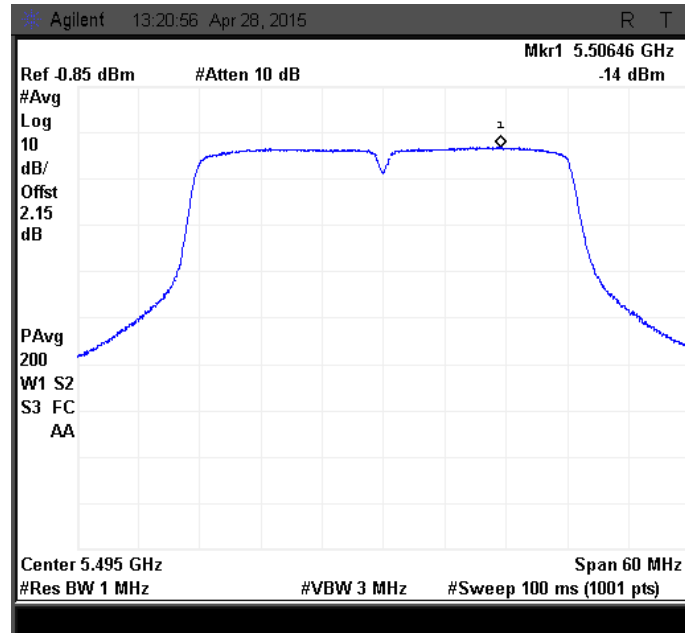


Figure 96: Power Spectral density measured at Ch. 0

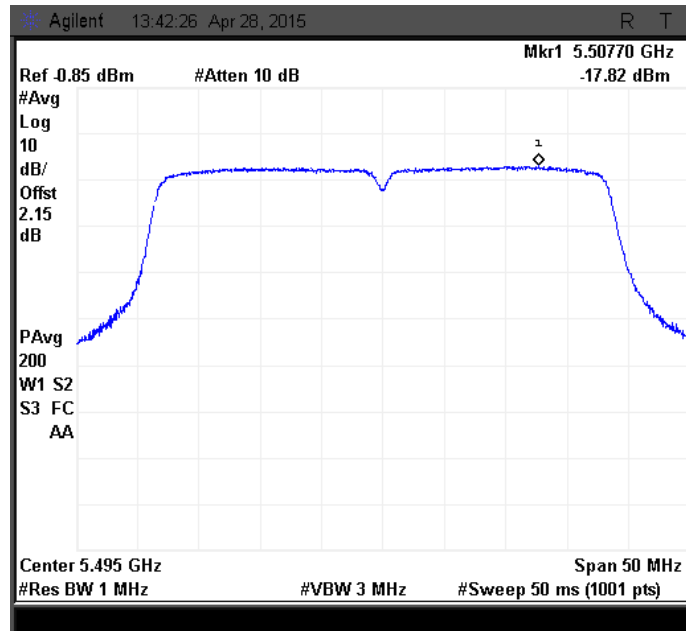


Figure 97: Power Spectral density measured at Ch. 1

### 5.3.4.5.2 40MHz MODULATION BW-Mid CHANNEL\_5550MHZ

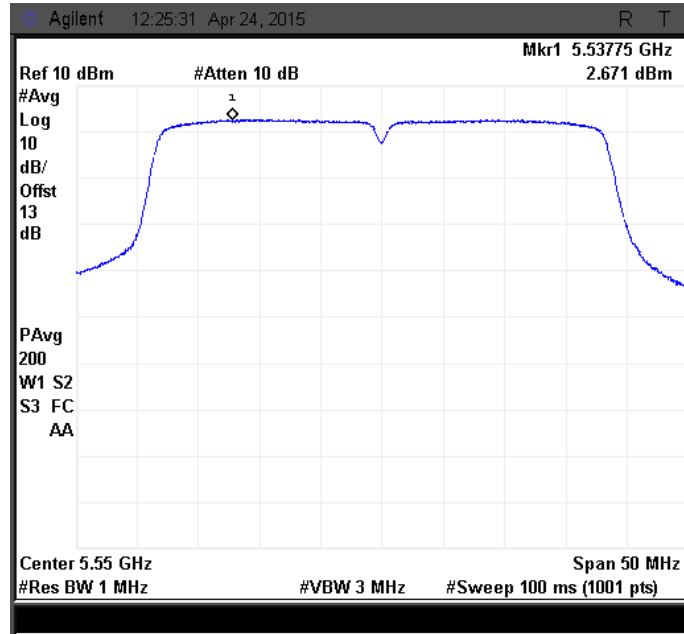


Figure 98: Power Spectral density measured at Ch. 0

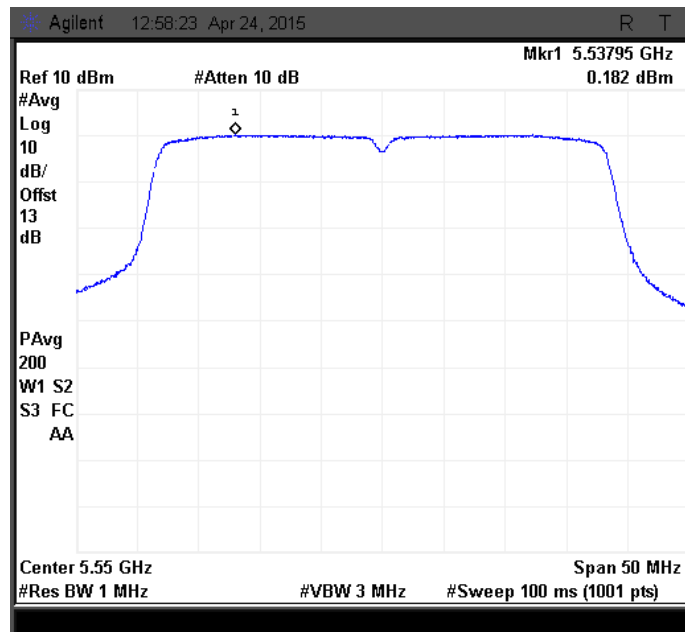


Figure 99: Power Spectral density measured at Ch. 1

### 5.3.4.5.3 40MHz MODULATION BW-HIGH CHANNEL\_5700MHZ

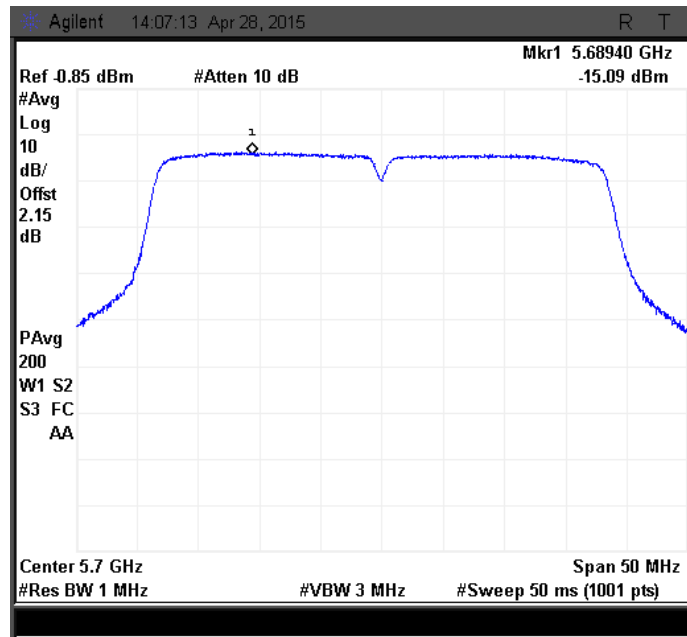


Figure 100: Power Spectral density measured at Ch. 0

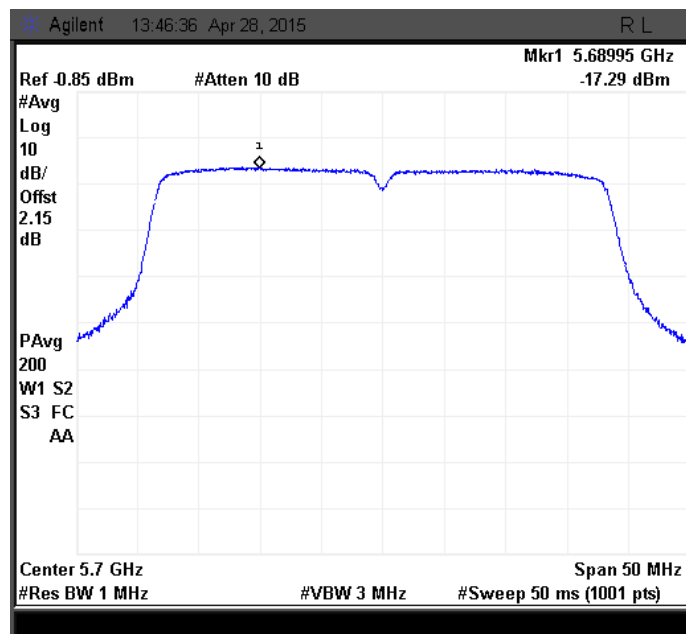


Figure 101: Power Spectral density measured at Ch. 1



#### 5.3.4.5.4 10MHz MODULATION BW-LOW CHANNEL\_5485 MHz

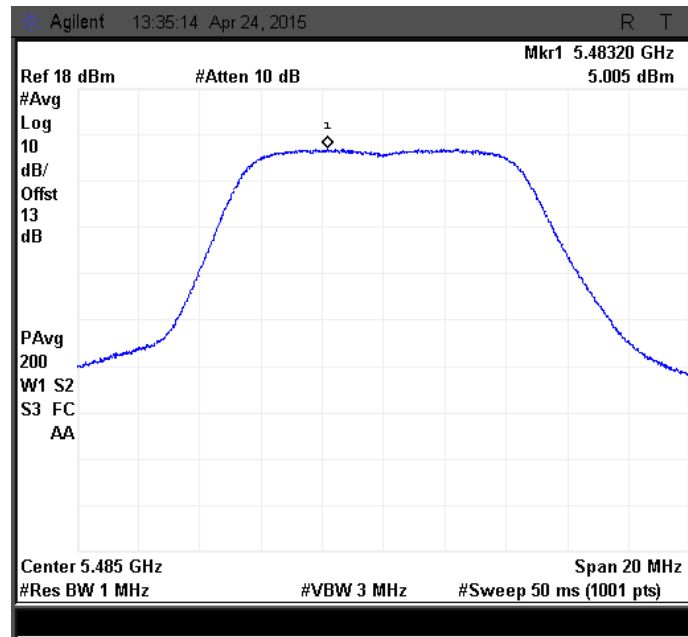


Figure 102: Power Spectral density measured at Ch. 0

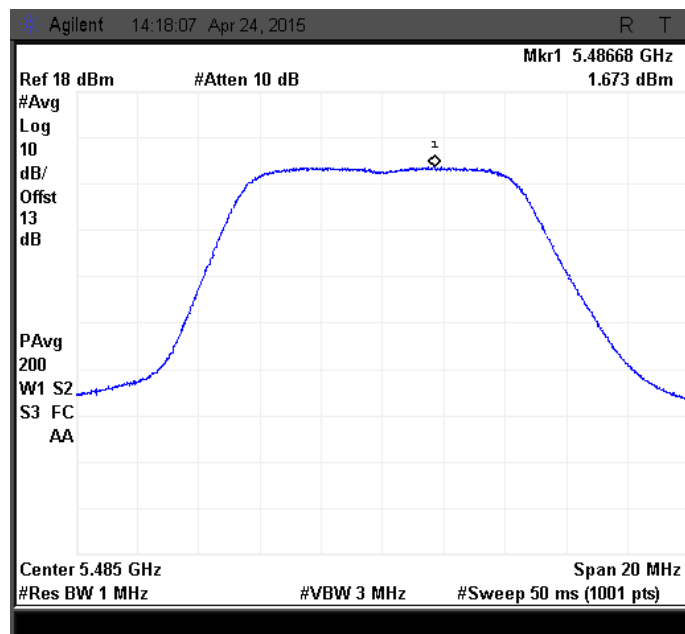


Figure 103: Power Spectral density measured at Ch. 1

### 5.3.4.5.5 10MHz MODULATION BW-MID CHANNEL\_5550 MHz

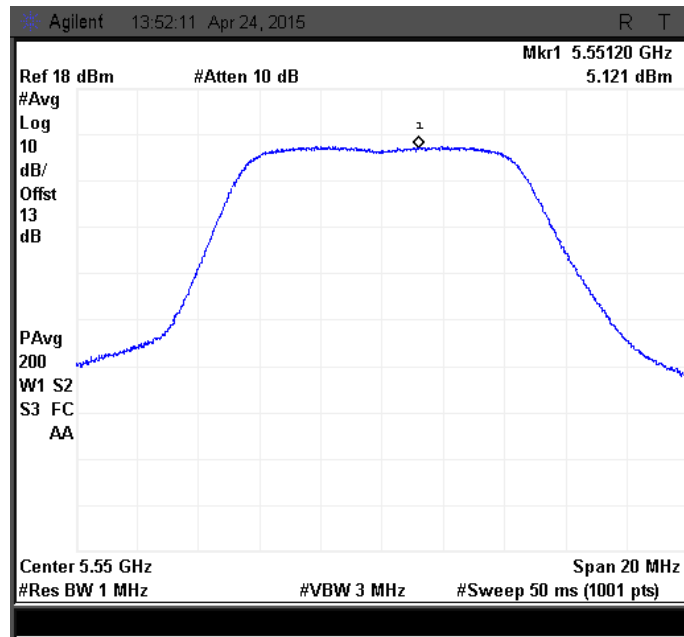


Figure 104: Power Spectral density measured at Ch. 0

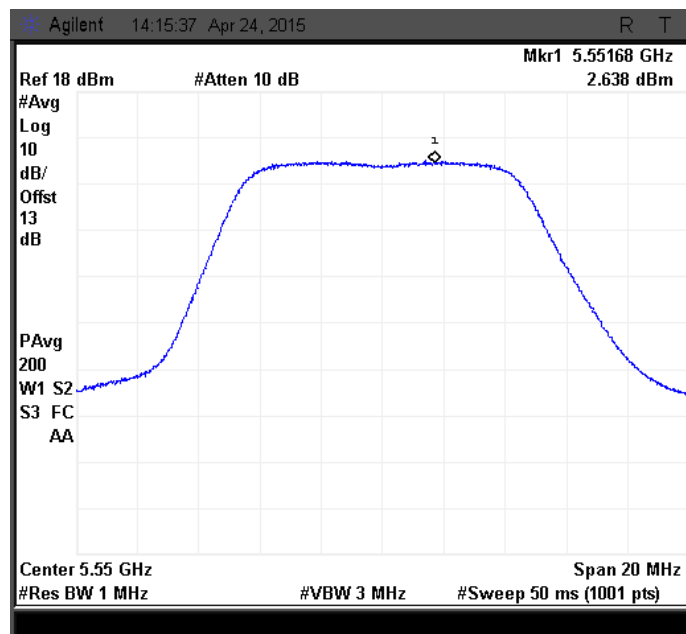


Figure 105: Power Spectral density measured at Ch. 1

### 5.3.4.5.6 10MHz MODULATION BW-HIGH CHANNEL\_5710MHz

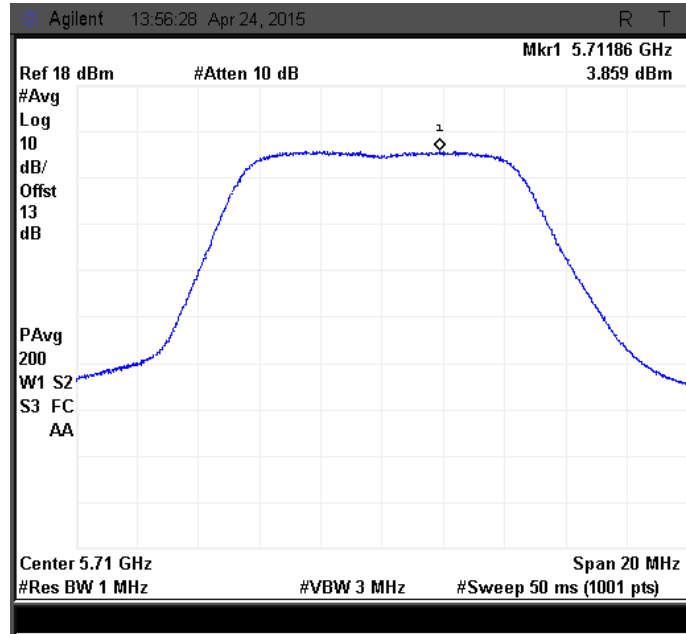


Figure 106: Power Spectral density measured at Ch. 0

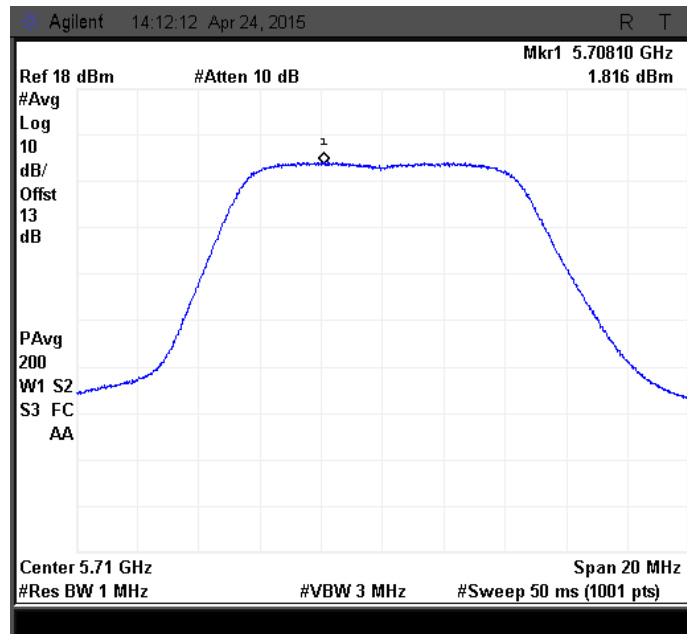


Figure 107: Power Spectral density measured at Ch. 1

### 5.3.4.6 RESULT (SUPPORTING GRAPHS / DATA) FOR 17DBI ANTENNA CONDITION

#### 5.3.4.6.1 40MHz MODULATION BW-LOW CHANNEL\_5495 MHz

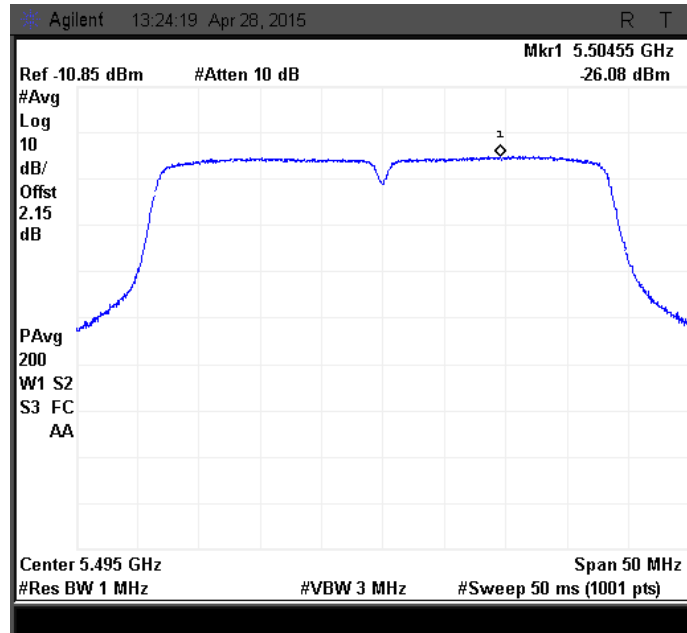


Figure 108: Power Spectral density measured at Ch. 0

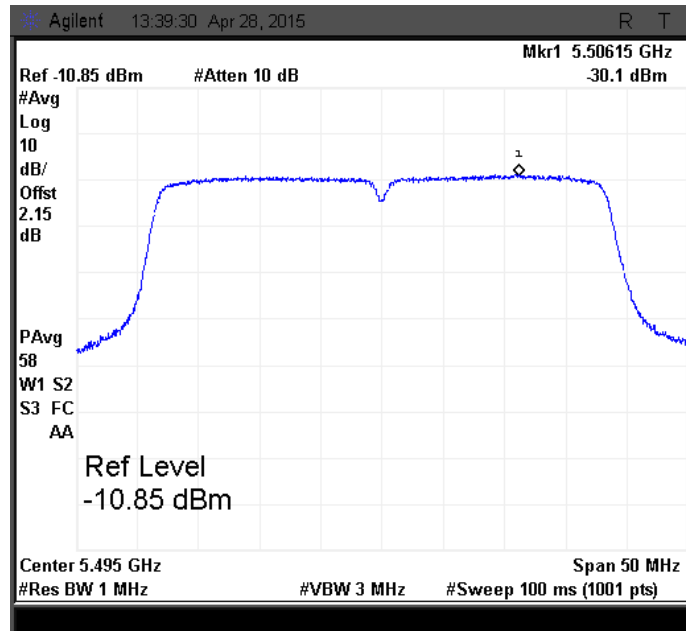


Figure 109: Power Spectral density measured at Ch. 1

### 5.3.4.6.2 40MHz MODULATION BW-MID CHANNEL\_5550 MHz

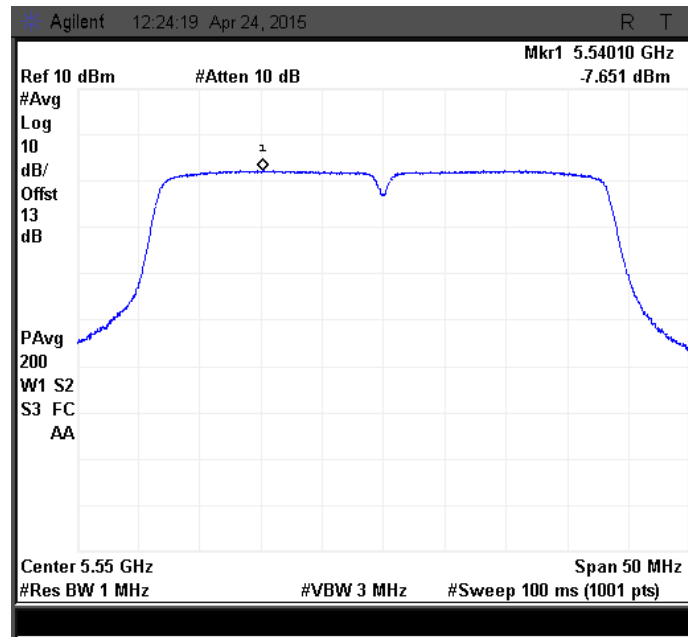


Figure 110: Power Spectral density measured at Ch. 0

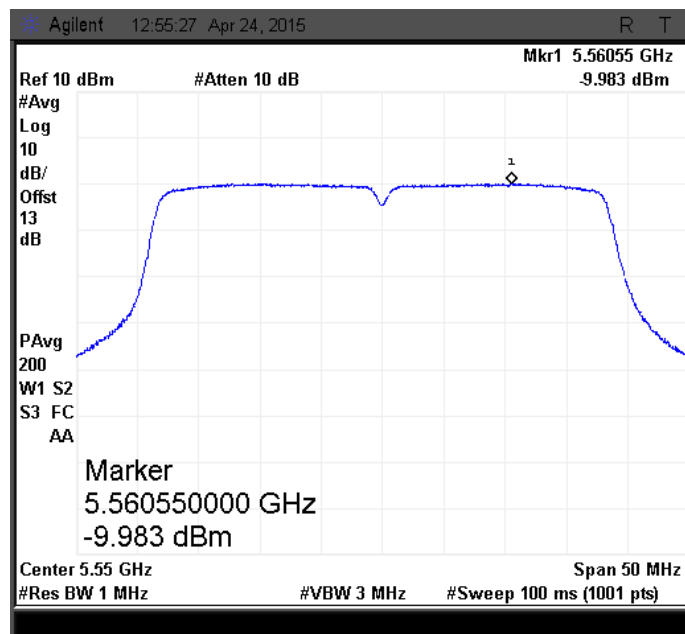


Figure 111: Power Spectral density measured at Ch. 1

### 5.3.4.6.3 40MHz MODULATION BW-HIGH CHANNEL\_5700MHz

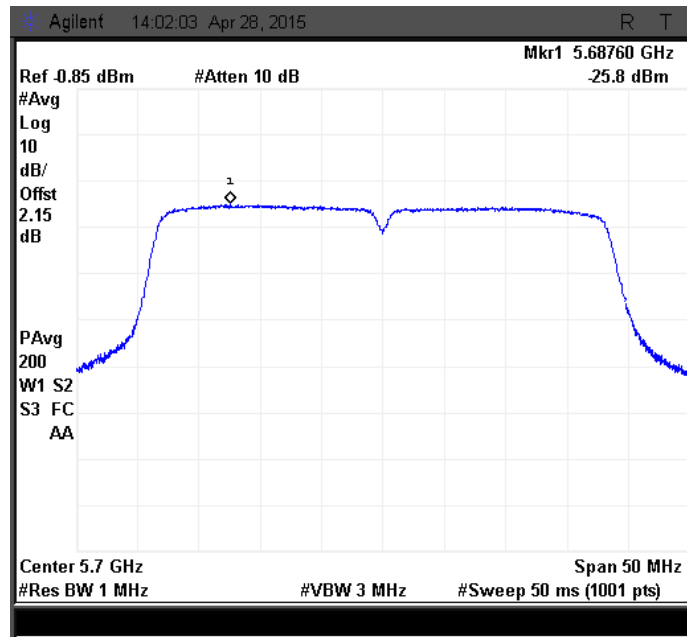


Figure 112: Power Spectral density measured at Ch. 0

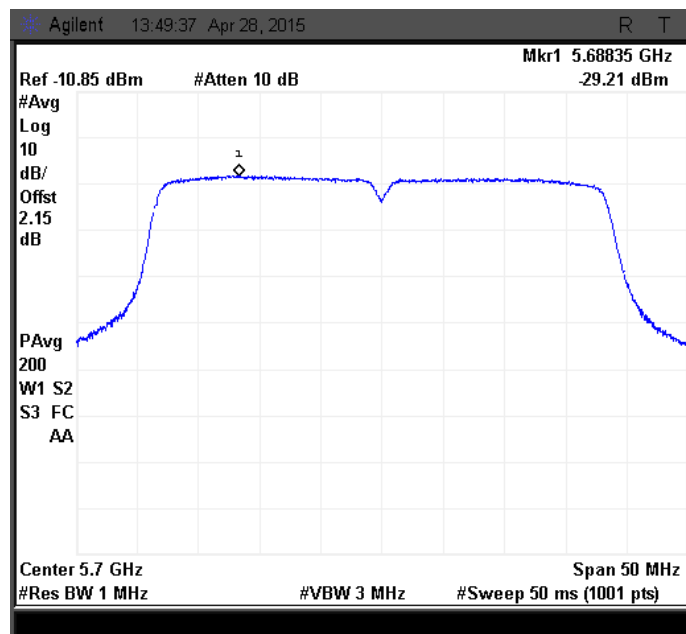


Figure 113: Power Spectral density measured at Ch. 1

#### 5.3.4.6.4 10MHz MODULATION BW-LOW HANNEL\_5485MHz

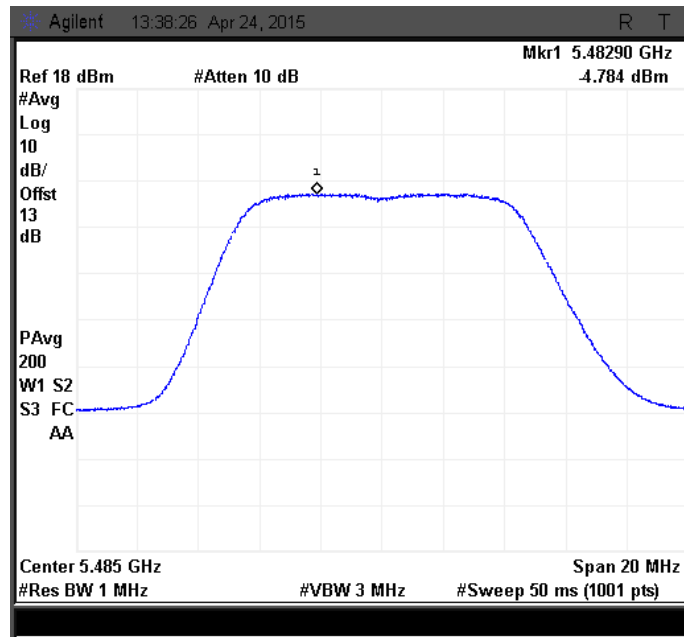


Figure 114: Power Spectral density measured at Ch. 0

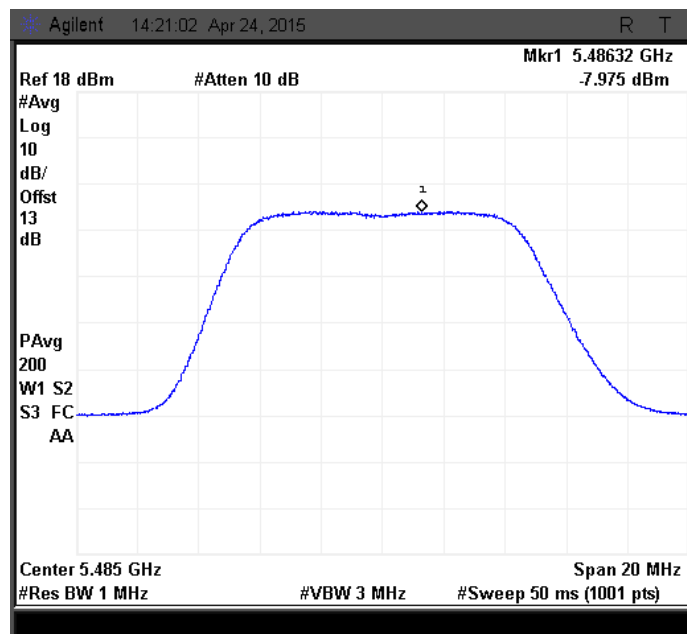


Figure 115: Power Spectral density measured at Ch. 1

### 5.3.4.6.5 10MHz MODULATION BW-MID CHANNEL\_5550MHZ

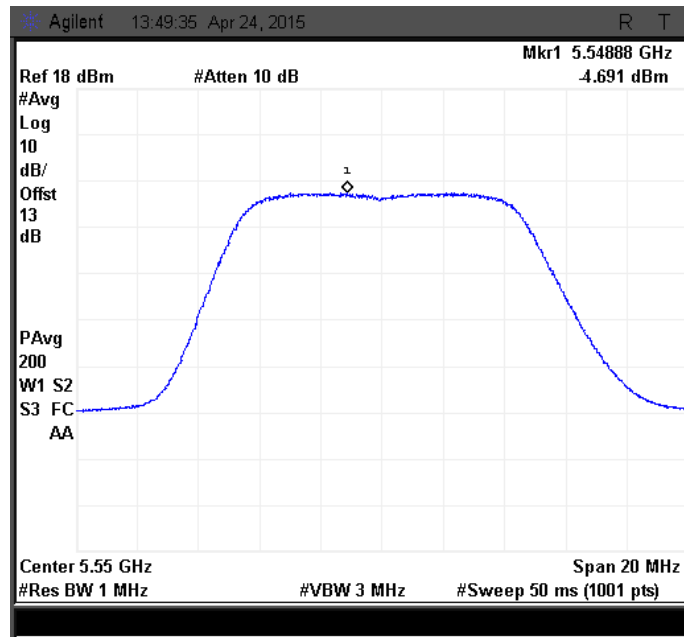


Figure 116: Power Spectral density measured at Ch. 0

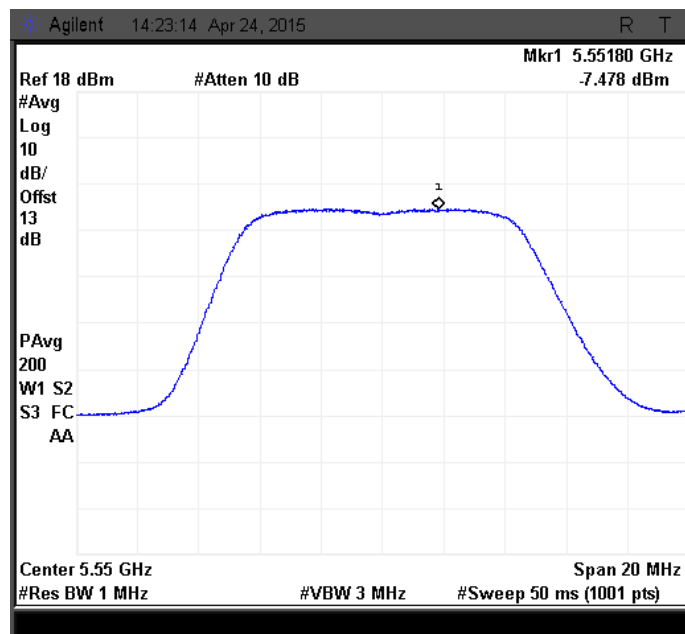


Figure 117: Power Spectral density measured at Ch. 1



#### 5.3.4.6.6 10MHz MODULATION BW-HIGH CHANNEL\_5710MHZ

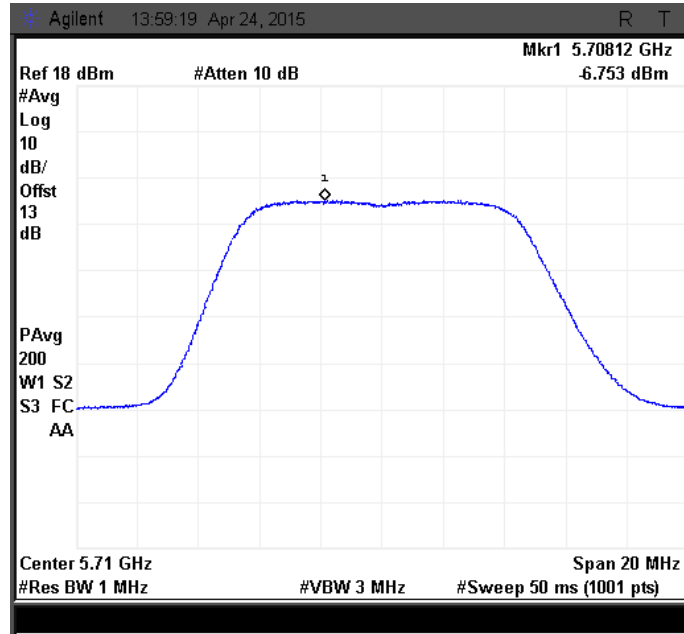


Figure 118: Power Spectral density measured at Ch. 0

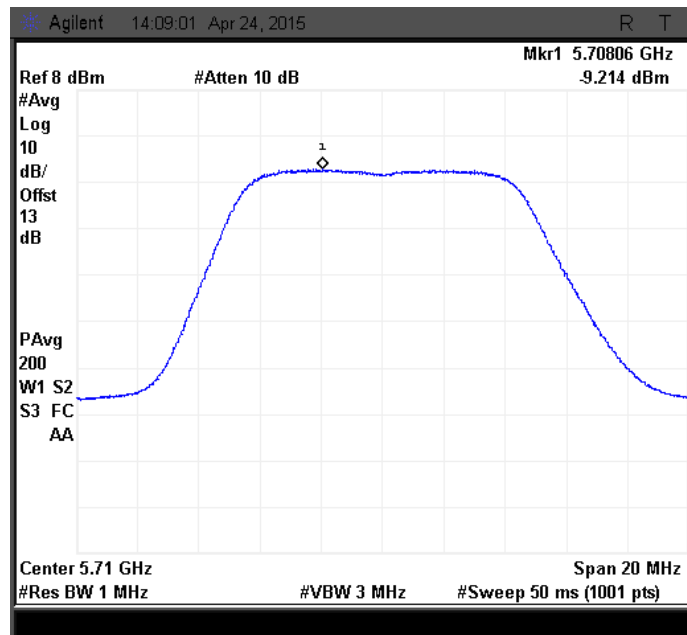


Figure 119: Power Spectral density measured at Ch. 1

### 5.3.4.7 RESULT (SUPPORTING GRAPHS / DATA) FOR 24DBI DIDH CONDITION

#### 5.3.4.7.1 40MHz MODULATION BW-LOW CHANNEL\_5495 MHz

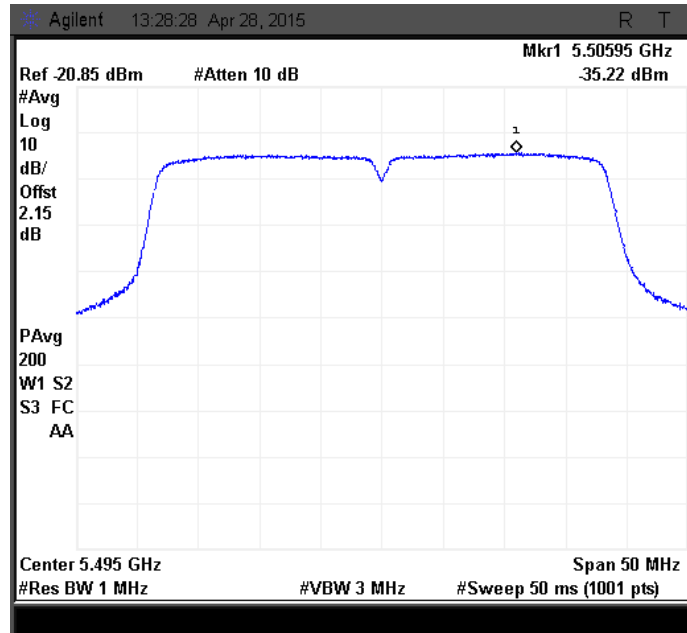


Figure 120: Power Spectral density measured at Ch. 0

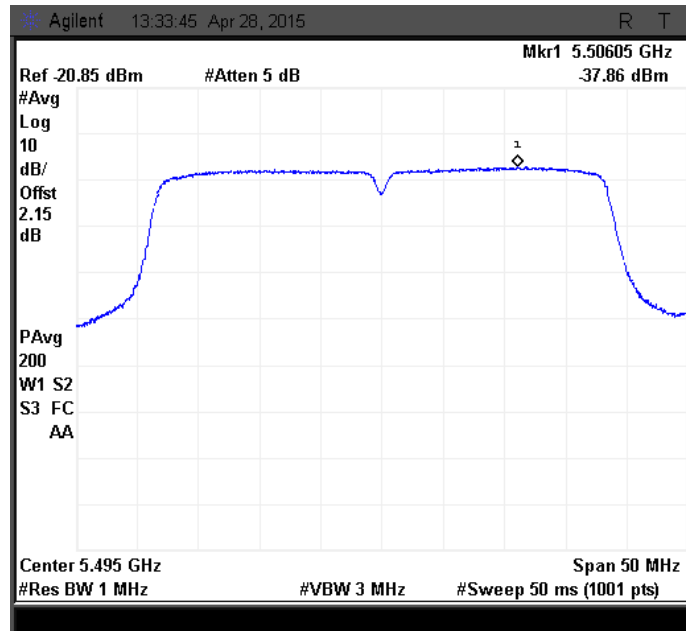


Figure 121: Power Spectral density measured at Ch. 1

### 5.3.4.7.2 40MHz MODULATION BW-Mid CHANNEL\_5550 MHz

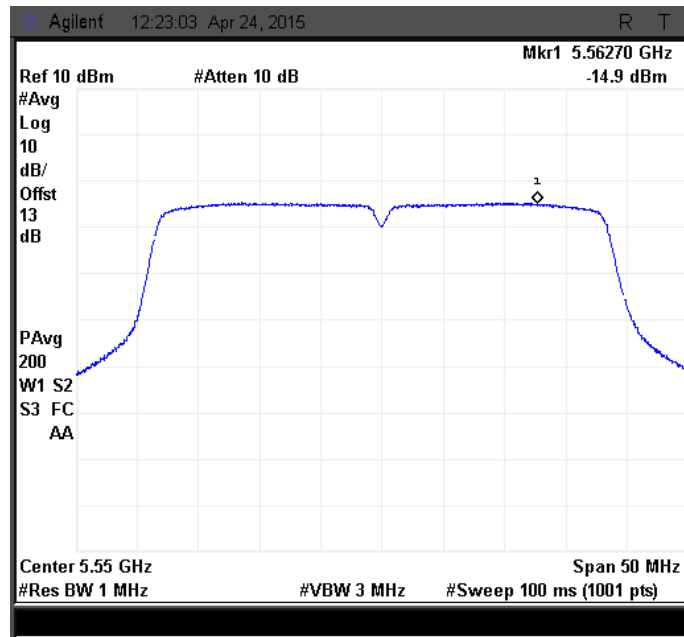


Figure 122: Power Spectral density measured at Ch. 0

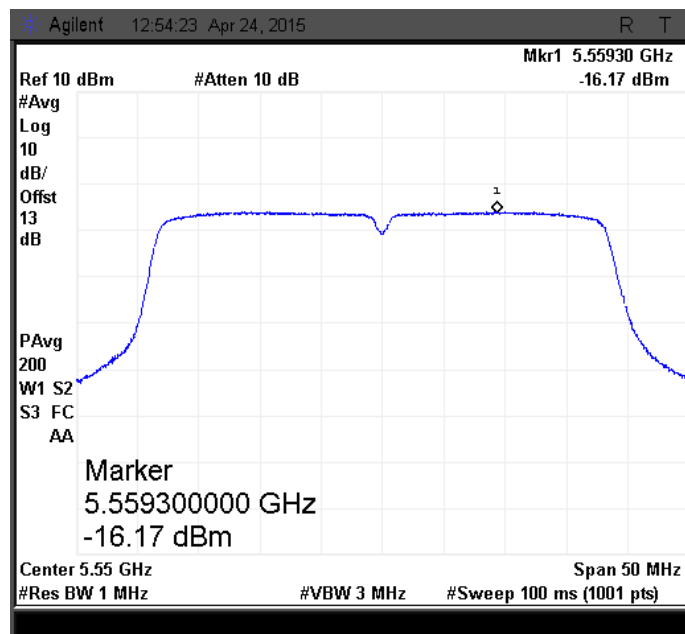


Figure 123: Power Spectral density measured at Ch. 1

### 5.3.4.7.3 40MHz MODULATION BW-HIGH CHANNEL\_5700MHz

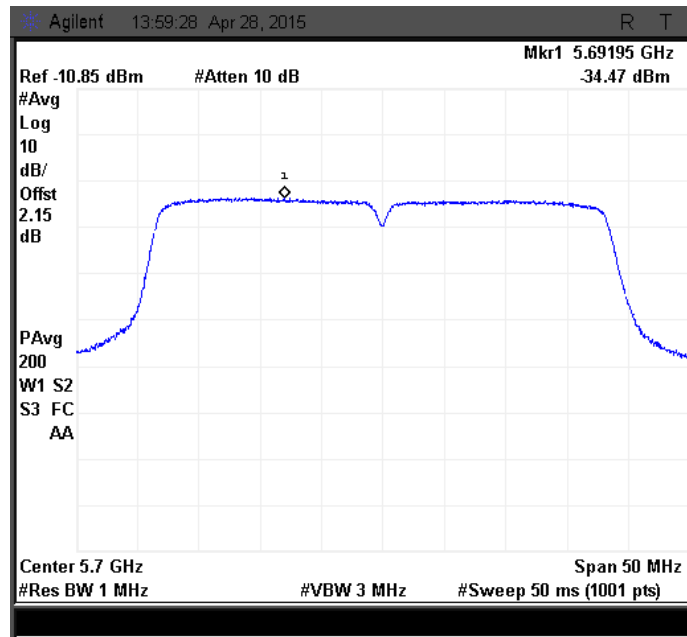


Figure 124: Power Spectral density measured at Ch. 0

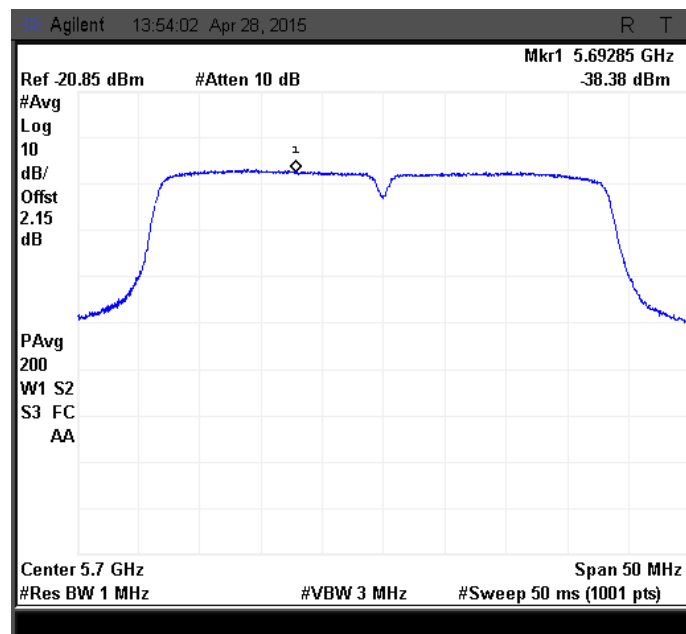


Figure 125: Power Spectral density measured at Ch. 1

#### 5.3.4.7.4 10MHz MODULATION BW-LOW CHANNEL\_5485 MHz

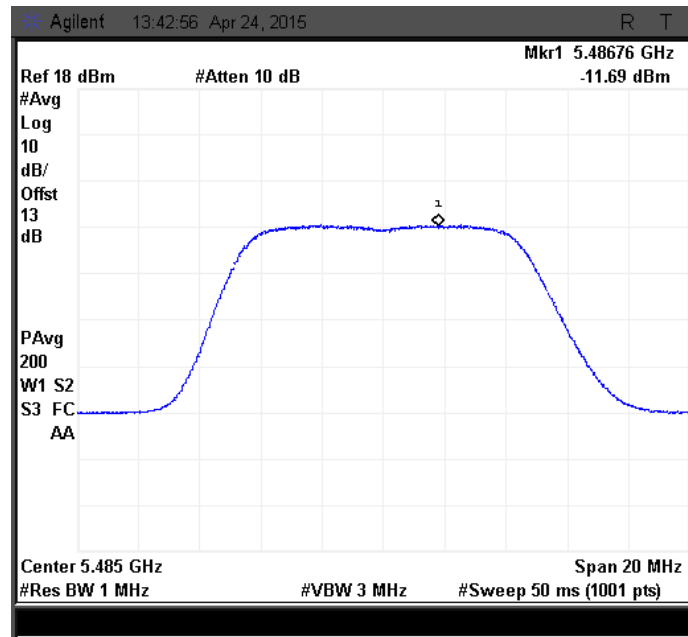


Figure 126: Power Spectral density measured at Ch. 0

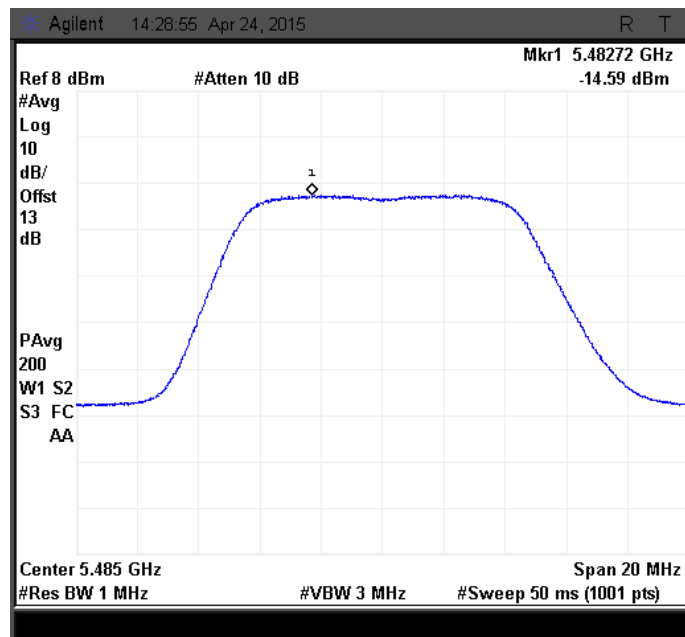


Figure 127: Power Spectral density measured at Ch. 1

### 5.3.4.7.5 10MHz MODULATION BW-MID CHANNEL\_5550 MHz

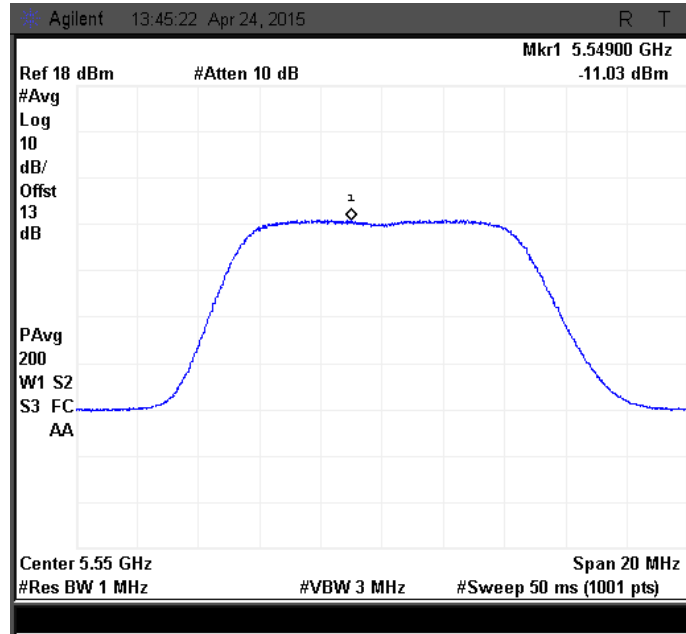


Figure 128: Power Spectral density measured at Ch. 0

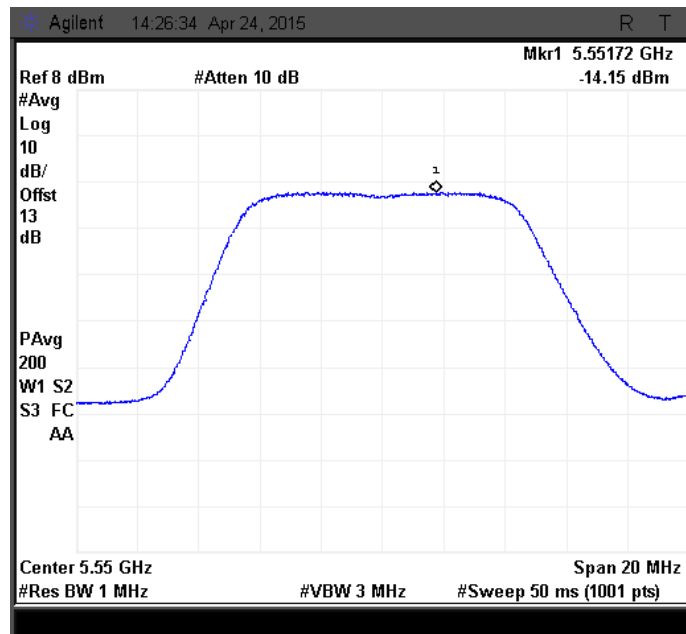


Figure 129: Power Spectral density measured at Ch. 1

#### 5.3.4.7.6 10MHz MODULATION BW-HIGH CHANNEL\_5710 MHz

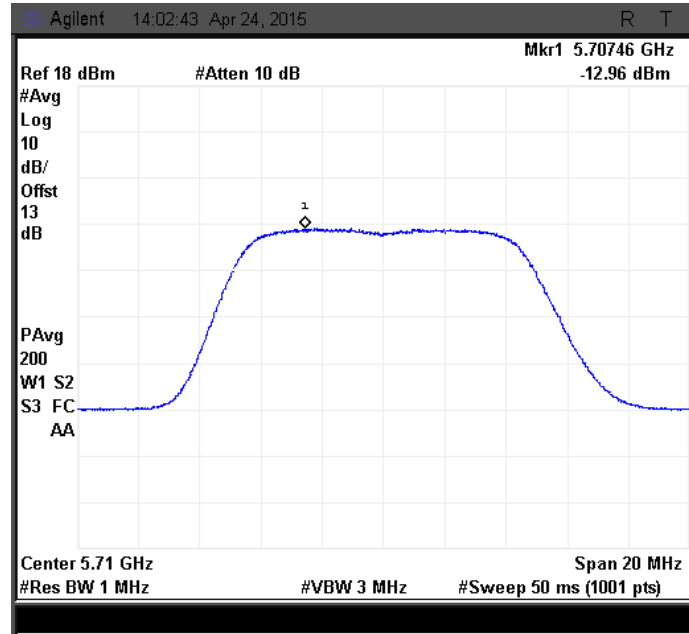


Figure 130: Power Spectral density measured at Ch. 0

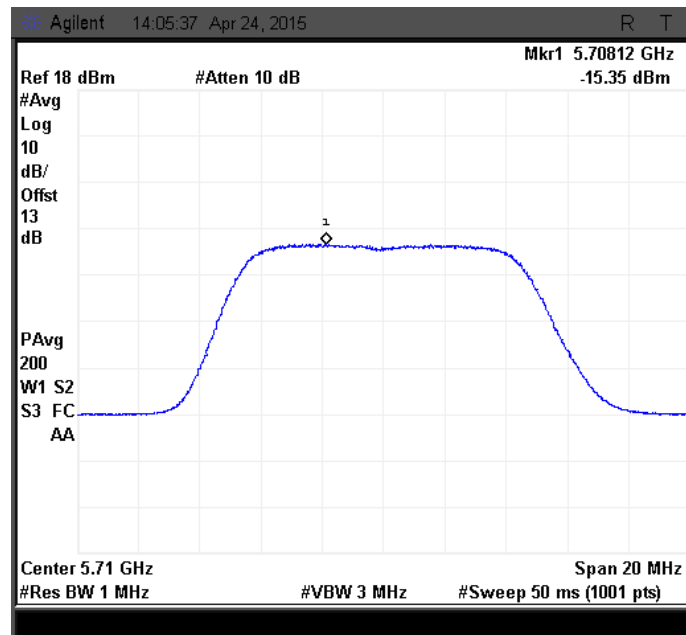


Figure 131: Power Spectral density measured at Ch. 1

### 5.3.4.8 RESULT

Peak Power Spectral Density for all channels in both 40MHz & 10MHz Modulation Bandwidths is within the Specified limit. Refer below table for consolidated result.

Condition	Modulation Bandwidth (MHz)	Antenna path	Channel Frequency (MHz)	Recorded value (dBm/MHz)	Limit (dBm/MHz)	Result
Basic	40	Ch. 0	5495	-14	8	Pass
Basic	40	Ch. 0	5550	2.671	8	Pass
Basic	40	Ch. 0	5700	-15.09	8	Pass
Basic	40	Ch. 1	5495	-17.82	8	Pass
Basic	40	Ch. 1	5550	0.182	8	Pass
Basic	40	Ch. 1	5700	-17.29	8	Pass
Basic	10	Ch. 0	5485	5.005	8	Pass
Basic	10	Ch. 0	5550	5.121	8	Pass
Basic	10	Ch. 0	5710	3.859	8	Pass
Basic	10	Ch. 1	5485	1.673	8	Pass
Basic	10	Ch. 1	5550	2.638	8	Pass
Basic	10	Ch. 1	5710	1.816	8	Pass
17dBi	40	Ch. 0	5495	-26.08	-3	Pass
17dBi	40	Ch. 0	5550	-7.651	-3	Pass
17dBi	40	Ch. 0	5700	-25.8	-3	Pass
17dBi	40	Ch. 1	5495	-30.1	-3	Pass
17dBi	40	Ch. 1	5550	-9.983	-3	Pass
17dBi	40	Ch. 1	5700	-29.21	-3	Pass
17dBi	10	Ch. 0	5485	-4.784	-3	Pass
17dBi	10	Ch. 0	5550	-4.691	-3	Pass
17dBi	10	Ch. 0	5710	-6.753	-3	Pass
17dBi	10	Ch. 1	5485	-7.975	-3	Pass
17dBi	10	Ch. 1	5550	-7.478	-3	Pass
17dBi	10	Ch. 1	5710	-9.214	-3	Pass
24dBi	40	Ch. 0	5495	-35.22	-10	Pass
24dBi	40	Ch. 0	5550	-14.9	-10	Pass
24dBi	40	Ch. 0	5700	-34.47	-10	Pass
24dBi	40	Ch. 1	5495	-37.86	-10	Pass
24dBi	40	Ch. 1	5550	-16.17	-10	Pass
24dBi	40	Ch. 1	5700	-38.38	-10	Pass
24dBi	10	Ch. 0	5485	-11.69	-10	Pass
24dBi	10	Ch. 0	5550	-11.03	-10	Pass
24dBi	10	Ch. 0	5710	-12.96	-10	Pass
24dBi	10	Ch. 1	5485	-14.59	-10	Pass
24dBi	10	Ch. 1	5550	-14.15	-10	Pass
24dBi	10	Ch. 1	5710	-15.35	-10	Pass



## 5.3.5 PEAK EXCURSION RATIO

### 5.3.5.1 TEST SPECIFICATION

Test Standard	47 CFR Ch. I (10–1–14 Ed), Part 15, Subpart C RSS-Gen, Issue 4, Nov 2014
Test Procedure	ANSI C63.10-2013
Frequency Range	5470 MHz to 5725 MHz
Resolution Bandwidth	1MHz
Video Bandwidth	3MHz
Sweep Time	50msec
Attenuation	Auto
Test Mode	Conducted
Detector	Peak
Input Voltage	120V AC
Input Frequency	60 Hz
Temperature	22.0°C
Humidity	56.0%
Tested By	Harsha K
Test Date	12 <sup>th</sup> Mar 2015 to 28 <sup>th</sup> Apr 2015

### 5.3.5.2 LIMITS

The Ratio of the peak excursion of the modulation envelope (measured using a peak hold function) to the maximum conducted output power shall not exceed 13dB across any 1MHz bandwidth or the emission bandwidth whichever is less.

### 5.3.5.3 TEST SETUP

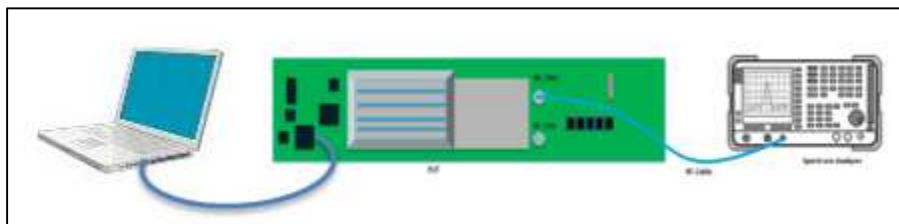


Figure 132: Typical test setup for Conducted Test setup

### 5.3.5.4 TEST PROCEDURE

The Conducted test was performed using the Spectrum analyzer. Measurements were done as per Section G of “789033 D01 General UNII Test Procedures Old Rules v01r04”. The RF output of the EUT was connected to the input port of Spectrum analyzer using an attenuator. Captured the data from spectrum analyzer and compared with the limits specified in the standard.

### 5.3.5.5 RESULT (SUPPORTING GRAPHS / DATA) FOR BASIC CONDITION

#### 5.3.5.5.1 40MHz MODULATION BW-LOW CHANNEL\_5495 MHz

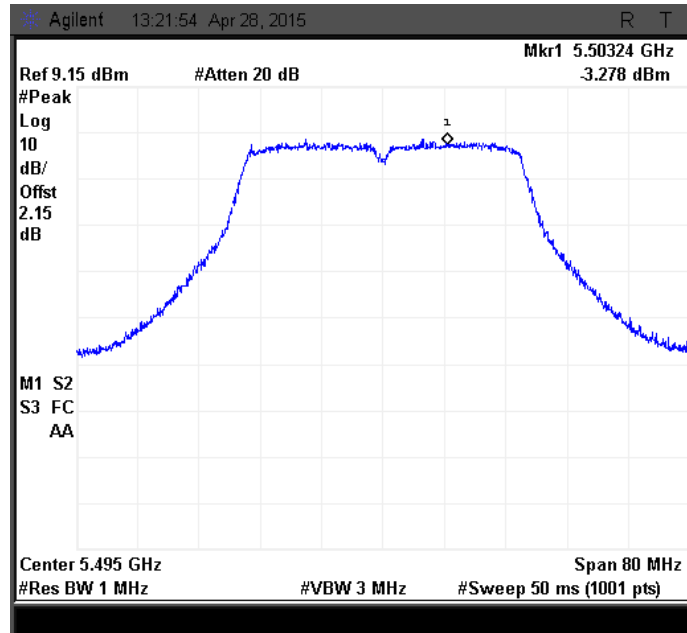


Figure 133: Peak Excursion Ratio plot measured at Ch. 0

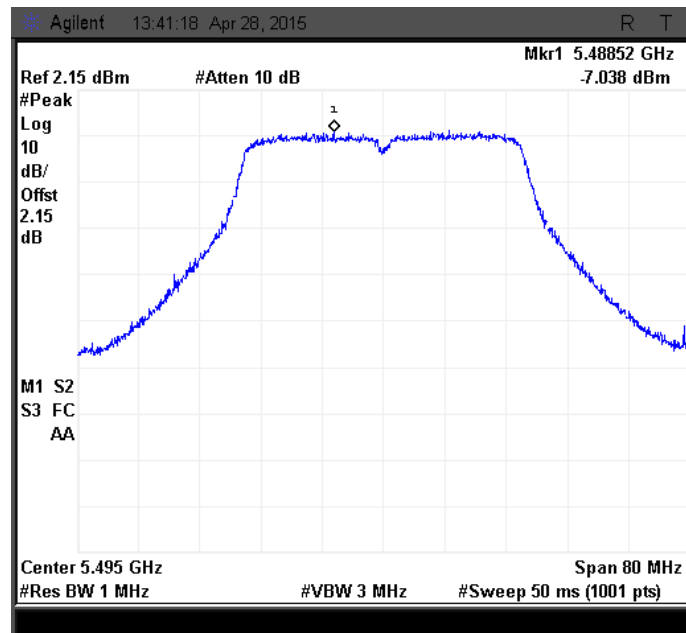


Figure 134: Peak Excursion Ratio plot measured at Ch. 1

### 5.3.5.5.2 40MHz MODULATION BW-Mid CHANNEL\_5550 MHz

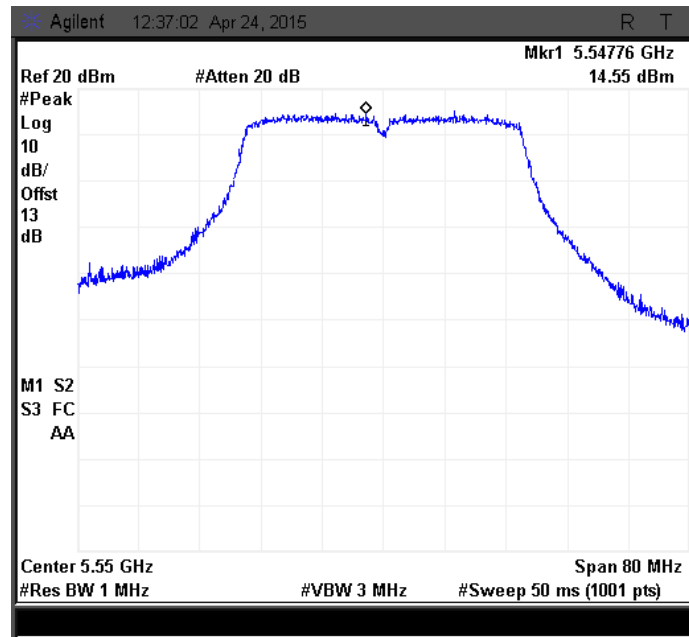


Figure 135: Peak Excursion Ratio plot measured at Ch. 0

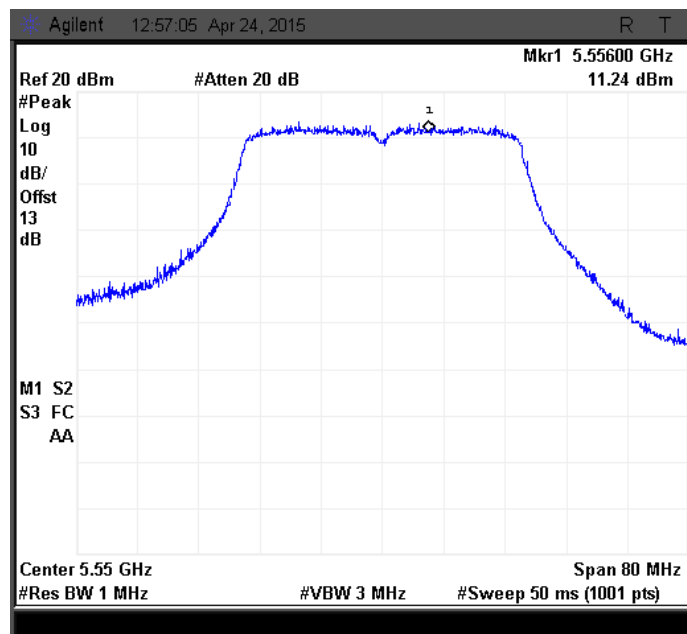


Figure 136: Peak Excursion Ratio plot measured at Ch. 1

### 5.3.5.5.3 40MHz MODULATION BW-HIGH CHANNEL\_5700MHz

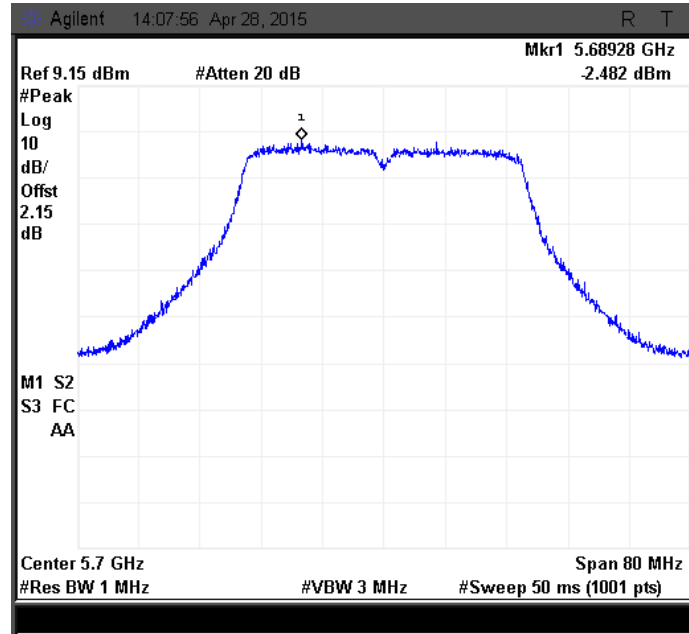


Figure 137: Peak Excursion Ratio plot measured at Ch. 0

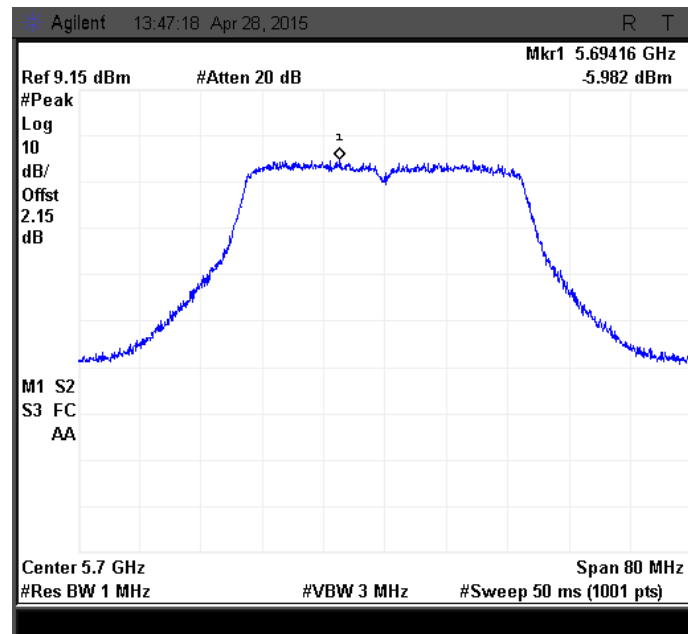


Figure 138: Peak Excursion Ratio plot measured at Ch. 1

#### 5.3.5.5.4 10MHz MODULATION BW-LOW CHANNEL\_5485 MHz

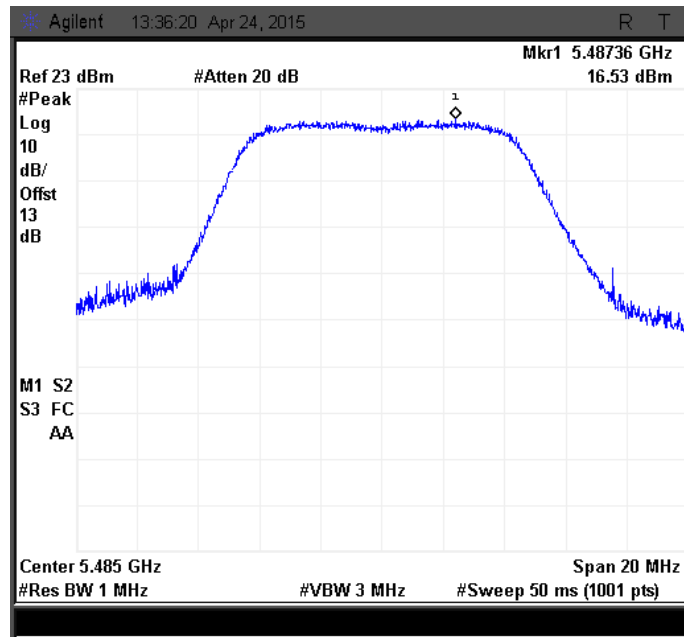


Figure 139: Peak Excursion Ratio plot measured at Ch. 0

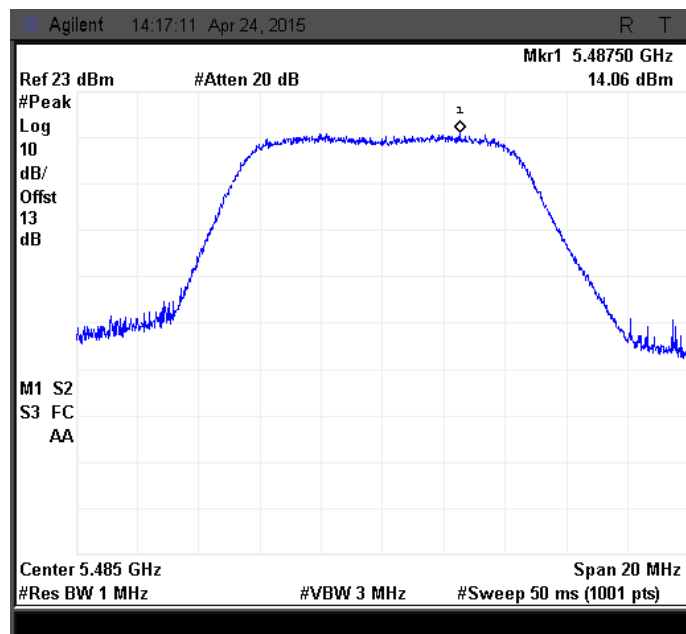


Figure 140: Peak Excursion Ratio plot measured at Ch. 1

### 5.3.5.5.5 10MHz MODULATION BW-Mid CHANNEL\_5550 MHz

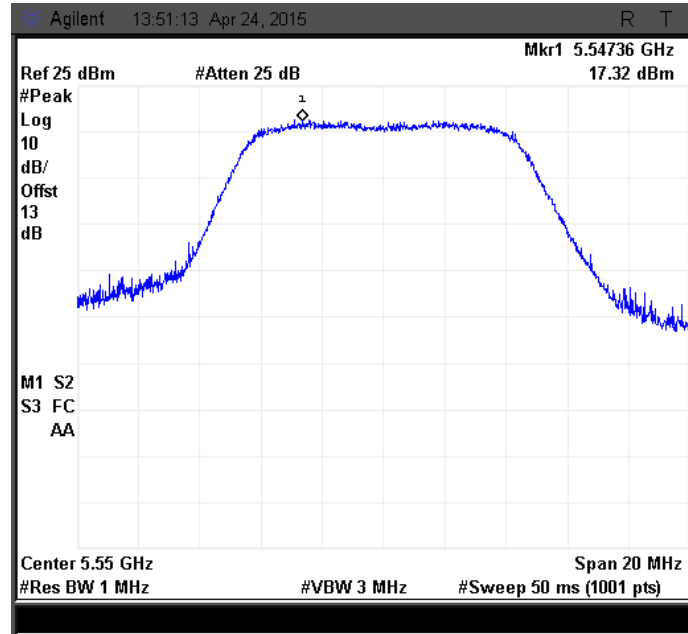


Figure 141: Peak Excursion Ratio plot measured at Ch. 0

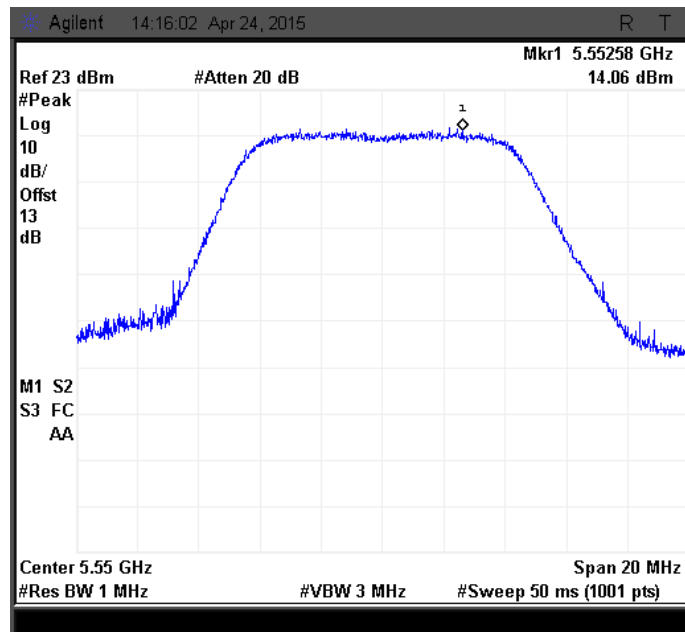


Figure 142: Peak Excursion Ratio plot measured at Ch. 1

### 5.3.5.5.6 10MHz MODULATION BW-HIGH CHANNEL\_5710 MHz

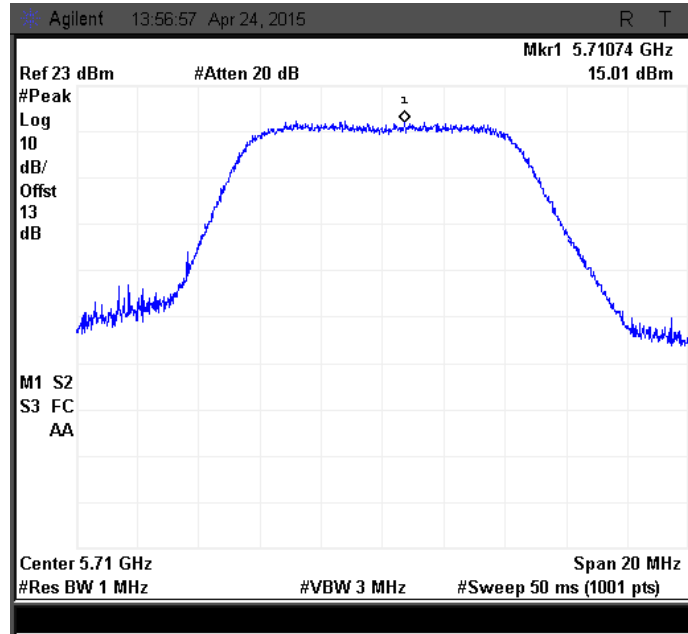


Figure 143: Peak Excursion Ratio plot measured at Ch. 0

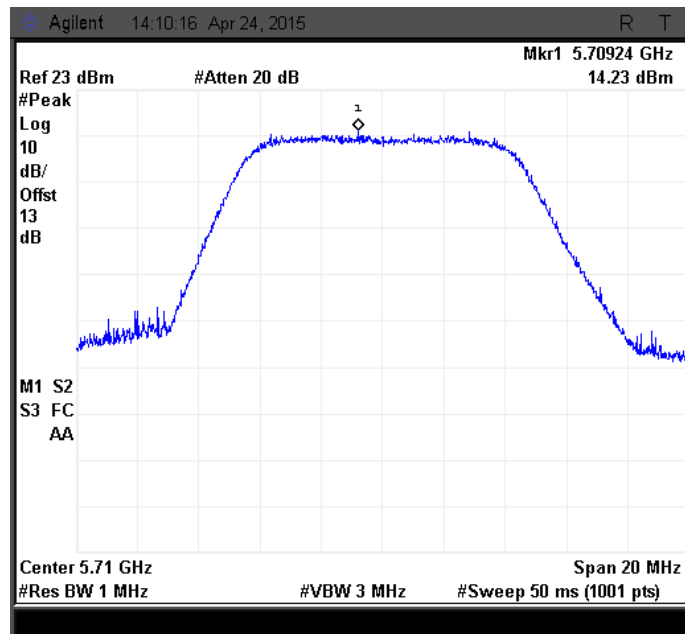


Figure 144: Peak Excursion Ratio plot measured at Ch. 1

### 5.3.5.6 RESULT (SUPPORTING GRAPHS / DATA) FOR 17DBI ANTENNA CONDITION

#### 5.3.5.6.1 40MHz MODULATION BW-LOW CHANNEL\_5495 MHz

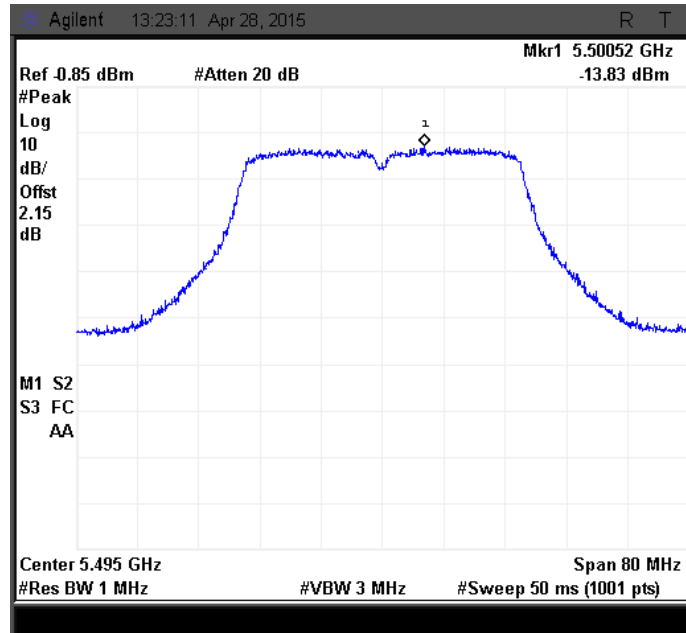


Figure 145: Peak Excursion Ratio plot measured at Ch. 0

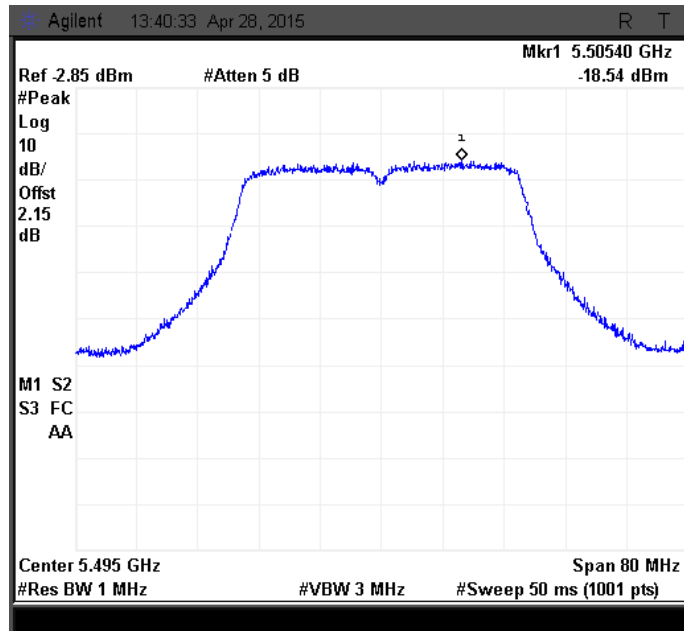


Figure 146: Peak Excursion Ratio plot measured at Ch. 1



### 5.3.5.6.2 40MHz MODULATION BW-MID CHANNEL\_5550 MHz

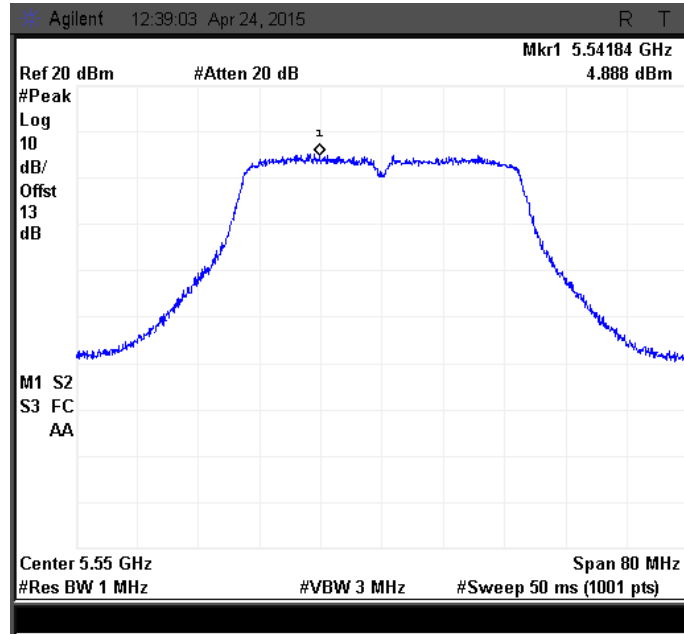


Figure 147: Peak Excursion Ratio plot measured at Ch. 0

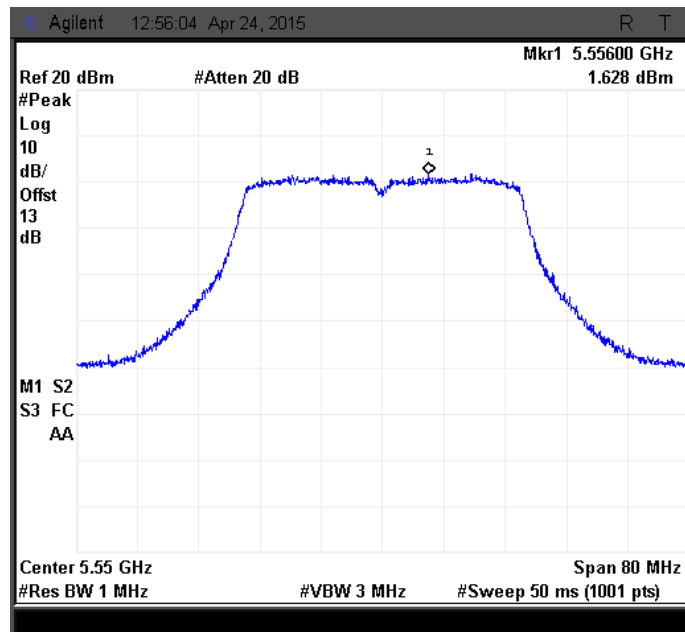


Figure 148: Peak Excursion Ratio plot measured at Ch. 1

### 5.3.5.6.3 40MHz MODULATION BW-HIGH CHANNEL\_5700MHZ

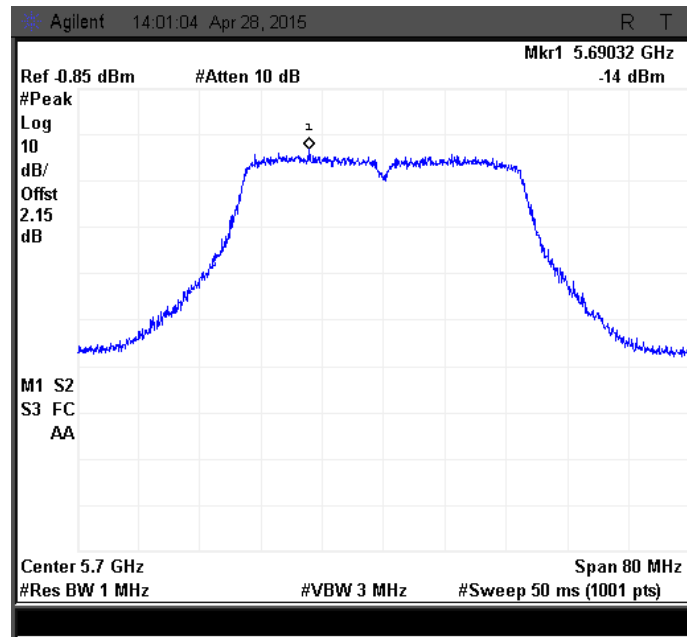


Figure 149: Peak Excursion Ratio plot measured at Ch. 0

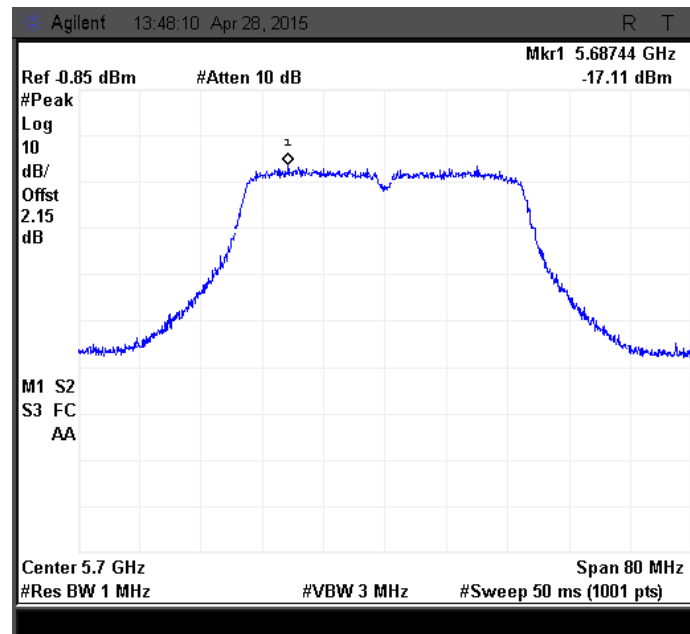


Figure 150: Peak Excursion Ratio plot measured at Ch. 1

#### 5.3.5.6.4 10MHz MODULATION BW-LOW CHANNEL\_5485 MHz

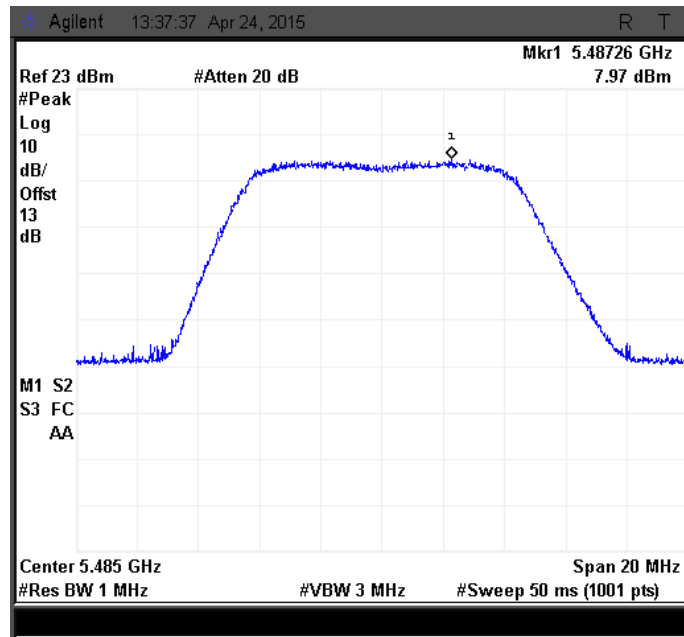


Figure 151: Peak Excursion Ratio plot measured at Ch. 0

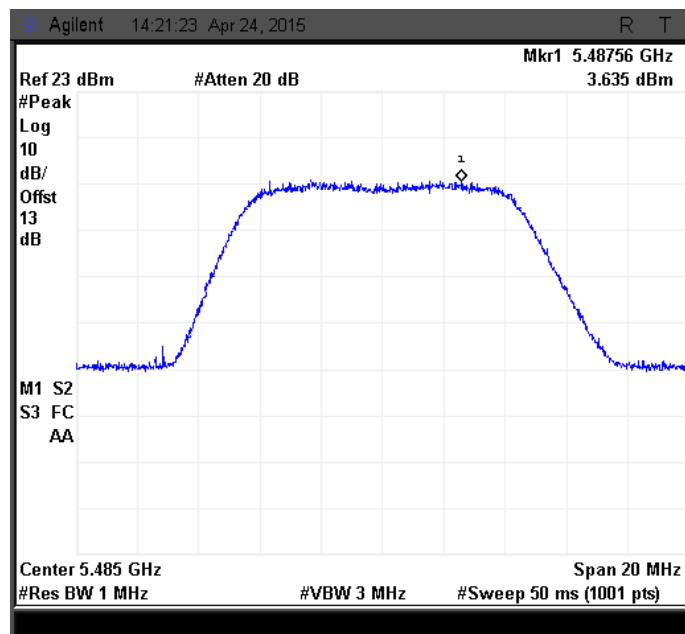


Figure 152: Peak Excursion Ratio plot measured at Ch. 1

### 5.3.5.6.5 10MHz MODULATION BW-MID CHANNEL\_5550 MHz

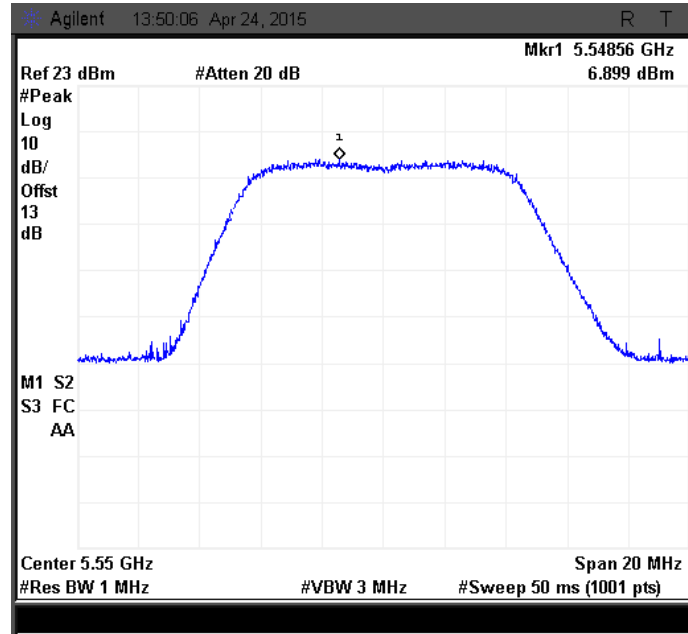


Figure 153: Peak Excursion Ratio plot measured at Ch. 0

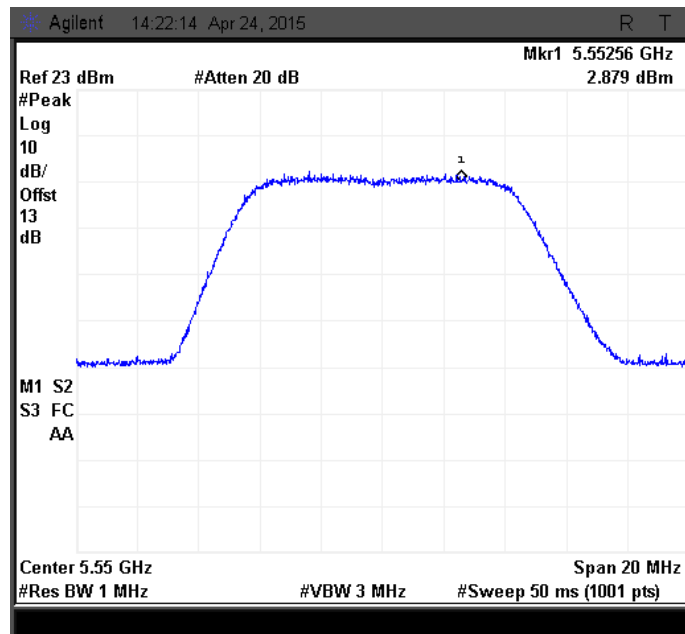


Figure 154: Peak Excursion Ratio plot measured at Ch. 1

### 5.3.5.6.6 10MHz MODULATION BW-HIGH CHANNEL\_5710MHZ

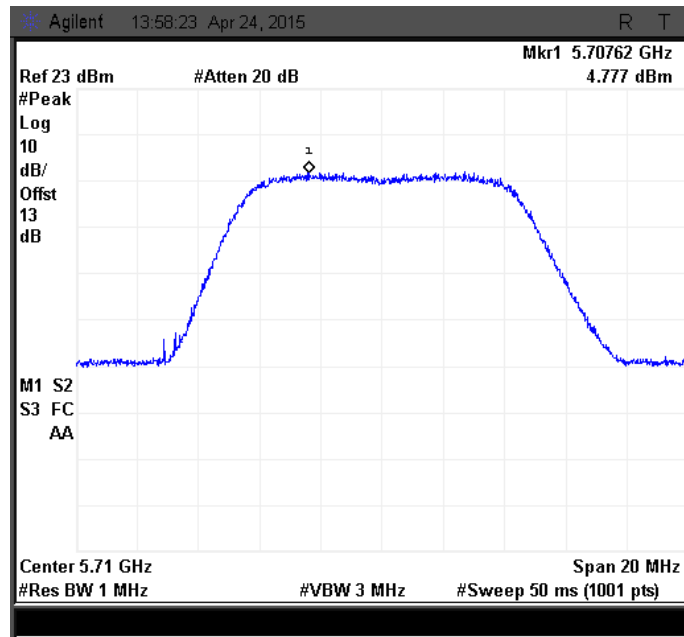


Figure 155: Peak Excursion Ratio plot measured at Ch. 0

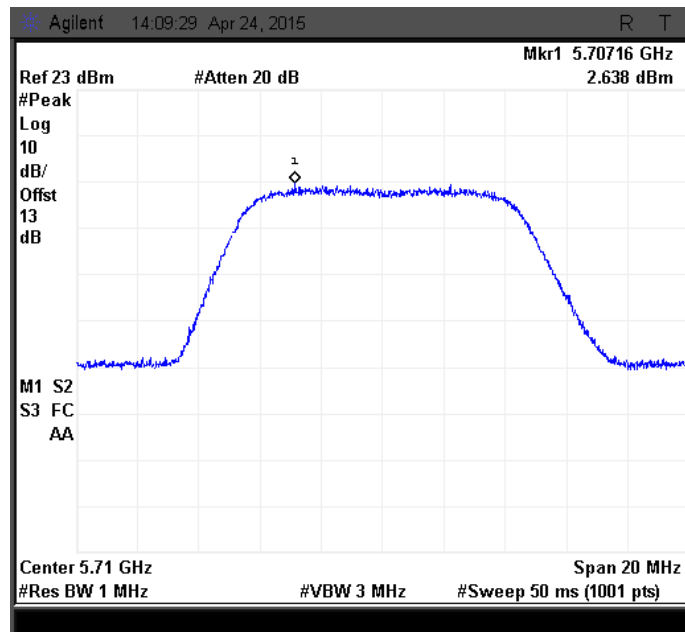


Figure 156: Peak Excursion Ratio plot measured at Ch. 1

### 5.3.5.7 RESULT (SUPPORTING GRAPHS / DATA) FOR 24DBI DIDH CONDITION

#### 5.3.5.7.1 40MHz MODULATION BW-LOW CHANNEL\_5495 MHz

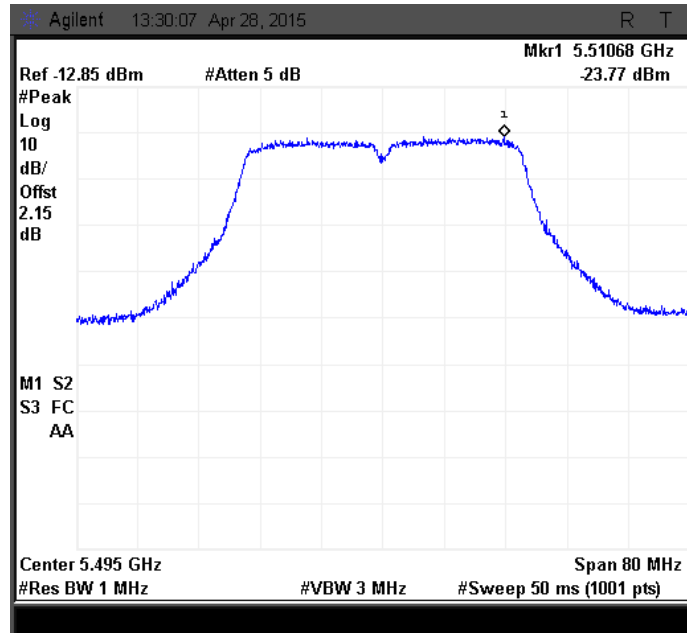


Figure 157: Peak Excursion Ratio plot measured at Ch. 0

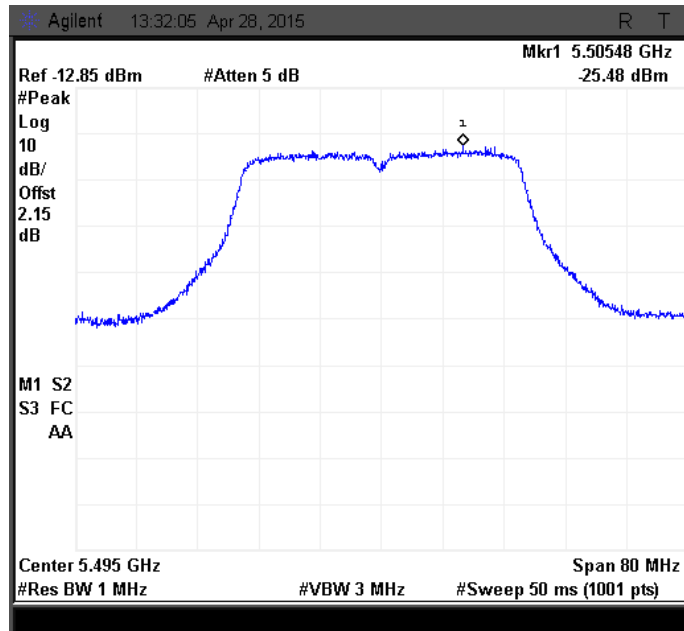


Figure 158: Peak Excursion Ratio plot measured at Ch. 1

### 5.3.5.7.2 40MHz MODULATION BW-Mid CHANNEL\_5550 MHz

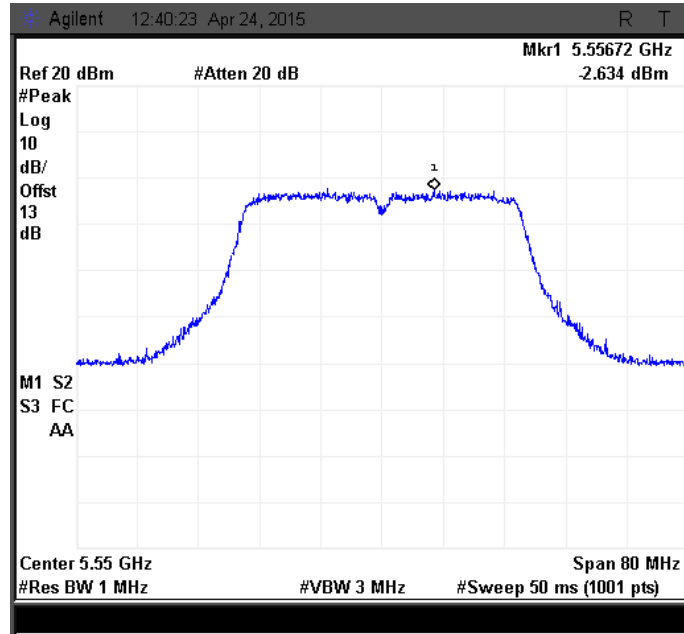


Figure 159: Peak Excursion Ratio plot measured at Ch. 0

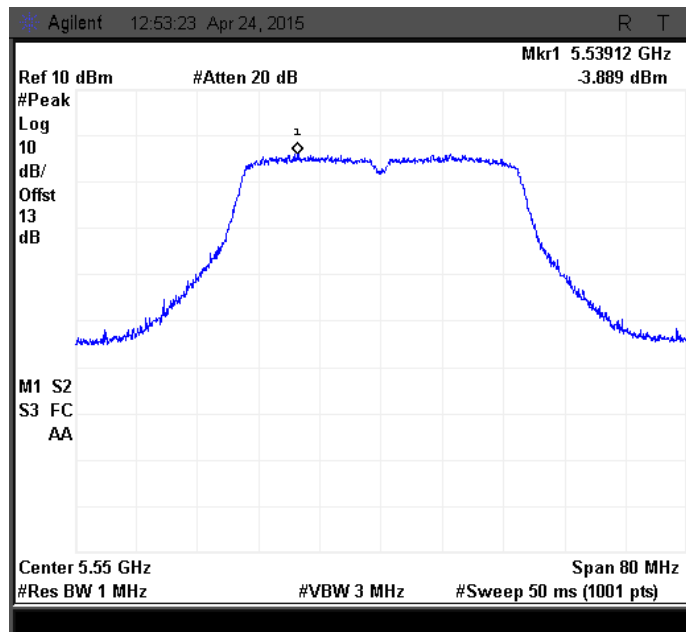


Figure 160: Peak Excursion Ratio plot measured at Ch. 1

### 5.3.5.7.3 40MHz MODULATION BW-HIGH CHANNEL\_5700MHz

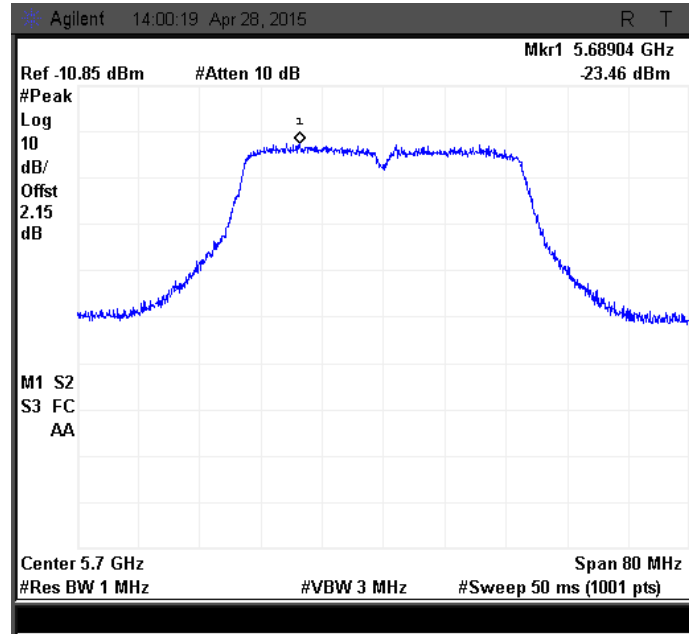


Figure 161: Peak Excursion Ratio plot measured at Ch. 0

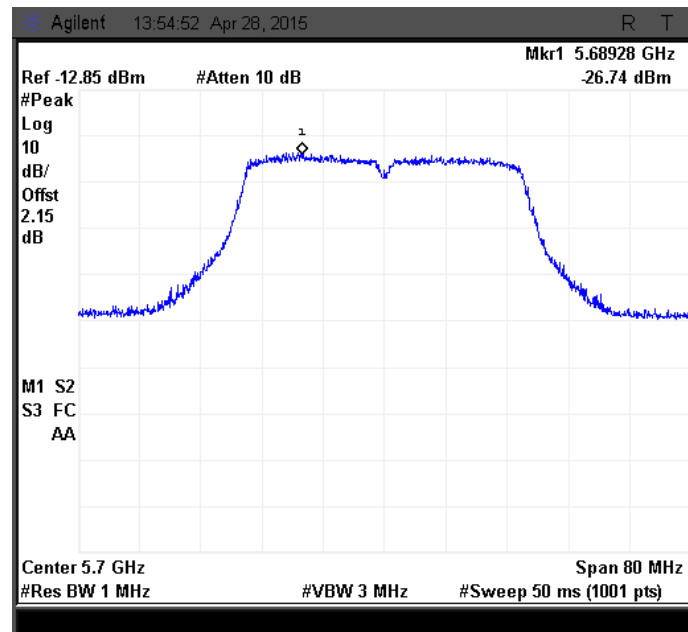


Figure 162: Peak Excursion Ratio plot measured at Ch. 1



#### 5.3.5.7.4 10MHz MODULATION BW-LOW CHANNEL\_5485 MHz

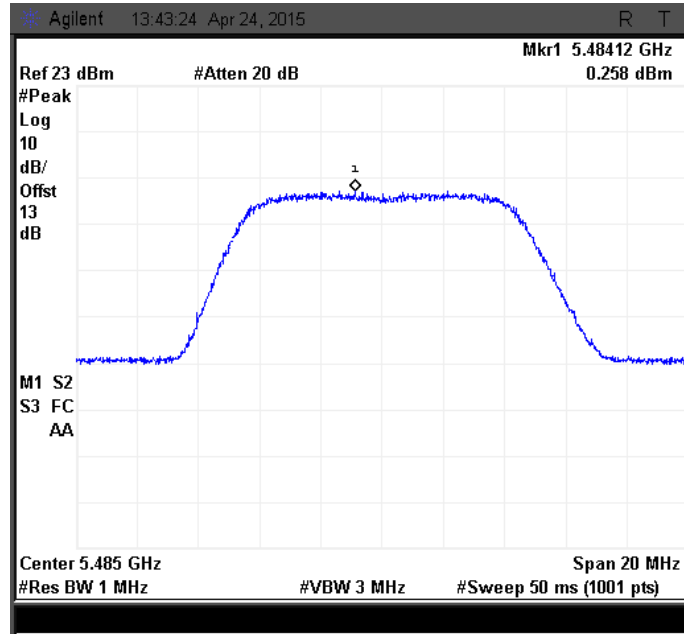


Figure 163: Peak Excursion Ratio plot measured at Ch. 0

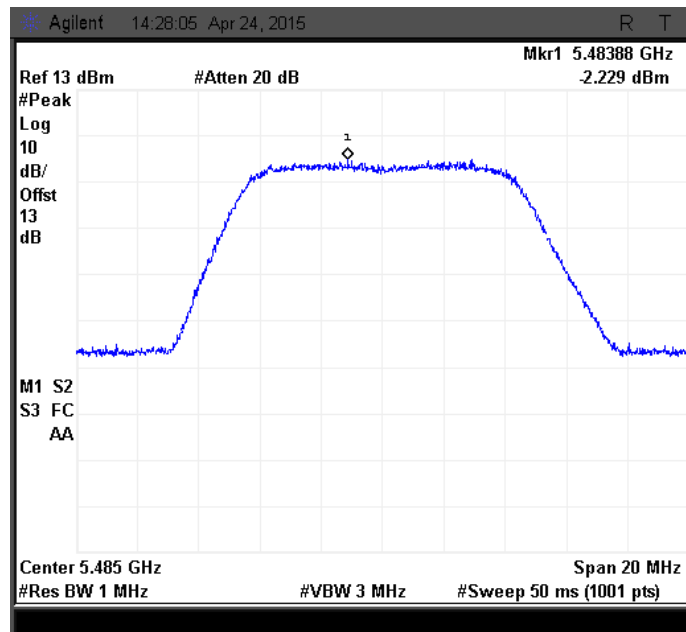


Figure 164: Peak Excursion Ratio plot measured at Ch. 1

### 5.3.5.7.5 10MHz MODULATION BW-MID CHANNEL\_5550 MHz

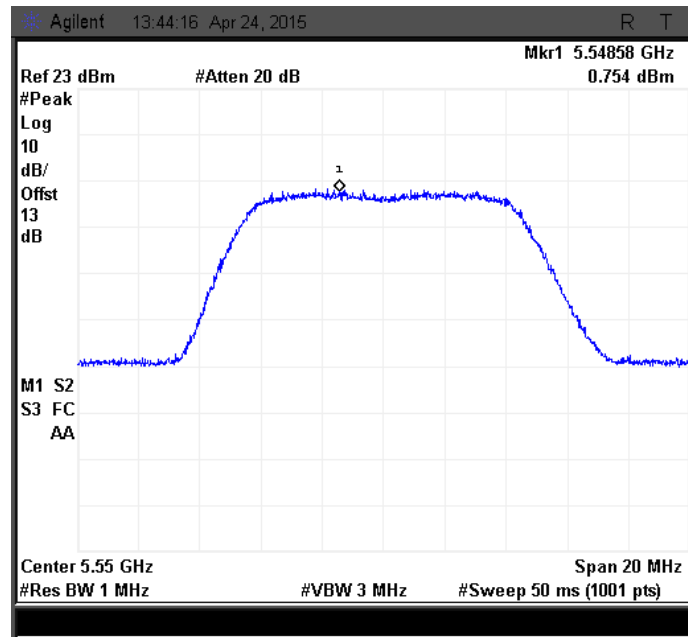


Figure 165: Peak Excursion Ratio plot measured at Ch. 0

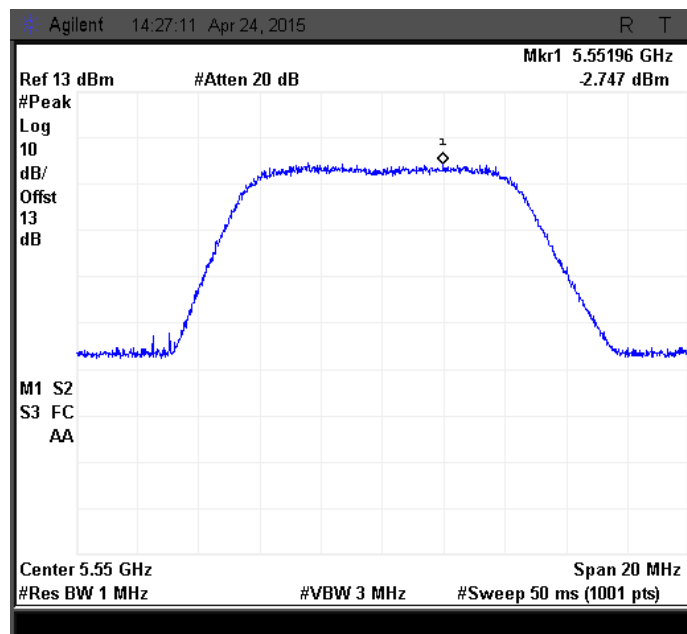


Figure 166: Peak Excursion Ratio plot measured at Ch. 1

### 5.3.5.7.6 10MHz MODULATION BW-HIGH CHANNEL\_5710 MHz

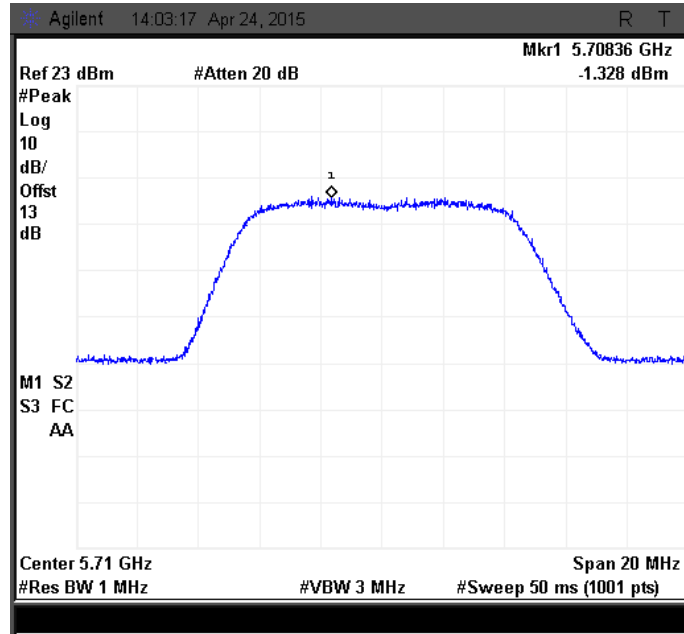


Figure 167: Peak Excursion Ratio plot measured at Ch. 0

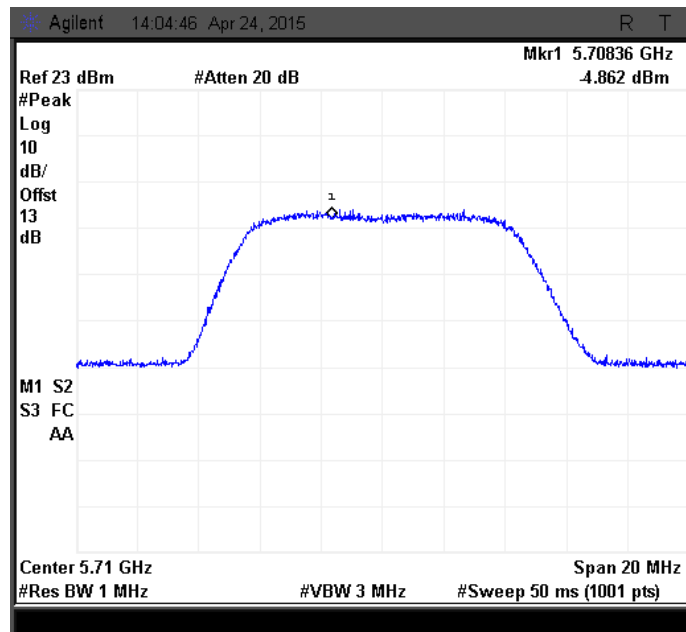


Figure 168: Peak Excursion Ratio plot measured at Ch. 1

### 5.3.5.8 RESULT

Peak Power Spectral Density for all channels in both 40MHz & 10MHz Modulation Bandwidths is within the Specified limit. Refer below table for consolidated result.

Condition	Mod. BW (MHz)	Ant. path	Channel Freq. (MHz)	PPSD value (dBm/MHz)	Recorded value (dBm)	Peak Excursion (dB)	Limit (dB)	Result
Basic	40	Ch. 0	5495	-14	-3.278	10.722	<13	Pass
Basic	40	Ch. 0	5550	2.671	15.55	12.879	<13	Pass
Basic	40	Ch. 0	5700	-15.09	-2.482	12.608	<13	Pass
Basic	40	Ch. 1	5495	-17.82	-7.038	10.782	<13	Pass
Basic	40	Ch. 1	5550	0.182	11.24	11.058	<13	Pass
Basic	40	Ch. 1	5700	-17.29	-5.982	11.308	<13	Pass
Basic	10	Ch. 0	5485	5.005	16.53	11.525	<13	Pass
Basic	10	Ch. 0	5550	5.121	17.32	12.199	<13	Pass
Basic	10	Ch. 0	5710	3.859	15.01	11.151	<13	Pass
Basic	10	Ch. 1	5485	1.673	14.06	12.387	<13	Pass
Basic	10	Ch. 1	5550	2.638	14.06	11.422	<13	Pass
Basic	10	Ch. 1	5710	1.816	14.23	12.414	<13	Pass
17dBi	40	Ch. 0	5495	-26.08	-13.83	12.25	<13	Pass
17dBi	40	Ch. 0	5550	-7.651	4.88	12.531	<13	Pass
17dBi	40	Ch. 0	5700	-25.8	-14	11.8	<13	Pass
17dBi	40	Ch. 1	5495	-30.1	-18.54	11.56	<13	Pass
17dBi	40	Ch. 1	5550	-9.983	1.628	11.611	<13	Pass
17dBi	40	Ch. 1	5700	-29.21	-17.11	12.1	<13	Pass
17dBi	10	Ch. 0	5485	-4.784	7.97	12.754	<13	Pass
17dBi	10	Ch. 0	5550	-4.691	6.899	11.59	<13	Pass
17dBi	10	Ch. 0	5710	-6.753	4.77	11.523	<13	Pass
17dBi	10	Ch. 1	5485	-7.975	3.635	11.61	<13	Pass
17dBi	10	Ch. 1	5550	-7.478	2.879	10.357	<13	Pass
17dBi	10	Ch. 1	5710	-9.214	2.638	11.852	<13	Pass
24dBi	40	Ch. 0	5495	-35.22	-23.77	11.45	<13	Pass
24dBi	40	Ch. 0	5550	-14.9	-2.634	12.266	<13	Pass
24dBi	40	Ch. 0	5700	-34.47	-23.46	11.01	<13	Pass
24dBi	40	Ch. 1	5495	-37.86	-25.48	12.38	<13	Pass
24dBi	40	Ch. 1	5550	-16.17	-3.889	12.281	<13	Pass
24dBi	40	Ch. 1	5700	-38.38	-26.74	11.64	<13	Pass
24dBi	10	Ch. 0	5485	-11.69	0.258	11.948	<13	Pass
24dBi	10	Ch. 0	5550	-11.03	0.754	11.784	<13	Pass
24dBi	10	Ch. 0	5710	-12.96	-1.328	11.632	<13	Pass
24dBi	10	Ch. 1	5485	-14.59	-2.229	12.361	<13	Pass
24dBi	10	Ch. 1	5550	-14.15	-2.747	11.403	<13	Pass
24dBi	10	Ch. 1	5710	-15.35	-4.862	10.488	<13	Pass

**Note:**

Peak Excursion Ratio value = Recorded value (dBm) – PSD value (dBm/MHz)

## 5.3.6 UNWANTED EMISSIONS LEVELS-CONDUCTED BAND EDGE

### 5.3.6.1 TEST SPECIFICATION

<b>Test Standard</b>	47 CFR Ch. I (10–1–14 Ed), Part 15, Subpart C RSS-Gen, Issue 4, Nov 2014
<b>Test Procedure</b>	ANSI C63.10-2013
<b>Frequency Range</b>	5470 MHz to 5725 MHz
<b>Resolution Bandwidth</b>	1MHz
<b>Video Bandwidth</b>	3MHz
<b>Sweep Time</b>	Auto
<b>Attenuation</b>	Auto
<b>Test Mode</b>	Conducted
<b>Detector</b>	Peak & Average
<b>Input Voltage</b>	120V AC
<b>Input Frequency</b>	60 Hz
<b>Temperature</b>	22.0°C
<b>Humidity</b>	56.0%
<b>Tested By</b>	Harsha K
<b>Test Date</b>	12 <sup>th</sup> Mar 2015 to 28 <sup>th</sup> Apr 2015

### 5.3.6.2 LIMITS

Standard	FCC Section	Antenna condition	Calculated Limit
47 CFR Ch. I (10–1–14 Ed), Part 15, Subpart C  RSS-Gen, Issue 4, Nov 2014	15.407 (b) (3)	2.15dBi Antenna	-32.15dBm/MHz
		17dBi Antenna	-47dBm/MHz
		24dBi dish	-54dBm/MHz

Limit as per standard is -27dBm/MHz. In this condition we have to consider MIMO condition & take 3dB Factor and also the antenna gain needs to be considered.

Calculated limit = -27dBm/MHz – 3 – Antenna gain

### 5.3.6.3 TEST SETUP

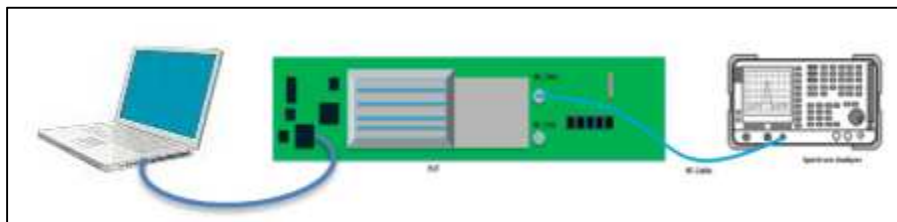


Figure 169: Typical test setup for Conducted Test setup



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#### 5.3.6.4 TEST PROCEDURE

The Conducted test was performed using the Spectrum analyzer. Measurements were done as per Sections H(1), H(2), H(3), H(5) & H(6) of “**789033 D01 General UNII Test Procedures Old Rules v01r04**”. The RF output of the EUT was connected to the input port of Spectrum analyzer using an attenuator. Captured the data from spectrum analyzer and compared with the limits specified in the standard.

### 5.3.6.5 RESULT (SUPPORTING GRAPHS / DATA) FOR BASIC CONDITION

#### 5.3.6.5.1 40MHz MODULATION BW-LOW CHANNEL\_5495 MHz

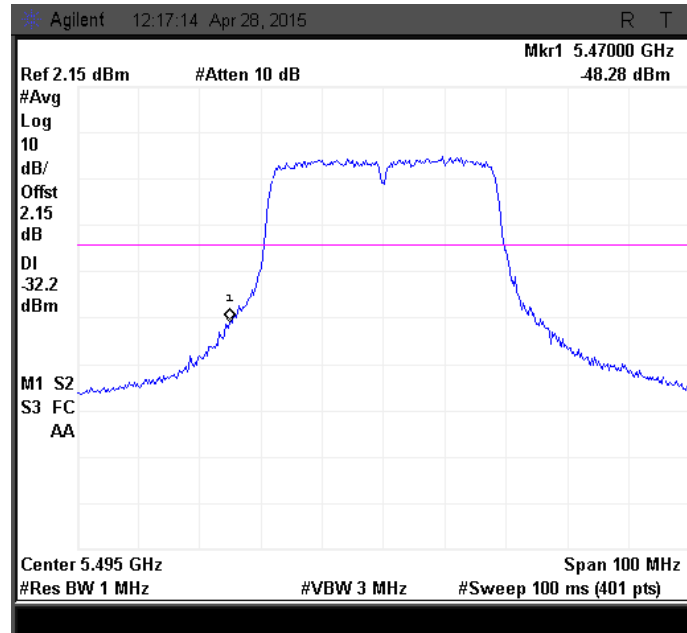


Figure 170: Band edge measured at Ch. 0-Avg

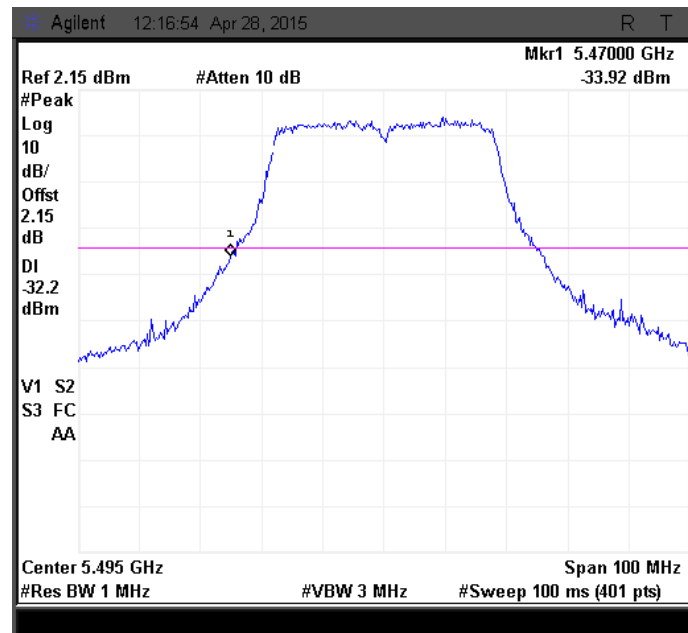
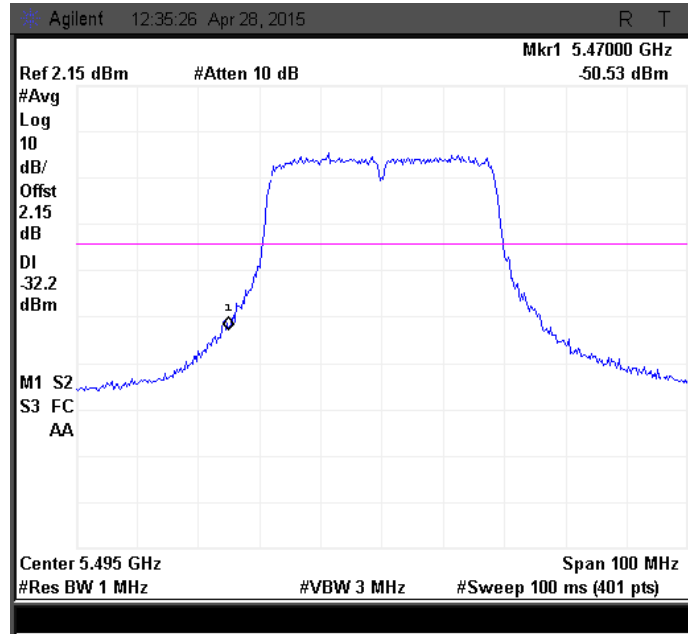
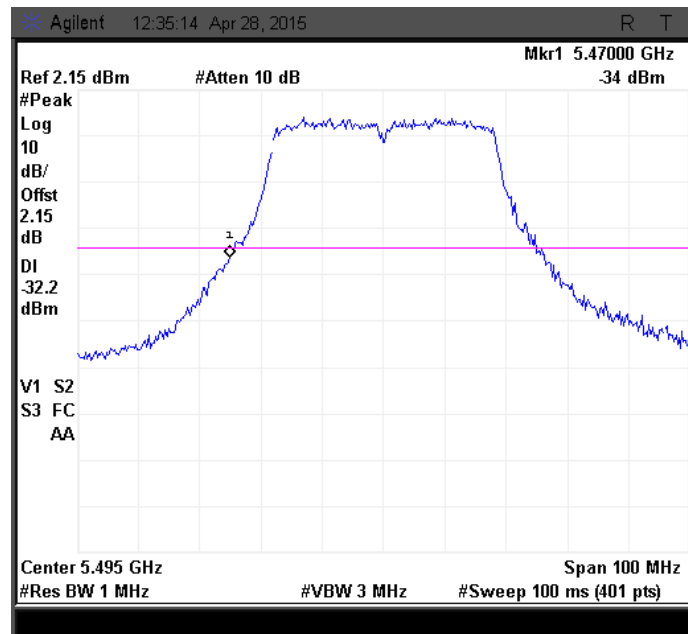


Figure 171: Band edge measured at Ch. 0-Peak



**Figure 172: Band edge measured at Ch. 1-Avg**



**Figure 173: Band edge measured at Ch. 1-Peak**



### 5.3.6.5.2 40MHz MODULATION BW-HIGH CHANNEL\_5700MHz

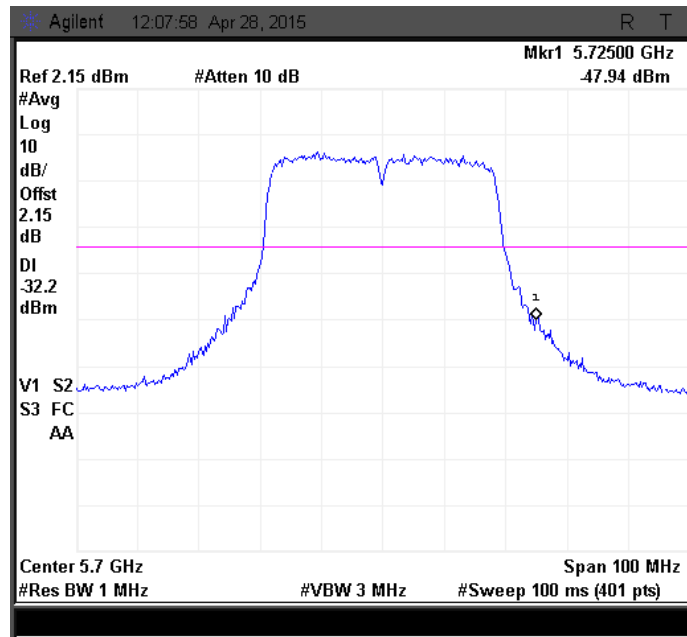


Figure 174: Band edge measured at Ch. 0-Avg

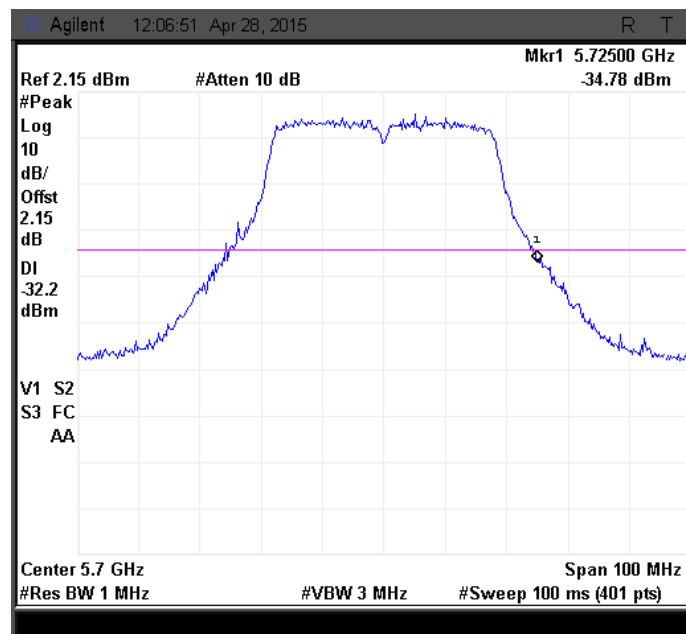


Figure 175: Band edge measured at Ch. 0-Peak

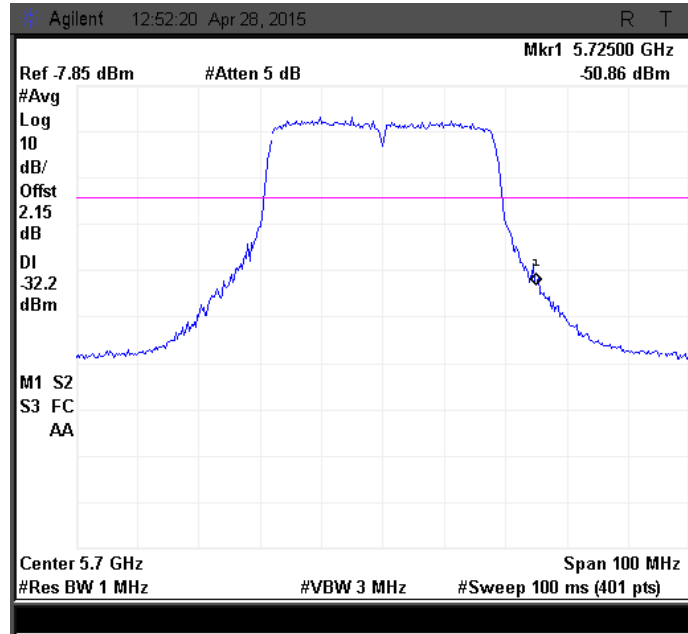


Figure 176: Band edge measured at Ch. 1-Avg

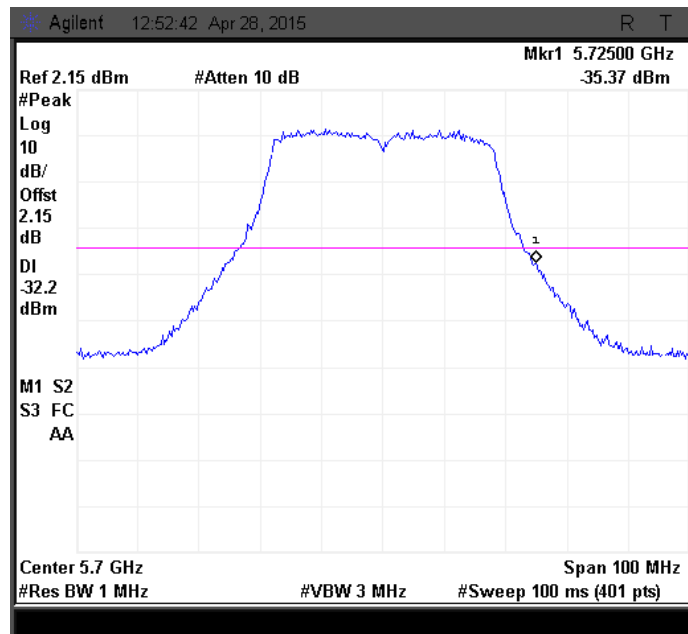


Figure 177: Band edge measured at Ch. 1-Peak

### 5.3.6.5.3 10MHz MODULATION BW-LOW CHANNEL\_5485 MHz

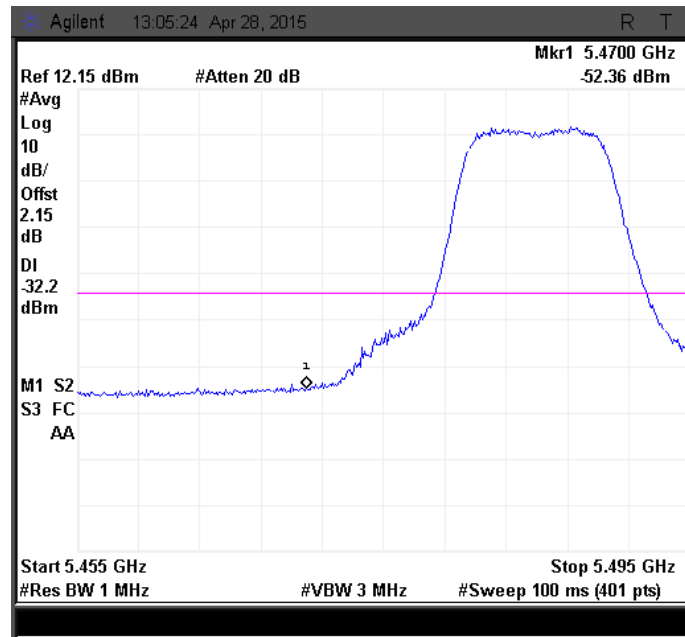


Figure 178: Band edge measured at Ch. 0-Avg

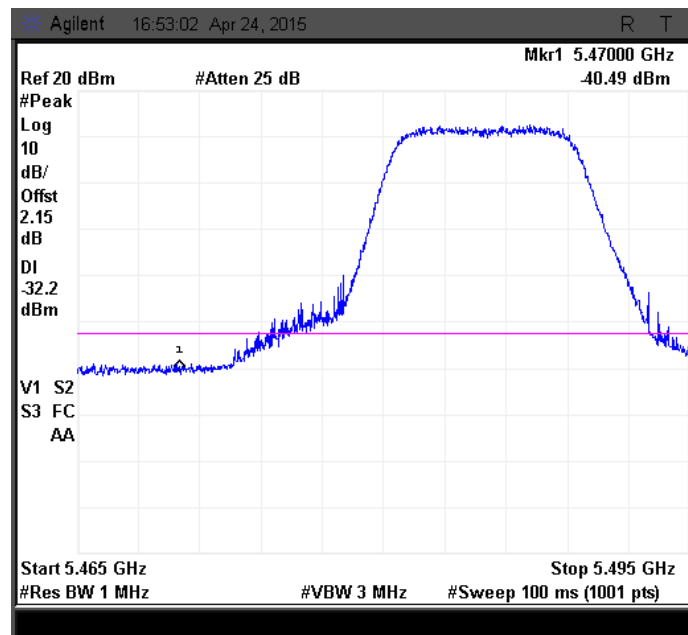


Figure 179: Band edge measured at Ch. 0-Peak

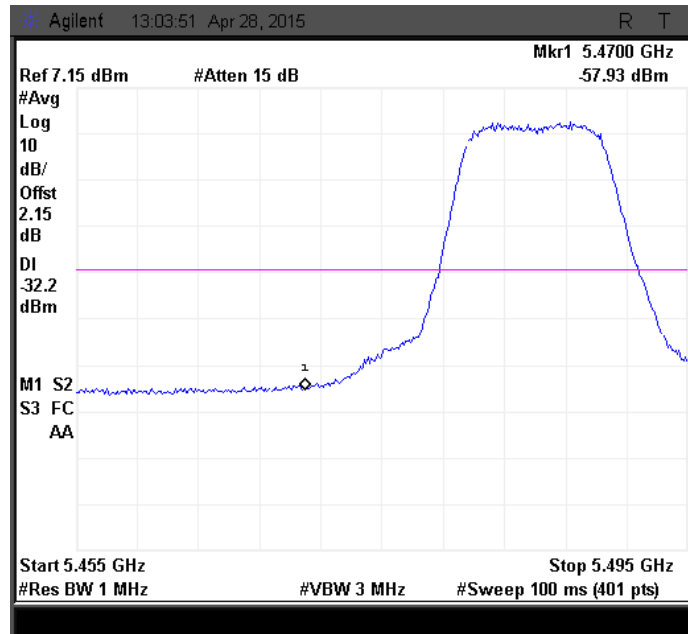


Figure 180: Band edge measured at Ch. 1-Avg

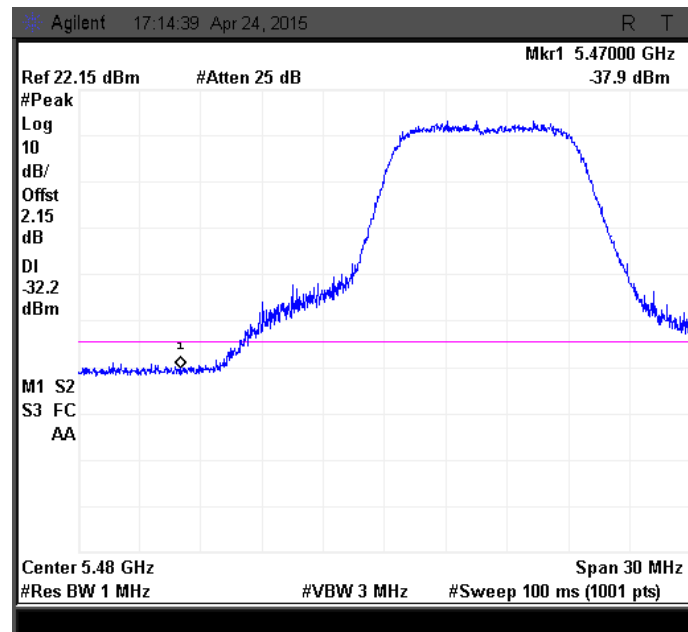


Figure 181: Band edge measured at Ch. 1-Peak

#### 5.3.6.5.4 10MHz MODULATION BW-HIGH CHANNEL\_5710 MHz

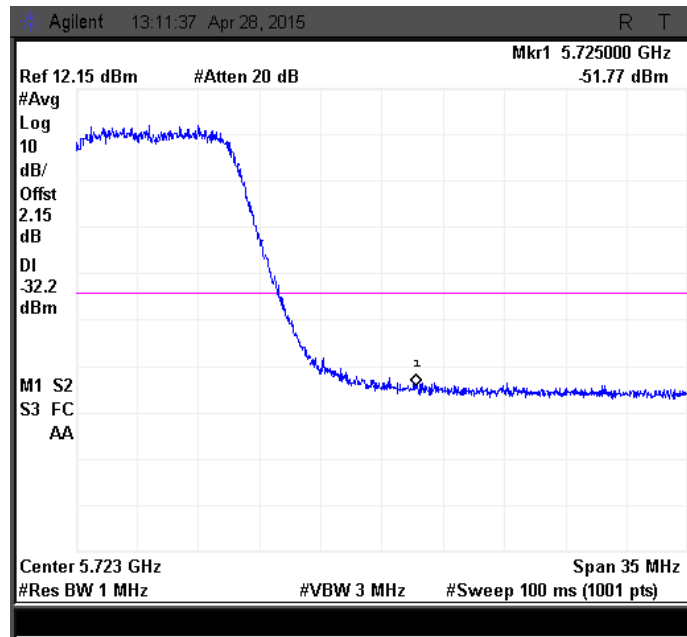


Figure 182: Band edge measured at Ch. 0-Avg

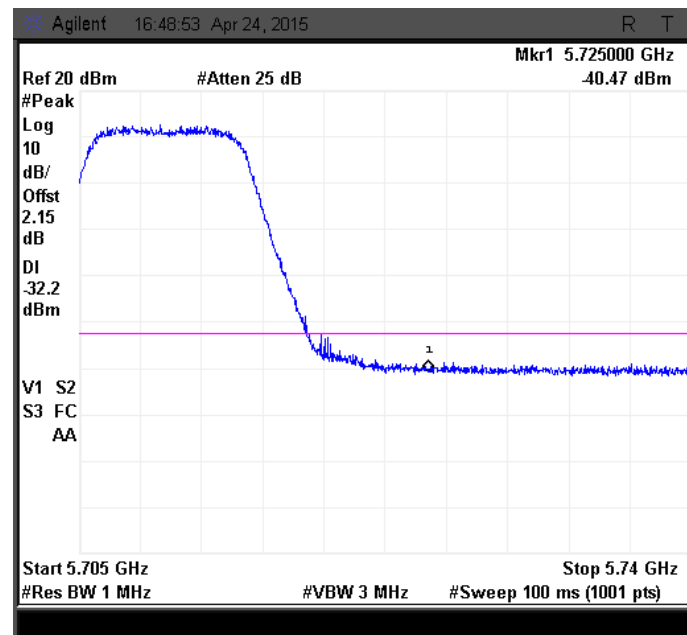


Figure 183: Band edge measured at Ch. 0-Peak

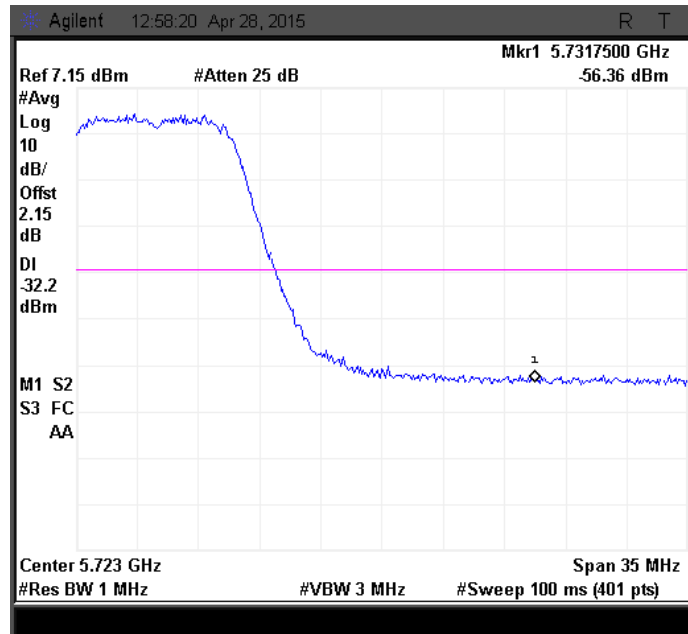


Figure 184: Band edge measured at Ch. 1-Avg

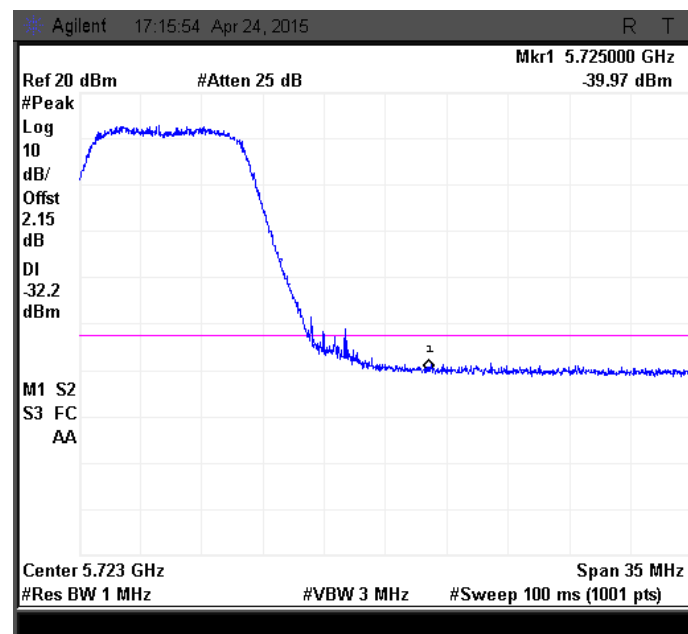


Figure 185: Band edge measured at Ch. 1-Peak

### 5.3.6.6 RESULT (SUPPORTING GRAPHS / DATA) FOR 17DBI ANTENNA CONDITION

#### 5.3.6.6.1 40MHz MODULATION BW-LOW CHANNEL\_5495 MHz

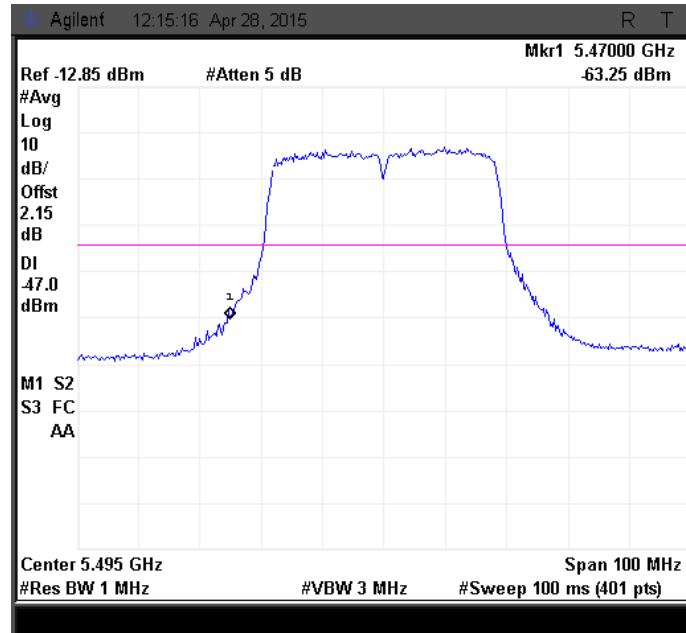


Figure 186: Band edge measured at Ch. 0-Avg

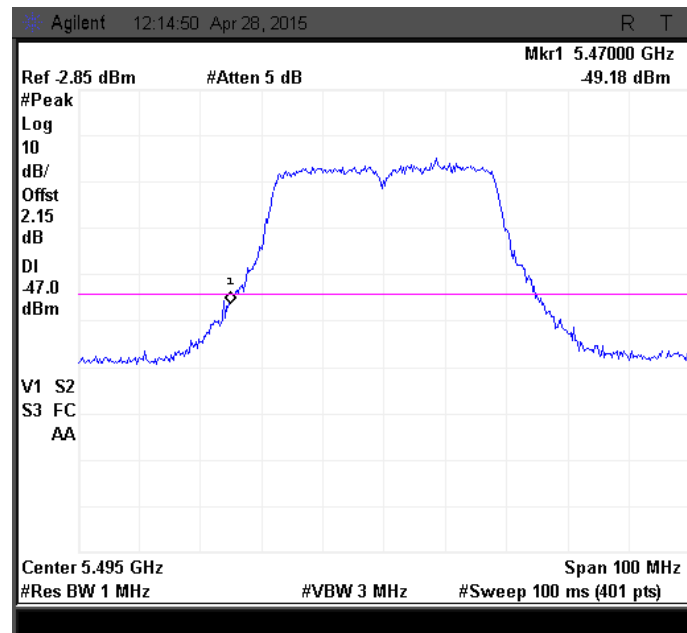
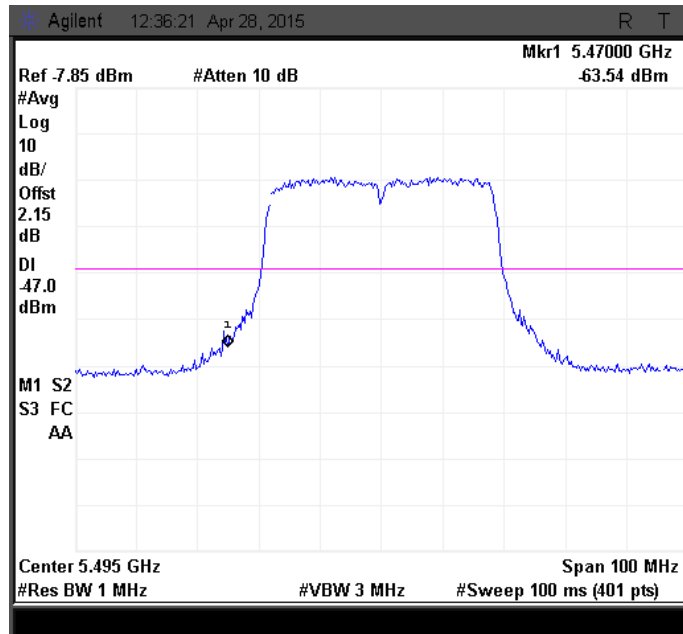
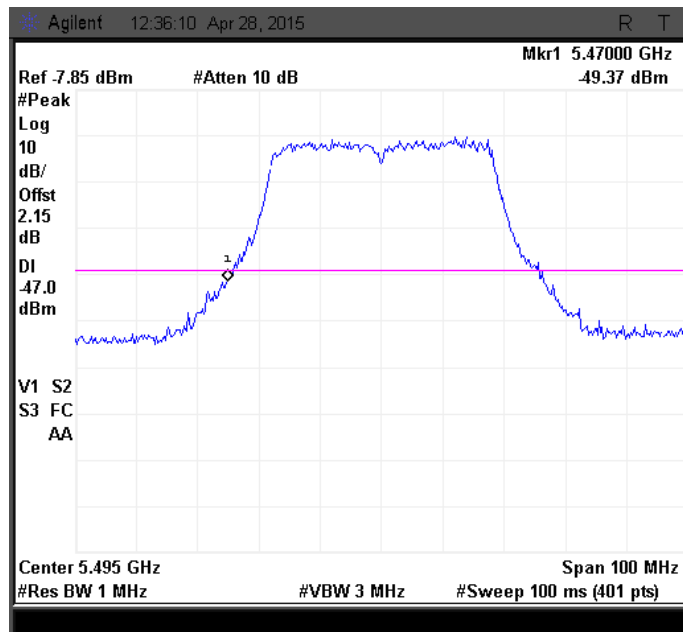


Figure 187: Band edge measured at Ch. 0-Peak.



**Figure 188: Band edge measured at Ch. 1-Avg**



**Figure 189: Band edge measured at Ch. 1-Peak**



### 5.3.6.6.2 40MHz MODULATION BW-HIGH CHANNEL\_5700MHz

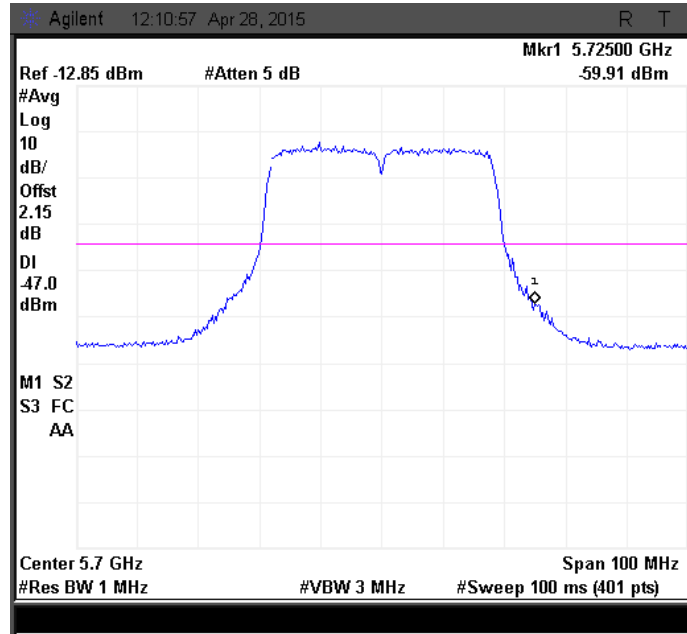


Figure 190: Band edge measured at Ch. 0-Avg

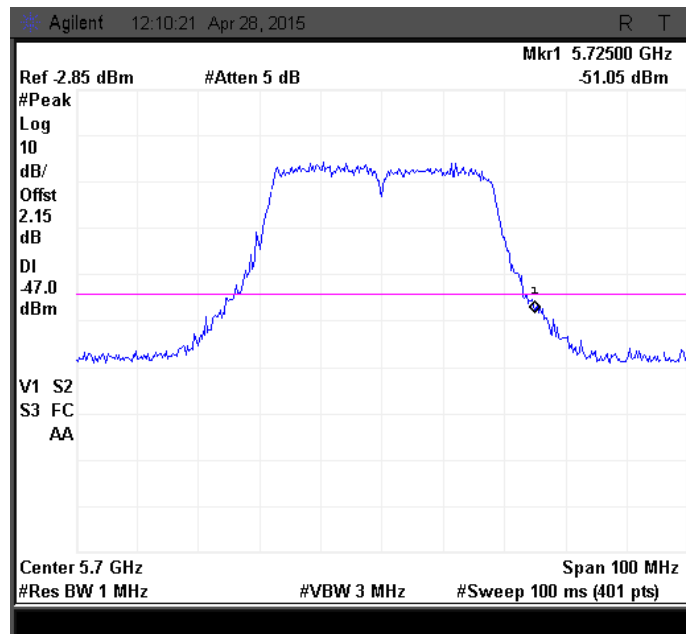


Figure 191: Band edge measured at Ch. 0-Peak

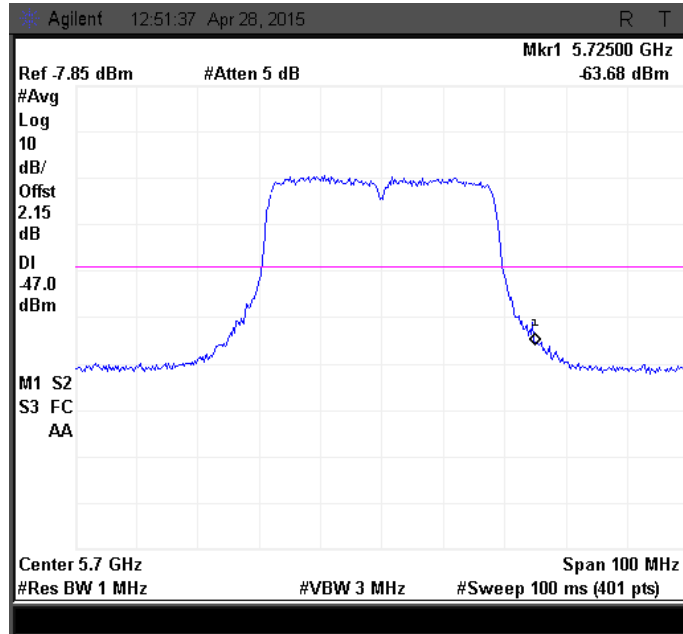


Figure 192: Band edge measured at Ch. 1-Avg

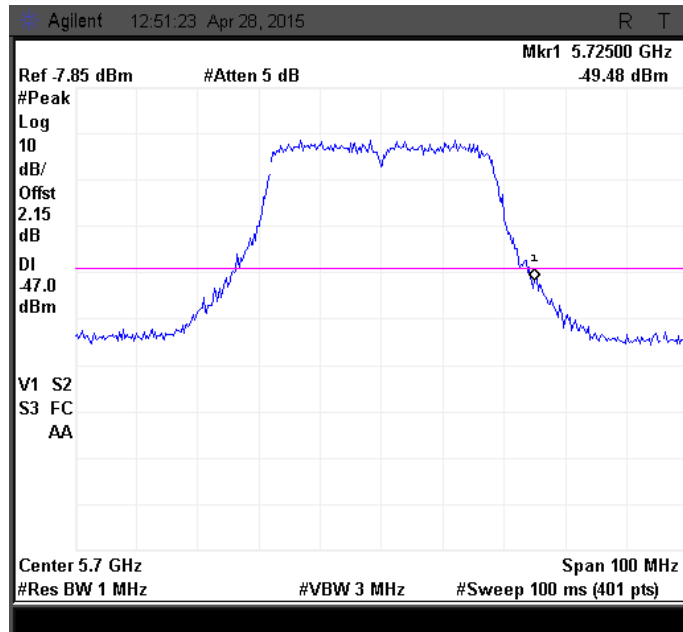


Figure 193: Band edge measured at Ch. 1-Peak

### 5.3.6.6.3 10MHz MODULATION BW-LOW CHANNEL\_5485 MHz

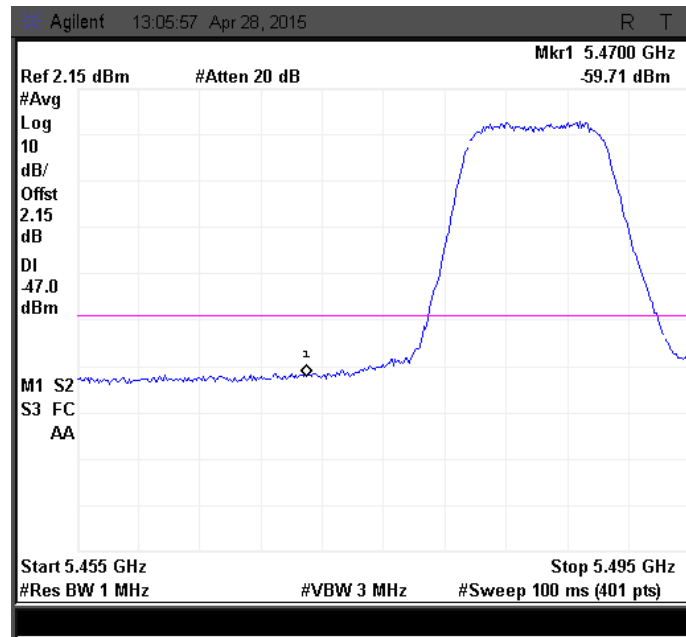


Figure 194: Band edge measured at Ch. 0-Avg

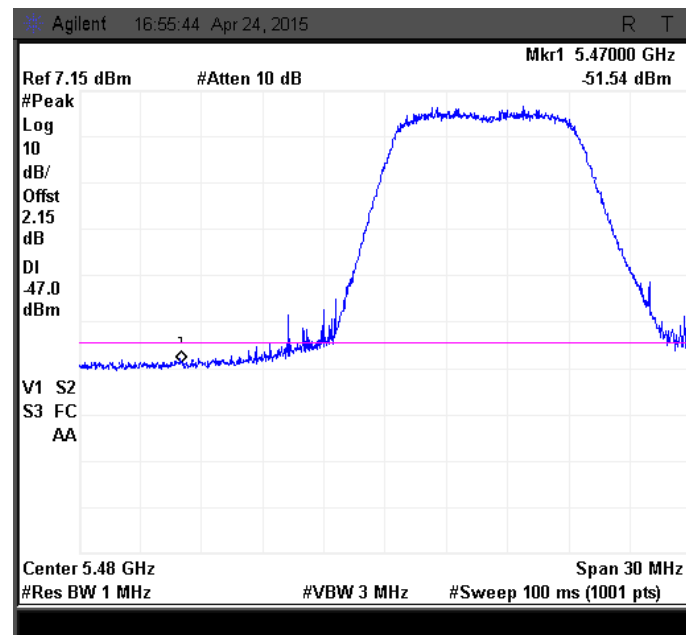


Figure 195: Band edge measured at Ch. 0-Peak

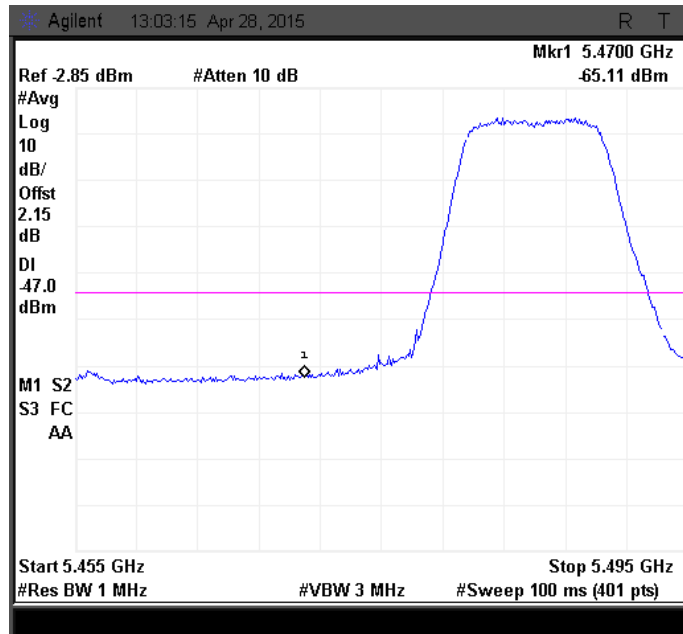


Figure 196: Band edge measured at Ch. 1-Avg

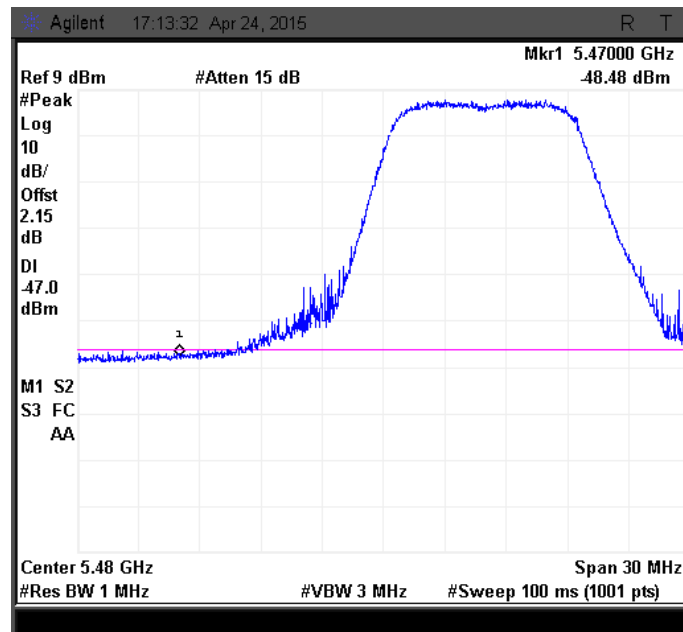


Figure 197: Band edge measured at Ch. 1-Peak

#### 5.3.6.6.4 10MHz MODULATION BW-HIGH CHANNEL\_5710 MHz

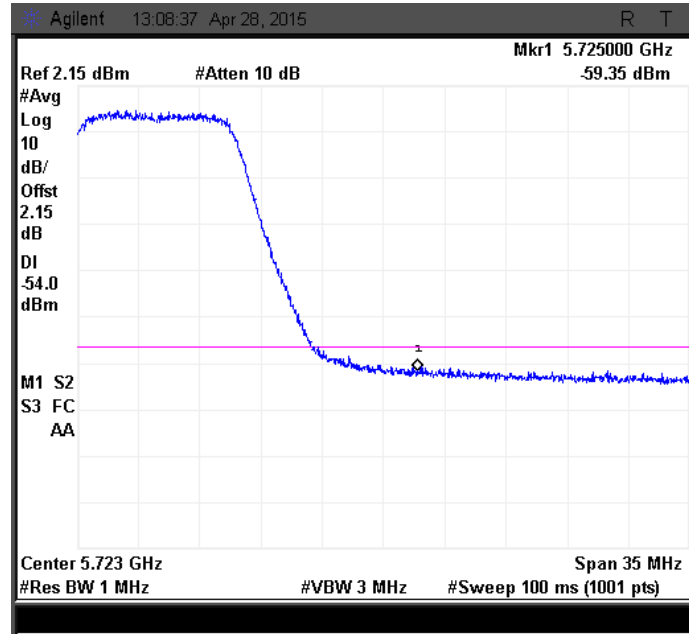


Figure 198: Band edge measured at Ch. 0-Avg

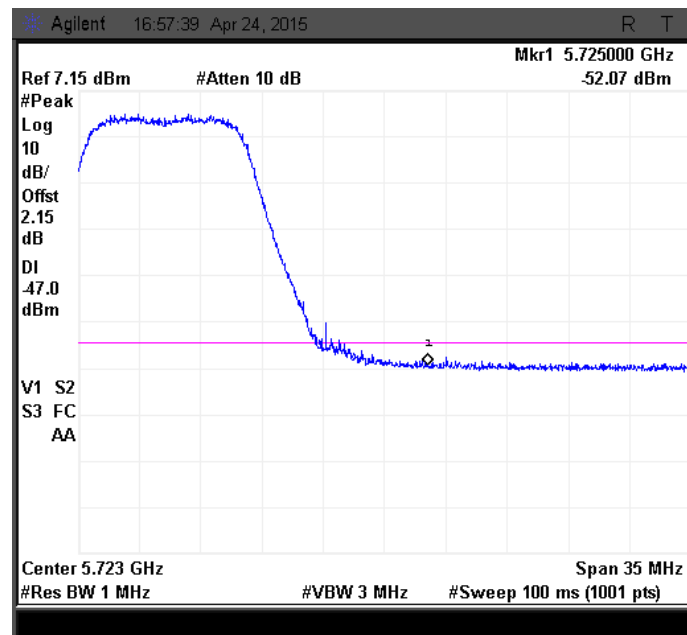


Figure 199: Band edge measured at Ch. 0-Peak

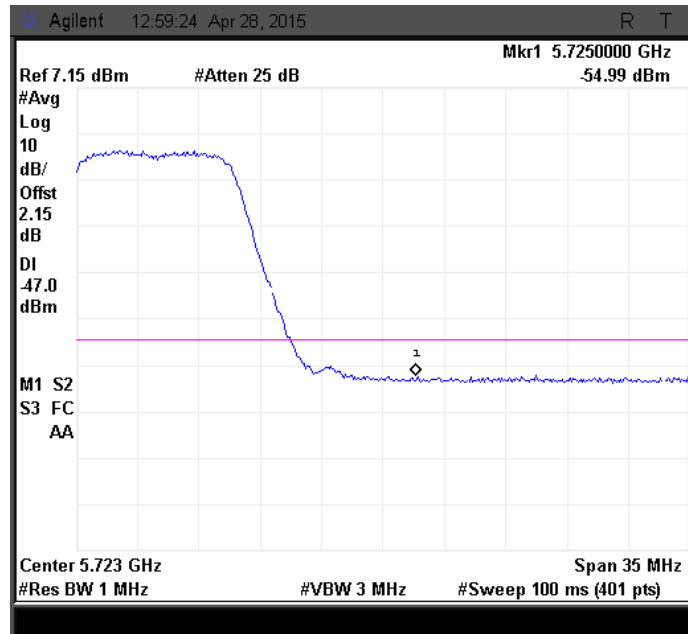


Figure 200: Band edge measured at Ch. 1-Avg

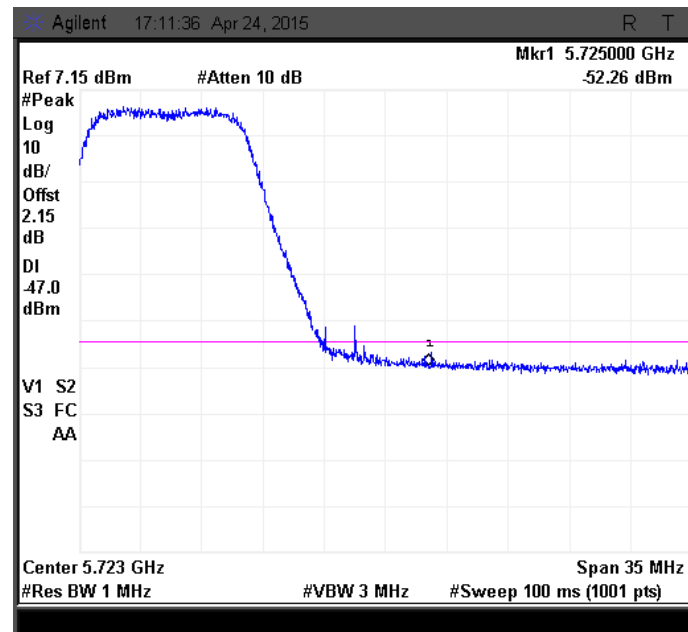


Figure 201: Band edge measured at Ch. 1-Peak

### 5.3.6.7 RESULT (SUPPORTING GRAPHS / DATA) FOR 24DBI DIDH CONDITION

#### 5.3.6.7.1 40MHz MODULATION BW-LOW CHANNEL\_5495 MHz

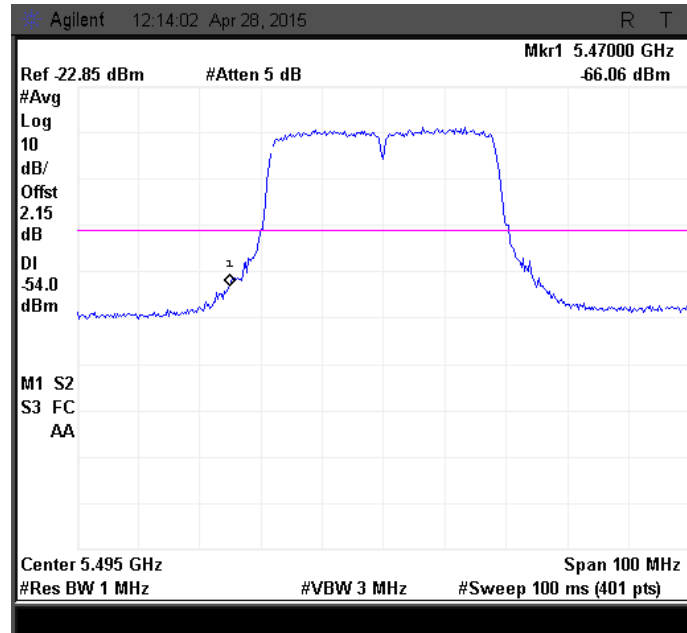


Figure 202: Band edge measured at Ch. 0-Avg

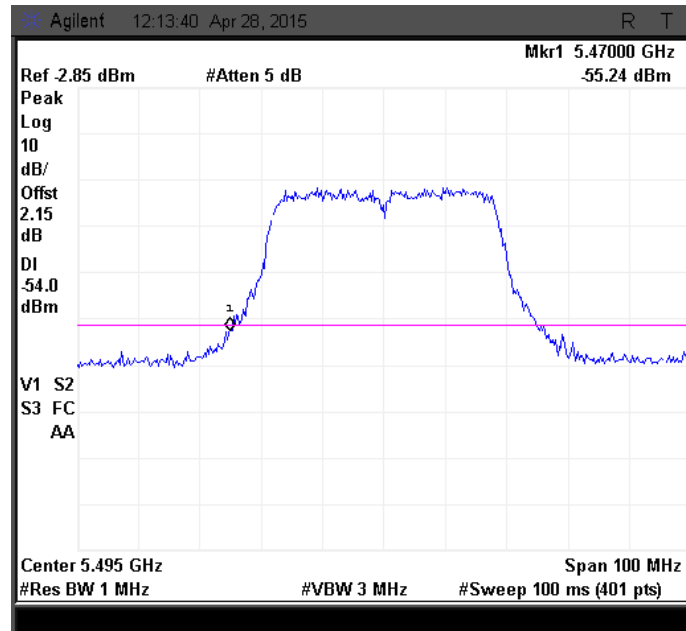


Figure 203: Band edge measured at Ch. 0-Peak

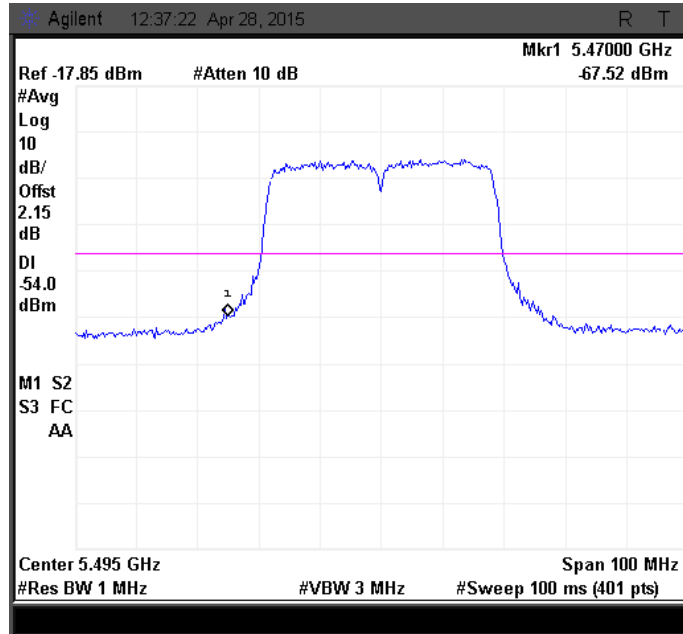


Figure 204: Band edge measured at Ch. 1-Avg

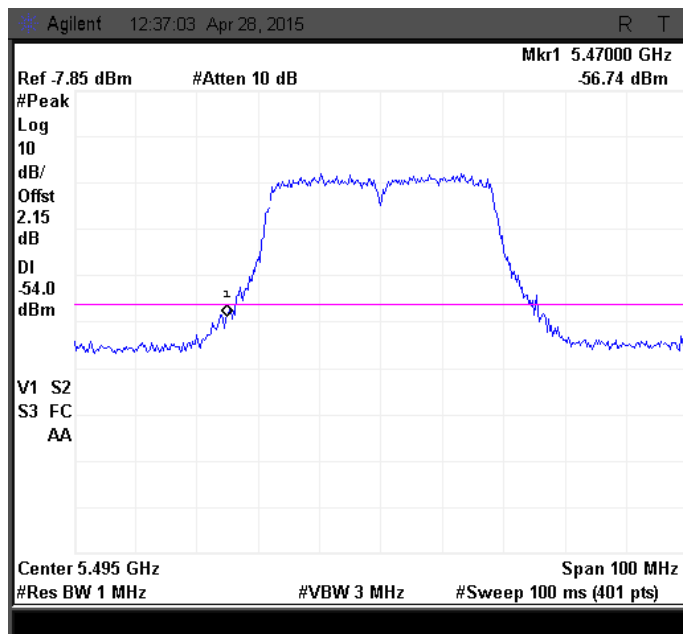


Figure 205: Band edge measured at Ch. 1-Peak



### 5.3.6.7.2 40MHz MODULATION BW-HIGH CHANNEL\_5700MHZ

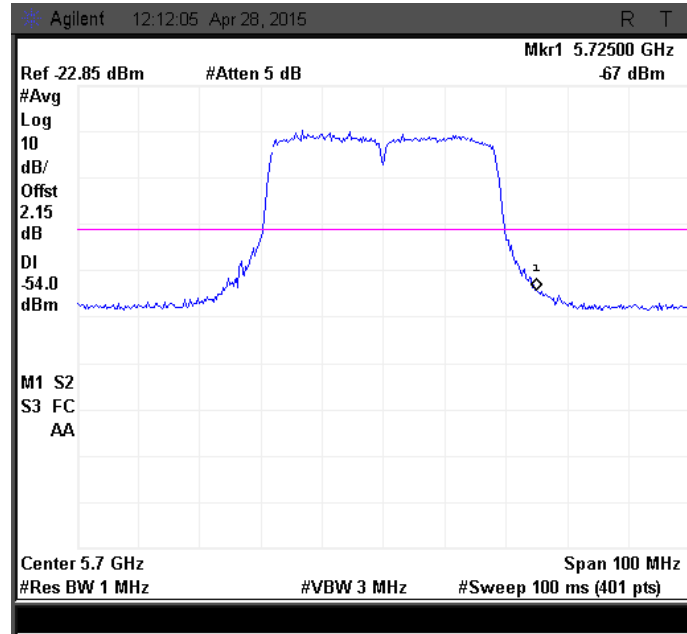


Figure 206: Band edge measured at Ch. 0-Avg

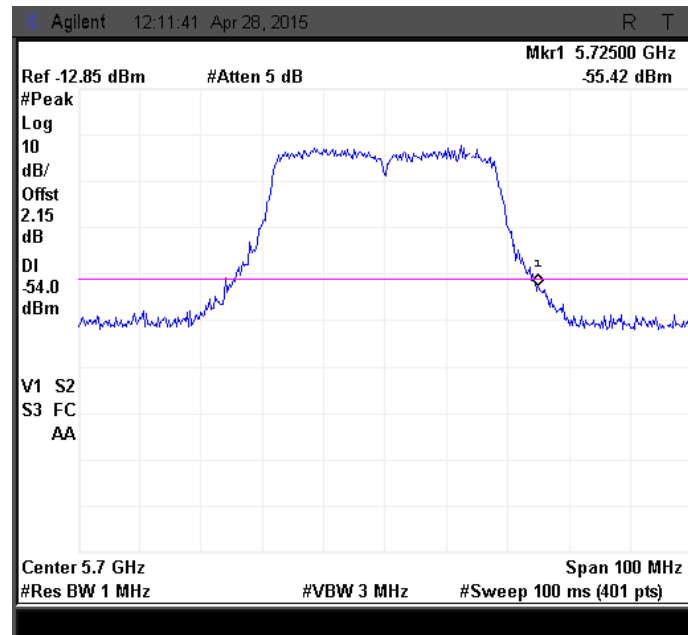
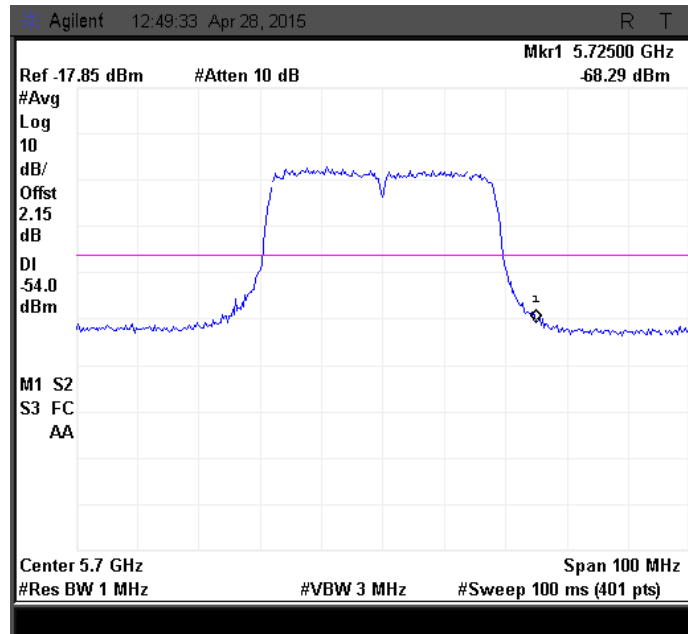
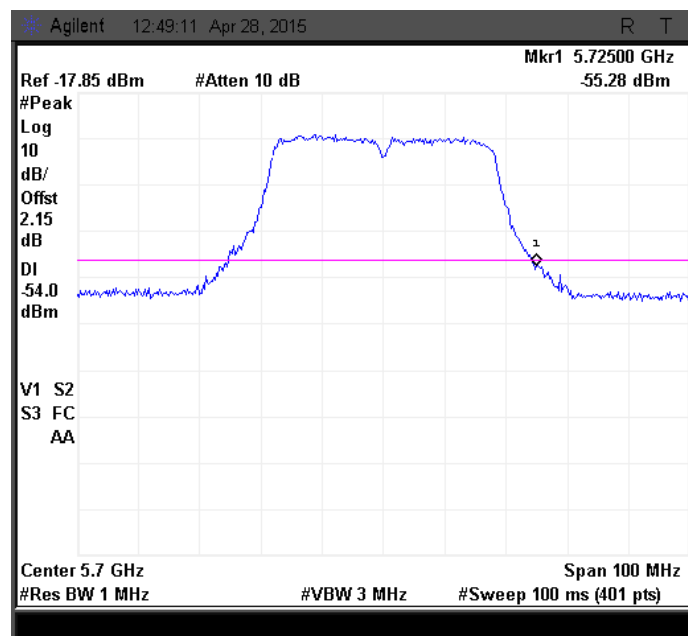


Figure 207: Band edge measured at Ch. 0-Peak



**Figure 208: Band edge measured at Ch. 1-Avg**



**Figure 209: Band edge measured at Ch. 1-Peak**

### 5.3.6.7.3 10MHz MODULATION BW-LOW CHANNEL\_5485 MHz

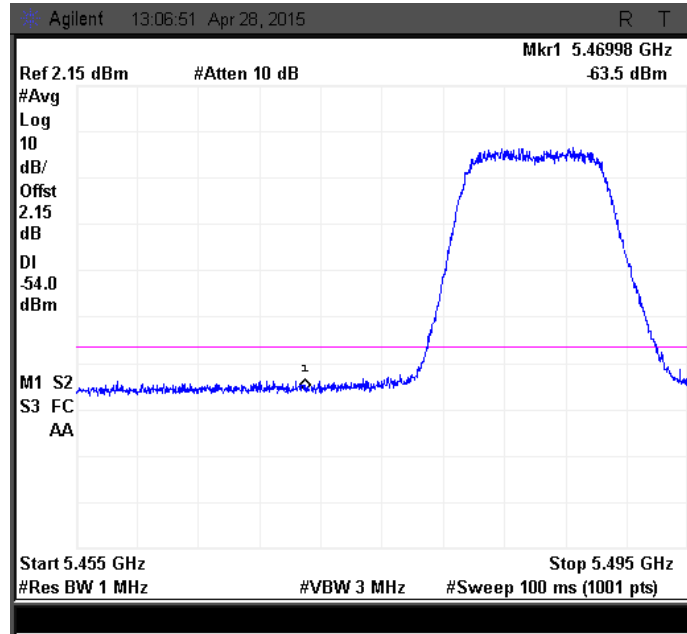


Figure 210: Band edge measured at Ch. 0-Avg

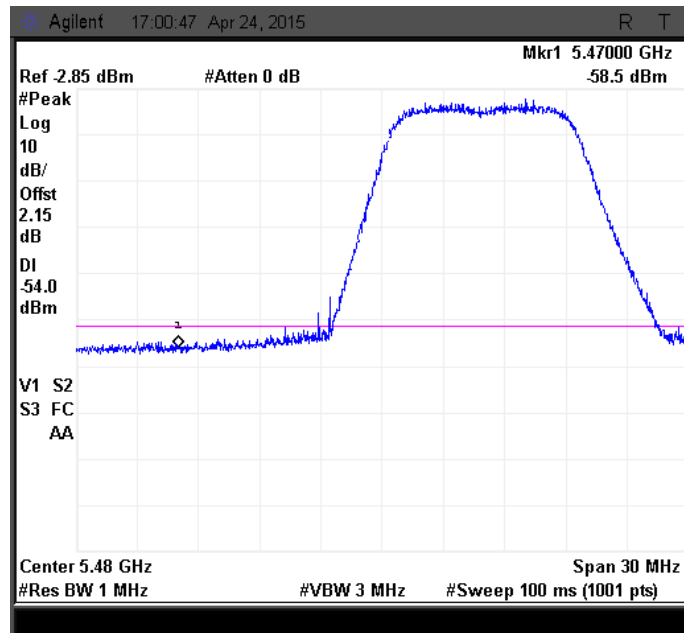


Figure 211: Band edge measured at Ch. 0-Peak

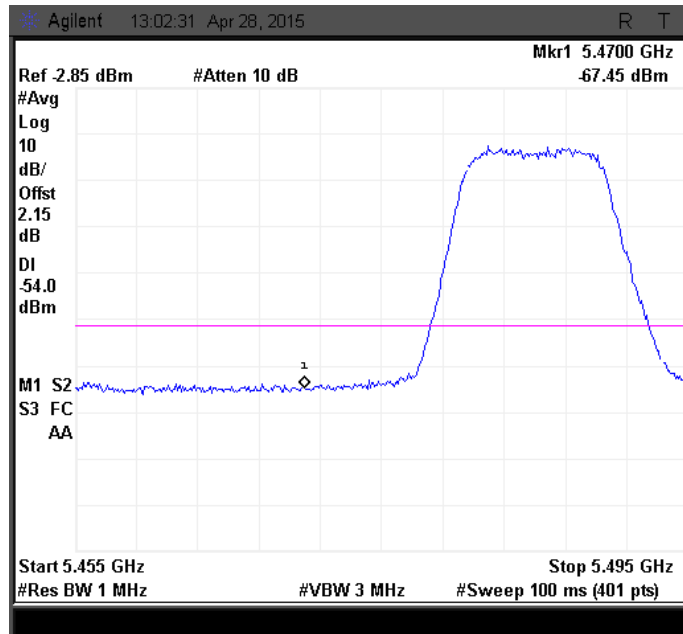


Figure 212: Band edge measured at Ch. 1-Avg

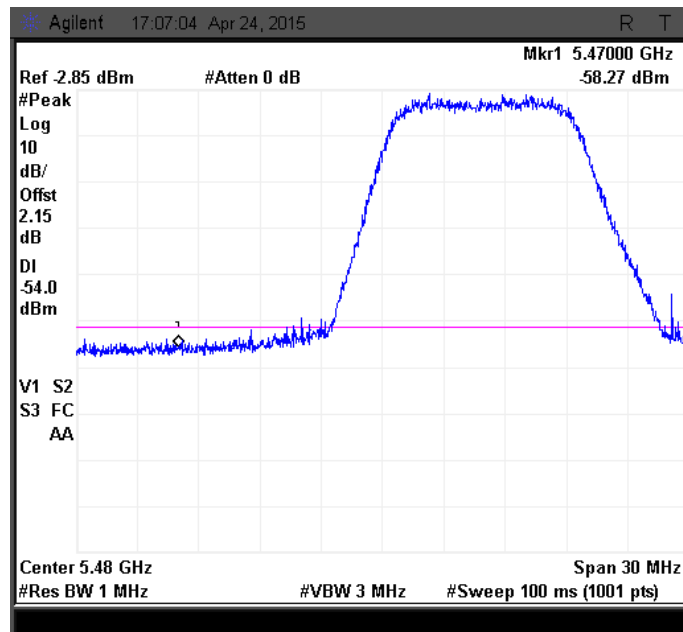


Figure 213: Band edge measured at Ch. 1-Peak

#### 5.3.6.7.4 10MHz MODULATION BW-HIGH CHANNEL\_5710 MHz

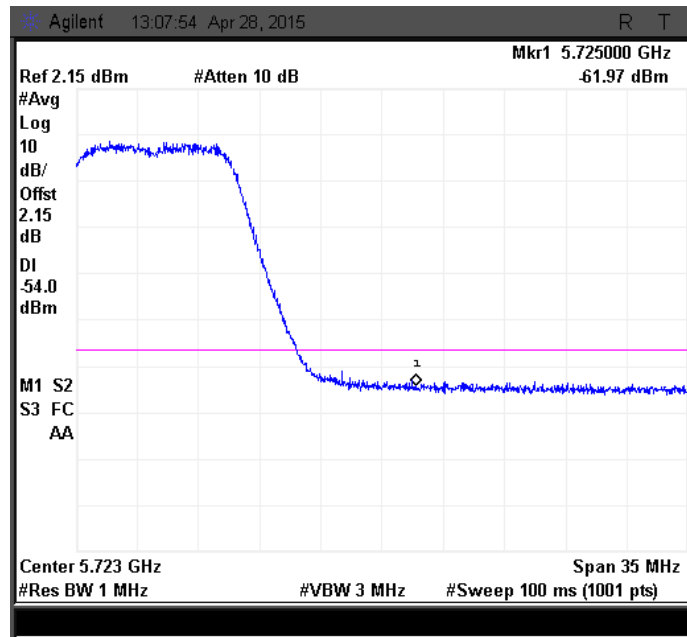


Figure 214: Band edge measured at Ch. 0-Avg

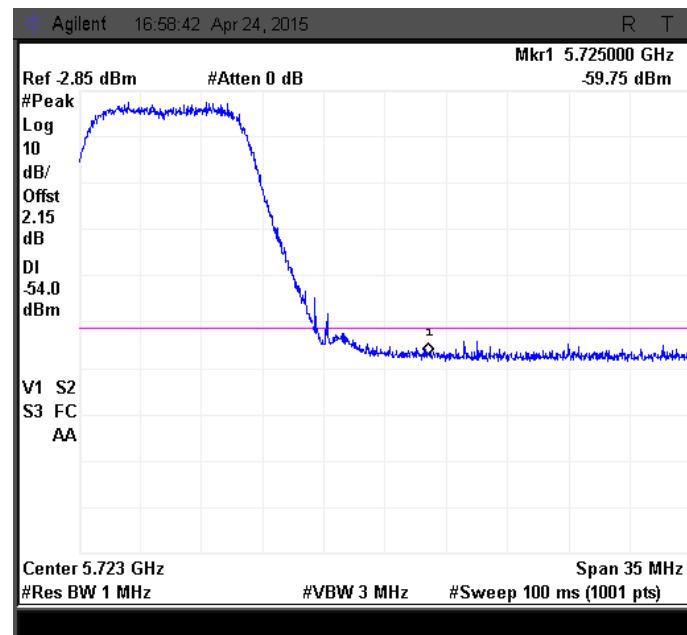


Figure 215: Band edge measured at Ch. 0-Peak

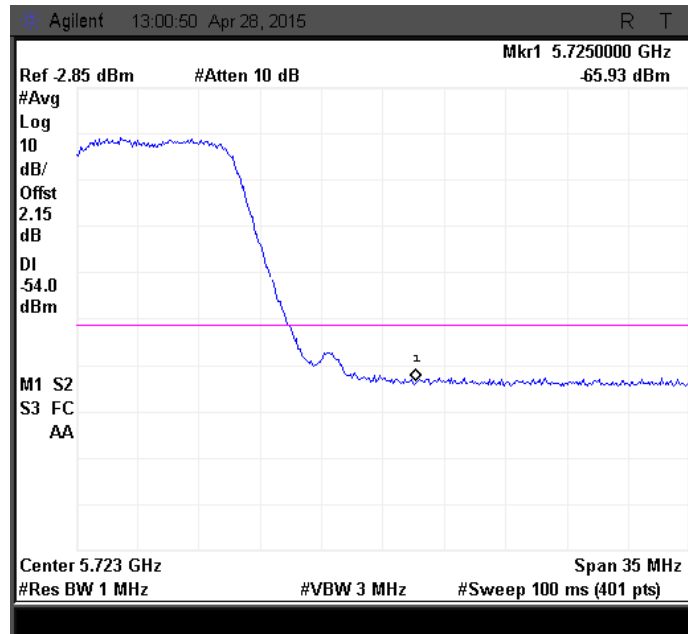


Figure 216: Band edge measured at Ch. 1-Avg

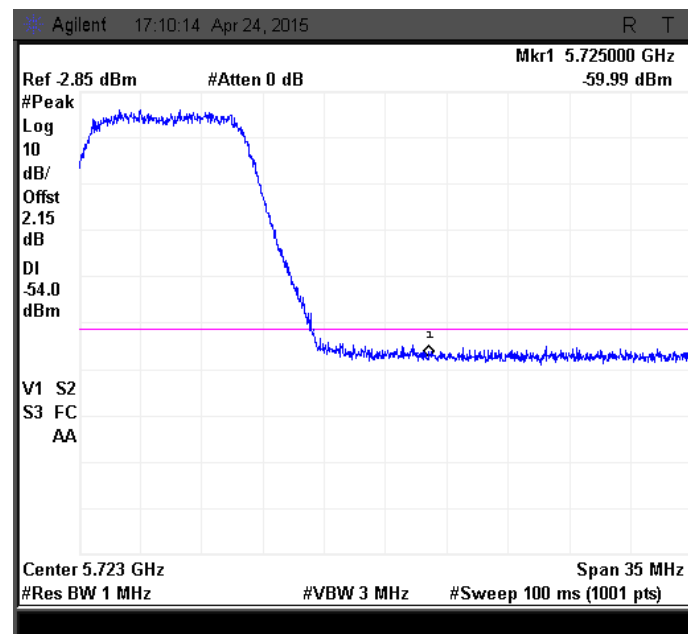


Figure 217: Band edge measured at Ch. 1-Peak

## 5.3.7 UNDESIRABLE EMISSION OUTSIDE THE INTENTIONAL BAND

### 5.3.7.1 TEST SPECIFICATION

<b>Test Standard</b>	47 CFR Ch. I (10–1–14 Ed), Part 15, Subpart C RSS-Gen, Issue 4, Nov 2014
<b>Test Procedure</b>	ANSI C63.10-2013
<b>Frequency Range</b>	9 kHz to 40GHz
<b>Resolution Bandwidth</b>	1MHz
<b>Video Bandwidth</b>	3MHz
<b>Sweep Time</b>	Auto
<b>Attenuation</b>	Auto
<b>Test Mode</b>	Conducted
<b>Detector</b>	Peak & Average
<b>Input Voltage</b>	120V AC
<b>Input Frequency</b>	60 Hz
<b>Temperature</b>	22.0°C
<b>Humidity</b>	56.0%
<b>Tested By</b>	Harsha K
<b>Test Date</b>	12 <sup>th</sup> Mar 2015 to 28 <sup>th</sup> Apr 2015

### 5.3.7.2 LIMITS

Standard	FCC Section	Antenna condition	Calculated Limit
47 CFR Ch. I (10–1–14 Ed), Part 15, Subpart C  RSS-Gen, Issue 4, Nov 2014	15.407 (b) (3)	2.15dBi Antenna	-32.15dBm/MHz
		17dBi Antenna	-47dBm/MHz
		24dBi dish	-54dBm/MHz

Limit as per standard is -27dBm/MHz. In this condition we have to consider MIMO condition & take 3dB Factor and also the antenna gain needs to be considered.

Calculated limit = -27dBm/MHz – 3 – Antenna gain

### 5.3.7.3 TEST SETUP

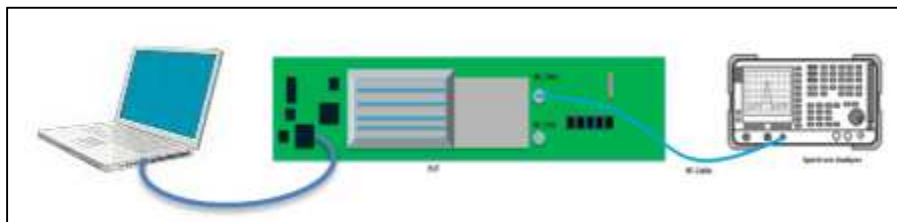


Figure 218: Typical test setup for Conducted Test setup



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#### 5.3.7.4 TEST PROCEDURE

The Conducted test was performed using the Spectrum analyzer. Measurements were done as per Sections H(1), H(2), H(3), H(4), H(5) & H(6) of **“789033 D01 General UNII Test Procedures Old Rules v01r04”**. The RF output of the EUT was connected to the input port of Spectrum analyzer using an attenuator. Captured the data from spectrum analyzer and compared with the limits specified in the standard.



### 5.3.7.5 RESULT (SUPPORTING GRAPHS / DATA) FOR BASIC CONDITION

#### 5.3.7.5.1 40MHz MODULATION BW - Low CHANNEL\_5495MHz

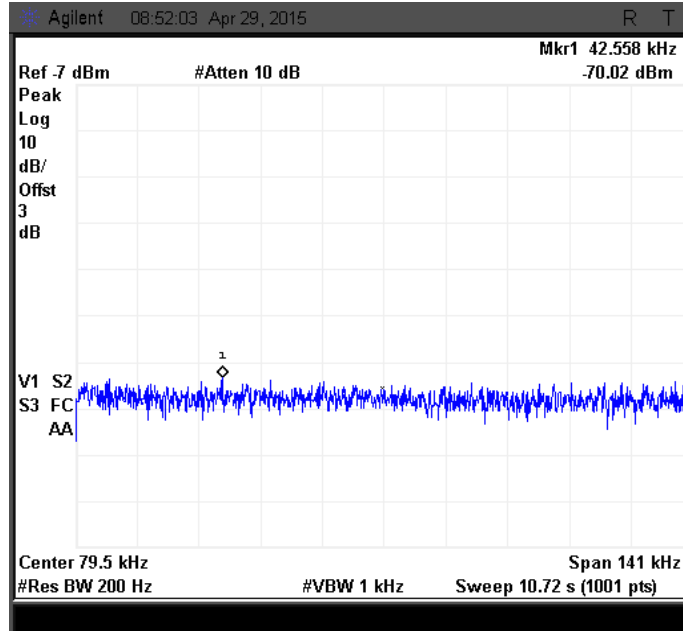


Figure 219: Spurious emission measured from 9 kHz to 150 kHz at Ch. 0-Peak

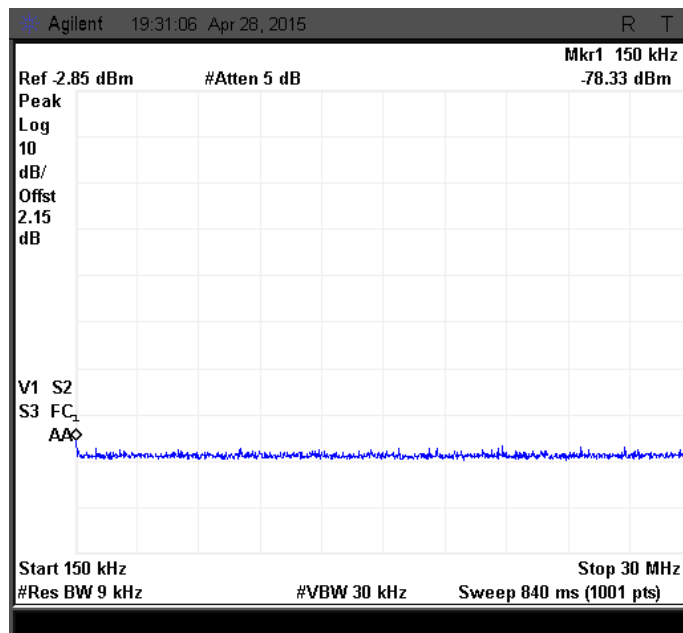


Figure 220: Spurious emission measured from 150 kHz to 30 MHz at Ch. 0-Peak

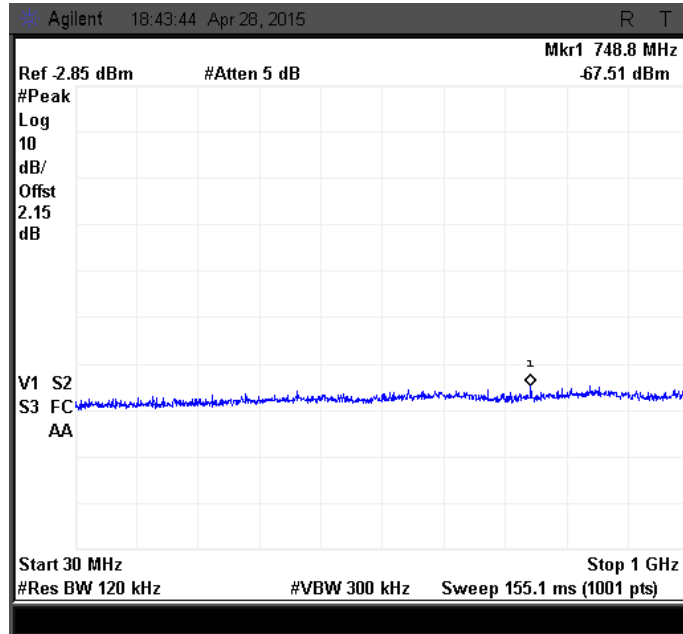


Figure 221: Spurious emission measured from 30 MHz to 1GHz at Ch. 0-Peak

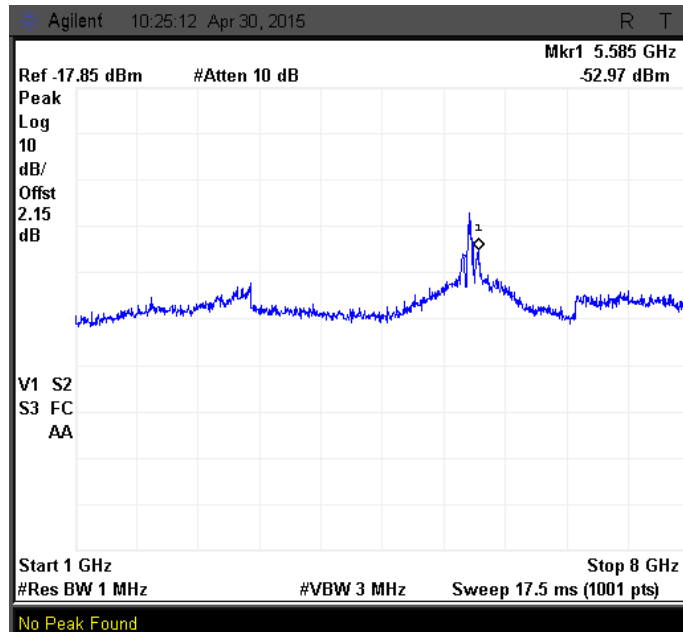


Figure 222: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Peak

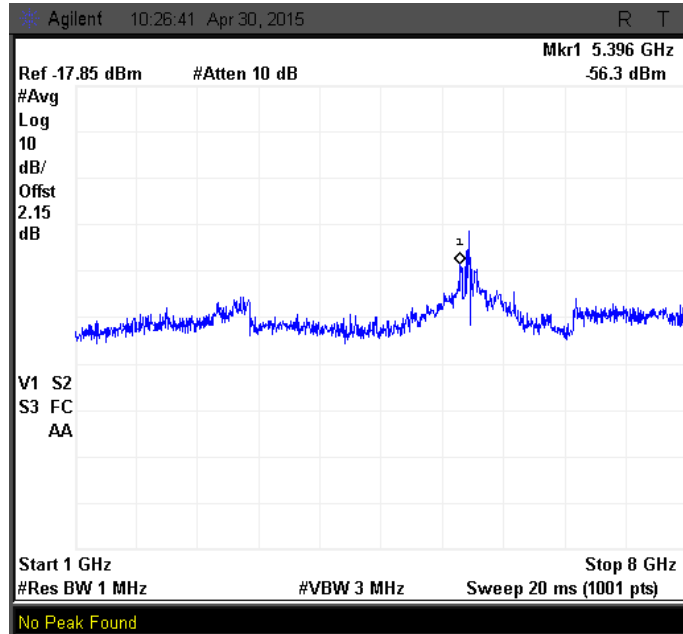


Figure 223: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Average

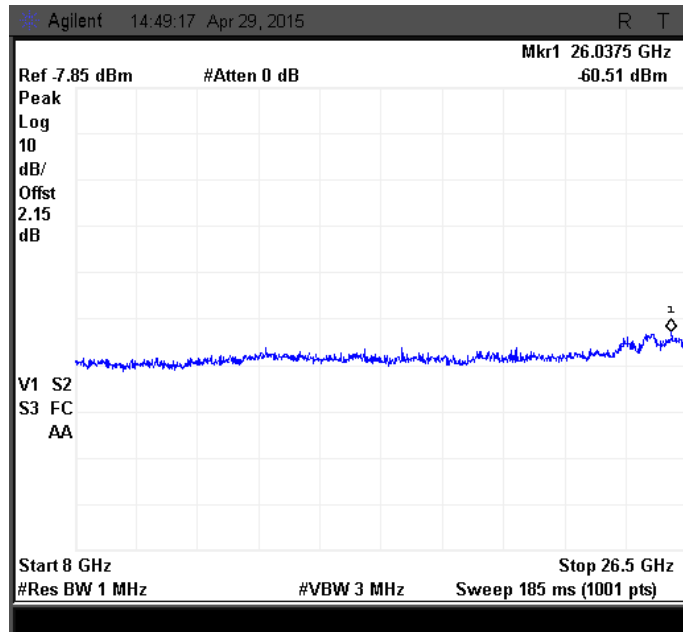


Figure 224: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Peak

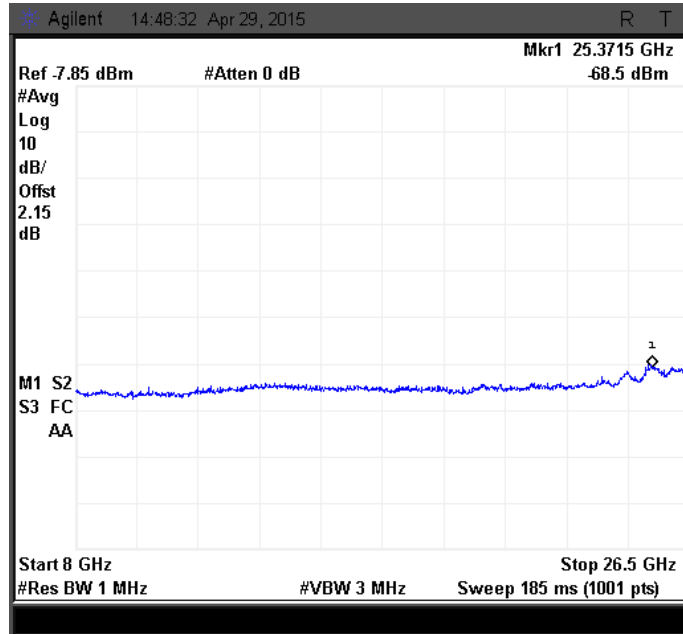


Figure 225: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Average

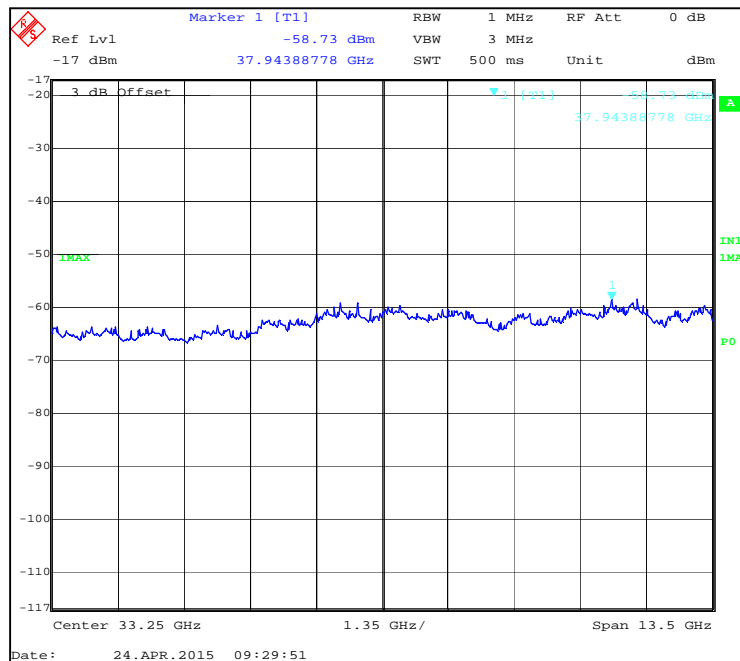


Figure 226: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Peak

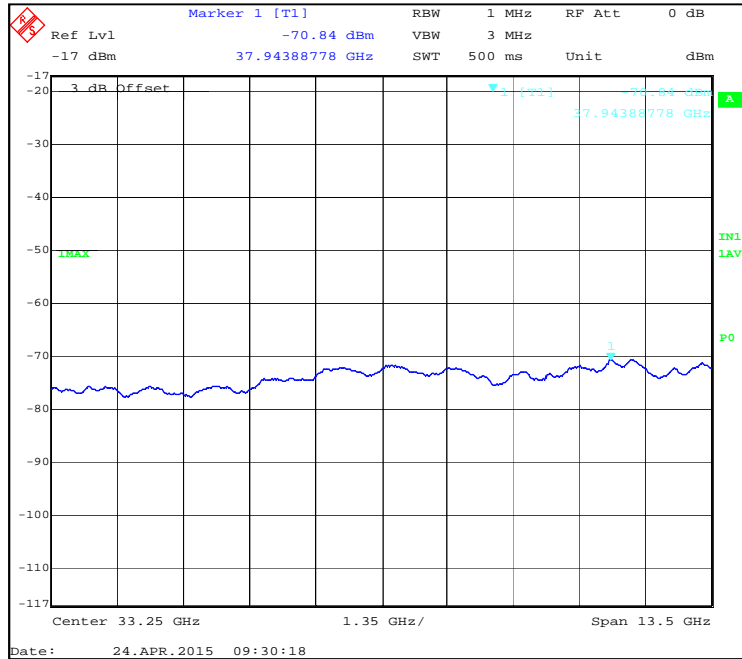


Figure 227: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Avg

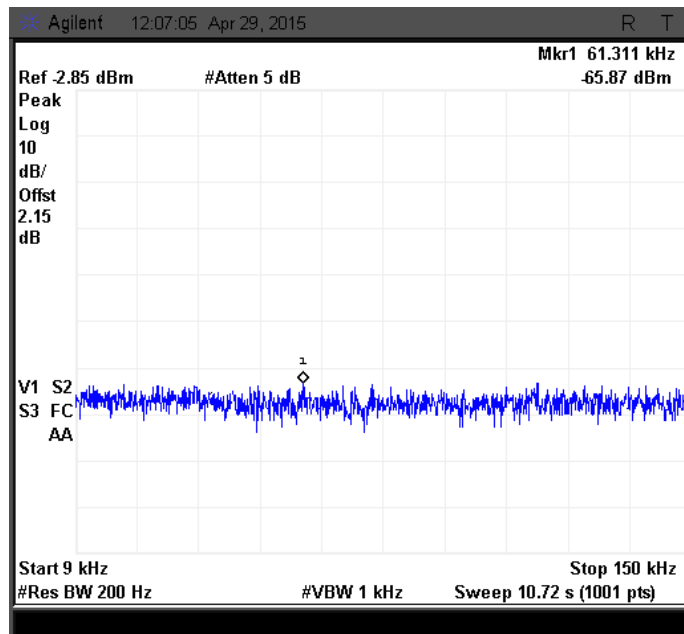


Figure 228: Spurious emission measured from 9 kHz to 150 kHz at Ch. 1-Peak

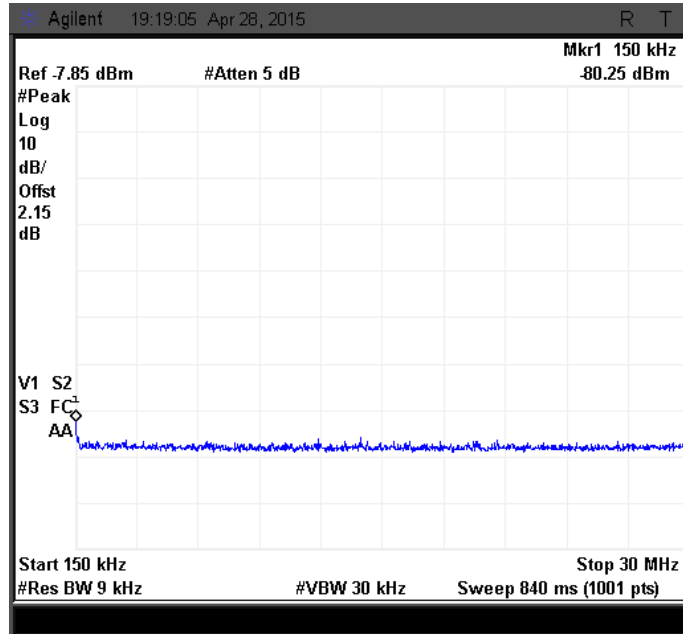


Figure 229: Spurious emission measured from 150 kHz to 30 MHz at Ch. 1-Peak

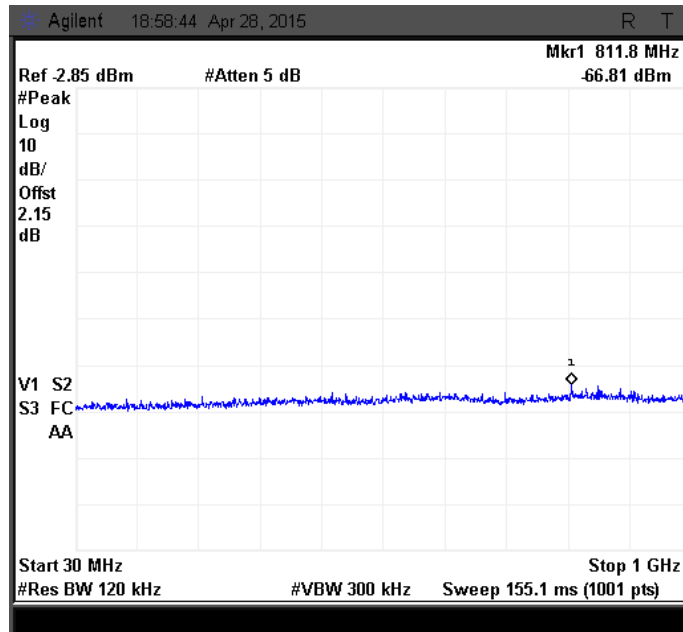


Figure 230: Spurious emission measured from 30 MHz to 1 GHz at Ch. 1-Peak

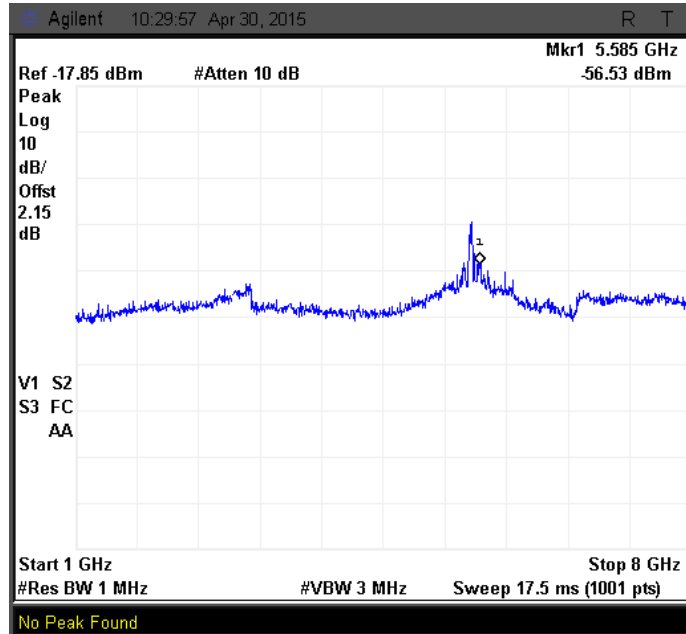


Figure 231: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Peak

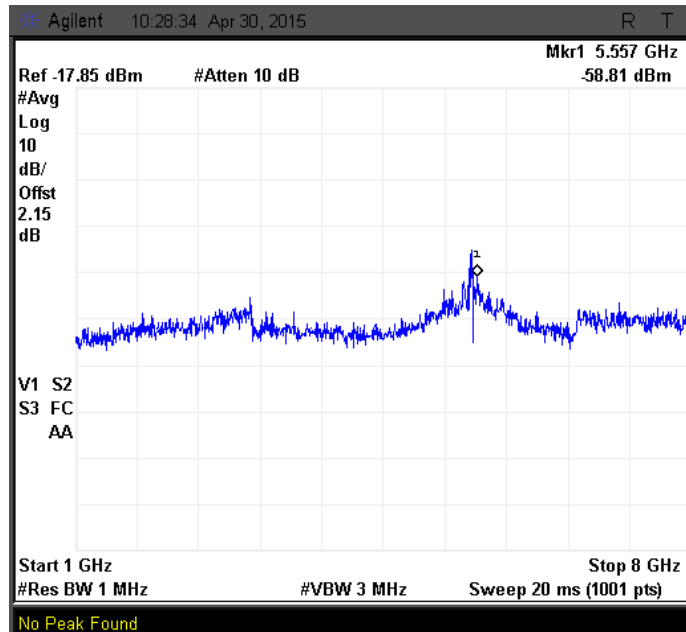


Figure 232: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Average

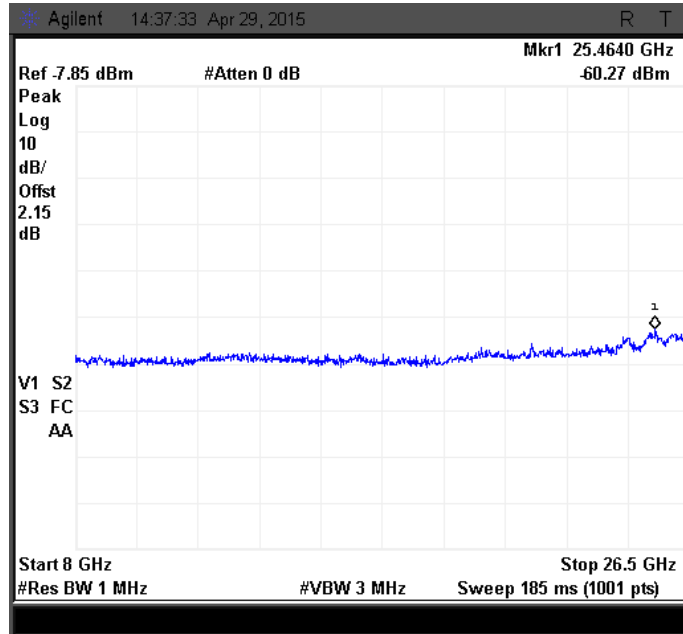


Figure 233: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Peak

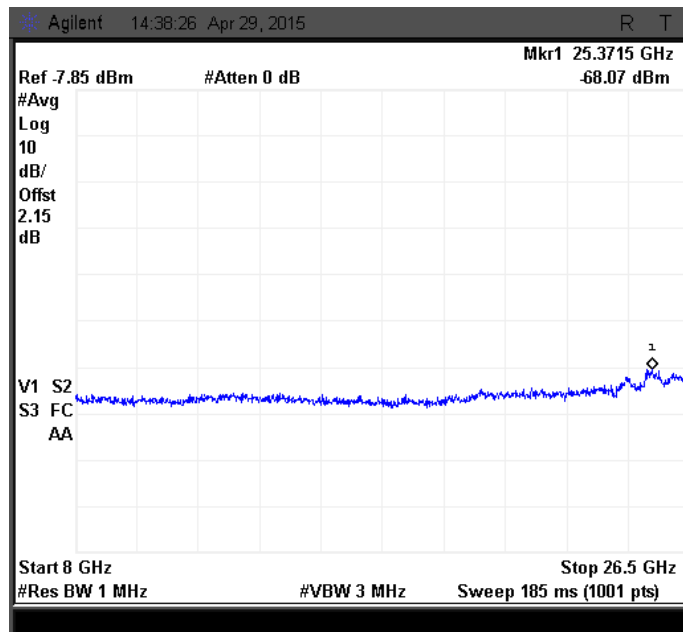


Figure 234: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Average



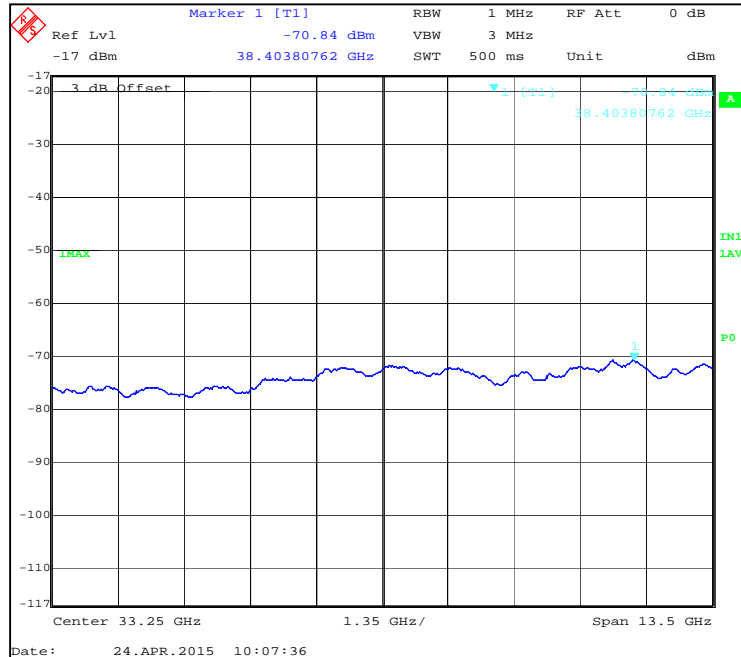


Figure 235: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Avg

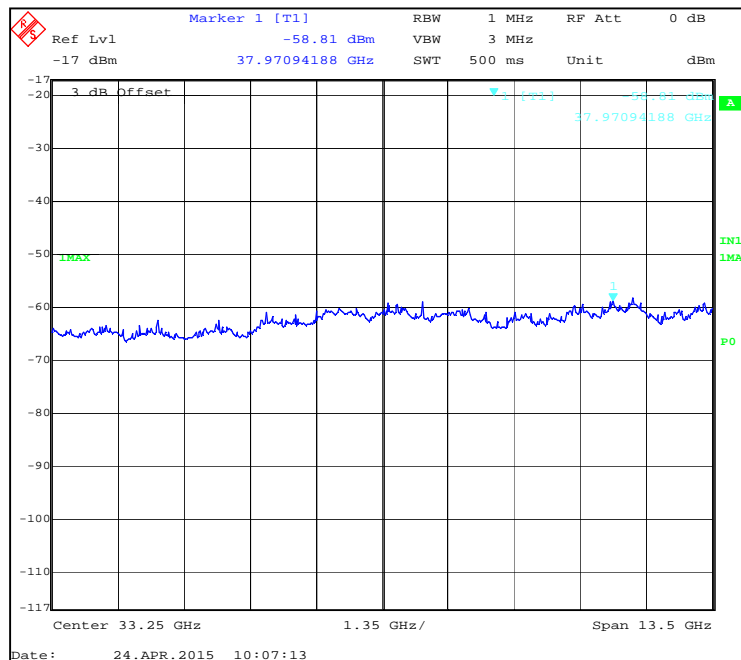


Figure 236: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Peak

### 5.3.7.5.2 40MHz MODULATION BW - MID CHANNEL\_5550MHZ

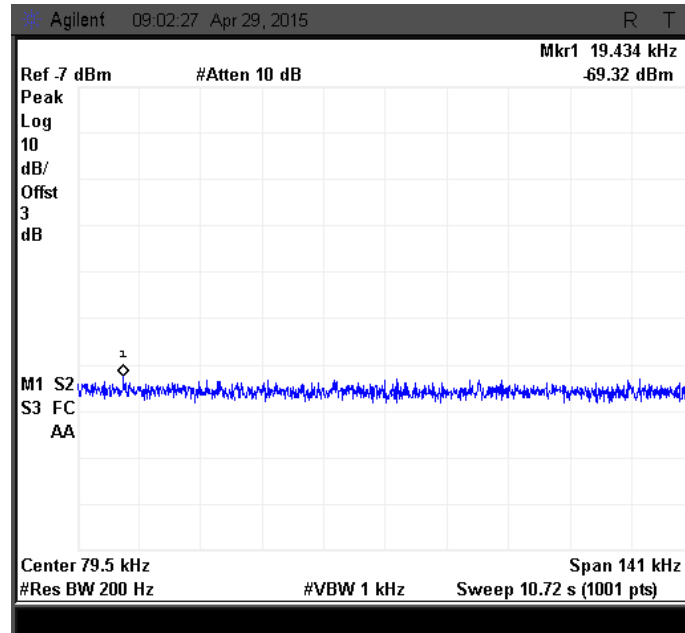


Figure 237: Spurious emission measured from 9 kHz to 150 kHz at Ch. 0-Peak

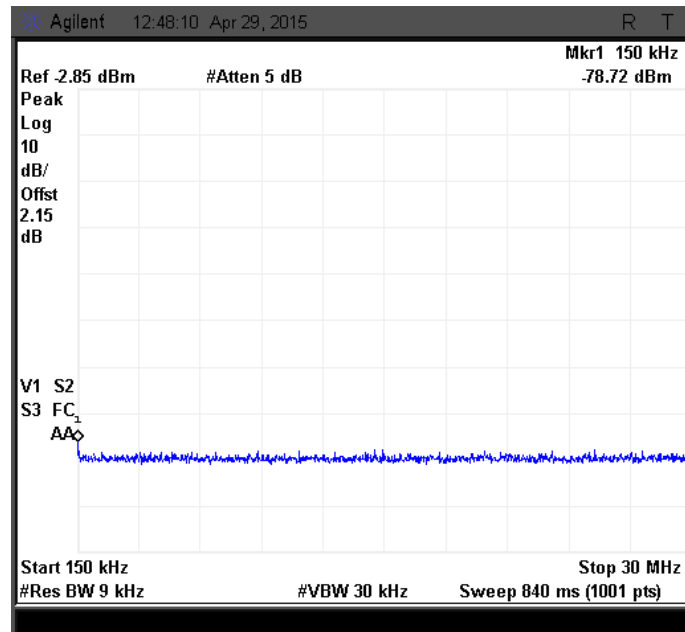


Figure 238: Spurious emission measured from 150 kHz to 30 MHz at Ch. 0-Peak

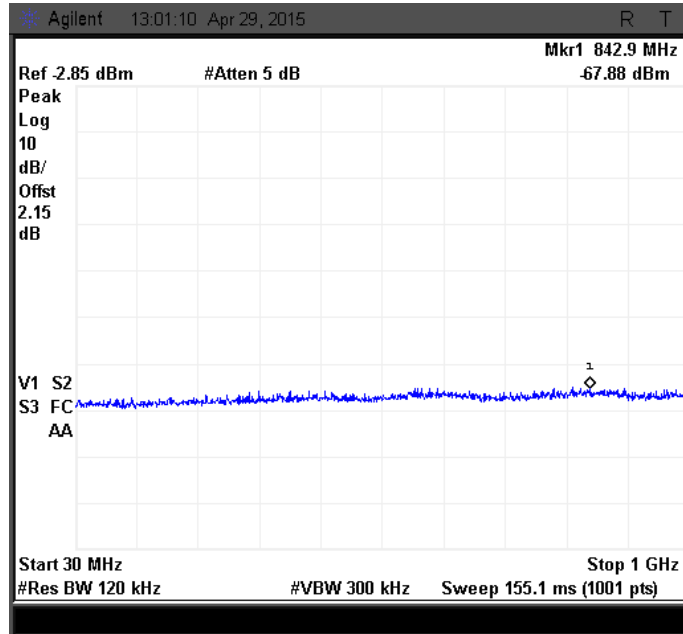


Figure 239: Spurious emission measured from 30 MHz to 1 GHz at Ch. 0-Peak

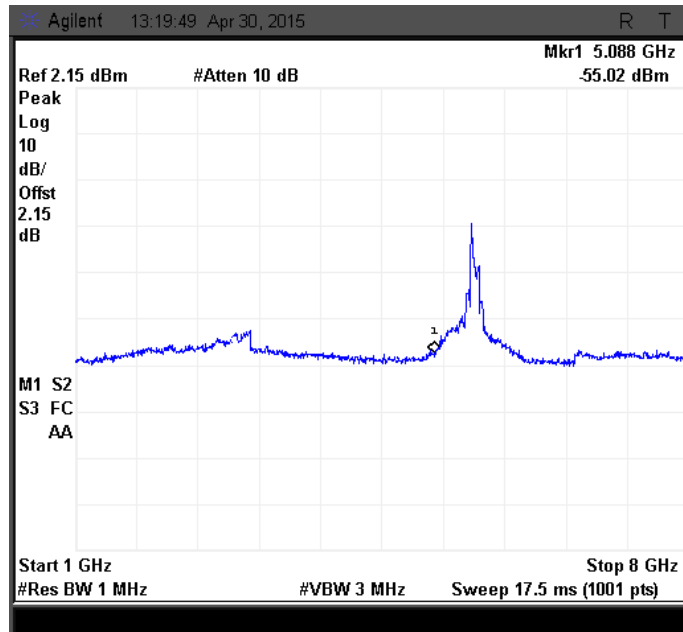


Figure 240: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Peak

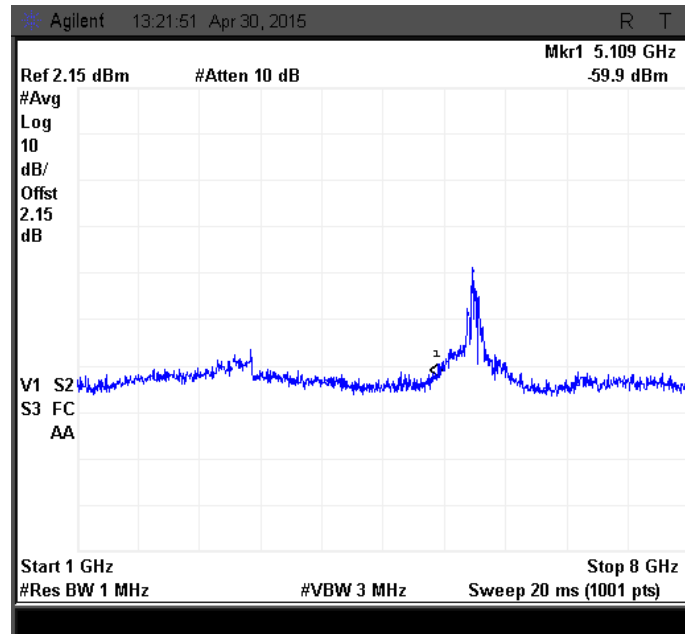


Figure 241: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Average

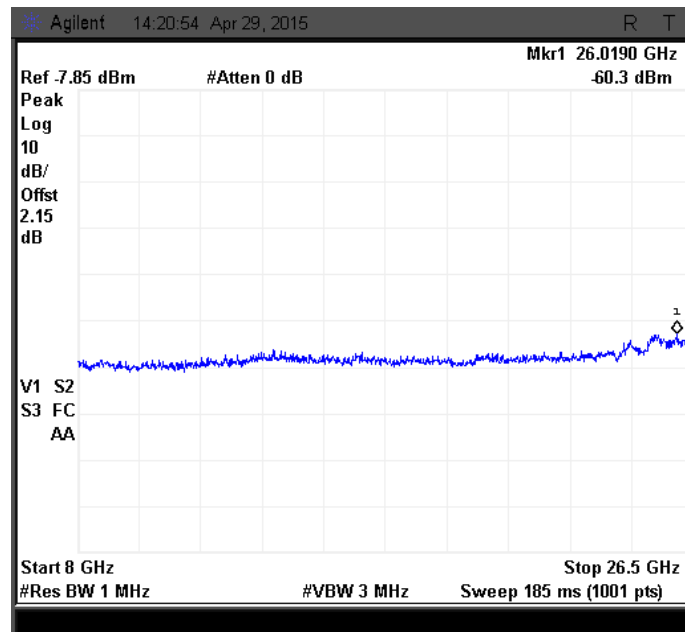
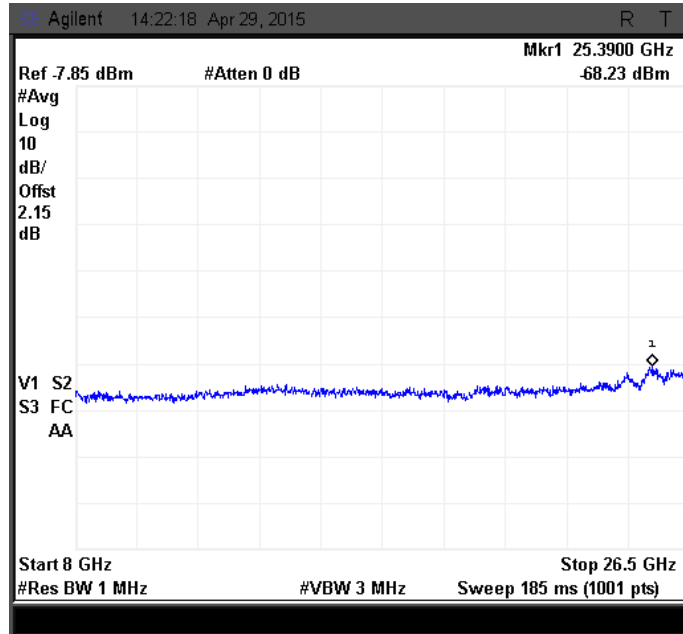
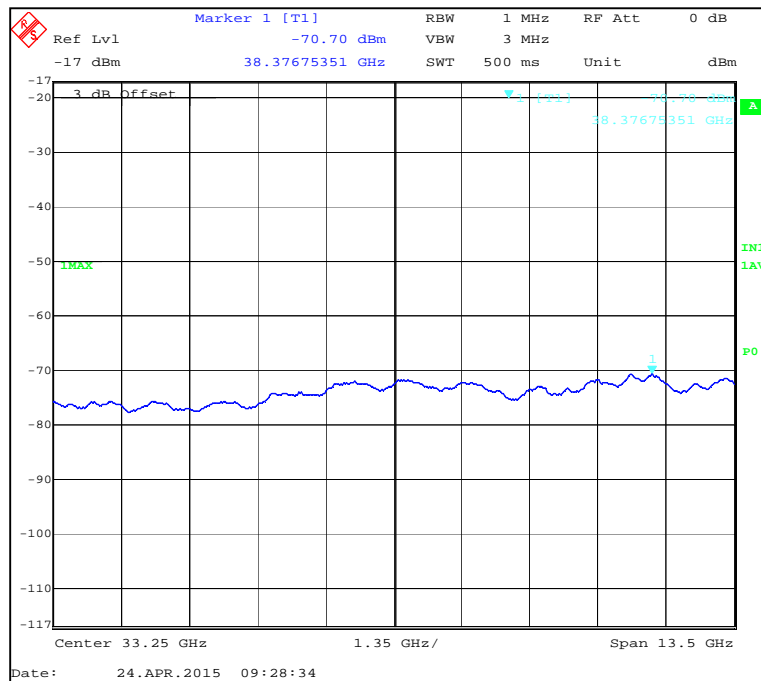


Figure 242: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Peak



**Figure 243: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Average**



**Figure 244: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Average**

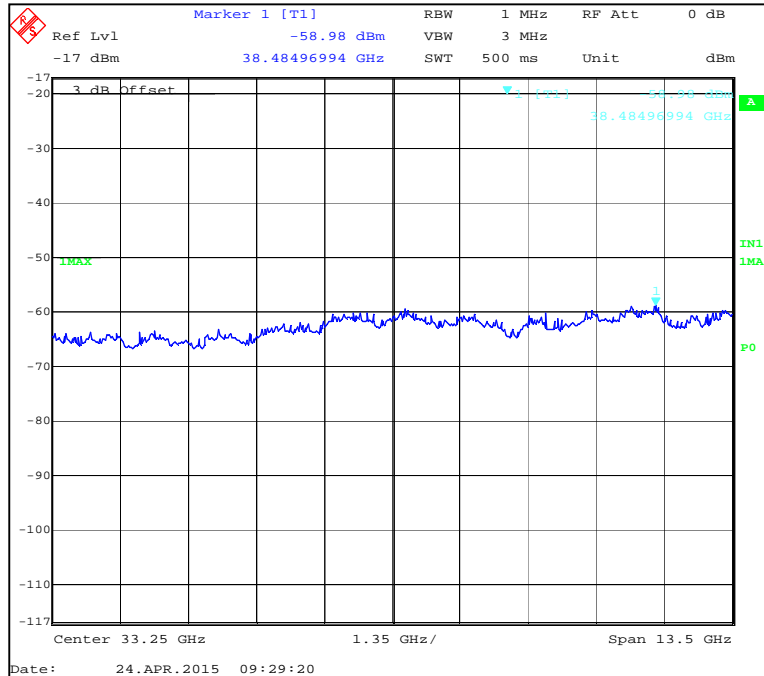


Figure 245: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Peak

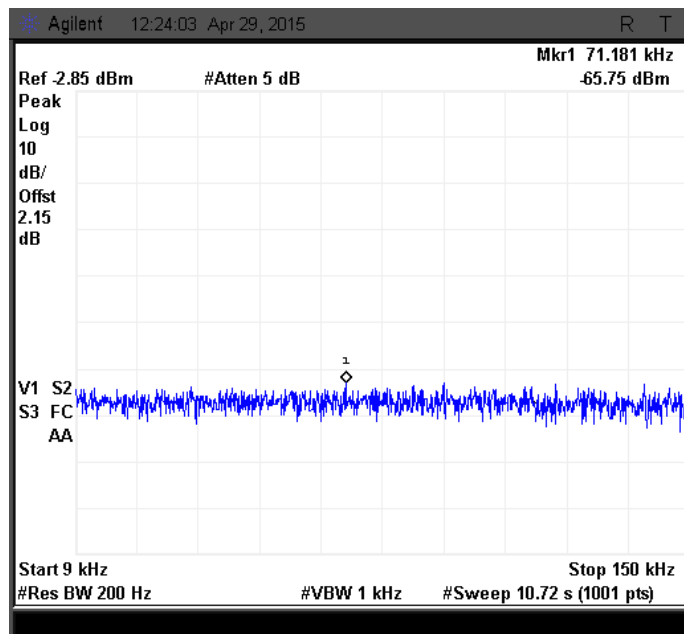


Figure 246: Spurious emission measured from 9 kHz to 150 kHz at Ch. 1-Peak

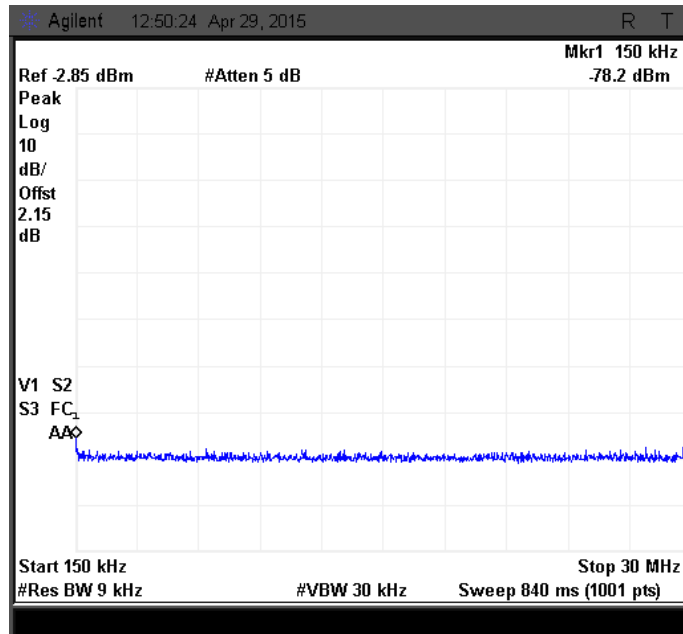


Figure 247: Spurious emission measured from 150 kHz to 30 MHz at Ch. 1-Peak

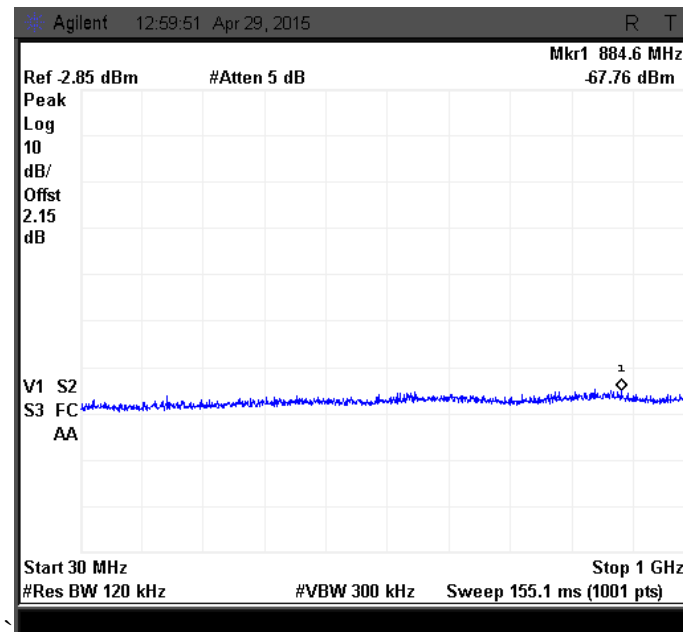


Figure 248: Spurious emission measured from 30 MHz to 1 GHz at Ch. 1-Peak

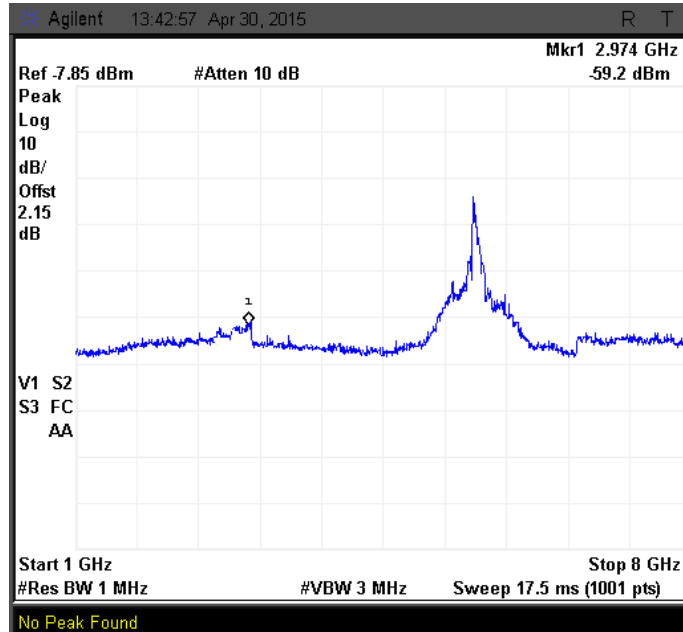


Figure 249: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Peak

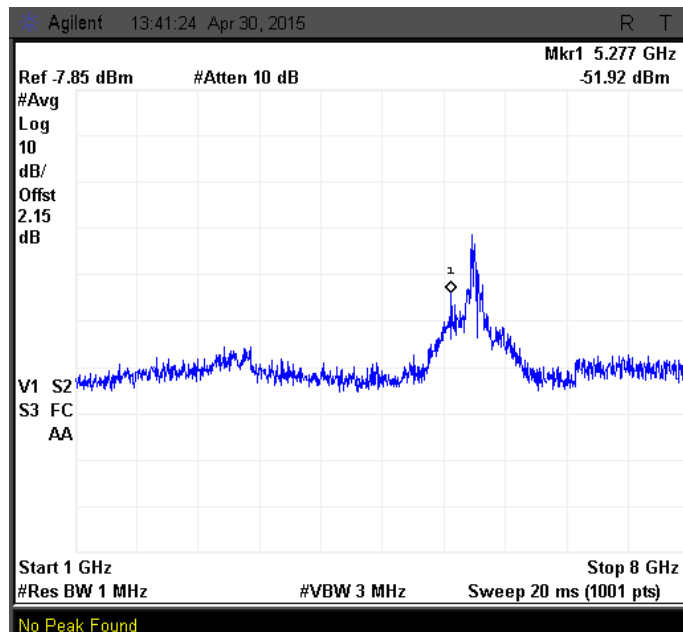


Figure 250: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Average



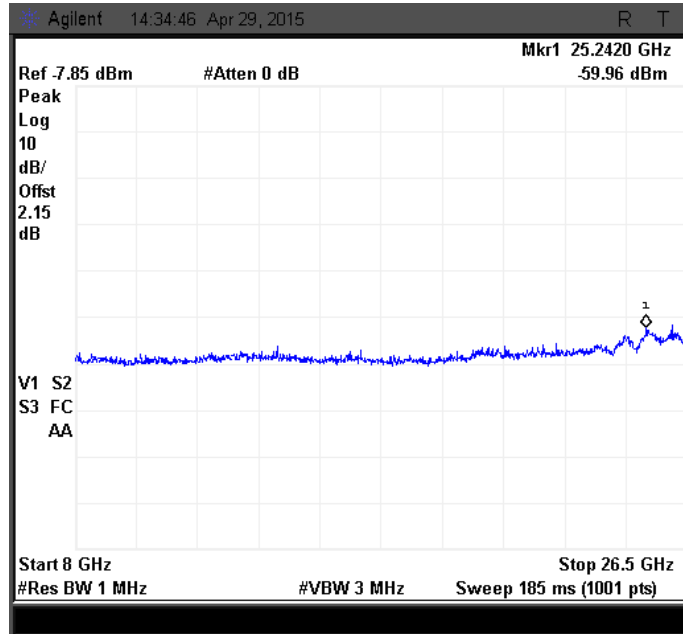


Figure 251: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Peak

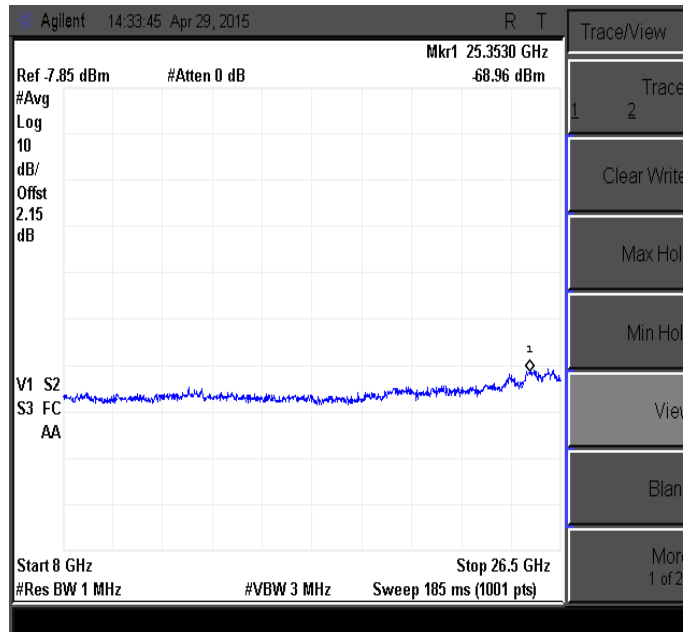
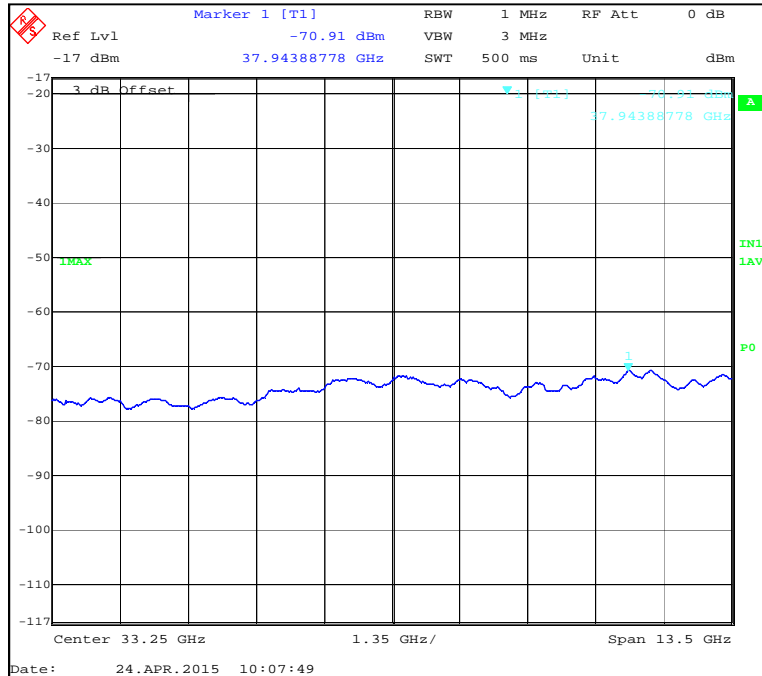
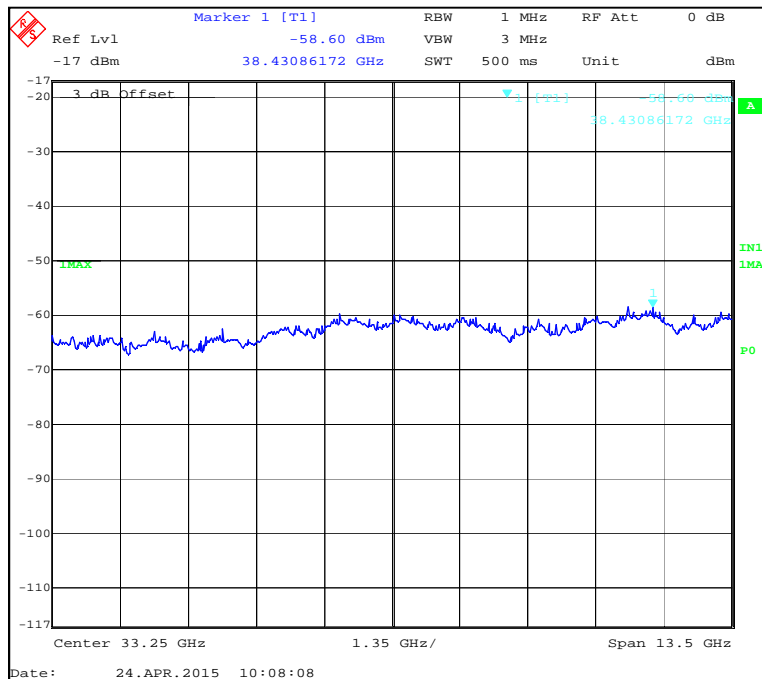


Figure 252: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Average



**Figure 253: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Average**



**Figure 254: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Peak**

### 5.3.7.5.3 40MHz MODULATION BW - HIGH CHANNEL\_5700MHz

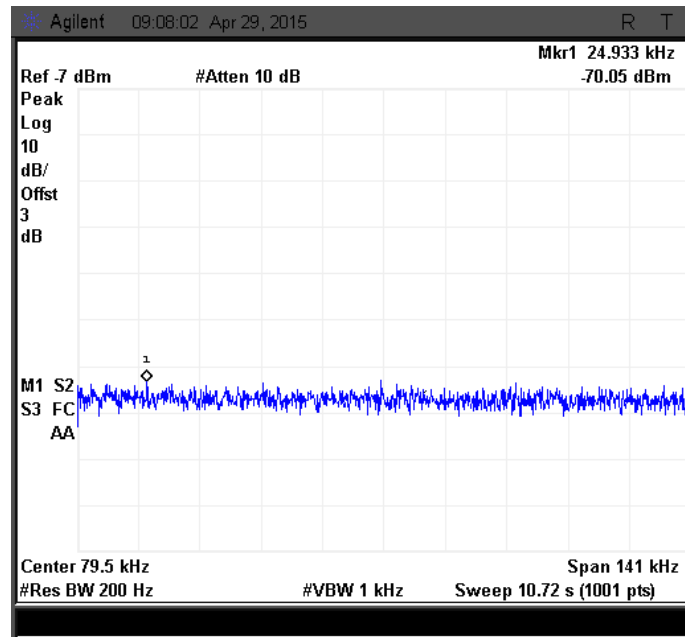


Figure 255: Spurious emission measured from 9 kHz to 150 kHz at Ch. 0-Peak

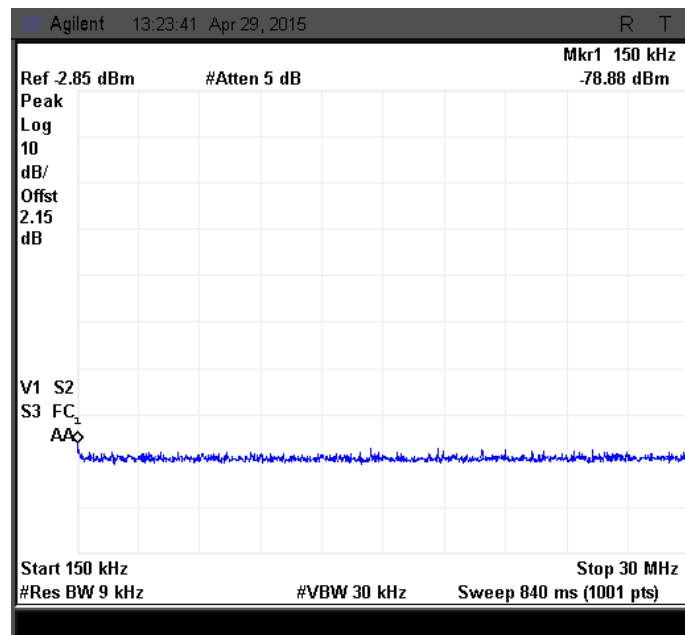


Figure 256: Spurious emission measured from 150 kHz to 30 MHz at Ch. 0-Peak

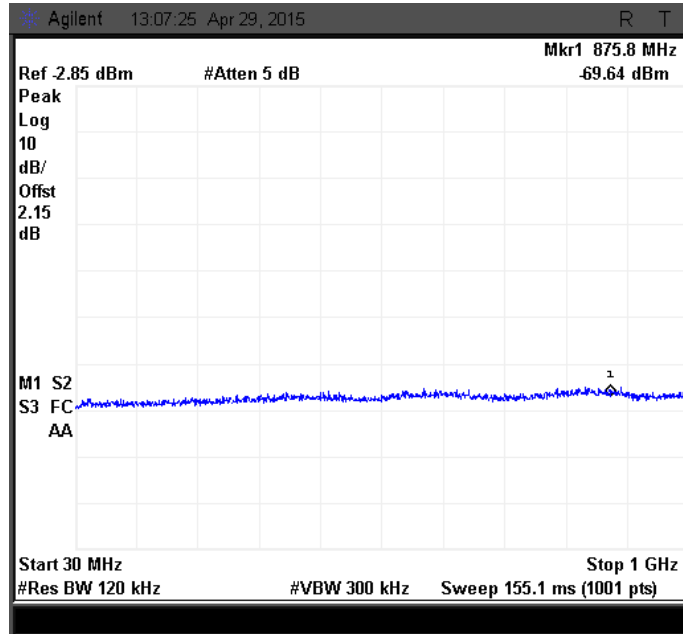


Figure 257: Spurious emission measured from 30 MHz to 1 GHz at Ch. 0-Peak

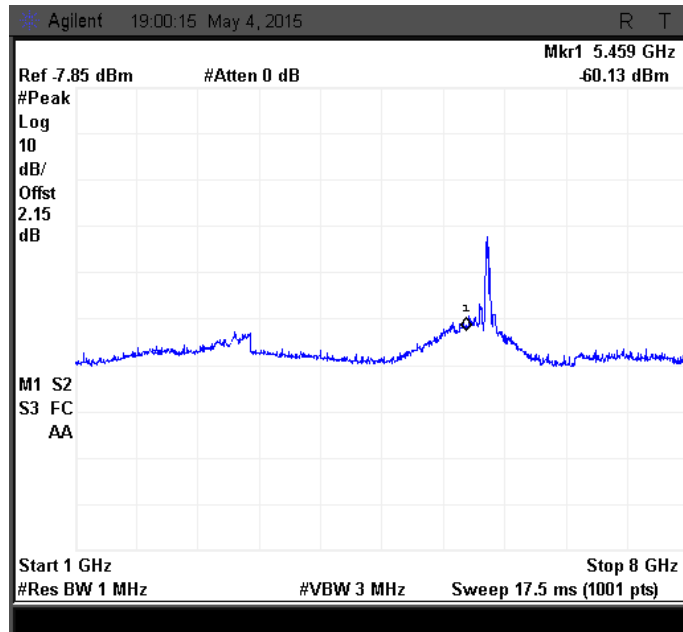


Figure 258: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Peak

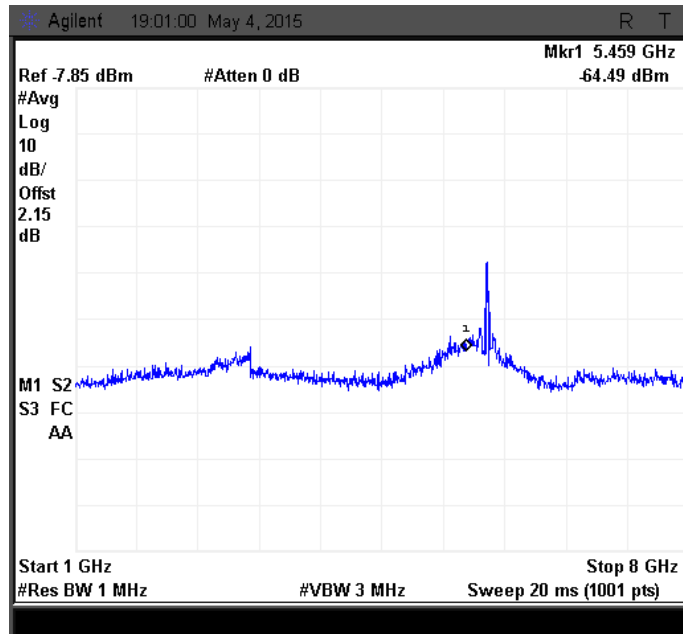


Figure 259: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Average

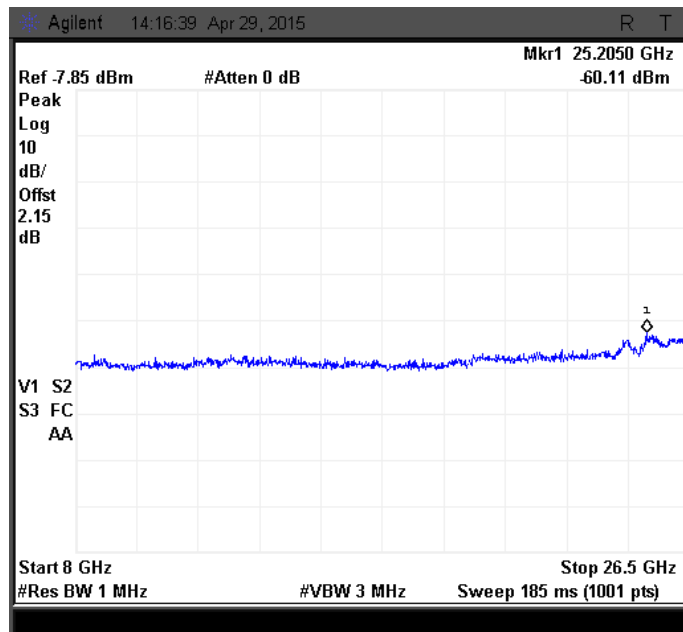


Figure 260: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Peak

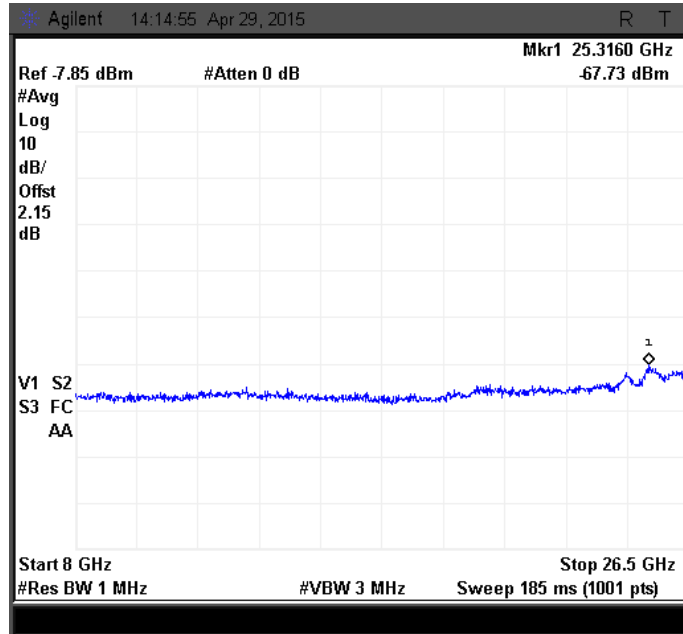


Figure 261: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Average

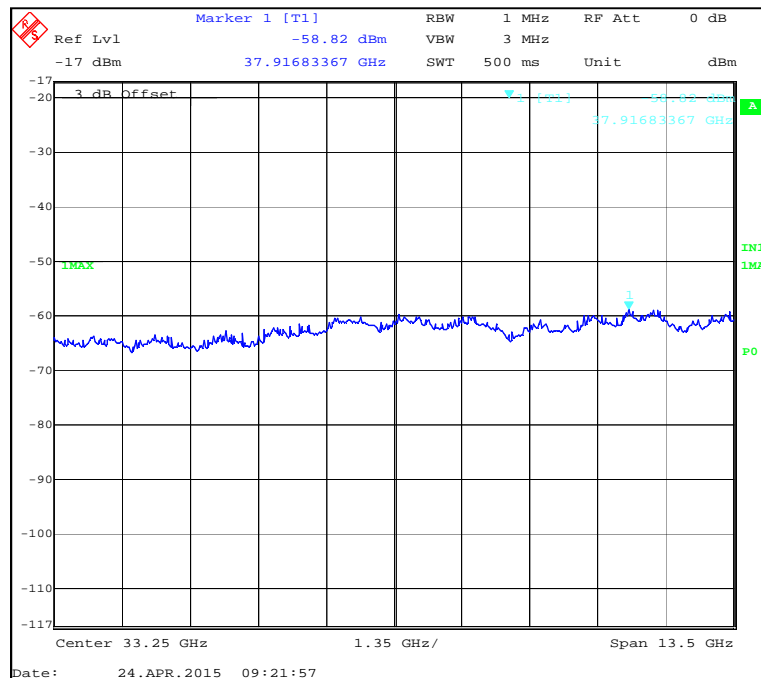
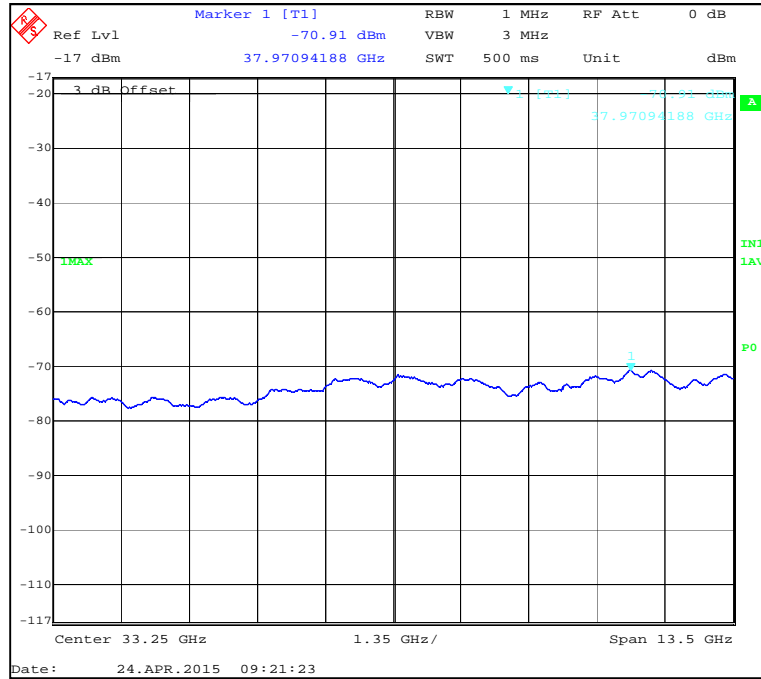
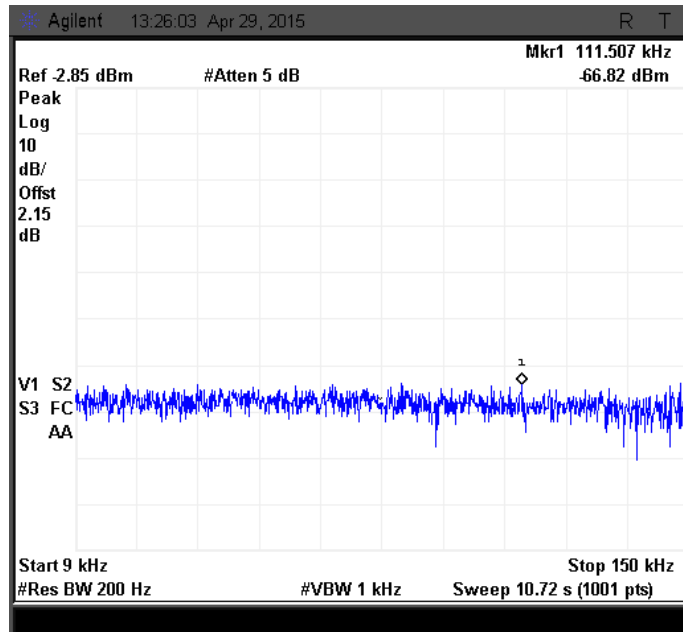


Figure 262: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Peak



**Figure 263: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Average**



**Figure 264: Spurious emission measured from 9 kHz to 150 kHz at Ch. 1-Peak**

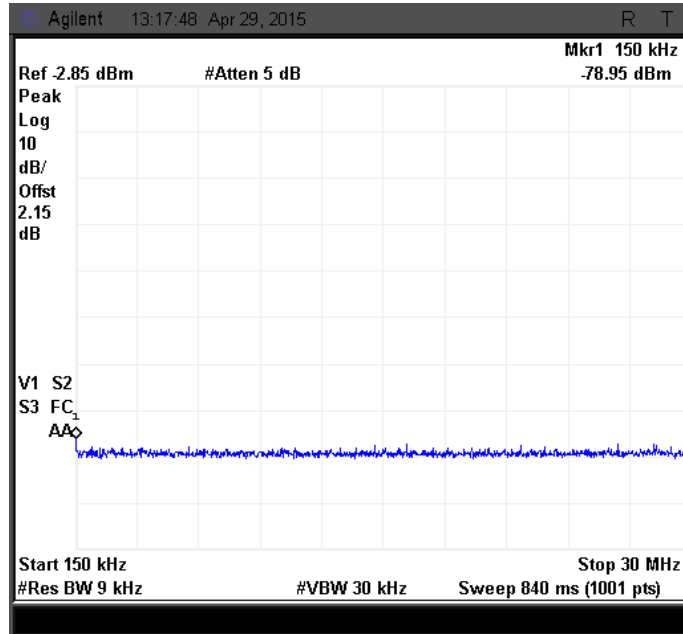


Figure 265: Spurious emission measured from 150 kHz to 30 MHz at Ch. 1-Peak

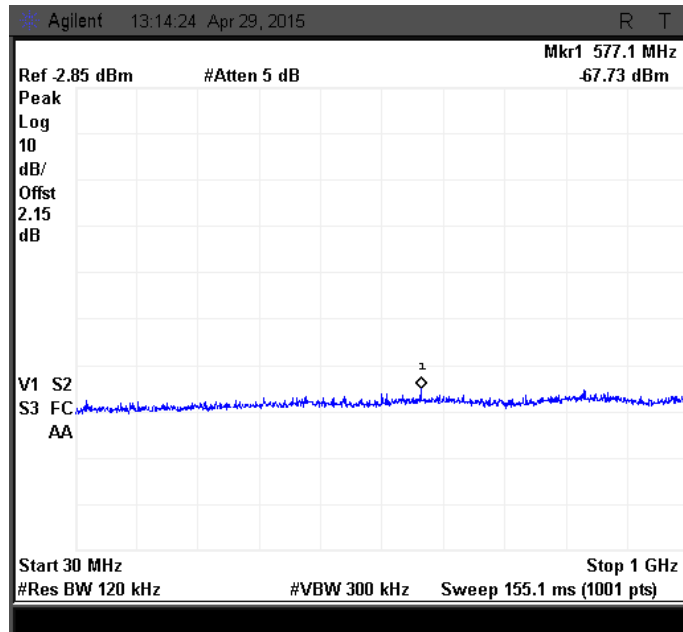


Figure 266: Spurious emission measured from 30 MHz to 1 GHz at Ch. 1-Peak



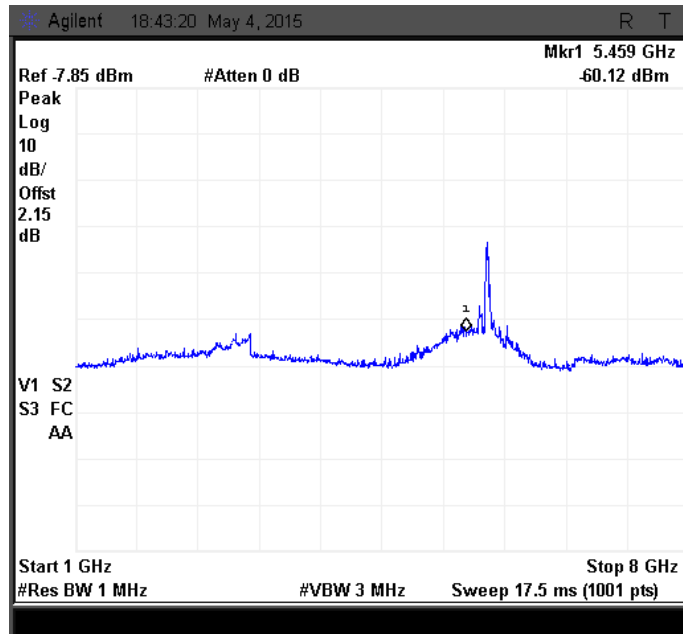


Figure 267: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Peak

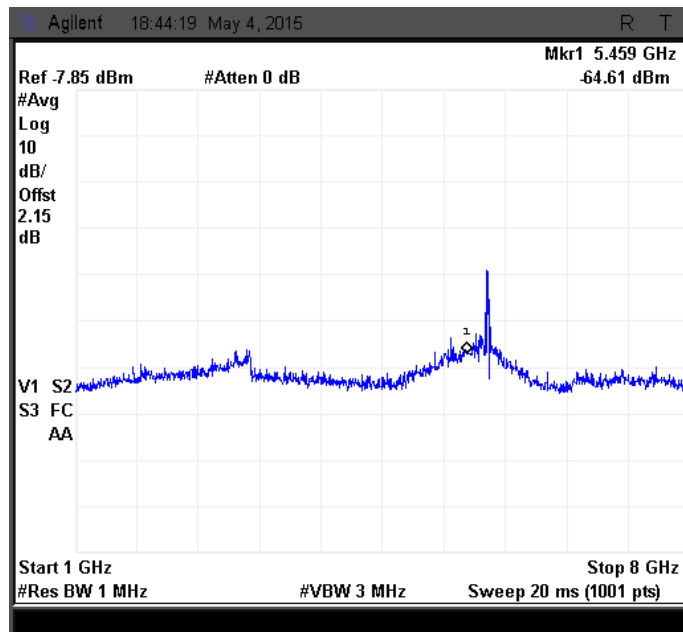


Figure 268: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Average

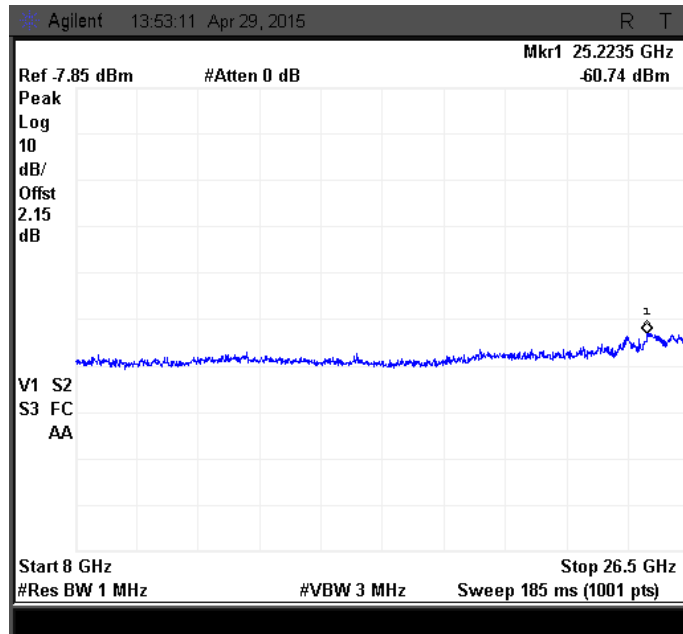


Figure 269: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Peak

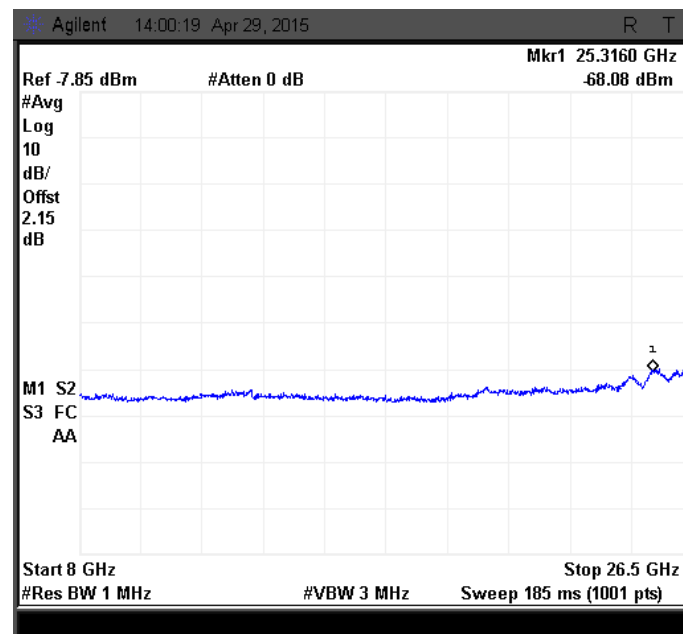
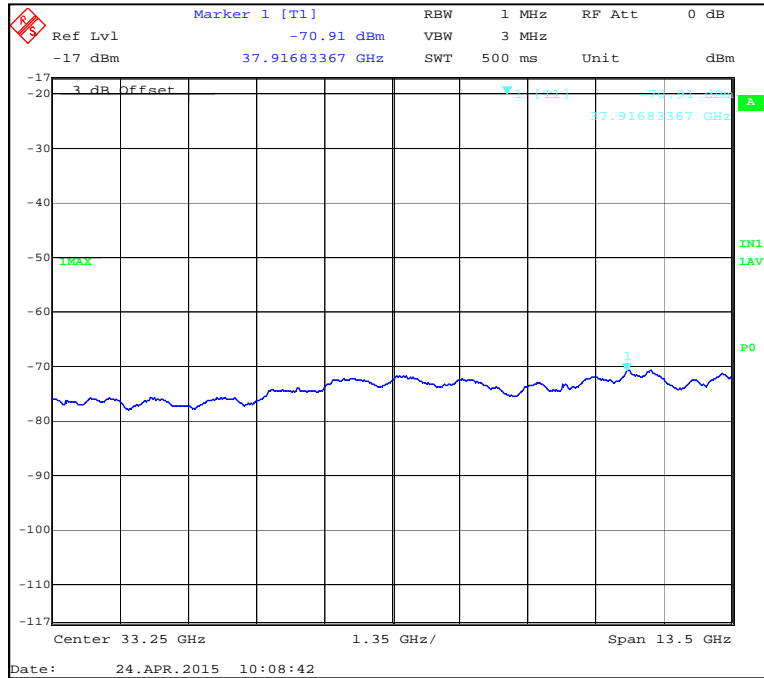
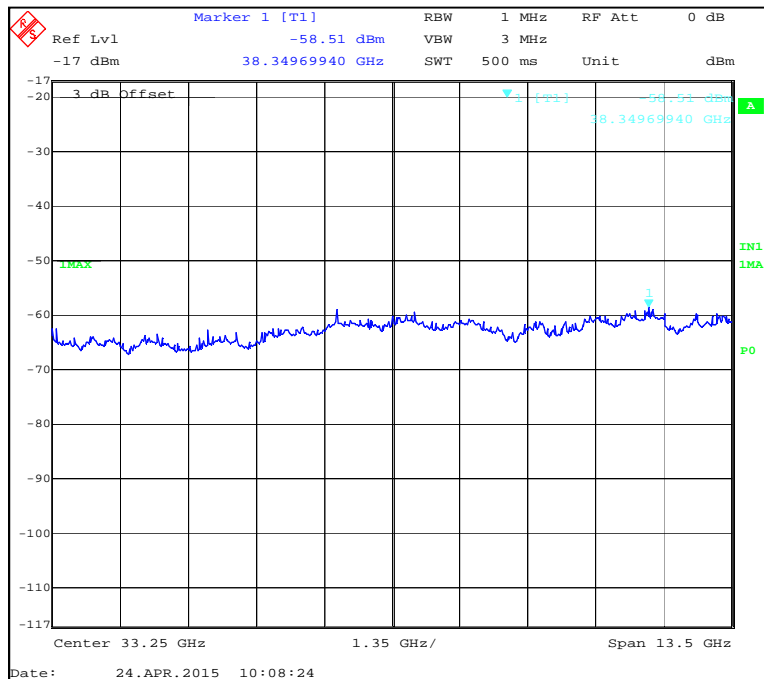


Figure 270: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Average



**Figure 271: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Average**



**Figure 272: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Peak**

#### 5.3.7.5.4 10MHz MODULATION BW - LOW CHANNEL\_5485 MHz

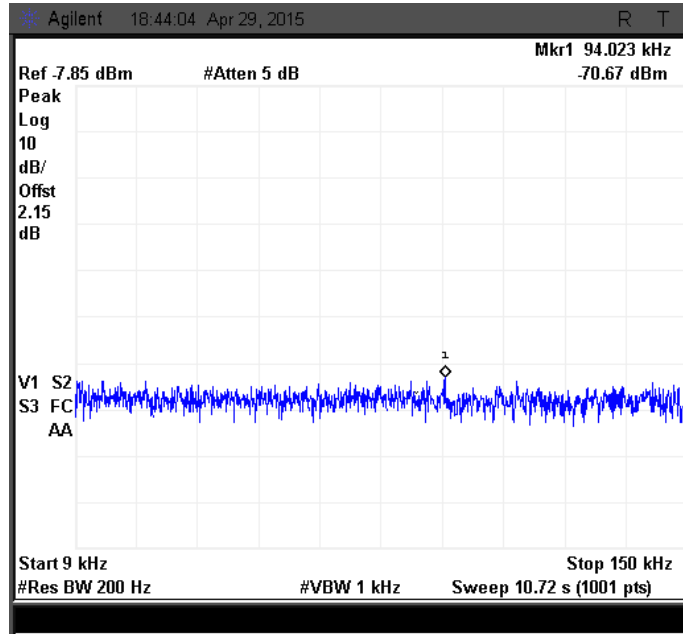


Figure 273: Spurious emission measured from 9 kHz to 150 kHz at Ch. 0-Peak

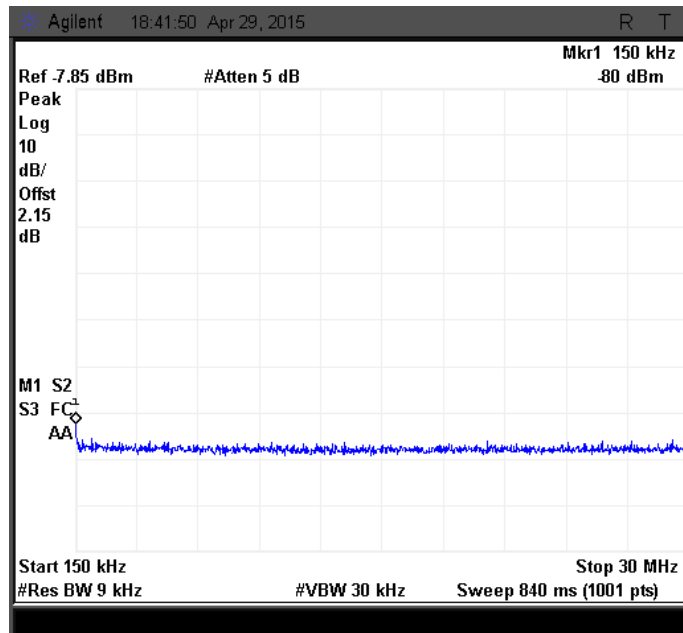


Figure 274: Spurious emission measured from 150 kHz to 30 MHz at Ch. 0-Peak

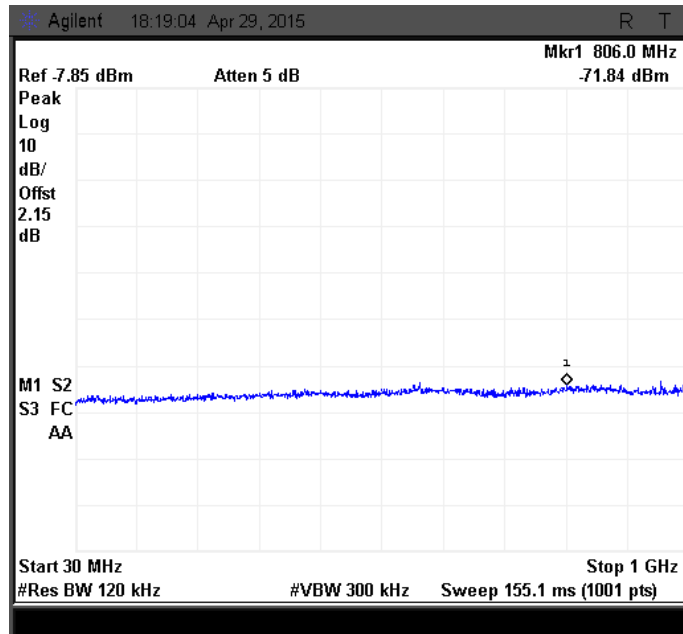


Figure 275: Spurious emission measured from 30 MHz to 1 GHz at Ch. 0-Peak

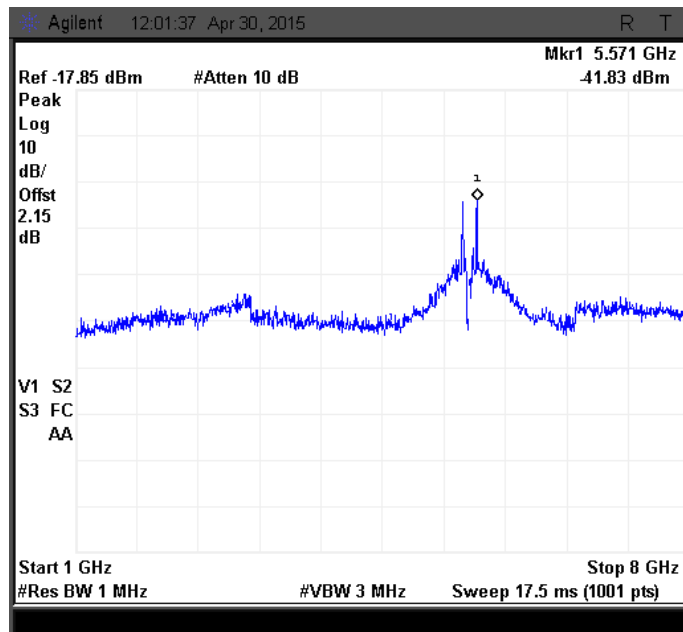


Figure 276: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Peak

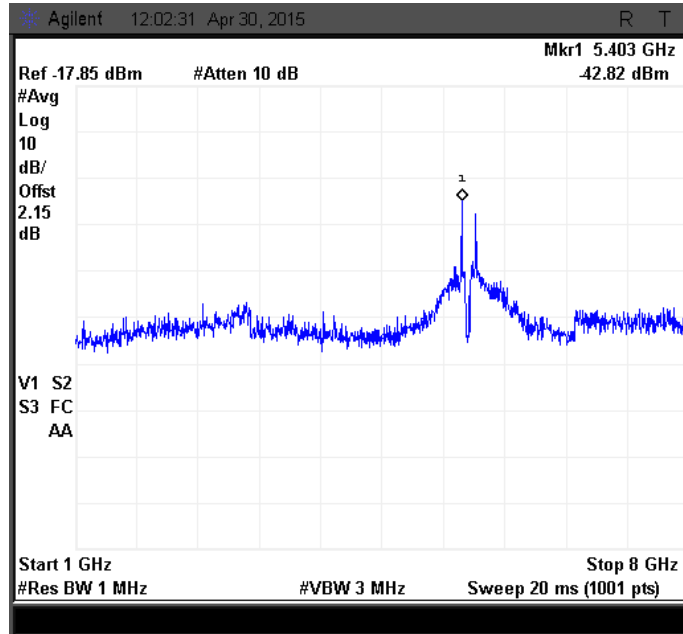


Figure 277: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Average

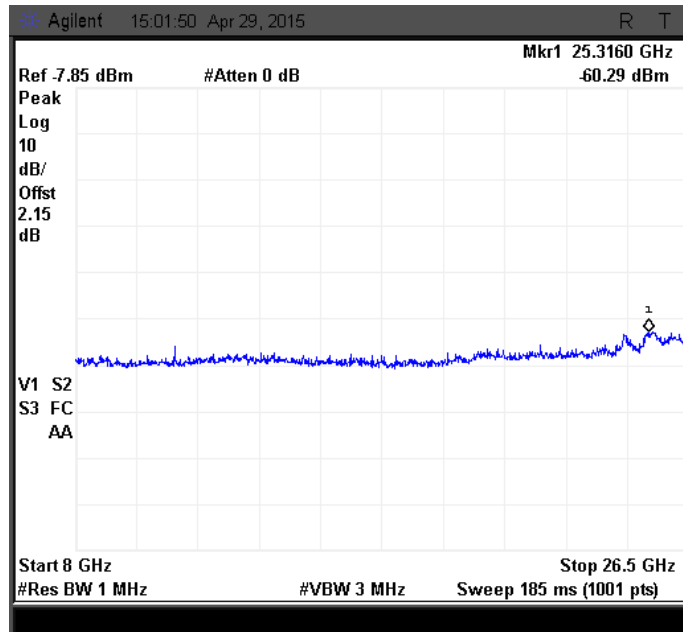


Figure 278: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Peak

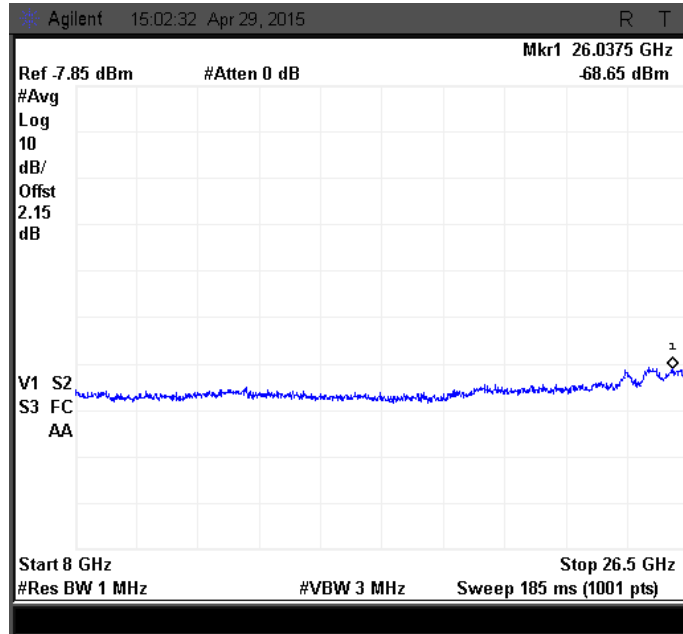


Figure 279: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Average

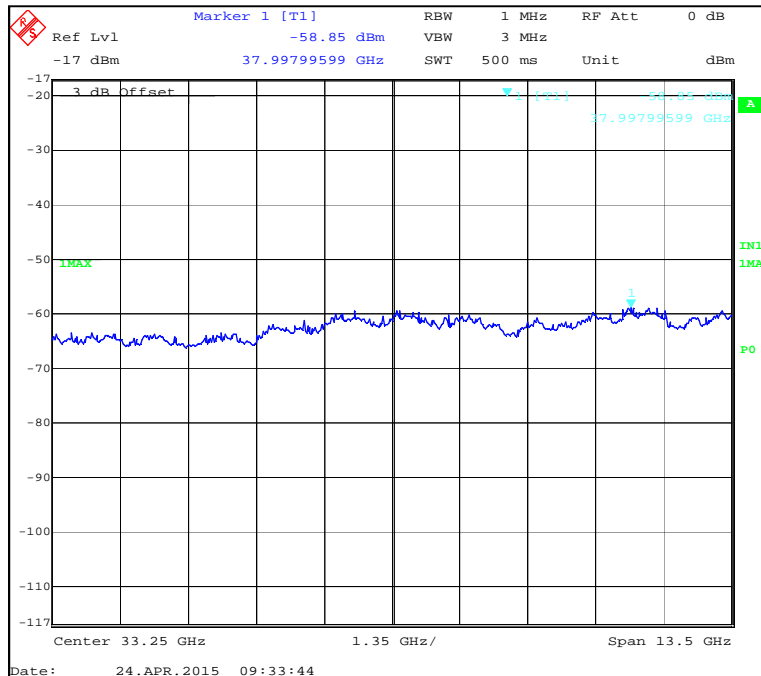
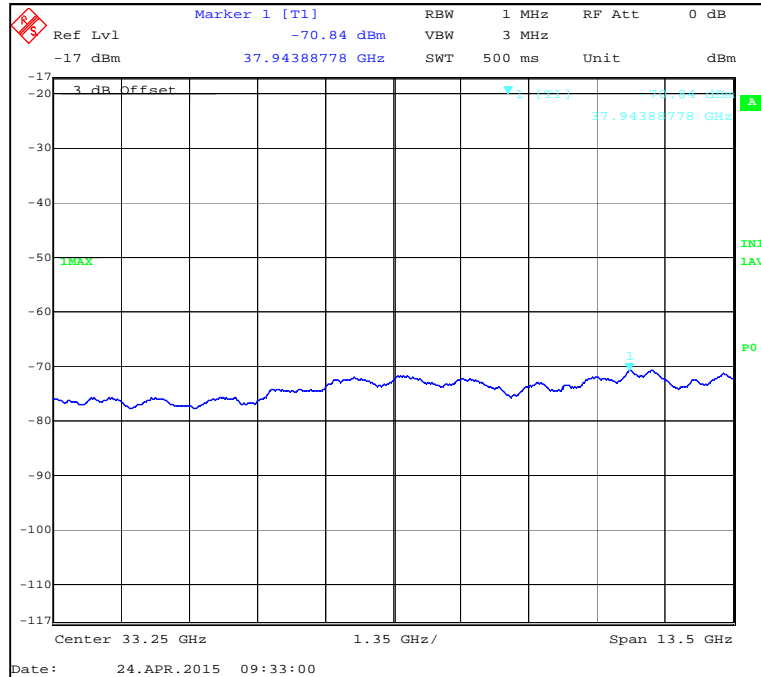
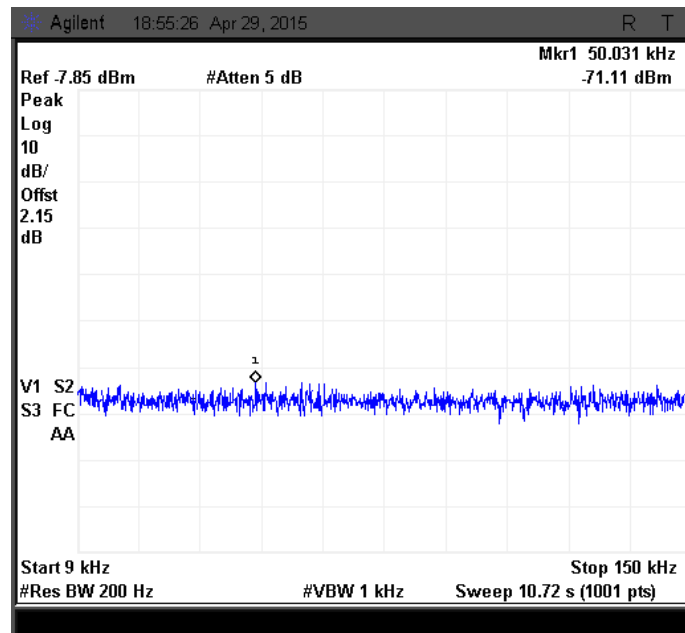


Figure 280: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Peak



**Figure 281: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Average**



**Figure 282: Spurious emission measured from 9 kHz to 150 kHz at Ch. 1-Peak**



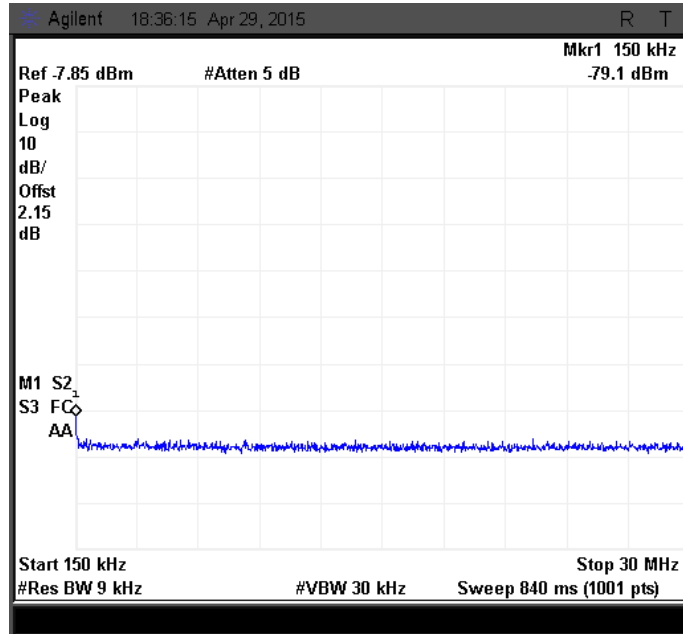


Figure 283: Spurious emission measured from 150 kHz to 30 MHz at Ch. 1-Peak

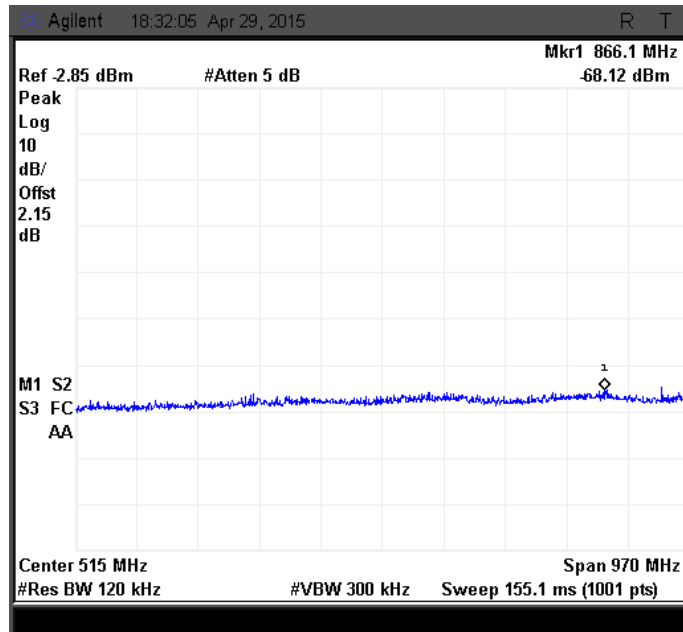


Figure 284: Spurious emission measured from 30 MHz to 1 GHz at Ch. 1-Peak

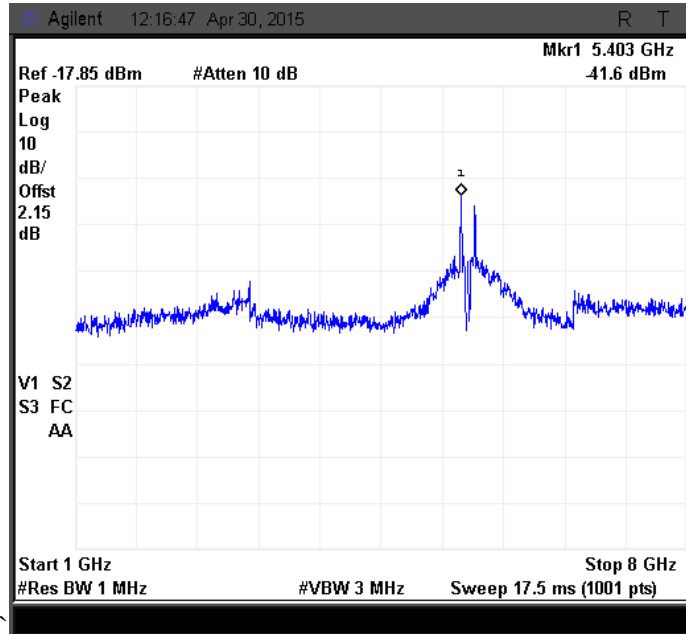


Figure 285: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Peak

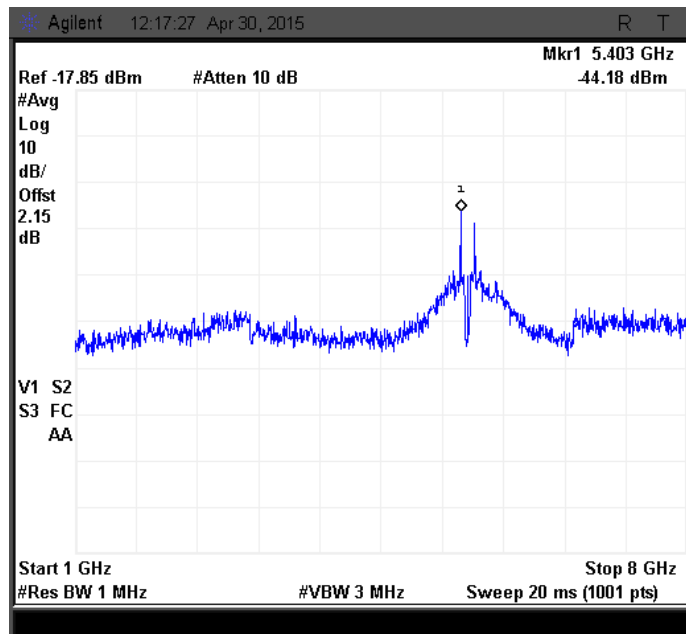


Figure 286: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Average

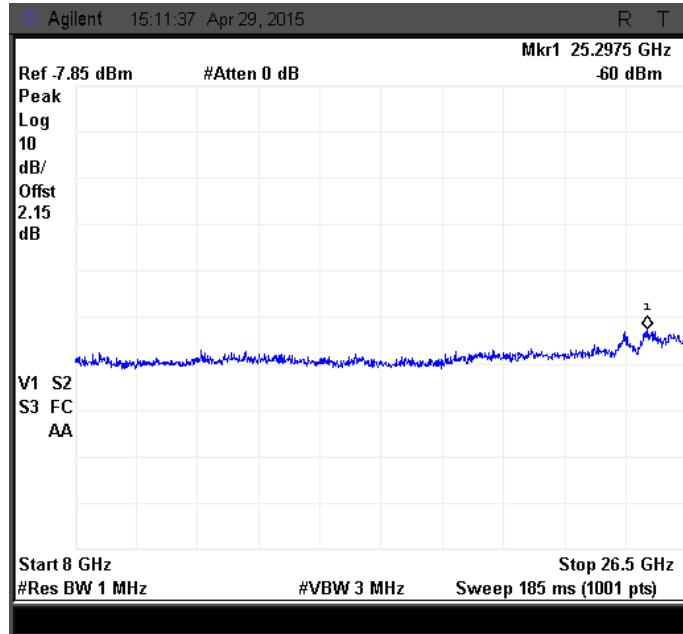


Figure 287: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Peak

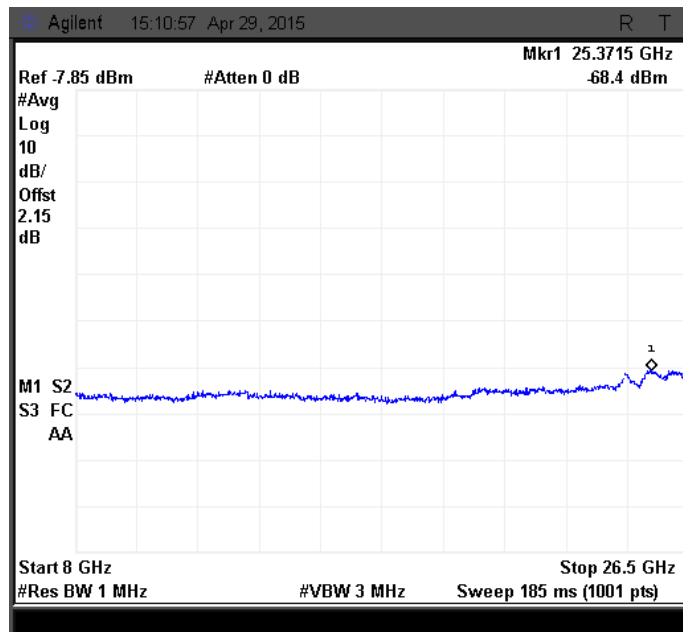
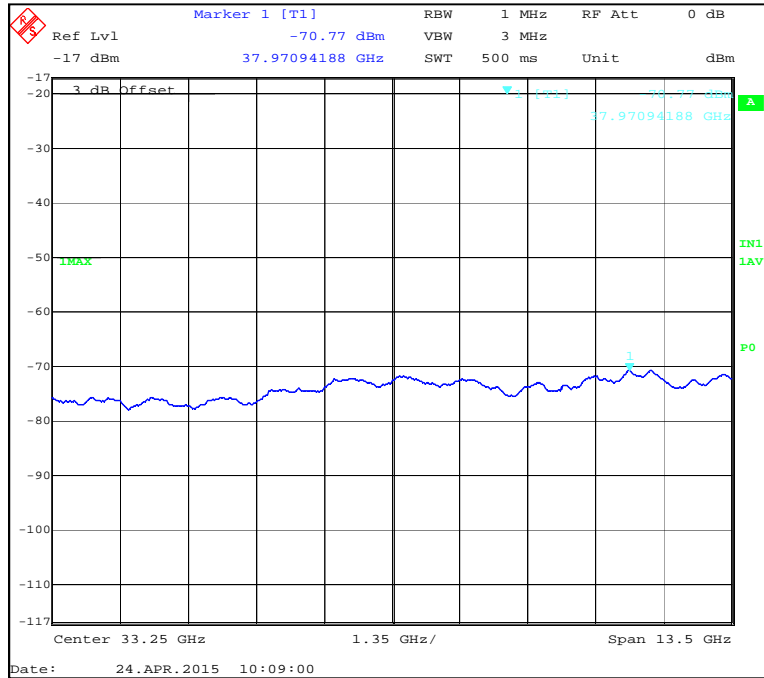
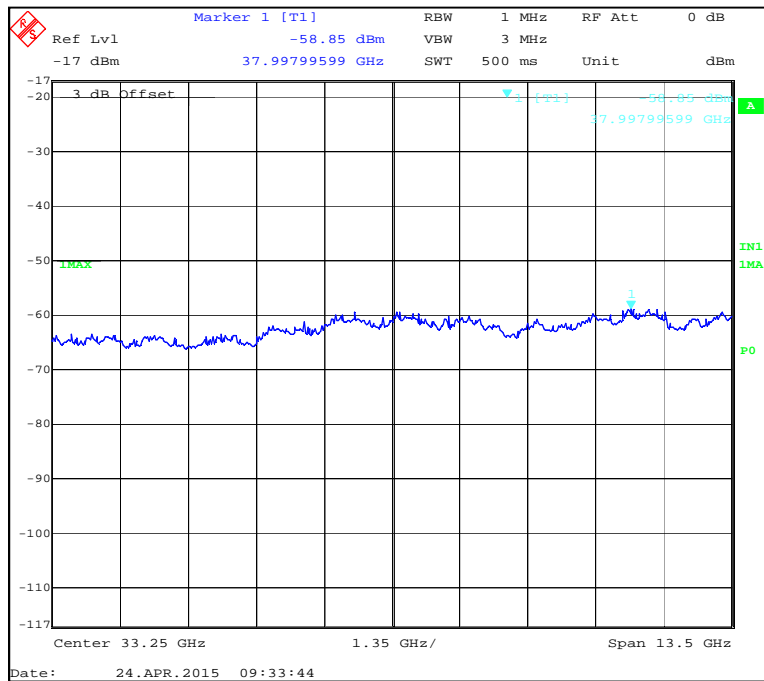


Figure 288: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Average



**Figure 289: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Average**



**Figure 290: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Peak**

### 5.3.7.5.5 10MHz MODULATION BW - MID CHANNEL\_5550 MHz

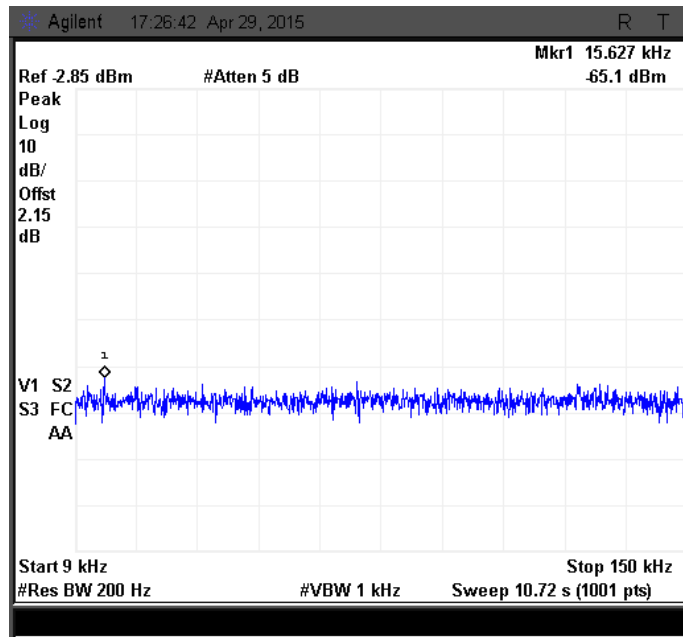


Figure 291: Spurious emission measured from 9 kHz to 150 kHz at Ch. 0-Peak

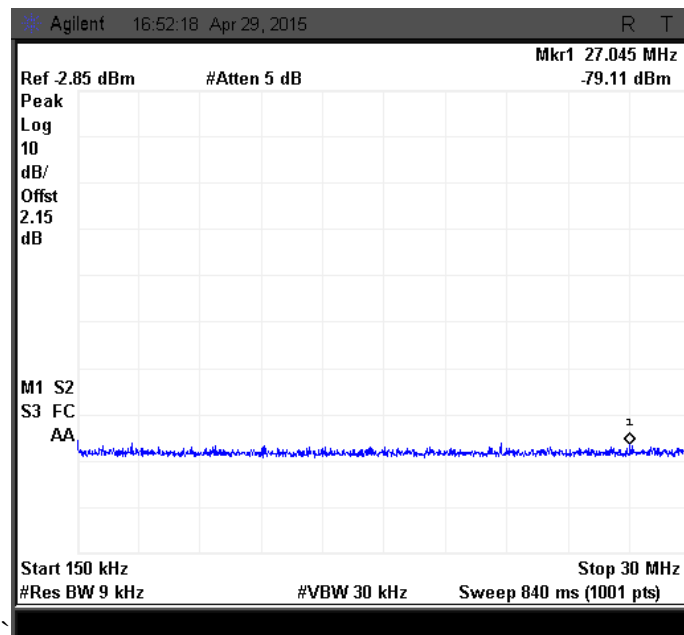


Figure 292: Spurious emission measured from 150 kHz to 30 MHz at Ch. 0-Peak

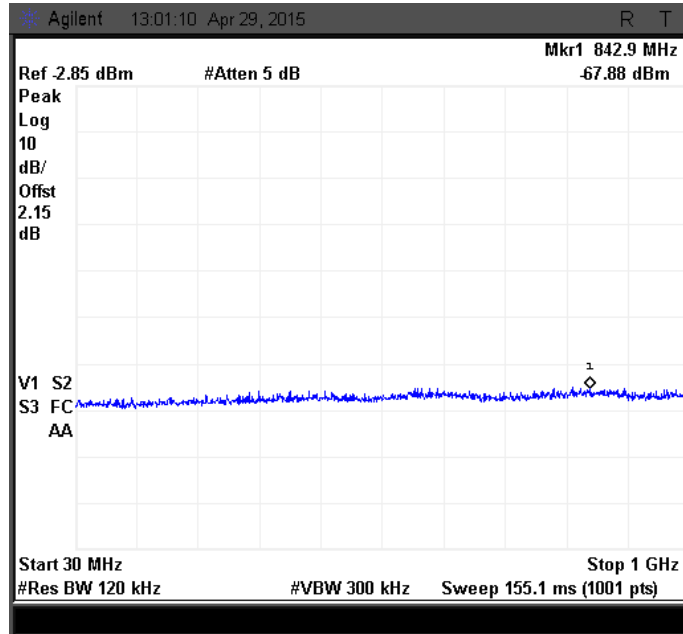


Figure 293: Spurious emission measured from 30 MHz to 1 GHz at Ch. 0-Peak

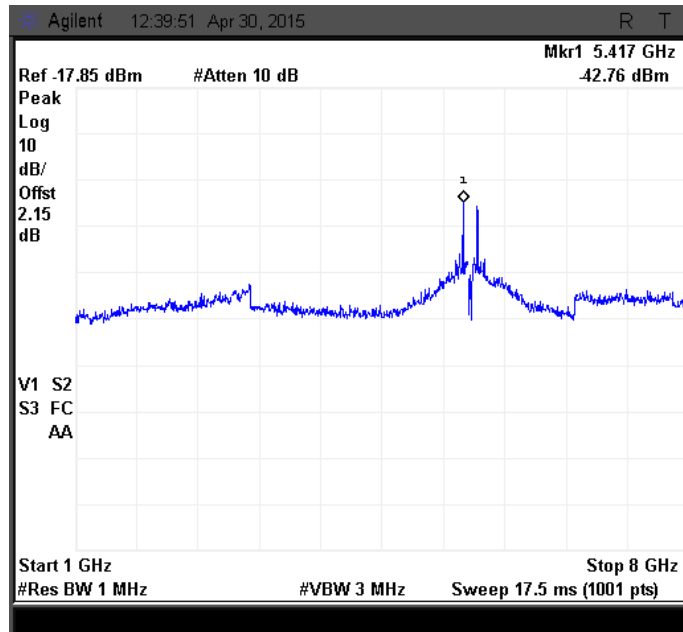


Figure 294: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Peak

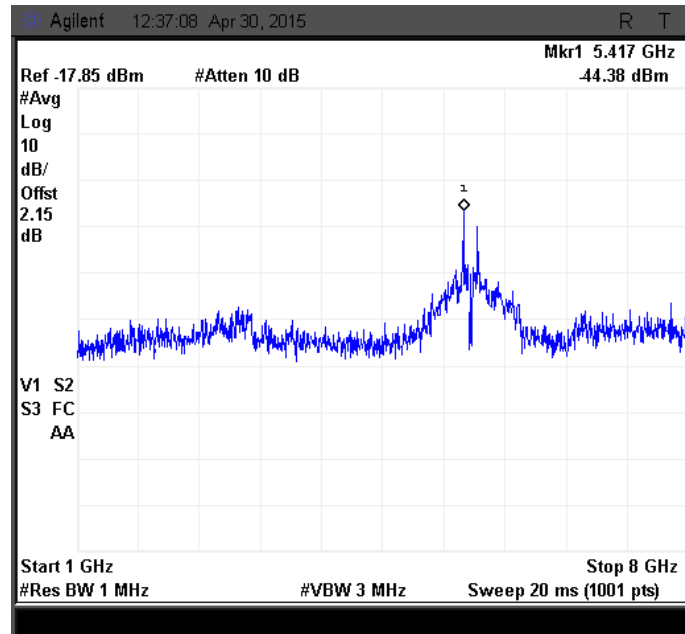


Figure 295: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Average

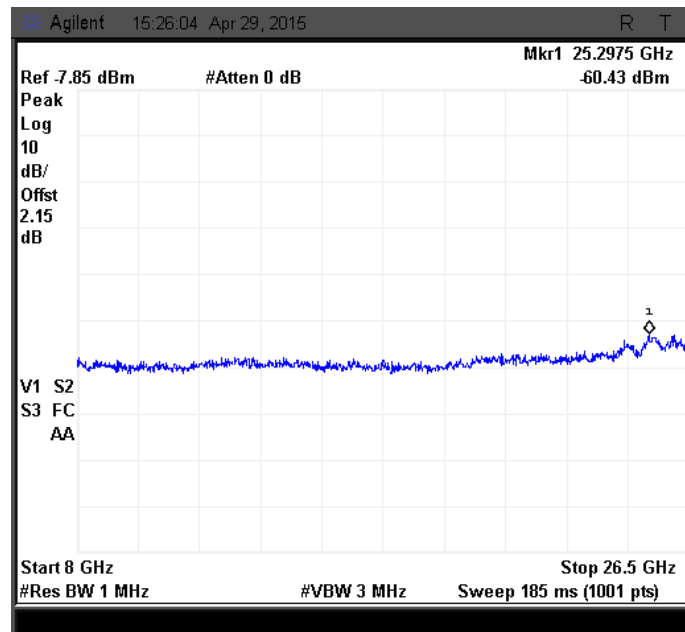


Figure 296: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Peak

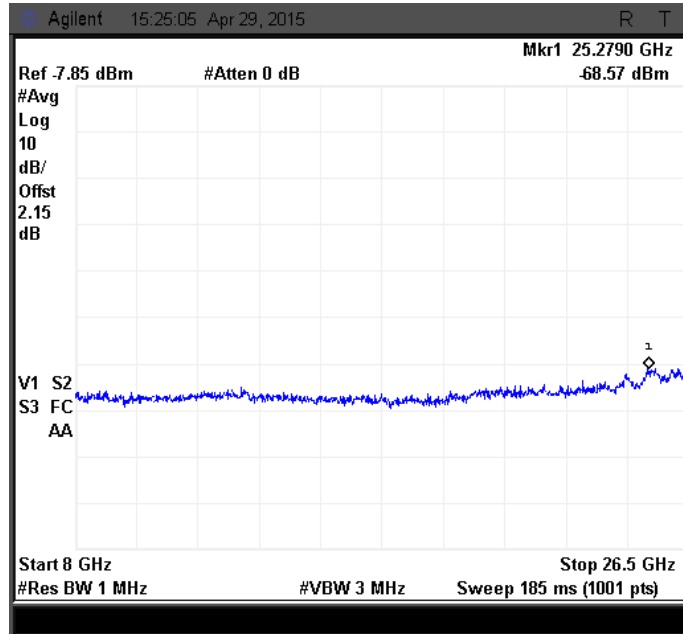


Figure 297: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Average

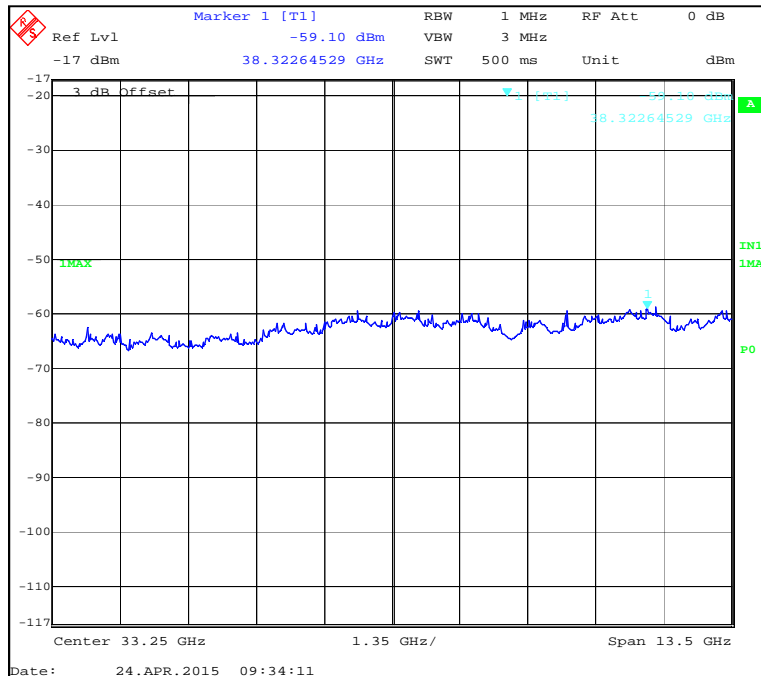
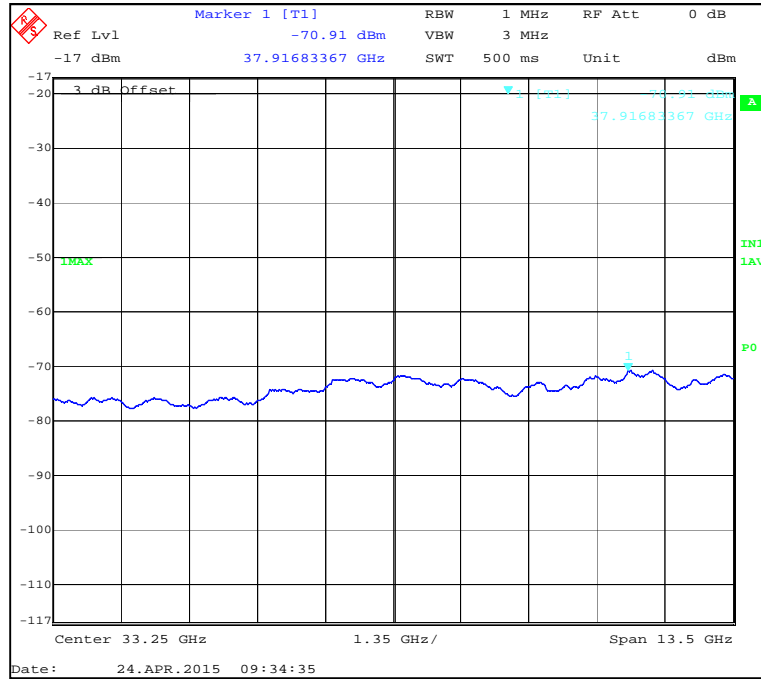
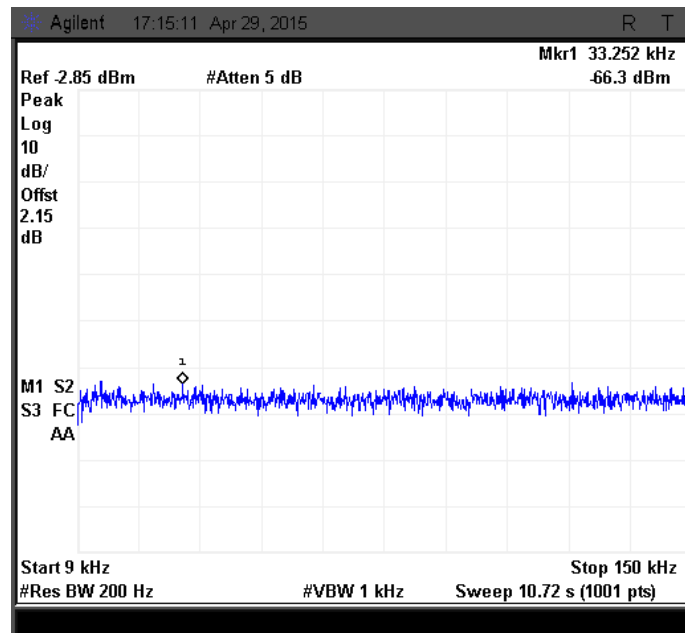


Figure 298: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Peak





**Figure 299: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Average**



**Figure 300: Spurious emission measured from 9 kHz to 150 kHz at Ch. 1-Peak**

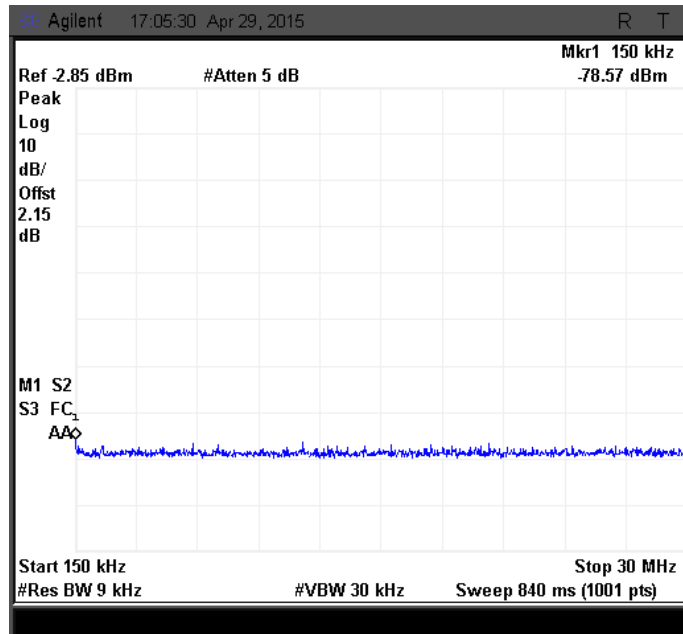


Figure 301: Spurious emission measured from 150 kHz to 30 MHz at Ch. 1-Peak

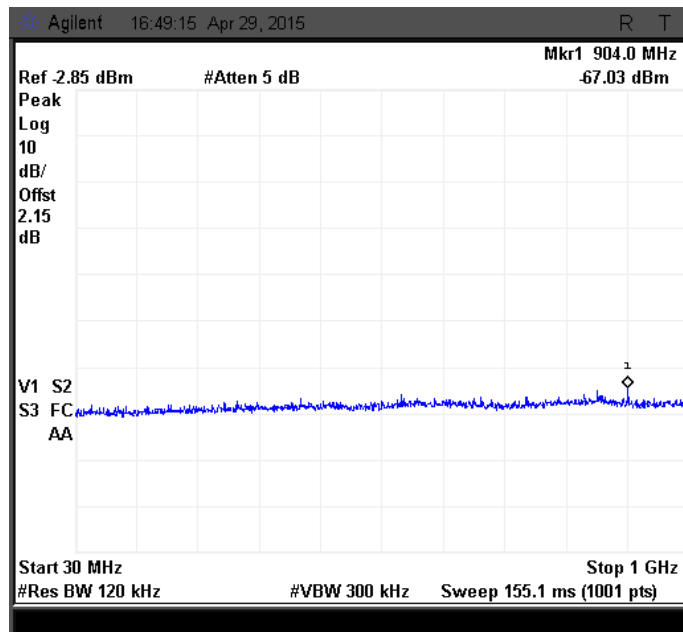


Figure 302: Spurious emission measured from 30 MHz to 1 GHz at Ch. 1-Peak

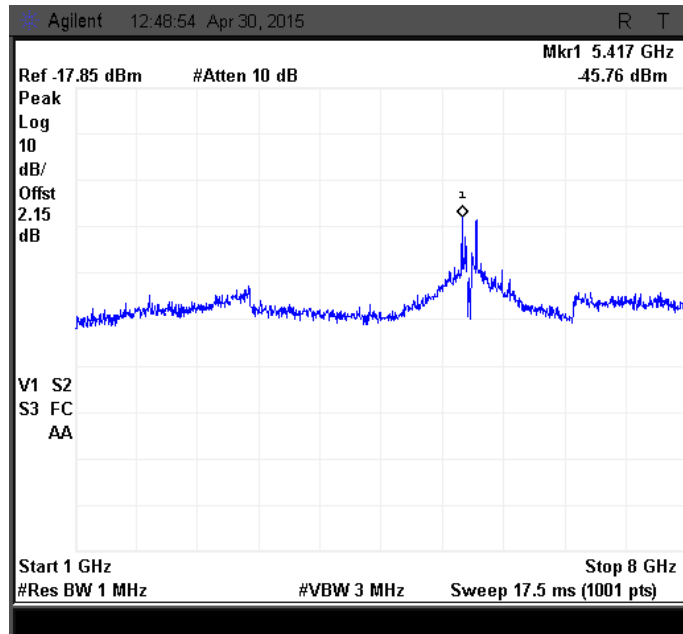


Figure 303: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Peak

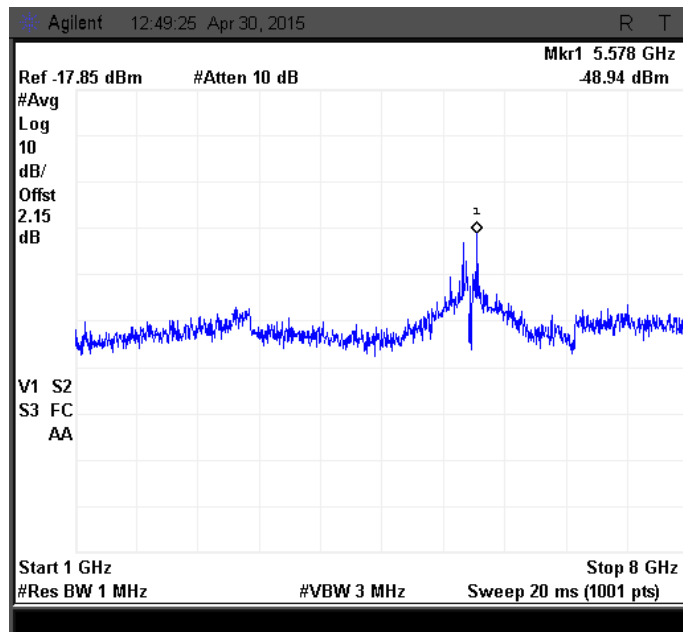


Figure 304: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Average

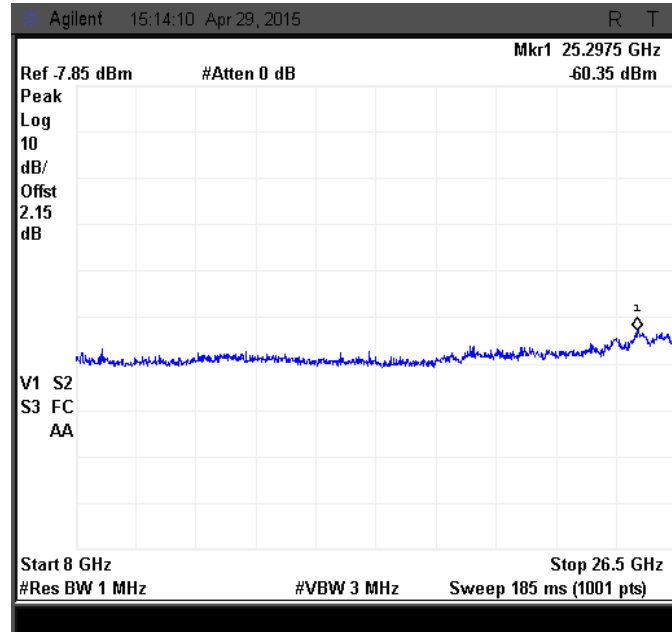


Figure 305: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Peak

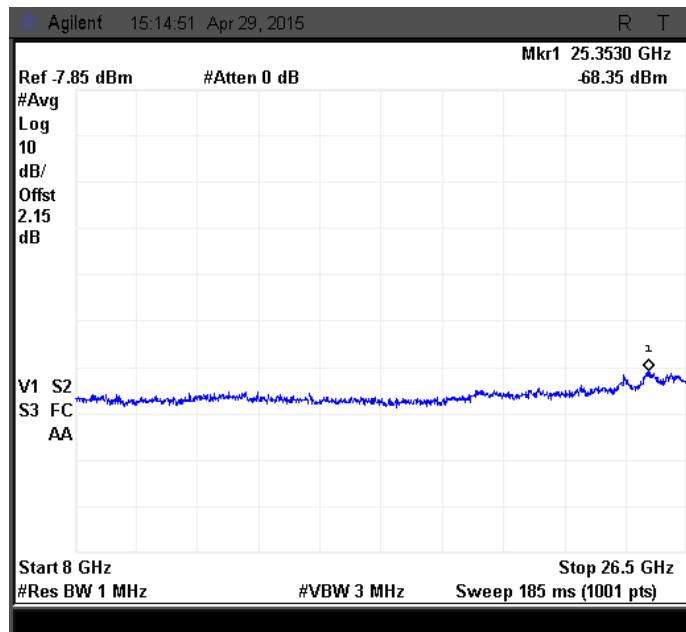
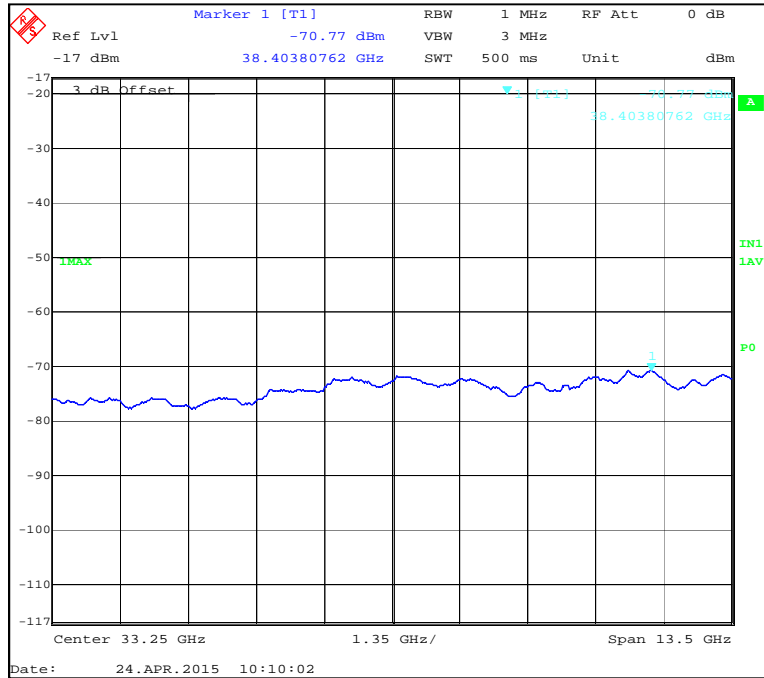
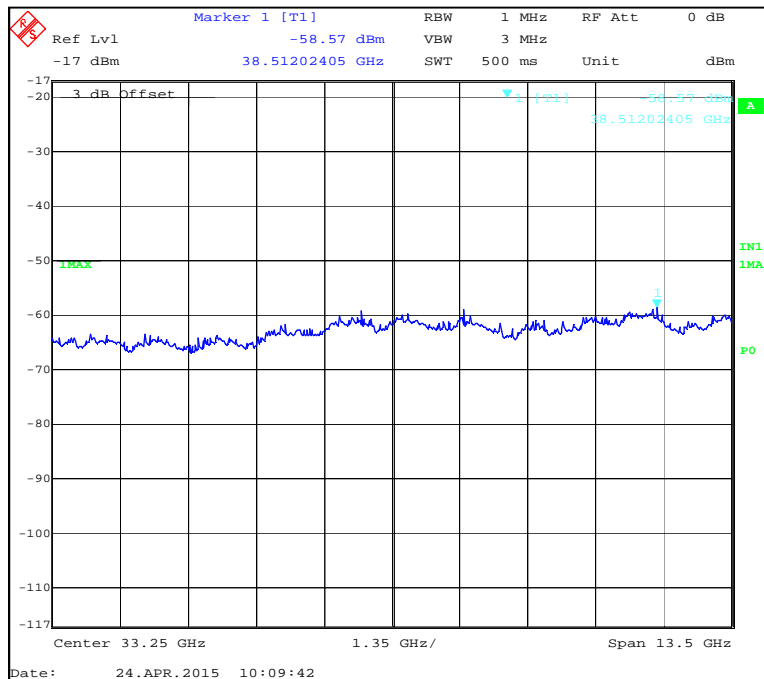


Figure 306: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Average



**Figure 307: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Average**



**Figure 308: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Peak**

### 5.3.7.5.6 10MHz MODULATION BW - HIGH CHANNEL\_5710 MHz

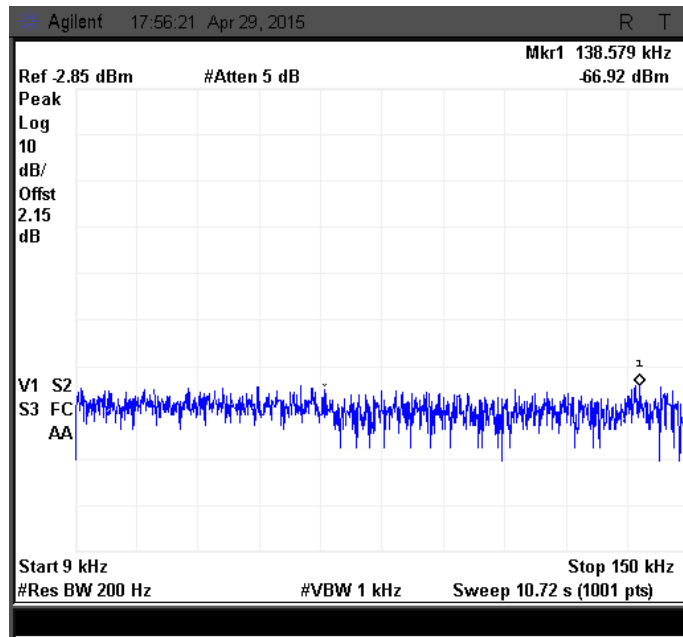


Figure 309: Spurious emission measured from 9 kHz to 150 kHz at Ch. 0-Peak

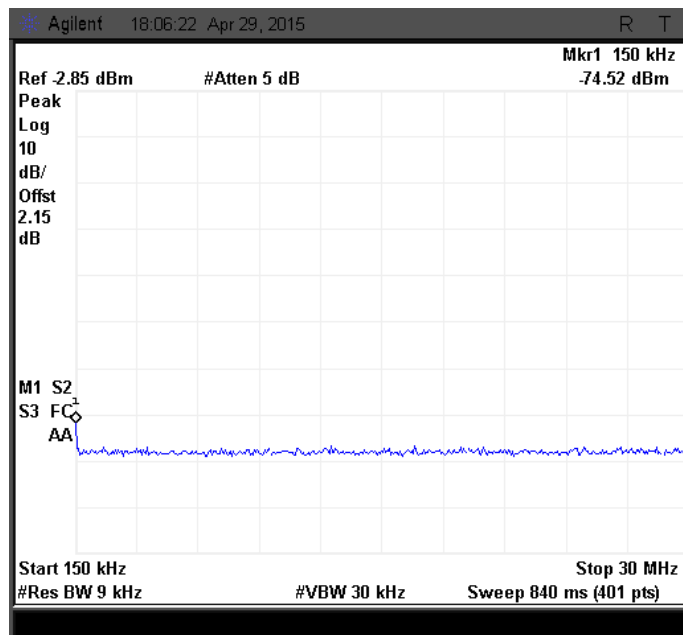


Figure 310: Spurious emission measured from 150 kHz to 30 MHz at Ch. 0-Peak

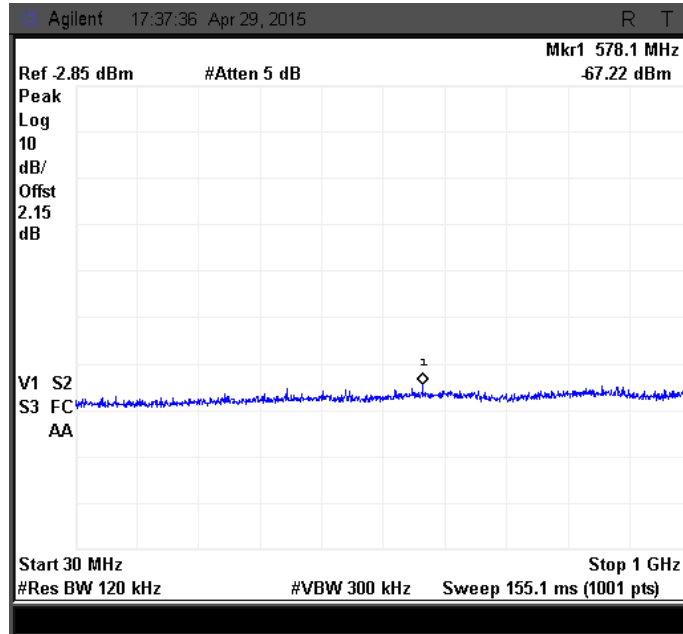


Figure 311: Spurious emission measured from 30 MHz to 1 GHz at Ch. 0-Peak

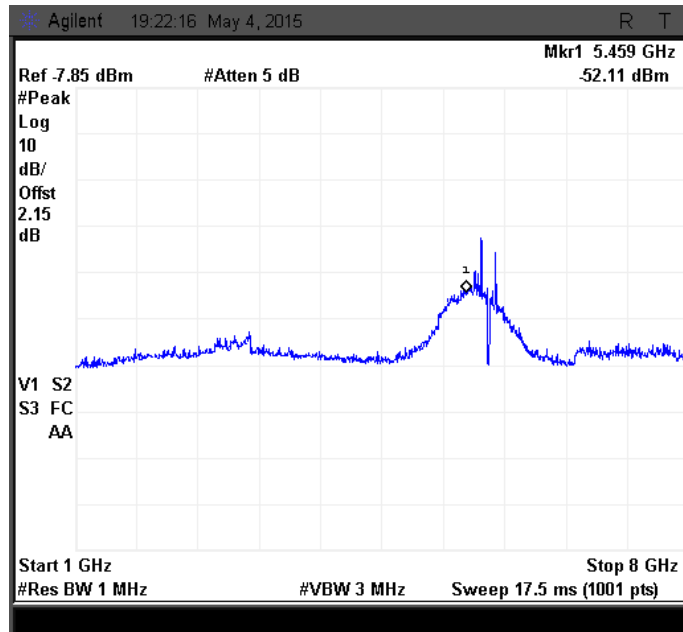


Figure 312: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Peak

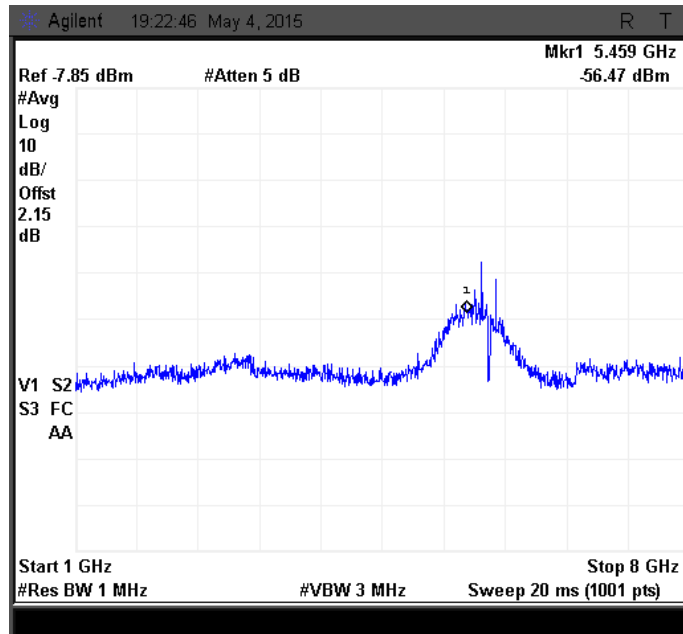


Figure 313: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Average

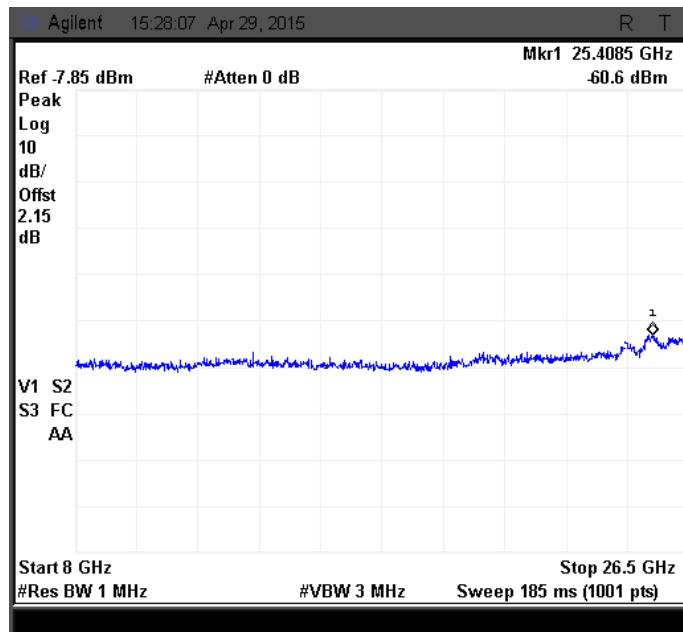


Figure 314: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Peak



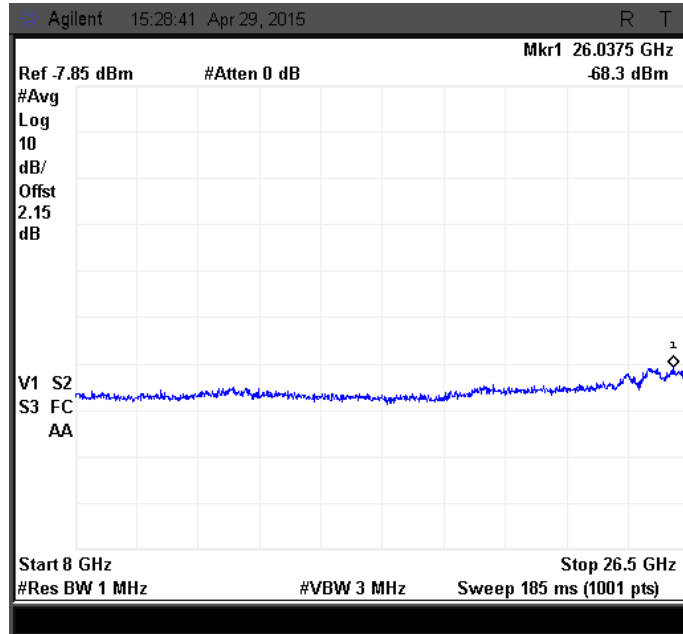


Figure 315: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Average

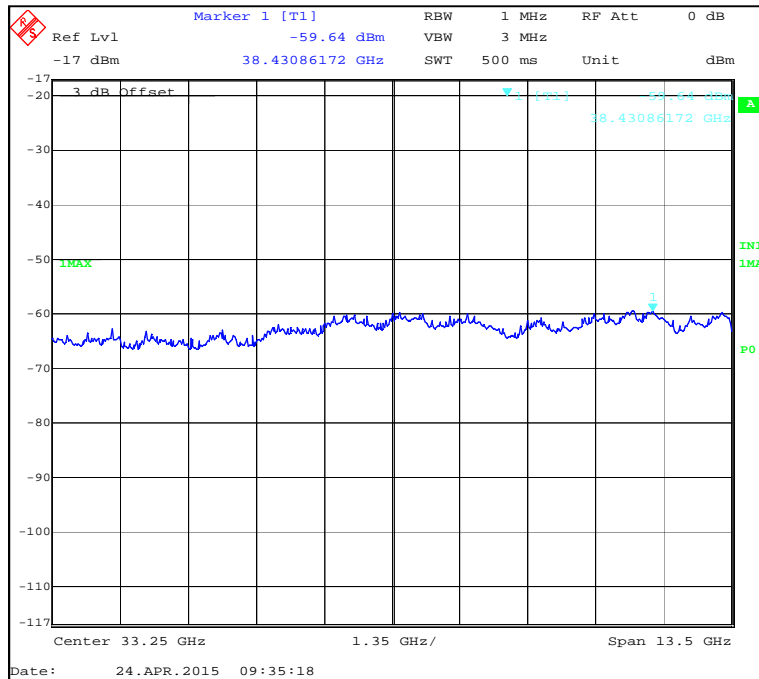
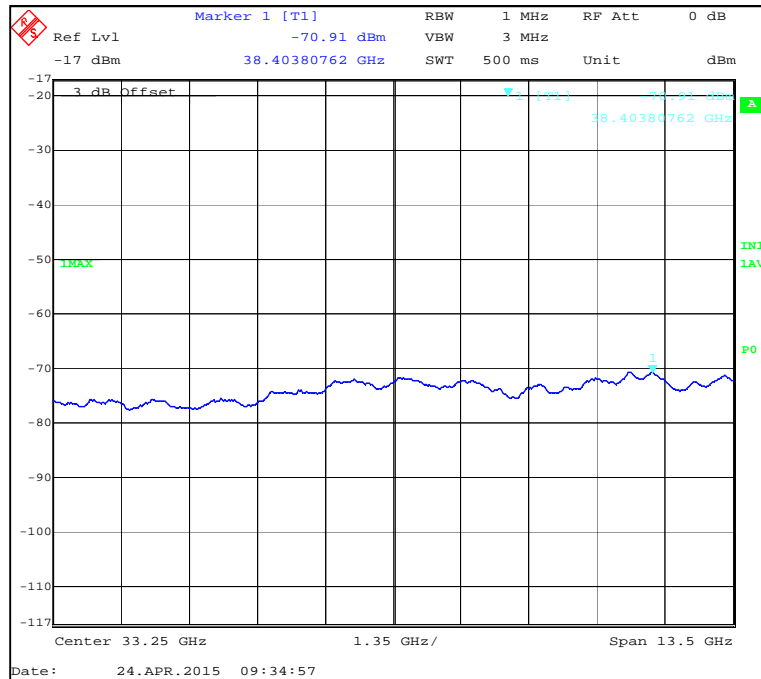
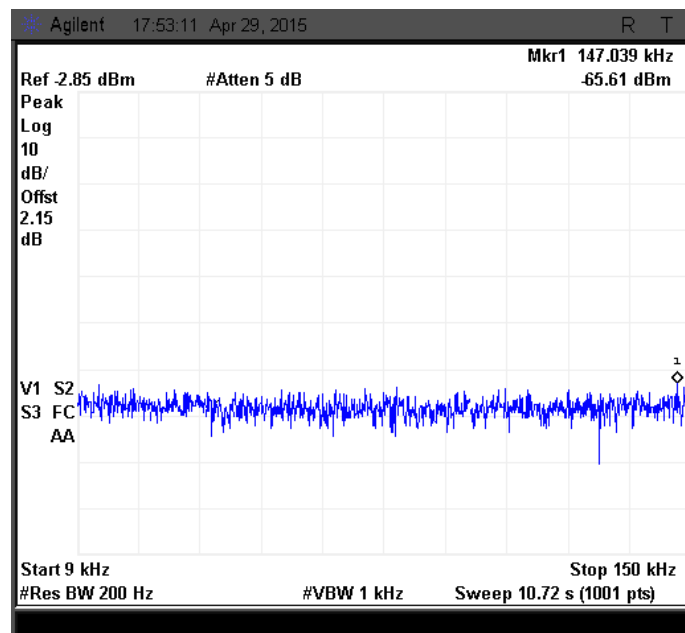


Figure 316: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Peak



**Figure 317: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Average**



**Figure 318: Spurious emission measured from 9 kHz to 150 kHz at Ch. 1-Peak**

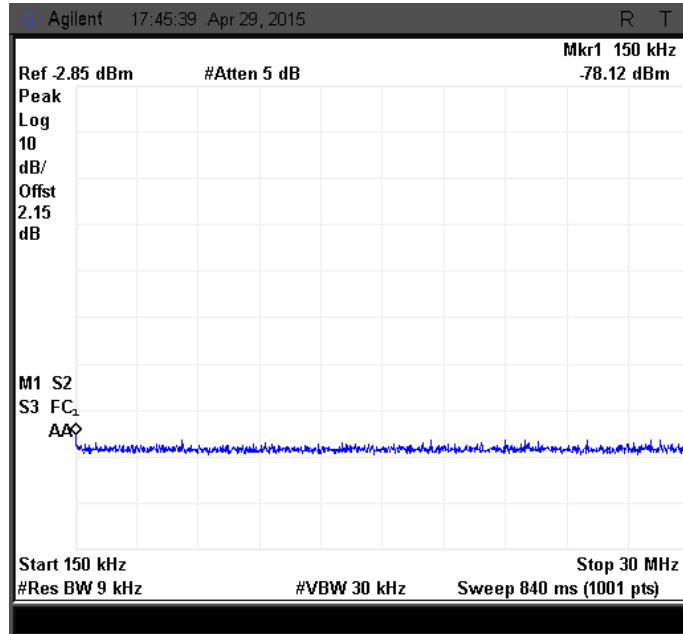


Figure 319: Spurious emission measured from 150 kHz to 30 MHz at Ch. 1-Peak

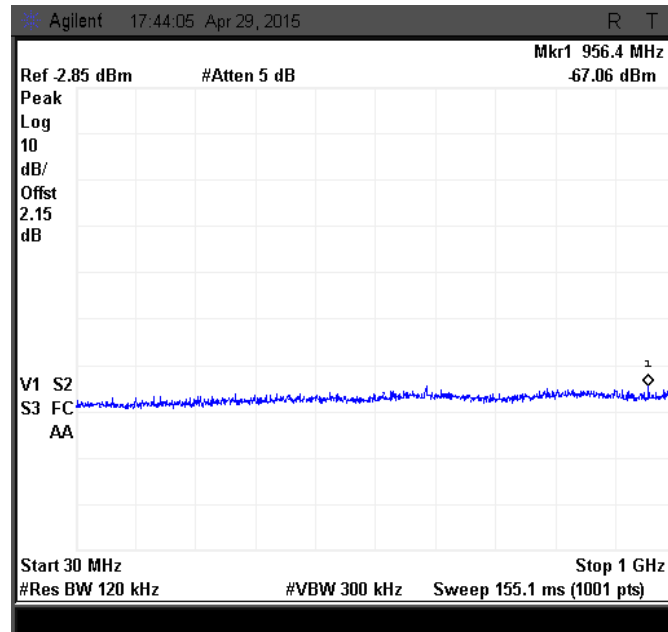


Figure 320: Spurious emission measured from 30 MHz to 1 GHz at Ch. 1-Peak

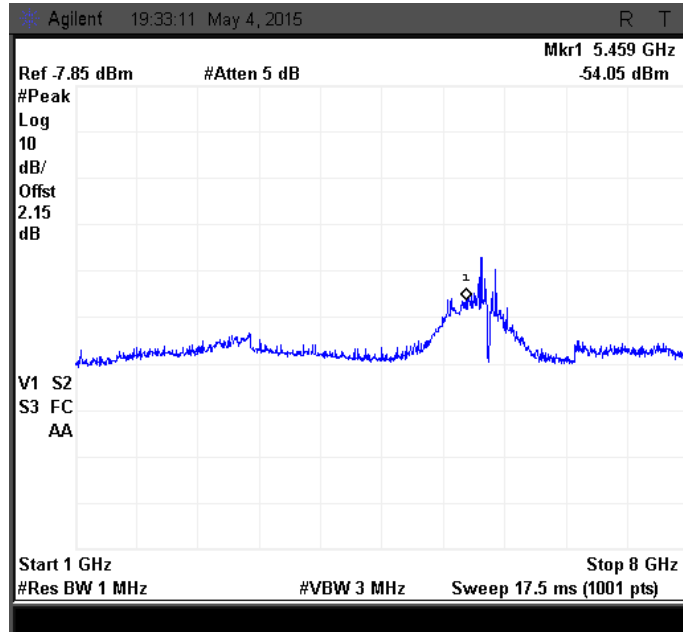


Figure 321: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Peak

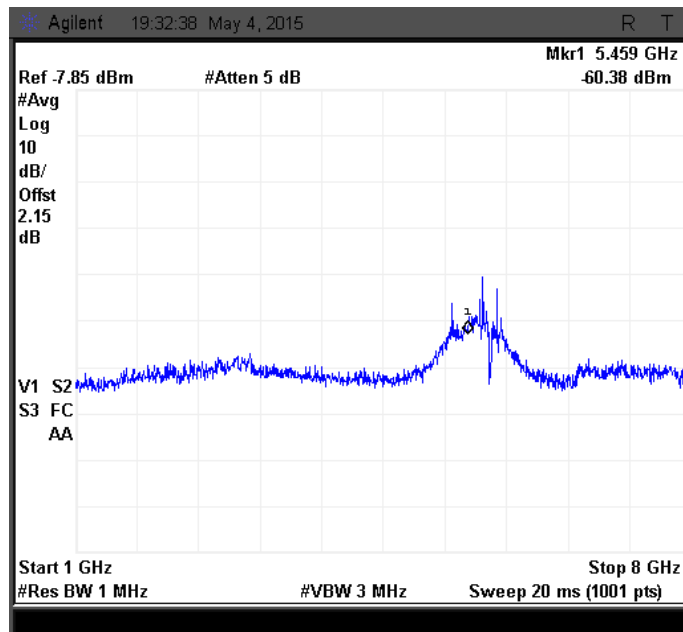


Figure 322: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Average

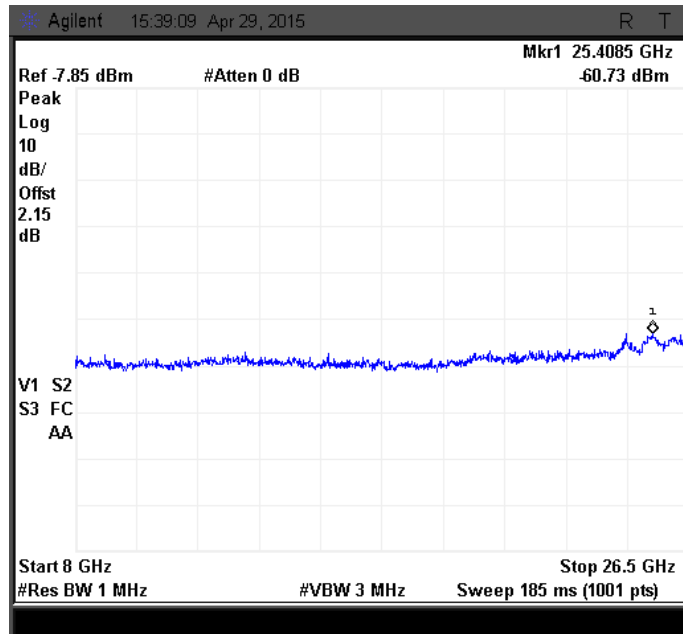


Figure 323: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Peak

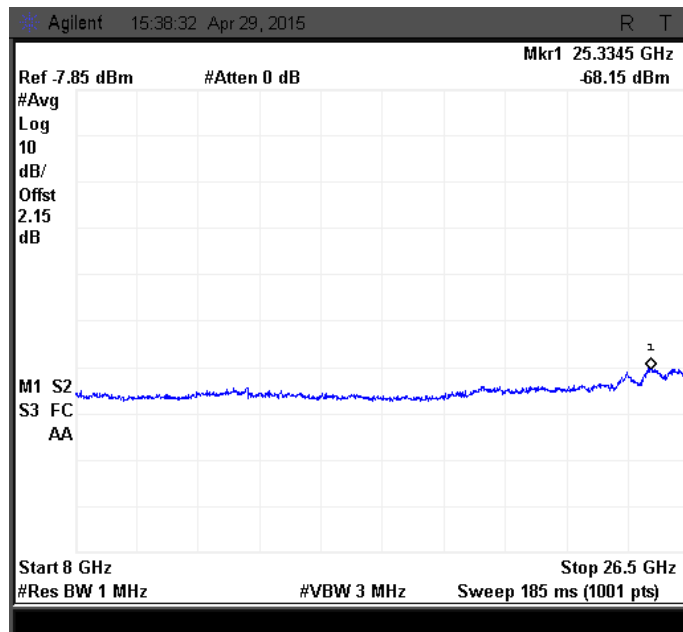


Figure 324: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Average

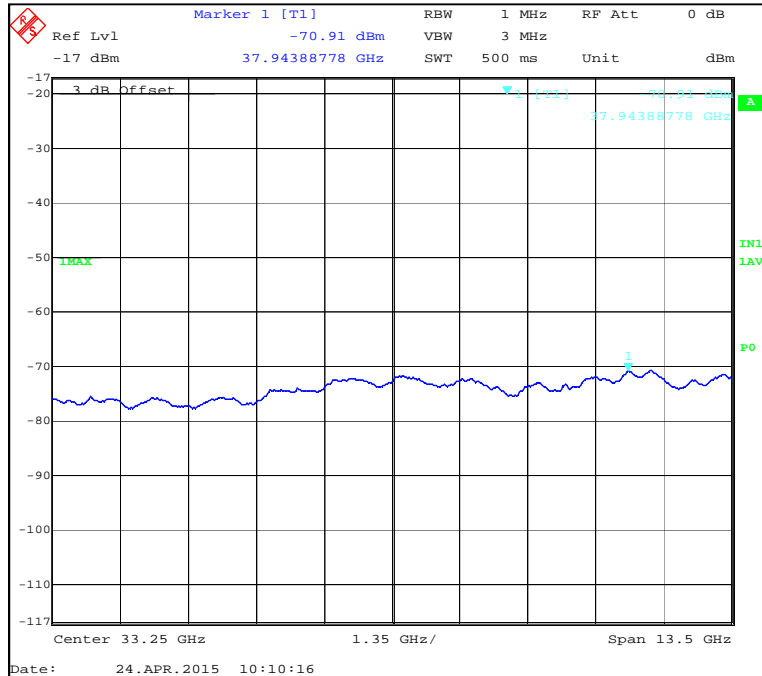


Figure 325: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Average

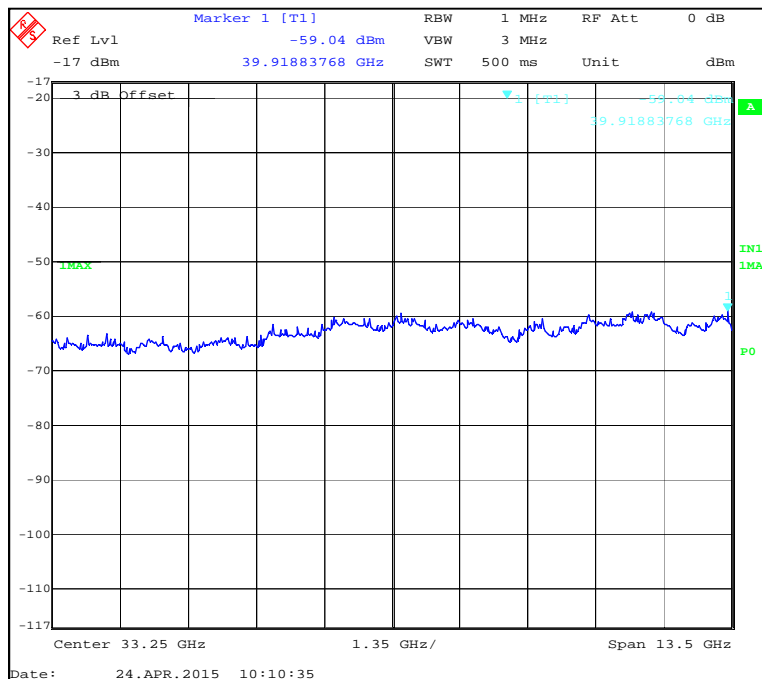


Figure 326: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Peak

### 5.3.7.6 RESULT (SUPPORTING GRAPHS / DATA) FOR 17DBI ANTENNA CONDITION

#### 5.3.7.6.1 40MHz MODULATION BW - Low CHANNEL\_5495 MHz

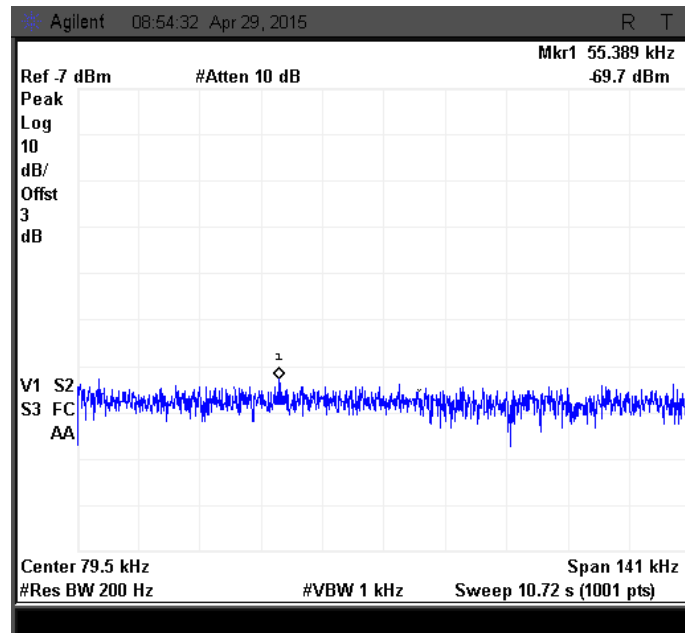


Figure 327: Spurious emission measured from 9 kHz to 150 kHz at Ch. 0-Peak

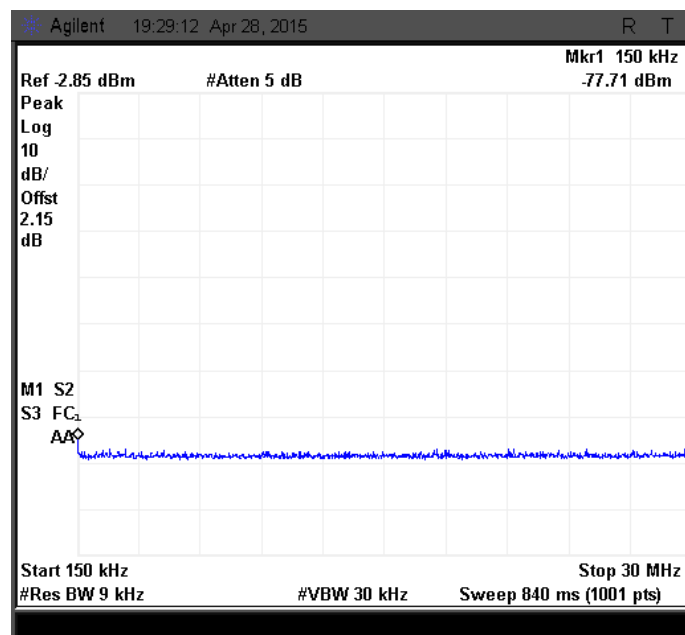


Figure 328: Spurious emission measured from 150 kHz to 30 MHz at Ch. 0-Peak

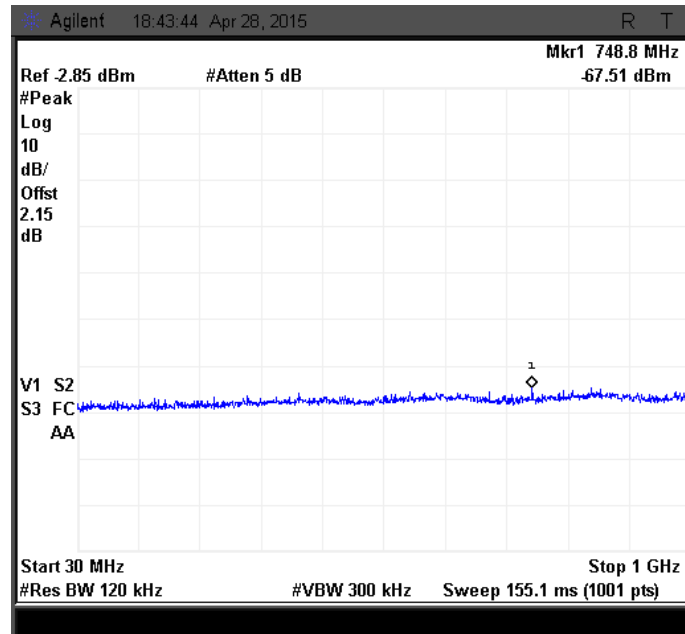


Figure 329: Spurious emission measured from 30 MHz to 1 GHz at Ch. 0-Peak

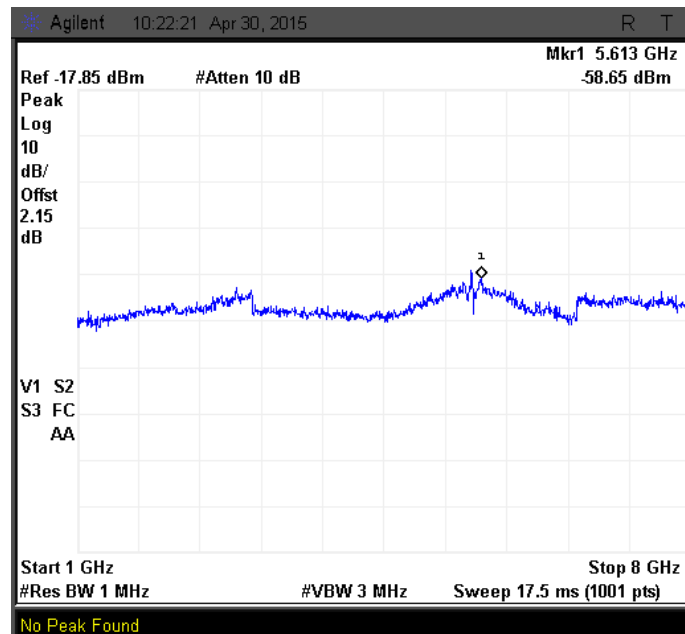


Figure 330: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Peak



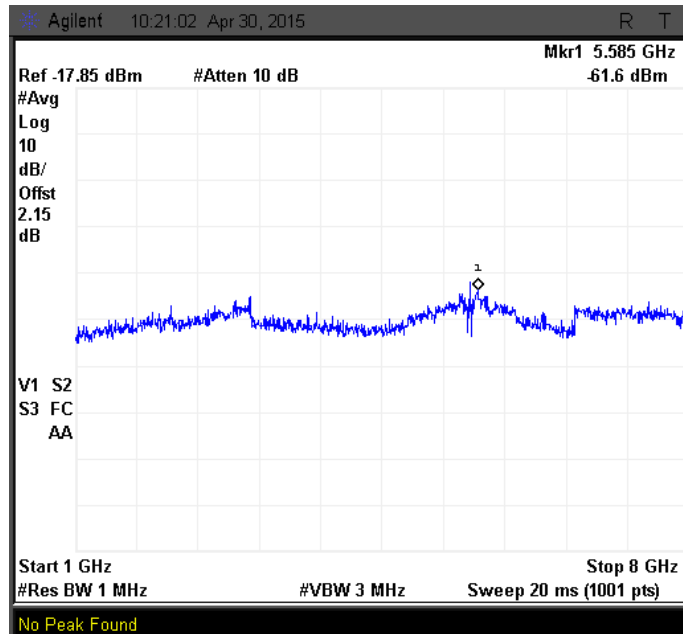


Figure 331: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Average

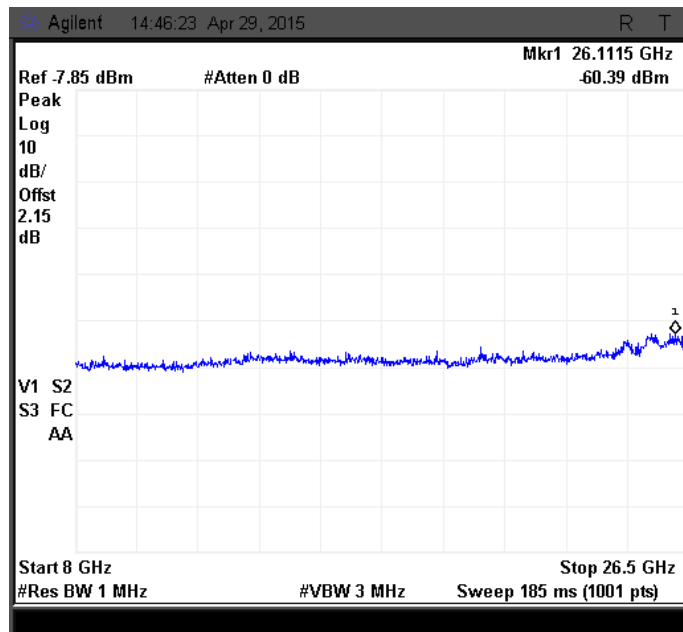
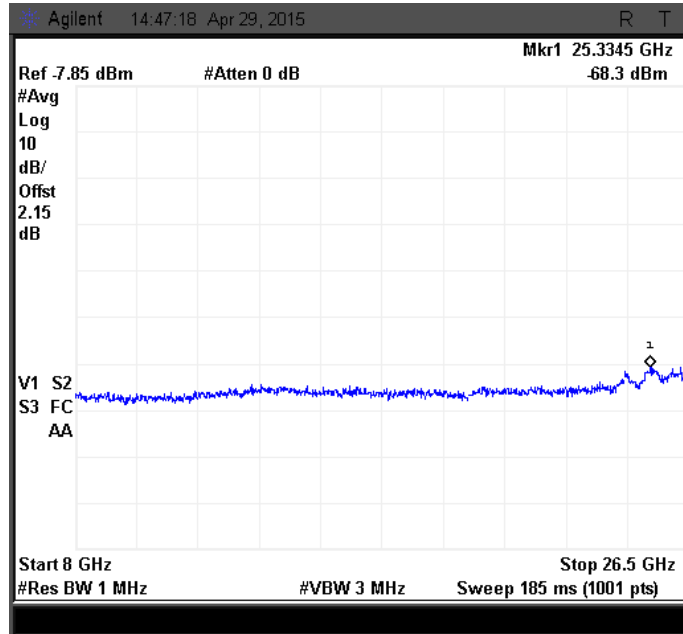
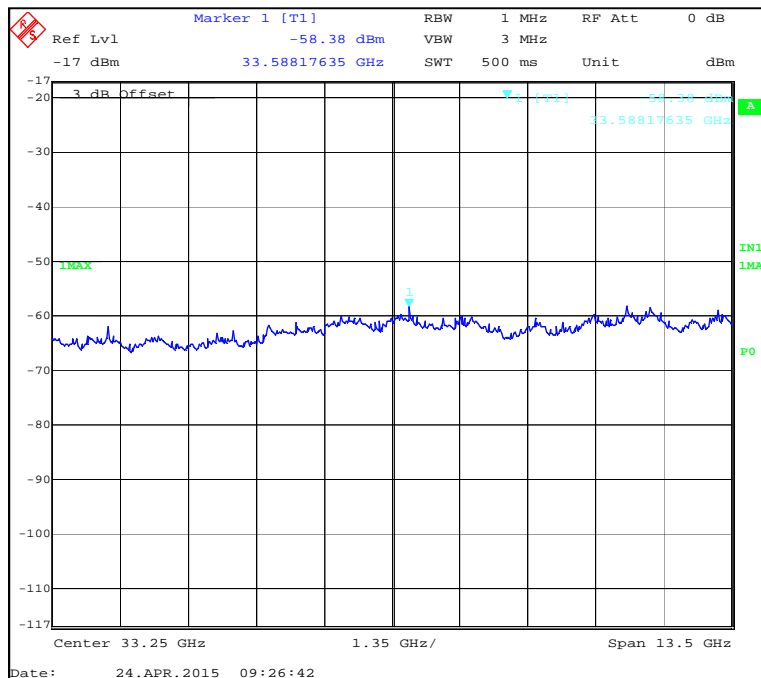


Figure 332: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Peak



**Figure 333: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Average**



**Figure 334: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Peak**

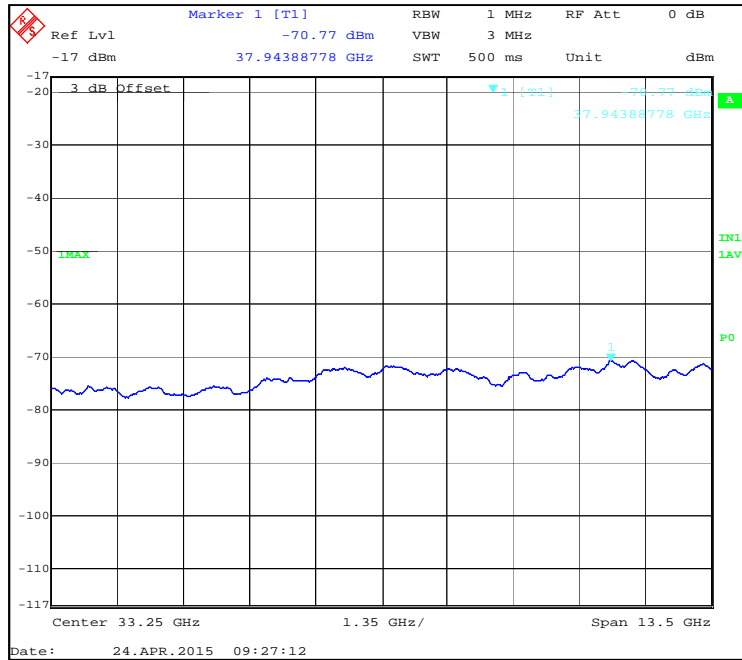


Figure 335: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Avg

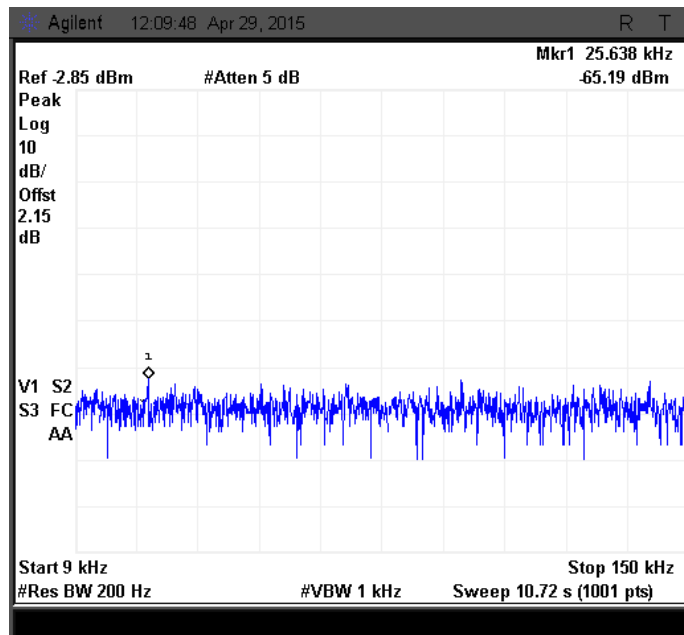


Figure 336: Spurious emission measured from 9 kHz to 150 kHz at Ch. 1-Peak

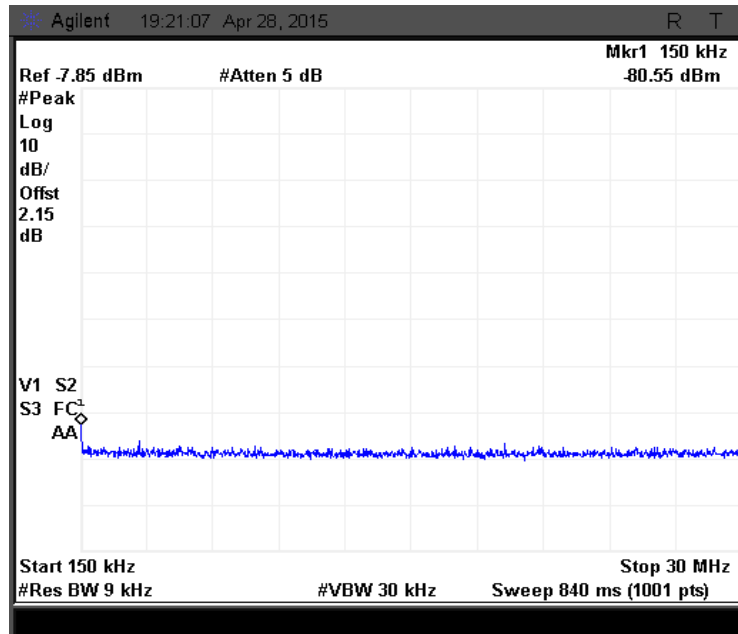


Figure 337: Spurious emission measured from 150 kHz to 30 MHz at Ch. 1-Peak

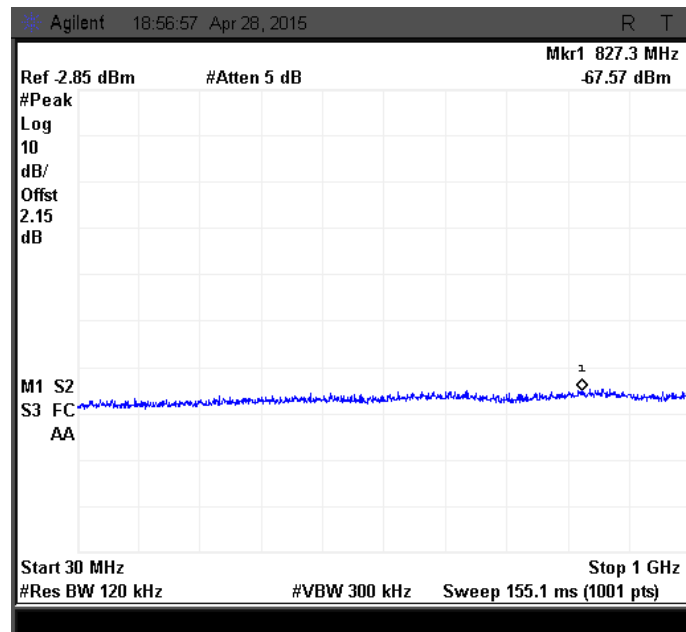


Figure 338: Spurious emission measured from 30 MHz to 1 GHz at Ch. 1-Peak

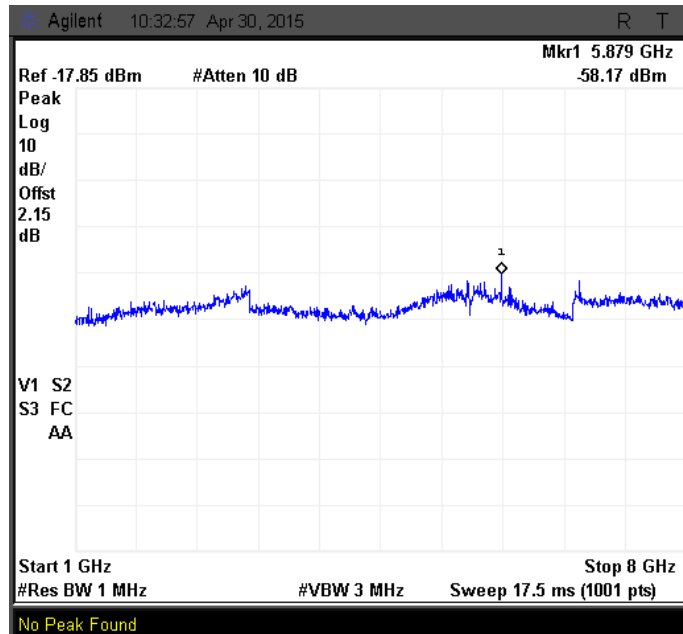


Figure 339: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Peak

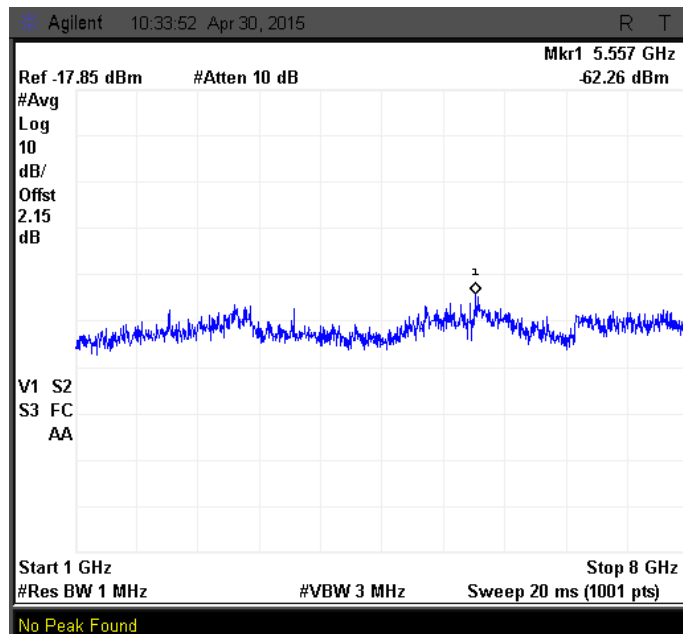


Figure 340: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Average

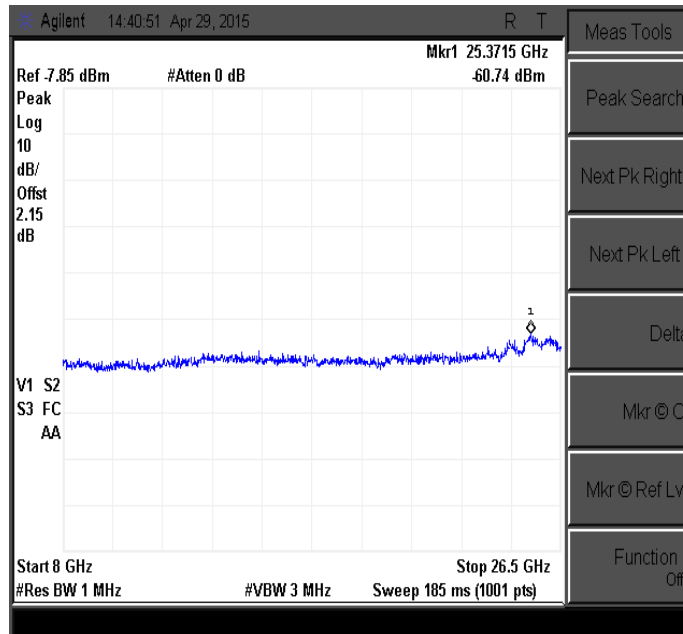


Figure 341: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Peak

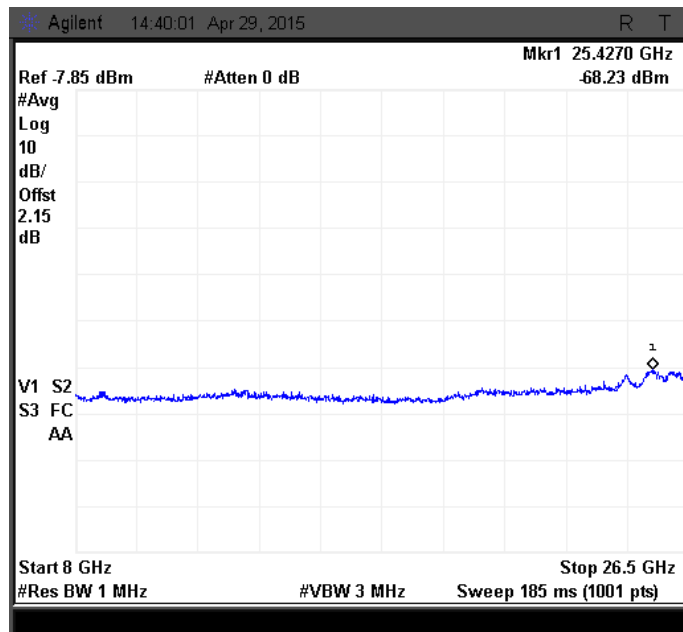
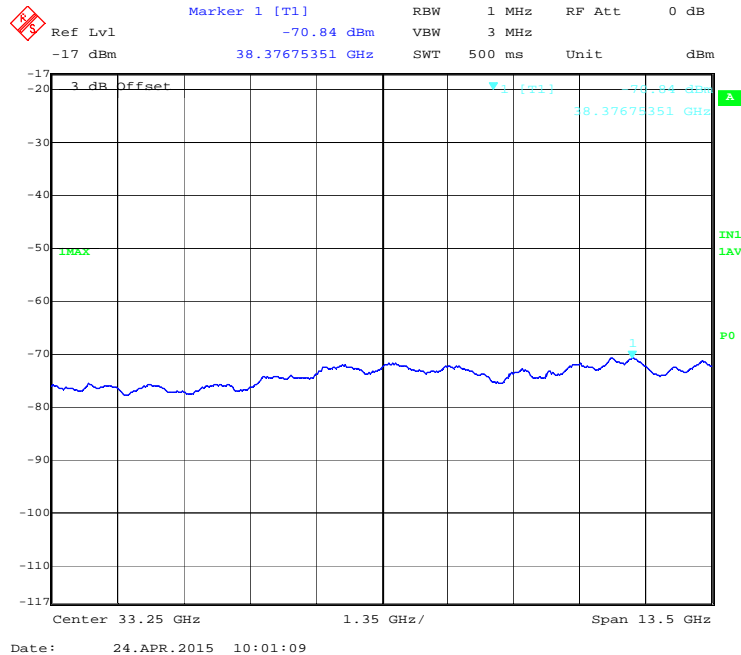
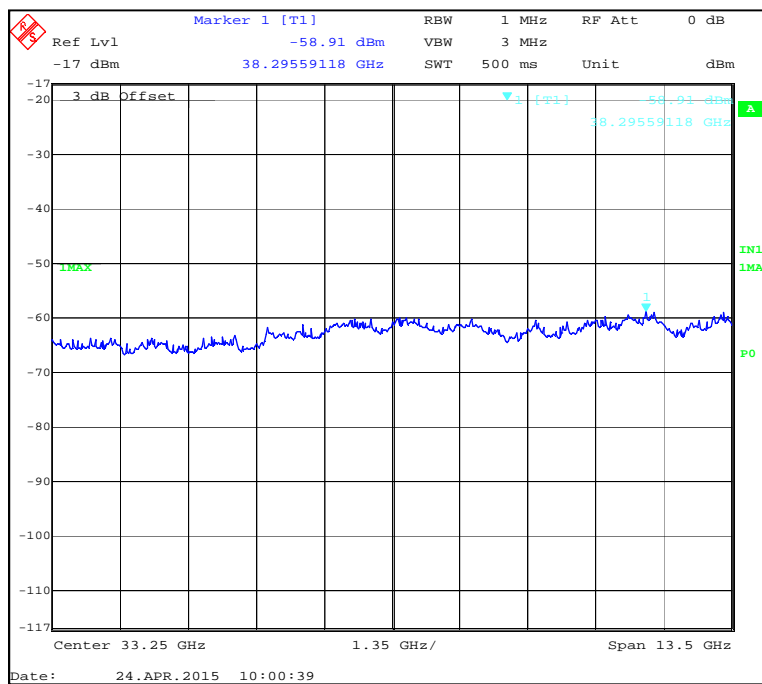


Figure 342: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Average



**Figure 343: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Average**



**Figure 344: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Peak**

### 5.3.7.6.2 40MHz MODULATION BW - MID CHANNEL\_5550 MHz

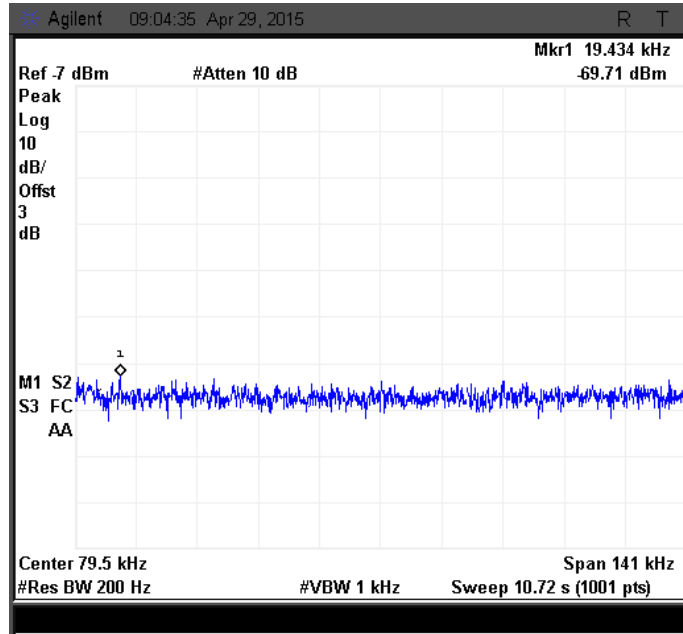


Figure 345: Spurious emission measured from 9 kHz to 150 kHz at Ch. 0-Peak

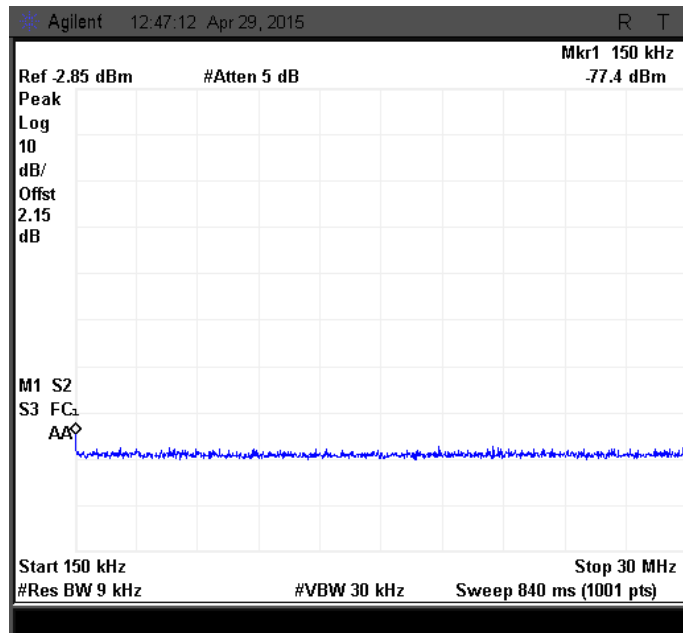


Figure 346: Spurious emission measured from 150 kHz to 30 MHz at Ch. 0-Peak



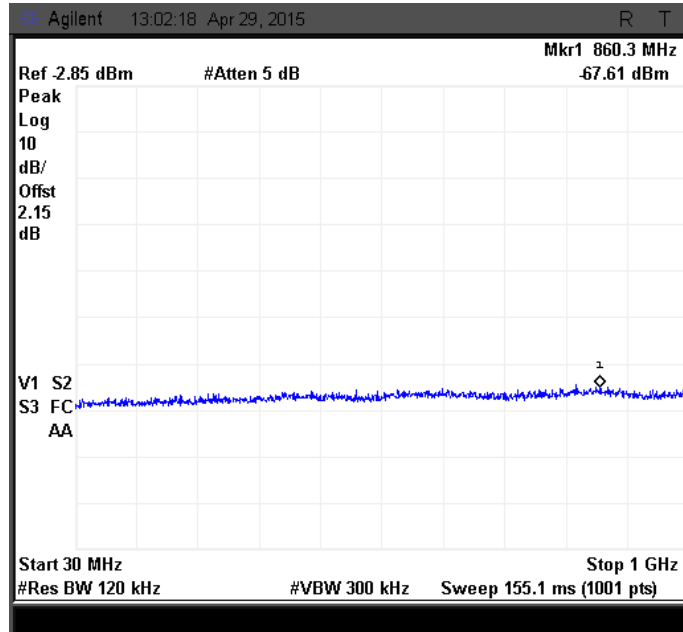


Figure 347: Spurious emission measured from 30 MHz to 1 GHz at Ch. 0-Peak

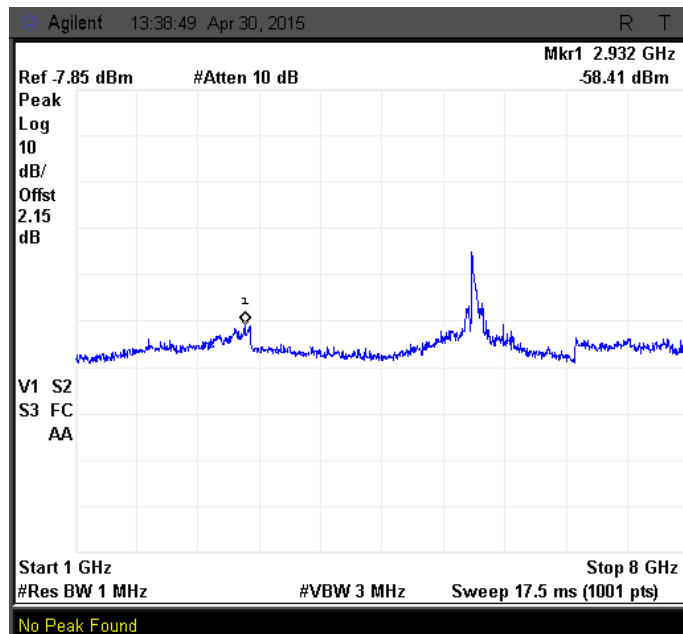


Figure 348: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Peak

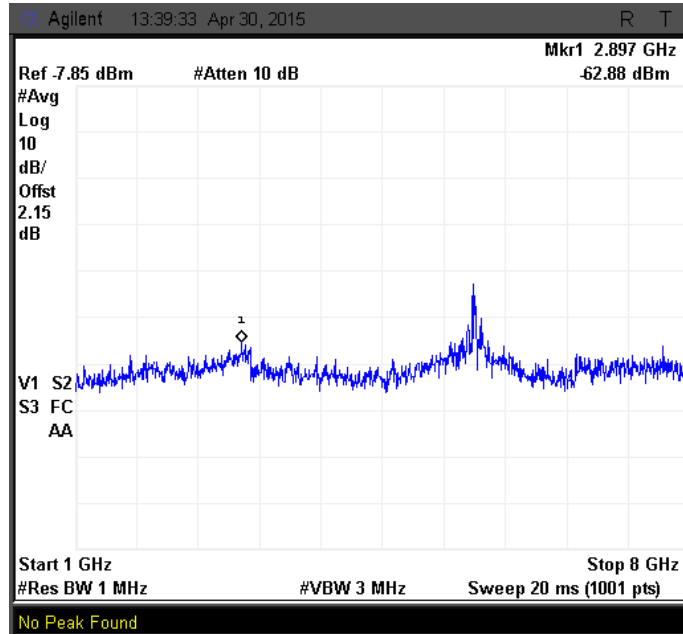


Figure 349: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Average

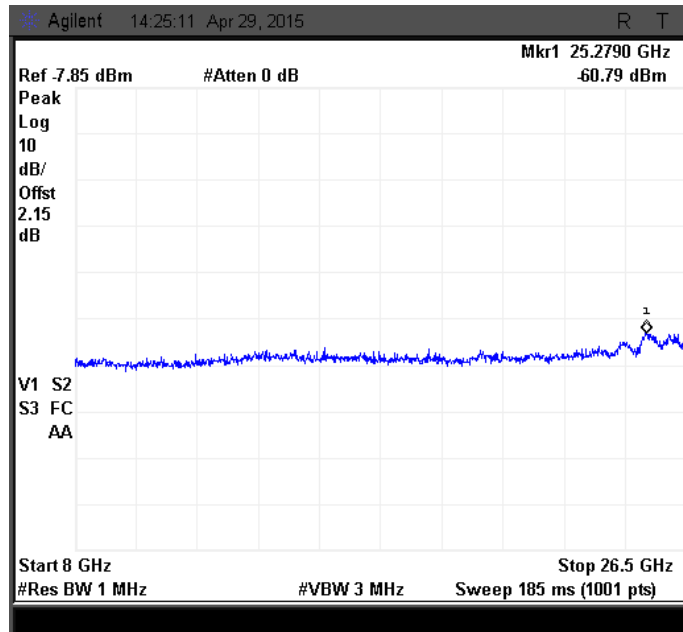


Figure 350: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Peak

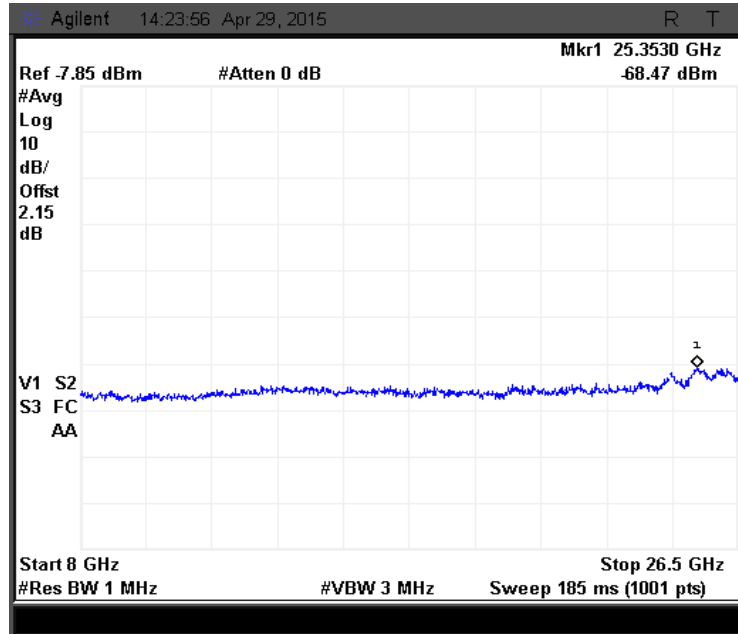


Figure 351: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Average

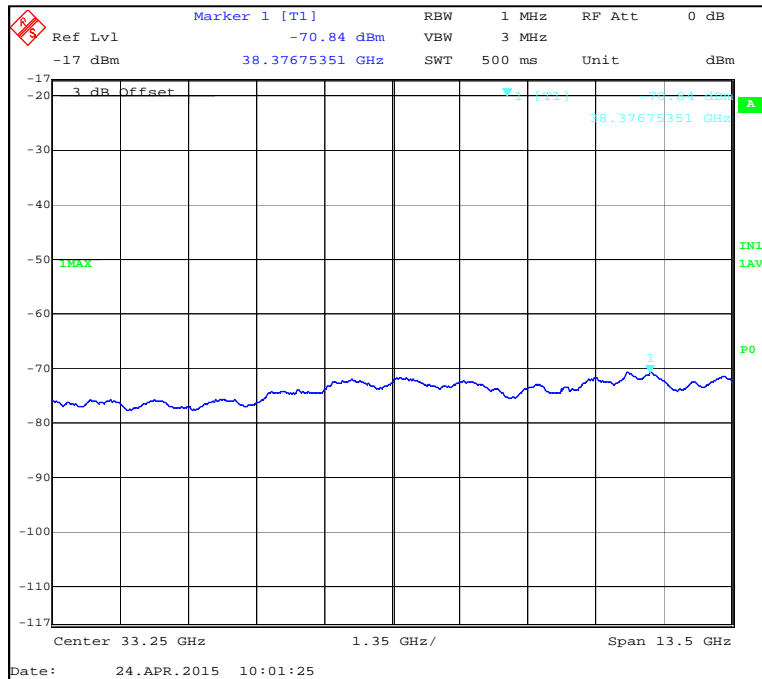
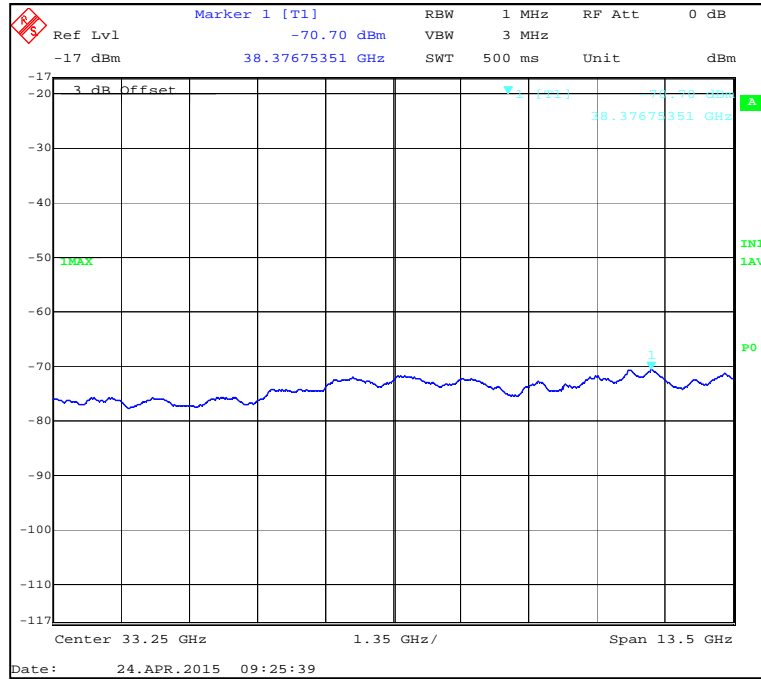
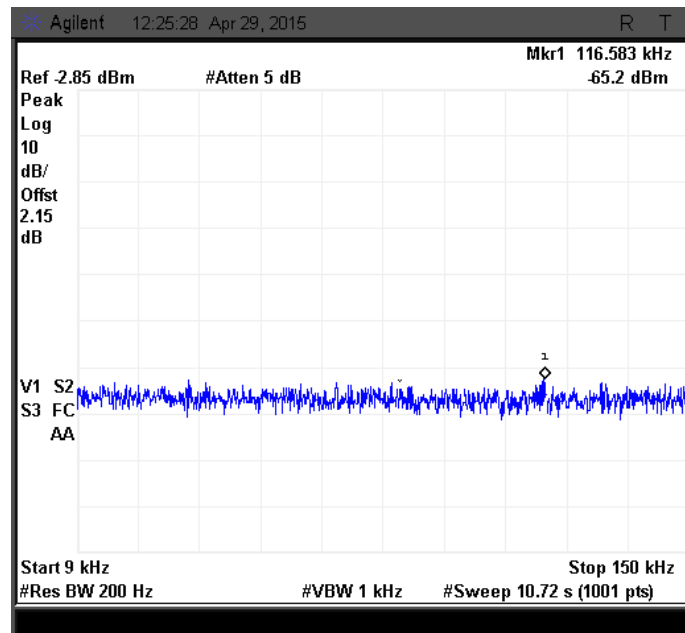


Figure 352: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Peak



**Figure 353: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Average**



**Figure 354: Spurious emission measured from 9 kHz to 150 kHz at Ch. 1-Peak**

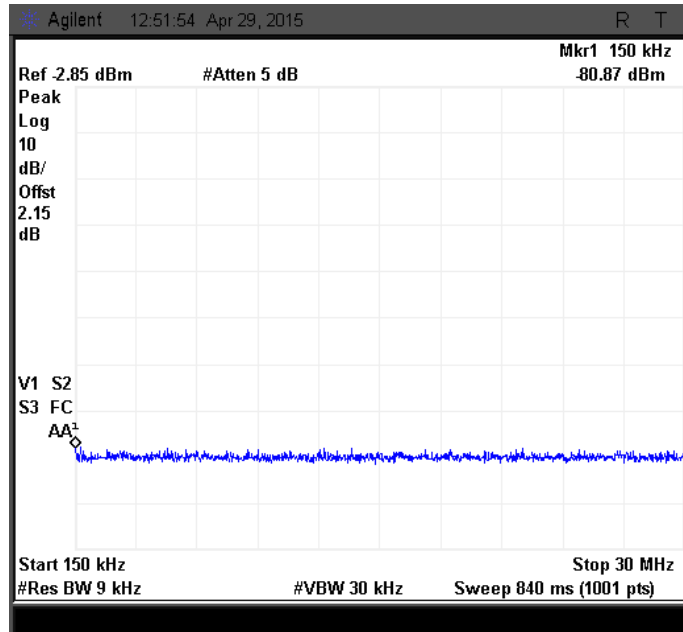


Figure 355: Spurious emission measured from 150 kHz to 30 kHz at Ch. 1-Peak

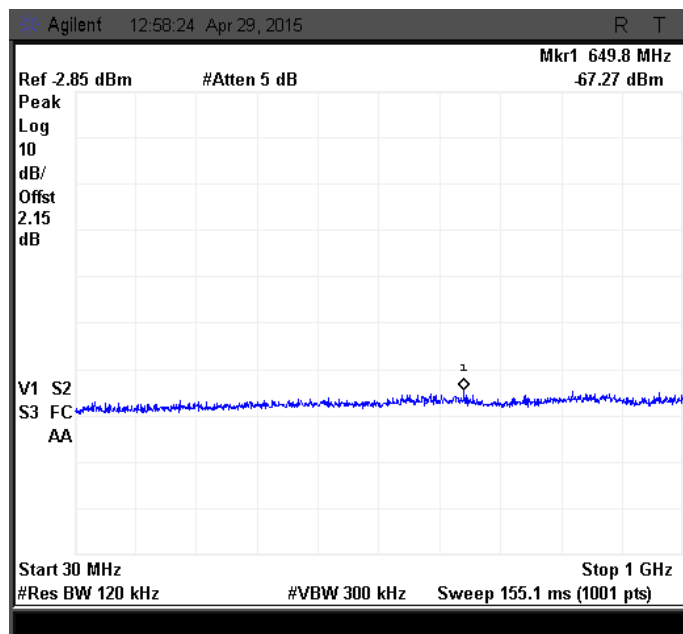


Figure 356: Spurious emission measured from 30 MHz to 1 GHz at Ch. 1-Peak

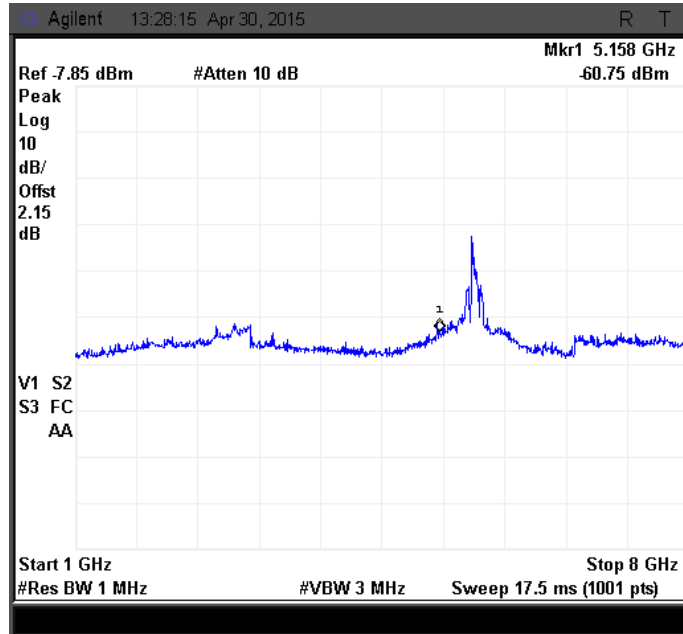


Figure 357: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Peak

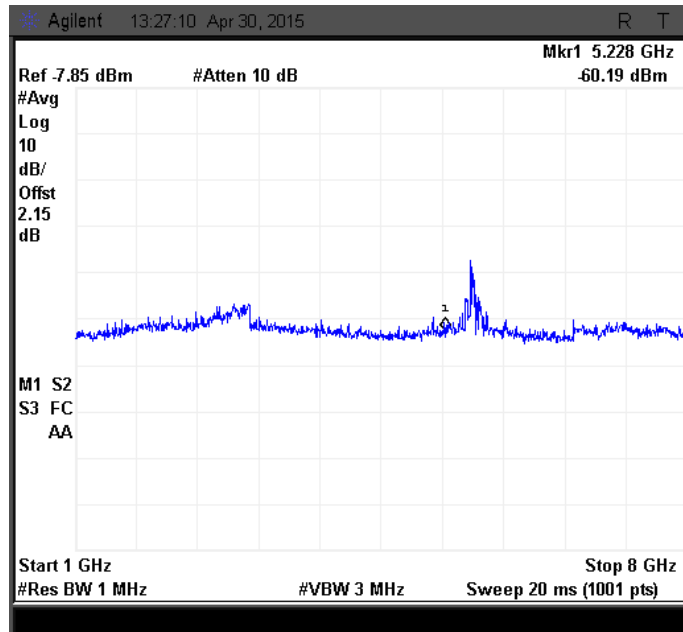


Figure 358: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Average

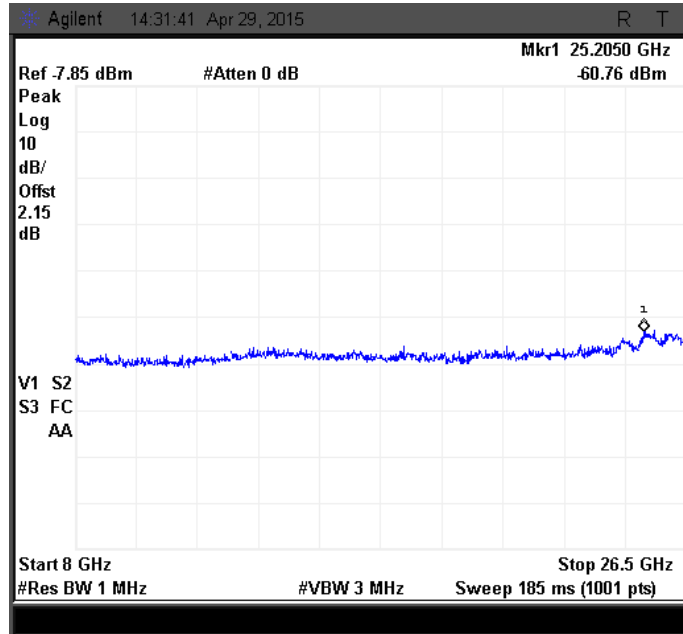


Figure 359: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Peak

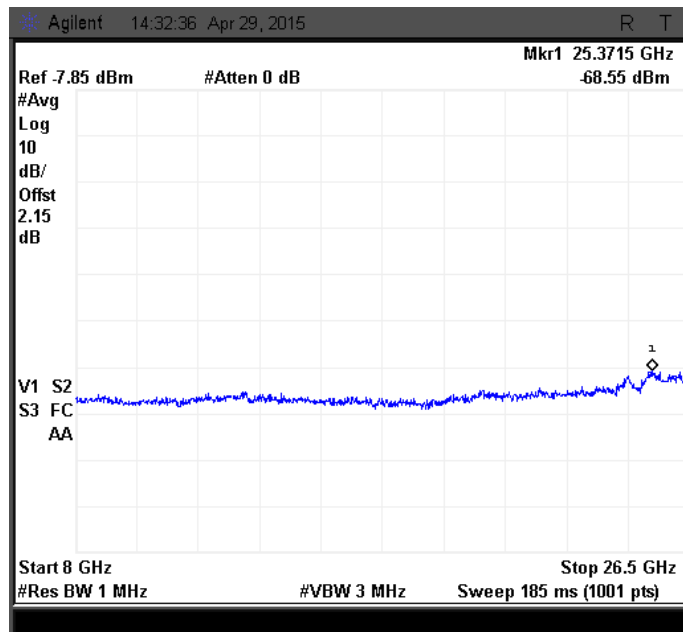
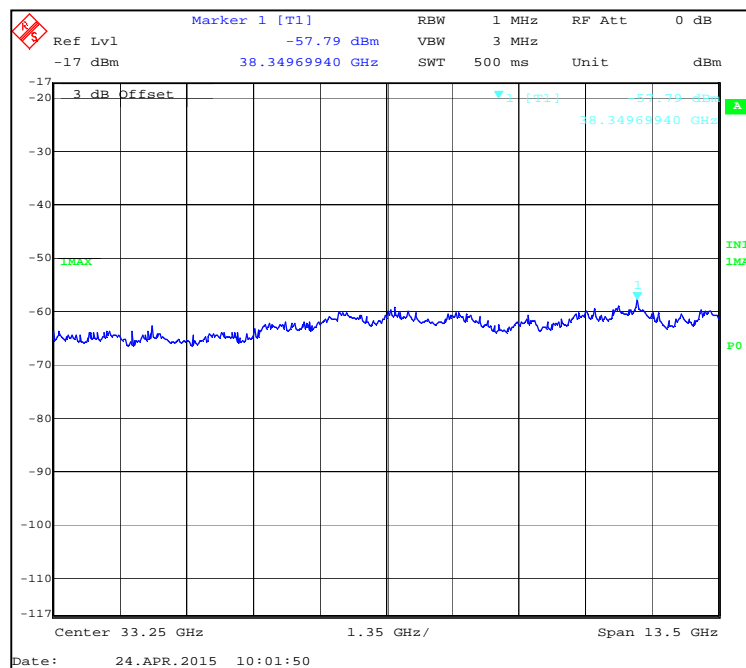
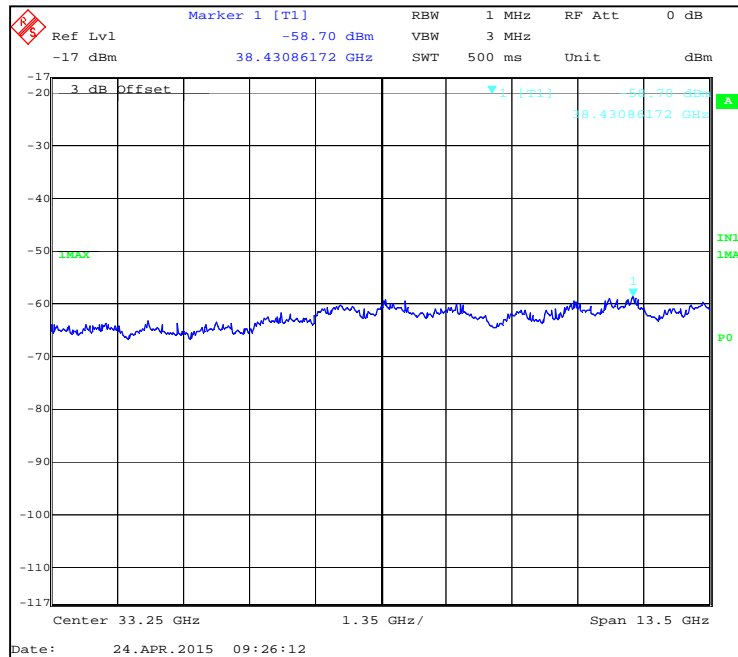


Figure 360: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Average





### 5.3.7.6.3 40MHz MODULATION BW - HIGH CHANNEL\_5700MHz

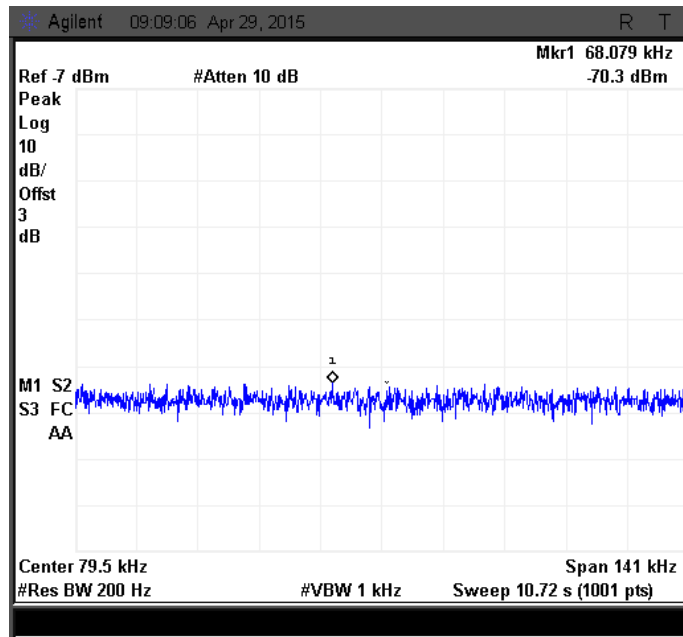


Figure 363: Spurious emission measured from 9 kHz to 150 kHz at Ch. 0-Peak

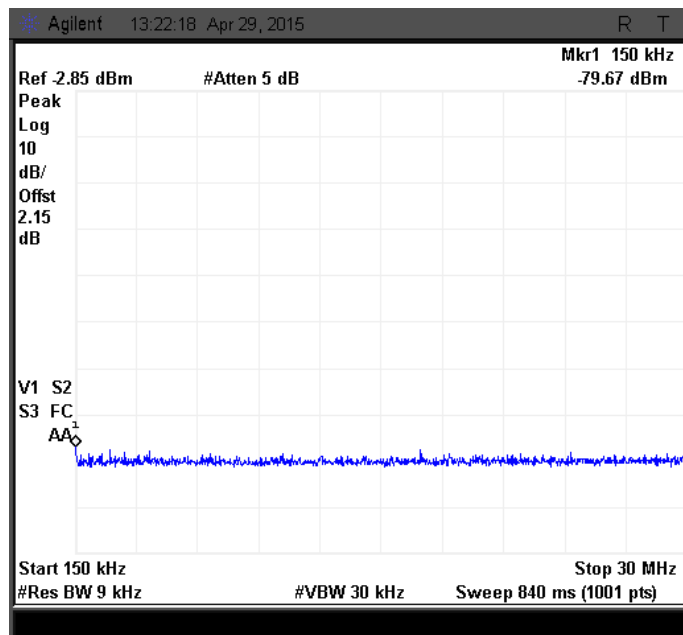


Figure 364: Spurious emission measured from 150 kHz to 30 MHz at Ch. 0-Peak

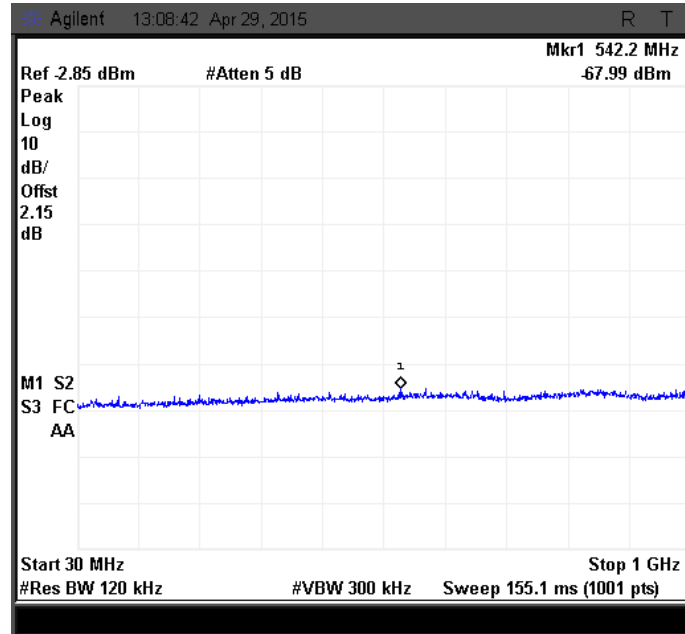


Figure 365: Spurious emission measured from 30 MHz to 1 GHz at Ch. 0-Peak

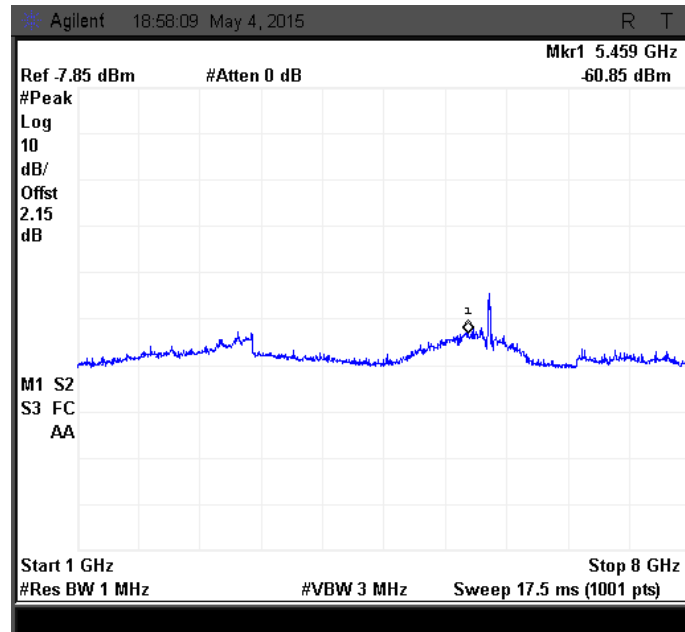


Figure 366: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Peak

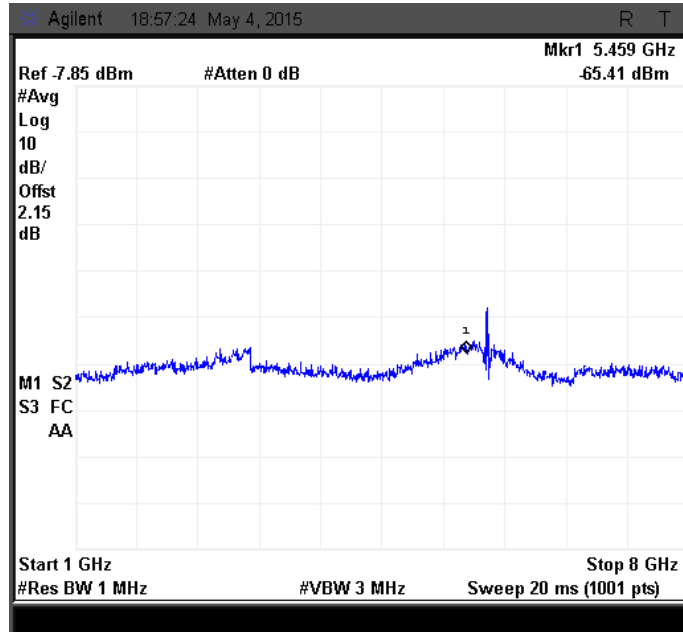


Figure 367: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Average

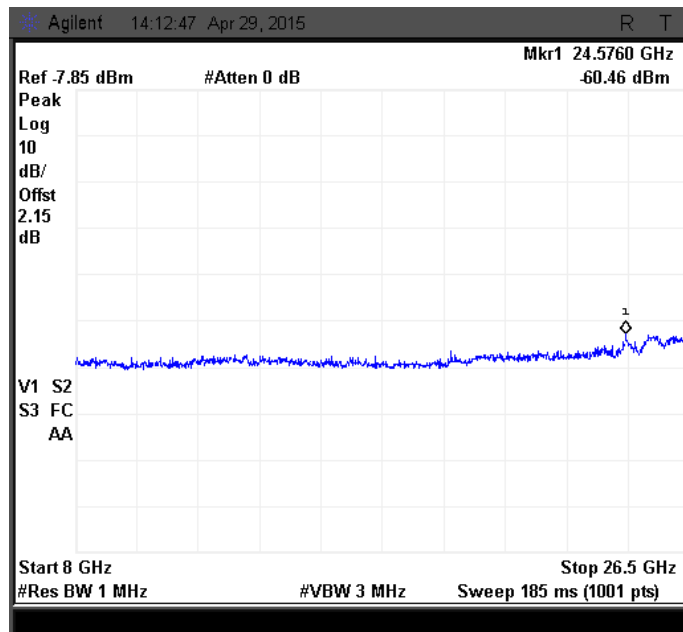


Figure 368: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Peak

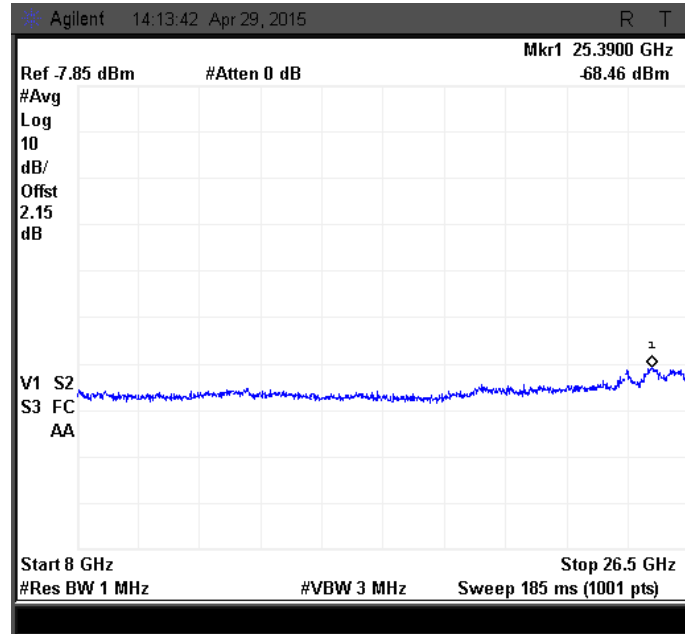


Figure 369: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Average

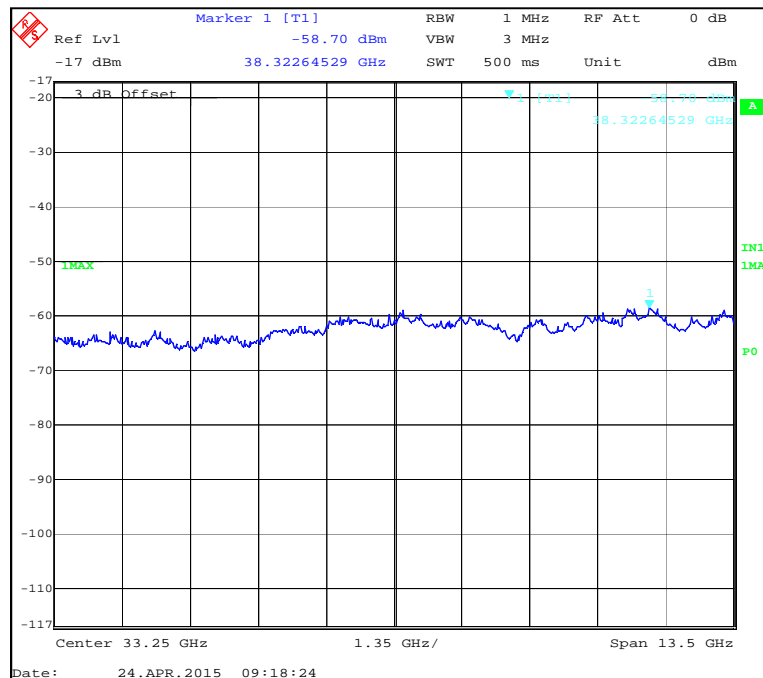


Figure 370: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Peak

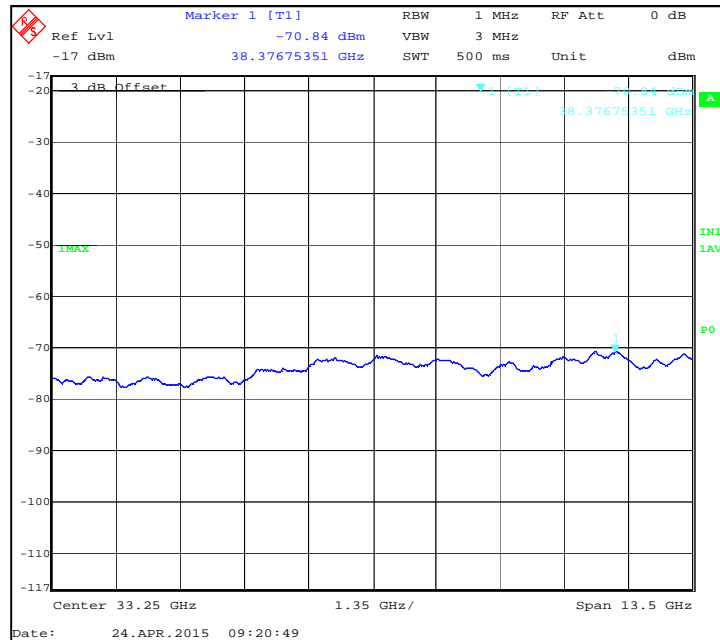


Figure 371: Spurious emission measured from 26.5GHz to 40 GHz at Ch. 0-Average

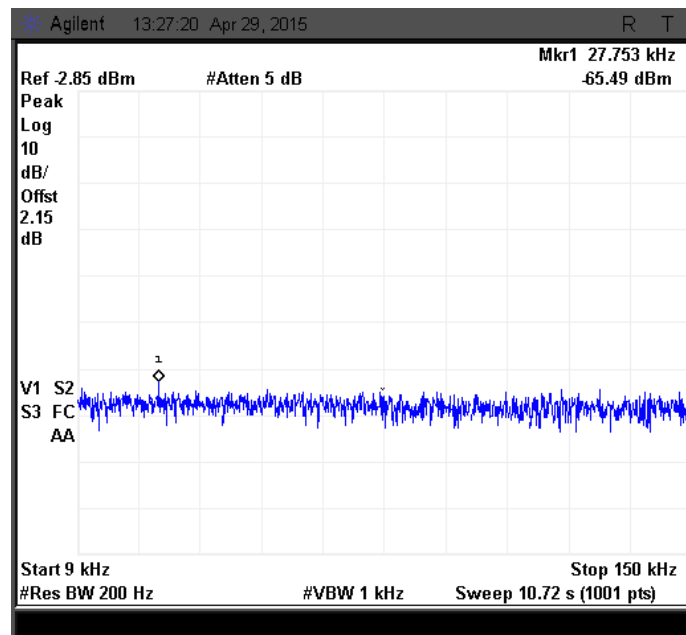


Figure 372: Spurious emission measured from 9 kHz to 150 kHz at Ch. 1-Peak

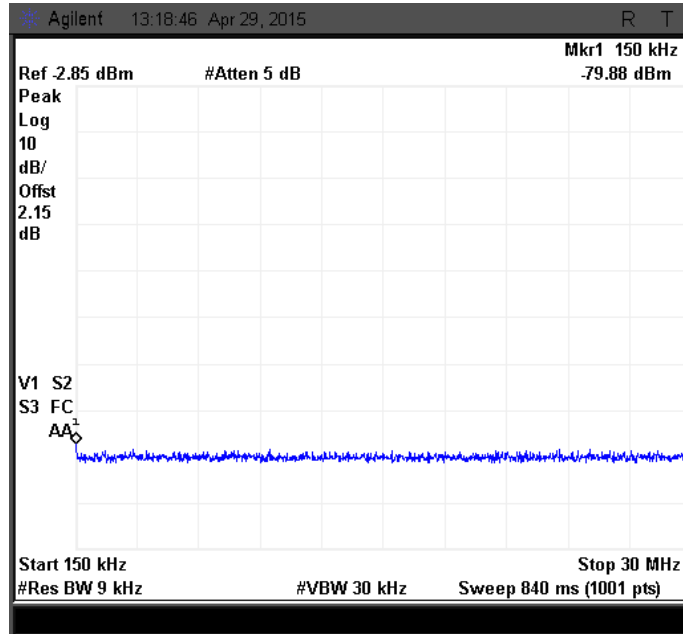


Figure 373: Spurious emission measured from 150 kHz to 30 MHz at Ch. 1-Peak

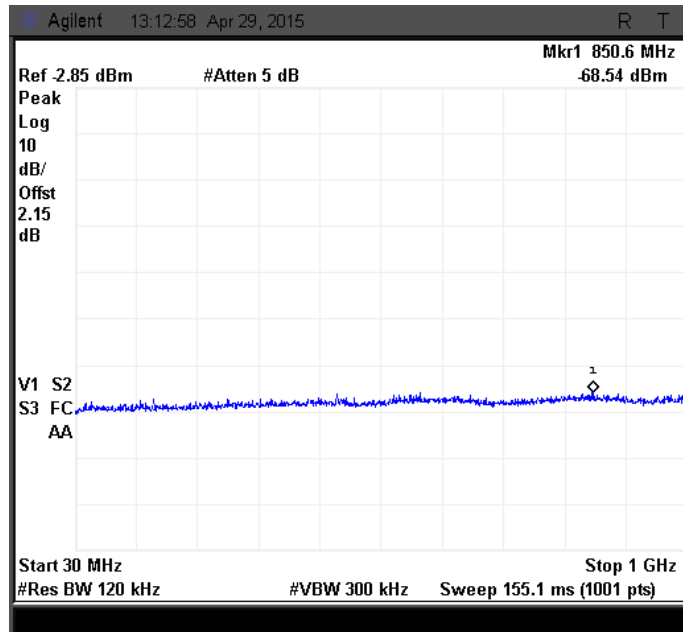


Figure 374: Spurious emission measured from 30 MHz to 1 GHz at Ch. 1-Peak

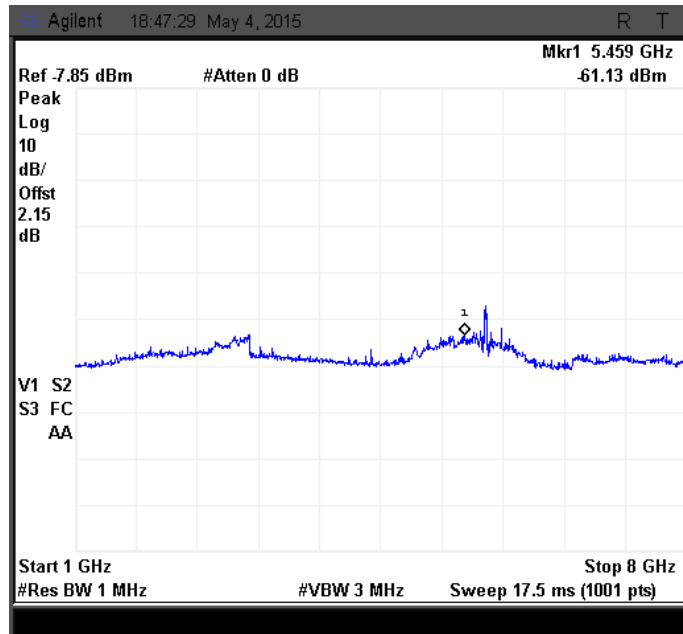


Figure 375: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Peak

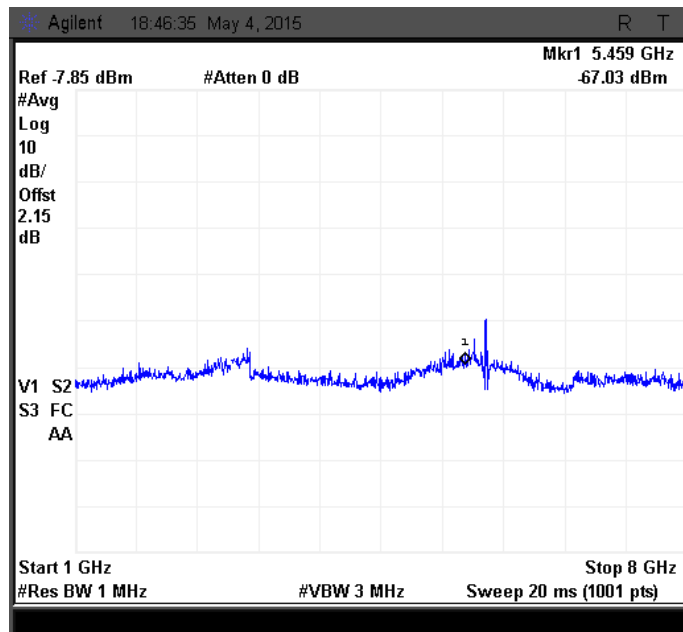


Figure 376: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Average

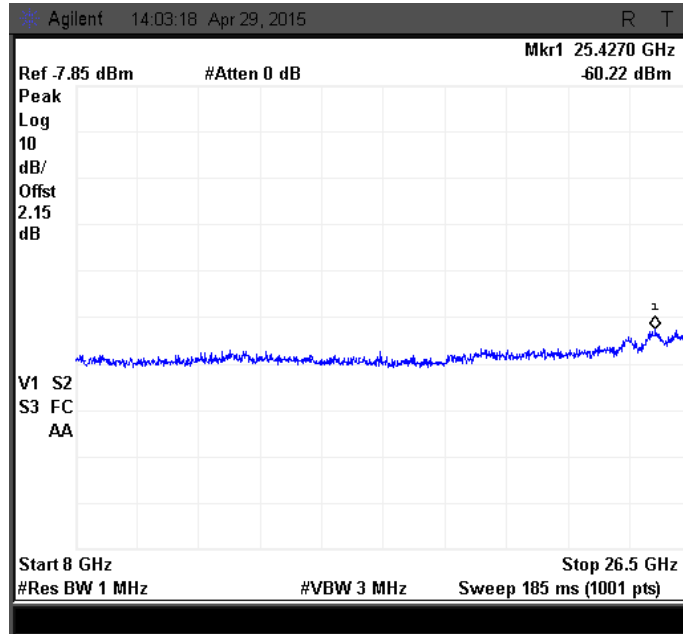


Figure 377: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Peak

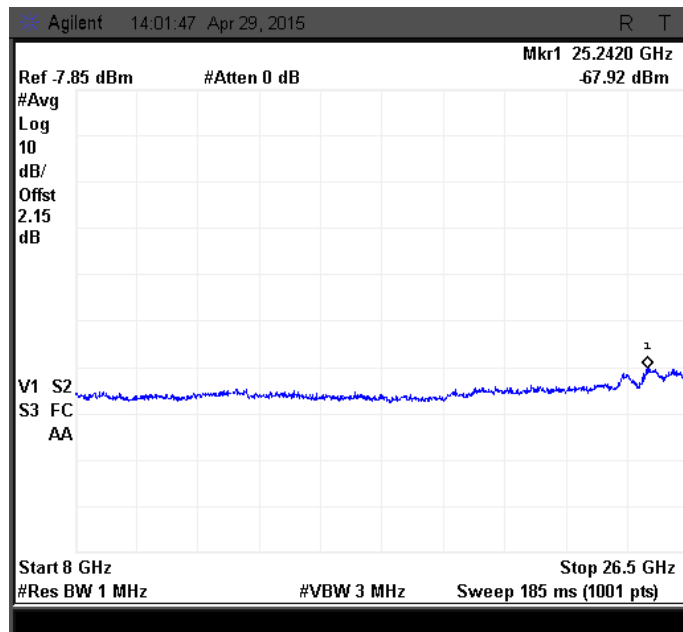
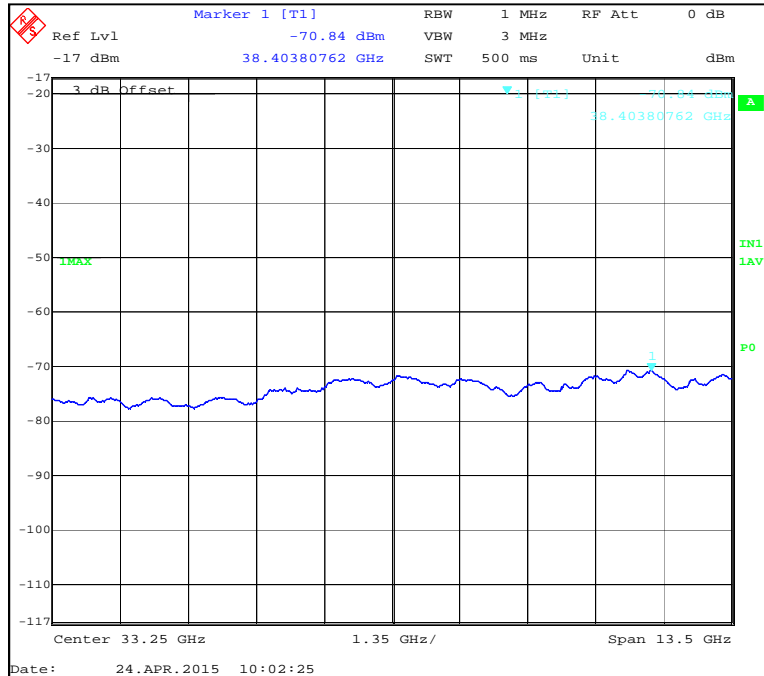
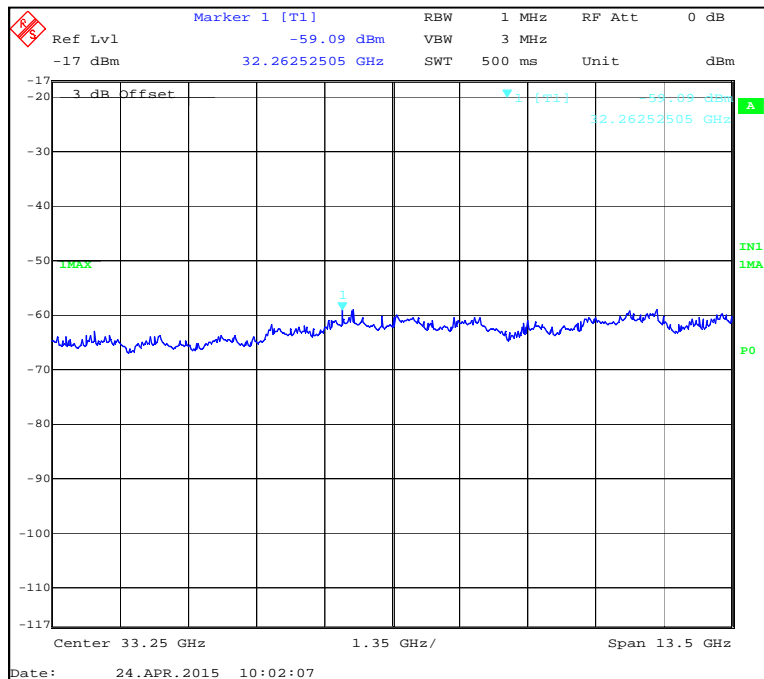


Figure 378: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Average





**Figure 379: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Average**



**Figure 380: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Peak**

#### 5.3.7.6.4 10MHz MODULATION BW - LOW CHANNEL\_5485MHz

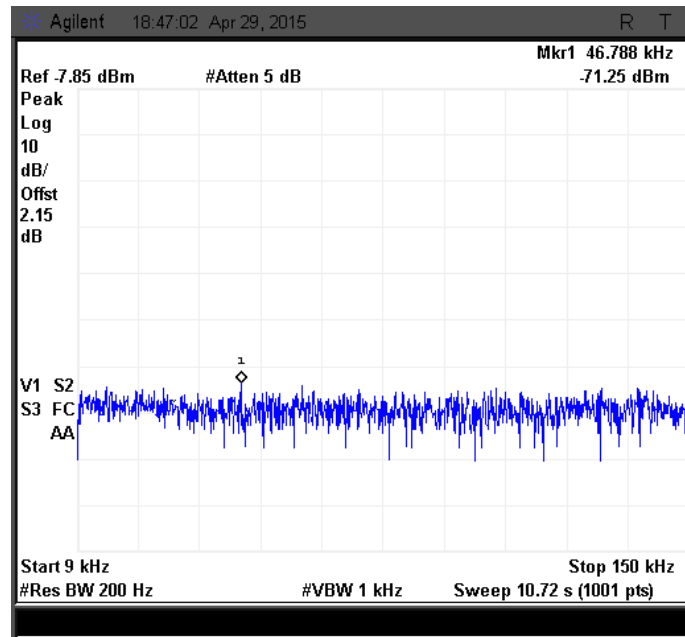


Figure 381: Spurious emission measured from 9 kHz to 150 kHz at Ch. 0-Peak

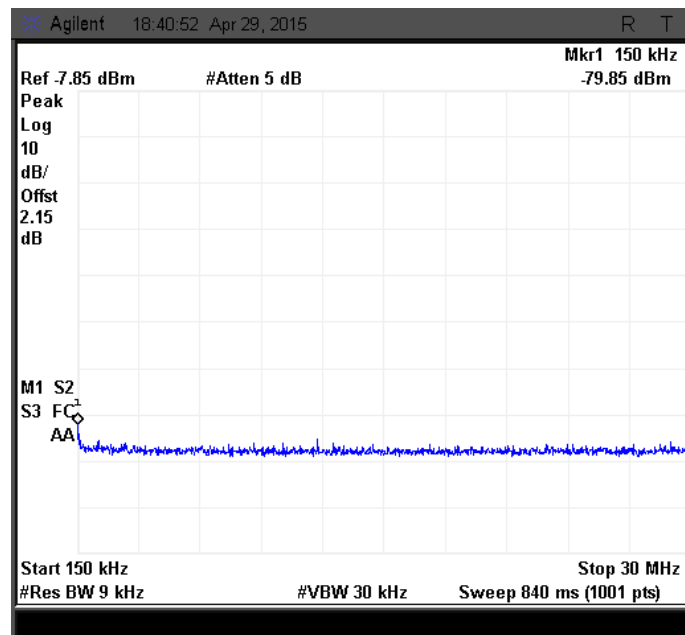


Figure 382: Spurious emission measured from 150 kHz to 30 MHz at Ch. 0-Peak

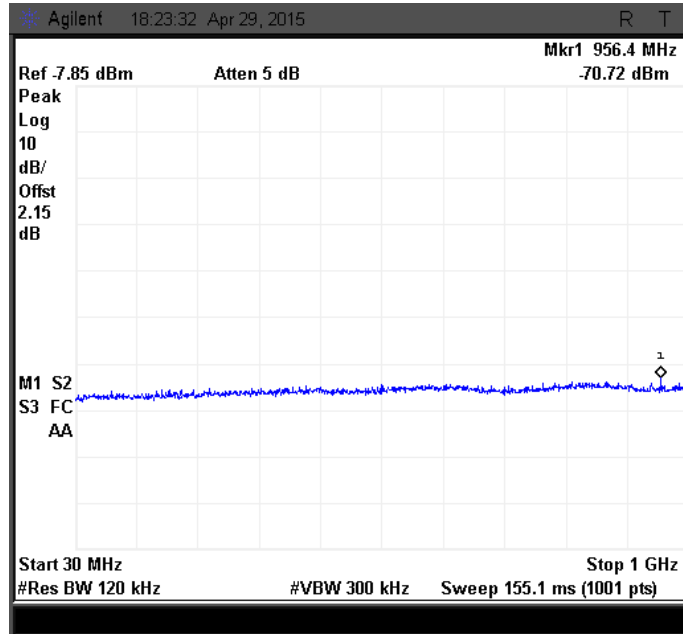


Figure 383: Spurious emission measured from 30 MHz to 1 GHz at Ch. 0-Peak

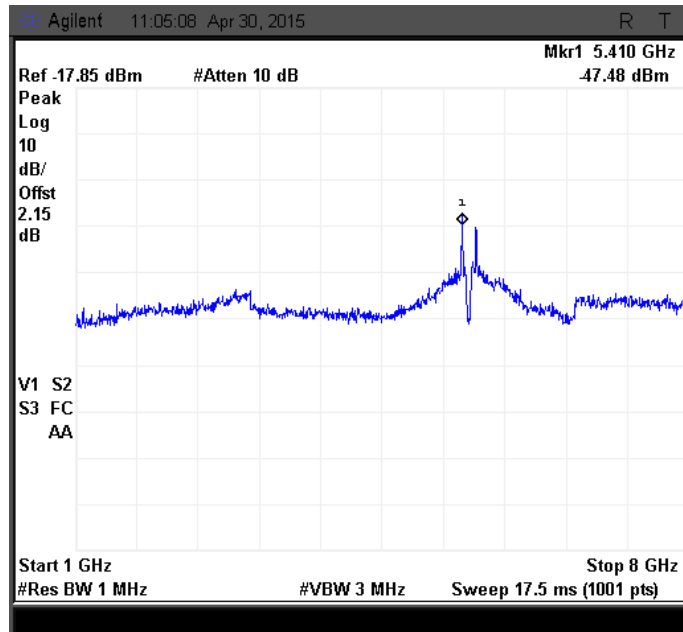


Figure 384: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Peak

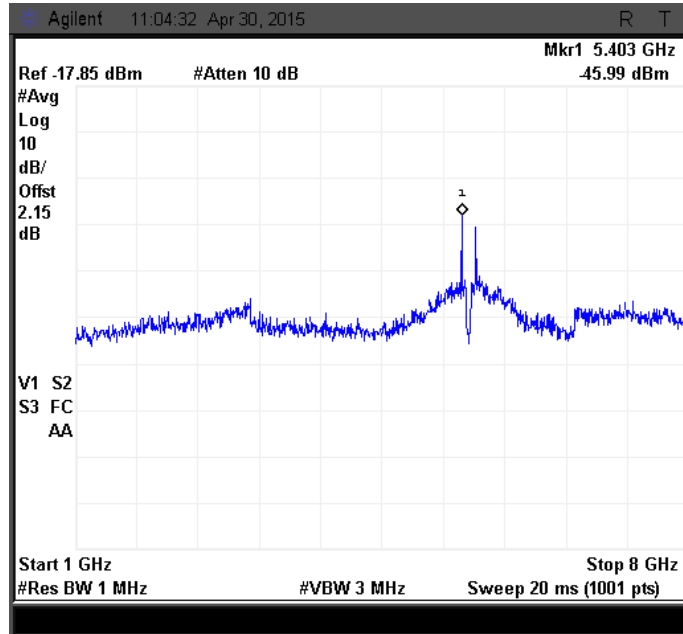


Figure 385: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Average

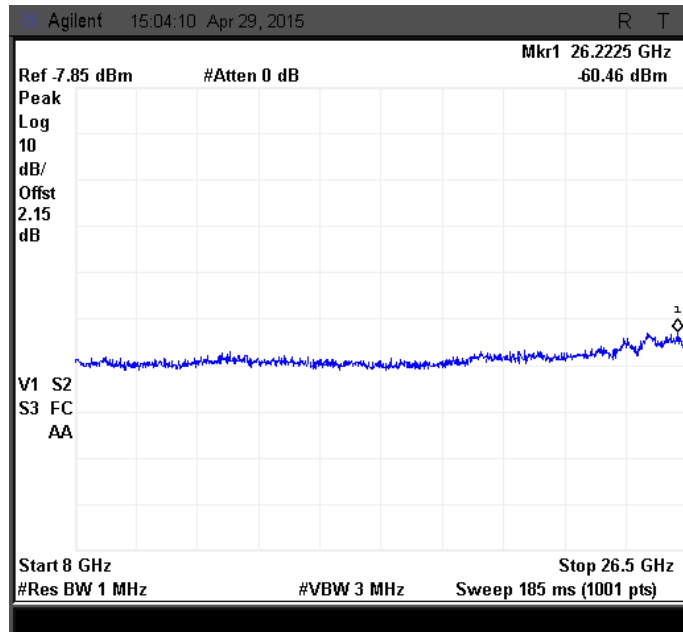
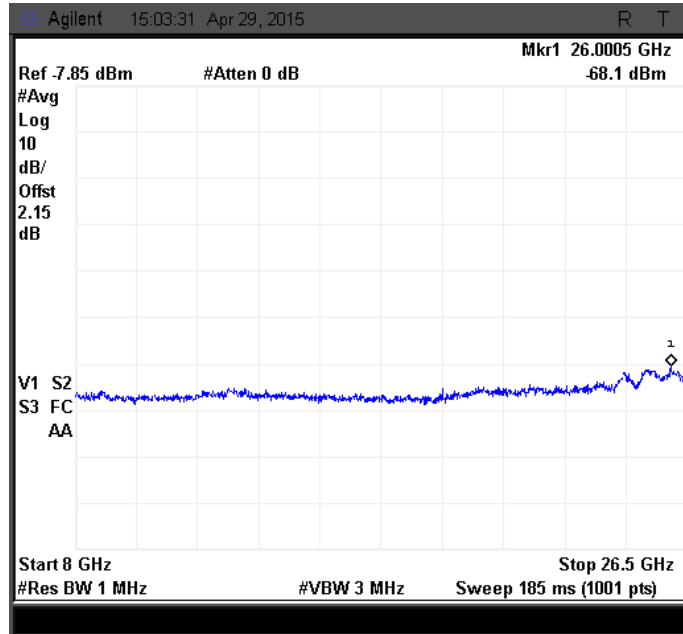
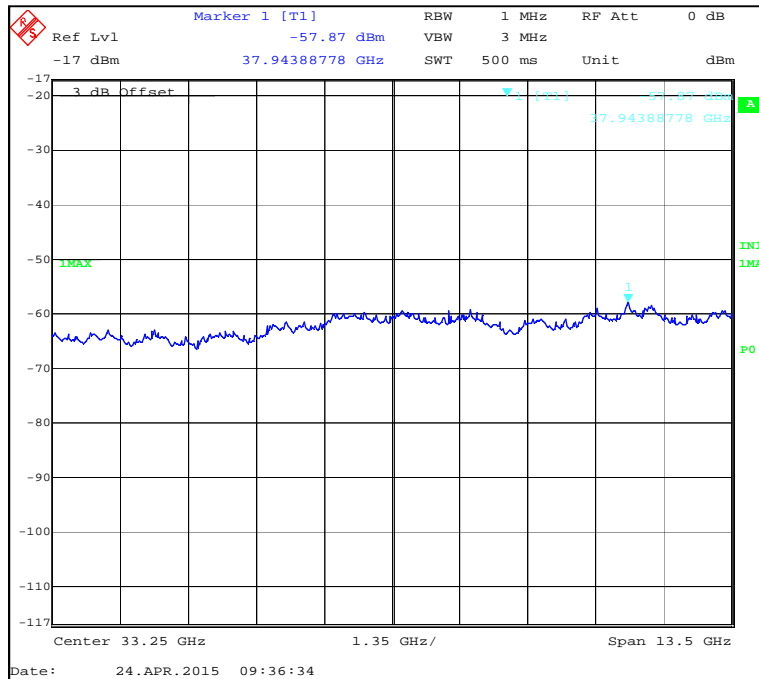


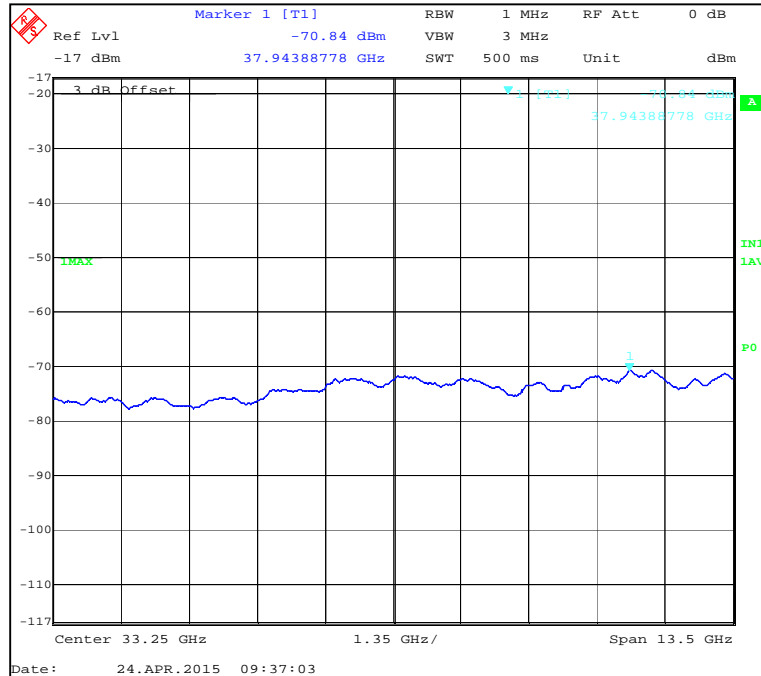
Figure 386: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Peak



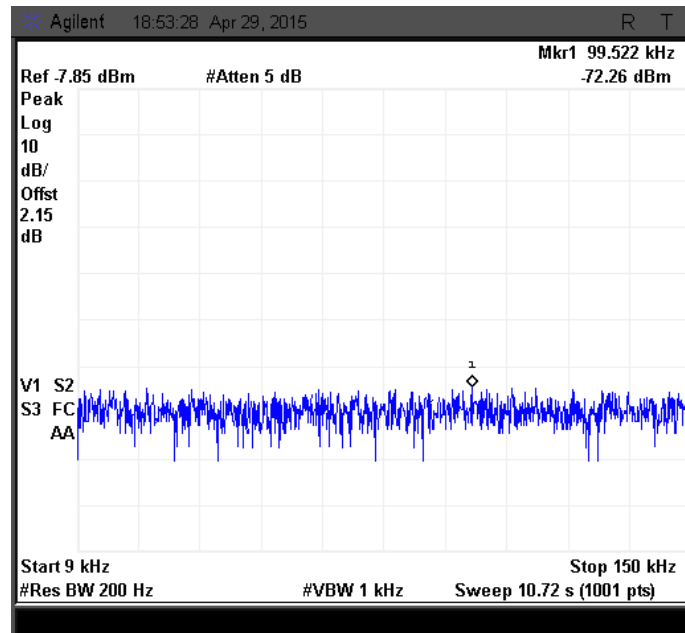
**Figure 387: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Average**



**Figure 388: Spurious emission measured from 26.5GHz to 40 GHz at Ch. 0-Peak**



**Figure 389: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Average**



**Figure 390: Spurious emission measured from 9 kHz to 150 kHz at Ch. 1-Peak**

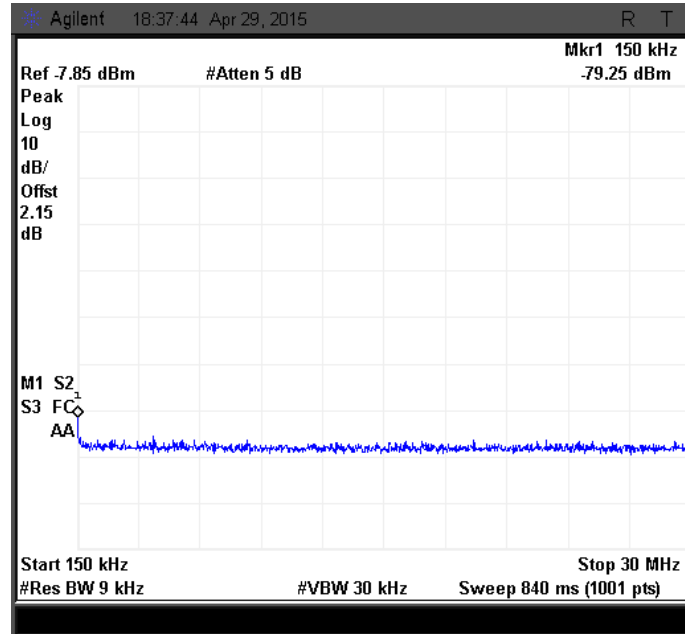


Figure 391: Spurious emission measured from 150 kHz to 30 MHz at Ch. 1-Peak

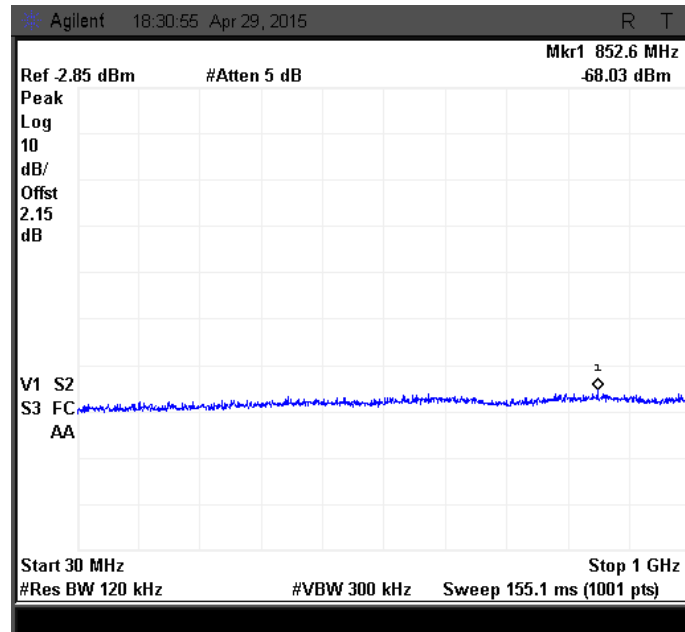


Figure 392: Spurious emission measured from 30 MHz to 1 GHz at Ch. 1-Peak

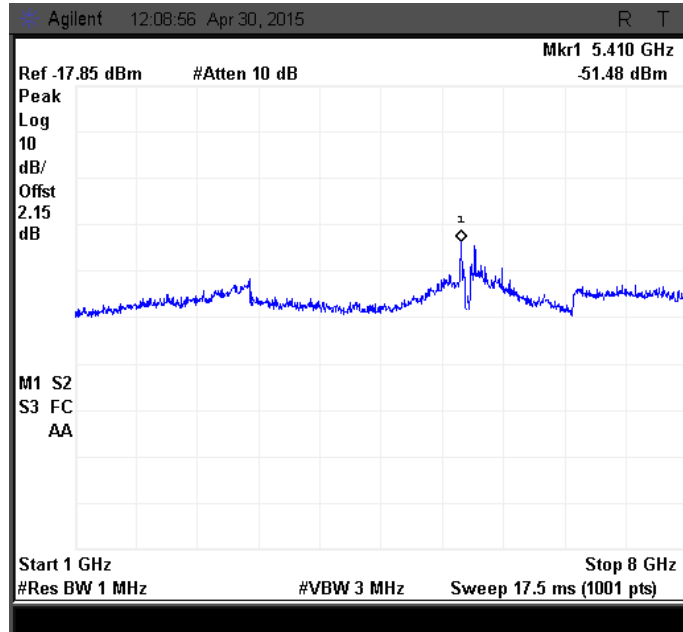


Figure 393: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Peak

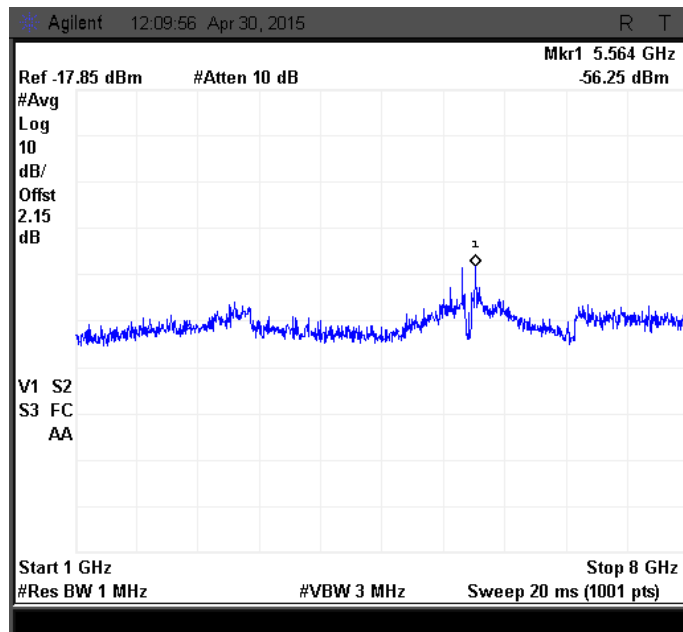


Figure 394: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Average



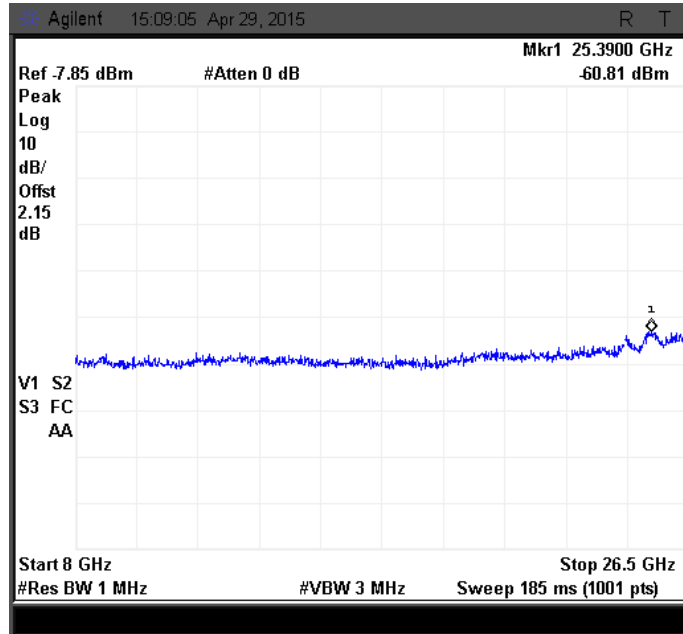


Figure 395: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Peak

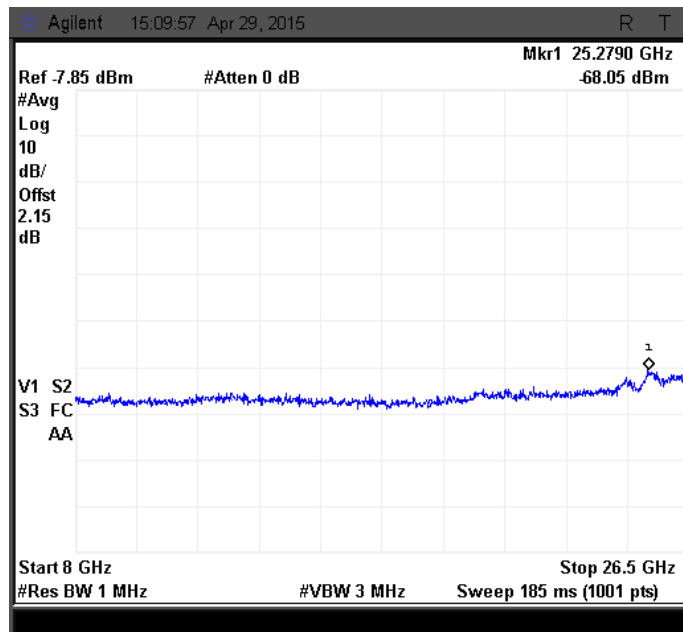
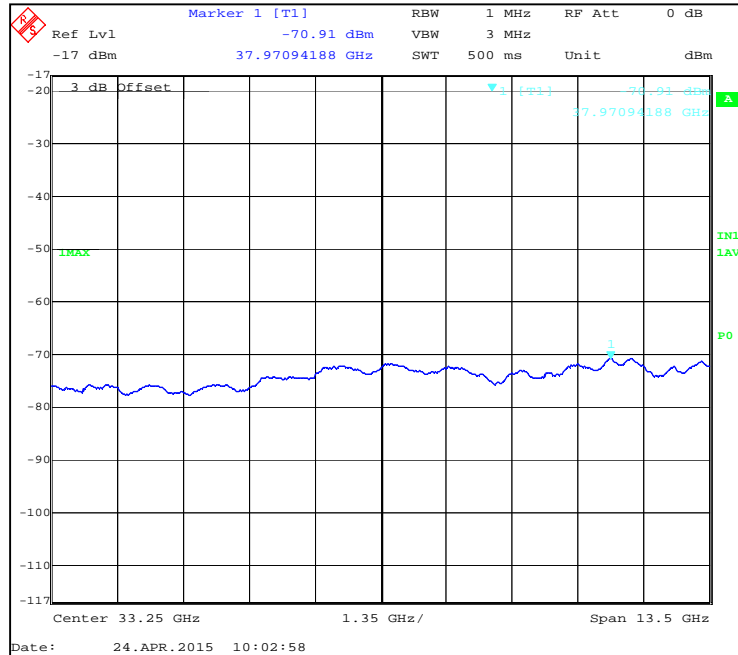
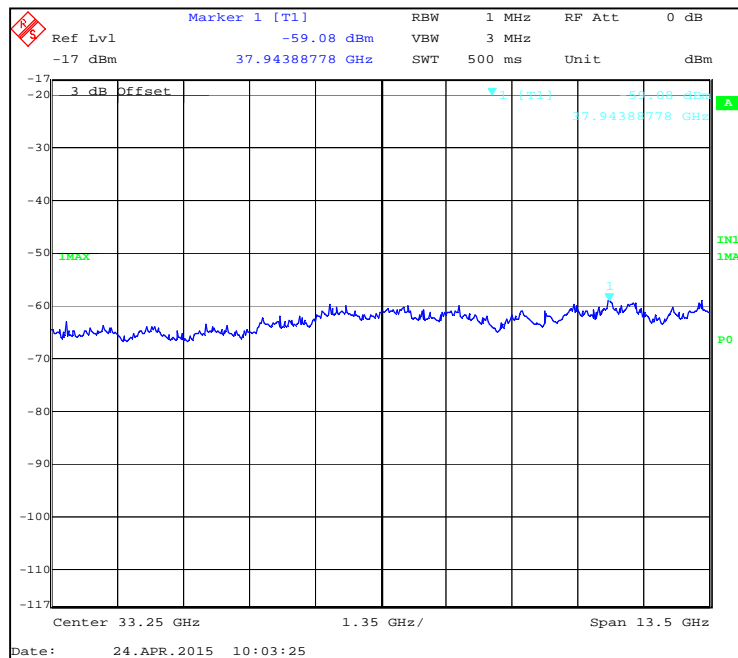


Figure 396: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Average



**Figure 397: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Average**



**Figure 398: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Peak**

### 5.3.7.6.5 10MHz MODULATION BW - MID CHANNEL\_5550MHz

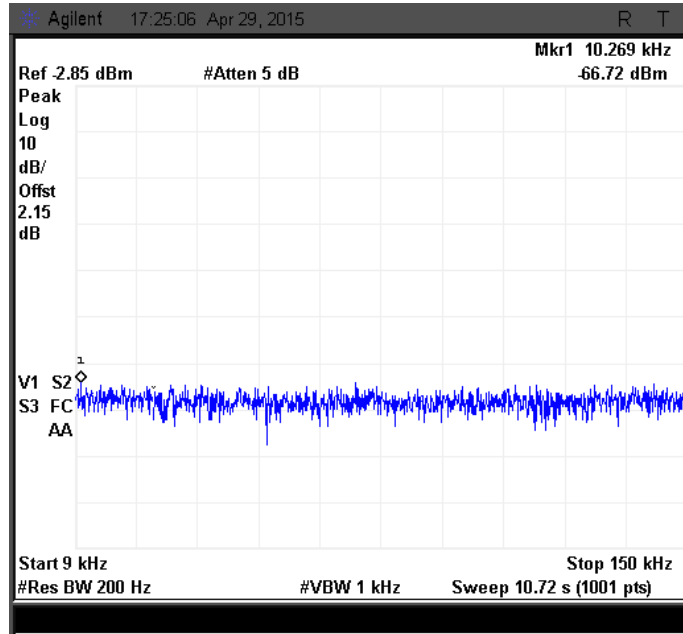


Figure 399: Spurious emission measured from 9 kHz to 150 kHz at Ch. 0-Peak

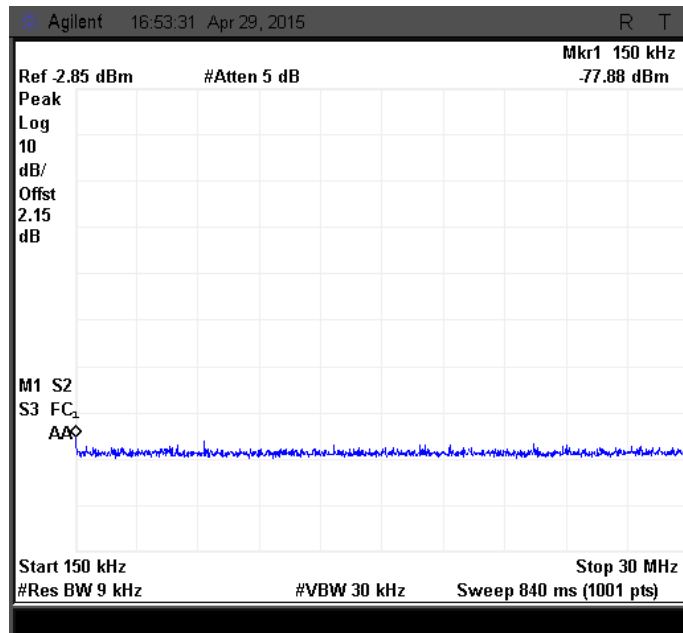


Figure 400: Spurious emission measured from 150 kHz to 30 MHz at Ch. 0-Peak

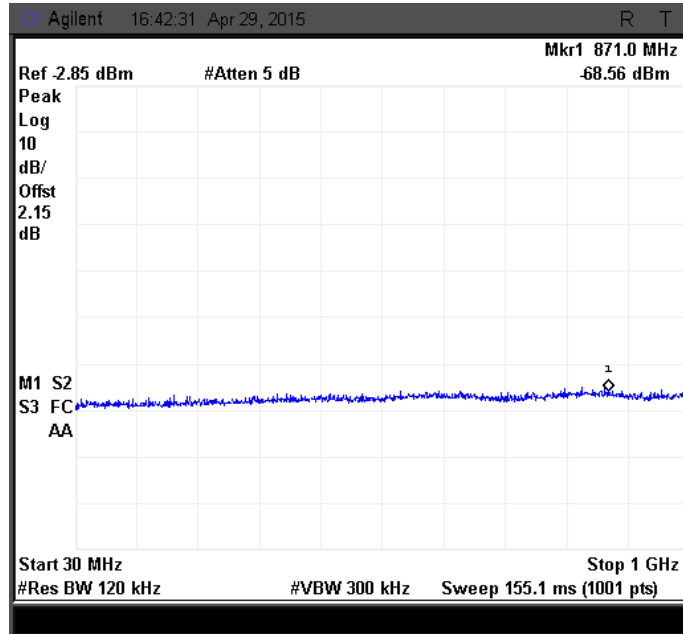


Figure 401: Spurious emission measured from 30 MHz to 1 GHz at Ch. 0-Peak

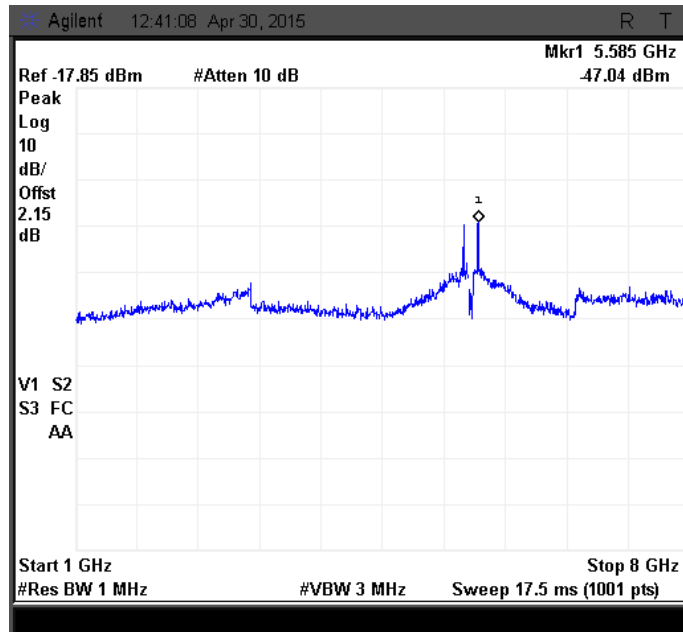


Figure 402: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Peak

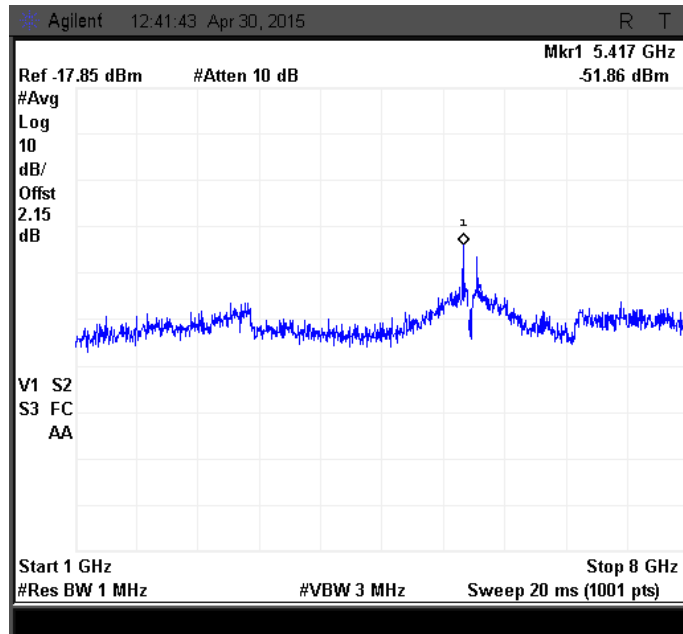


Figure 403: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Average

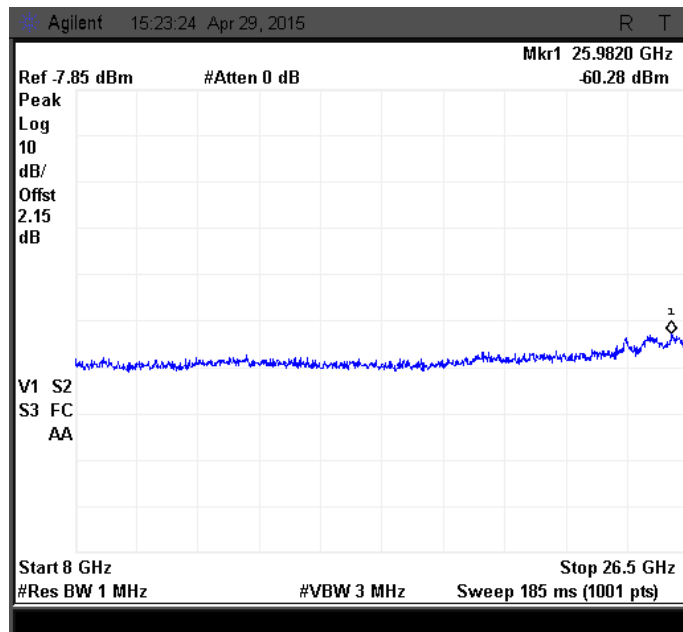
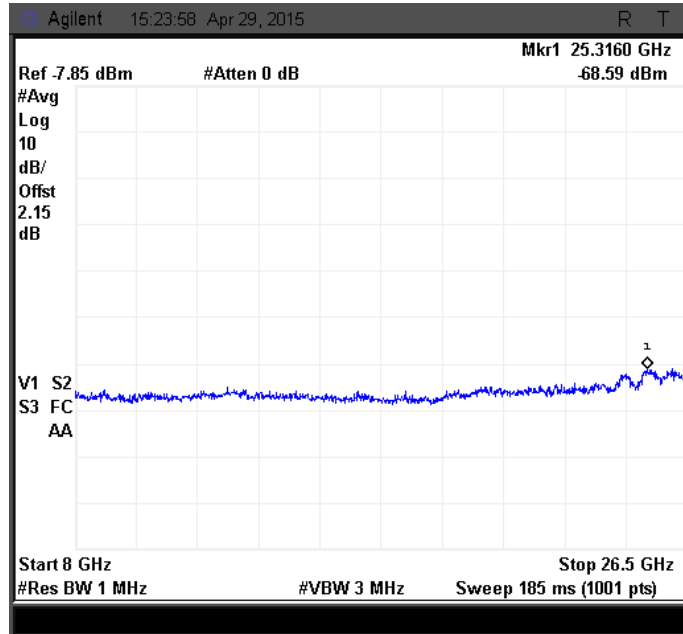
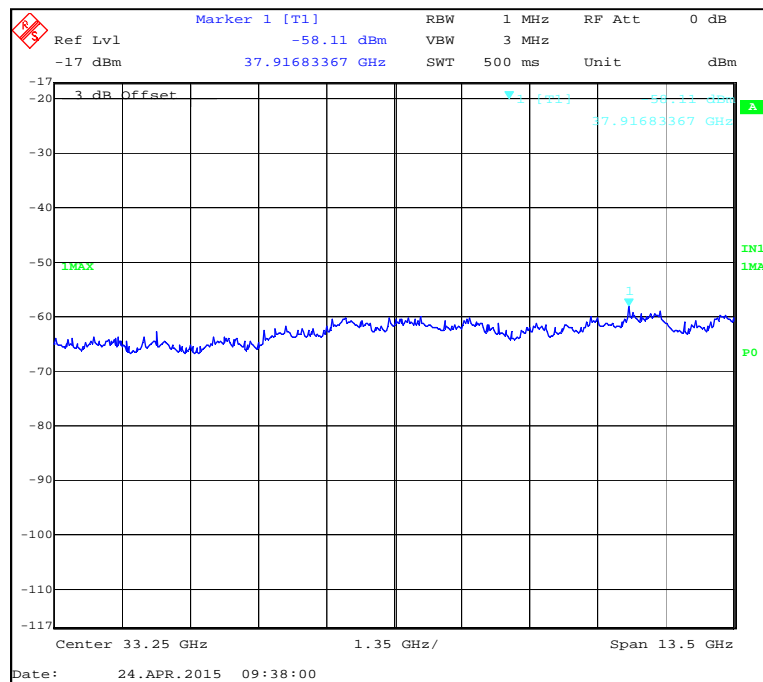


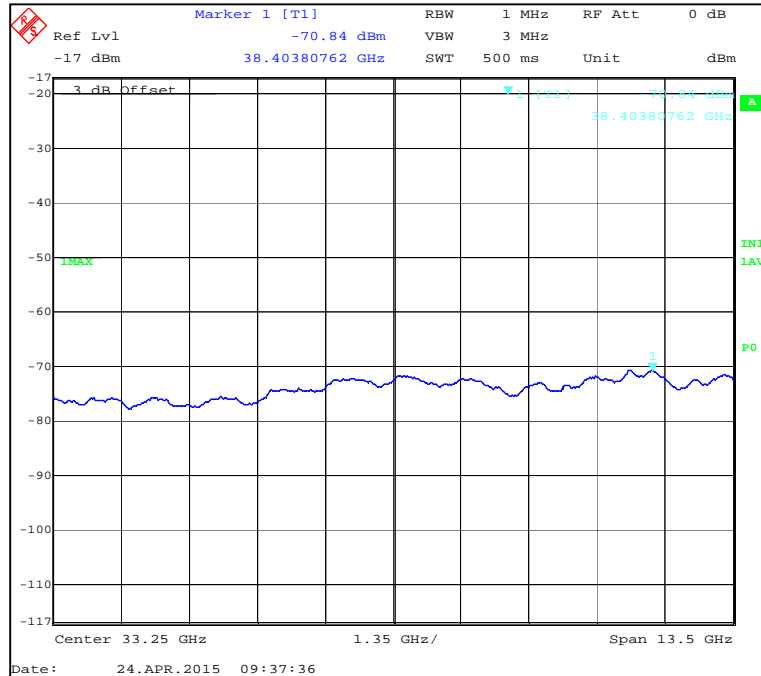
Figure 404: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Peak



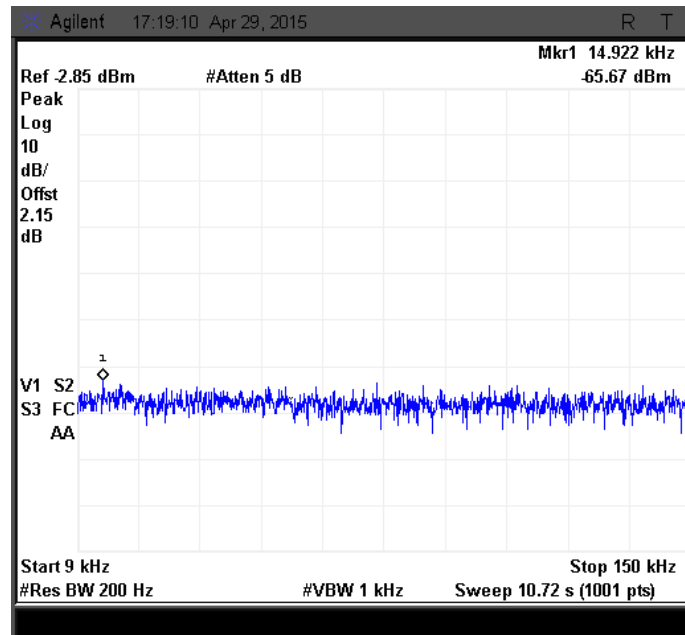
**Figure 405: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Average**



**Figure 406: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Peak**



**Figure 407: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Average**



**Figure 408: Spurious emission measured from 9 kHz to 150 kHz at Ch. 1-Peak**

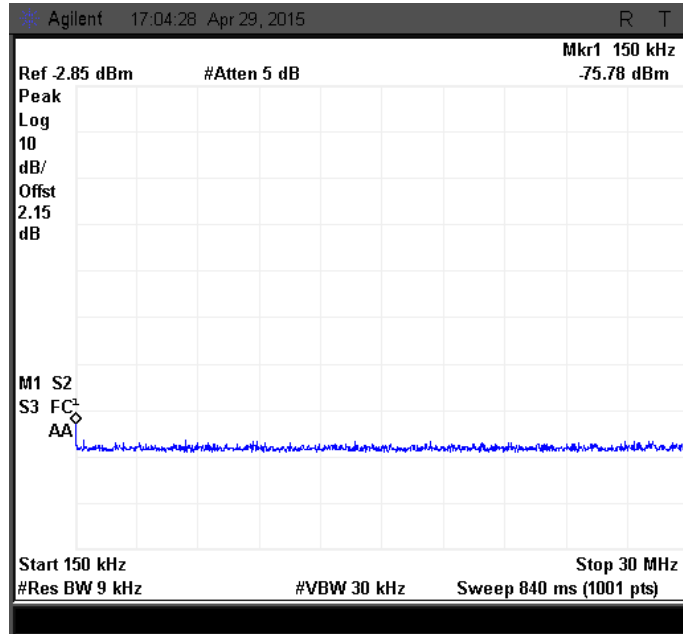


Figure 409: Spurious emission measured from 150 kHz to 30 MHz at Ch. 1-Peak

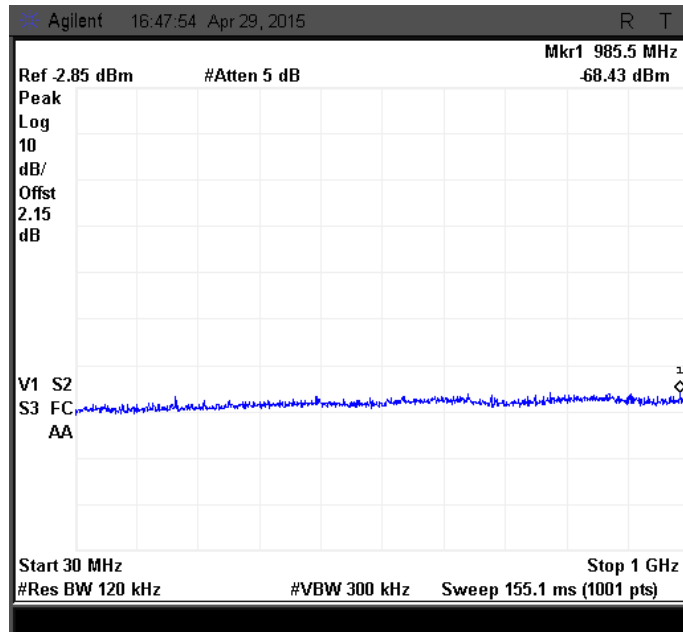


Figure 410: Spurious emission measured from 30 MHz to 1 GHz at Ch. 1-Peak



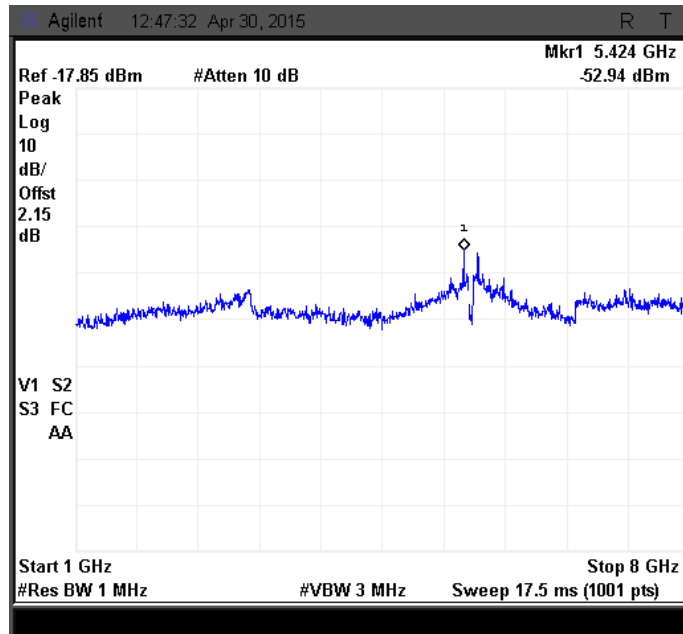


Figure 411: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Peak

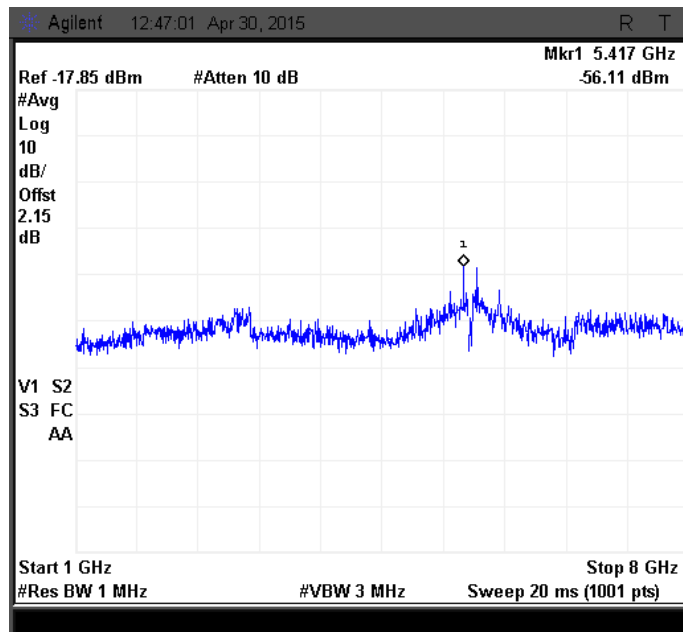


Figure 412: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Average

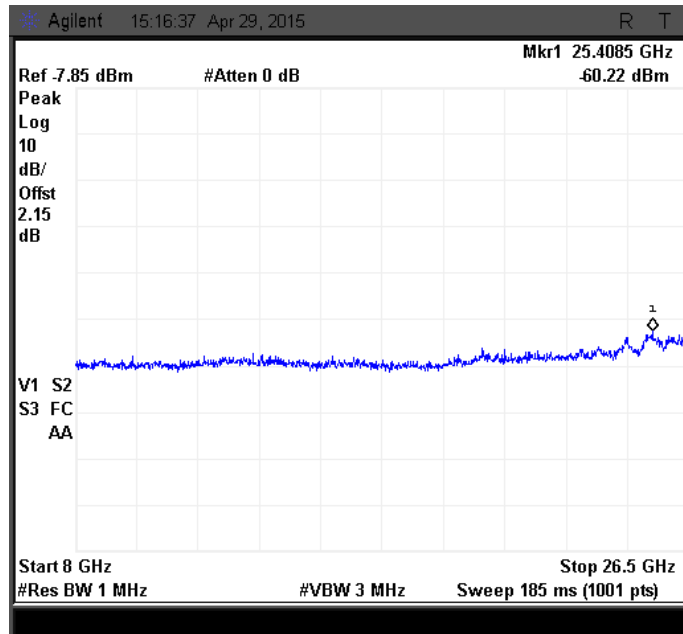


Figure 413: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Peak

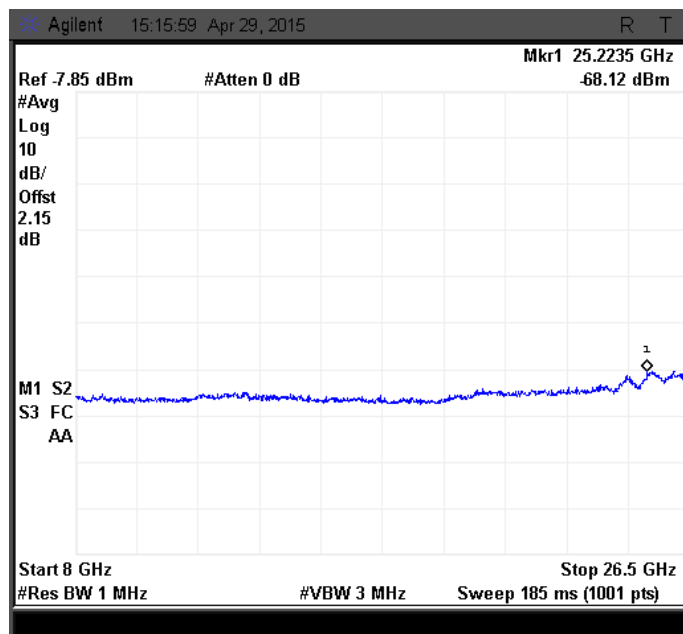
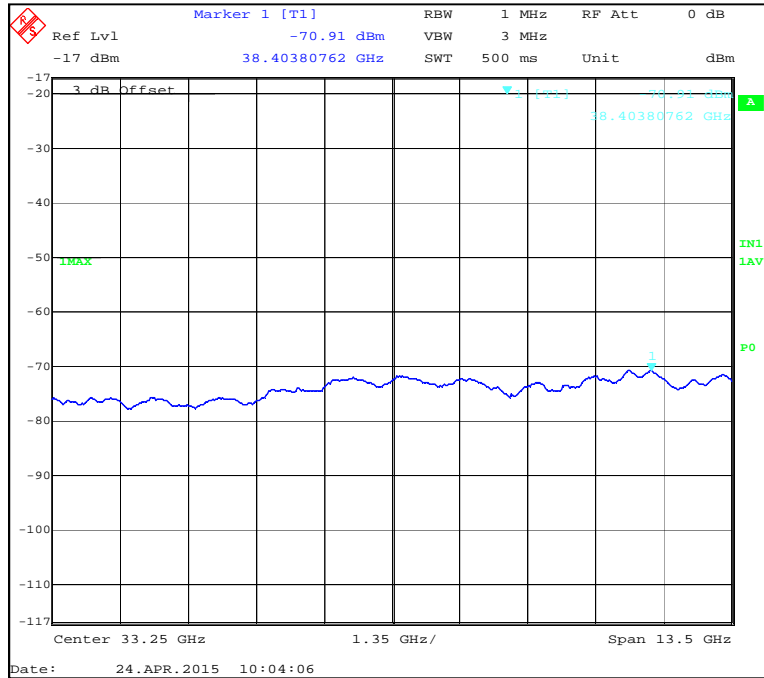
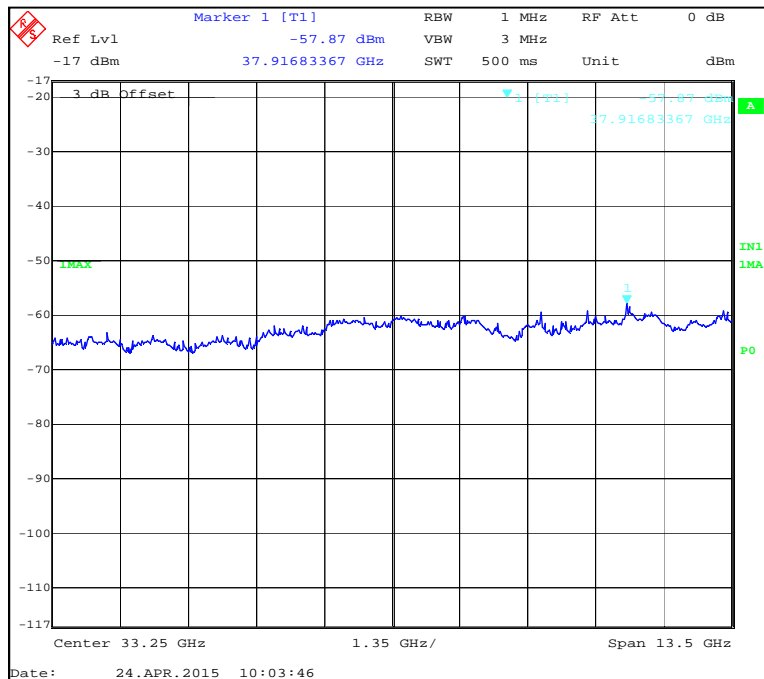


Figure 414: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Average



**Figure 415: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Average**



**Figure 416: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Peak**

### 5.3.7.6.6 10MHz MODULATION BW - HIGH CHANNEL\_5710MHz

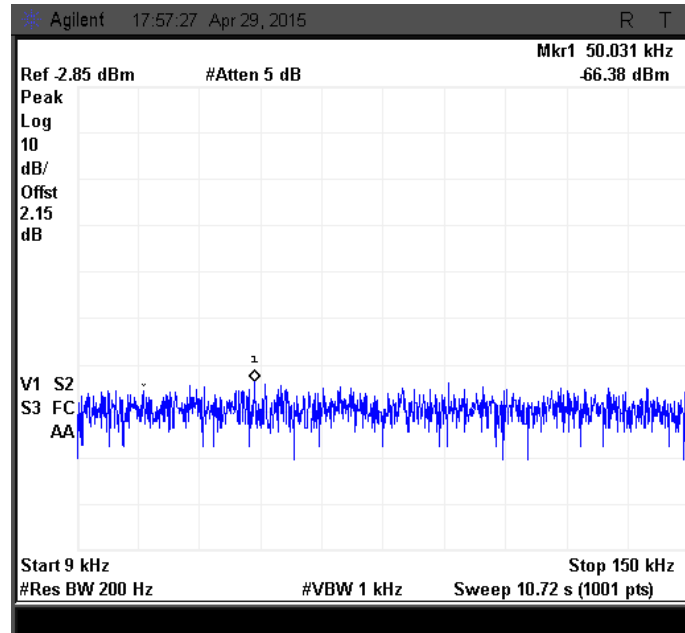


Figure 417: Spurious emission measured from 9 kHz to 150 kHz at Ch. 0-Peak

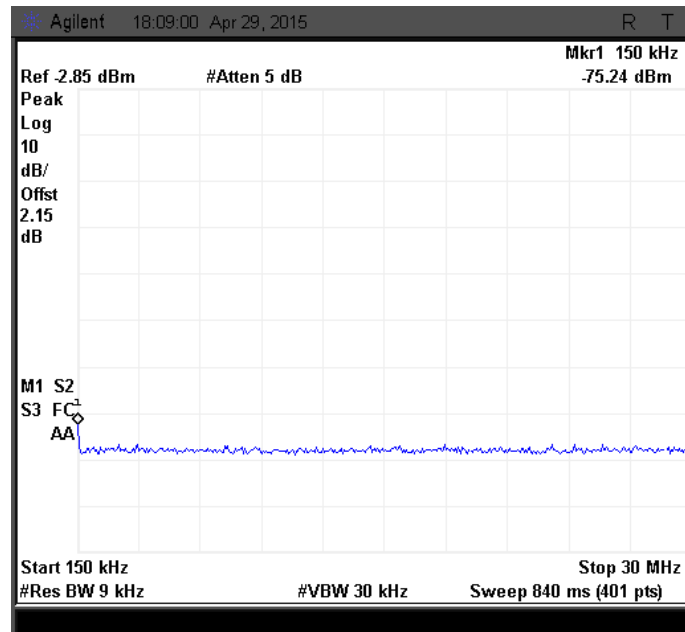


Figure 418: Spurious emission measured from 150 kHz to 30 MHz at Ch. 0-Peak

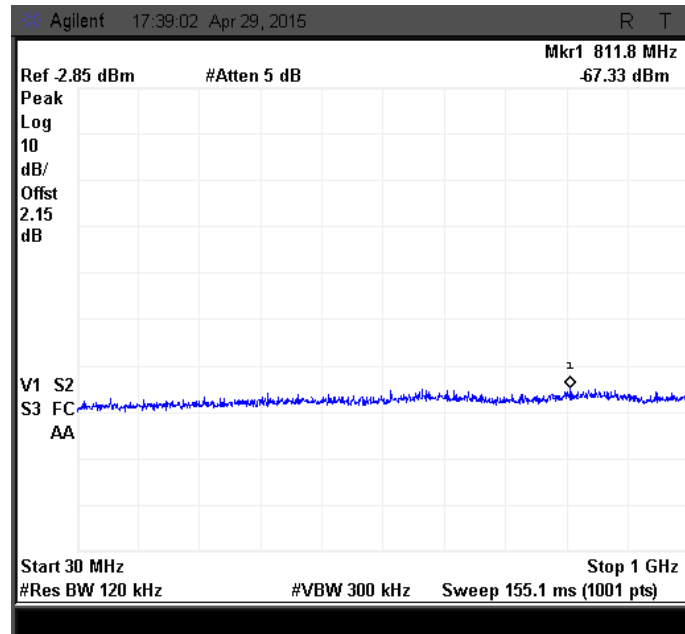


Figure 419: Spurious emission measured from 30 MHz to 1 GHz at Ch. 0-Peak

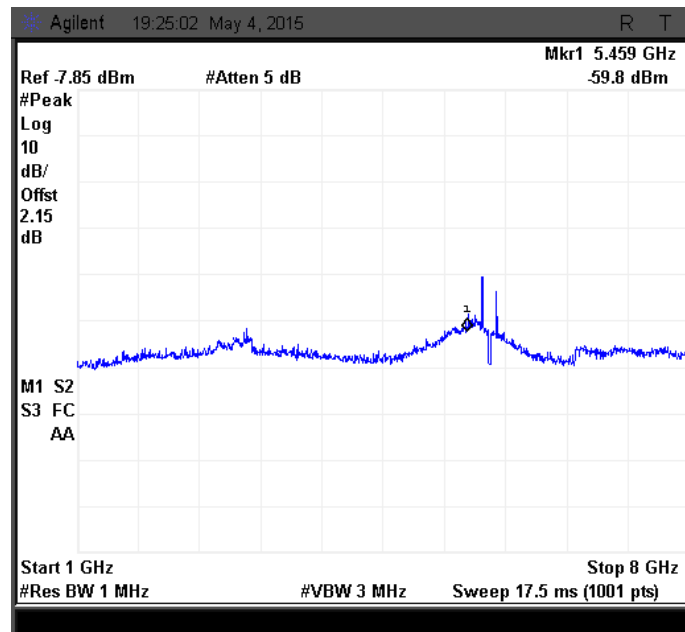


Figure 420: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Peak

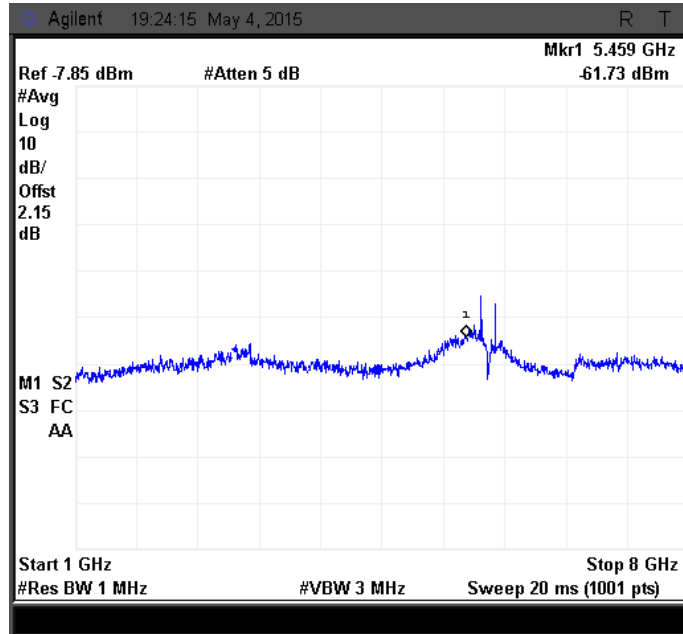


Figure 421: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Average

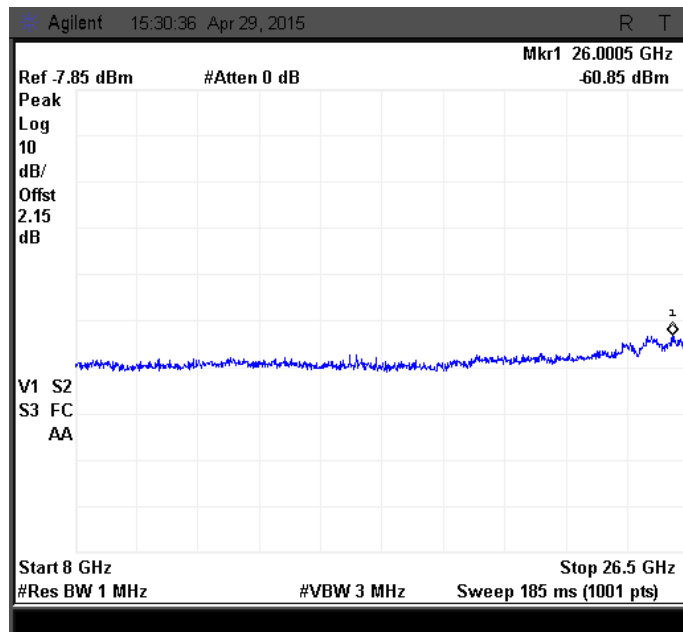


Figure 422: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Peak

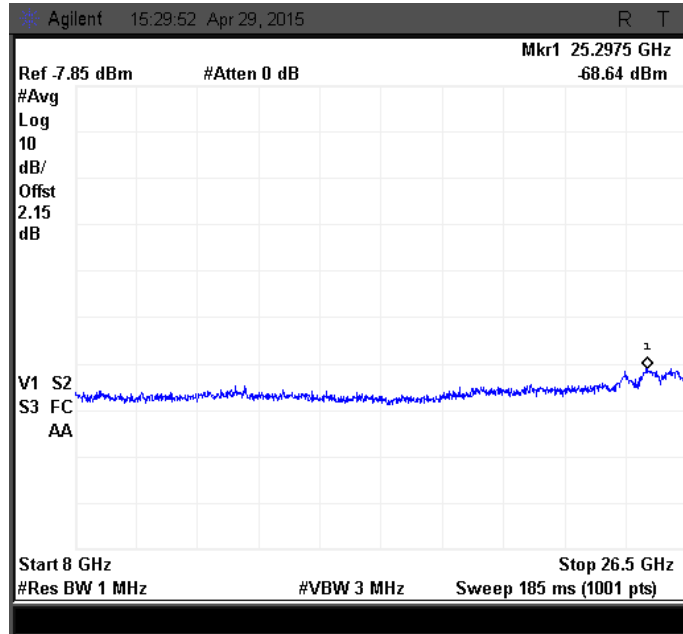


Figure 423: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Average

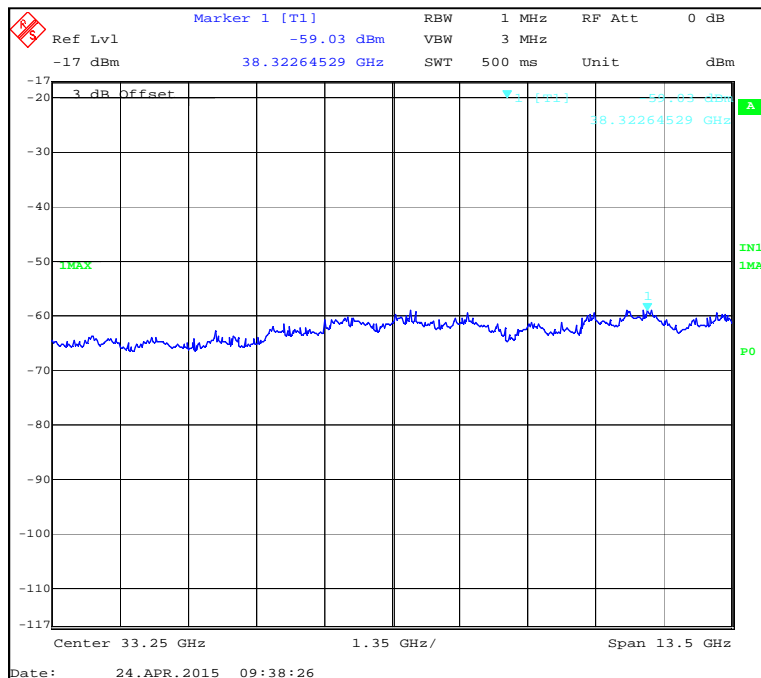
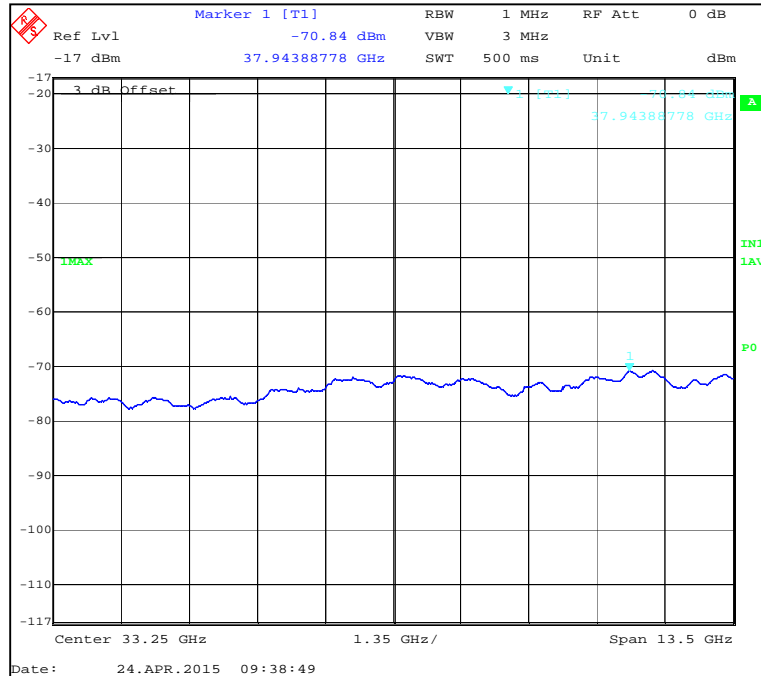
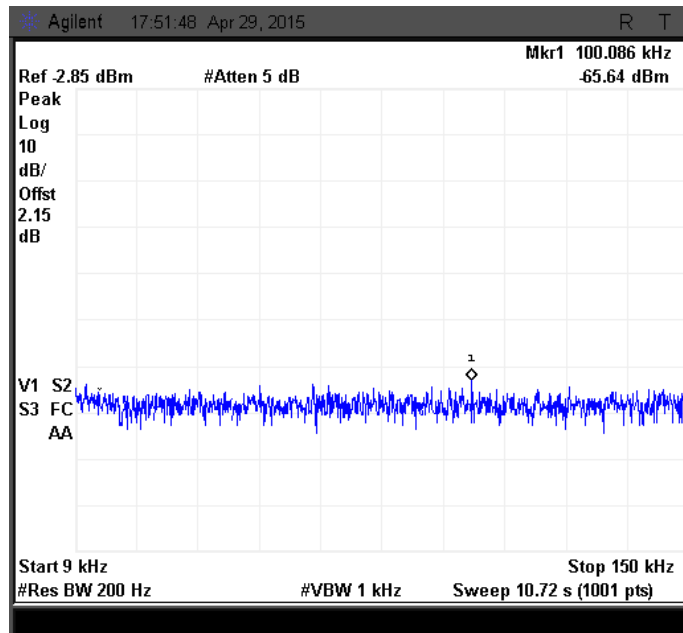


Figure 424: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Peak



**Figure 425: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Average**



**Figure 426: Spurious emission measured from 9 kHz to 150 kHz at Ch. 1-Peak**



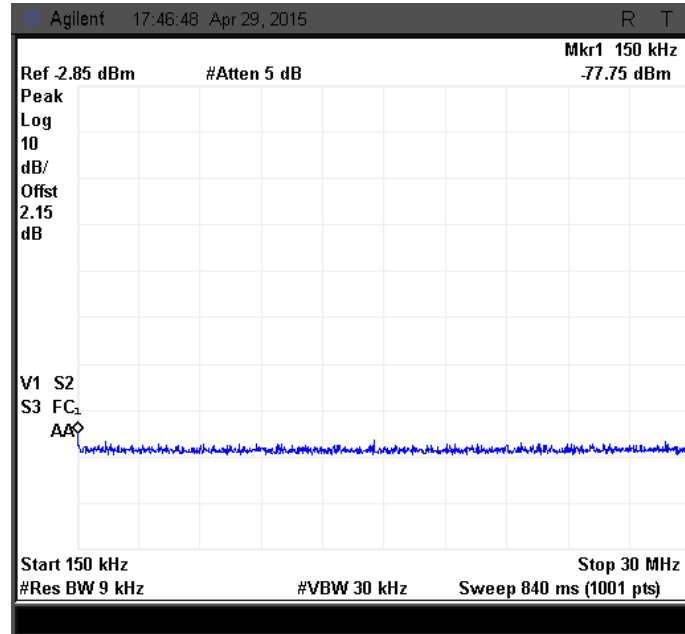


Figure 427: Spurious emission measured from 150 kHz to 30 MHz at Ch. 1-Peak

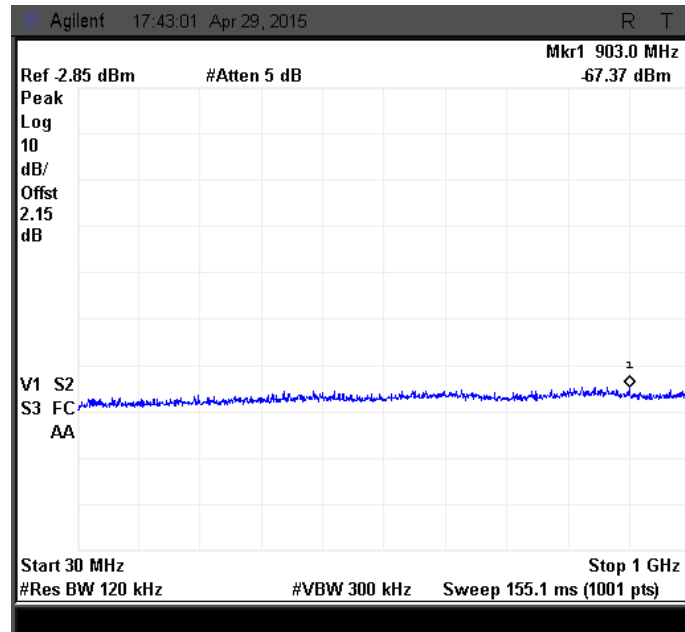


Figure 428: Spurious emission measured from 30 MHz to 1 GHz at Ch. 1-Peak

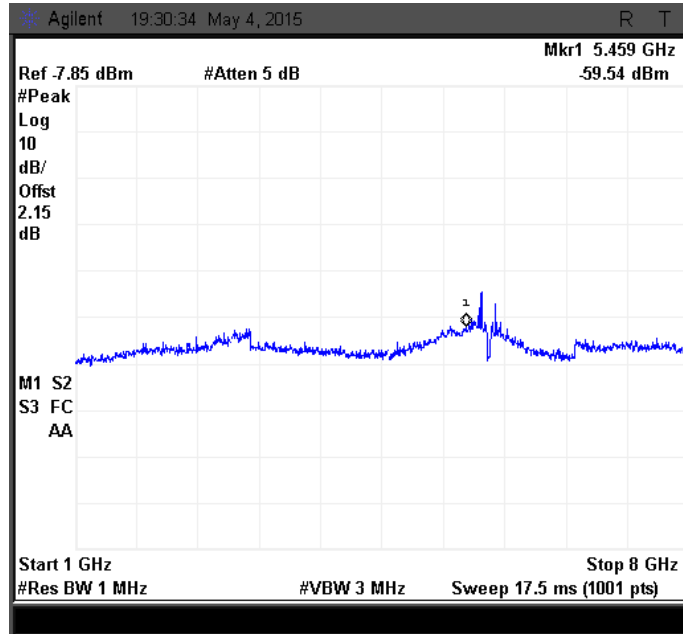


Figure 429: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Peak

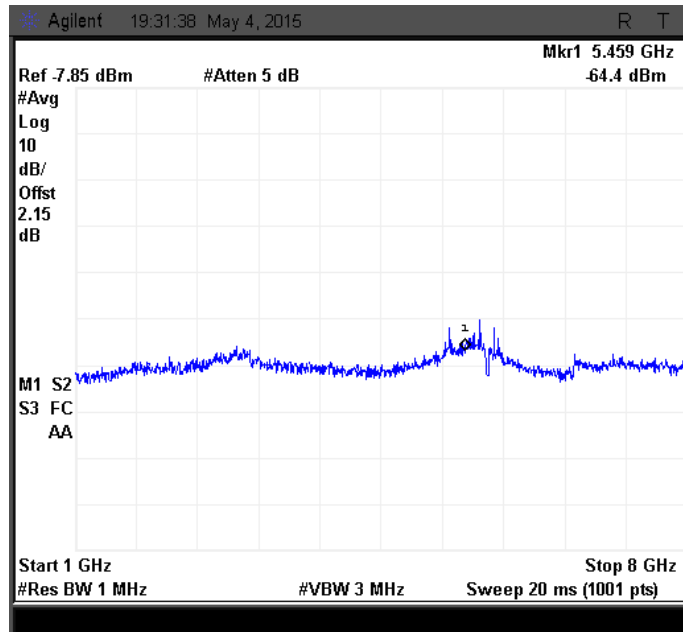


Figure 430: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Average

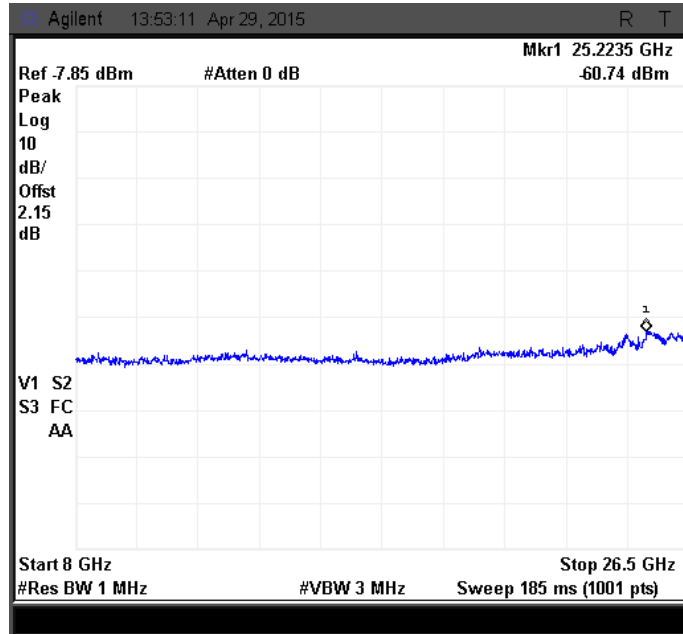


Figure 431: Spurious emission measured from 8 GHz to 26.50 GHz at Ch. 1-Peak

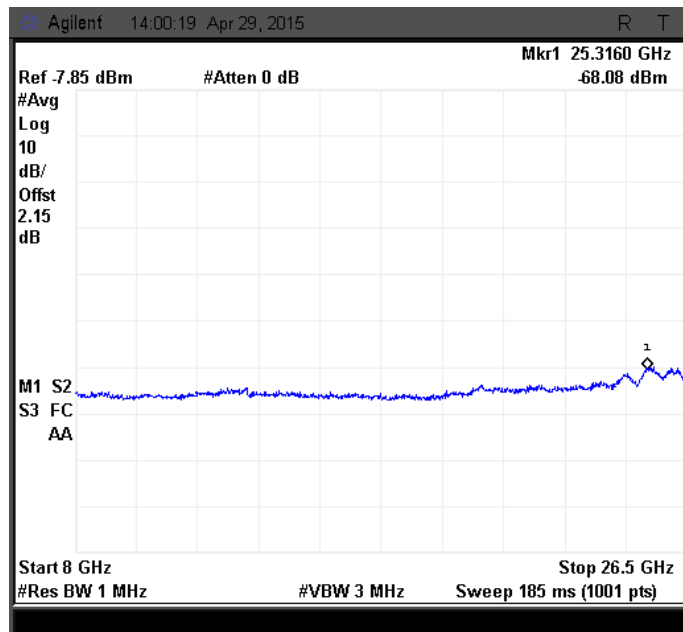
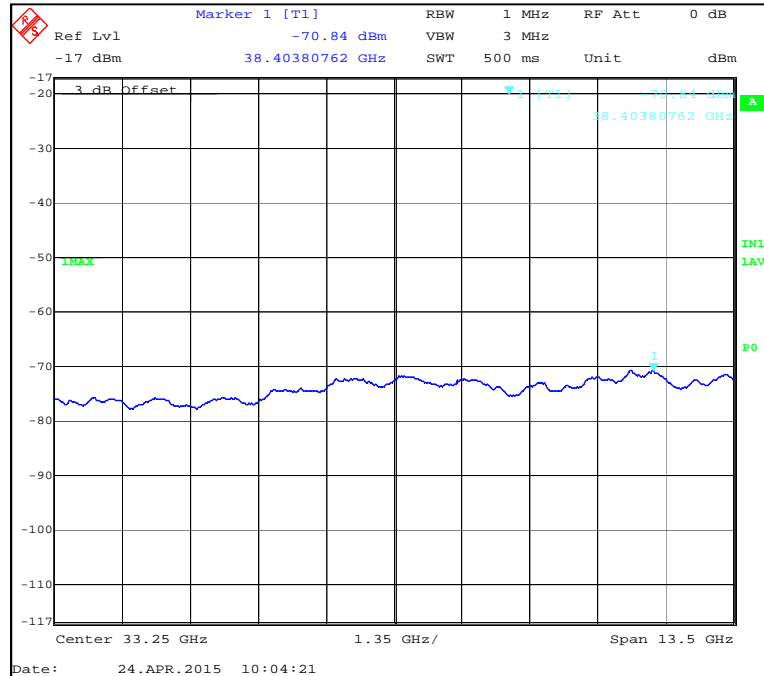
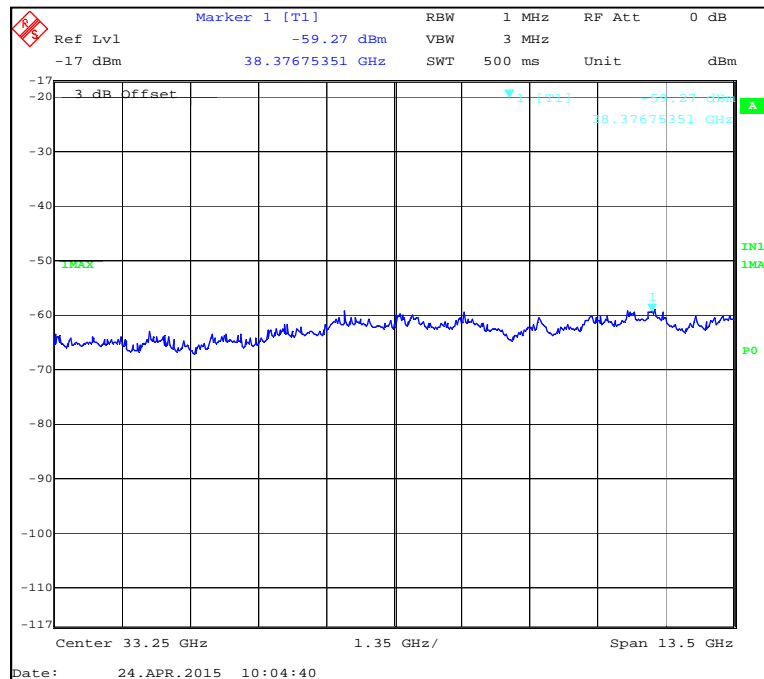


Figure 432: Spurious emission measured from 8 GHz to 26.50 GHz at Ch. 1-Average



**Figure 433: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Average**



**Figure 434: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Peak**

### 5.3.7.7 RESULT (SUPPORTING GRAPHS / DATA) FOR 24DBI DISH CONDITION

#### 5.3.7.7.1 40MHz MODULATION BW - LOW CHANNEL\_5495 MHz

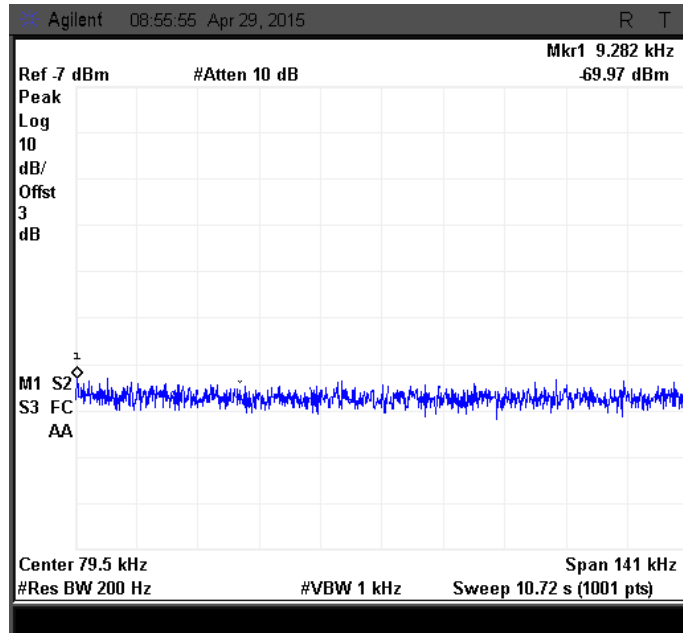


Figure 435: Spurious emission measured from 9 kHz to 150 kHz at Ch. 0-Peak

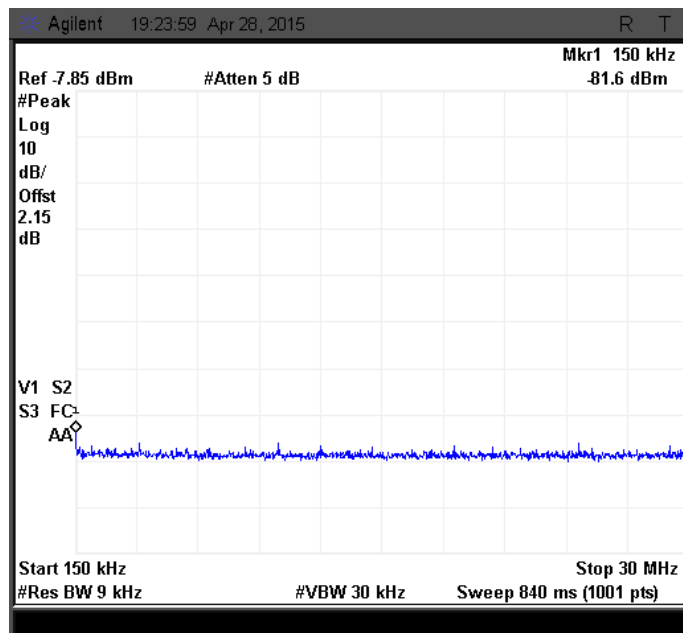


Figure 436: Spurious emission measured from 150 kHz to 30 MHz at Ch. 0-Peak

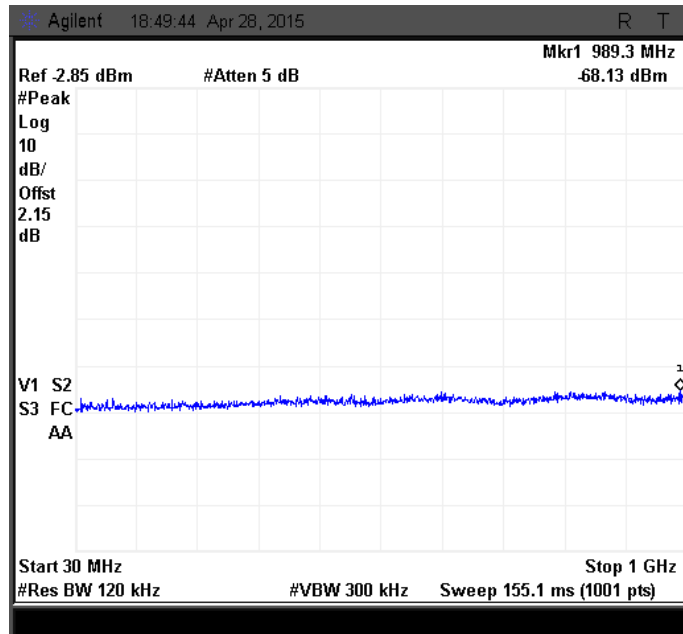


Figure 437: Spurious emission measured from 30 MHz to 1 GHz at Ch. 0-Peak

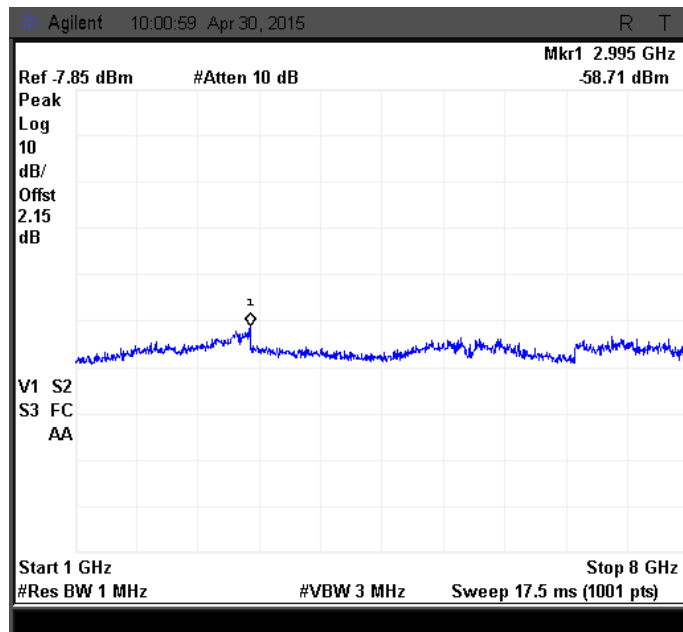


Figure 438: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Peak

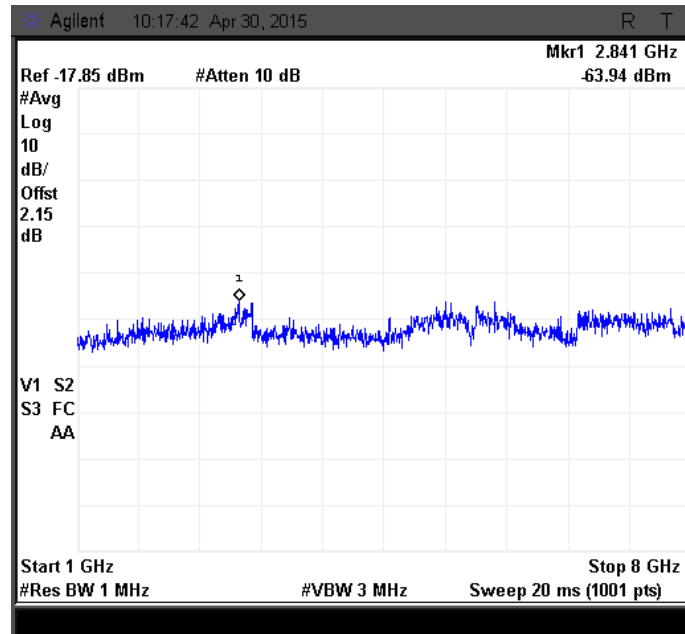


Figure 439: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Average

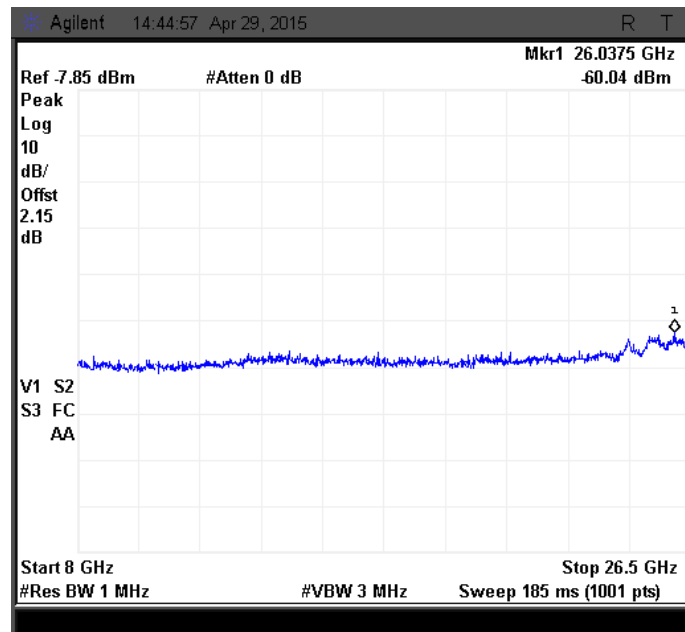


Figure 440: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Peak

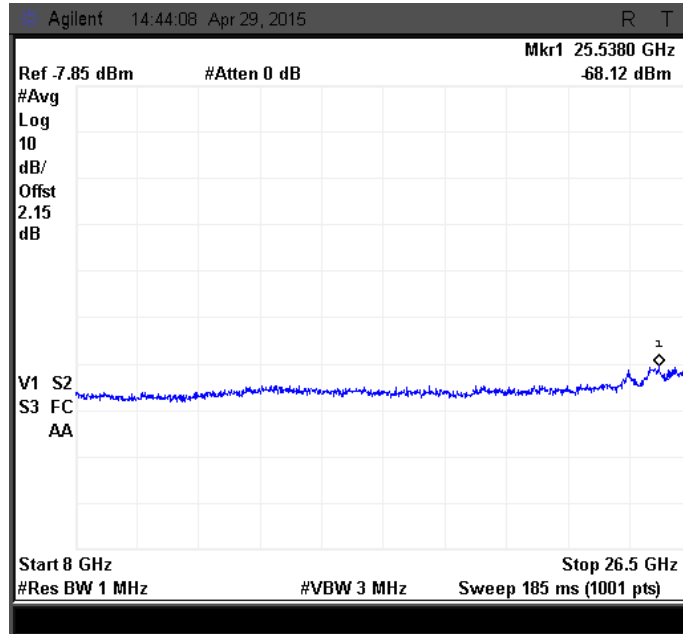


Figure 441: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Average

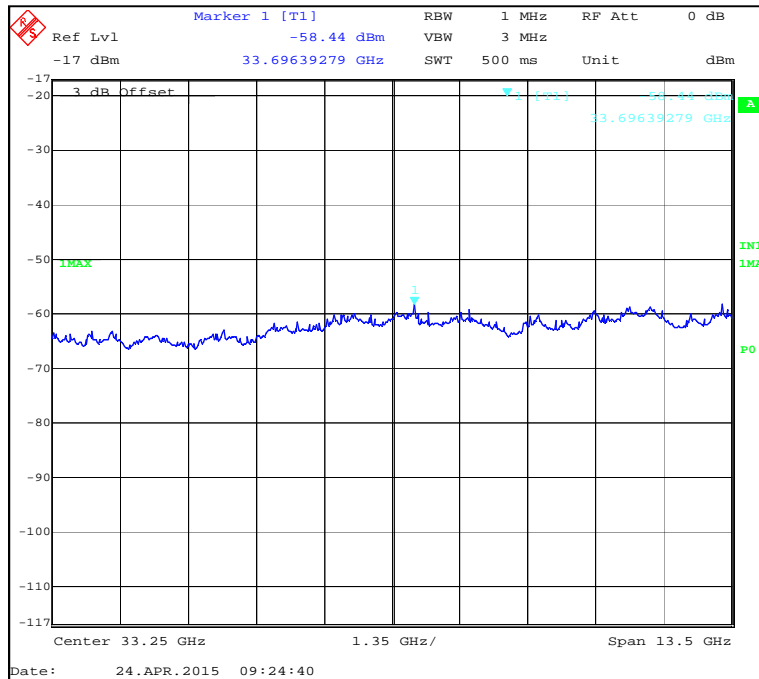


Figure 442: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Peak



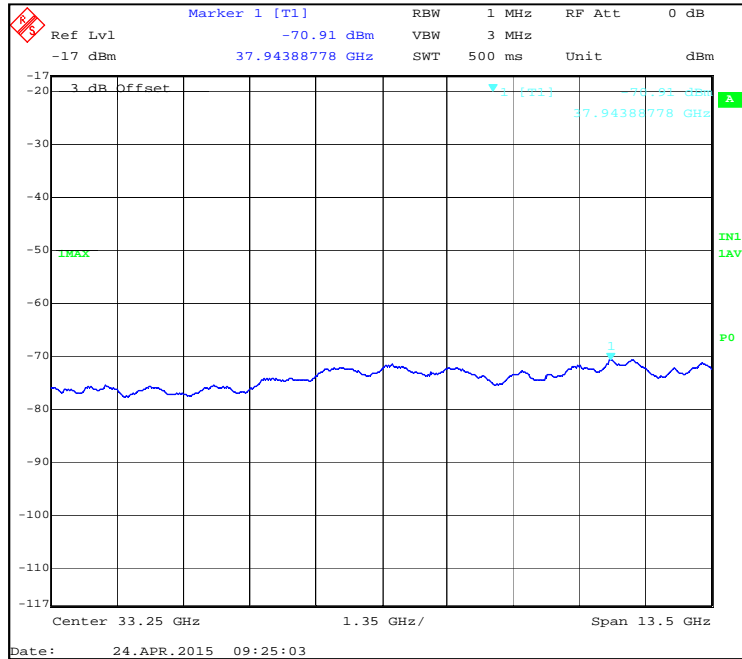


Figure 443: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Avg

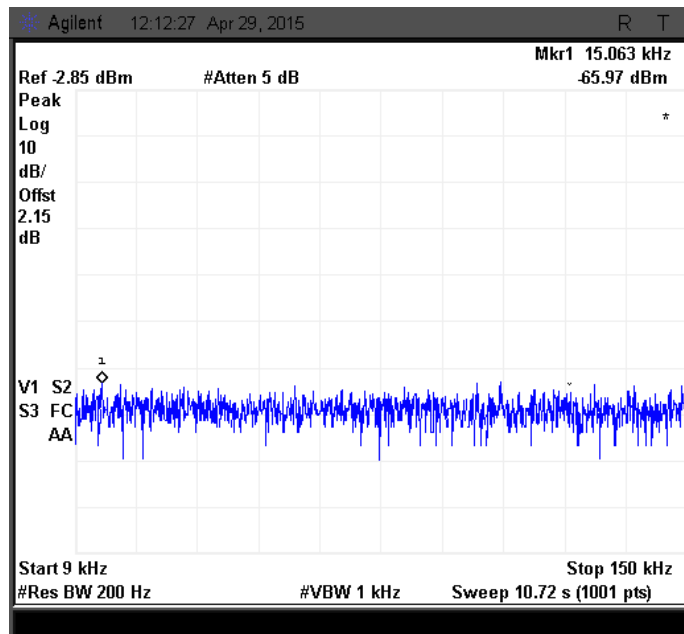


Figure 444: Spurious emission measured from 9 kHz to 150 kHz at Ch. 1-Peak

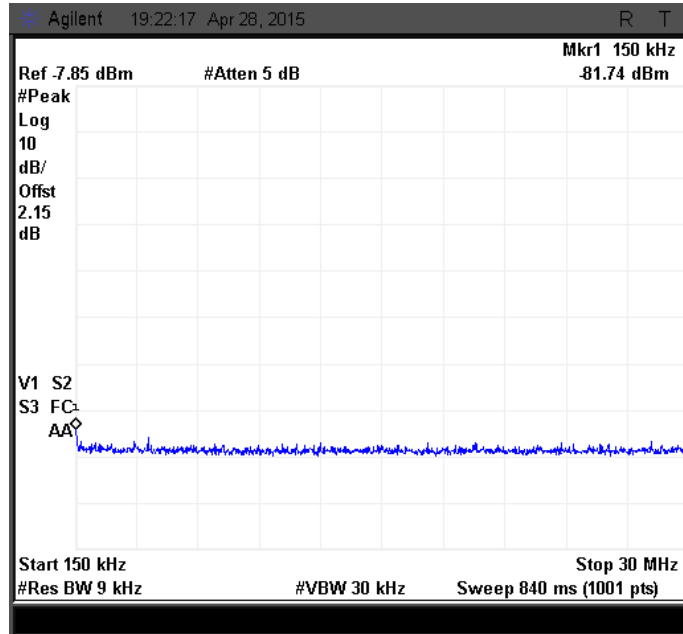


Figure 445: Spurious emission measured from 150 kHz to 30 MHz at Ch. 1-Peak

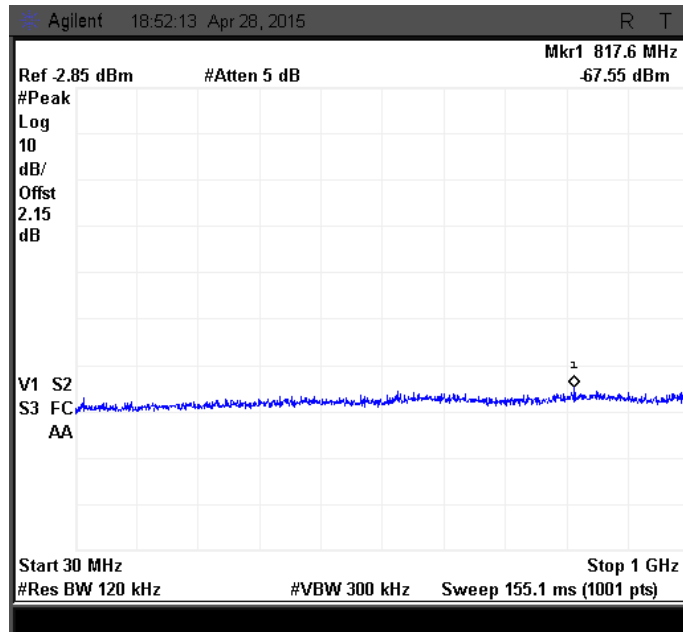


Figure 446: Spurious emission measured from 30 MHz to 1 GHz at Ch. 1-Peak

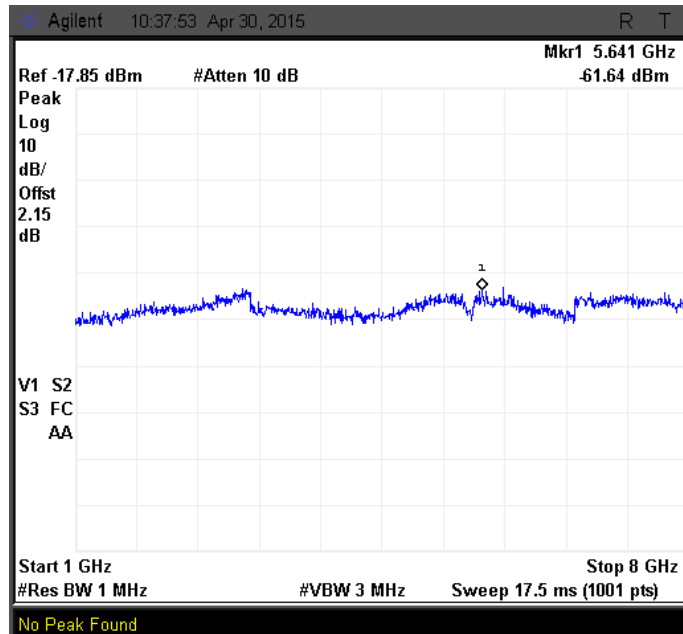


Figure 447: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Peak

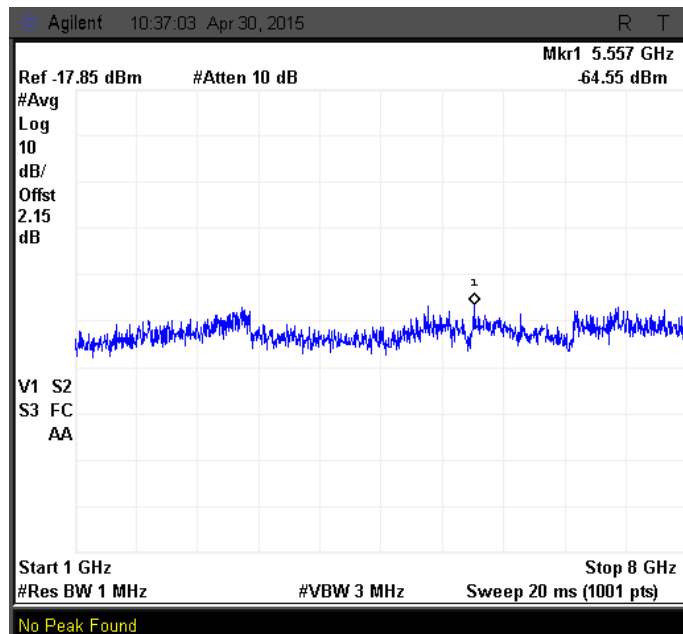


Figure 448: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Average

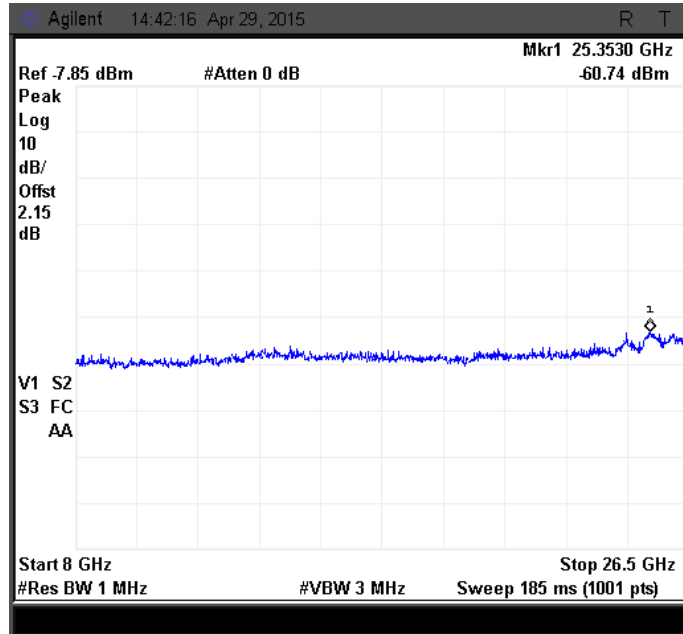


Figure 449: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Peak

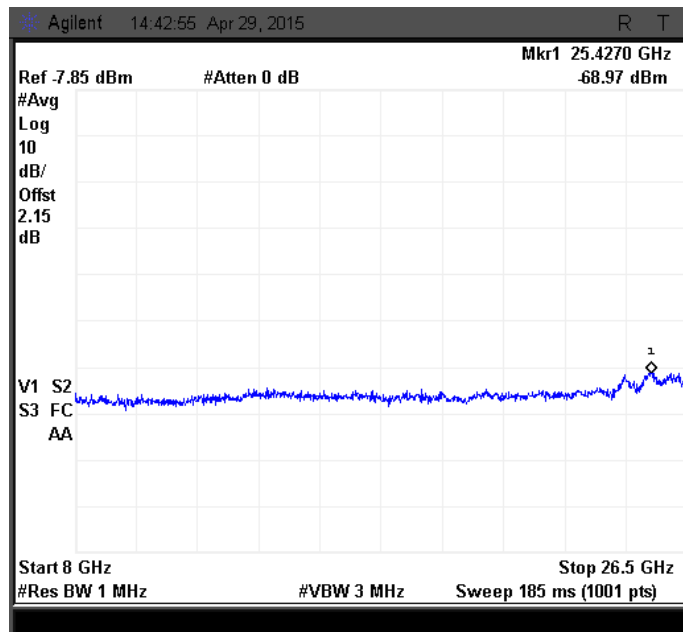


Figure 450: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Average

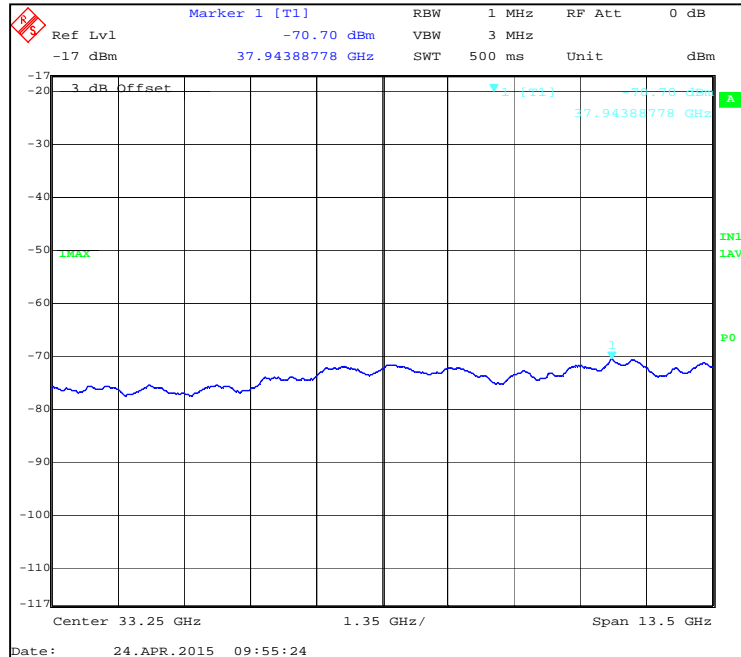


Figure 451: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Average

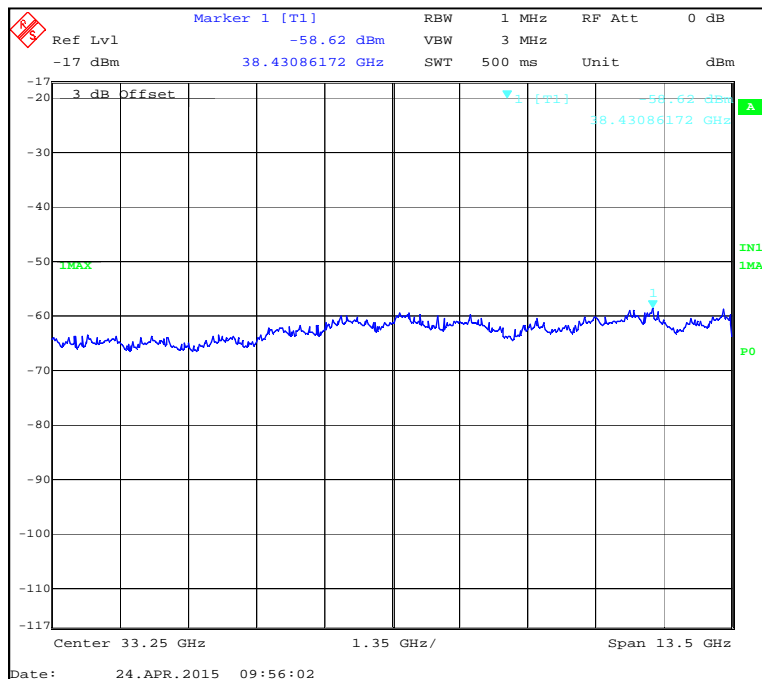


Figure 452: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Peak

### 5.3.7.7.2 40MHz MODULATION BW - MID CHANNEL\_5550 MHz

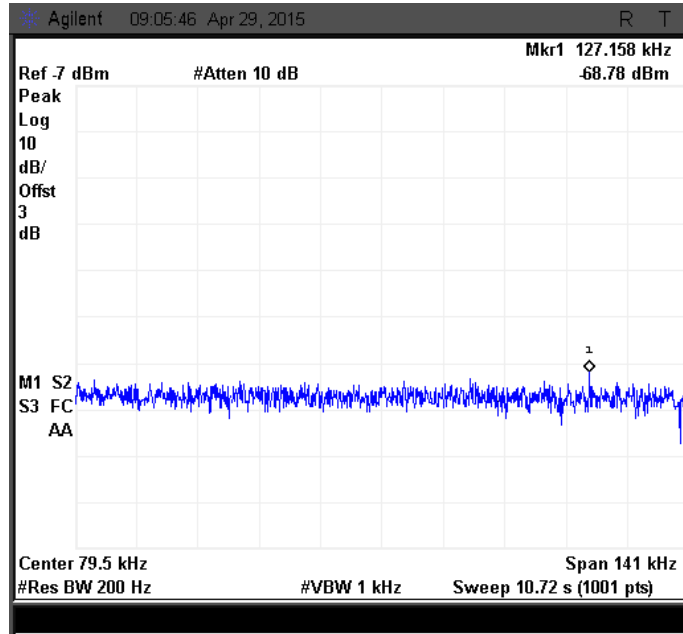


Figure 453: Spurious emission measured from 9 kHz to 150 kHz at Ch. 0-Peak

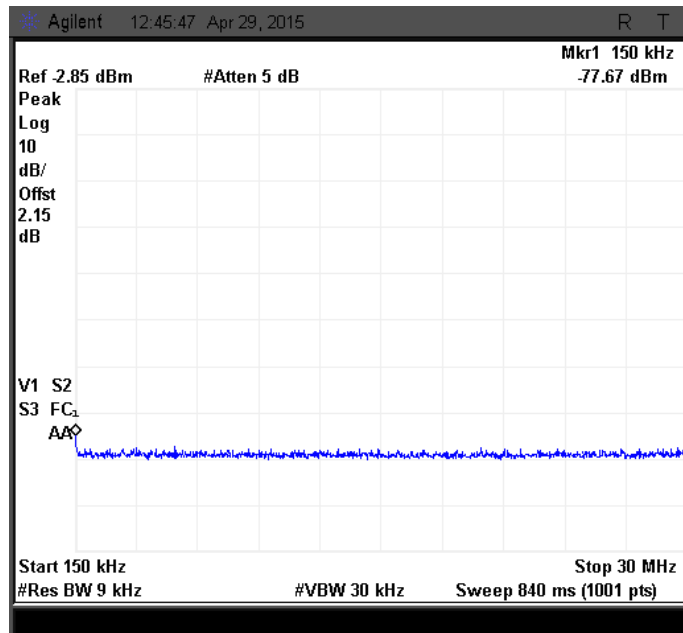


Figure 454: Spurious emission measured from 150 kHz to 30 MHz at Ch. 0-Peak

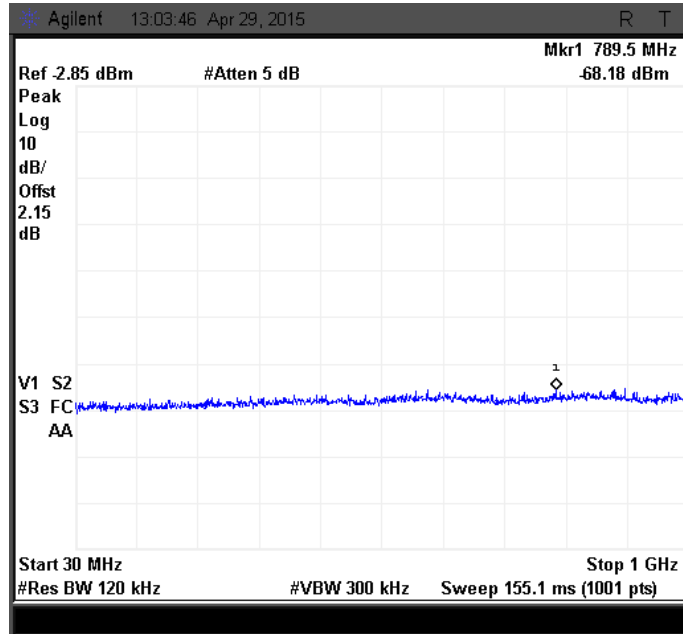


Figure 455: Spurious emission measured from 30 MHz to 1 GHz at Ch. 0-Peak

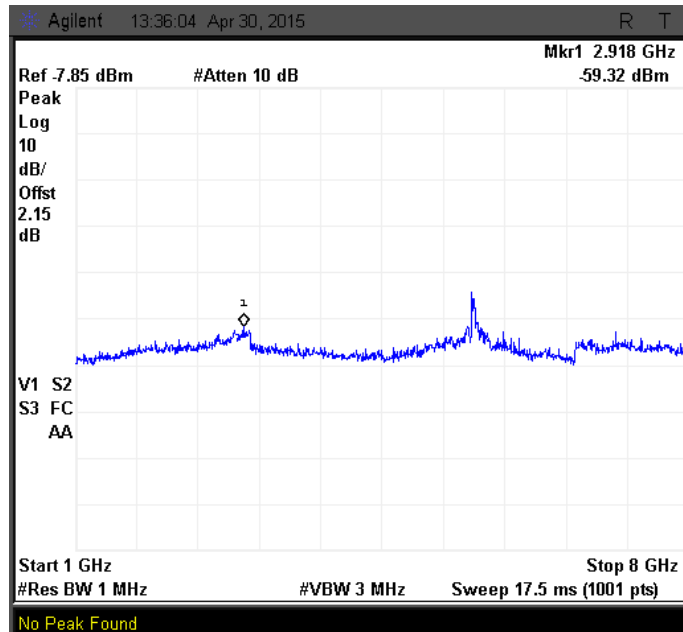


Figure 456: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Peak

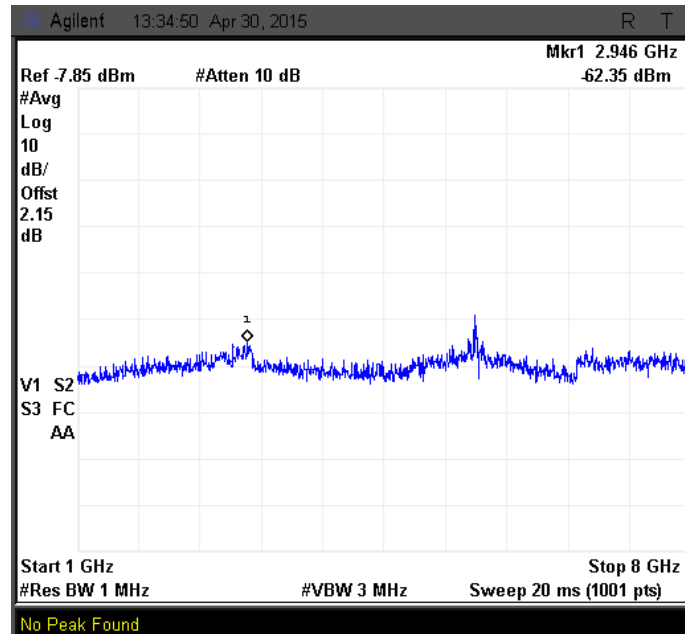


Figure 457: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Average

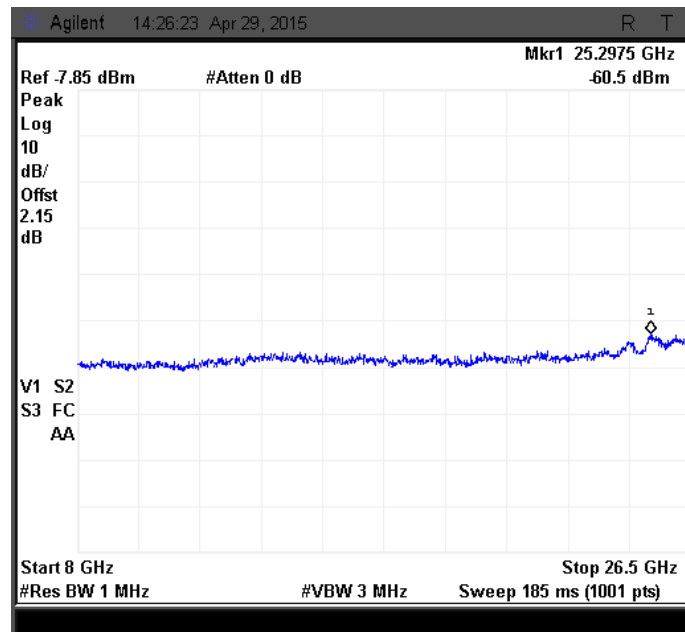


Figure 458: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Peak



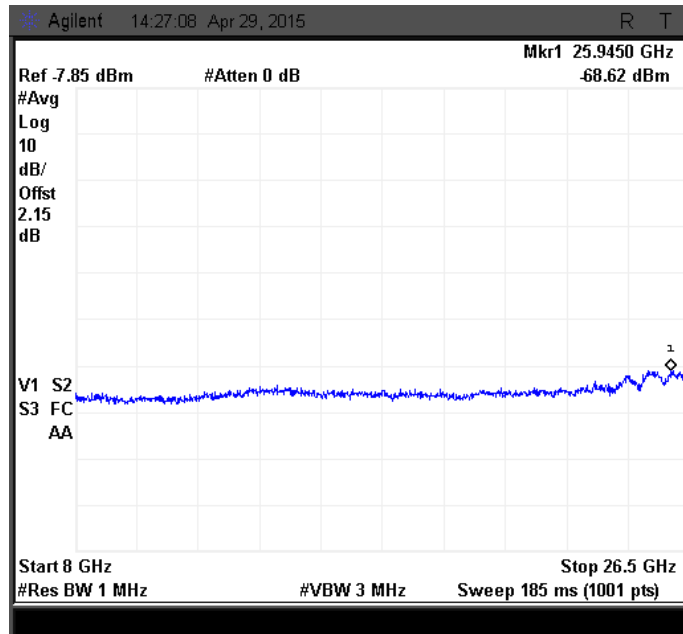


Figure 459: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Average

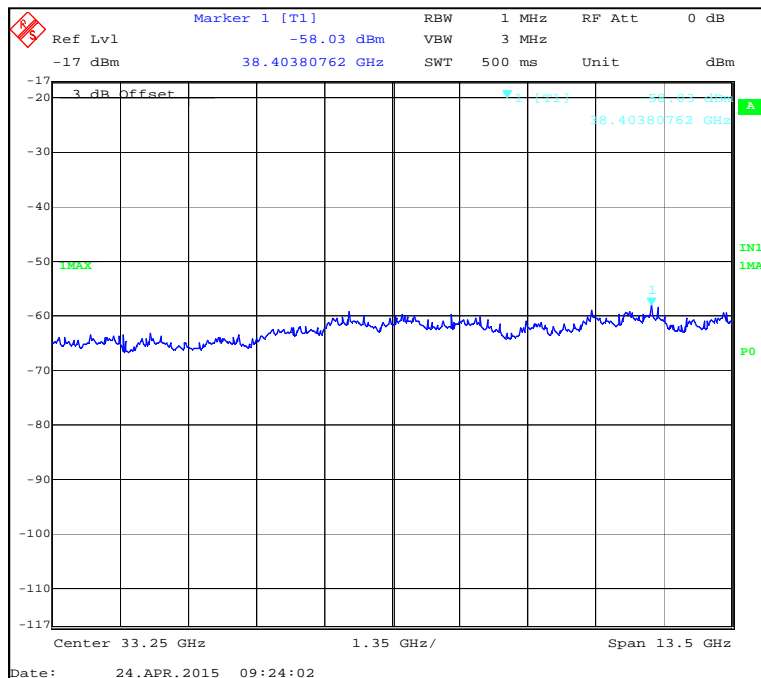
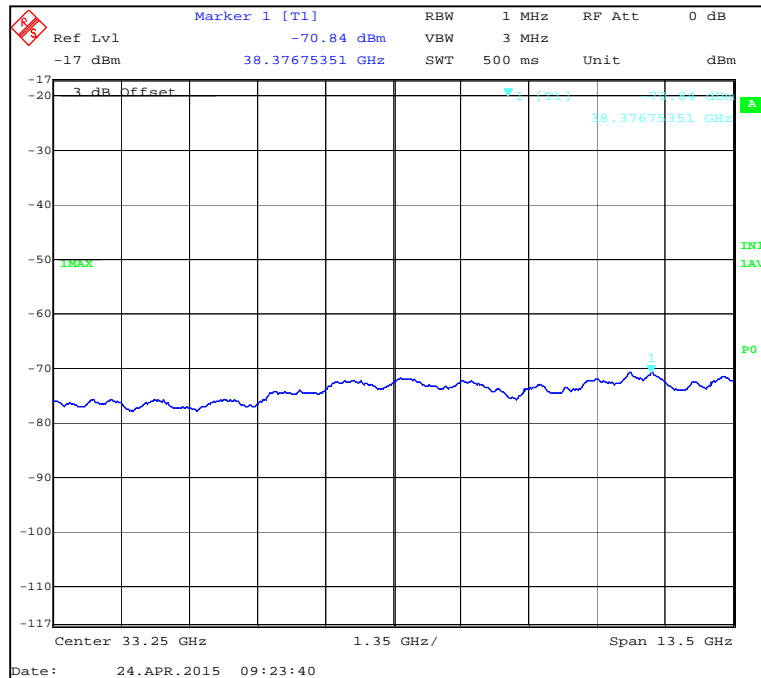
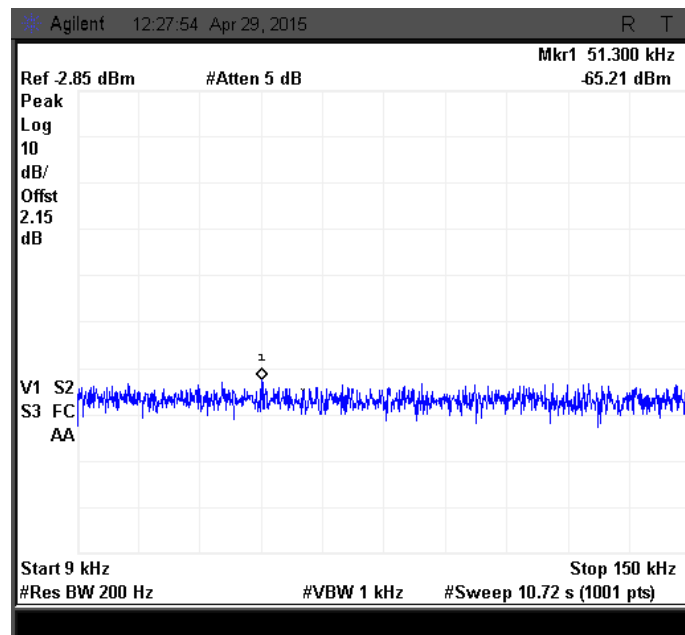


Figure 460: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Peak



**Figure 461: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Average**



**Figure 462: Spurious emission measured from 9 kHz to 150 kHz at Ch. 1-Peak**

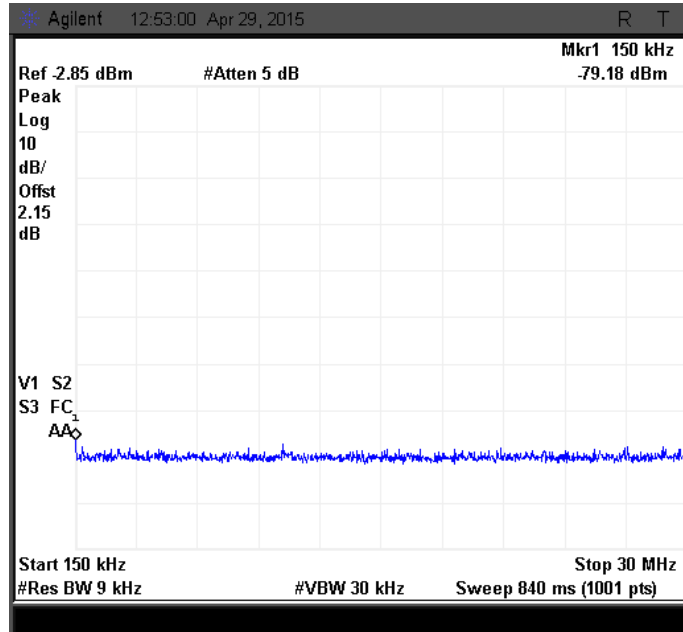


Figure 463: Spurious emission measured from 150 kHz to 30 MHz at Ch. 1-Peak

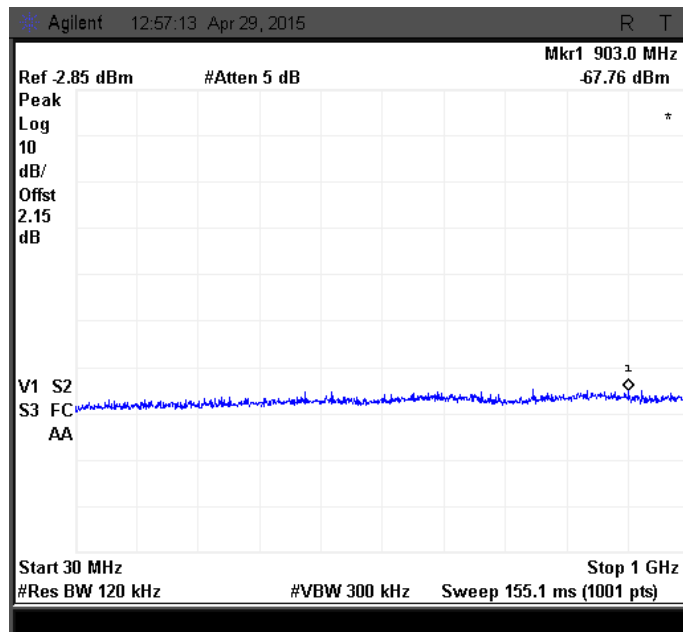


Figure 464: Spurious emission measured from 30 MHz to 1 GHz at Ch. 1-Peak

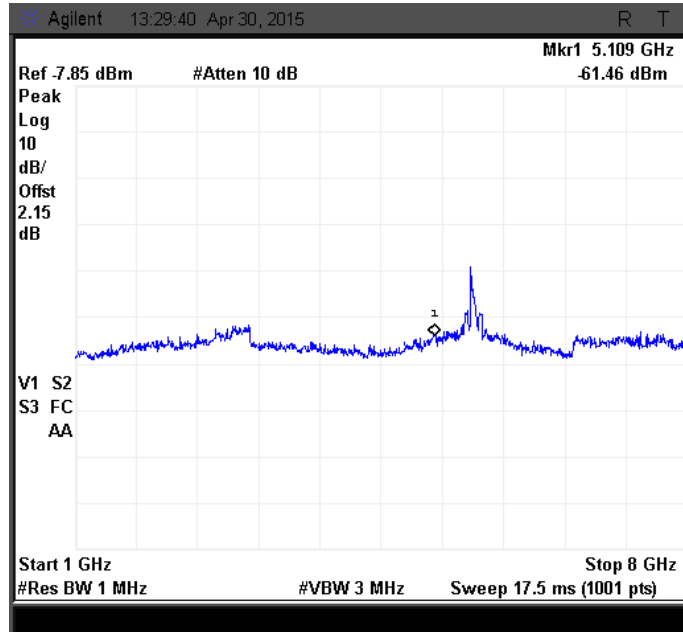


Figure 465: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Peak

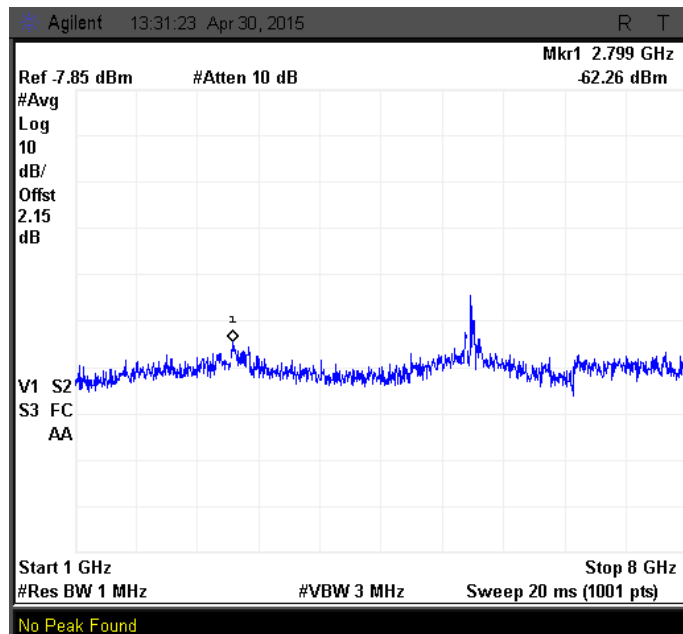


Figure 466: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Average

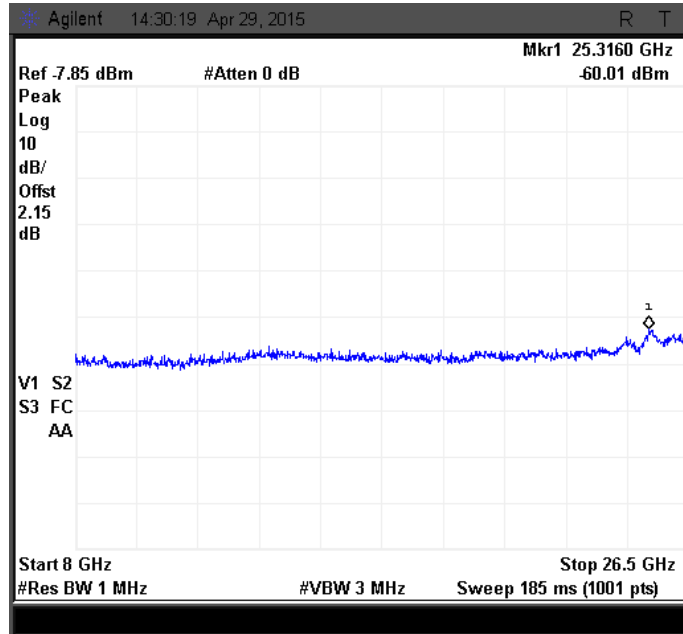


Figure 467: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Peak

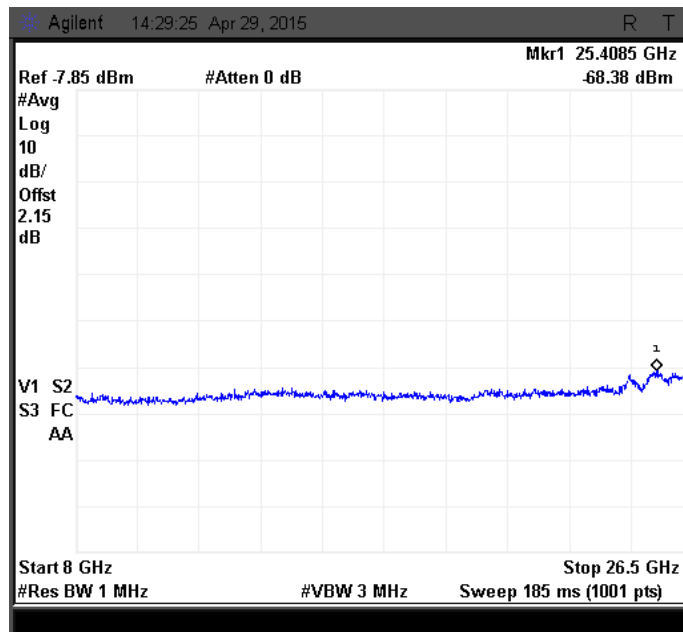
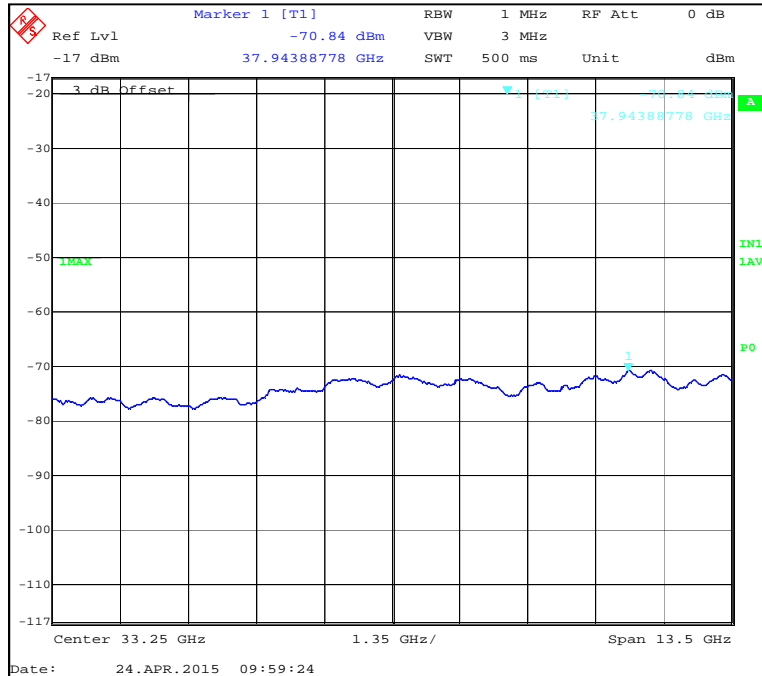
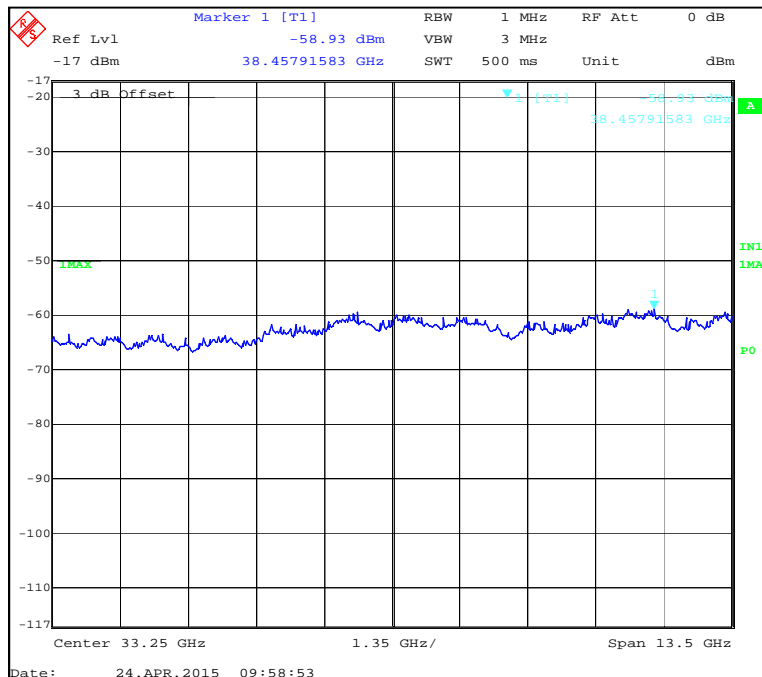


Figure 468: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Average



**Figure 469: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Average**



**Figure 470: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Peak**

### 5.3.7.7.3 40MHz MODULATION BW - HIGH CHANNEL\_5700MHz

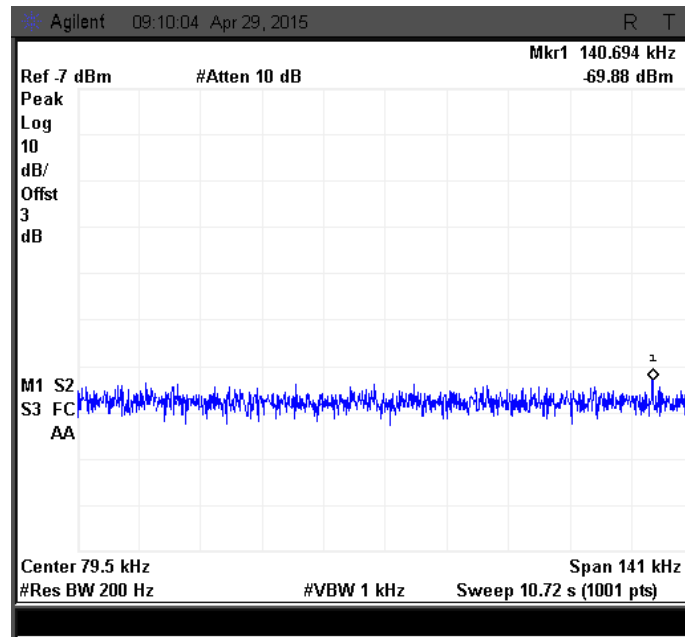


Figure 471: Spurious emission measured from 9 kHz to 150 kHz at Ch. 0-Peak

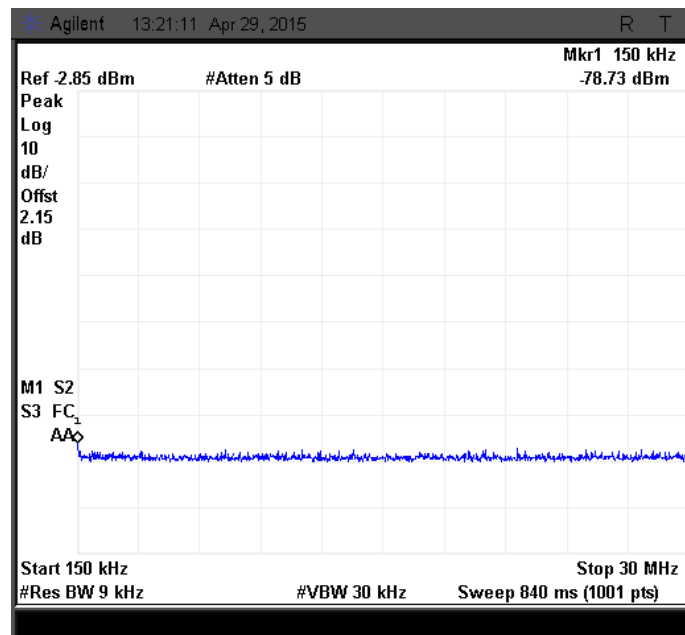


Figure 472: Spurious emission measured from 150 kHz to 30 MHz at Ch. 0-Peak

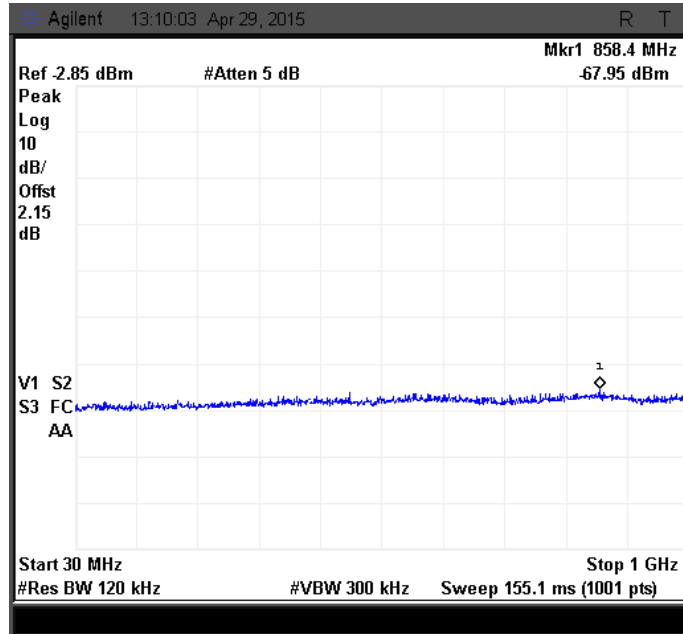


Figure 473: Spurious emission measured from 30 MHz to 1 GHz at Ch. 0-Peak

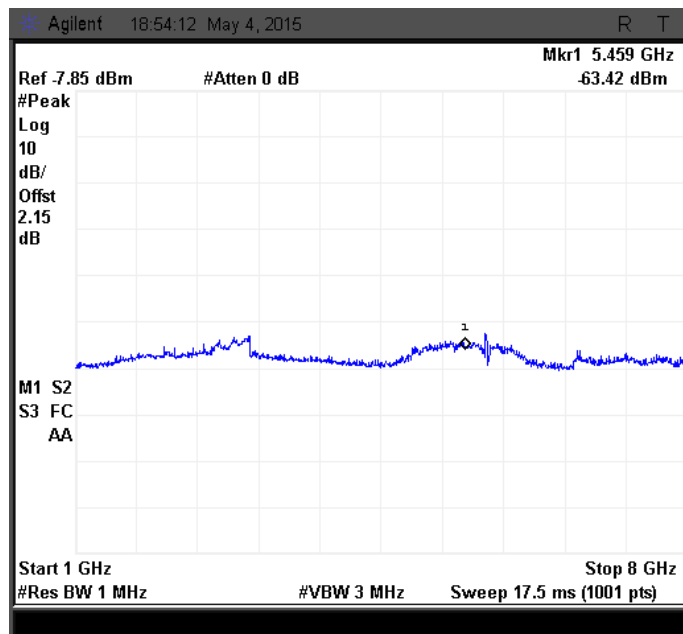


Figure 474: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Peak



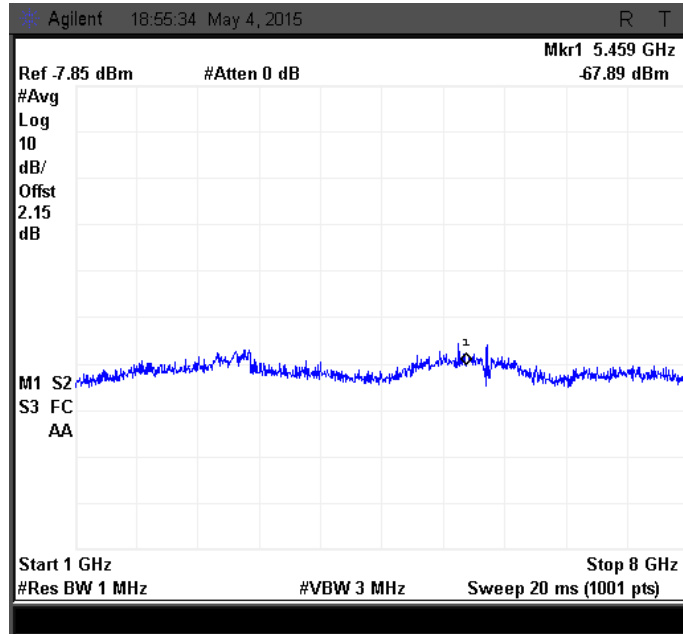


Figure 475: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Average

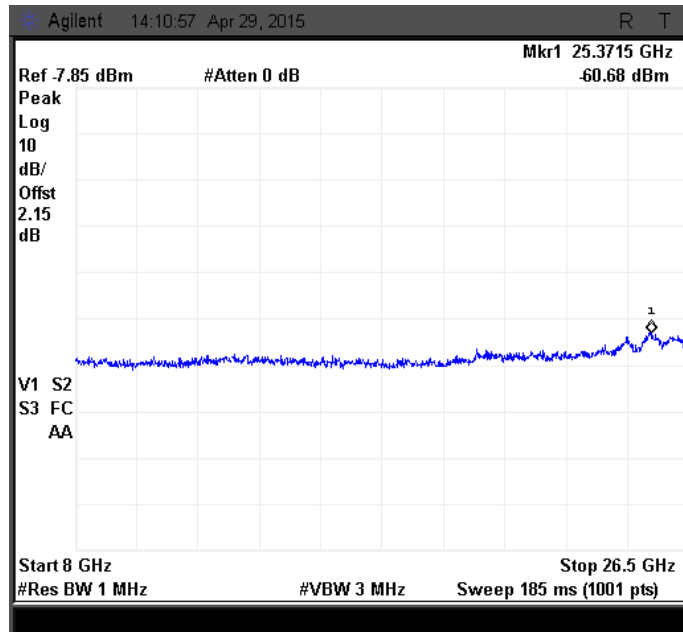


Figure 476 : Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Peak

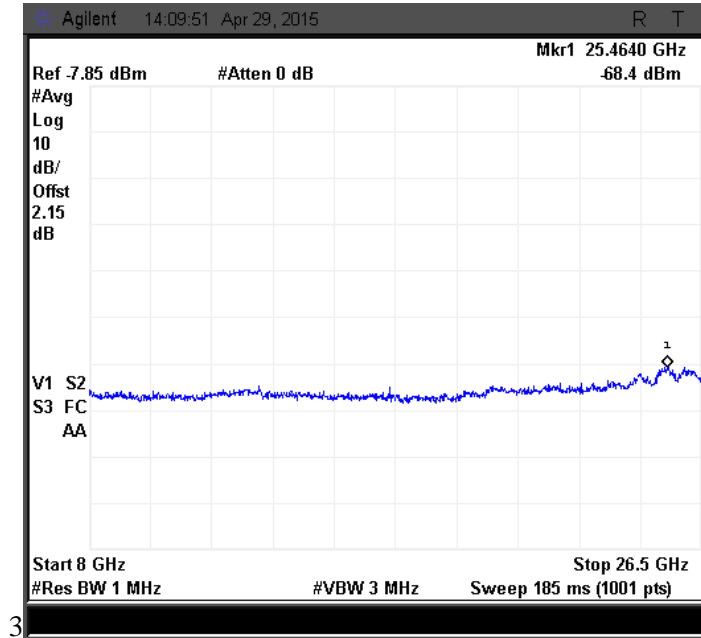


Figure 477: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Average

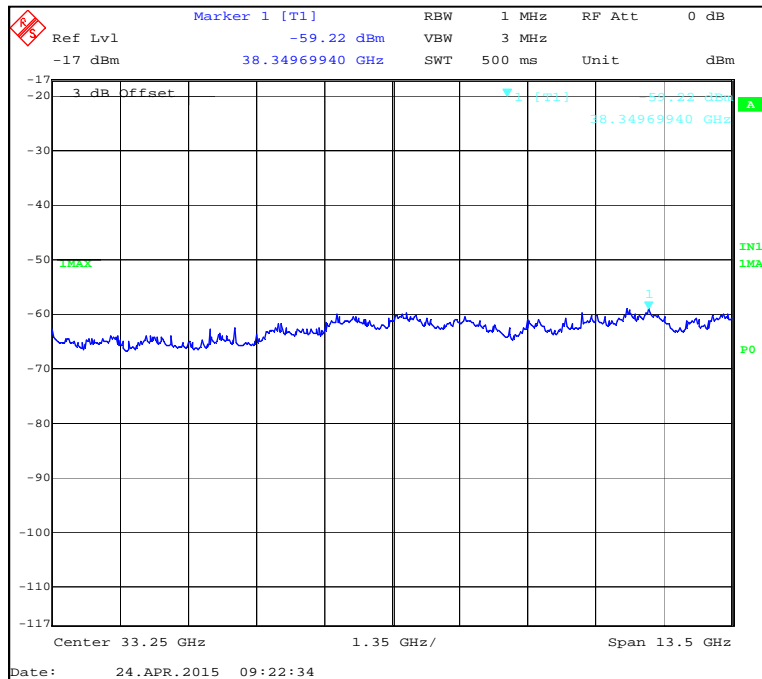
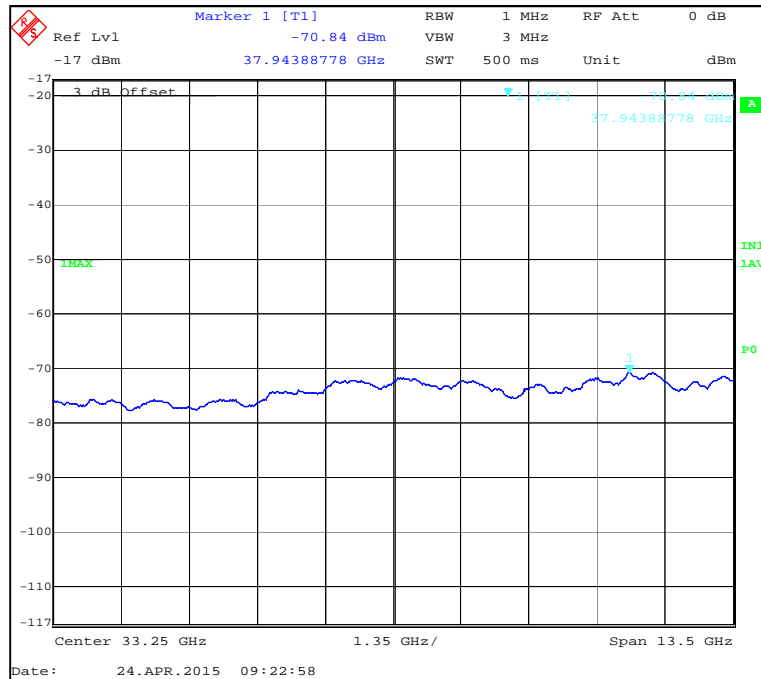
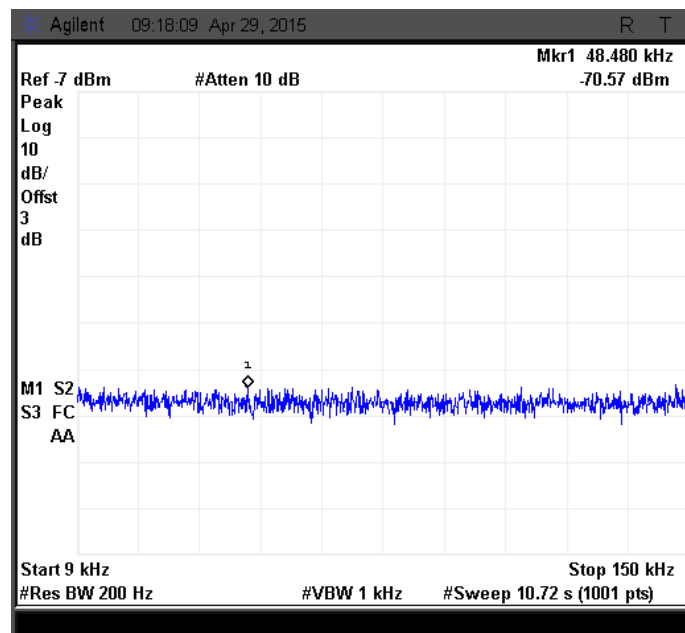


Figure 478: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Peak



**Figure 479: Spurious emission measured from 26.5GHz to 40 GHz at Ch. 0-Average**



**Figure 480: Spurious emission measured from 9 kHz to 150 kHz at Ch. 1-Peak**

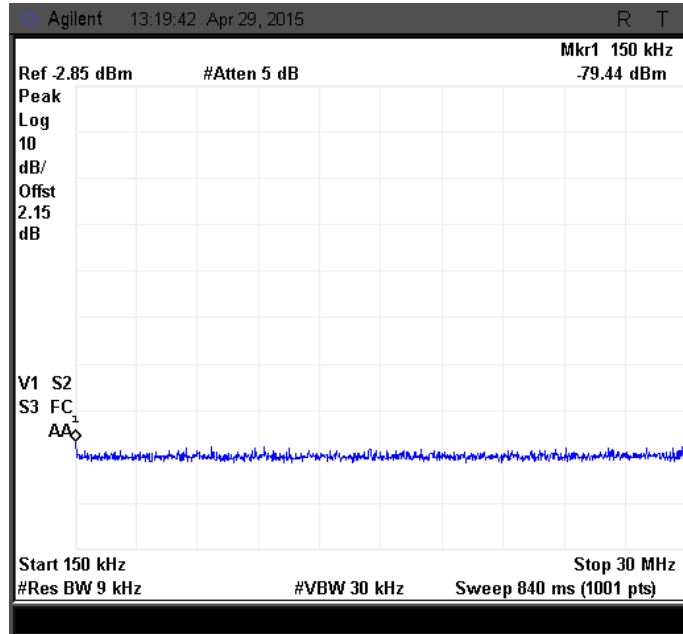


Figure 481: Spurious emission measured from 150 kHz to 30 MHz at Ch. 1-Peak

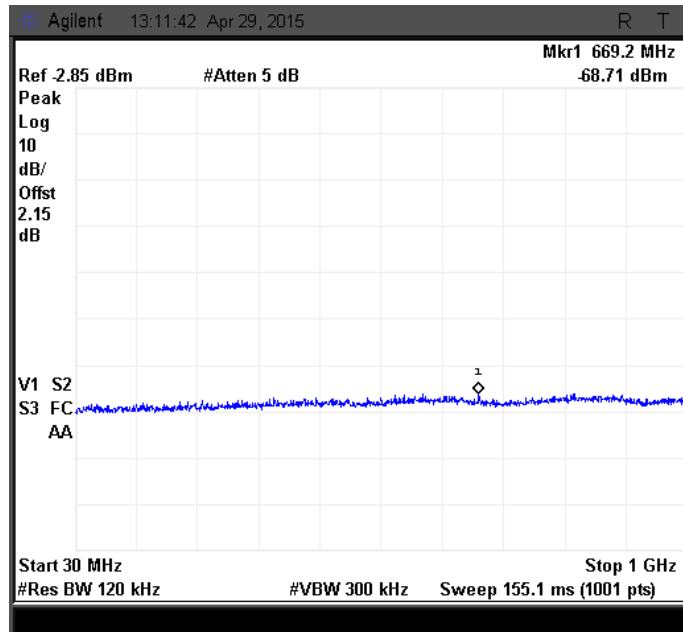


Figure 482: Spurious emission measured from 30 MHz to 1 GHz at Ch. 1-Peak

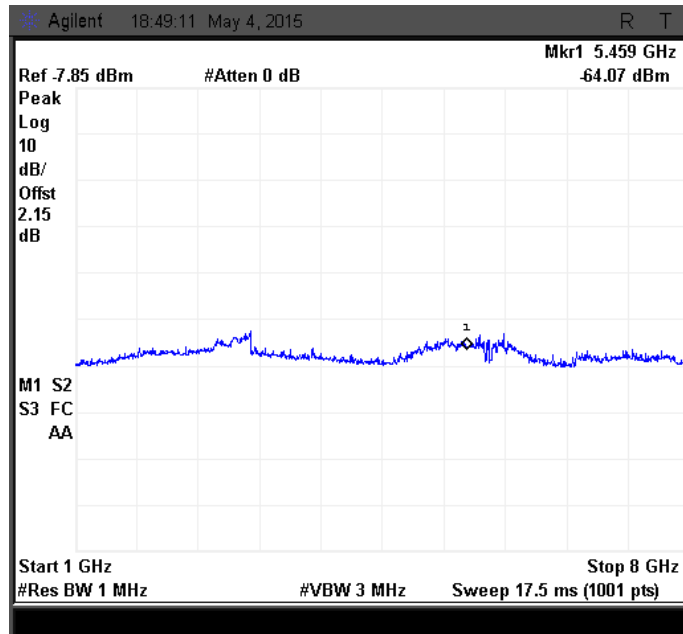


Figure 483: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Peak

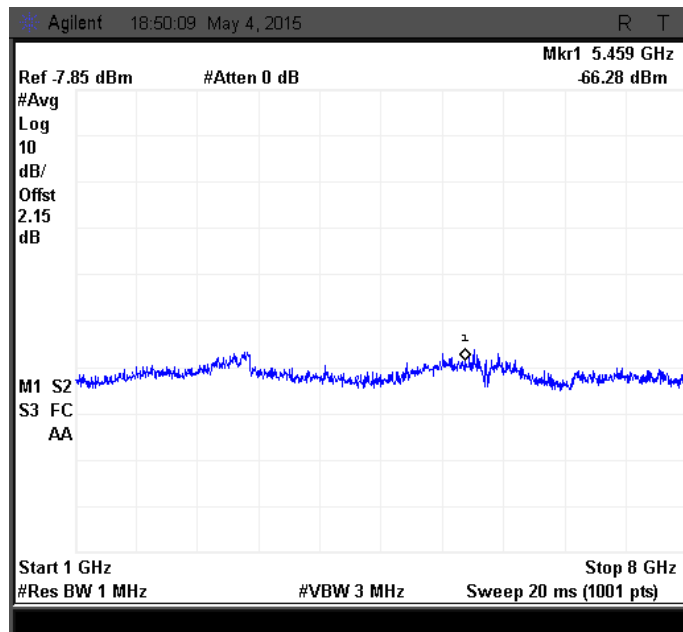


Figure 484: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Average

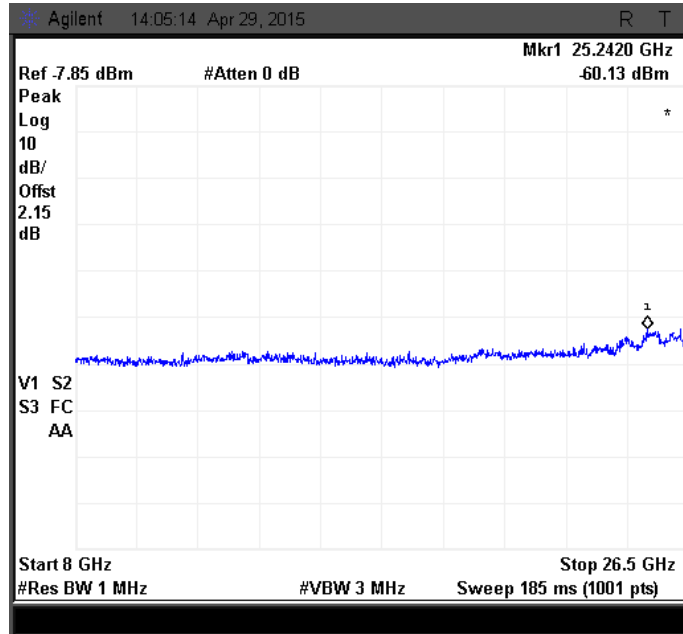


Figure 485: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Peak

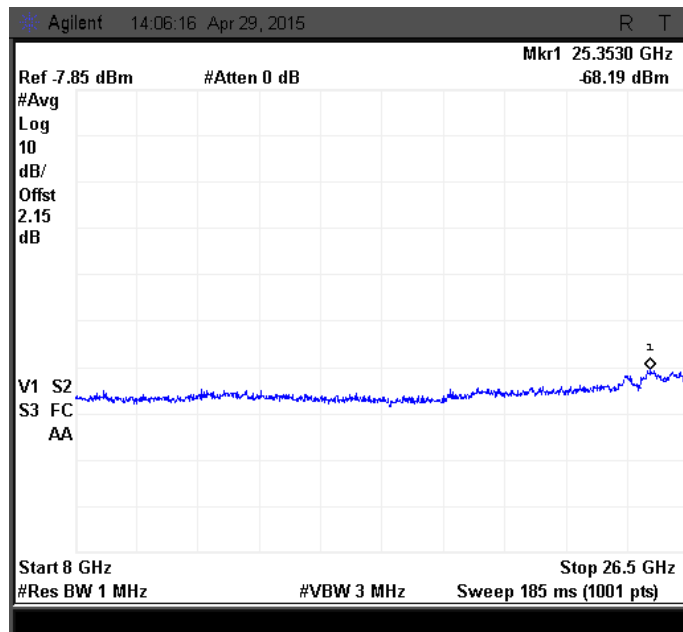
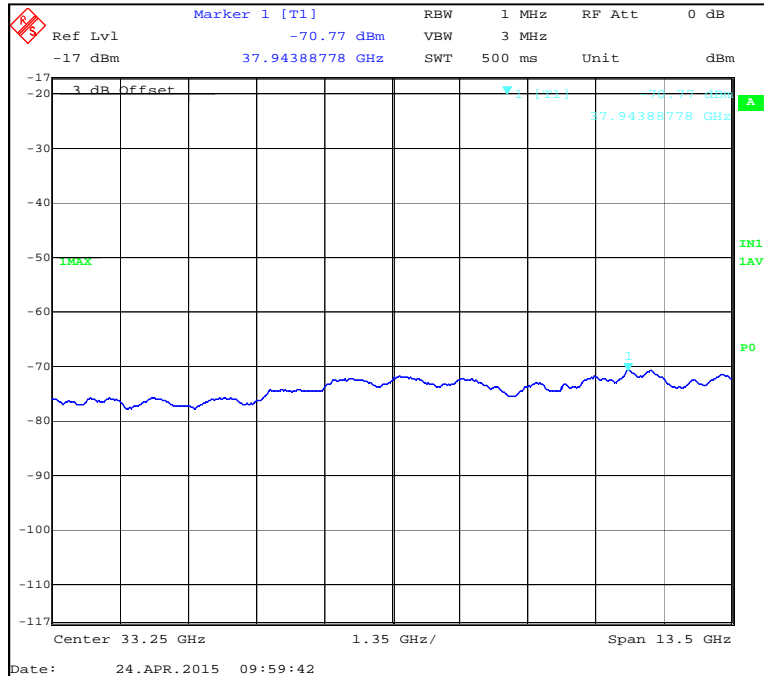
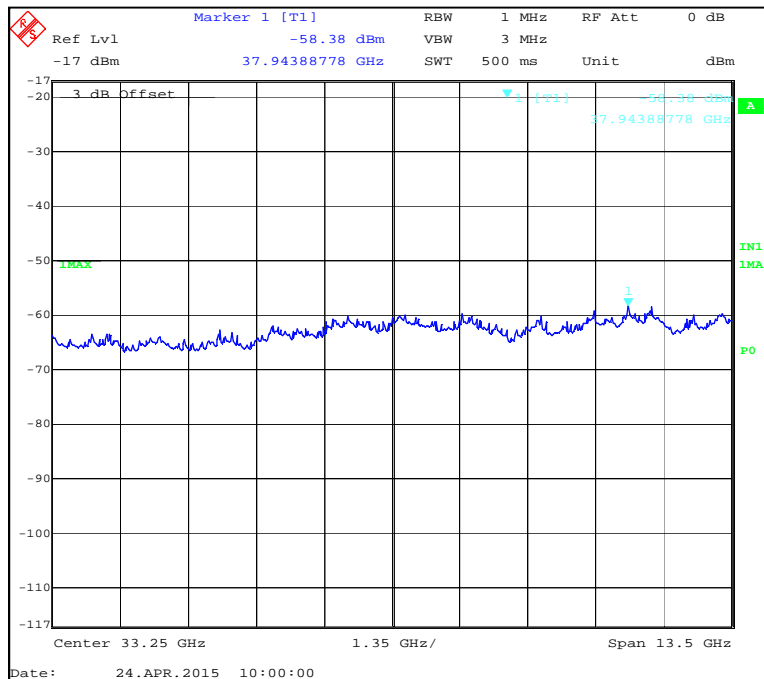


Figure 486: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Average



**Figure 487: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Average**



**Figure 488: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Peak**

#### 5.3.7.7.4 10MHz MODULATION BW - LOW CHANNEL\_5485 MHz

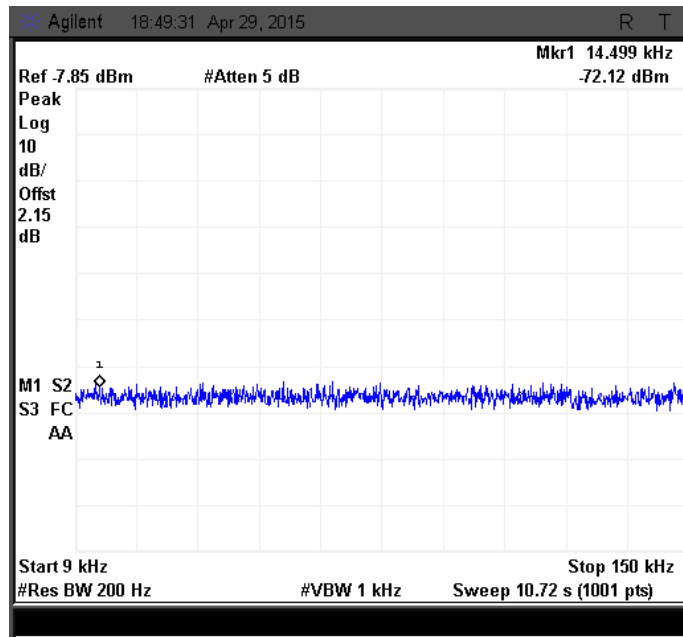


Figure 489: Spurious emission measured from 9 kHz to 150 kHz at Ch. 0-Peak

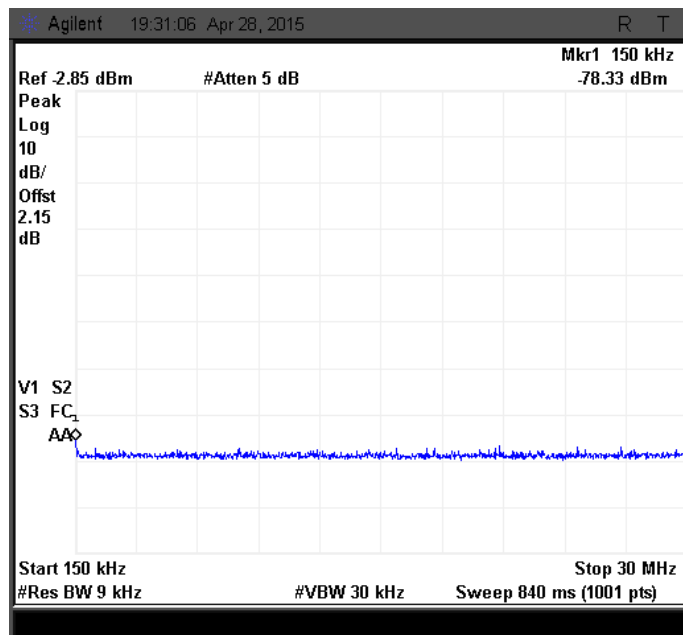


Figure 490: Spurious emission measured from 150 kHz to 30 MHz at Ch. 0-Peak



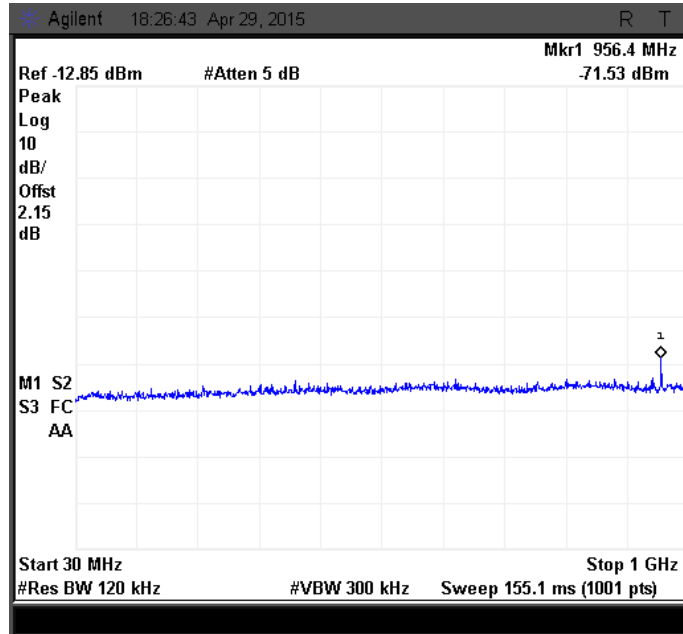


Figure 491: Spurious emission measured from 30 MHz to 1 GHz at Ch. 0-Peak

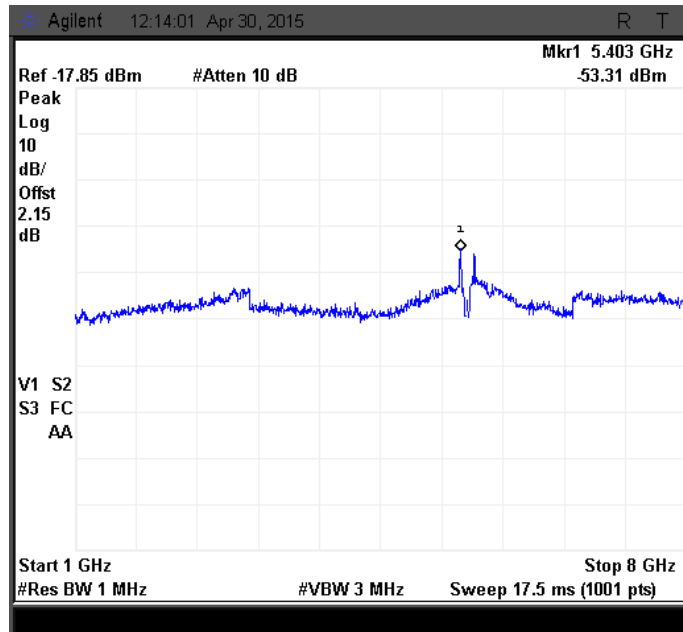


Figure 492: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Peak

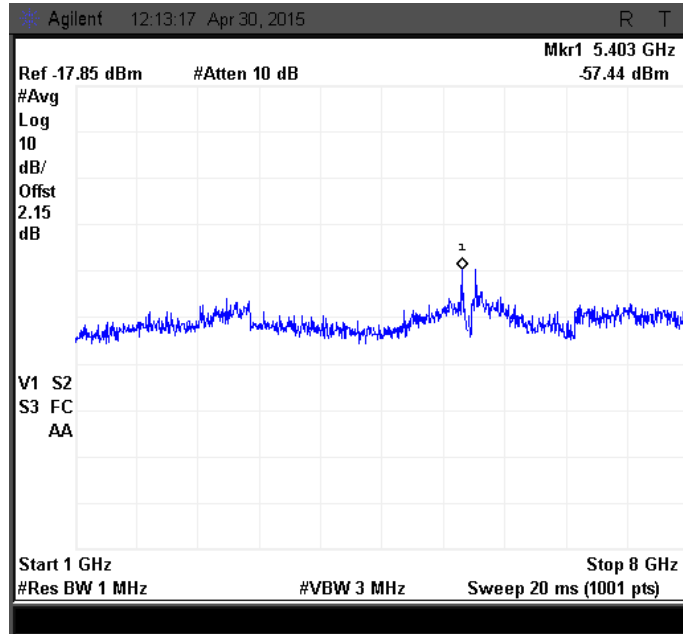


Figure 493: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Average

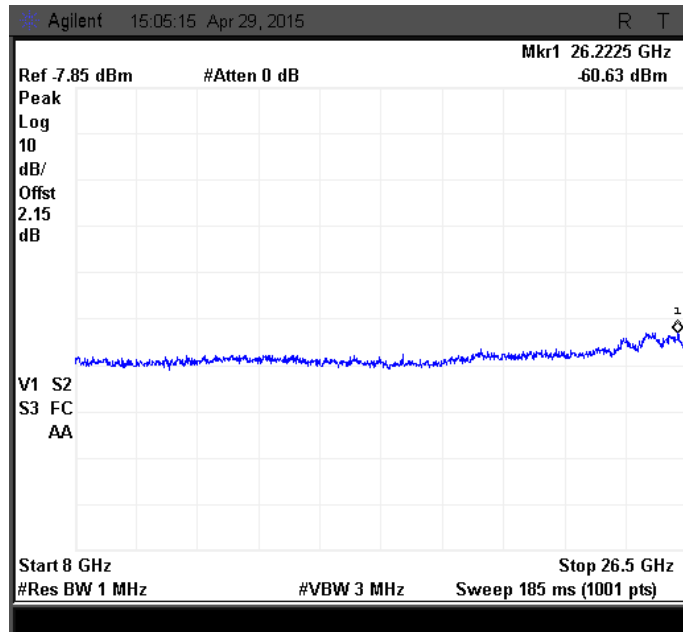
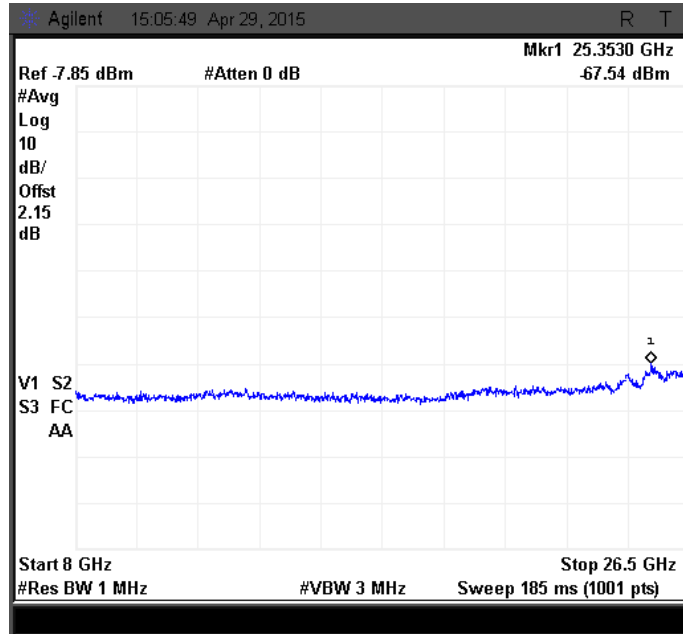
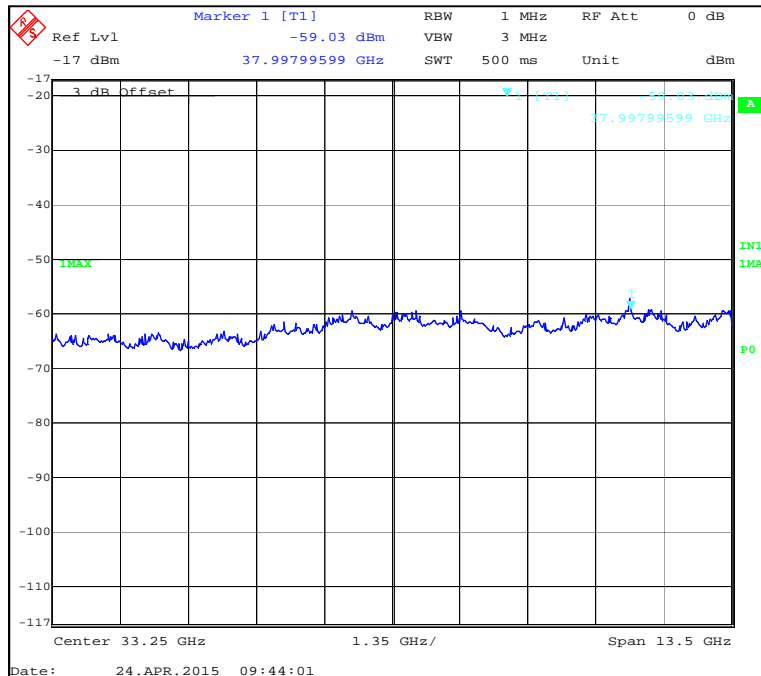


Figure 494: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Peak



**Figure 495: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Average**



**Figure 496: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Peak**

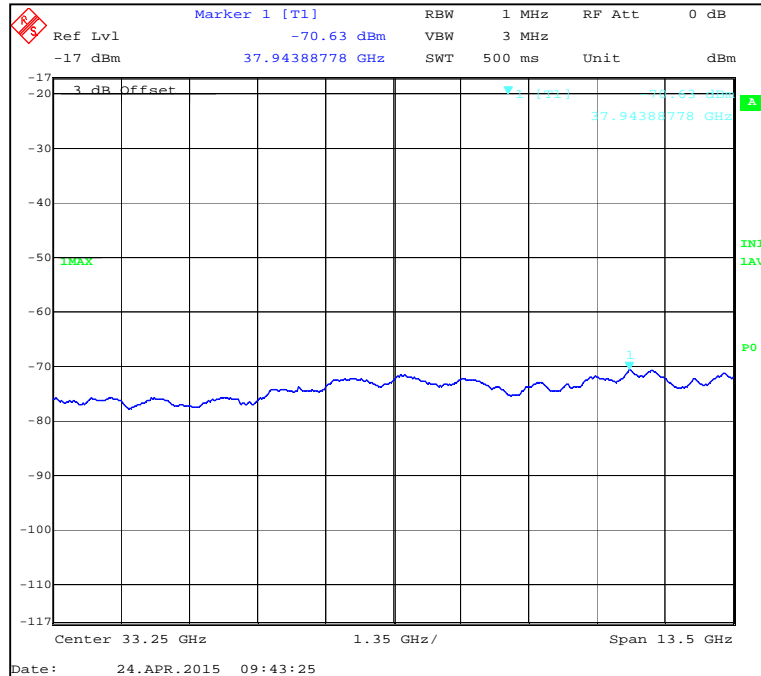


Figure 497: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Average

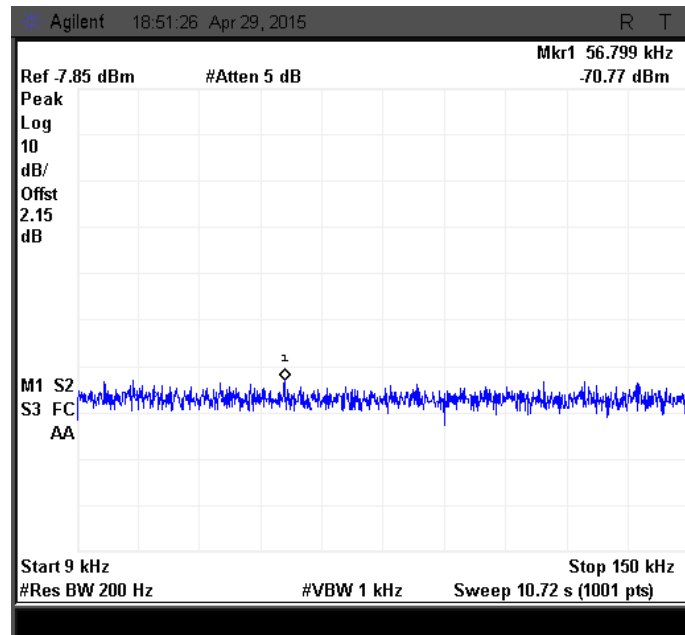


Figure 498: Spurious emission measured from 9 kHz to 150 kHz at Ch. 1-Peak

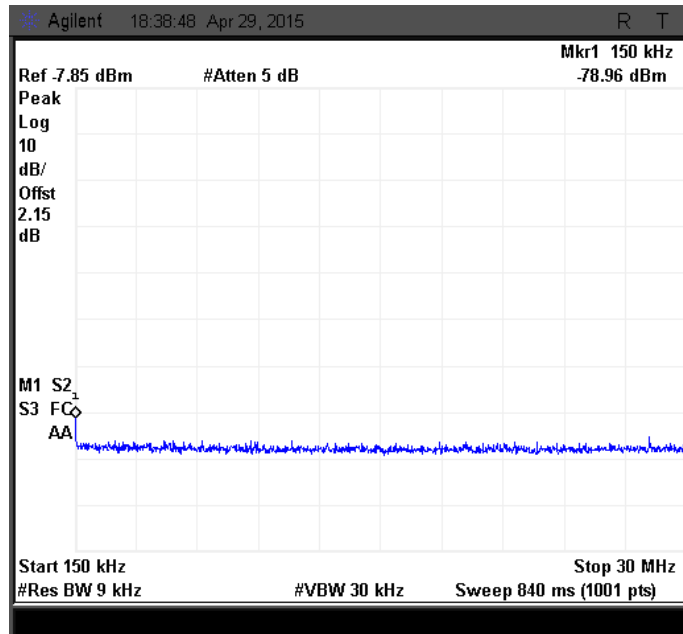


Figure 499: Spurious emission measured from 150 kHz to 30 MHz at Ch. 1-Peak

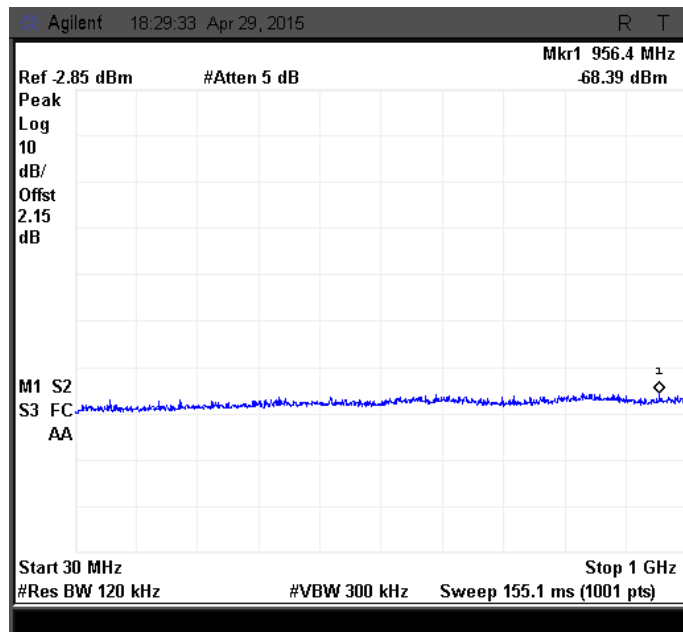


Figure 500: Spurious emission measured from 30 MHz to 1 GHz at Ch. 1-Peak

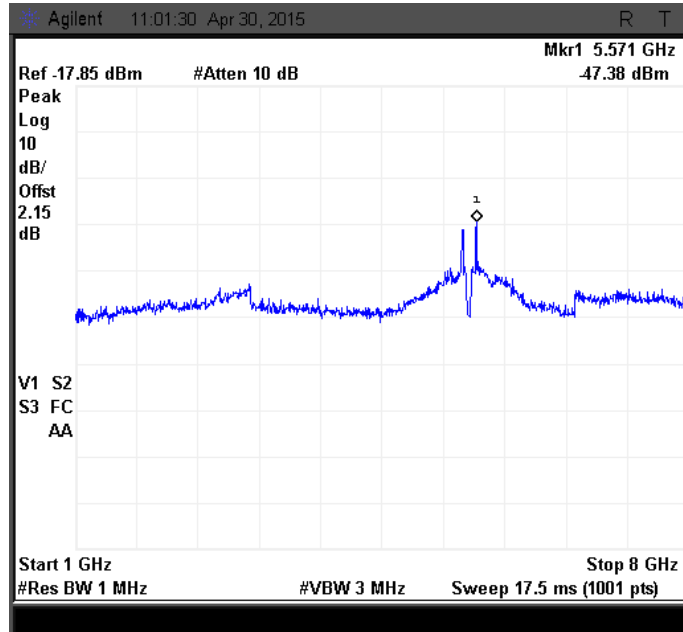


Figure 501: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Peak

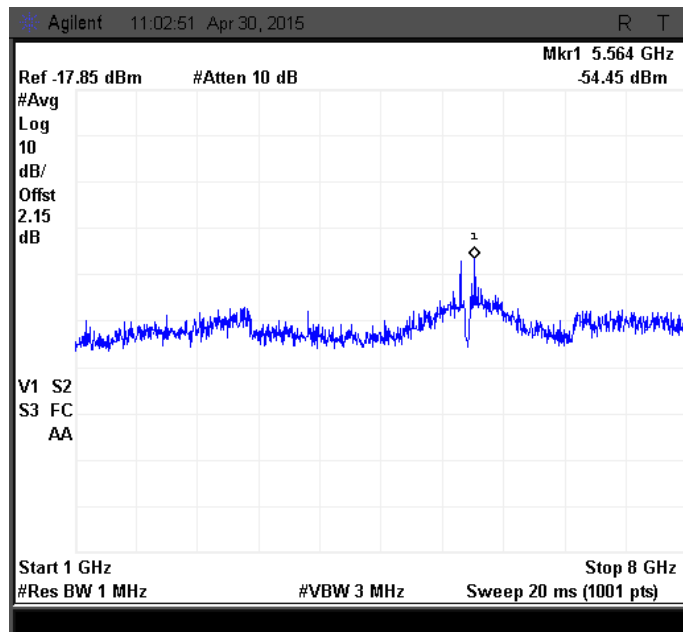


Figure 502: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Average

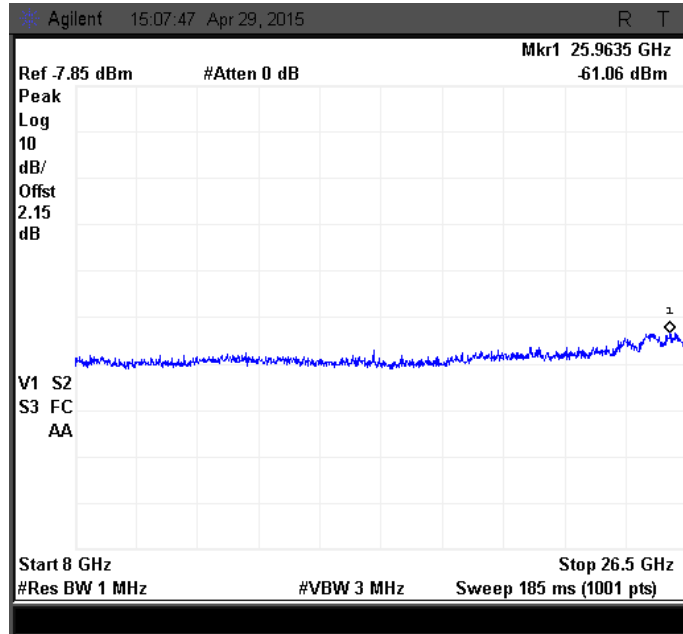


Figure 503: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Peak

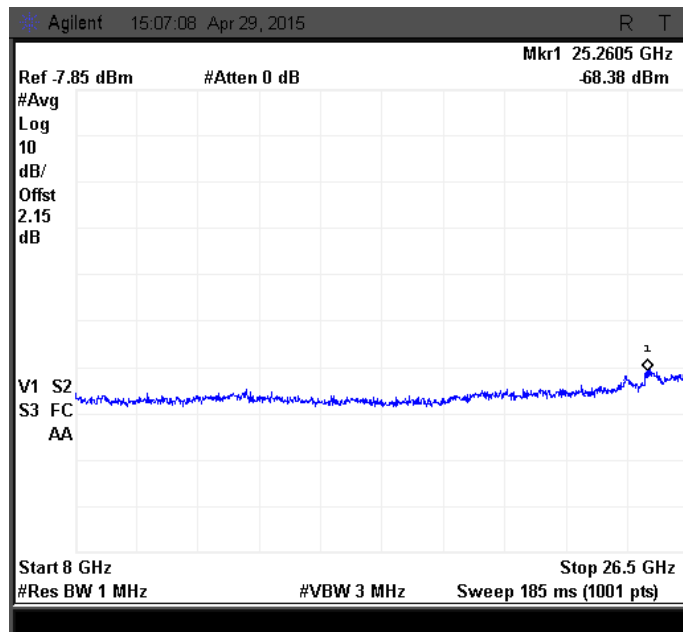
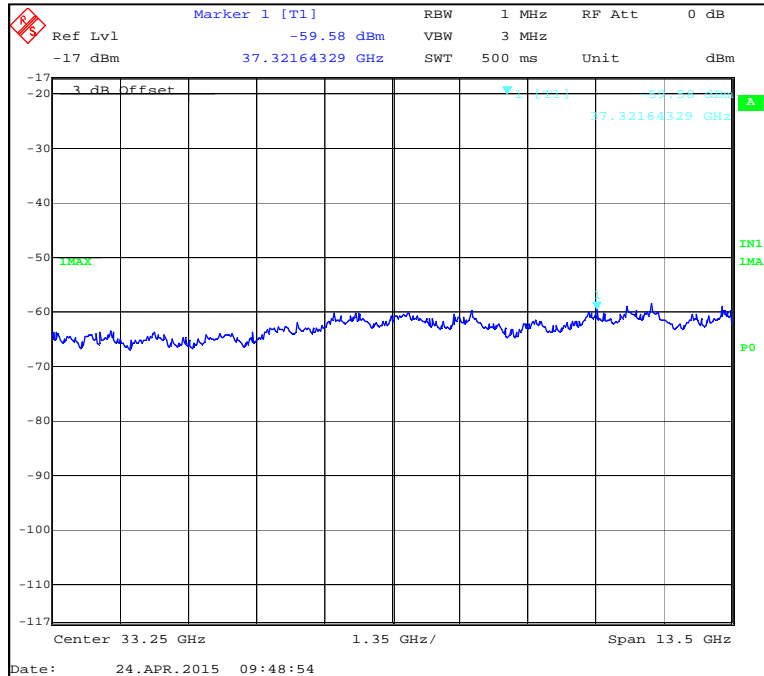
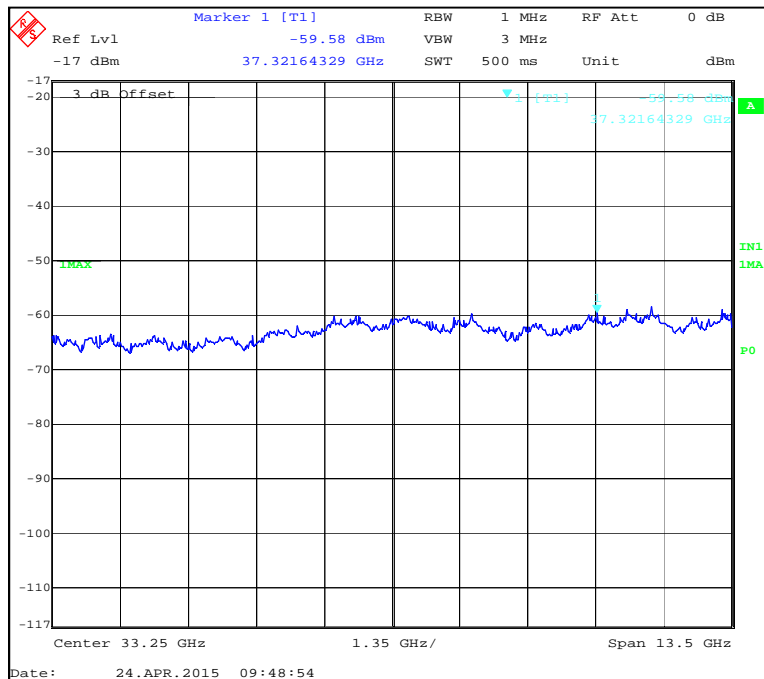


Figure 504: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Average



**Figure 505: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Average**



**Figure 506: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Peak**



### 5.3.7.7.5 10MHz MODULATION BW - MID CHANNEL\_5550 MHz

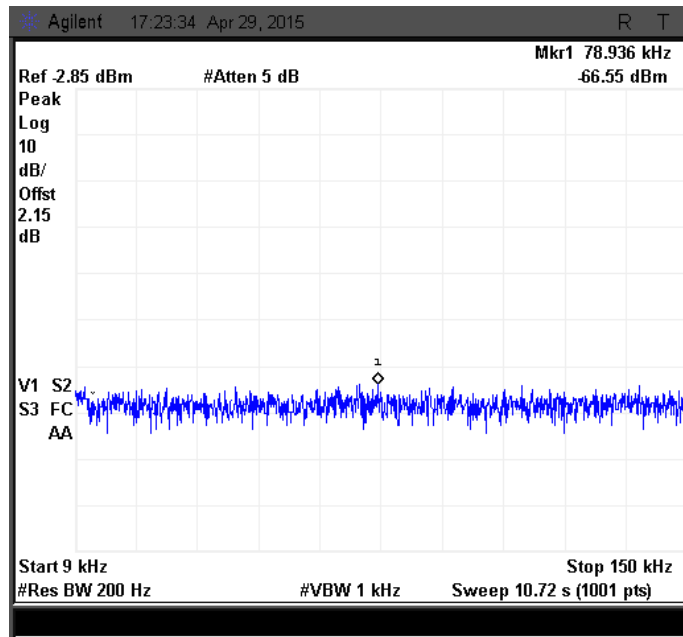


Figure 507: Spurious emission measured from 9 kHz to 150 kHz at Ch. 0-Peak

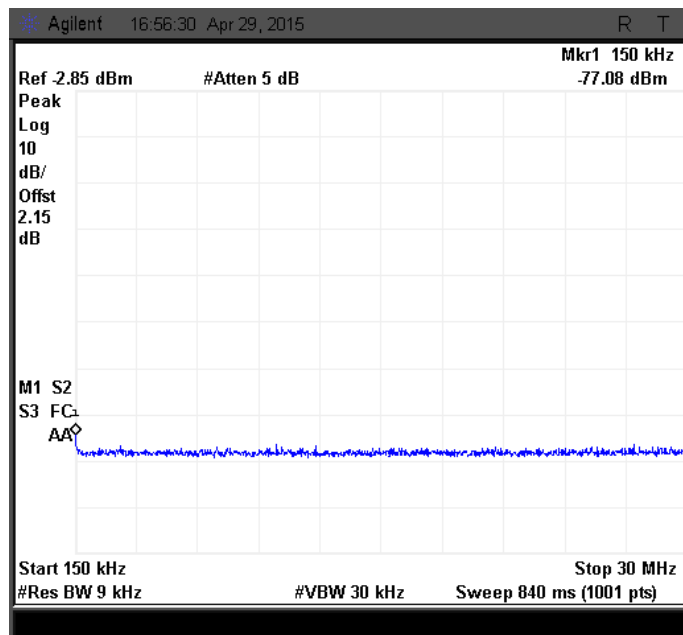


Figure 508: Spurious emission measured from 150 kHz to 30 MHz at Ch. 0-Peak

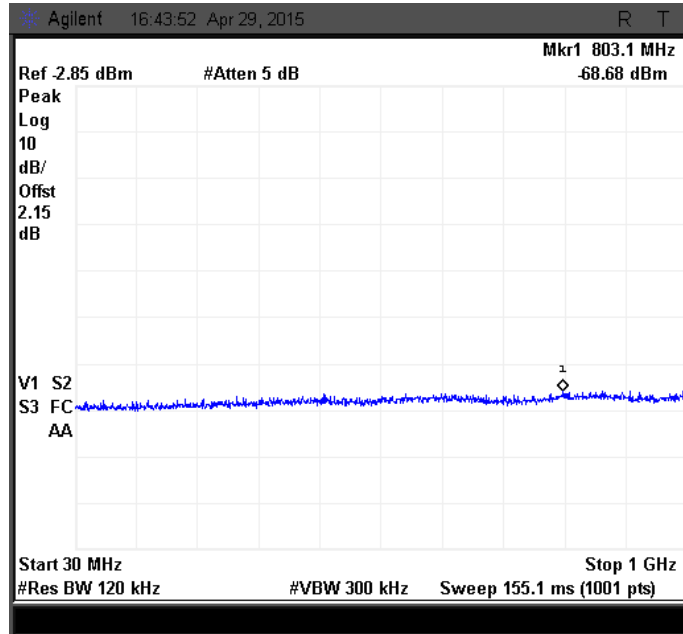


Figure 509: Spurious emission measured from 30 MHz to 1 GHz at Ch. 0-Peak

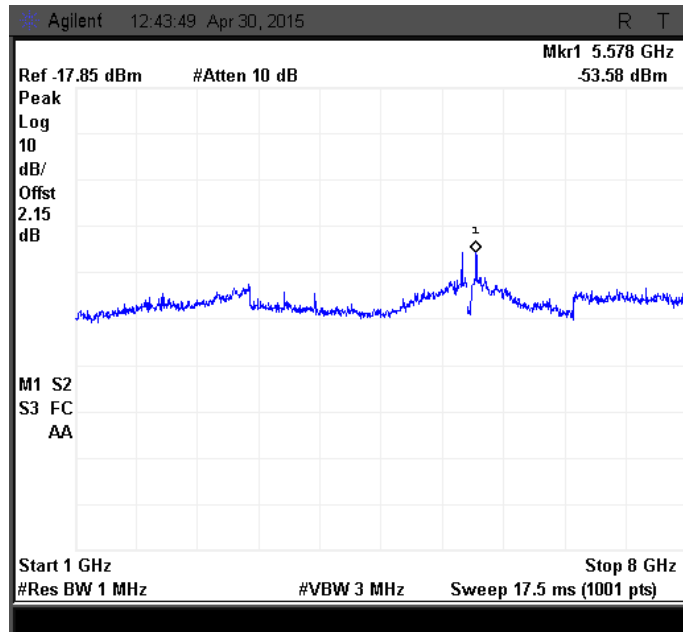


Figure 510: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Peak

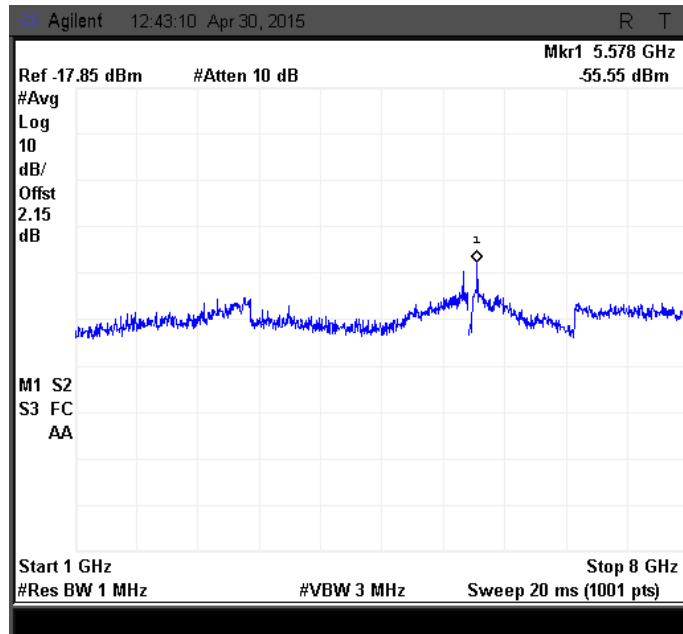


Figure 511: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Average

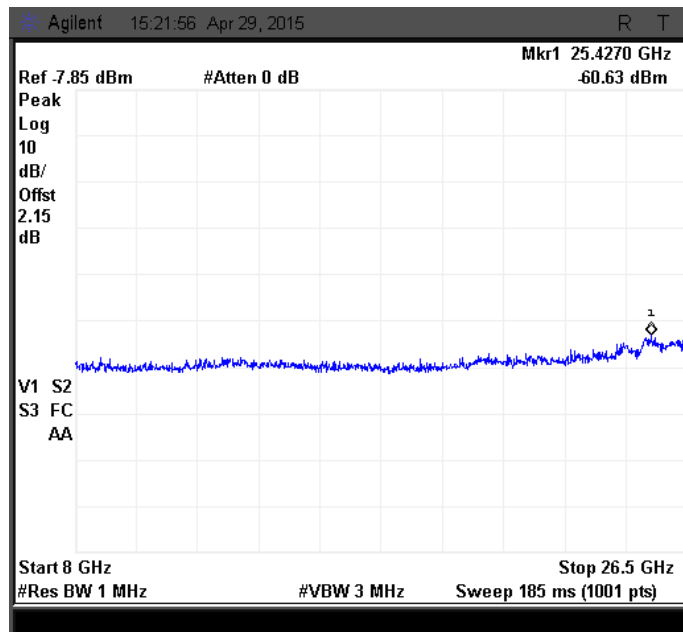


Figure 512: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Peak

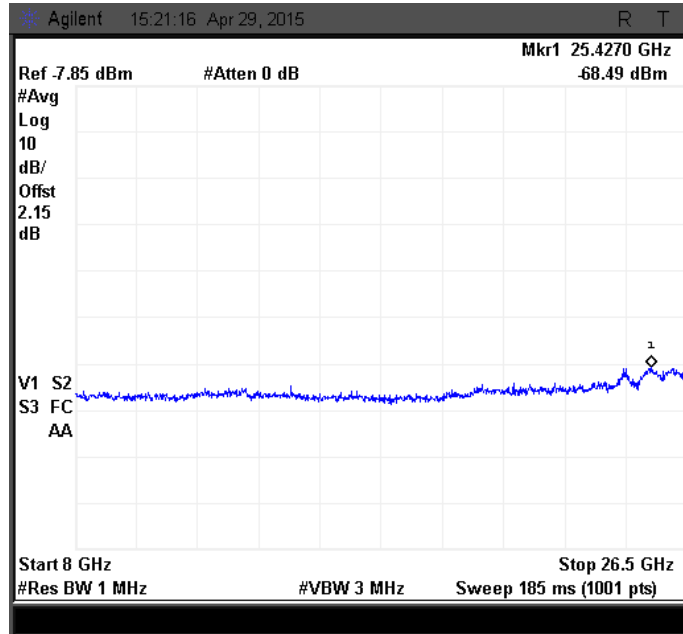


Figure 513: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Average

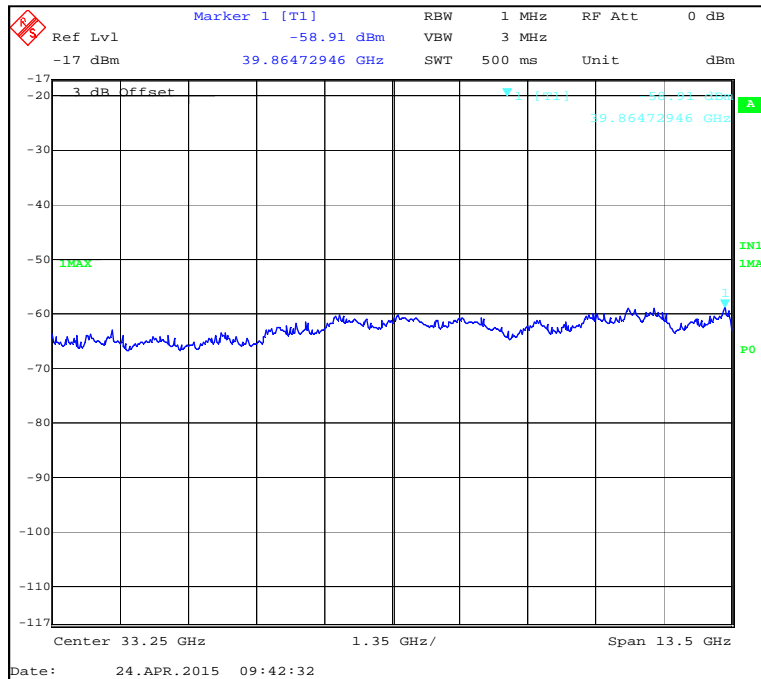
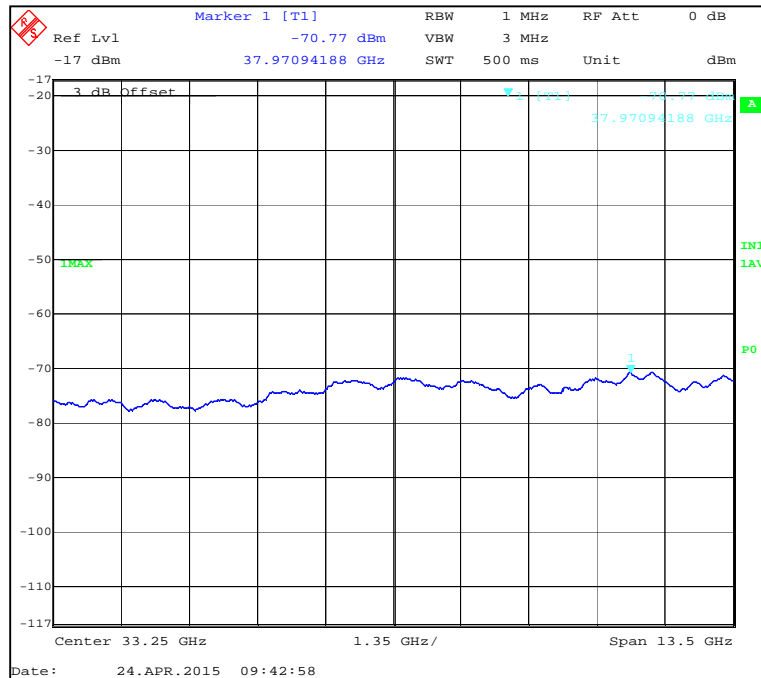
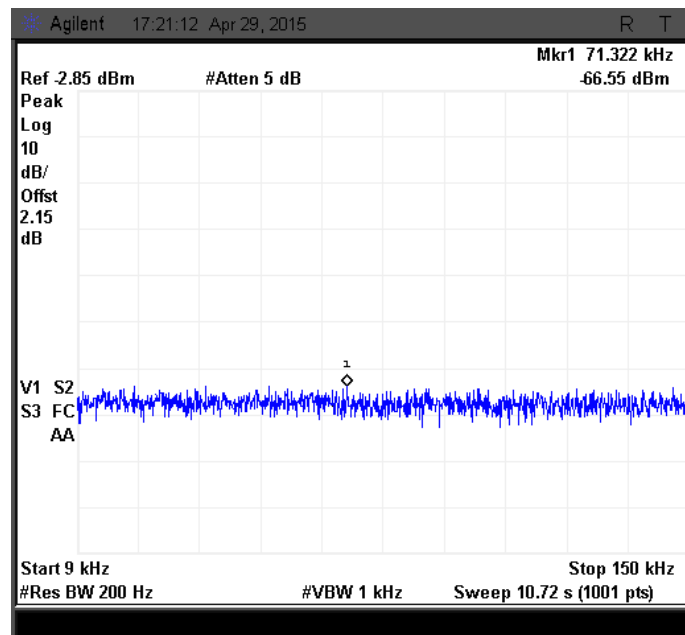


Figure 514: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Peak



**Figure 515: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Average**



**Figure 516: Spurious emission measured from 9 kHz to 150 kHz at Ch. 1-Peak**

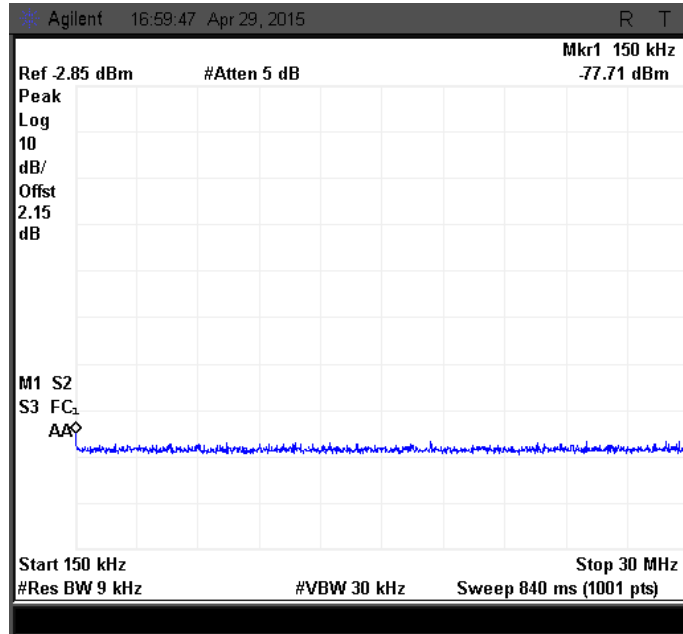


Figure 517: Spurious emission measured from 150 kHz to 30 MHz at Ch. 1-Peak

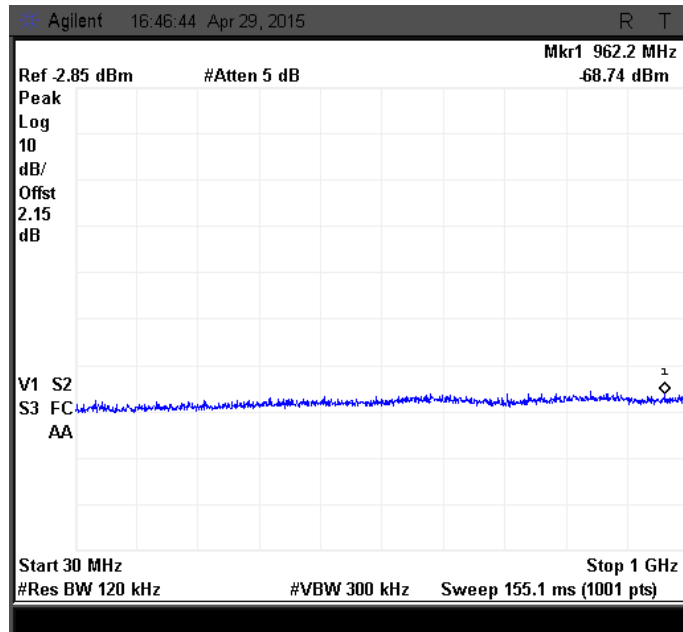


Figure 518: Spurious emission measured from 30 MHz to 1 GHz at Ch. 1-Peak

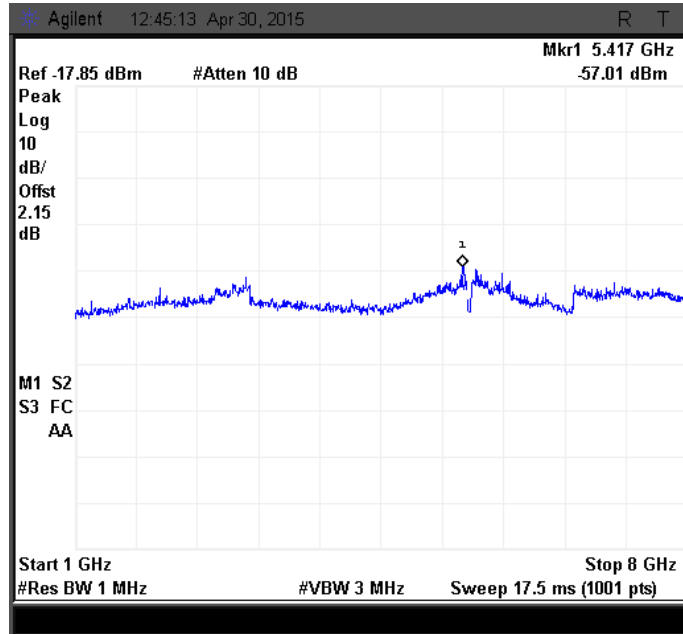


Figure 519: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Peak

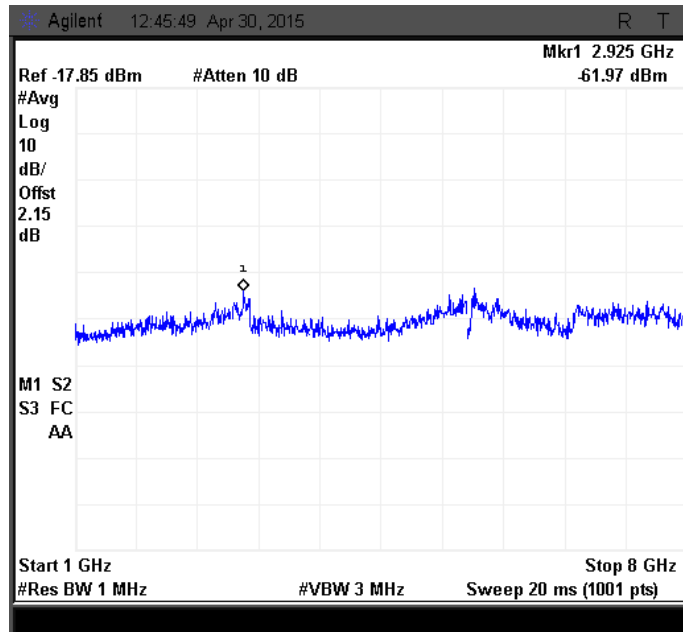


Figure 520: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Average

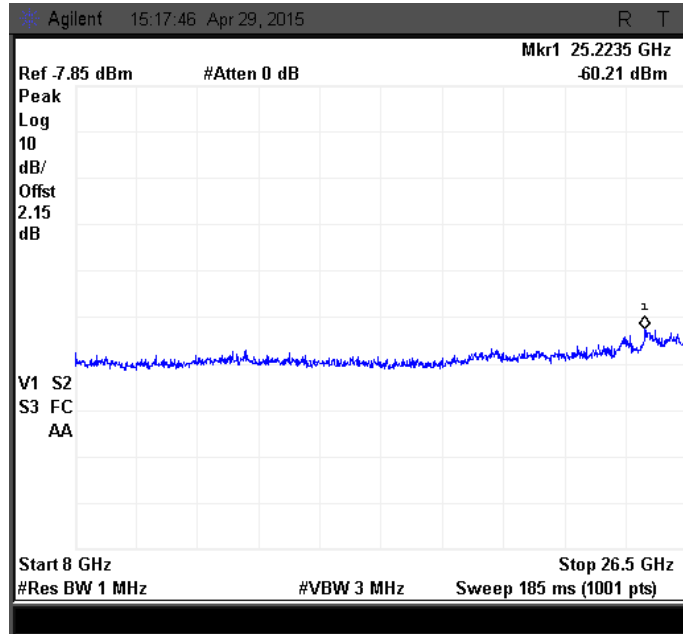


Figure 521: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Peak

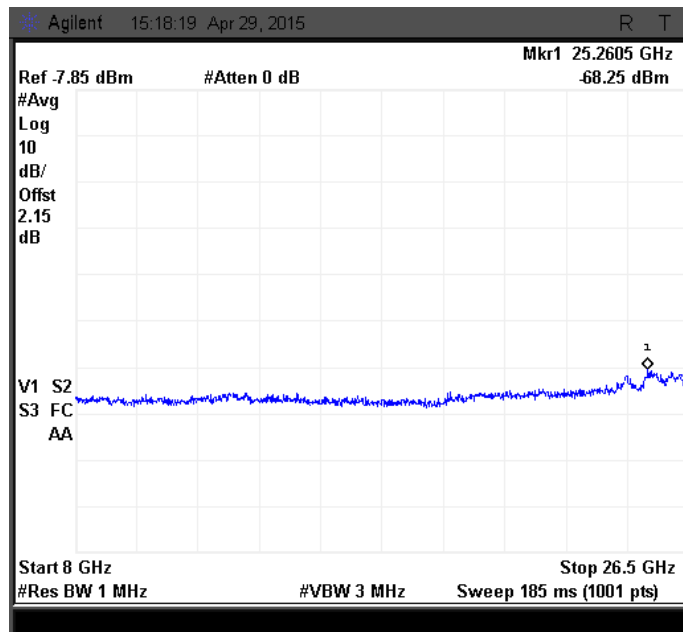
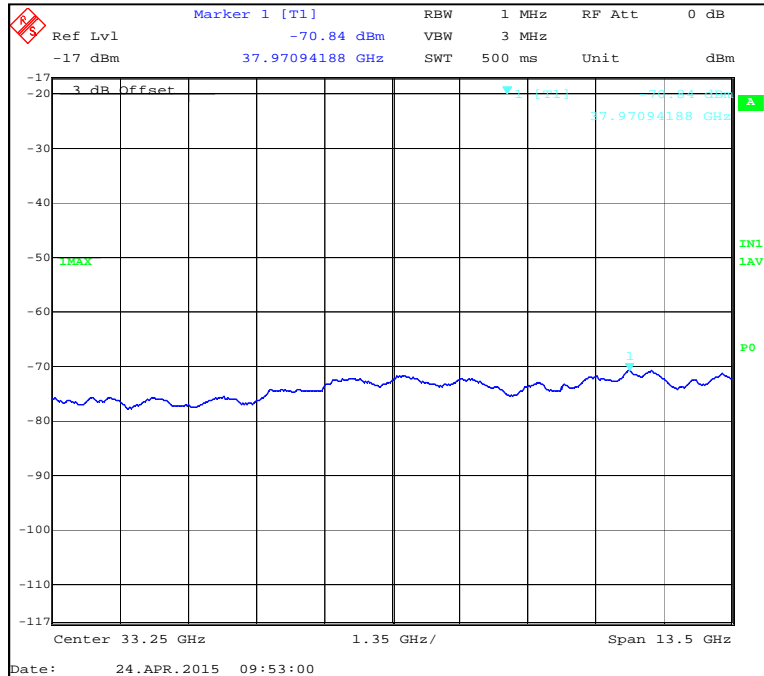
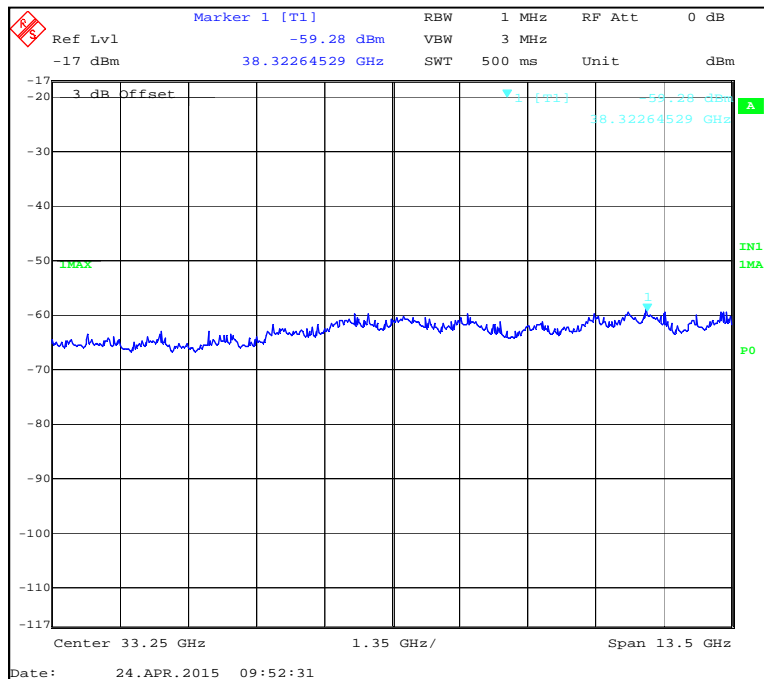


Figure 522: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Average





**Figure 523: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Average**



**Figure 524: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Peak**

### 5.3.7.7.6 10MHz MODULATION BW - HIGH CHANNEL\_5710 MHz

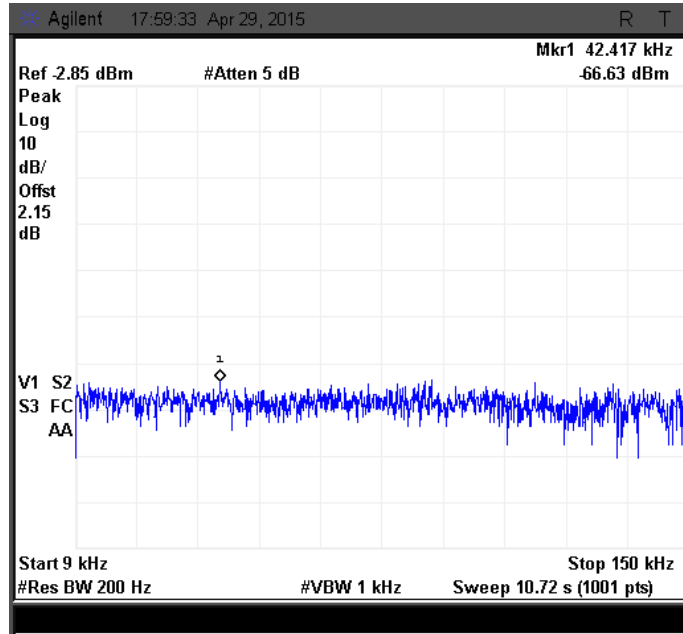


Figure 525: Spurious emission measured from 9 kHz to 150 kHz at Ch. 0-Peak

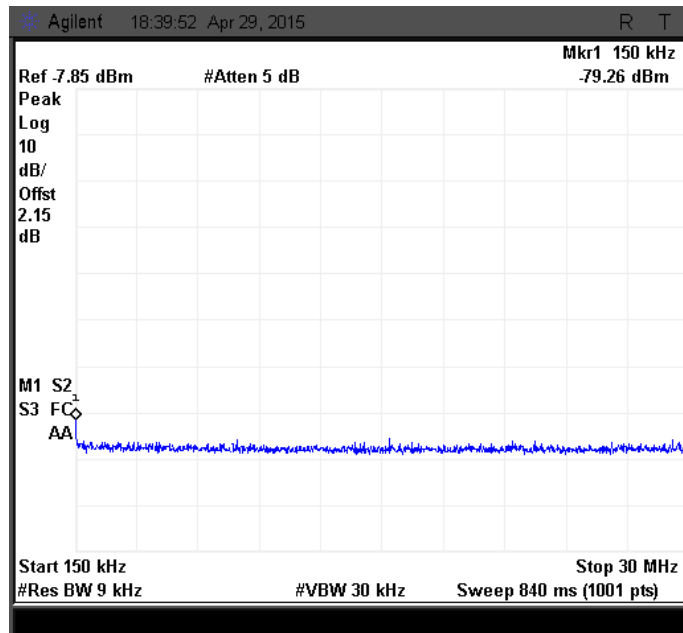


Figure 526: Spurious emission measured from 150 kHz to 30 MHz at Ch. 0-Peak

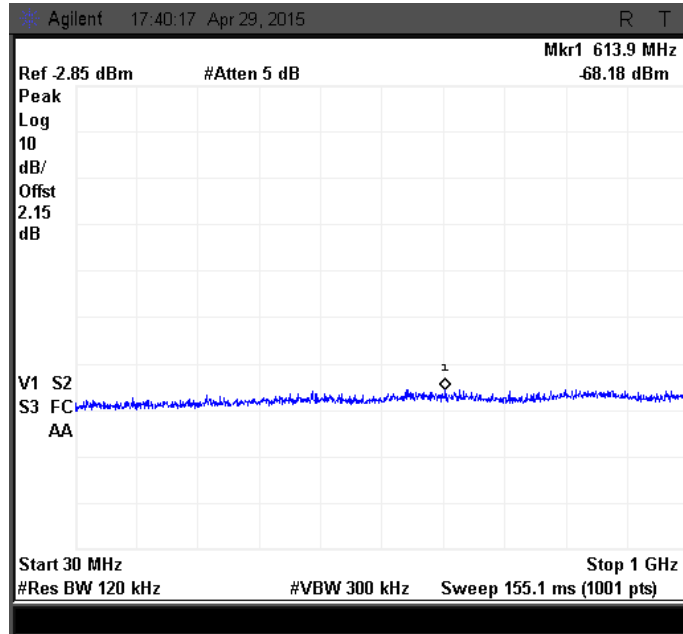


Figure 527: Spurious emission measured from 30 MHz to 1 GHz at Ch. 0-Peak

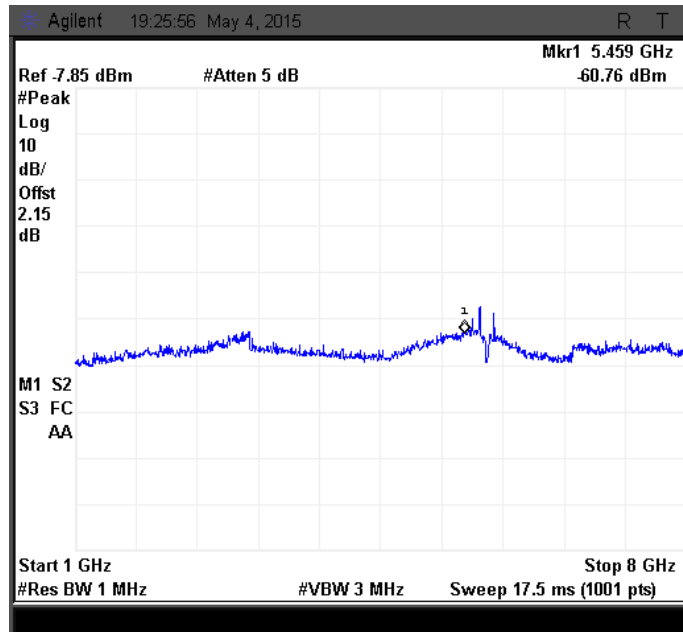


Figure 528: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Peak

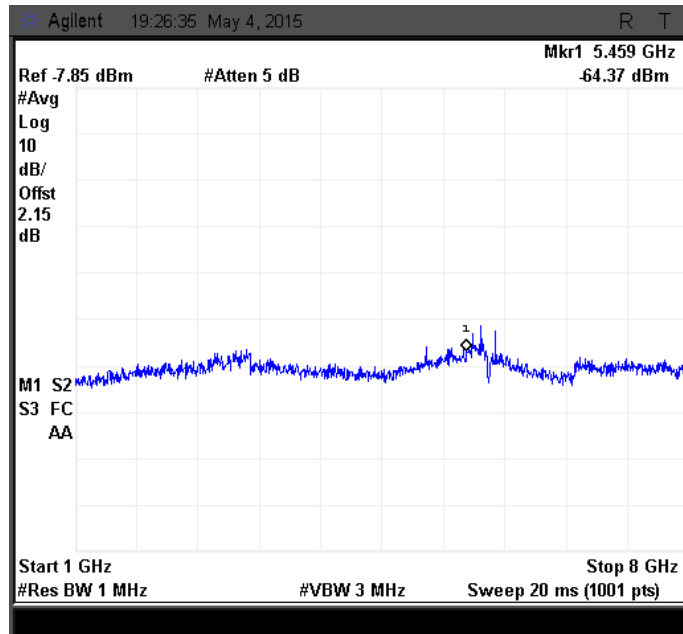


Figure 529: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Average

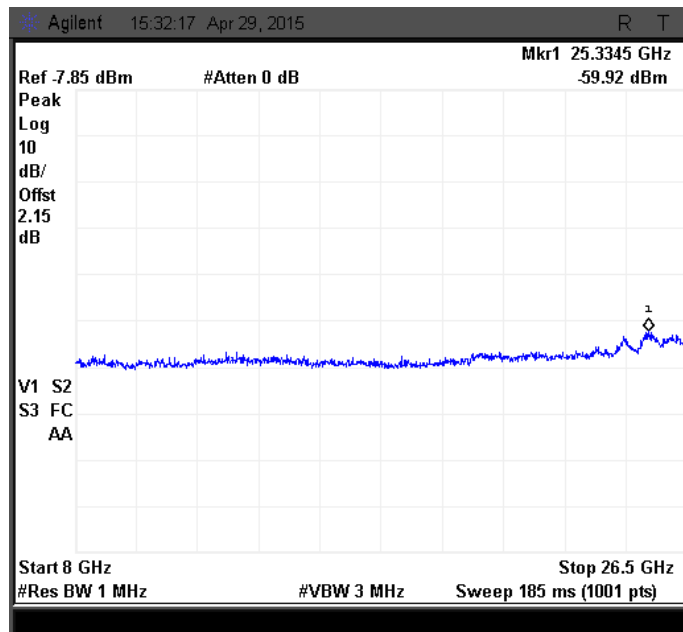


Figure 530: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Peak

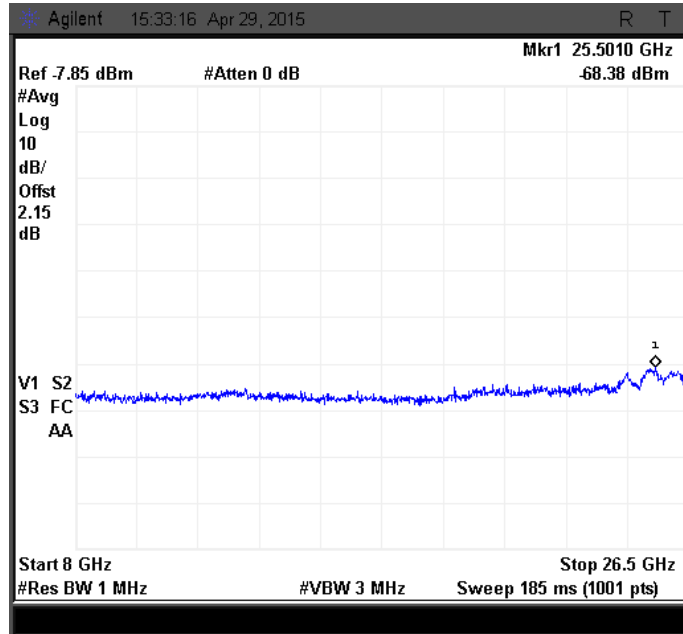


Figure 531: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Average

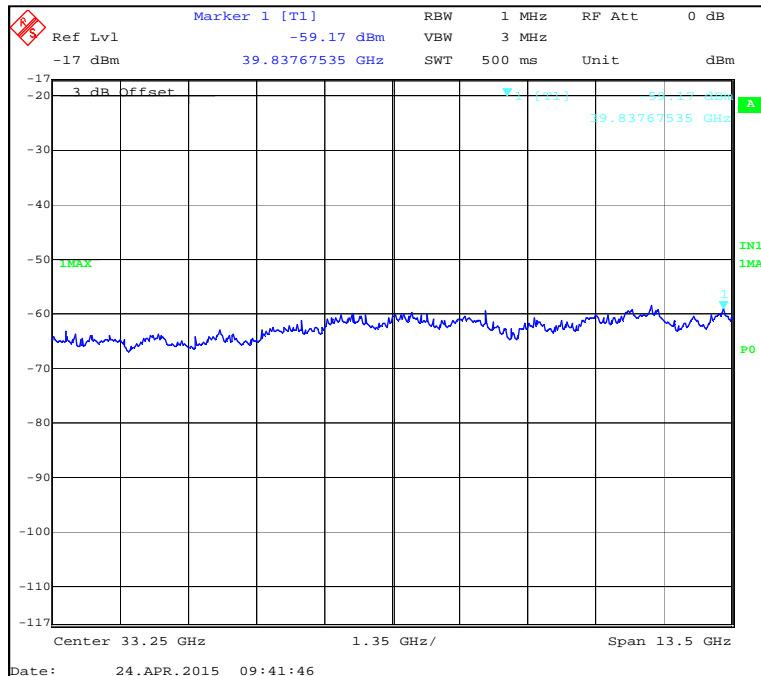


Figure 532: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Peak

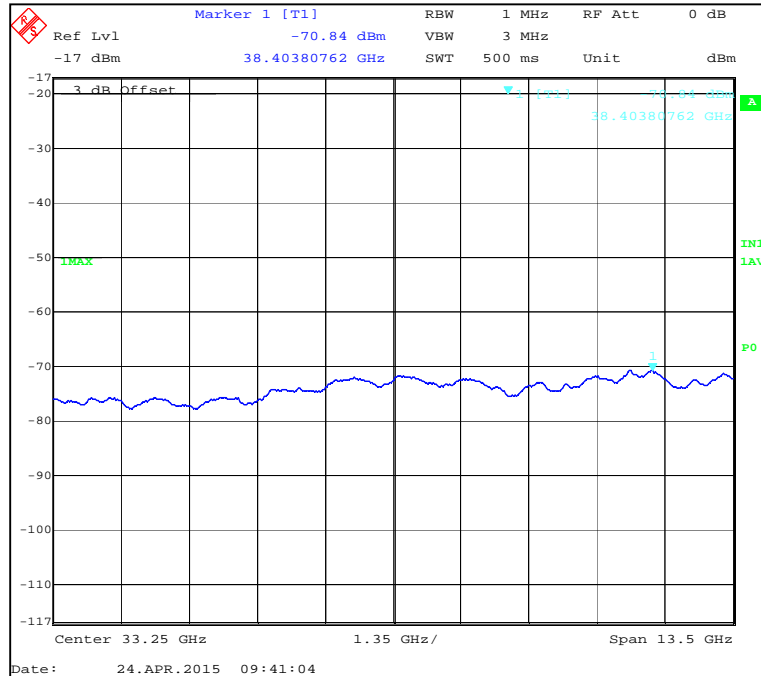


Figure 533: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Average

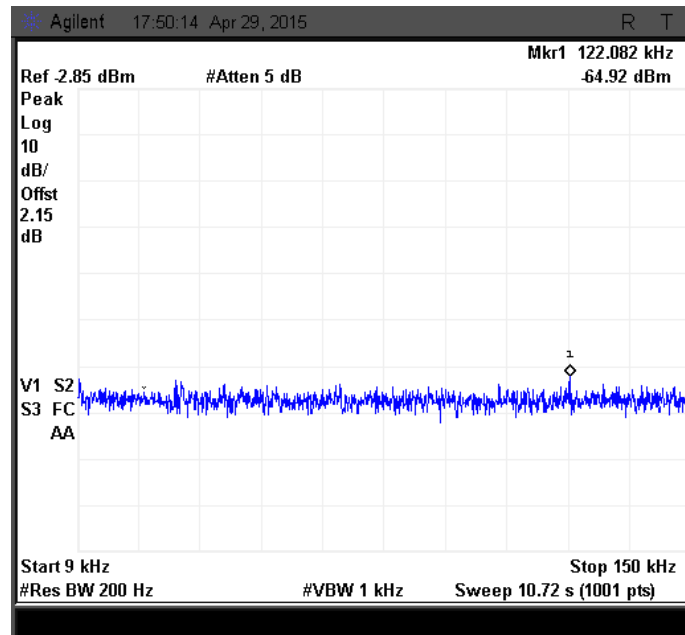


Figure 534: Spurious emission measured from 9 kHz to 150 kHz at Ch. 1-Peak

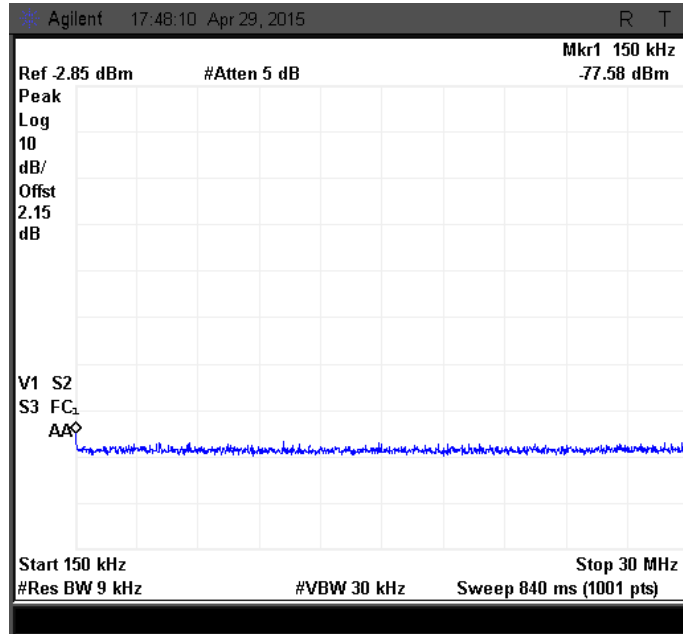


Figure 535: Spurious emission measured from 150 kHz to 30 MHz at Ch. 1-Peak

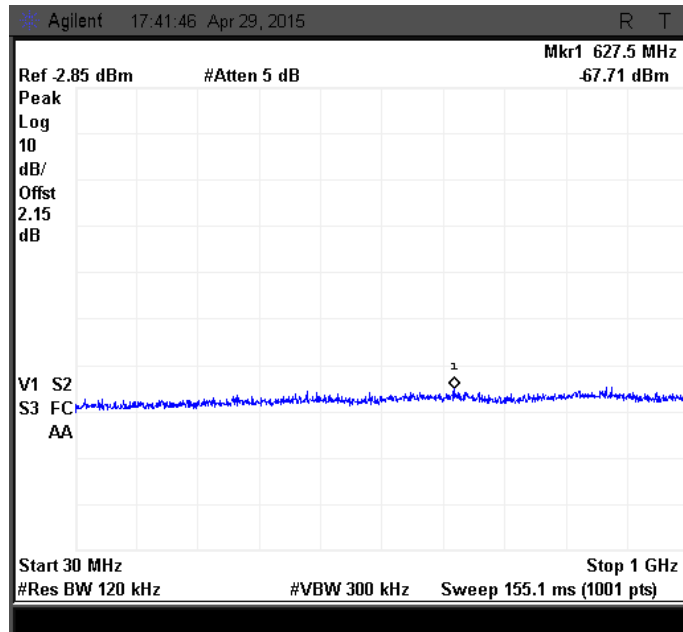


Figure 536: Spurious emission measured from 30 MHz to 1 GHz at Ch. 1-Peak

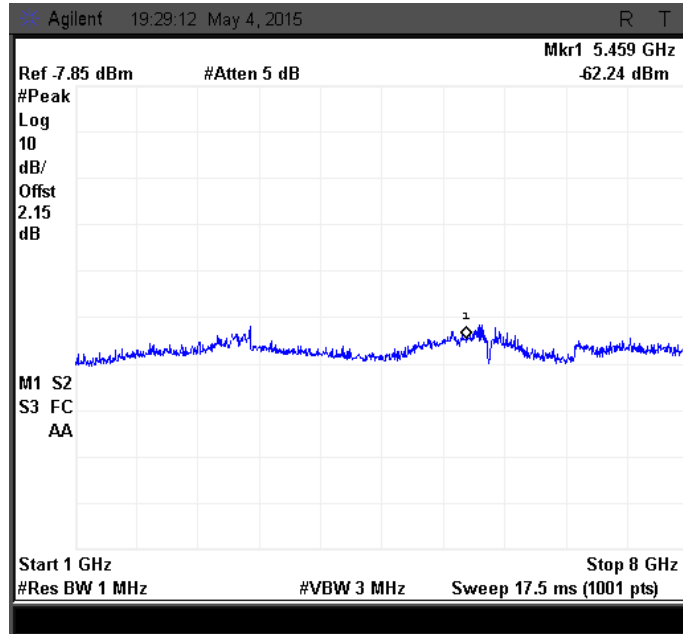


Figure 537: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Peak

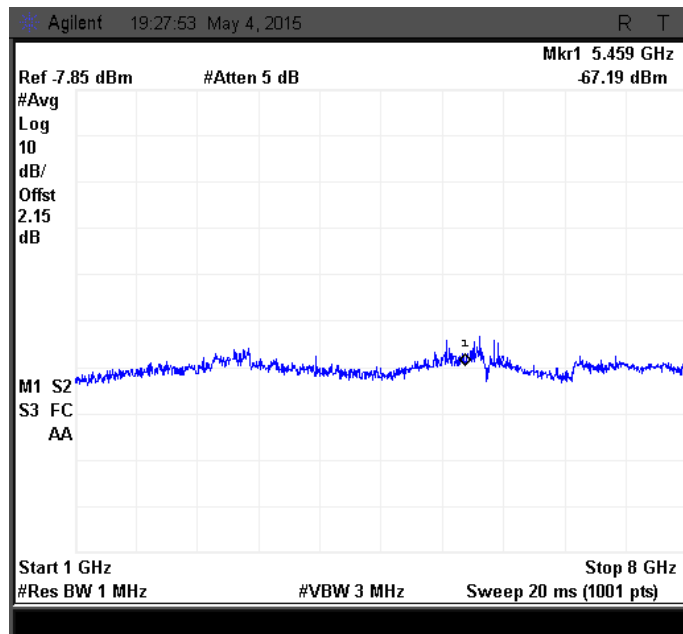


Figure 538: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Average



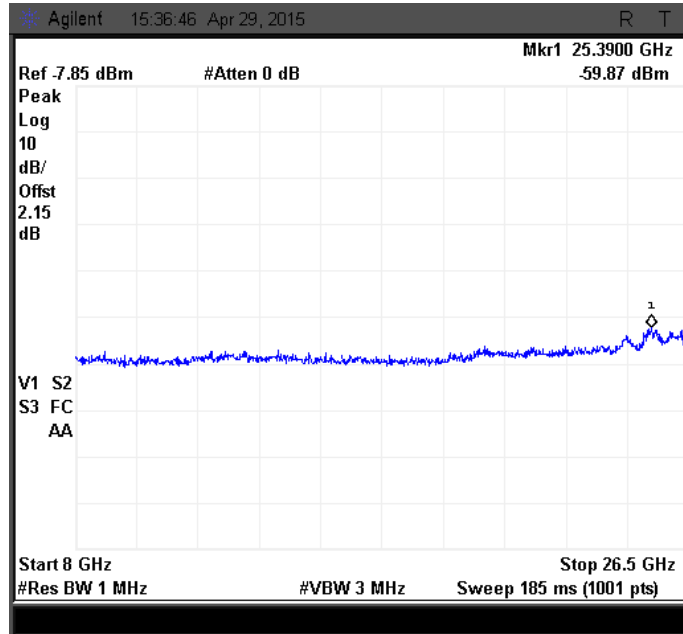


Figure 539: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Peak

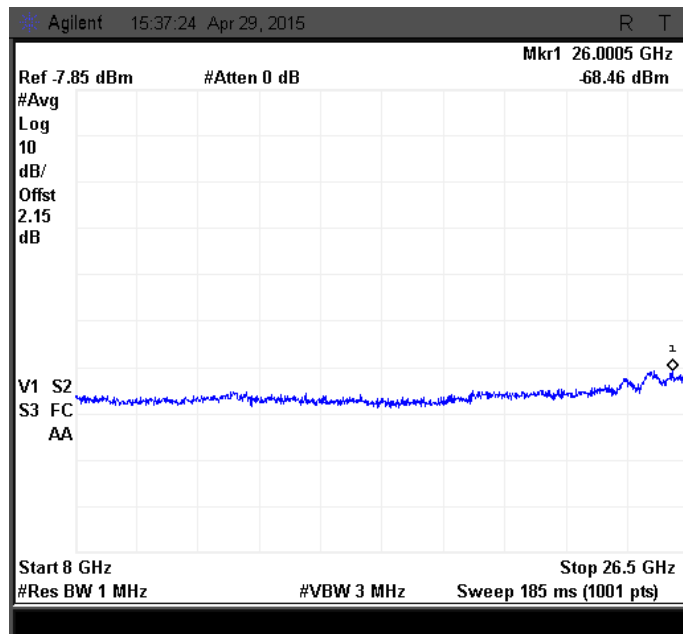
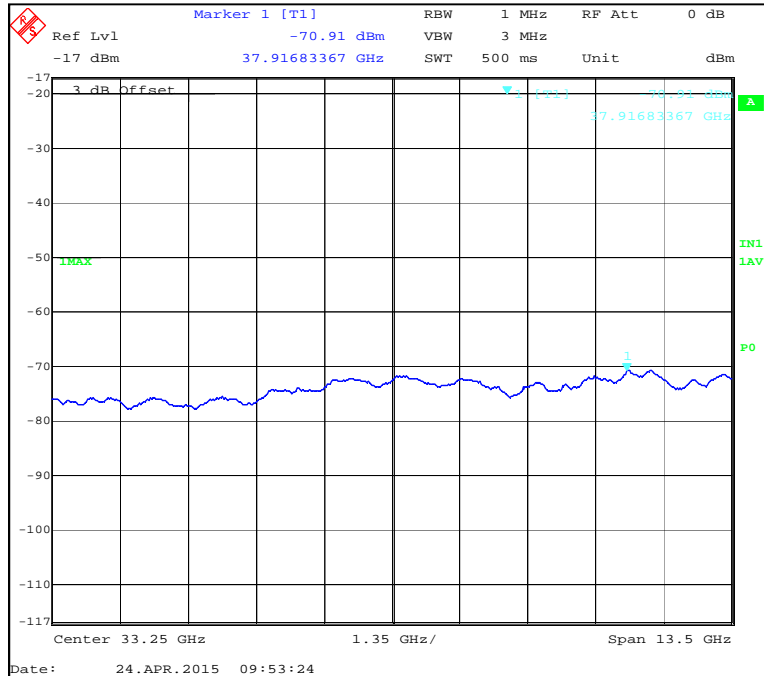
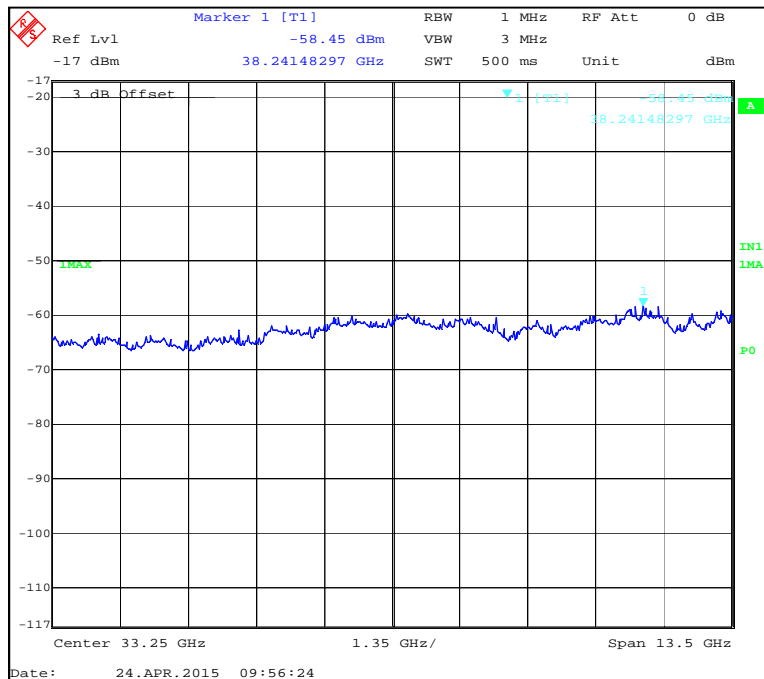


Figure 540: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Average



**Figure 541: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Average**



**Figure 542: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Peak**



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### 5.3.7.8 RESULT

Emission is below EIRP limit in all channels for both 40MHz & 10MHz Modulation Bandwidths.



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## APPENDIX I – ACRONYMS

dB $\mu$ V	Decibel micro Volts
EUT	Equipment Under Test
FCC	Federal Communications Commission
GHz	Giga Hertz
kHz	Kilo Hertz
LISN	Line Impedance Stabilization Network
MHz	Mega Hertz
QP	Quasi Peak

**END OF REPORT**