

Appendix B

E-UTRA Band 4

TABLE OF CONTENTS

1. MAIN TEST INSTRUMENTS	3
2. MEASUREMENT UNCERTAINTY	3
3 EFFECTIVE (ISOTROPIC) RADIATED POWER	4
3.1. TEST RESULT	4
4. PEAK-TO-AVERAGE RATIO (CCDF)	9
4.1. TEST RESULT	9
4.2. TEST PLOTS.....	9
5. MODULATION CHARACTERISTICS	12
5.1. TEST MODE = LTE /TM1 20MHZ.....	12
5.1.1. TEST CHANNEL = MCH.....	12
5.2. TEST MODE = LTE /TM2 20MHZ.....	13
5.2.1. TEST CHANNEL = MCH.....	13
6. 26DB BANDWIDTH AND OCCUPIED BANDWIDTH	14
6.1. TEST RESULT	14
6.2. TEST PLOTS.....	15
7. BAND EDGE COMPLIANCE	27
7.1. TEST PLOTS.....	27
8. SPURIOUS EMISSION AT ANTENNA TERMINAL	44
8.1. TEST PLOTS.....	44
9. FREQUENCY STABILITY	49
9.1. FREQUENCY VS VOLTAGE	49
9.2. FREQUENCY VS TEMPERATURE	49

1. Main Test Instruments

RE in Chamber					
Test Equipment	Manufacturer	Model No.	Inventory No.	Cal. date	Cal. Due date
				(yyyy-mm-dd)	(yyyy-mm-dd)
3m Semi-Anechoic Chamber	AUDIX	N/A	SEM001-02	2018/3/13	2021/3/12
Spectrum Analyzer (20Hz-43GHz)	Rohde & Schwarz	FSU43	SEM004-08	2019/3/2	2020/3/1
BiConiLog Antenna (26-3000MHz)	ETS-Lindgren	3142C	SEM003-01	2017/6/27	2020/6/26
Horn Antenna (800MHz-18GHz)	Rohde & Schwarz	HF907	SEM003-07	2018/4/13	2021/4/12
Horn Antenna (15-40GHz)	Schwarzbeck	BBHA 9170	SEM003-15	2017/10/17	2020/10/16
Amplifier (0.1-1300MHz)	HP	8447D	SEM005-02	2019/7/14	2020/7/14
Low Noise Amplifier (100MHz-18GHz)	Black Diamond Series	BDLNA-0118-352810	SEM005-05	2019/7/14	2020/7/14
Pre-Amplifier (0.1-26.5GHz)	Compliance Directions Systems Inc.	PAP-0126	EMC2063	2019/9/20	2020/9/19
Pre-amplifier (26-40GHz)	Compliance Directions Systems Inc.	PAP-2640-50	SEM005-08	2019/3/2	2020/3/1
Band filter	N/A	N/A	N/A	N/A	N/A
Measurement Software	AUDIX	e3 V8.2014-6-27	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM026-01	2019/6/12	2020/6/11
Wideband Radio Communication Tester	Anristu	MT8821C	6201462742	2019/4/3	2020/4/3
Wideband Radio Communication Tester	Rohde & Schwarz	CMW500	W005-02	2019/1/13	2020/1/12
RF conducted test					
Test Equipment	Manufacturer	Model No.	Inventory No.	Cal. date	Cal. Due date
				(yyyy-mm-dd)	(yyyy-mm-dd)
Dual Output Mobile Communication DC Source	Agilent Technologies Inc	66311B	W009-09	2018/11/2	2019/11/1
Signal Analyzer	Rohde & Schwarz	FSV	W005-02	2019/3/2	2020/3/1
Coaxial Cable	SGS	N/A	SEM031-01	2019/6/12	2020/6/11
Attenuator	Weinschel Associates	WA41	SEM021-09	N/A	N/A
Signal Generator	KEYSIGHT	N5173B	SEM006-05	2018/11/2	2019/11/1
Humidity/ Temperature Indicator	Shanghai Meteorological Industry Factory	HTC-1	W006-17	2018/11/2	2019/11/1
Temperature Chamber	GIANT FORCE	ICT-150-40-CP-AR	W027-03	2018/11/2	2019/11/1
Wideband Radio Communication Tester	Anristu	MT8821C	6201462742	2019/3/2	2020/3/1

2. Measurement Uncertainty

For a 95% confidence level ($k = 2$), the measurement expanded uncertainties for defined systems, in accordance with the recommendations of ISO 17025 as following:

Test Item	Extended Uncertainty	Data
Transmit Output Power Data	Power [dBm]	$U = \pm 0.37$ dB
Bandwidth	Magnitude [%]	$U = \pm 0.2\%$
Band Edge Compliance	Disturbance Power [dBm]	$U = \pm 2.0$ dB
Spurious Emissions, Conducted	Disturbance Power [dBm]	$U = \pm 2.0$ dB
Frequency Stability	Frequency Accuracy [ppm]	$U = \pm 0.24$ ppm

3 Effective (Isotropic) Radiated Power

3.1. Test Result

Band	Bandwidth	Modulation	Channel	RB Configuration	Conducted Power(dBm)	EIRP (dBm)	Limit (dBm)	Verdict
Band4	1.4MHz	QPSK	19957	1RB#0	23.37	25.42	30.00	PASS
Band4	1.4MHz	QPSK	19957	1RB#2	23.41	25.46	30.00	PASS
Band4	1.4MHz	QPSK	19957	1RB#5	23.21	25.26	30.00	PASS
Band4	1.4MHz	QPSK	19957	3RB#1	23.33	25.38	30.00	PASS
Band4	1.4MHz	QPSK	19957	3RB#0	23.42	25.47	30.00	PASS
Band4	1.4MHz	QPSK	19957	3RB#3	23.10	25.15	30.00	PASS
Band4	1.4MHz	QPSK	19957	6RB#0	22.35	24.40	30.00	PASS
Band4	1.4MHz	QPSK	20175	1RB#5	23.28	25.33	30.00	PASS
Band4	1.4MHz	QPSK	20175	1RB#0	23.62	25.67	30.00	PASS
Band4	1.4MHz	QPSK	20175	1RB#2	23.15	25.20	30.00	PASS
Band4	1.4MHz	QPSK	20175	3RB#0	23.17	25.22	30.00	PASS
Band4	1.4MHz	QPSK	20175	3RB#1	23.50	25.55	30.00	PASS
Band4	1.4MHz	QPSK	20175	3RB#3	23.14	25.19	30.00	PASS
Band4	1.4MHz	QPSK	20175	6RB#0	22.40	24.45	30.00	PASS
Band4	1.4MHz	QPSK	20393	1RB#2	23.27	25.32	30.00	PASS
Band4	1.4MHz	QPSK	20393	1RB#5	23.38	25.43	30.00	PASS
Band4	1.4MHz	QPSK	20393	1RB#0	23.16	25.21	30.00	PASS
Band4	1.4MHz	QPSK	20393	3RB#0	23.08	25.13	30.00	PASS
Band4	1.4MHz	QPSK	20393	3RB#3	23.45	25.50	30.00	PASS
Band4	1.4MHz	QPSK	20393	3RB#1	23.05	25.10	30.00	PASS
Band4	1.4MHz	QPSK	20393	6RB#0	22.25	24.30	30.00	PASS
Band4	1.4MHz	16QAM	19957	1RB#2	22.82	24.87	30.00	PASS
Band4	1.4MHz	16QAM	19957	1RB#5	22.84	24.89	30.00	PASS
Band4	1.4MHz	16QAM	19957	1RB#0	22.57	24.62	30.00	PASS
Band4	1.4MHz	16QAM	19957	3RB#0	22.64	24.69	30.00	PASS
Band4	1.4MHz	16QAM	19957	3RB#1	22.65	24.70	30.00	PASS
Band4	1.4MHz	16QAM	19957	3RB#3	22.64	24.69	30.00	PASS
Band4	1.4MHz	16QAM	19957	6RB#0	21.34	23.39	30.00	PASS
Band4	1.4MHz	16QAM	20175	1RB#5	22.65	24.70	30.00	PASS
Band4	1.4MHz	16QAM	20175	1RB#0	22.83	24.88	30.00	PASS
Band4	1.4MHz	16QAM	20175	1RB#2	22.57	24.62	30.00	PASS
Band4	1.4MHz	16QAM	20175	3RB#3	22.65	24.70	30.00	PASS
Band4	1.4MHz	16QAM	20175	3RB#1	22.73	24.78	30.00	PASS
Band4	1.4MHz	16QAM	20175	3RB#0	22.62	24.67	30.00	PASS
Band4	1.4MHz	16QAM	20175	6RB#0	21.33	23.38	30.00	PASS
Band4	1.4MHz	16QAM	20393	1RB#2	22.69	24.74	30.00	PASS
Band4	1.4MHz	16QAM	20393	1RB#5	22.85	24.90	30.00	PASS
Band4	1.4MHz	16QAM	20393	1RB#0	22.67	24.72	30.00	PASS
Band4	1.4MHz	16QAM	20393	3RB#3	22.73	24.78	30.00	PASS
Band4	1.4MHz	16QAM	20393	3RB#1	22.65	24.70	30.00	PASS
Band4	1.4MHz	16QAM	20393	3RB#0	22.65	24.70	30.00	PASS
Band4	1.4MHz	16QAM	20393	6RB#0	21.24	23.29	30.00	PASS
Band4	3MHz	QPSK	19965	1RB#14	23.35	25.40	30.00	PASS
Band4	3MHz	QPSK	19965	1RB#0	23.50	25.55	30.00	PASS
Band4	3MHz	QPSK	19965	1RB#8	23.27	25.32	30.00	PASS

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Report No: JYTSZB-R12-2102954

Band4	3MHz	QPSK	19965	8RB#7	22.42	24.47	30.00	PASS
Band4	3MHz	QPSK	19965	8RB#4	22.45	24.50	30.00	PASS
Band4	3MHz	QPSK	19965	8RB#0	22.53	24.58	30.00	PASS
Band4	3MHz	QPSK	19965	15RB#0	22.46	24.51	30.00	PASS
Band4	3MHz	QPSK	20175	1RB#14	23.19	25.24	30.00	PASS
Band4	3MHz	QPSK	20175	1RB#8	23.62	25.67	30.00	PASS
Band4	3MHz	QPSK	20175	1RB#0	23.13	25.18	30.00	PASS
Band4	3MHz	QPSK	20175	8RB#7	22.32	24.37	30.00	PASS
Band4	3MHz	QPSK	20175	8RB#0	22.36	24.41	30.00	PASS
Band4	3MHz	QPSK	20175	8RB#4	22.50	24.55	30.00	PASS
Band4	3MHz	QPSK	20175	15RB#0	22.38	24.43	30.00	PASS
Band4	3MHz	QPSK	20385	1RB#14	23.17	25.22	30.00	PASS
Band4	3MHz	QPSK	20385	1RB#8	23.56	25.61	30.00	PASS
Band4	3MHz	QPSK	20385	1RB#0	23.13	25.18	30.00	PASS
Band4	3MHz	QPSK	20385	8RB#4	22.25	24.30	30.00	PASS
Band4	3MHz	QPSK	20385	8RB#0	22.32	24.37	30.00	PASS
Band4	3MHz	QPSK	20385	8RB#7	22.30	24.35	30.00	PASS
Band4	3MHz	QPSK	20385	15RB#0	22.32	24.37	30.00	PASS
Band4	3MHz	16QAM	19965	1RB#8	22.81	24.86	30.00	PASS
Band4	3MHz	16QAM	19965	1RB#14	22.76	24.81	30.00	PASS
Band4	3MHz	16QAM	19965	1RB#0	22.69	24.74	30.00	PASS
Band4	3MHz	16QAM	19965	8RB#0	21.50	23.55	30.00	PASS
Band4	3MHz	16QAM	19965	8RB#7	21.45	23.50	30.00	PASS
Band4	3MHz	16QAM	19965	8RB#4	21.37	23.42	30.00	PASS
Band4	3MHz	16QAM	19965	15RB#0	21.51	23.56	30.00	PASS
Band4	3MHz	16QAM	20175	1RB#8	22.81	24.86	30.00	PASS
Band4	3MHz	16QAM	20175	1RB#14	22.83	24.88	30.00	PASS
Band4	3MHz	16QAM	20175	1RB#0	22.62	24.67	30.00	PASS
Band4	3MHz	16QAM	20175	8RB#4	21.37	23.42	30.00	PASS
Band4	3MHz	16QAM	20175	8RB#0	21.39	23.44	30.00	PASS
Band4	3MHz	16QAM	20175	8RB#7	21.38	23.43	30.00	PASS
Band4	3MHz	16QAM	20175	15RB#0	21.45	23.50	30.00	PASS
Band4	3MHz	16QAM	20385	1RB#14	22.84	24.89	30.00	PASS
Band4	3MHz	16QAM	20385	1RB#0	22.69	24.74	30.00	PASS
Band4	3MHz	16QAM	20385	1RB#8	22.65	24.70	30.00	PASS
Band4	3MHz	16QAM	20385	8RB#0	21.24	23.29	30.00	PASS
Band4	3MHz	16QAM	20385	8RB#7	21.31	23.36	30.00	PASS
Band4	3MHz	16QAM	20385	8RB#4	21.30	23.35	30.00	PASS
Band4	3MHz	16QAM	20385	15RB#0	21.36	23.41	30.00	PASS
Band4	5MHz	QPSK	19975	1RB#24	23.43	25.48	30.00	PASS
Band4	5MHz	QPSK	19975	1RB#12	23.60	25.65	30.00	PASS
Band4	5MHz	QPSK	19975	1RB#0	23.28	25.33	30.00	PASS
Band4	5MHz	QPSK	19975	12RB#6	22.46	24.51	30.00	PASS
Band4	5MHz	QPSK	19975	12RB#0	22.46	24.51	30.00	PASS
Band4	5MHz	QPSK	19975	12RB#13	22.56	24.61	30.00	PASS
Band4	5MHz	QPSK	19975	25RB#0	22.53	24.58	30.00	PASS
Band4	5MHz	QPSK	20175	1RB#24	23.36	25.41	30.00	PASS
Band4	5MHz	QPSK	20175	1RB#0	23.63	25.68	30.00	PASS
Band4	5MHz	QPSK	20175	1RB#12	23.26	25.31	30.00	PASS
Band4	5MHz	QPSK	20175	12RB#6	22.46	24.51	30.00	PASS
Band4	5MHz	QPSK	20175	12RB#0	22.50	24.55	30.00	PASS
Band4	5MHz	QPSK	20175	12RB#13	22.57	24.62	30.00	PASS
Band4	5MHz	QPSK	20175	25RB#0	22.48	24.53	30.00	PASS

JianYan Testing Group Shenzhen Co., Ltd.

Report No: JYTSZB-R12-2102954

Band4	5MHz	QPSK	20375	1RB#0	23.35	25.40	30.00	PASS
Band4	5MHz	QPSK	20375	1RB#12	23.54	25.59	30.00	PASS
Band4	5MHz	QPSK	20375	1RB#24	23.32	25.37	30.00	PASS
Band4	5MHz	QPSK	20375	12RB#0	22.39	24.44	30.00	PASS
Band4	5MHz	QPSK	20375	12RB#6	22.43	24.48	30.00	PASS
Band4	5MHz	QPSK	20375	12RB#13	22.41	24.46	30.00	PASS
Band4	5MHz	QPSK	20375	25RB#0	22.39	24.44	30.00	PASS
Band4	5MHz	16QAM	19975	1RB#0	22.87	24.92	30.00	PASS
Band4	5MHz	16QAM	19975	1RB#12	22.84	24.89	30.00	PASS
Band4	5MHz	16QAM	19975	1RB#24	22.78	24.83	30.00	PASS
Band4	5MHz	16QAM	19975	12RB#13	21.61	23.66	30.00	PASS
Band4	5MHz	16QAM	19975	12RB#0	21.56	23.61	30.00	PASS
Band4	5MHz	16QAM	19975	12RB#6	21.49	23.54	30.00	PASS
Band4	5MHz	16QAM	19975	25RB#0	21.49	23.54	30.00	PASS
Band4	5MHz	16QAM	20175	1RB#0	22.80	24.85	30.00	PASS
Band4	5MHz	16QAM	20175	1RB#12	22.79	24.84	30.00	PASS
Band4	5MHz	16QAM	20175	1RB#24	22.71	24.76	30.00	PASS
Band4	5MHz	16QAM	20175	12RB#0	21.43	23.48	30.00	PASS
Band4	5MHz	16QAM	20175	12RB#13	21.48	23.53	30.00	PASS
Band4	5MHz	16QAM	20175	12RB#6	21.52	23.57	30.00	PASS
Band4	5MHz	16QAM	20175	25RB#0	21.50	23.55	30.00	PASS
Band4	5MHz	16QAM	20375	1RB#0	22.83	24.88	30.00	PASS
Band4	5MHz	16QAM	20375	1RB#24	22.69	24.74	30.00	PASS
Band4	5MHz	16QAM	20375	1RB#12	22.67	24.72	30.00	PASS
Band4	5MHz	16QAM	20375	12RB#0	21.36	23.41	30.00	PASS
Band4	5MHz	16QAM	20375	12RB#6	21.44	23.49	30.00	PASS
Band4	5MHz	16QAM	20375	12RB#13	21.41	23.46	30.00	PASS
Band4	5MHz	16QAM	20375	25RB#0	21.37	23.42	30.00	PASS
Band4	10MHz	QPSK	20000	1RB#0	23.33	25.38	30.00	PASS
Band4	10MHz	QPSK	20000	1RB#24	23.51	25.56	30.00	PASS
Band4	10MHz	QPSK	20000	1RB#49	23.10	25.15	30.00	PASS
Band4	10MHz	QPSK	20000	25RB#12	22.38	24.43	30.00	PASS
Band4	10MHz	QPSK	20000	25RB#0	22.26	24.31	30.00	PASS
Band4	10MHz	QPSK	20000	25RB#25	22.33	24.38	30.00	PASS
Band4	10MHz	QPSK	20000	50RB#0	22.24	24.29	30.00	PASS
Band4	10MHz	QPSK	20175	1RB#49	23.16	25.21	30.00	PASS
Band4	10MHz	QPSK	20175	1RB#0	23.50	25.55	30.00	PASS
Band4	10MHz	QPSK	20175	1RB#24	23.14	25.19	30.00	PASS
Band4	10MHz	QPSK	20175	25RB#0	22.25	24.30	30.00	PASS
Band4	10MHz	QPSK	20175	25RB#12	22.36	24.41	30.00	PASS
Band4	10MHz	QPSK	20175	25RB#25	22.46	24.51	30.00	PASS
Band4	10MHz	QPSK	20175	50RB#0	22.36	24.41	30.00	PASS
Band4	10MHz	QPSK	20350	1RB#24	23.08	25.13	30.00	PASS
Band4	10MHz	QPSK	20350	1RB#49	23.43	25.48	30.00	PASS
Band4	10MHz	QPSK	20350	1RB#0	23.05	25.10	30.00	PASS
Band4	10MHz	QPSK	20350	25RB#0	22.16	24.21	30.00	PASS
Band4	10MHz	QPSK	20350	25RB#25	22.25	24.30	30.00	PASS
Band4	10MHz	QPSK	20350	25RB#12	22.29	24.34	30.00	PASS
Band4	10MHz	QPSK	20350	50RB#0	22.22	24.27	30.00	PASS
Band4	10MHz	16QAM	20000	1RB#24	22.66	24.71	30.00	PASS
Band4	10MHz	16QAM	20000	1RB#49	22.87	24.92	30.00	PASS
Band4	10MHz	16QAM	20000	1RB#0	22.59	24.64	30.00	PASS
Band4	10MHz	16QAM	20000	25RB#0	21.36	23.41	30.00	PASS

JianYan Testing Group Shenzhen Co., Ltd.

Report No: JYTSZB-R12-2102954

Band4	10MHz	16QAM	20000	25RB#12	21.33	23.38	30.00	PASS
Band4	10MHz	16QAM	20000	25RB#25	21.32	23.37	30.00	PASS
Band4	10MHz	16QAM	20000	50RB#0	21.41	23.46	30.00	PASS
Band4	10MHz	16QAM	20175	1RB#49	22.75	24.80	30.00	PASS
Band4	10MHz	16QAM	20175	1RB#0	22.83	24.88	30.00	PASS
Band4	10MHz	16QAM	20175	1RB#24	22.49	24.54	30.00	PASS
Band4	10MHz	16QAM	20175	25RB#25	21.24	23.29	30.00	PASS
Band4	10MHz	16QAM	20175	25RB#12	21.27	23.32	30.00	PASS
Band4	10MHz	16QAM	20175	25RB#0	21.44	23.49	30.00	PASS
Band4	10MHz	16QAM	20175	50RB#0	21.41	23.46	30.00	PASS
Band4	10MHz	16QAM	20350	1RB#24	22.68	24.73	30.00	PASS
Band4	10MHz	16QAM	20350	1RB#49	22.81	24.86	30.00	PASS
Band4	10MHz	16QAM	20350	1RB#0	22.54	24.59	30.00	PASS
Band4	10MHz	16QAM	20350	25RB#25	21.21	23.26	30.00	PASS
Band4	10MHz	16QAM	20350	25RB#12	21.31	23.36	30.00	PASS
Band4	10MHz	16QAM	20350	25RB#0	21.17	23.22	30.00	PASS
Band4	10MHz	16QAM	20350	50RB#0	21.26	23.31	30.00	PASS
Band4	15MHz	QPSK	20025	1RB#74	23.28	25.33	30.00	PASS
Band4	15MHz	QPSK	20025	1RB#0	23.59	25.64	30.00	PASS
Band4	15MHz	QPSK	20025	1RB#38	23.25	25.30	30.00	PASS
Band4	15MHz	QPSK	20025	36RB#39	22.40	24.45	30.00	PASS
Band4	15MHz	QPSK	20025	36RB#18	22.38	24.43	30.00	PASS
Band4	15MHz	QPSK	20025	36RB#0	22.43	24.48	30.00	PASS
Band4	15MHz	QPSK	20025	75RB#0	22.34	24.39	30.00	PASS
Band4	15MHz	QPSK	20175	1RB#74	23.25	25.30	30.00	PASS
Band4	15MHz	QPSK	20175	1RB#38	23.60	25.65	30.00	PASS
Band4	15MHz	QPSK	20175	1RB#0	23.13	25.18	30.00	PASS
Band4	15MHz	QPSK	20175	36RB#0	22.39	24.44	30.00	PASS
Band4	15MHz	QPSK	20175	36RB#39	22.40	24.45	30.00	PASS
Band4	15MHz	QPSK	20175	36RB#18	22.49	24.54	30.00	PASS
Band4	15MHz	QPSK	20175	75RB#0	22.43	24.48	30.00	PASS
Band4	15MHz	QPSK	20325	1RB#74	23.18	25.23	30.00	PASS
Band4	15MHz	QPSK	20325	1RB#38	23.51	25.56	30.00	PASS
Band4	15MHz	QPSK	20325	1RB#0	23.23	25.28	30.00	PASS
Band4	15MHz	QPSK	20325	36RB#18	22.20	24.25	30.00	PASS
Band4	15MHz	QPSK	20325	36RB#0	22.29	24.34	30.00	PASS
Band4	15MHz	QPSK	20325	36RB#39	22.29	24.34	30.00	PASS
Band4	15MHz	QPSK	20325	75RB#0	22.31	24.36	30.00	PASS
Band4	15MHz	16QAM	20025	1RB#0	22.81	24.86	30.00	PASS
Band4	15MHz	16QAM	20025	1RB#74	22.81	24.86	30.00	PASS
Band4	15MHz	16QAM	20025	1RB#38	22.64	24.69	30.00	PASS
Band4	15MHz	16QAM	20025	36RB#0	21.46	23.51	30.00	PASS
Band4	15MHz	16QAM	20025	36RB#39	21.47	23.52	30.00	PASS
Band4	15MHz	16QAM	20025	36RB#18	21.40	23.45	30.00	PASS
Band4	15MHz	16QAM	20025	75RB#0	21.45	23.50	30.00	PASS
Band4	15MHz	16QAM	20175	1RB#38	22.68	24.73	30.00	PASS
Band4	15MHz	16QAM	20175	1RB#74	22.83	24.88	30.00	PASS
Band4	15MHz	16QAM	20175	1RB#0	22.60	24.65	30.00	PASS
Band4	15MHz	16QAM	20175	36RB#18	21.39	23.44	30.00	PASS
Band4	15MHz	16QAM	20175	36RB#0	21.44	23.49	30.00	PASS
Band4	15MHz	16QAM	20175	36RB#39	21.47	23.52	30.00	PASS
Band4	15MHz	16QAM	20175	75RB#0	21.41	23.46	30.00	PASS
Band4	15MHz	16QAM	20325	1RB#74	22.76	24.81	30.00	PASS

JianYan Testing Group Shenzhen Co., Ltd.

Report No: JYTSZB-R12-2102954

Band4	15MHz	16QAM	20325	1RB#0	22.75	24.80	30.00	PASS
Band4	15MHz	16QAM	20325	1RB#38	22.64	24.69	30.00	PASS
Band4	15MHz	16QAM	20325	36RB#0	21.27	23.32	30.00	PASS
Band4	15MHz	16QAM	20325	36RB#39	21.28	23.33	30.00	PASS
Band4	15MHz	16QAM	20325	36RB#18	21.29	23.34	30.00	PASS
Band4	15MHz	16QAM	20325	75RB#0	21.30	23.35	30.00	PASS
Band4	20MHz	QPSK	20050	1RB#99	23.47	25.52	30.00	PASS
Band4	20MHz	QPSK	20050	1RB#49	23.70	25.75	30.00	PASS
Band4	20MHz	QPSK	20050	1RB#0	23.37	25.42	30.00	PASS
Band4	20MHz	QPSK	20050	50RB#25	22.56	24.61	30.00	PASS
Band4	20MHz	QPSK	20050	50RB#0	22.55	24.60	30.00	PASS
Band4	20MHz	QPSK	20050	50RB#50	22.58	24.63	30.00	PASS
Band4	20MHz	QPSK	20050	100RB#0	22.54	24.59	30.00	PASS
Band4	20MHz	QPSK	20175	1RB#99	23.38	25.43	30.00	PASS
Band4	20MHz	QPSK	20175	1RB#0	23.73	25.78	30.00	PASS
Band4	20MHz	QPSK	20175	1RB#49	23.32	25.37	30.00	PASS
Band4	20MHz	QPSK	20175	50RB#25	22.50	24.55	30.00	PASS
Band4	20MHz	QPSK	20175	50RB#0	22.52	24.57	30.00	PASS
Band4	20MHz	QPSK	20175	50RB#50	22.60	24.65	30.00	PASS
Band4	20MHz	QPSK	20175	100RB#0	22.54	24.59	30.00	PASS
Band4	20MHz	QPSK	20300	1RB#0	23.37	25.42	30.00	PASS
Band4	20MHz	QPSK	20300	1RB#49	23.61	25.66	30.00	PASS
Band4	20MHz	QPSK	20300	1RB#99	23.33	25.38	30.00	PASS
Band4	20MHz	QPSK	20300	50RB#0	22.40	24.45	30.00	PASS
Band4	20MHz	QPSK	20300	50RB#25	22.46	24.51	30.00	PASS
Band4	20MHz	QPSK	20300	50RB#50	22.48	24.53	30.00	PASS
Band4	20MHz	QPSK	20300	100RB#0	22.46	24.51	30.00	PASS
Band4	20MHz	16QAM	20050	1RB#0	22.83	24.88	30.00	PASS
Band4	20MHz	16QAM	20050	1RB#49	22.78	24.83	30.00	PASS
Band4	20MHz	16QAM	20050	1RB#99	22.83	24.88	30.00	PASS
Band4	20MHz	16QAM	20050	50RB#50	21.62	23.67	30.00	PASS
Band4	20MHz	16QAM	20050	50RB#0	21.59	23.64	30.00	PASS
Band4	20MHz	16QAM	20050	50RB#25	21.53	23.58	30.00	PASS
Band4	20MHz	16QAM	20050	100RB#0	21.56	23.61	30.00	PASS
Band4	20MHz	16QAM	20175	1RB#0	22.77	24.82	30.00	PASS
Band4	20MHz	16QAM	20175	1RB#49	22.69	24.74	30.00	PASS
Band4	20MHz	16QAM	20175	1RB#99	22.74	24.79	30.00	PASS
Band4	20MHz	16QAM	20175	50RB#0	21.53	23.58	30.00	PASS
Band4	20MHz	16QAM	20175	50RB#50	21.54	23.59	30.00	PASS
Band4	20MHz	16QAM	20175	50RB#25	21.57	23.62	30.00	PASS
Band4	20MHz	16QAM	20175	100RB#0	21.56	23.61	30.00	PASS
Band4	20MHz	16QAM	20300	1RB#0	22.82	24.87	30.00	PASS
Band4	20MHz	16QAM	20300	1RB#99	22.73	24.78	30.00	PASS
Band4	20MHz	16QAM	20300	1RB#49	22.77	24.82	30.00	PASS
Band4	20MHz	16QAM	20300	50RB#0	21.40	23.45	30.00	PASS
Band4	20MHz	16QAM	20300	50RB#25	21.45	23.50	30.00	PASS
Band4	20MHz	16QAM	20300	50RB#50	21.45	23.50	30.00	PASS
Band4	20MHz	16QAM	20300	100RB#0	21.45	23.50	30.00	PASS

Remark:

a: For getting the EIRP (Efficient Isotropic Radiated Power), the following formula should be taken to calculate it,

ERP [dBm] = Conducted Power [dBm] + Gain [dBd]

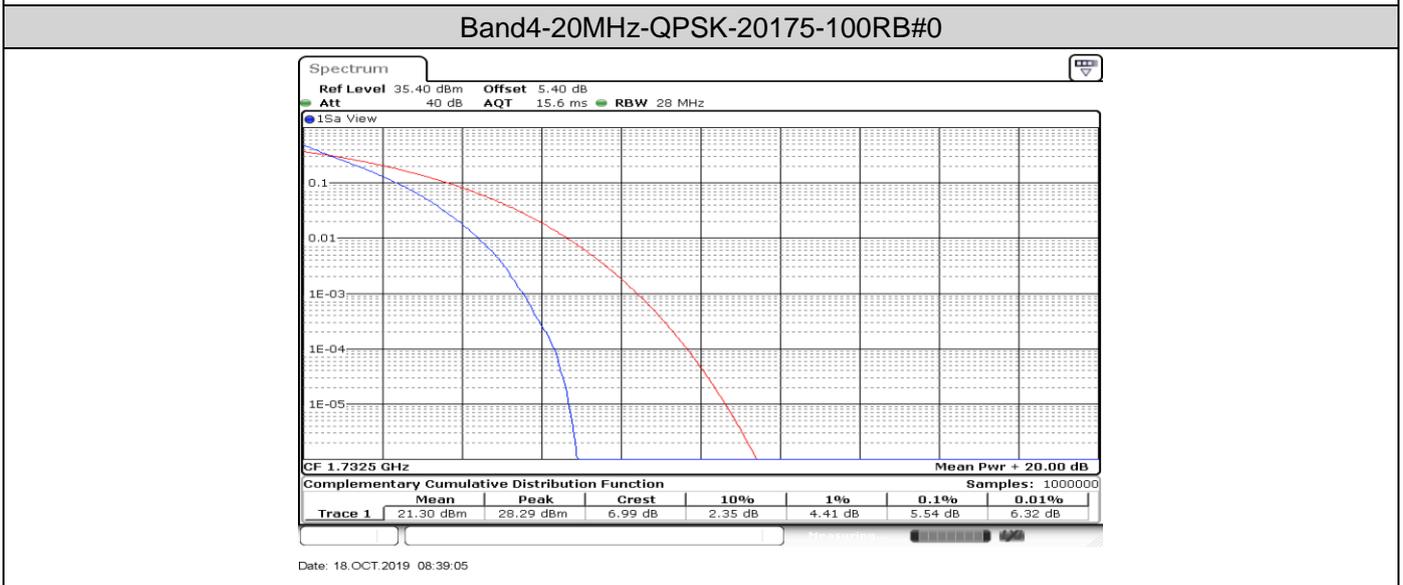
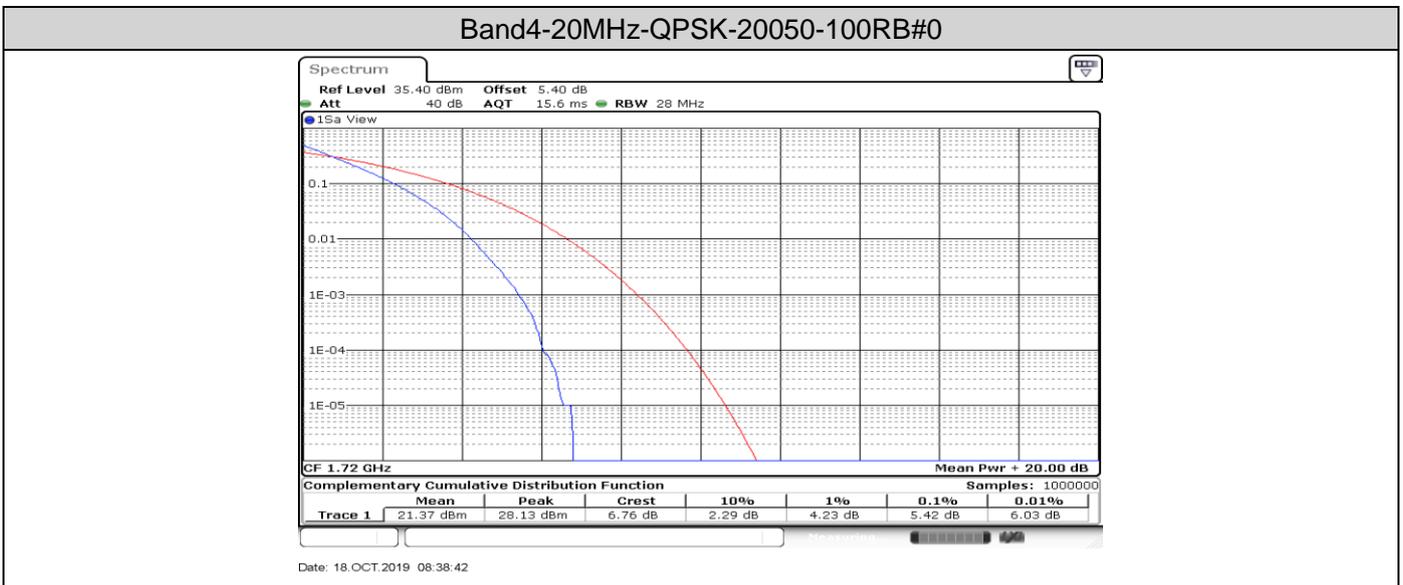
EIRP [dBm] = Conducted Power [dBm] + Gain [dBi]

4. Peak-to-Average Ratio (CCDF)

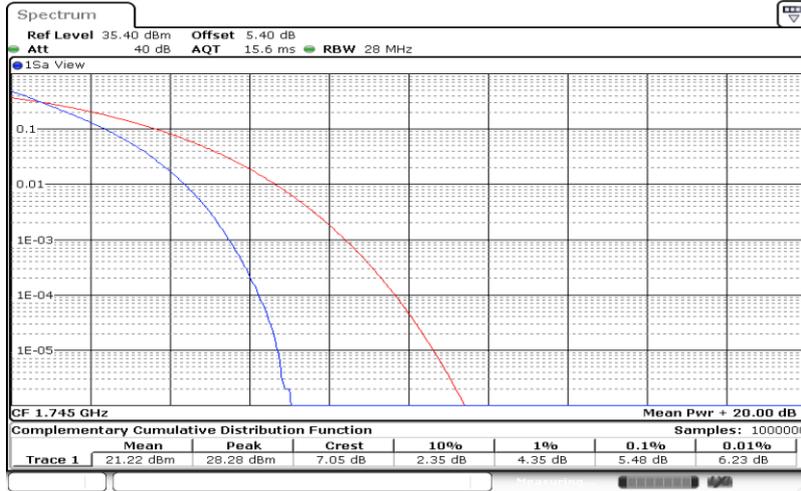
4.1. Test Result

Band	Bandwidth	Modulation	Channel	RB Configuration	Result(dB)	Limit(dB)	Verdict
Band4	20MHz	QPSK	20050	100RB#0	5.42	13	PASS
Band4	20MHz	QPSK	20175	100RB#0	5.54	13	PASS
Band4	20MHz	QPSK	20300	100RB#0	5.48	13	PASS
Band4	20MHz	16QAM	20050	100RB#0	6.09	13	PASS
Band4	20MHz	16QAM	20175	100RB#0	6.23	13	PASS
Band4	20MHz	16QAM	20300	100RB#0	6.17	13	PASS

4.2. Test Plots

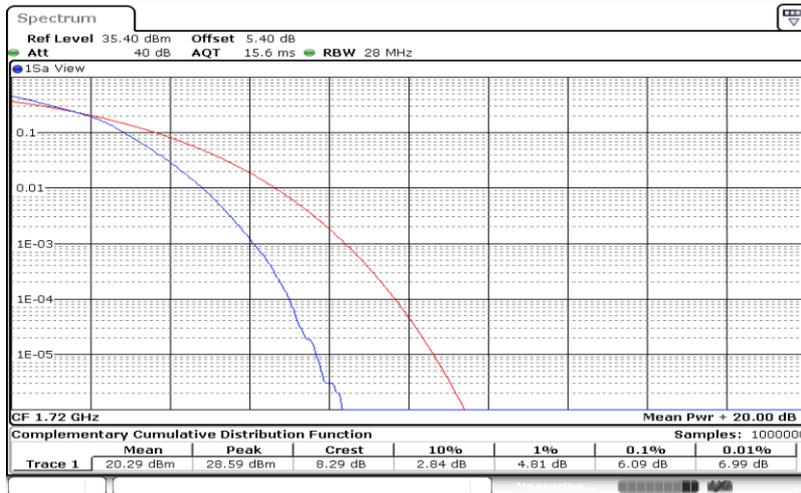


Band4-20MHz-QPSK-20300-100RB#0



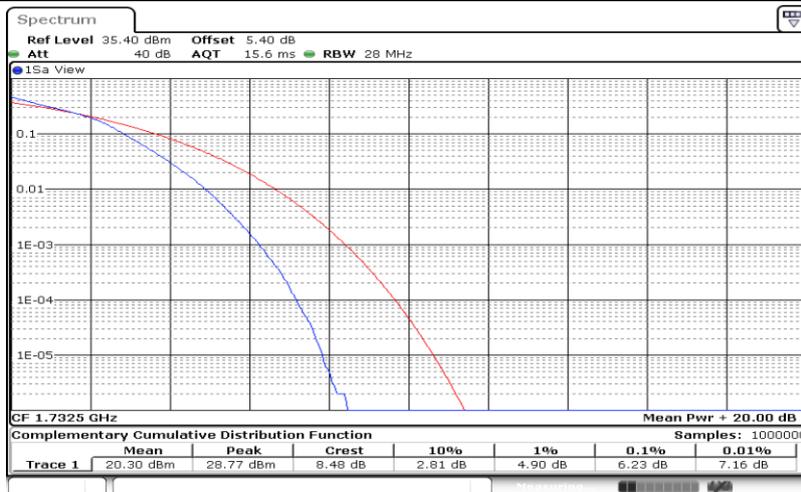
Date: 18.OCT.2019 08:39:28

Band4-20MHz-16QAM-20050-100RB#0



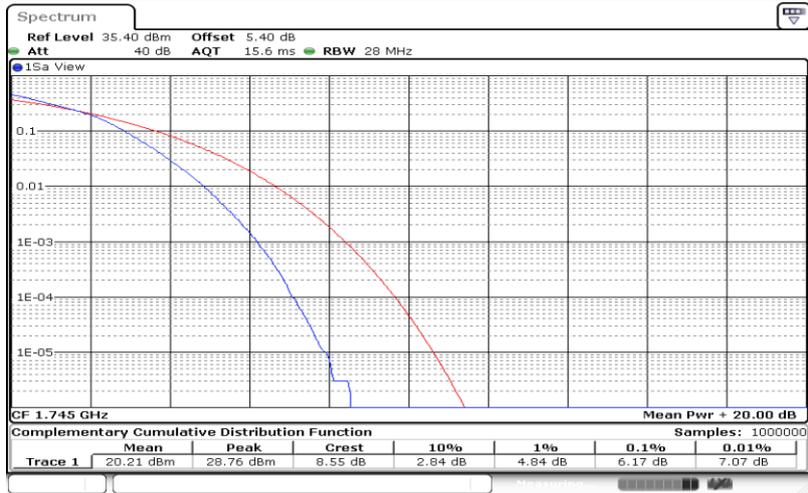
Date: 18.OCT.2019 08:38:54

Band4-20MHz-16QAM-20175-100RB#0



Date: 18.OCT.2019 08:39:17

Band4-20MHz-16QAM-20300-100RB#0

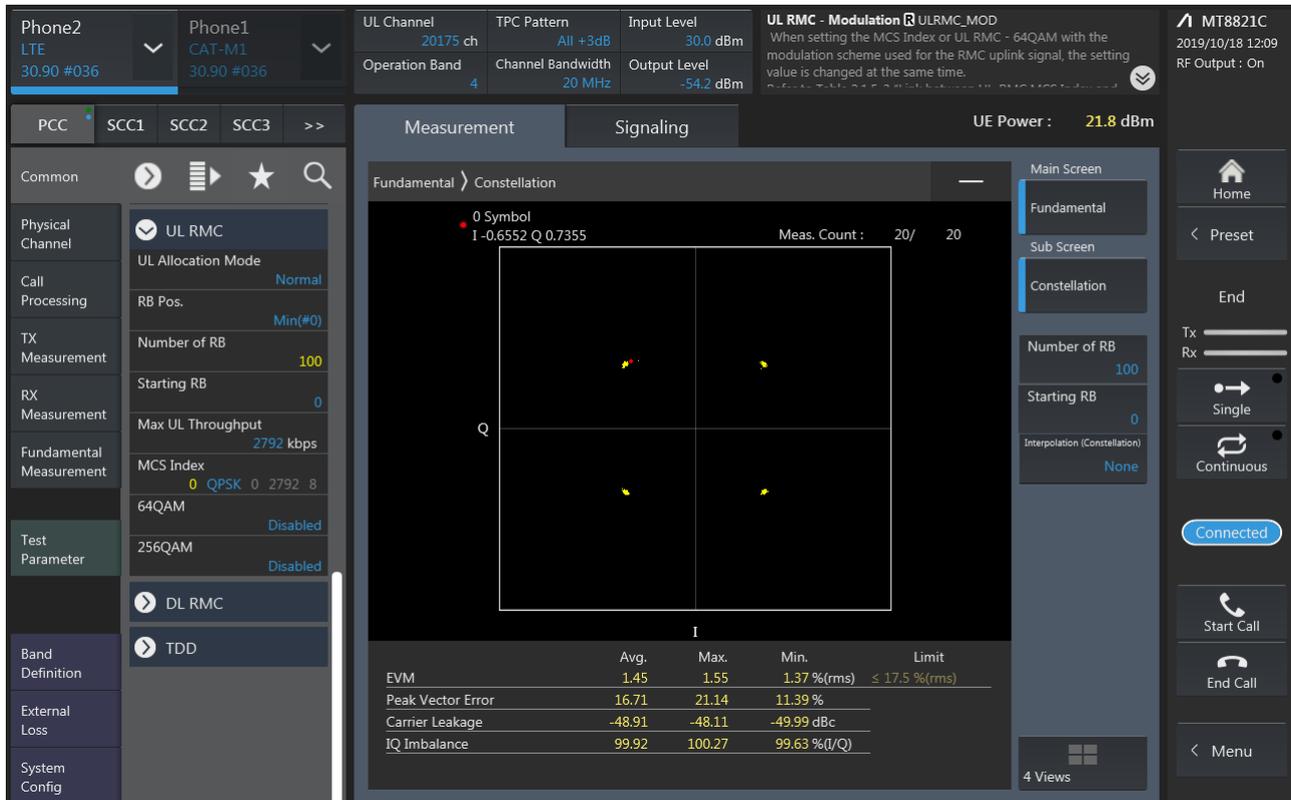


Date: 18.OCT.2019 08:39:40

5. Modulation Characteristics

5.1. Test Mode = LTE /TM1 20MHz

5.1.1. Test Channel = MCH



5.2. Test Mode = LTE /TM2 20MHz

5.2.1. Test Channel = MCH

The screenshot displays a mobile testing software interface with the following sections:

- Top Bar:** Phone2 (LTE 30.90 #036), Phone1 (CAT-M1 30.90 #036), UL Channel (20175 ch), TPC Pattern (All +3dB), Input Level (30.0 dBm), Operation Band (4), Channel Bandwidth (20 MHz), Output Level (-54.2 dBm), UL RMC - Modulation (ULRMC_MOD), and MT8821C (2019/10/18 12:10, RF Output: On).
- Measurement/Signaling:** UE Power: 20.8 dBm.
- Left Panel (Common):**
 - Physical Channel: UL RMC (UL Allocation Mode: Normal)
 - Call Processing: RB Pos. (Min(#0))
 - TX Measurement: Number of RB (100)
 - RX Measurement: Starting RB (0), Max UL Throughput (17568 kbps)
 - Fundamental Measurement: MCS Index (11 16QAM 10 17568 8), 64QAM (Disabled), 256QAM (Disabled)
 - Test Parameter: DL RMC, TDD
 - Band Definition, External Loss, System Config
- Main Display (Fundamental Constellation):**
 - 0 Symbol: I -0.3169 Q -0.9202
 - Meas. Count: 20/ 20
 - Constellation diagram showing 16 points in a 4x4 grid.
 - Measurement Table:
- Right Panel (Main Screen):**
 - Fundamental (Main Screen)
 - Sub Screen: Constellation
 - Number of RB: 100
 - Starting RB: 0
 - Interpolation (Constellation): None
 - Buttons: Home, Preset, End, Single, Continuous, Connected, Start Call, End Call, Menu

	Avg.	Max.	Min.	Limit
EVM	2.06	2.13	1.97 %(rms)	≤ 12.5 %(rms)
Peak Vector Error	20.10	25.82	15.43 %	
Carrier Leakage	-49.93	-48.13	-52.28 dBc	
IQ Imbalance	99.99	100.34	99.60 %(I/Q)	

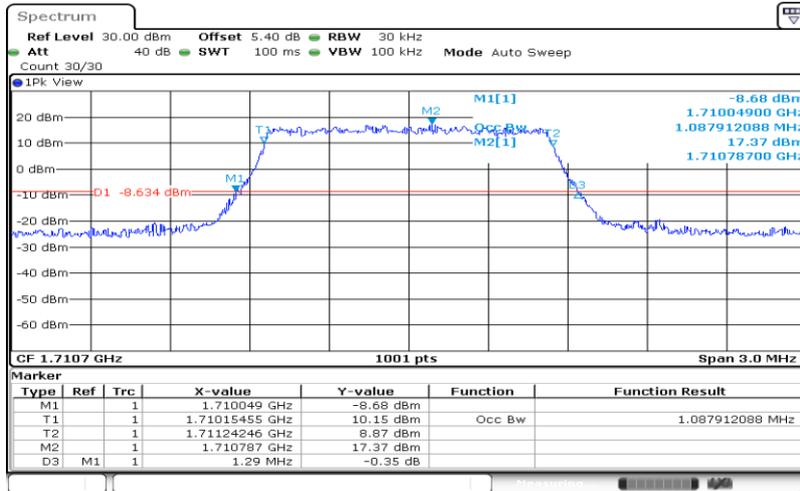
6. 26dB Bandwidth and Occupied Bandwidth

6.1. Test Result

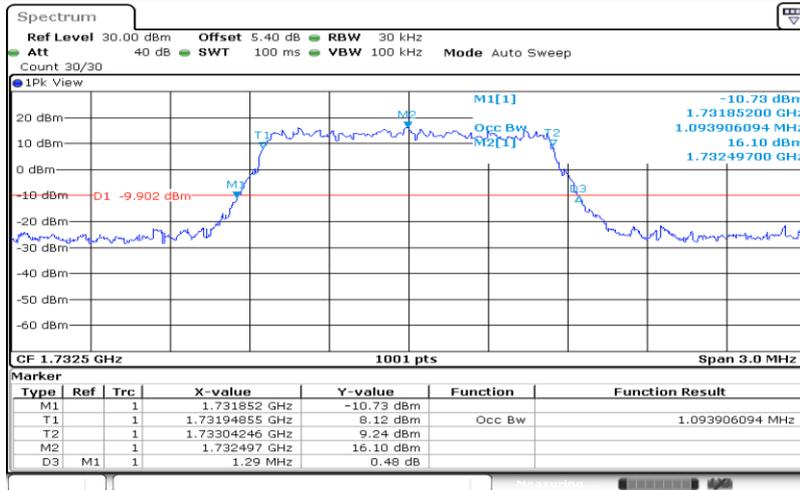
Band	Bandwidth	Modulation	Channel	RB Configuration	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
Band4	1.4MHz	QPSK	19957	6RB#0	1.088	1.290	PASS
Band4	1.4MHz	QPSK	20175	6RB#0	1.094	1.290	PASS
Band4	1.4MHz	QPSK	20393	6RB#0	1.091	1.299	PASS
Band4	1.4MHz	16QAM	19957	6RB#0	1.091	1.293	PASS
Band4	1.4MHz	16QAM	20175	6RB#0	1.085	1.299	PASS
Band4	1.4MHz	16QAM	20393	6RB#0	1.091	1.290	PASS
Band4	3MHz	QPSK	19965	15RB#0	2.691	2.928	PASS
Band4	3MHz	QPSK	20175	15RB#0	2.691	2.928	PASS
Band4	3MHz	QPSK	20385	15RB#0	2.685	2.934	PASS
Band4	3MHz	16QAM	19965	15RB#0	2.679	2.898	PASS
Band4	3MHz	16QAM	20175	15RB#0	2.673	2.898	PASS
Band4	3MHz	16QAM	20385	15RB#0	2.673	2.910	PASS
Band4	5MHz	QPSK	19975	25RB#0	4.466	4.850	PASS
Band4	5MHz	QPSK	20175	25RB#0	4.466	4.860	PASS
Band4	5MHz	QPSK	20375	25RB#0	4.476	4.800	PASS
Band4	5MHz	16QAM	19975	25RB#0	4.486	4.840	PASS
Band4	5MHz	16QAM	20175	25RB#0	4.476	4.860	PASS
Band4	5MHz	16QAM	20375	25RB#0	4.476	4.870	PASS
Band4	10MHz	QPSK	20000	50RB#0	8.931	9.640	PASS
Band4	10MHz	QPSK	20175	50RB#0	8.931	9.640	PASS
Band4	10MHz	QPSK	20350	50RB#0	8.931	9.560	PASS
Band4	10MHz	16QAM	20000	50RB#0	8.931	9.620	PASS
Band4	10MHz	16QAM	20175	50RB#0	8.951	9.680	PASS
Band4	10MHz	16QAM	20350	50RB#0	8.931	9.680	PASS
Band4	15MHz	QPSK	20025	75RB#0	13.487	14.520	PASS
Band4	15MHz	QPSK	20175	75RB#0	13.487	14.730	PASS
Band4	15MHz	QPSK	20325	75RB#0	13.487	14.760	PASS
Band4	15MHz	16QAM	20025	75RB#0	13.487	15.420	PASS
Band4	15MHz	16QAM	20175	75RB#0	13.487	14.610	PASS
Band4	15MHz	16QAM	20325	75RB#0	13.457	15.210	PASS
Band4	20MHz	QPSK	20050	100RB#0	17.902	19.200	PASS
Band4	20MHz	QPSK	20175	100RB#0	17.902	19.360	PASS
Band4	20MHz	QPSK	20300	100RB#0	17.902	19.320	PASS
Band4	20MHz	16QAM	20050	100RB#0	17.902	19.320	PASS
Band4	20MHz	16QAM	20175	100RB#0	17.942	19.360	PASS
Band4	20MHz	16QAM	20300	100RB#0	17.902	19.320	PASS

6.2. Test Plots

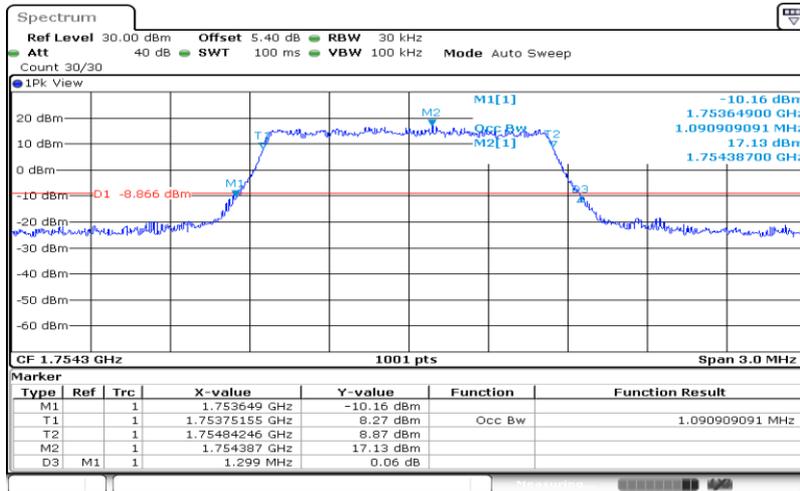
Band4-1.4MHz-QPSK-19957-6RB#0-1.088



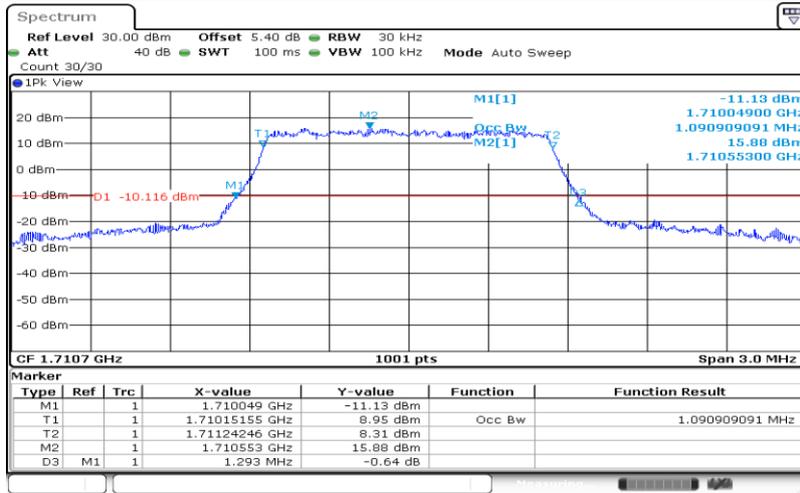
Band4-1.4MHz-QPSK-20175-6RB#0-1.094



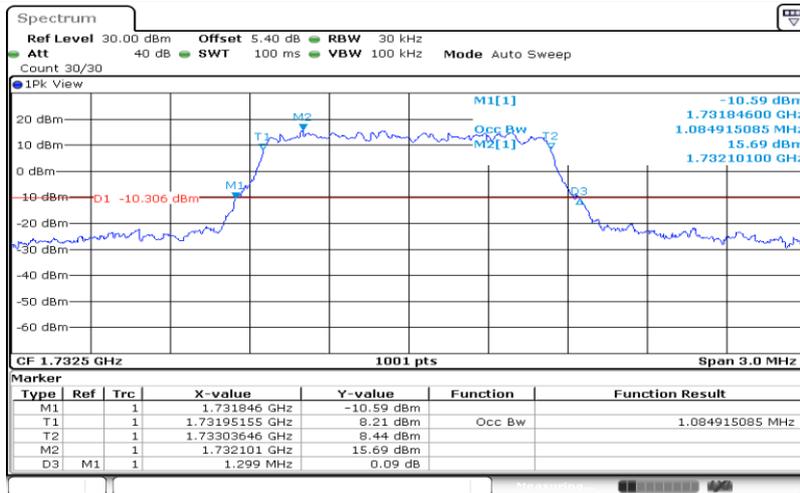
Band4-1.4MHz-QPSK-20393-6RB#0-1.091



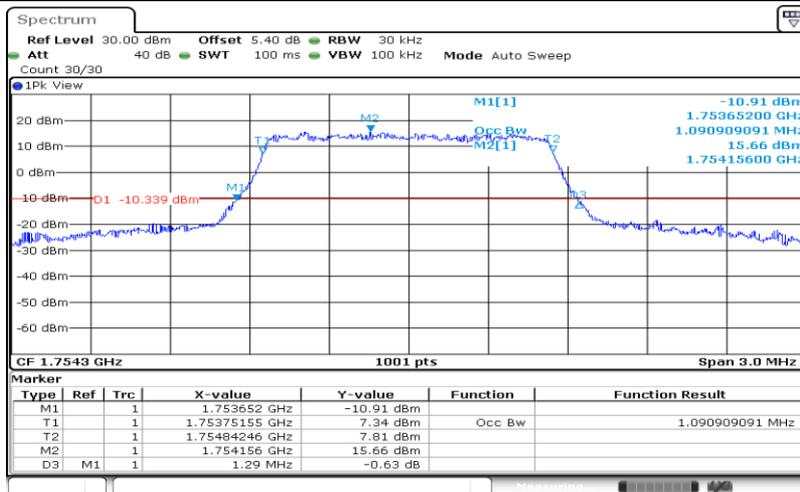
Band4-1.4MHz-16QAM-19957-6RB#0-1.091



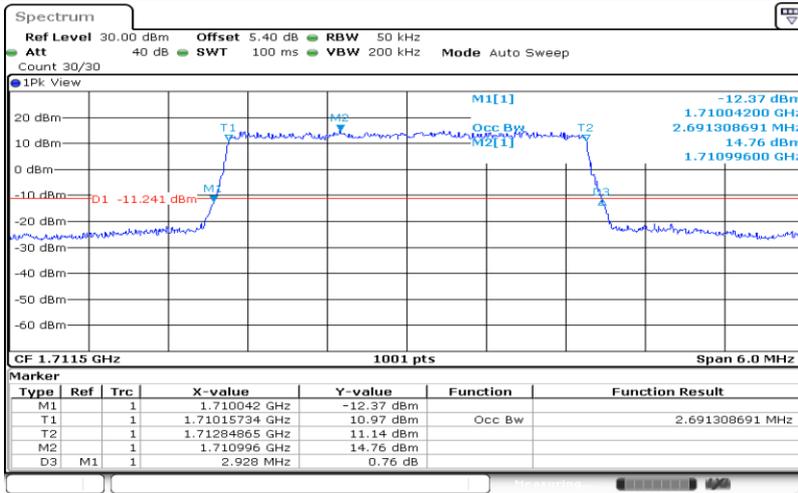
Band4-1.4MHz-16QAM-20175-6RB#0-1.085



Band4-1.4MHz-16QAM-20393-6RB#0-1.091

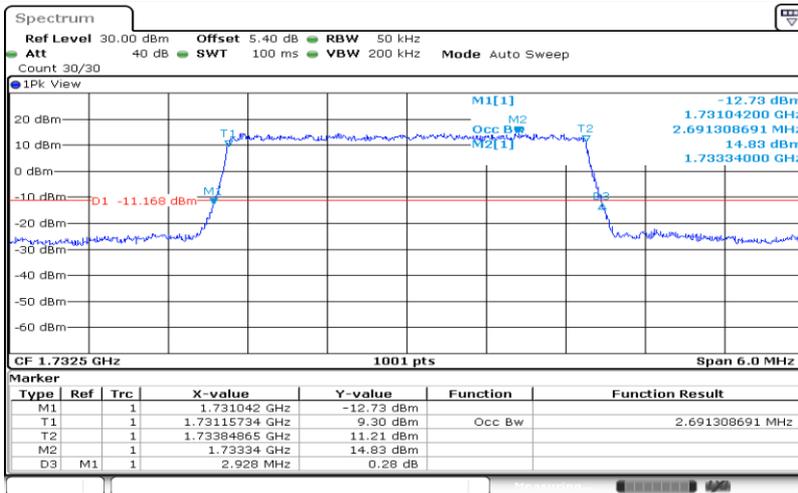


Band4-3MHz-QPSK-19965-15RB#0-2.691



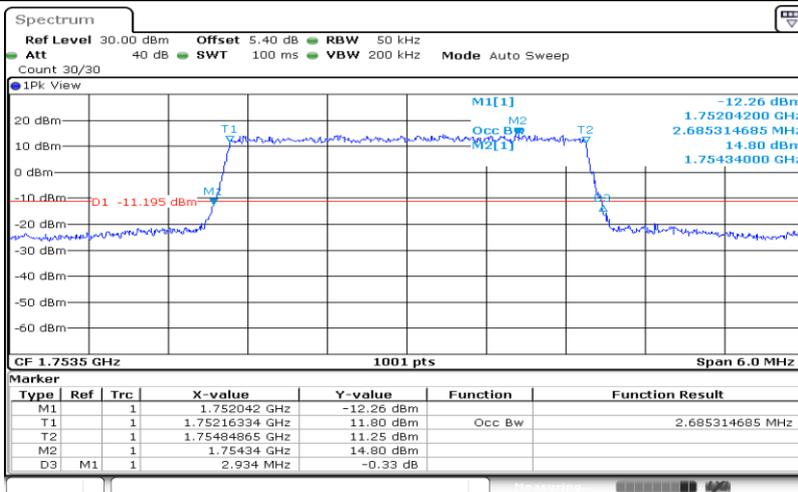
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Band4-3MHz-QPSK-20175-15RB#0-2.691



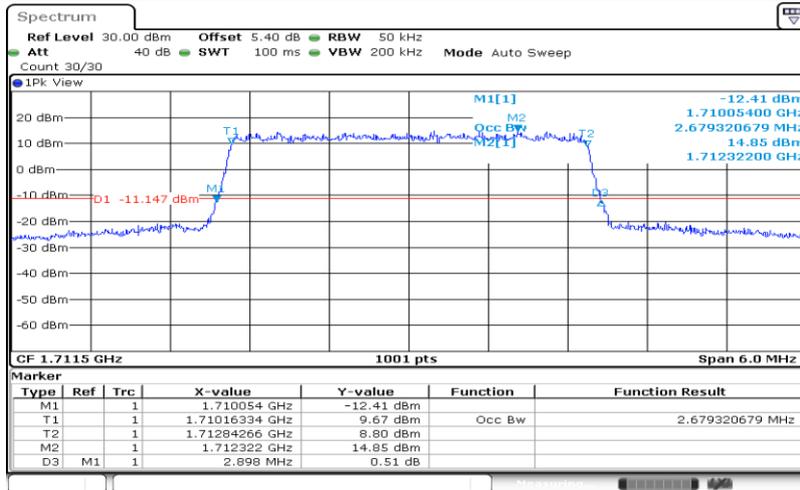
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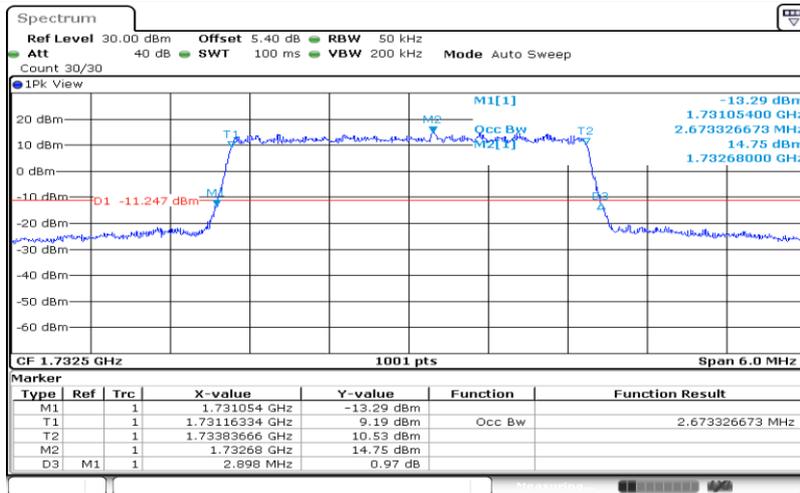
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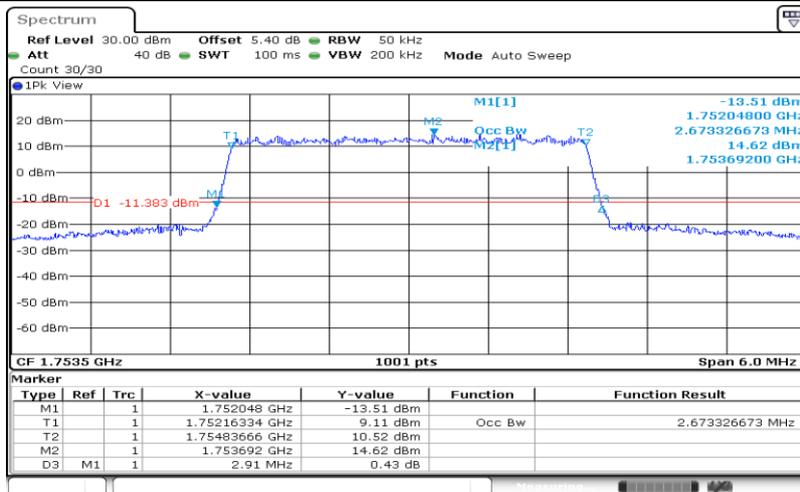
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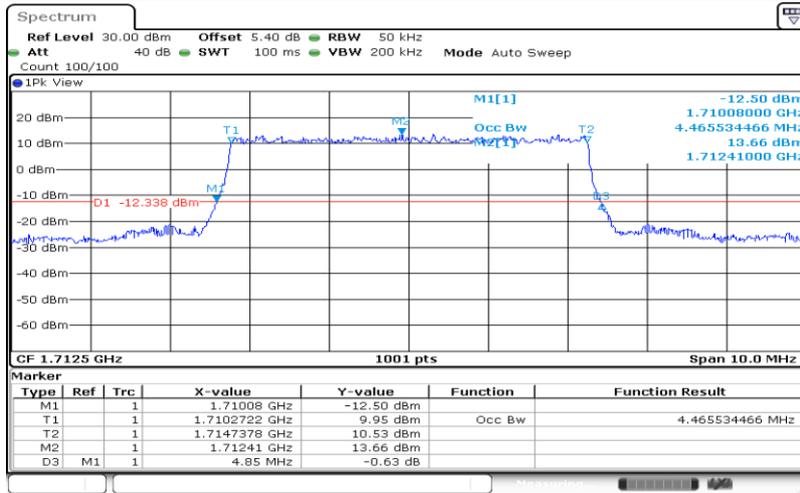
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Band4-3MHz-16QAM-20385-15RB#0-2.673



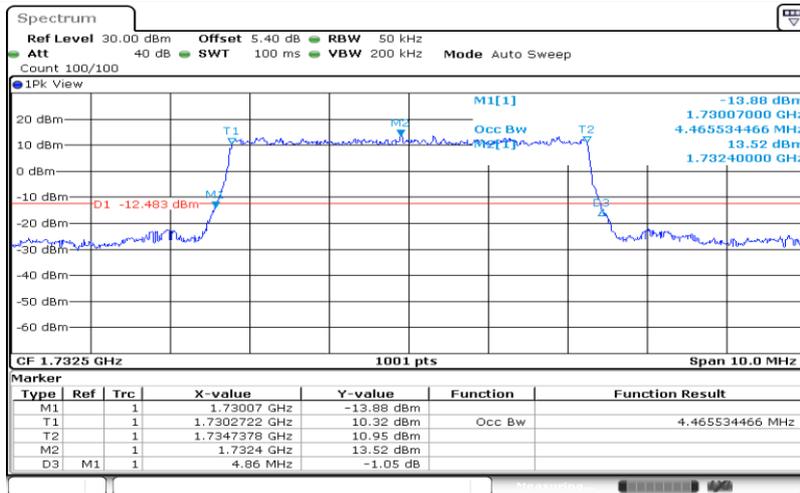
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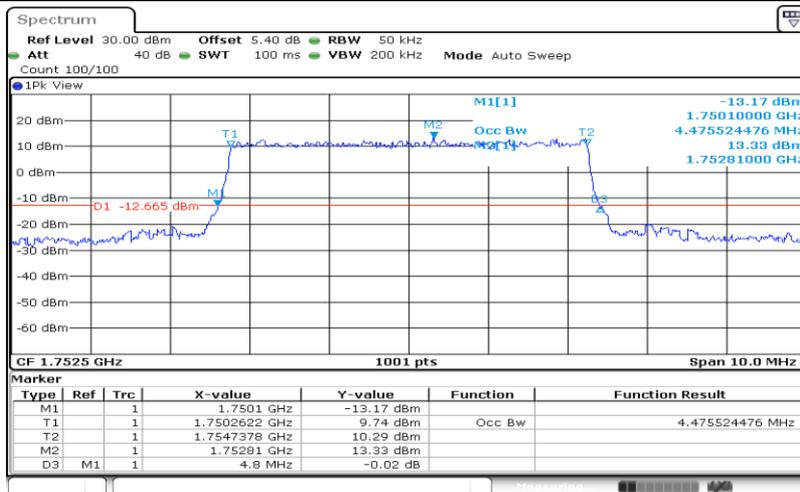
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Band4-5MHz-QPSK-20175-25RB#0-4.466



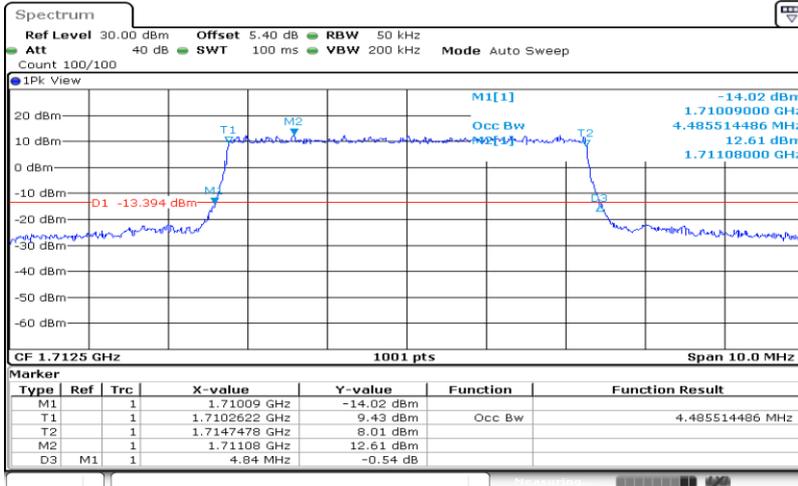
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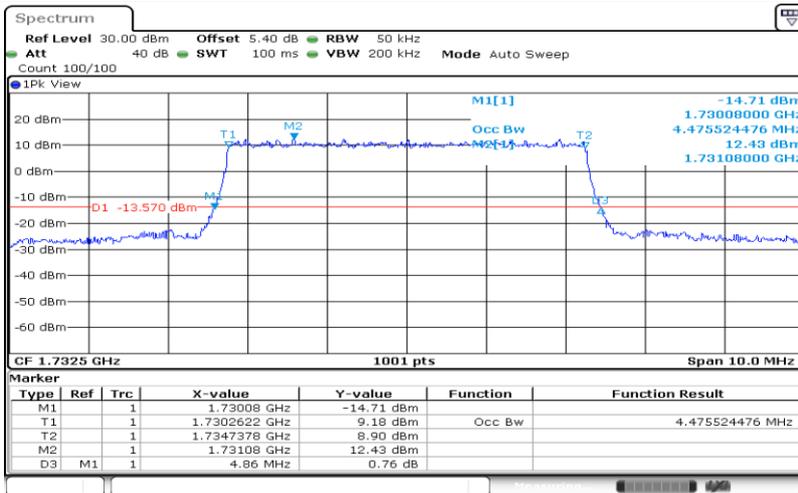


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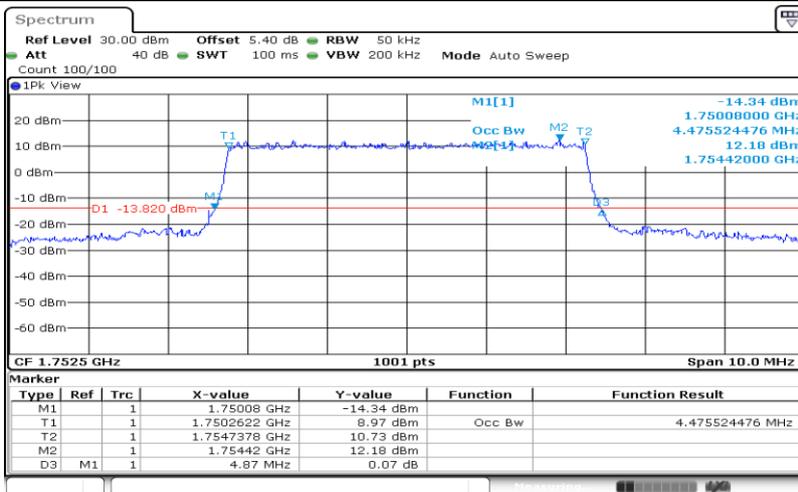
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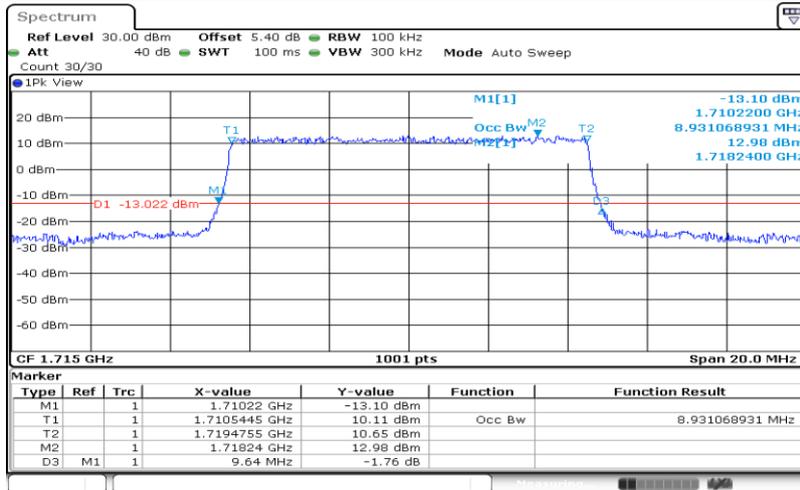
Band4-5MHz-16QAM-20175-25RB#0-4.476



Band4-5MHz-16QAM-20375-25RB#0-4.476

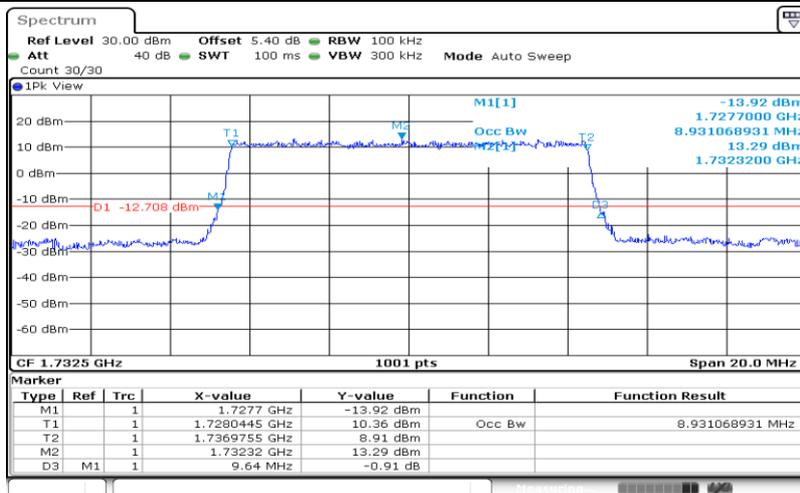


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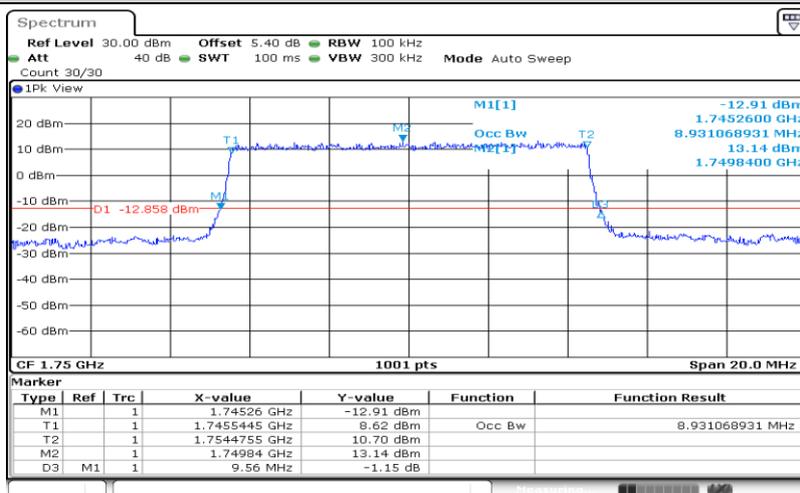
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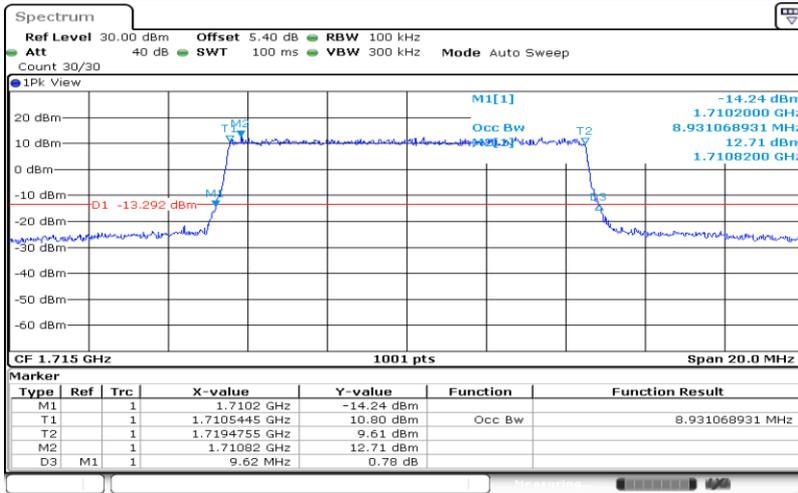
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Band4-10MHz-QPSK-20350-50RB#0-8.931

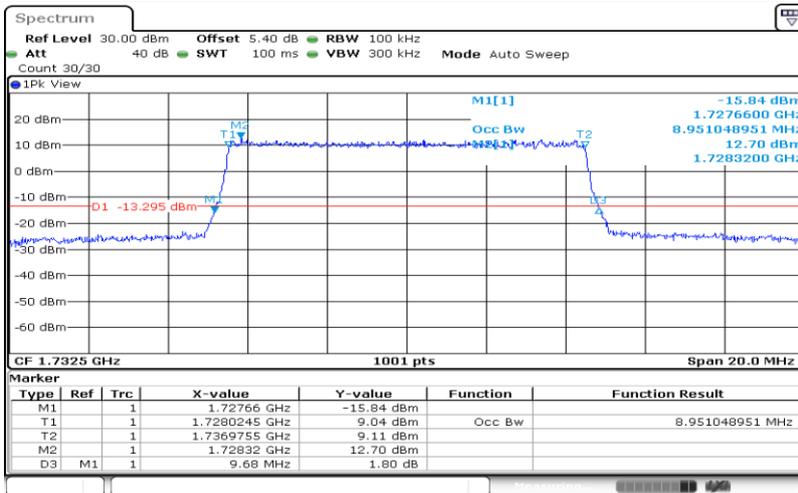


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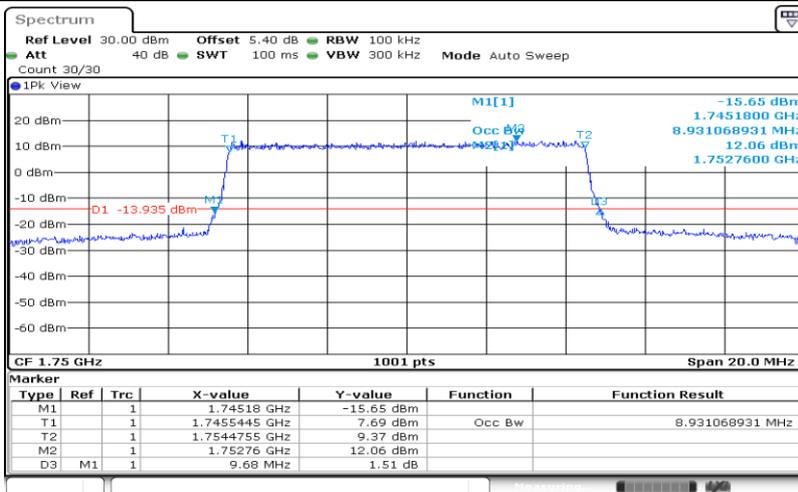
Band4-10MHz-16QAM-20000-50RB#0-8.931



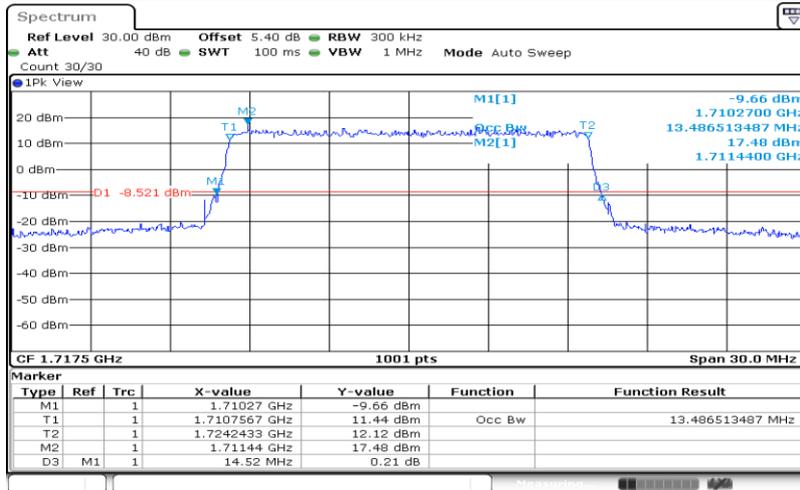
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Band4-10MHz-16QAM-20350-50RB#0-8.931

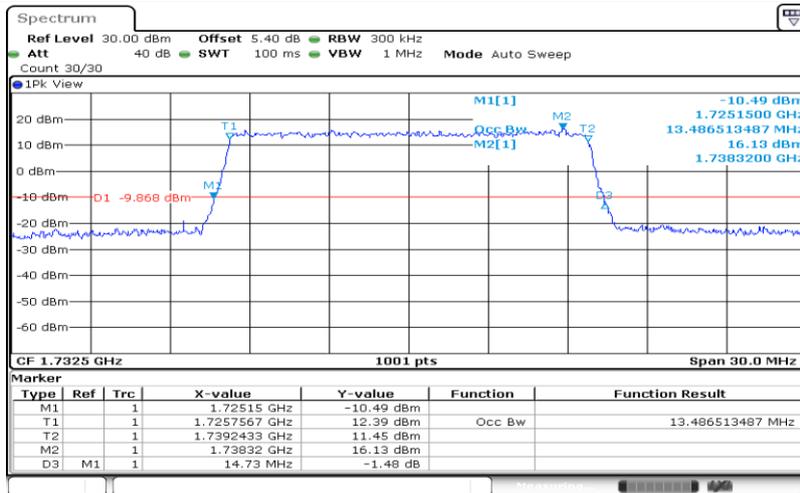


Band4-15MHz-QPSK-20025-75RB#0-13.487



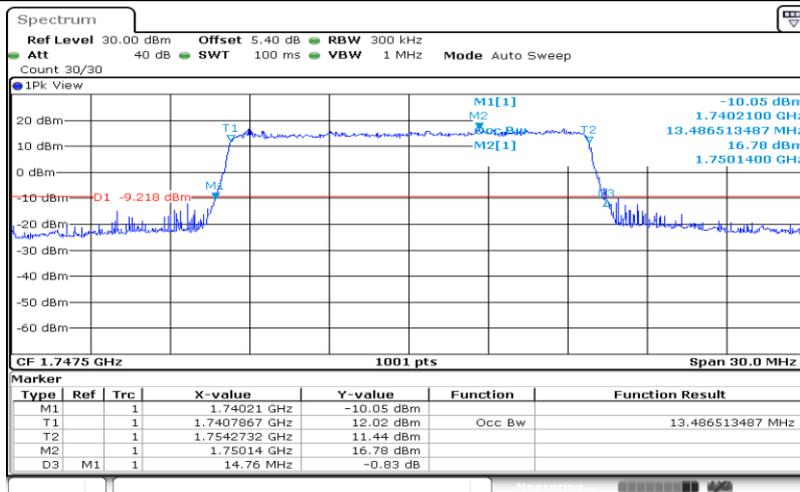
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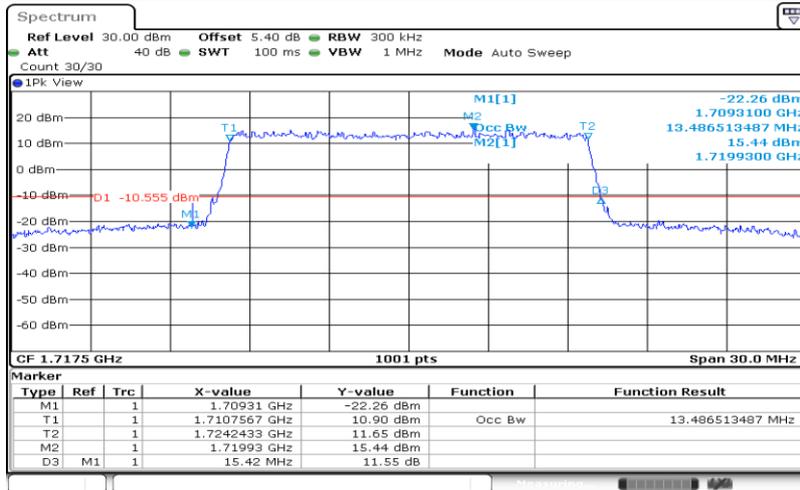
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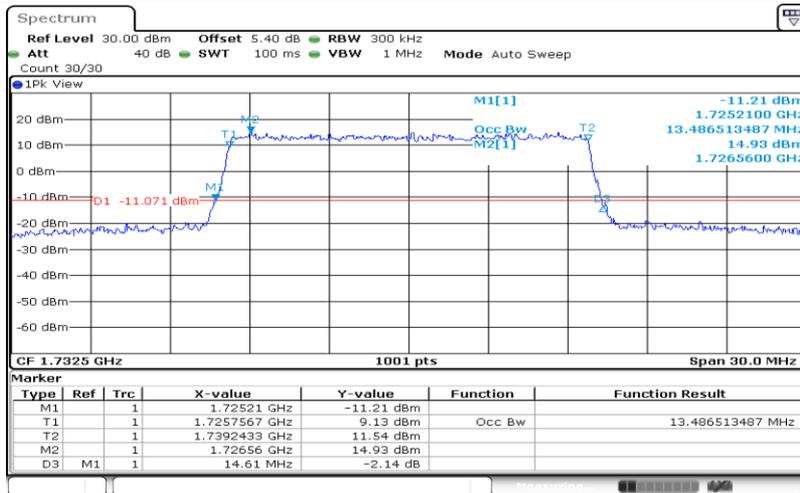
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Band4-15MHz-16QAM-20025-75RB#0-13.487



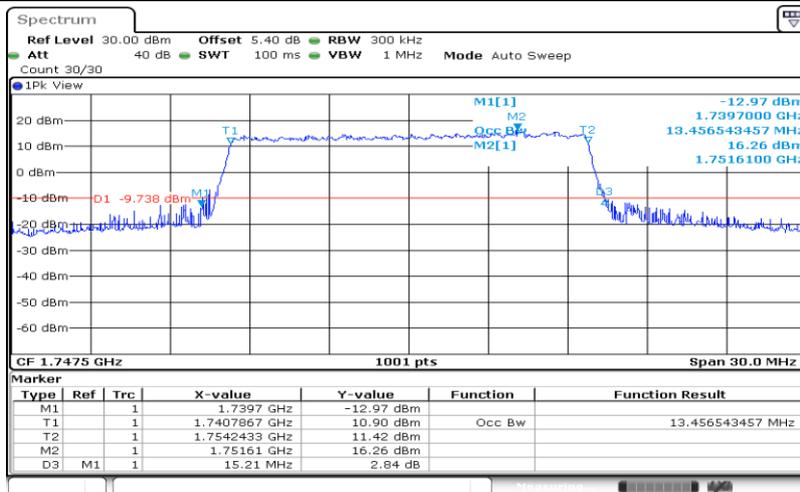
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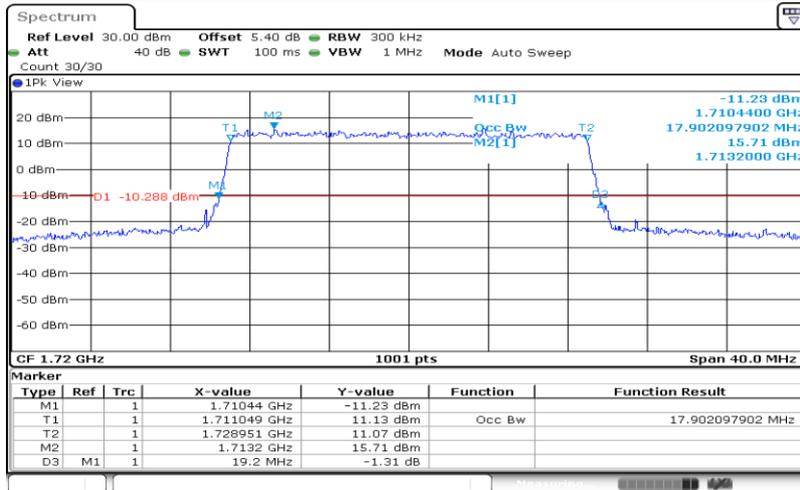
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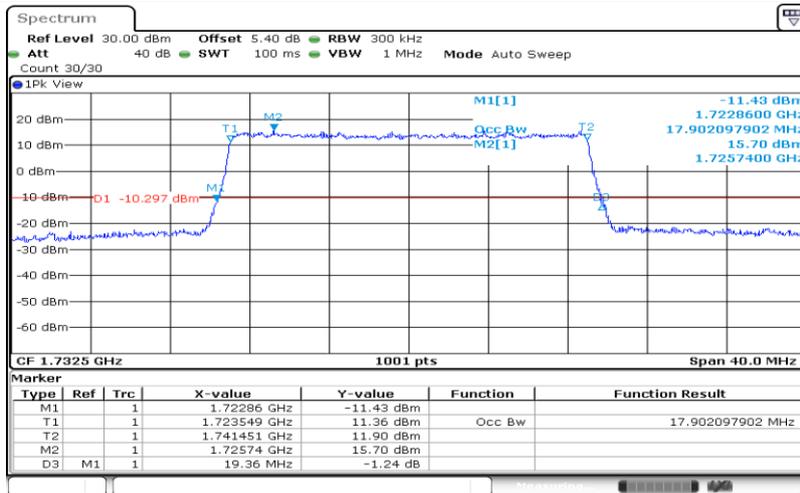


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Band4-20MHz-QPSK-20050-100RB#0-17.902



Band4-20MHz-QPSK-20175-100RB#0-17.902



Band4-20MHz-QPSK-20300-100RB#0-17.902

