



Appendix A: Transmitter Output Power



1 Average Power (Total)

Test Mode	Carrier Conf.	RF Ch.	Average Power [dBm]	Average Power [W]	Average Power [W/MHz]	Verdict
TM 1	MC 1	B	45.43	34.91	---	Pass
		M	46.00	39.81	---	Pass
		T	45.74	37.50	---	Pass
	MC 2	B	45.4	34.67	---	Pass
		M	45.64	36.64	---	Pass
		T	45.62	36.48	---	Pass
	MC 3	B	45.48	35.32	---	Pass
		M	45.46	35.16	---	Pass
		T	45.33	34.12	---	Pass
	MC 4	B	45.74	37.50	---	Pass
		M	45.89	38.82	---	Pass
		T	45.66	36.81	---	Pass
E-TM 1.1	1.4M	B	45.66	36.81	---	Pass
		M	45.77	37.76	---	Pass
		T	45.52	35.65	---	Pass
	3M	B	45.70	37.15	---	Pass
		M	45.71	37.24	---	Pass
		T	45.67	36.90	---	Pass
	5M	B	45.66	36.81	---	Pass
		M	45.81	38.11	---	Pass
		T	45.56	35.97	---	Pass
	10M	B	45.73	37.41	---	Pass
		M	45.74	37.50	---	Pass
		T	45.66	36.81	---	Pass
	15M	B	45.74	37.50	---	Pass
		M	45.75	37.58	---	Pass
		T	45.72	37.33	---	Pass
	20M	B	45.80	38.02	---	Pass
		M	45.58	36.14	---	Pass
		T	45.77	37.76	---	Pass

2 Peak-to-Average Ratio

(Not applicable)



Appendix B: Modulation Characteristics

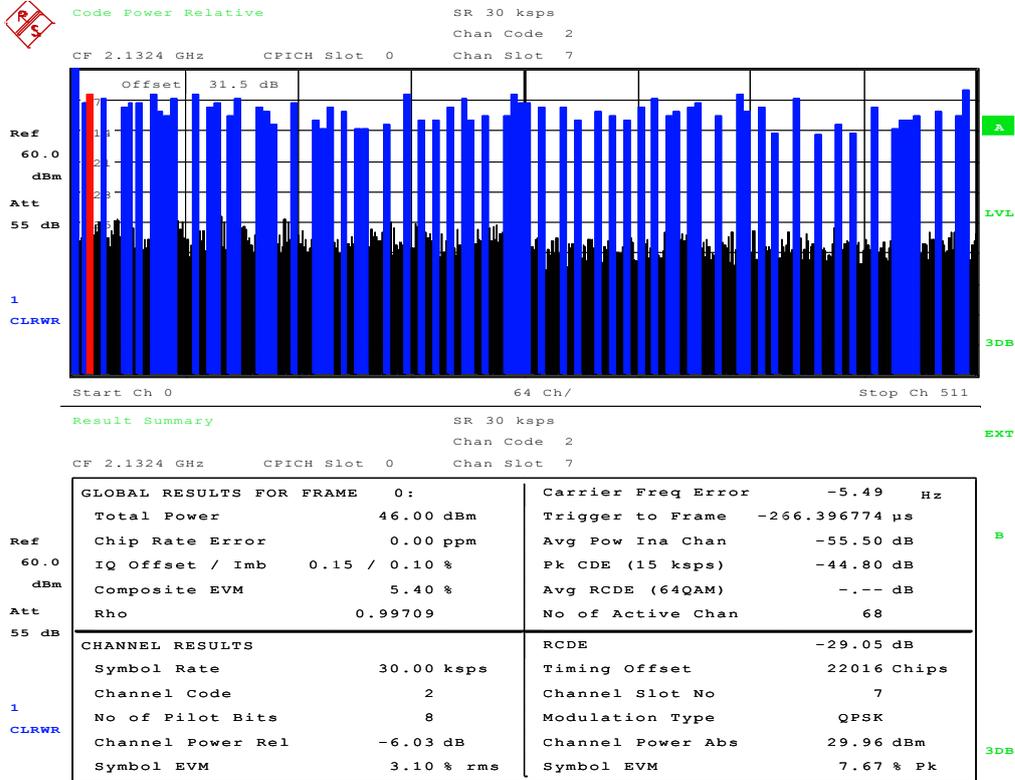


1 Result Table

Test Mode	Digital modulation?	Verdict
TM 1	Yes	Pass
E-TM 1.1	Yes	Pass

2 Test Plot

2.1 Test Mode = TM 1



Date: 10.MAR.2010 15:19:58



2.2 Test Mode = E-TM 1.1

EUTRA/LTE						
Freq:	2.1107 GHz	Meas Setup:	1 TX x 1 RX	Ext. Att:	33 dB	
Mode:	DL FDD, 6 RB (1.4 MHz), Normal (CP)	Sync State:	OK	Capture Time:	20.1 ms	
SINGLE TRG: FREE RUN EXT REF						
Result Summary						
Frame Results	Min	Mean	Limit	Max	Limit	Unit
EVM PDSCH QPSK		5.89	17.50			%
EVM PDSCH 16QAM			12.50			%
EVM PDSCH 64QAM			8.00			%
Results for Selection	Subframe(s)	ALL	Selection	Antenna 1	Symbols meas.	140
EVM All	5.09	6.19		8.36		%
EVM Phys. Channel	5.02	6.21		8.82		%
EVM Phys. Signal	4.66	5.96		7.40		%
Frequency Error	- 2.56	1.36		7.63		Hz
Sampling Error	- 10.62	2.42		14.63		ppm
IQ Offset	- 46.15	- 42.66		- 38.94		dB
IQ Gain Imbalance	- 0.07	0.00		0.05		dB
IQ Quadrature Error	- 0.47	0.12		1.59		°
OSTP	45.46	45.72		45.89		dBm
Power	45.43	45.68		45.76		dBm
Crest Factor		6.49				dB

Date: 17.OCT.2011 08:24:24



Appendix C: Occupied Bandwidth



1 Result Table

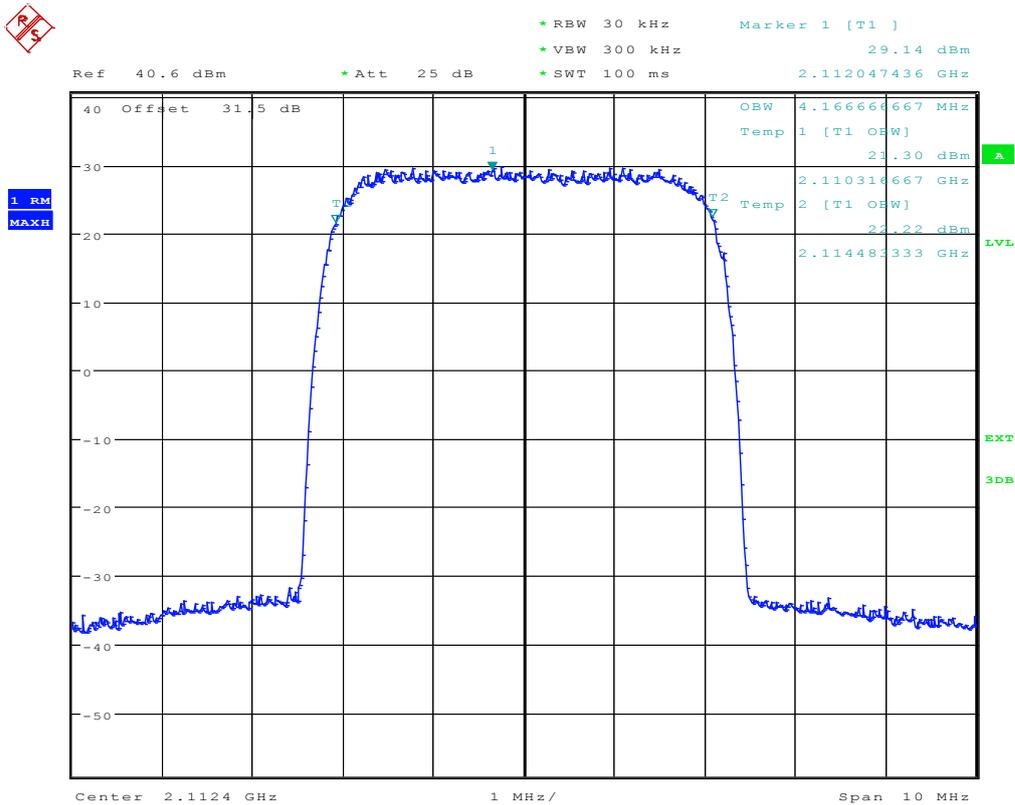
Test Mode	Carrier Conf.	RF Ch.	Occupied Bandwidth [MHz]	Verdict
TM 1	MC 1	B	4.17	Pass
		M	4.17	Pass
		T	4.17	Pass
E-TM 1.1	1.4M	B	1.10	Pass
		M	1.10	Pass
		T	1.10	Pass
	3M	B	2.69	Pass
		M	2.69	Pass
		T	2.69	Pass
	5M	B	4.52	Pass
		M	4.50	Pass
		T	4.50	Pass
	10M	B	8.97	Pass
		M	8.97	Pass
		T	8.97	Pass
15M	B	13.37	Pass	
	M	13.37	Pass	
	T	13.37	Pass	
20M	B	17.82	Pass	
	M	17.82	Pass	
	T	17.82	Pass	

2 Test Plot

2.1 Test Mode = TM 1

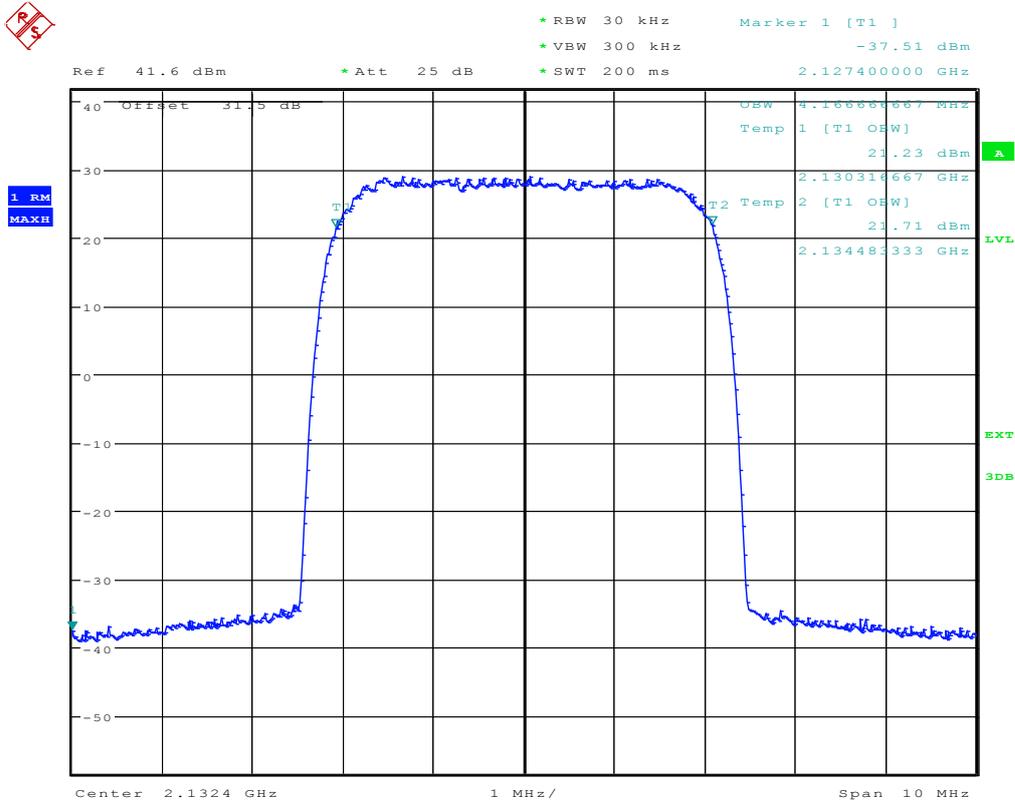
2.1.1 Carrier Conf. = MC 1

2.1.1.1 Ch. B



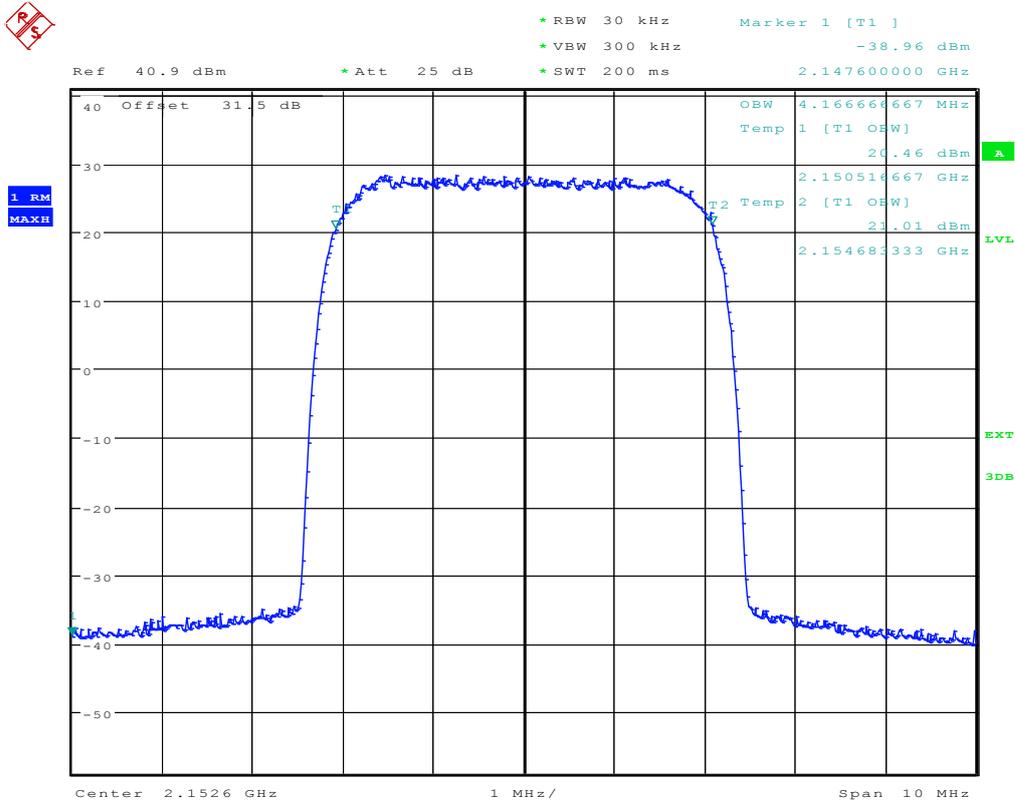
Date: 10.MAR.2010 14:25:28

2.1.1.2 Ch. M

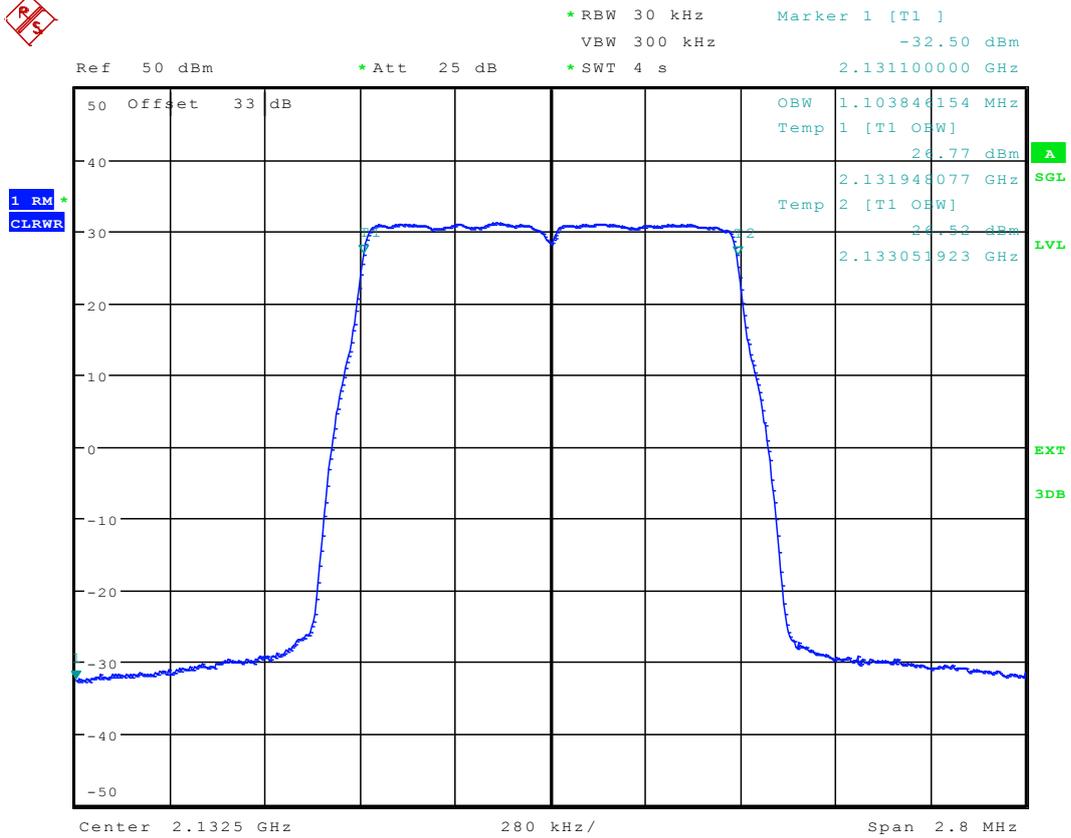


Date: 10.MAR.2010 15:17:36

2.1.1.3 Ch. T

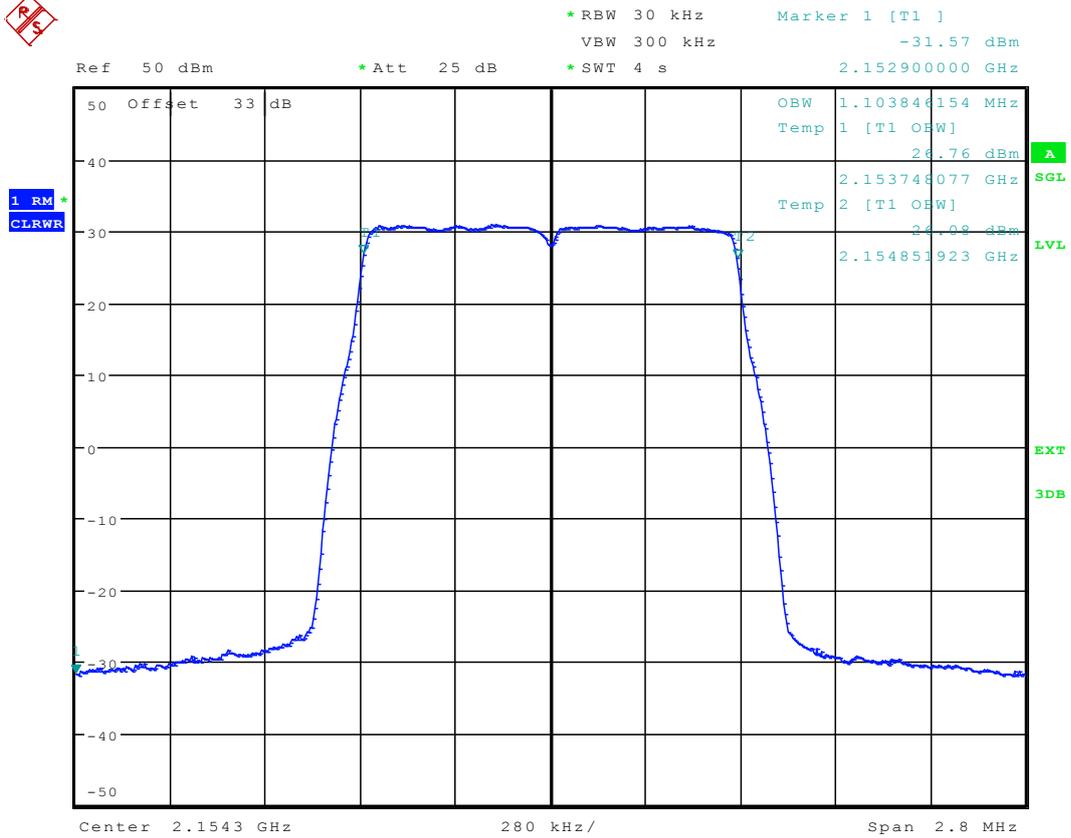


Date: 10.MAR.2010 16:05:53



Date: 17.OCT.2011 06:17:35

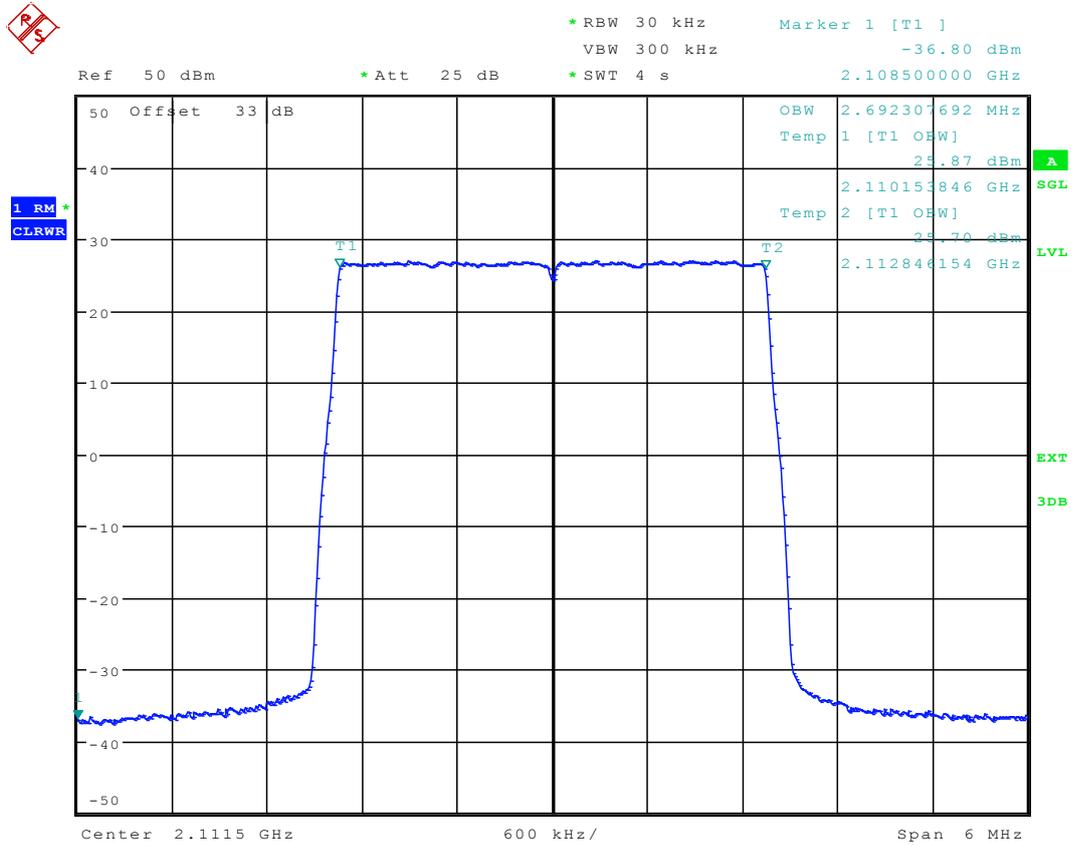
2.2.1.3 Ch. T



Date: 17.OCT.2011 06:19:48

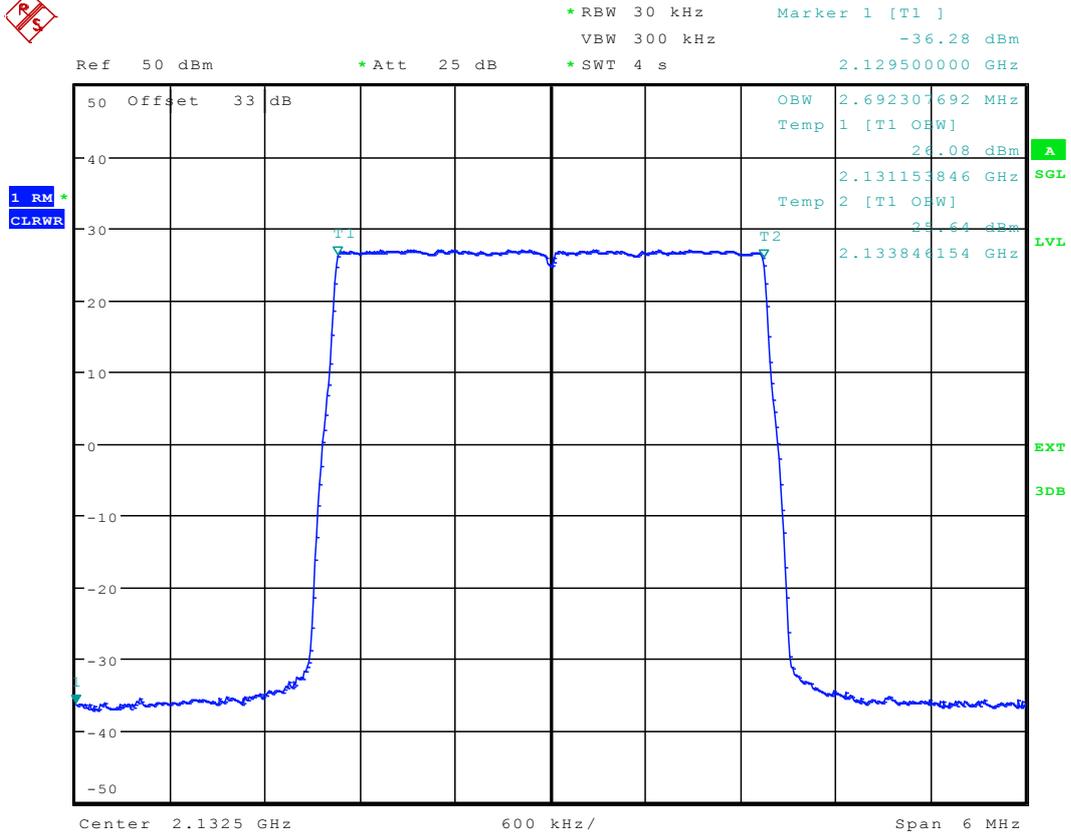
2.2.2 Carrier Conf. = 3M

2.2.2.1 Ch. B



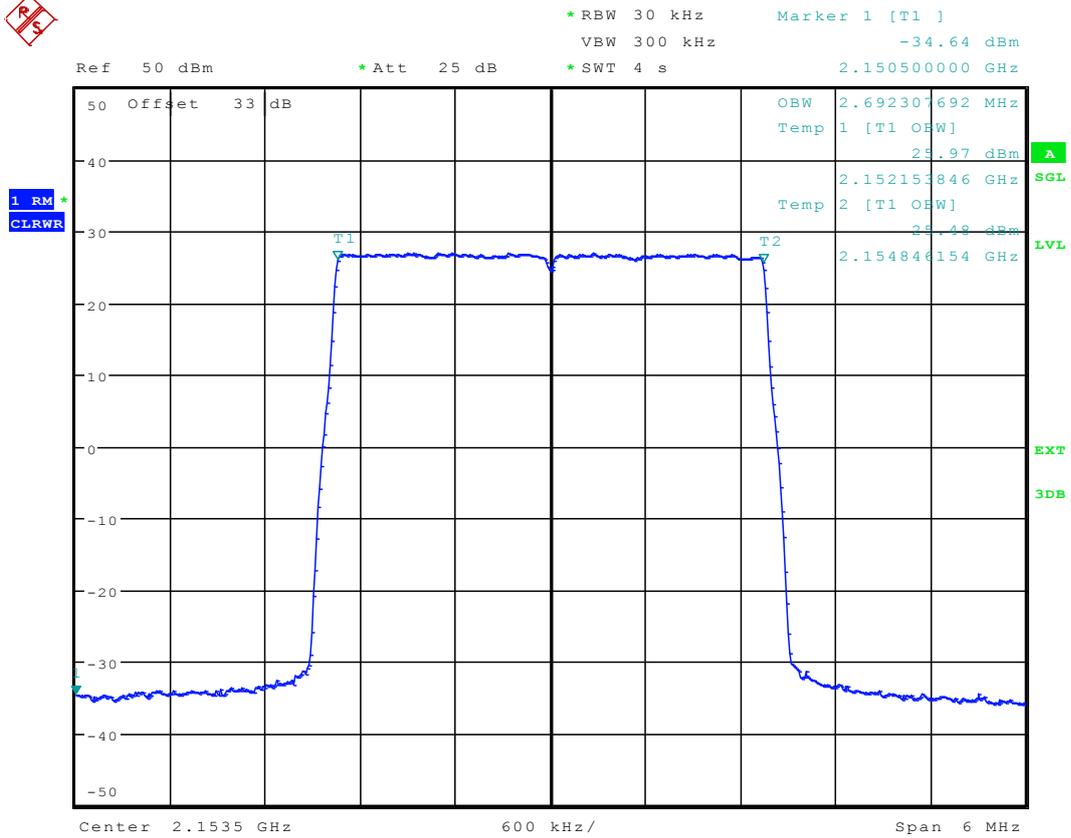
Date: 17.OCT.2011 06:22:06

2.2.2.2 Ch. M

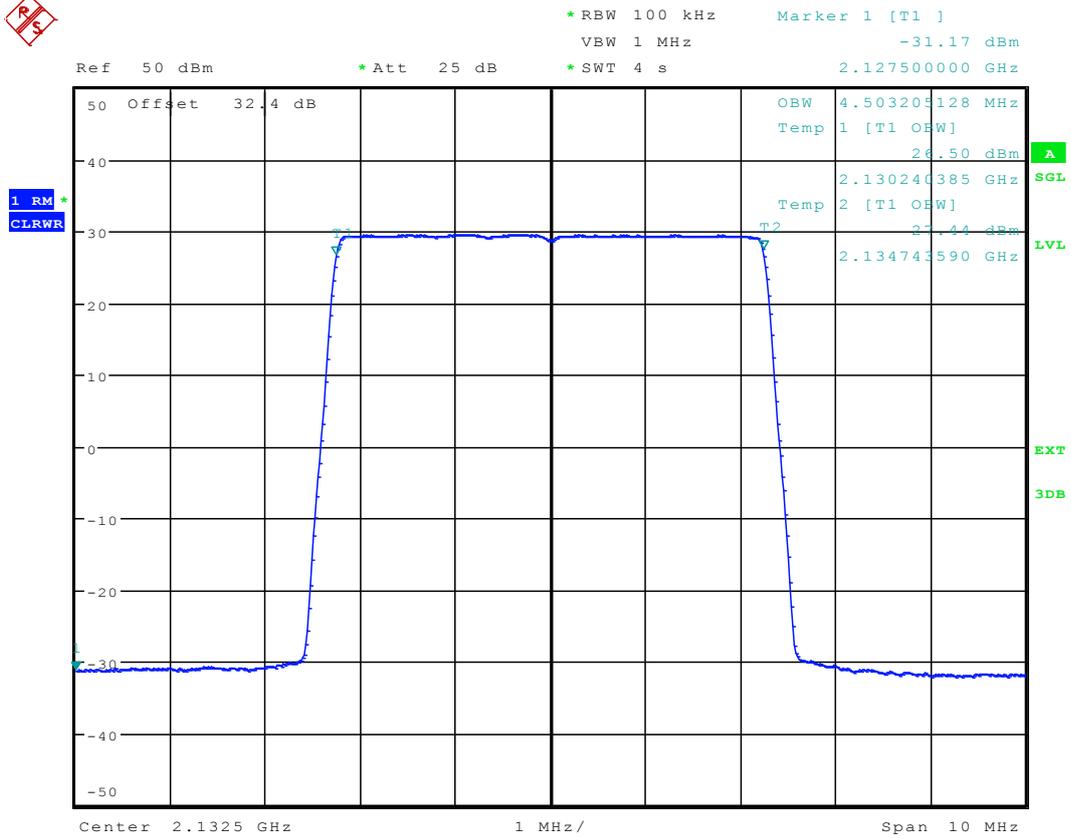


Date: 17.OCT.2011 06:24:18

2.2.2.3 Ch. T

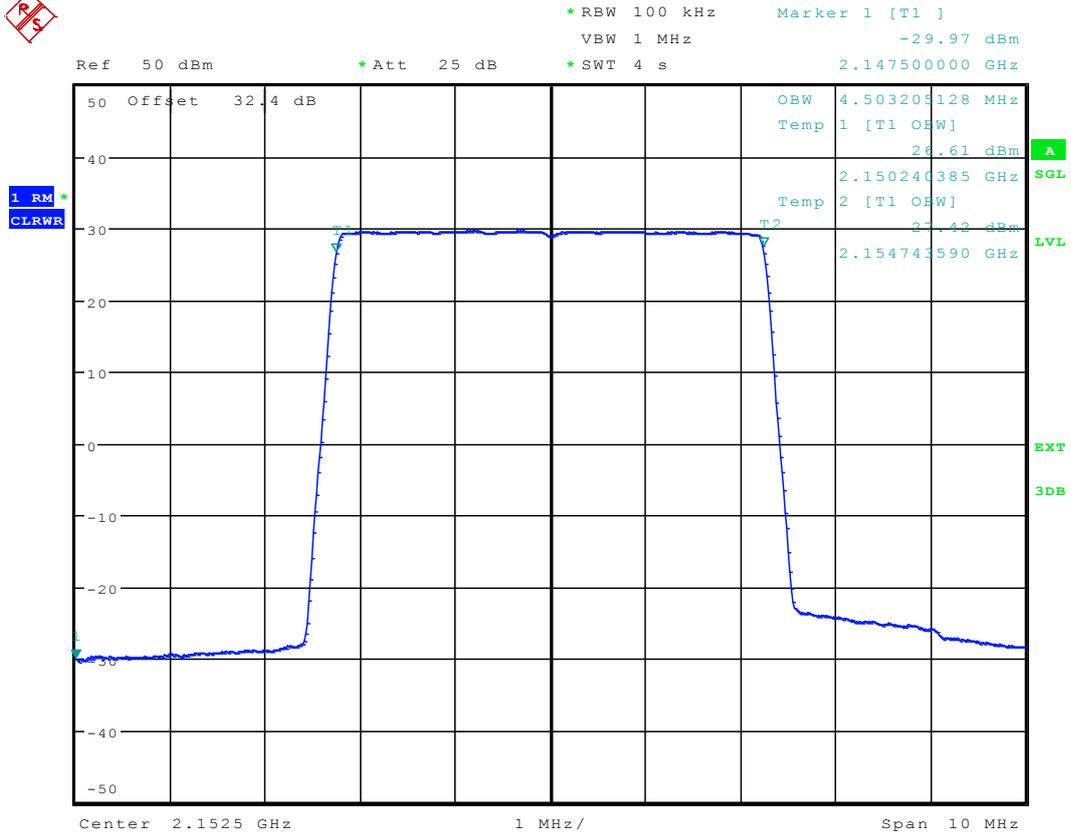


Date: 17.OCT.2011 06:26:26



Date: 11.OCT.2011 06:28:19

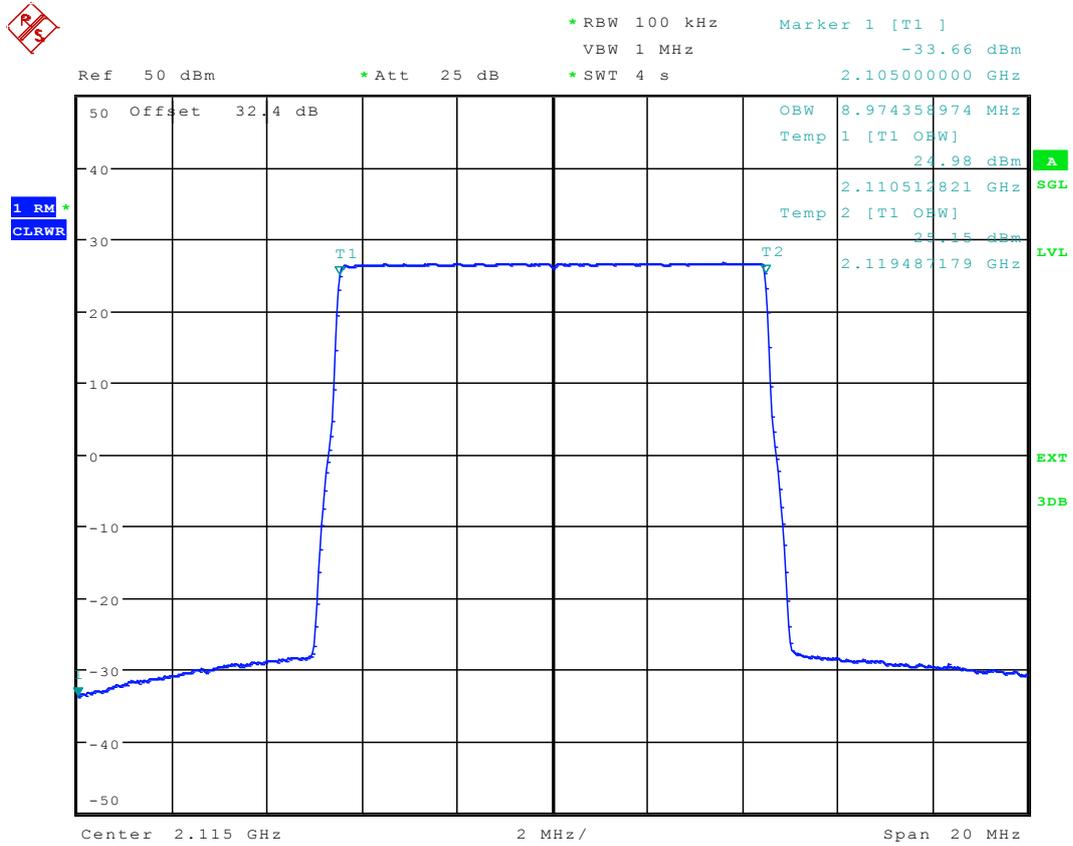
2.2.3.3 Ch. T



Date: 11.OCT.2011 06:30:58

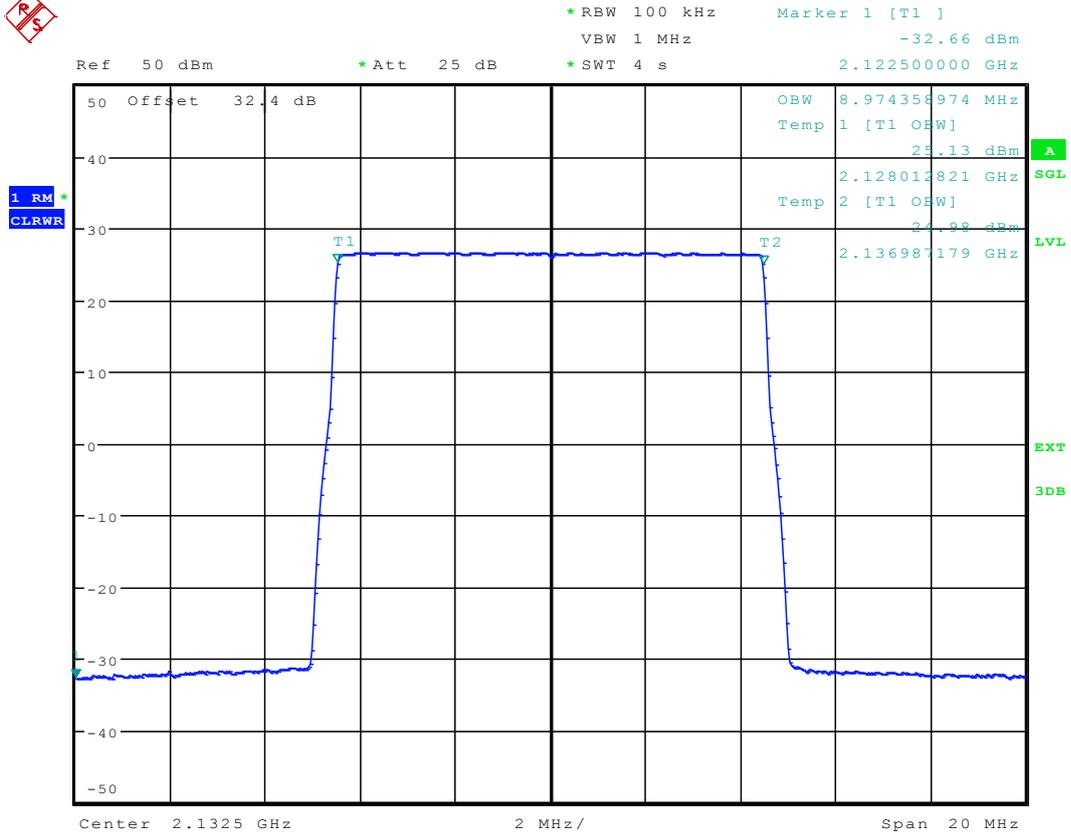
2.2.4 Carrier Conf. = 10M

2.2.4.1 Ch. B



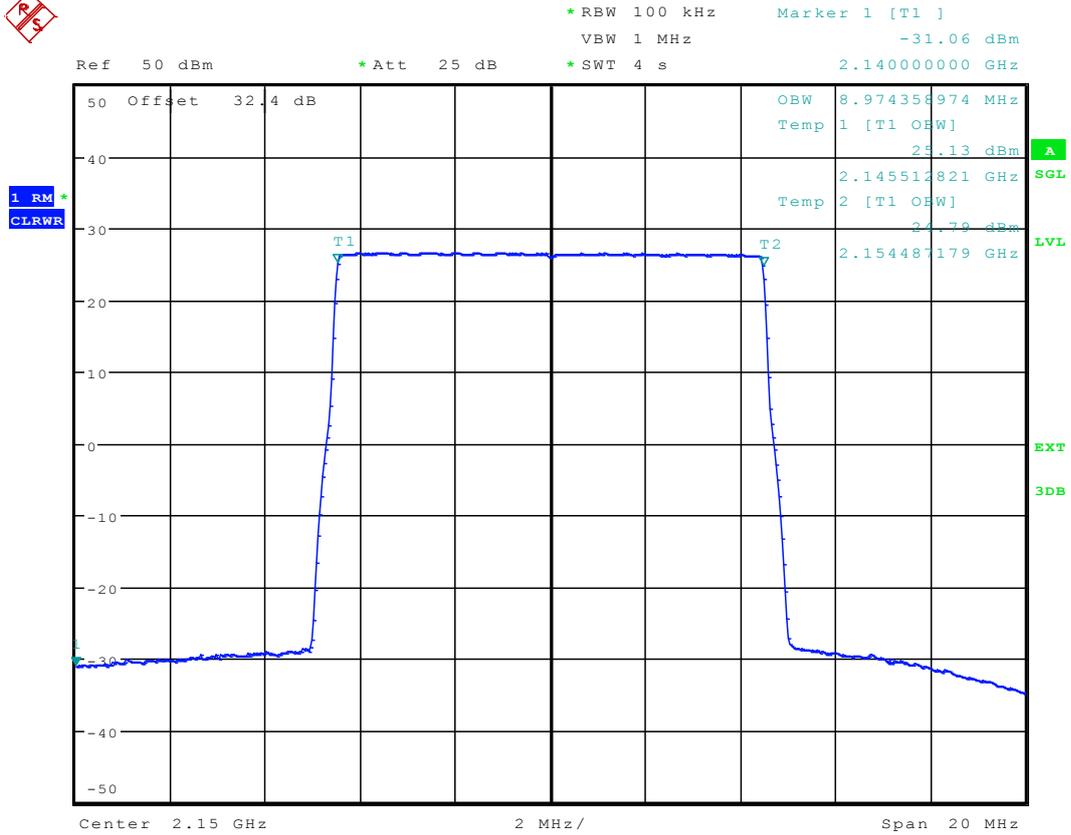
Date: 11.OCT.2011 06:33:14

2.2.4.2 Ch. M



Date: 11.OCT.2011 06:35:25

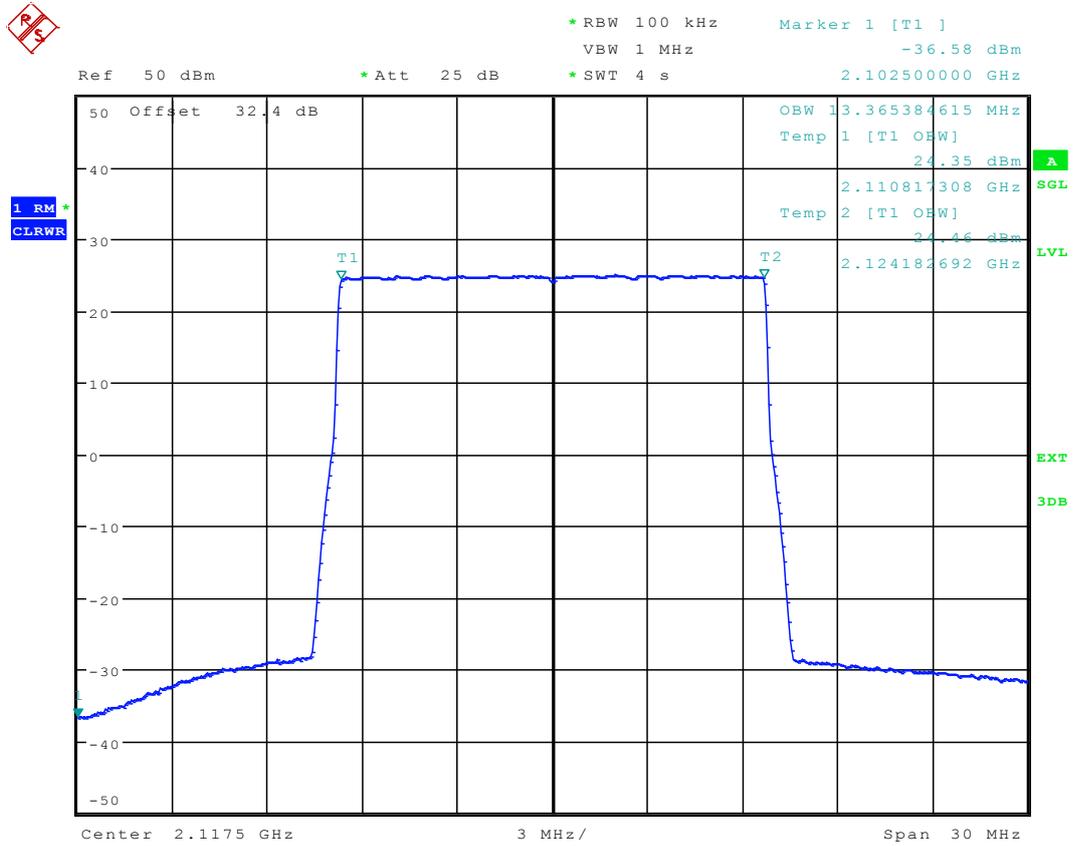
2.2.4.3 Ch. T



Date: 11.OCT.2011 06:37:36

2.2.5 Carrier Conf. = 15M

2.2.5.1 Ch. B

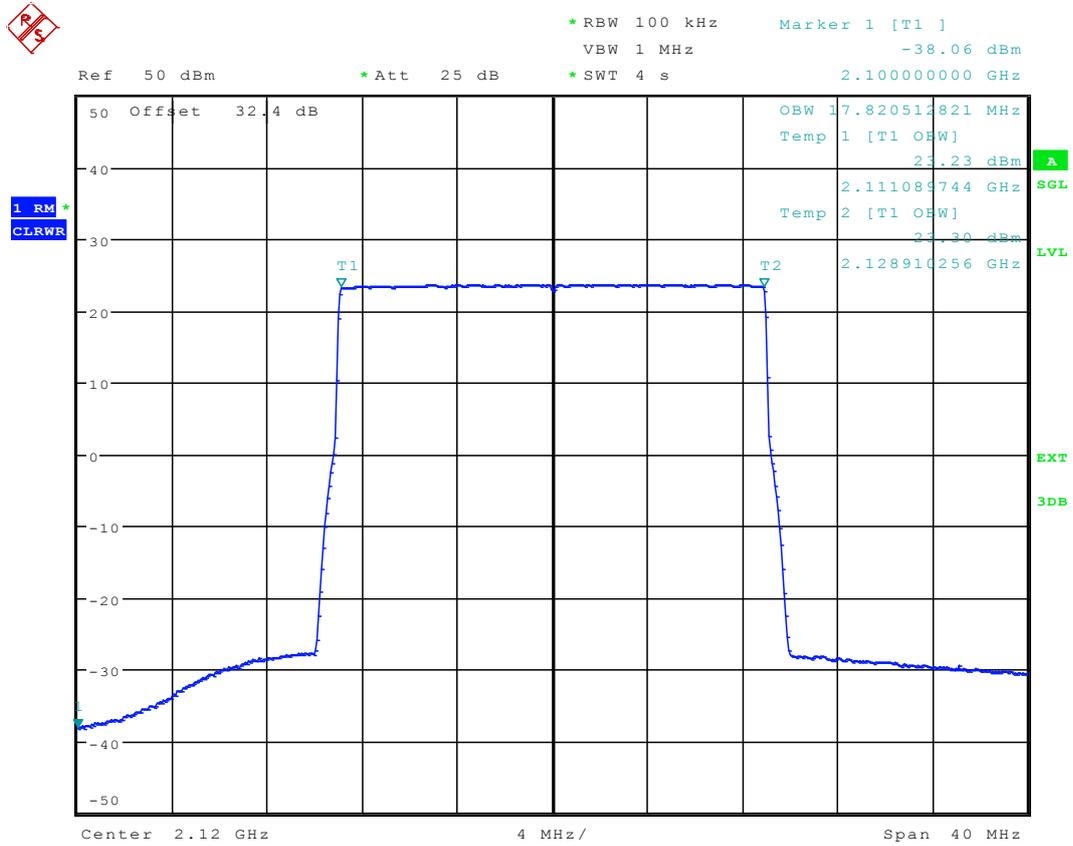


Date: 11.OCT.2011 06:39:51

2.2.5.2 Ch. M

2.2.6 Carrier Conf. = 20M

2.2.6.1 Ch. B



Date: 11.OCT.2011 06:46:30

2.2.6.2 Ch. M



Appendix D: Band Edges Compliance



1 Result Table

NOTE: The offset of measurement filter -3dB point may be considered when identifying the maximum emission for e.g. the CDMA, WCDMA, WiMAX, LTE systems.

Test Mode	Carrier Conf.	RF Ch.	Band Edges Emissions [dBm]	Verdict
TM 1	MC 1	B	-17.65	Pass
		T	-17.87	Pass
	MC 4	B	-21.43	Pass
		T	-21.62	Pass
E-TM 1.1	1.3M	B	-28.77	Pass
		T	-26.31	Pass
	3M	B	-21.94	Pass
		T	-23.74	Pass
	5M	B	-24.95	Pass
		T	-24.45	Pass
	10M	B	-24.71	Pass
		T	-25.29	Pass
	15M	B	-18.34	Pass
		T	-18.23	Pass
	20M	B	-23.18	Pass
		T	-22.85	Pass
E-TM 1.2	1.3M	B	-26.01	Pass
		T	-24.94	Pass
	3M	B	-20.72	Pass
		T	-23.28	Pass
	5M	B	-23.57	Pass
		T	-23.63	Pass
	10M	B	-26.38	Pass
		T	-25.66	Pass
	15M	B	-18.40	Pass
		T	-17.53	Pass
20M	B	-23.29	Pass	
	T	-22.59	Pass	

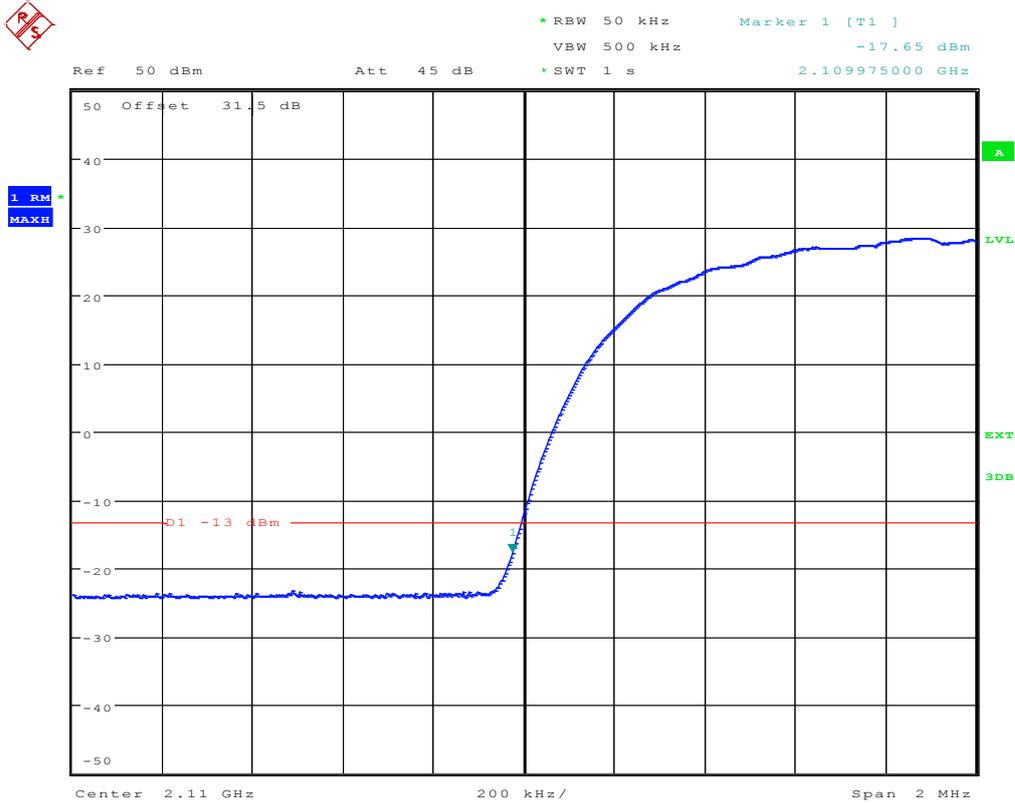


2 Test Plot

2.1 Test Mode = TM 1

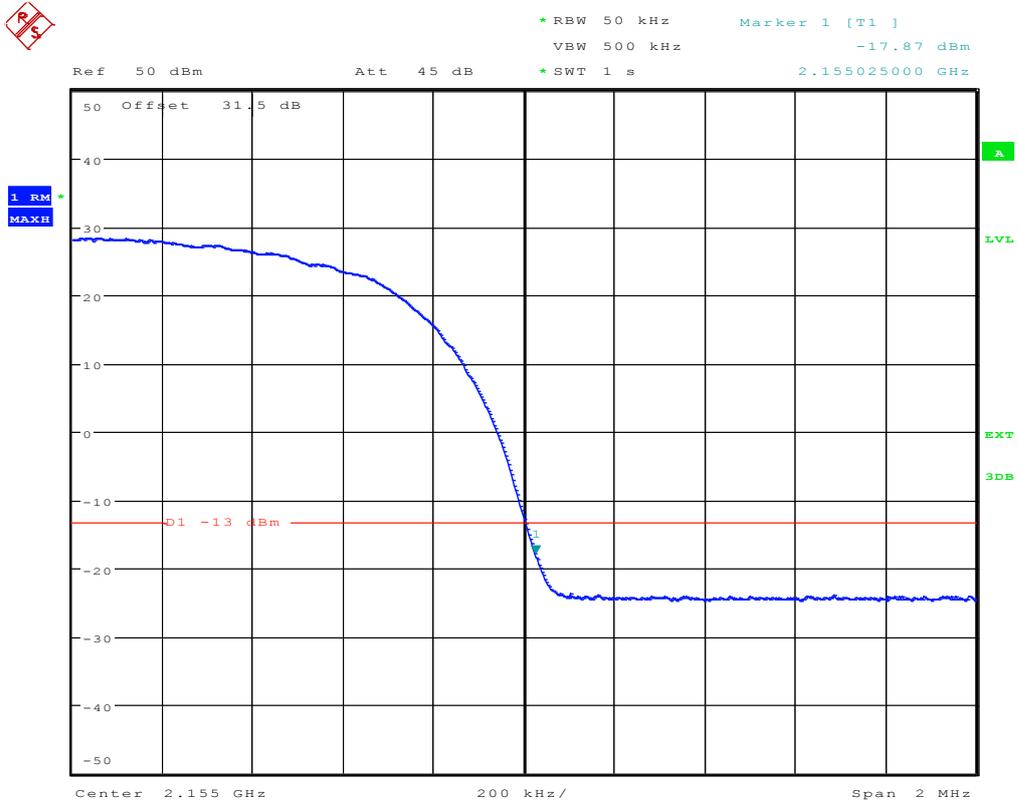
2.1.1 Carrier Conf. = MC 1

2.1.1.1 Ch. B



Date: 10.MAR.2010 14:36:08

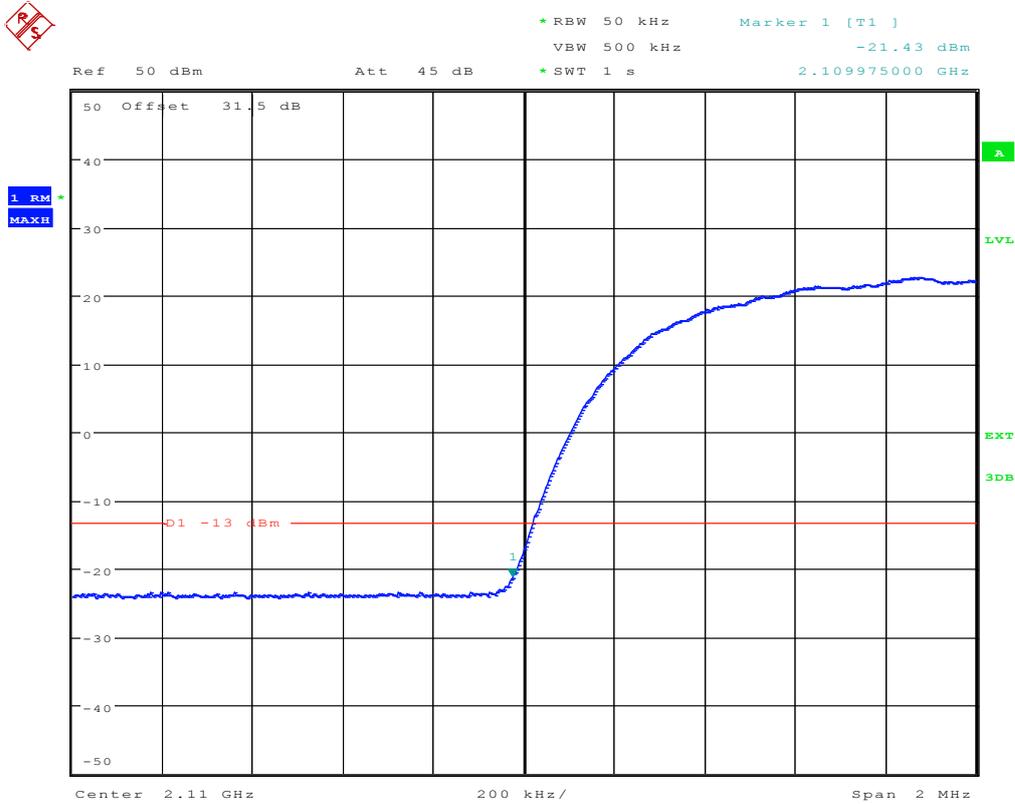
2.1.1.2 Ch. T



Date: 10.MAR.2010 16:00:21

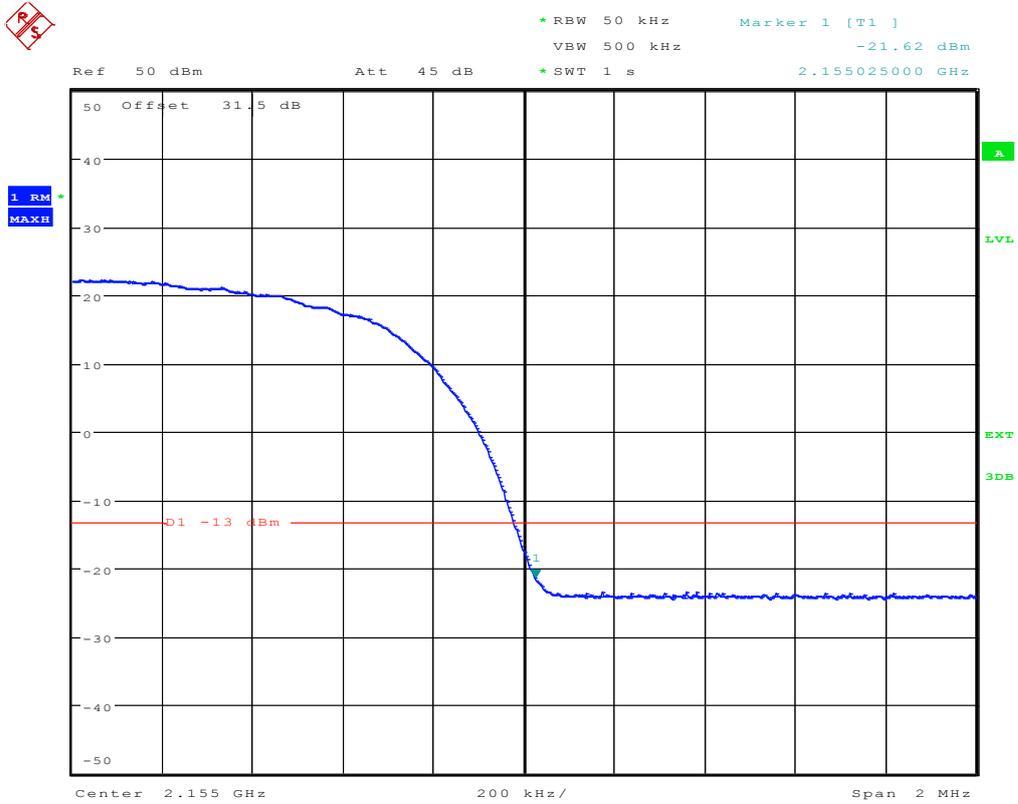
2.1.2 Carrier Conf. = MC 4

2.1.2.1 Ch. B



Date: 10.MAR.2010 18:40:58

2.1.2.2 Ch. T

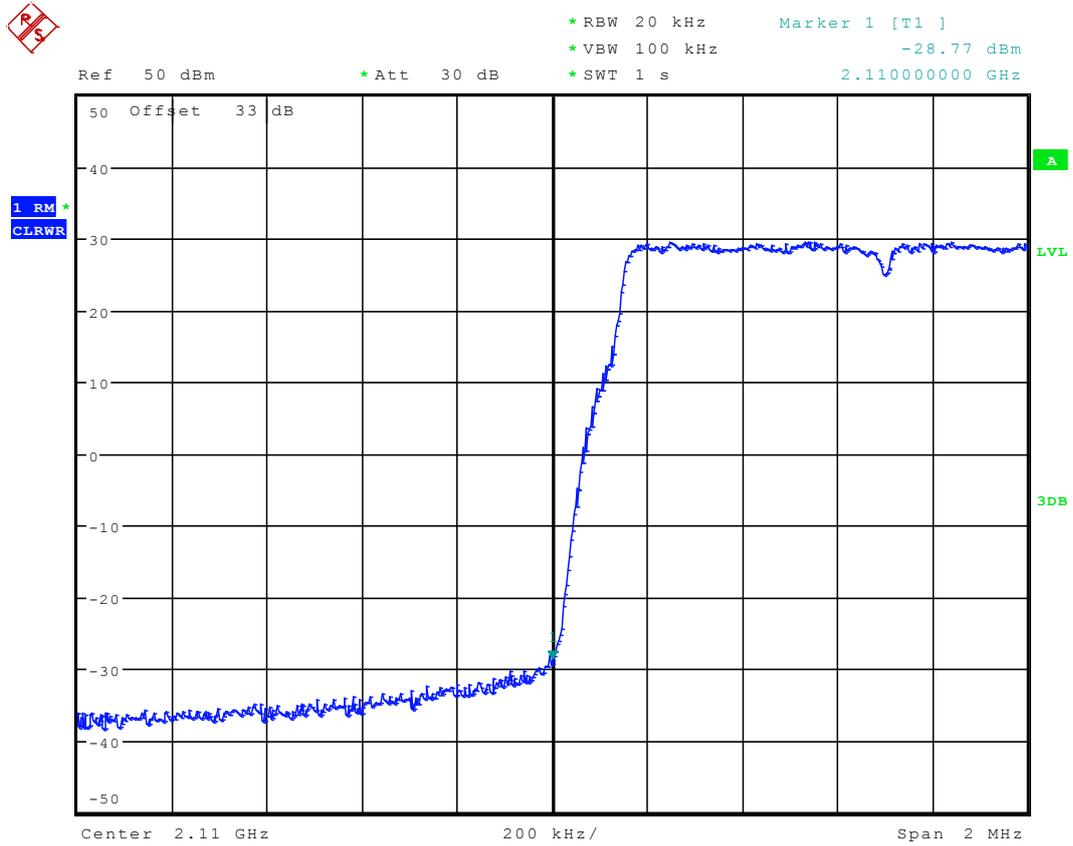


Date: 10.MAR.2010 19:22:48

2.2 Test Mode = E-TM 1.1

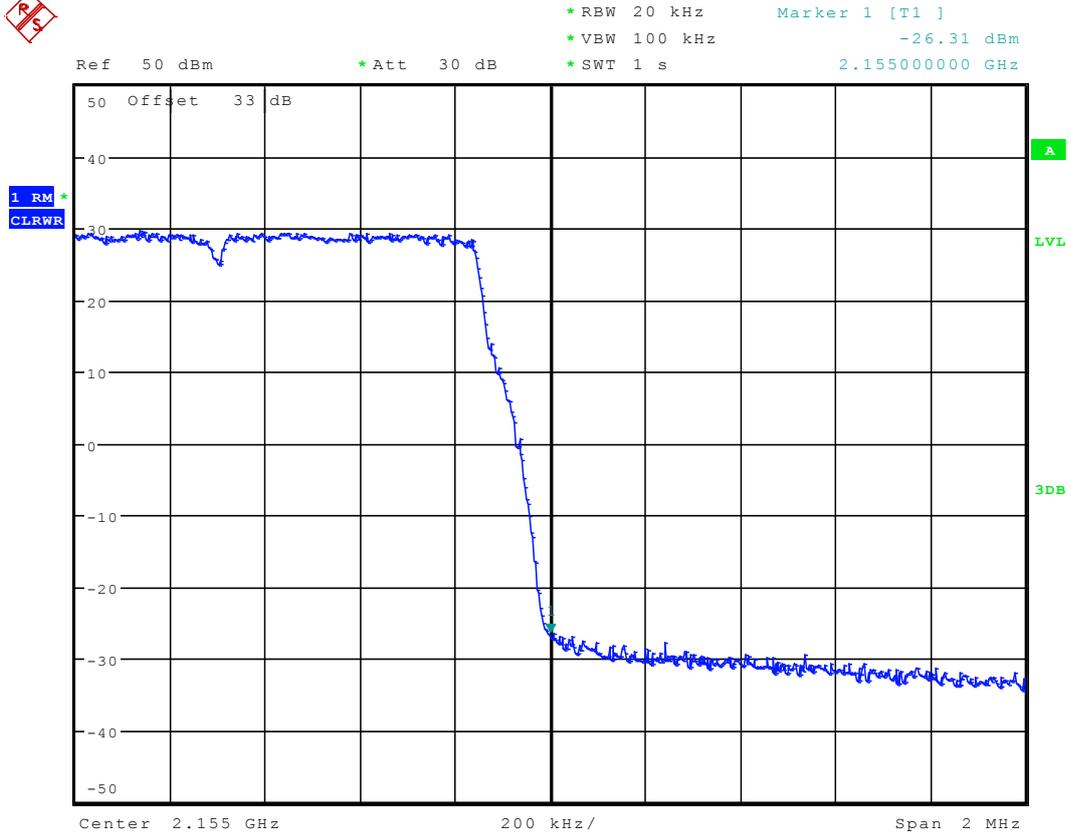
2.2.1 Carrier Conf. = 1.4M

2.2.1.1 Ch. B



Date: 21.OCT.2021 15:41:39

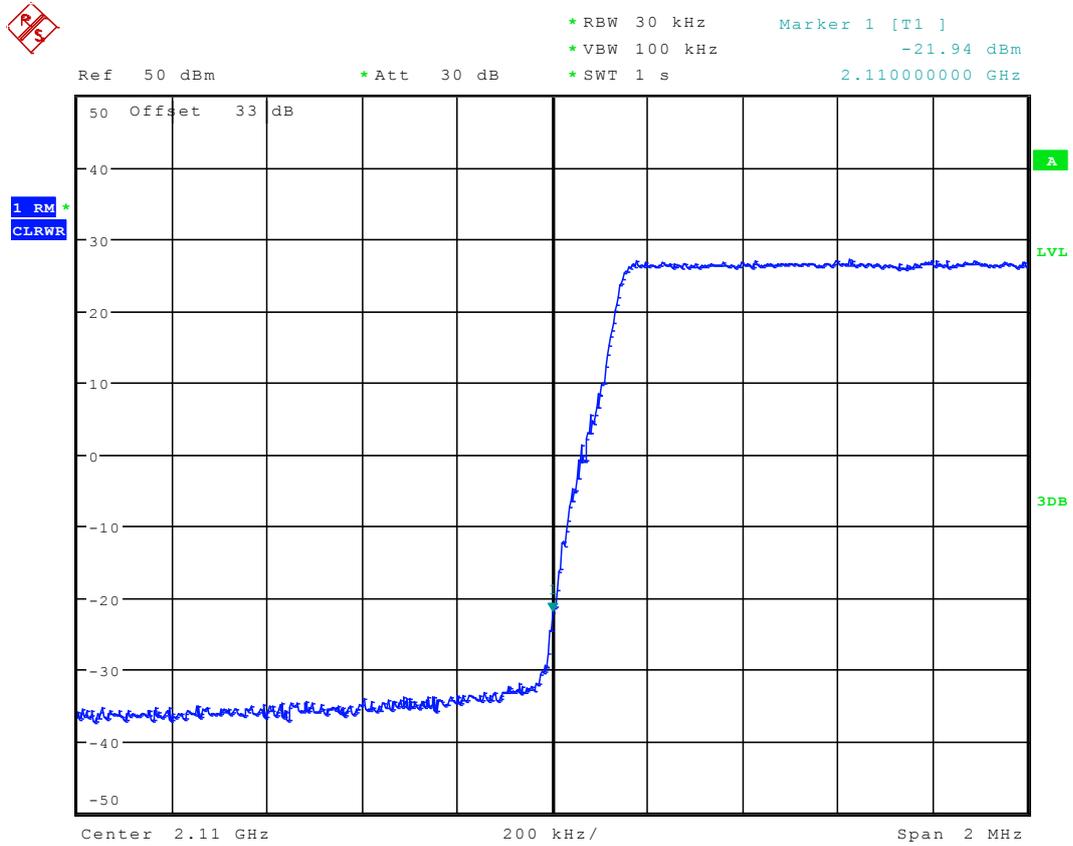
2.2.1.2 Ch. T



Date: 21.OCT.2021 15:43:36

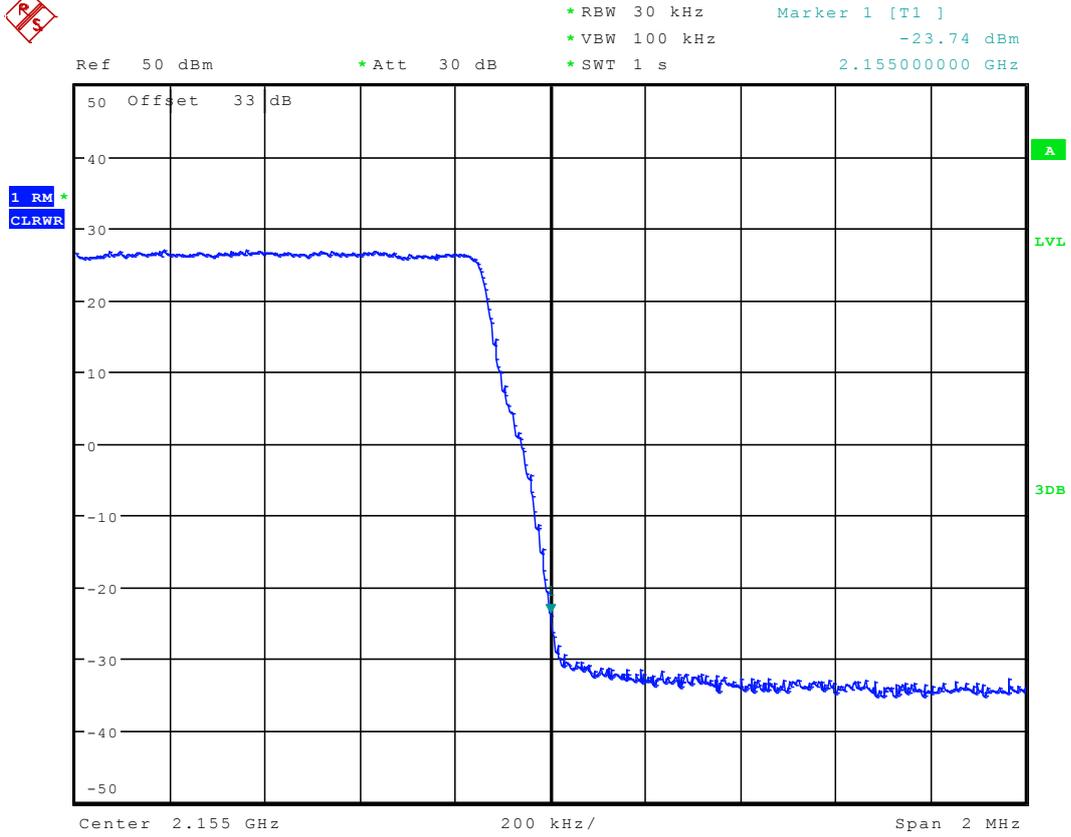
2.2.2 Carrier Conf. = 3M

2.2.2.1 Ch. B



Date: 21.OCT.2021 14:51:15

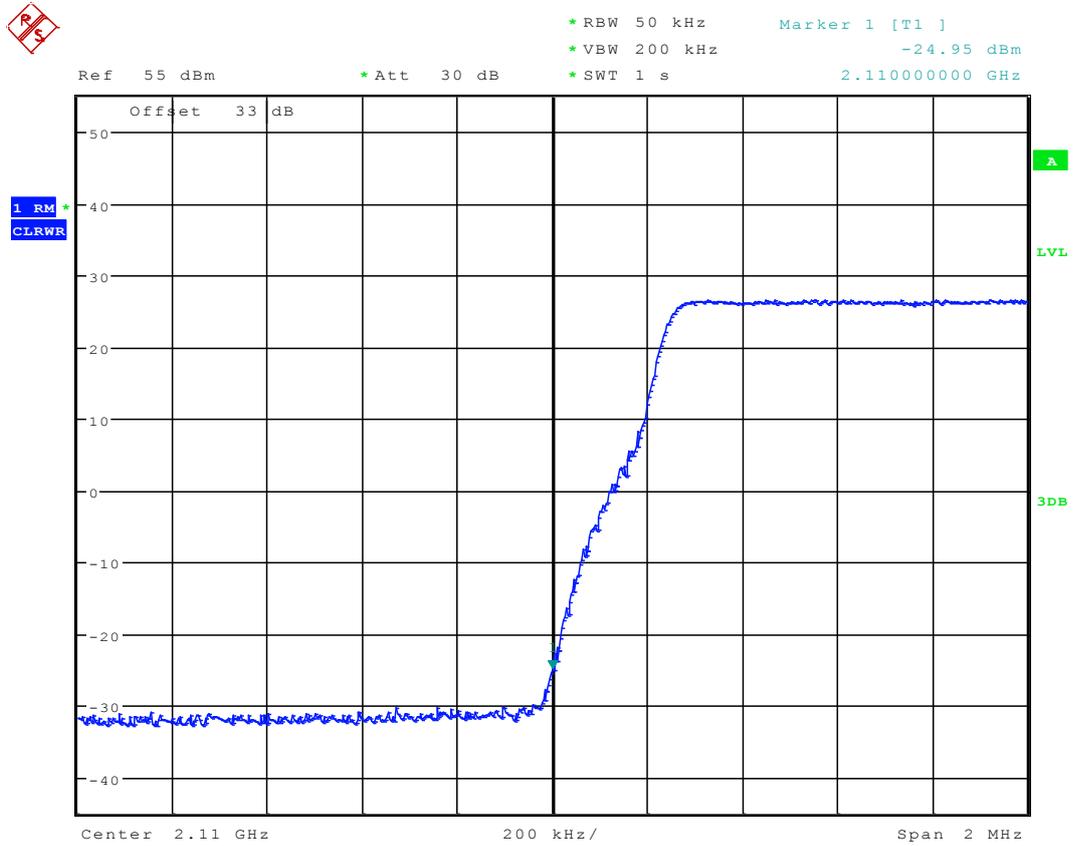
2.2.2.2 Ch. T



Date: 21.OCT.2021 14:54:31

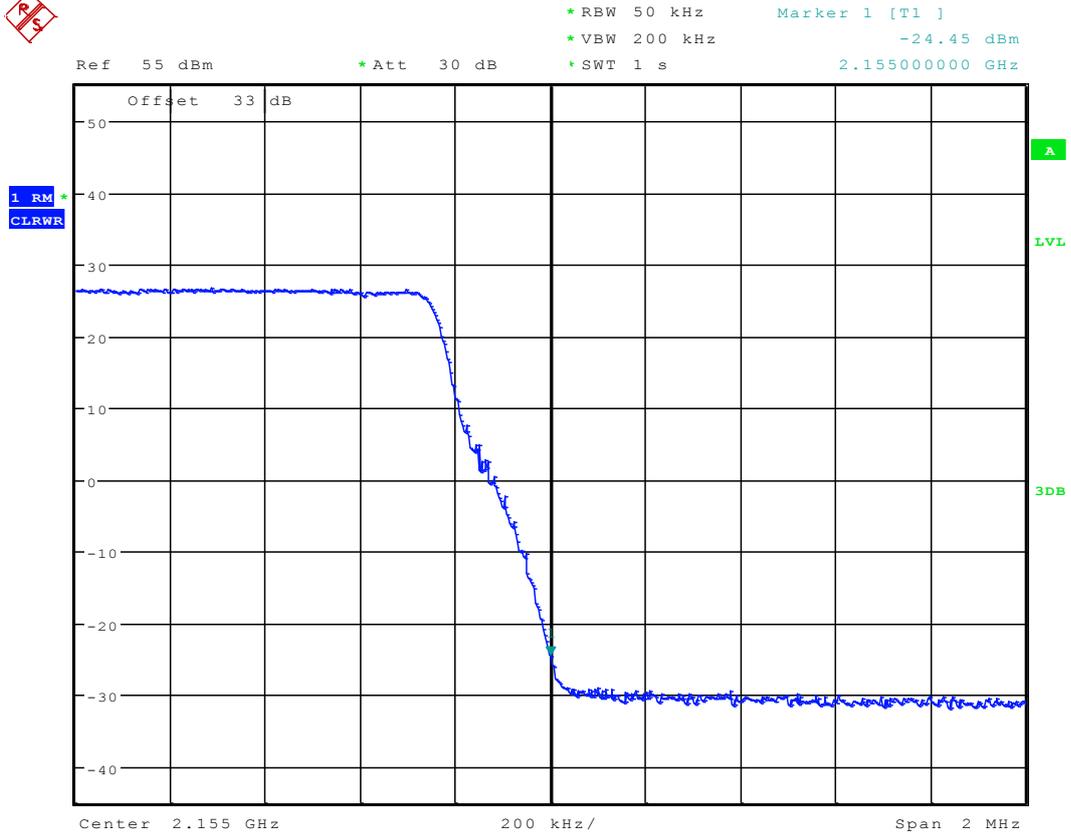
2.2.3 Carrier Conf. = 5M

2.2.3.1 Ch. B



Date: 21.OCT.2021 11:18:55

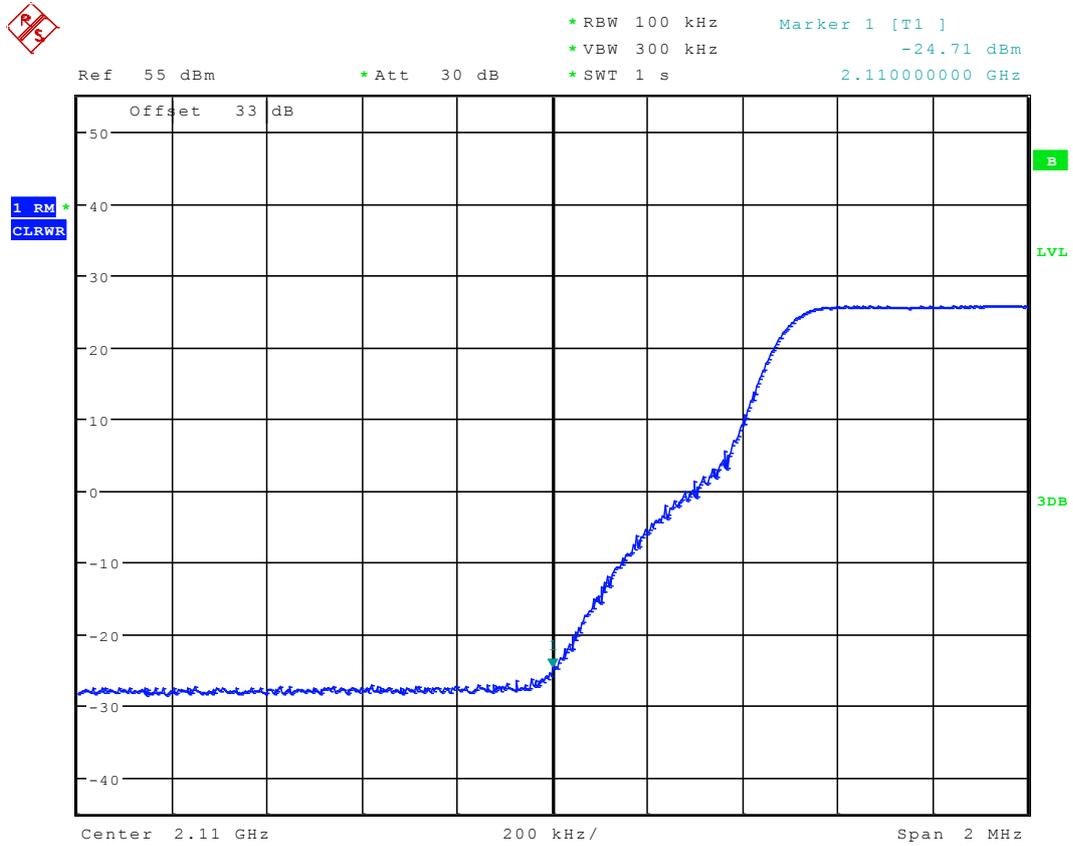
2.2.3.2 Ch. T



Date: 21.OCT.2021 11:17:18

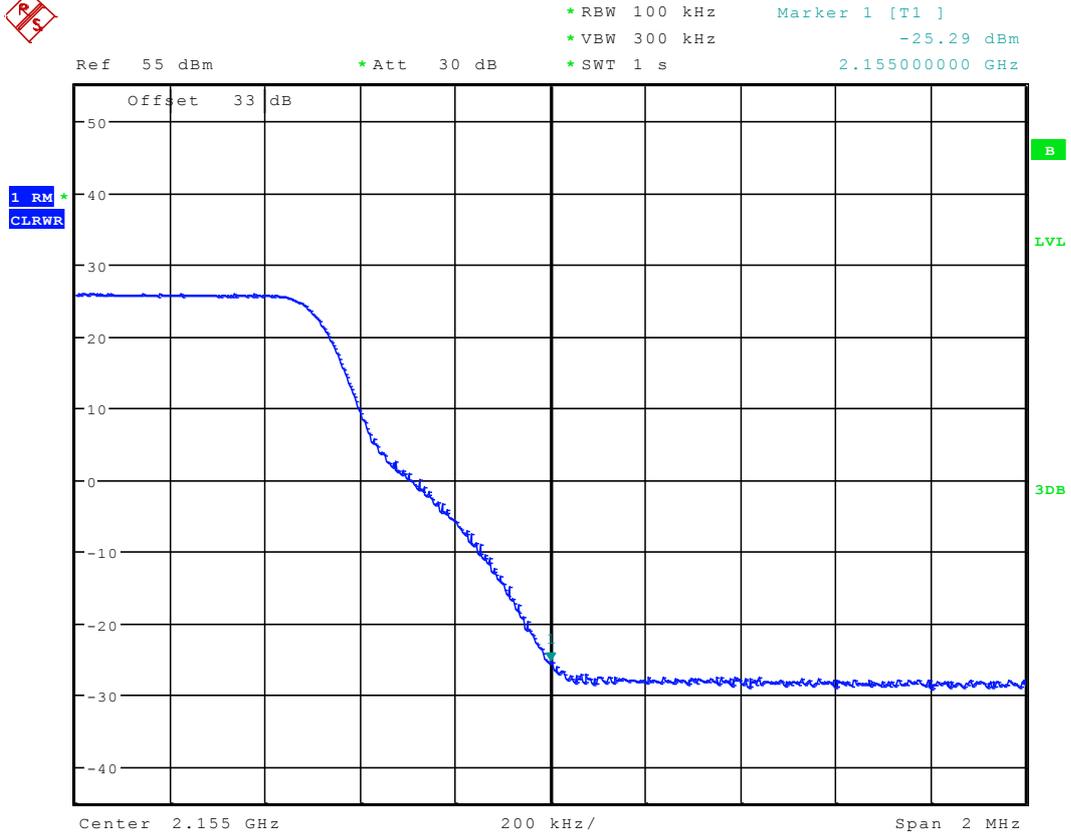
2.2.4 Carrier Conf. = 10M

2.2.4.1 Ch. B



Date: 12.OCT.2021 10:55:06

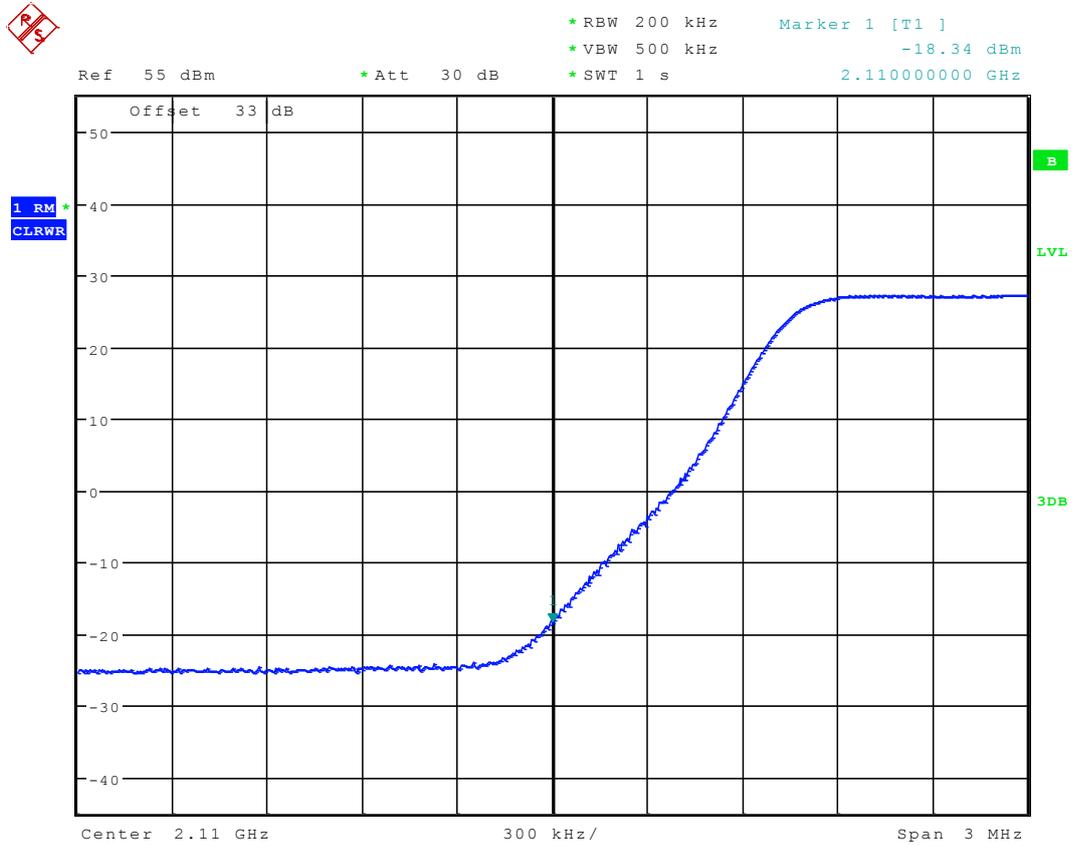
2.2.4.2 Ch. T



Date: 12.OCT.2021 11:11:37

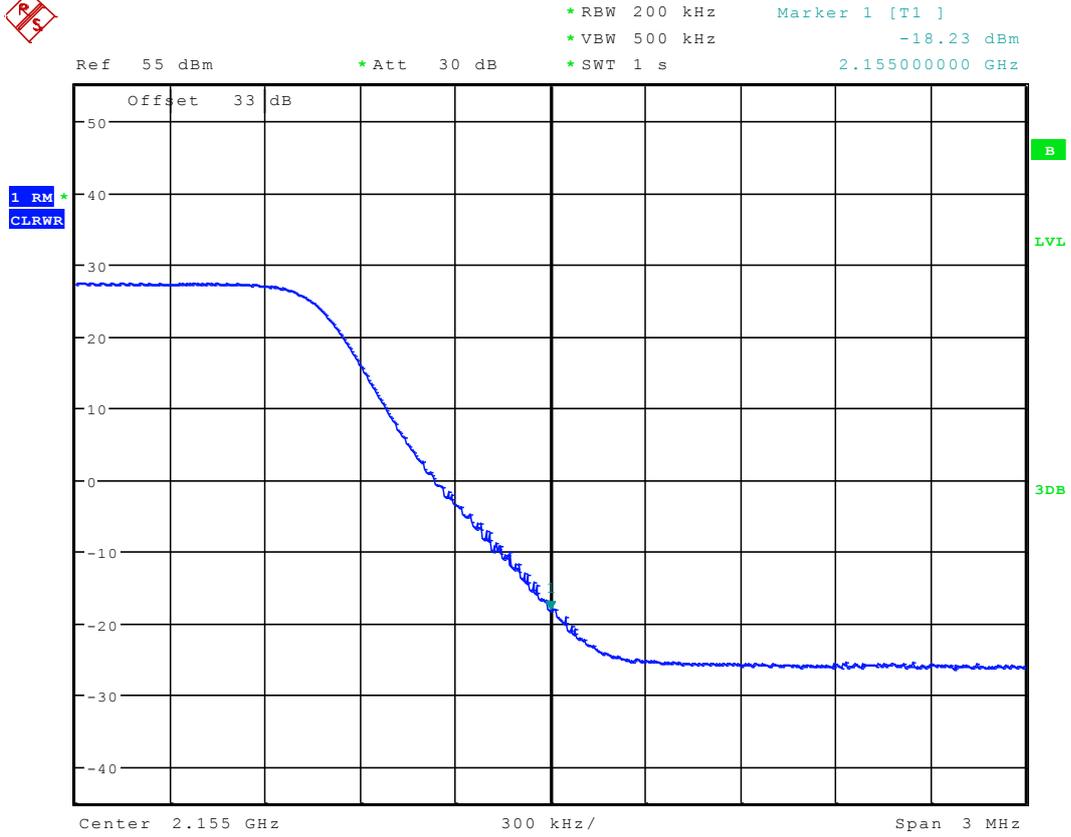
2.2.5 Carrier Conf. = 15M

2.2.5.1 Ch. B



Date: 12.OCT.2021 10:50:37

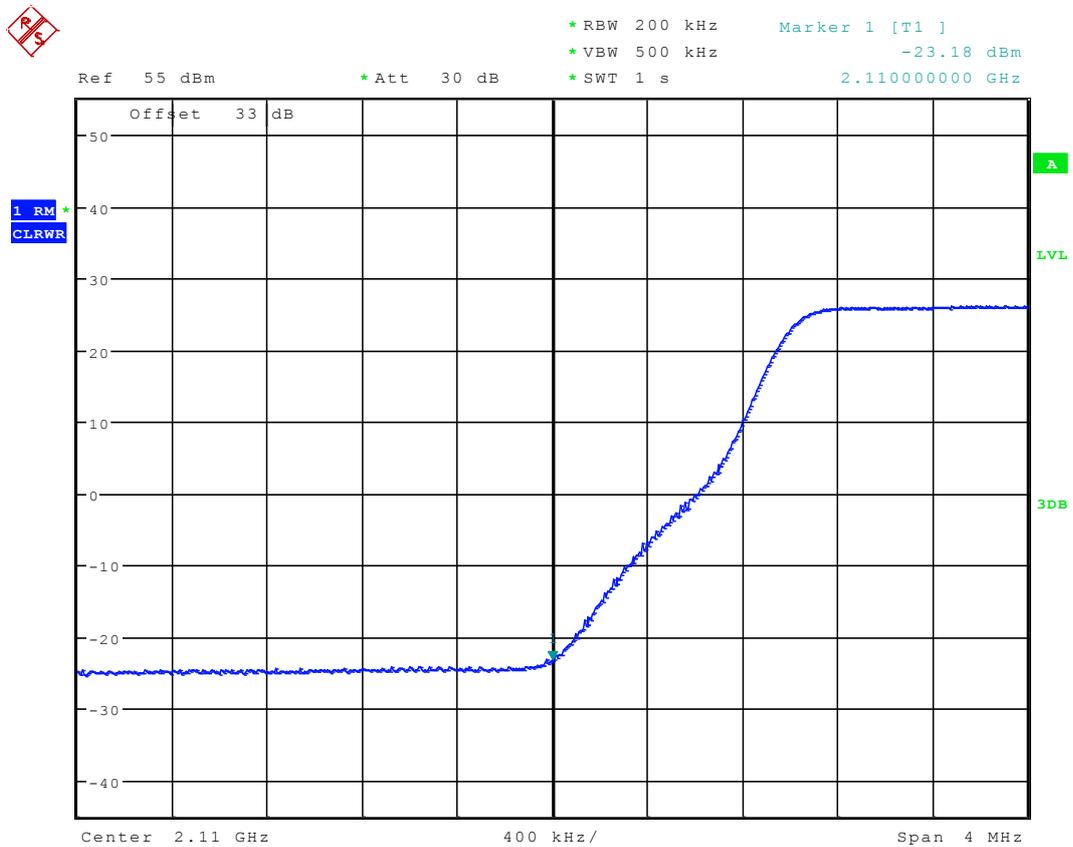
2.2.5.2 Ch. T



Date: 12.OCT.2021 10:45:26

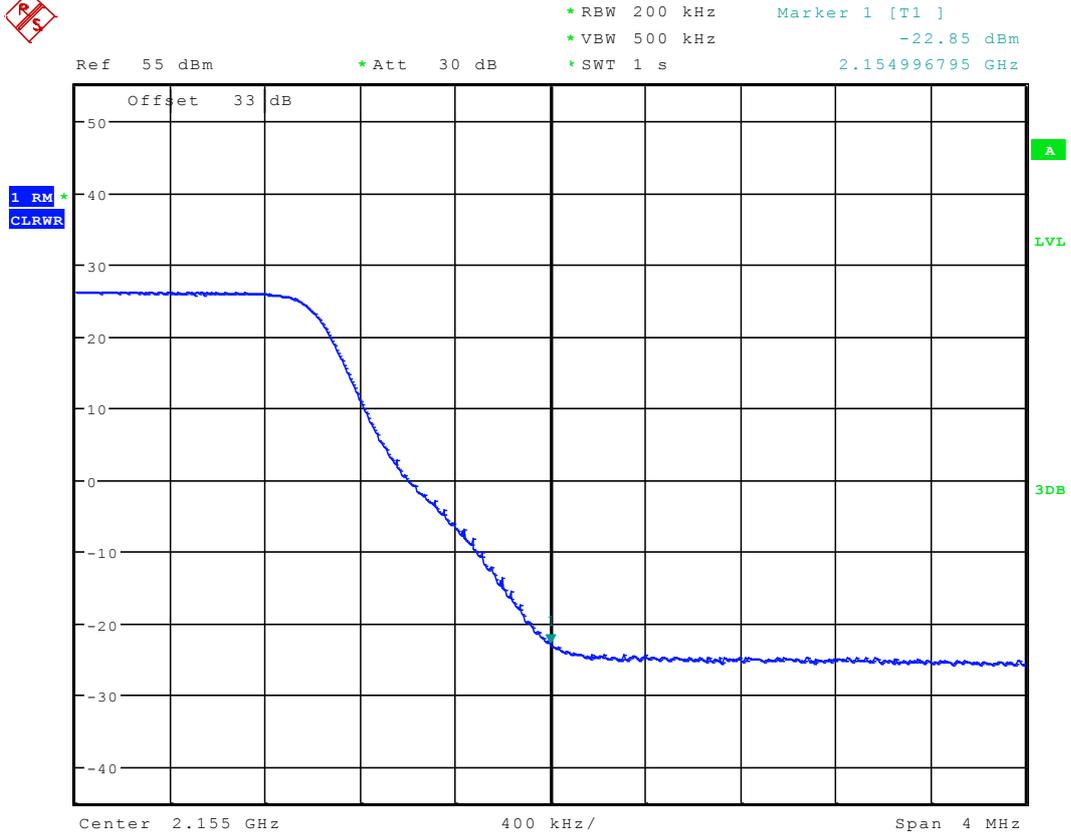
2.2.6 Carrier Conf. = 20M

2.2.6.1 Ch. B



Date: 12.OCT.2021 10:13:40

2.2.6.2 Ch. T

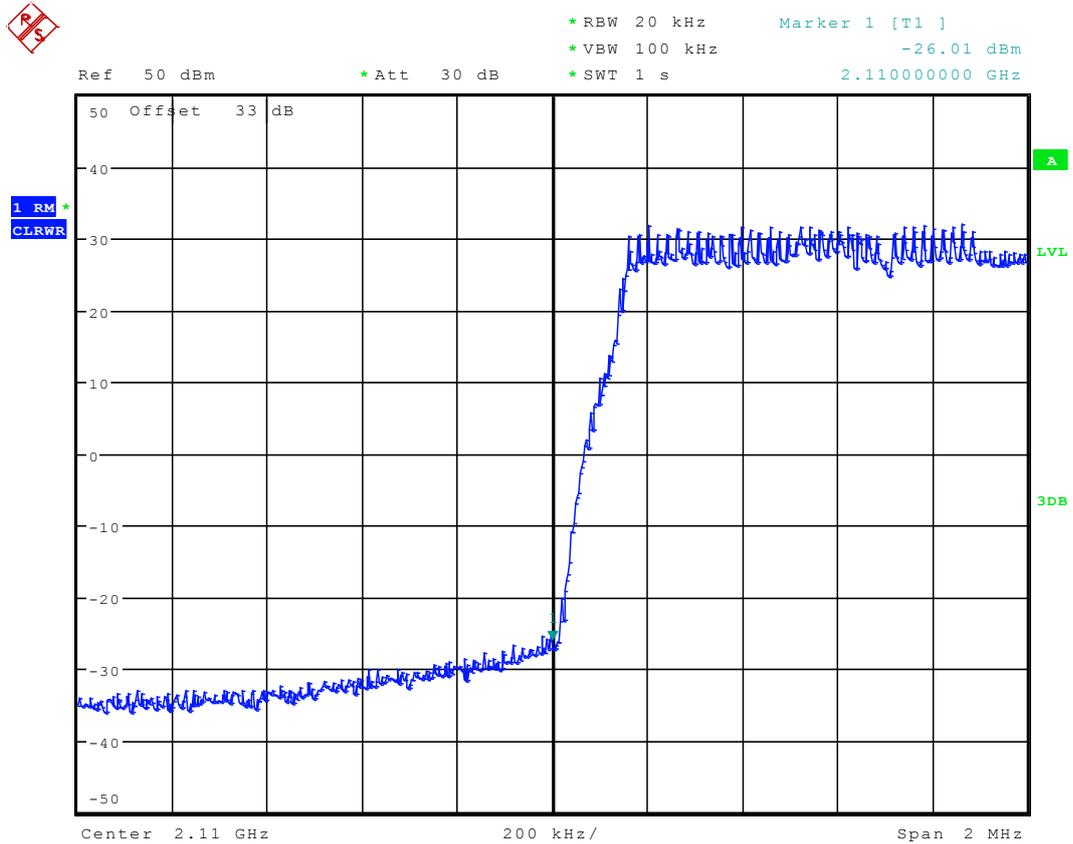


Date: 12.OCT.2021 10:06:59

2.3 Test Mode = E-TM 1.2

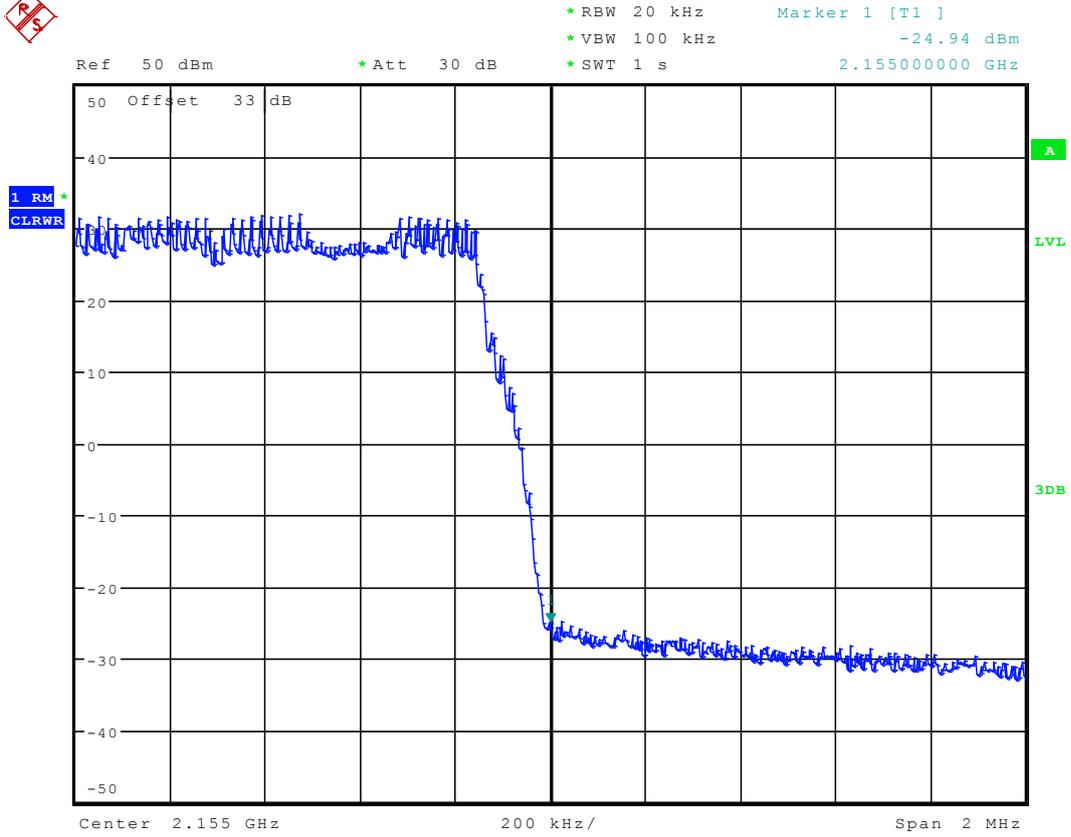
2.3.1 Carrier Conf. = 1.4M

2.3.1.1 Ch. B



Date: 21.OCT.2021 15:42:17

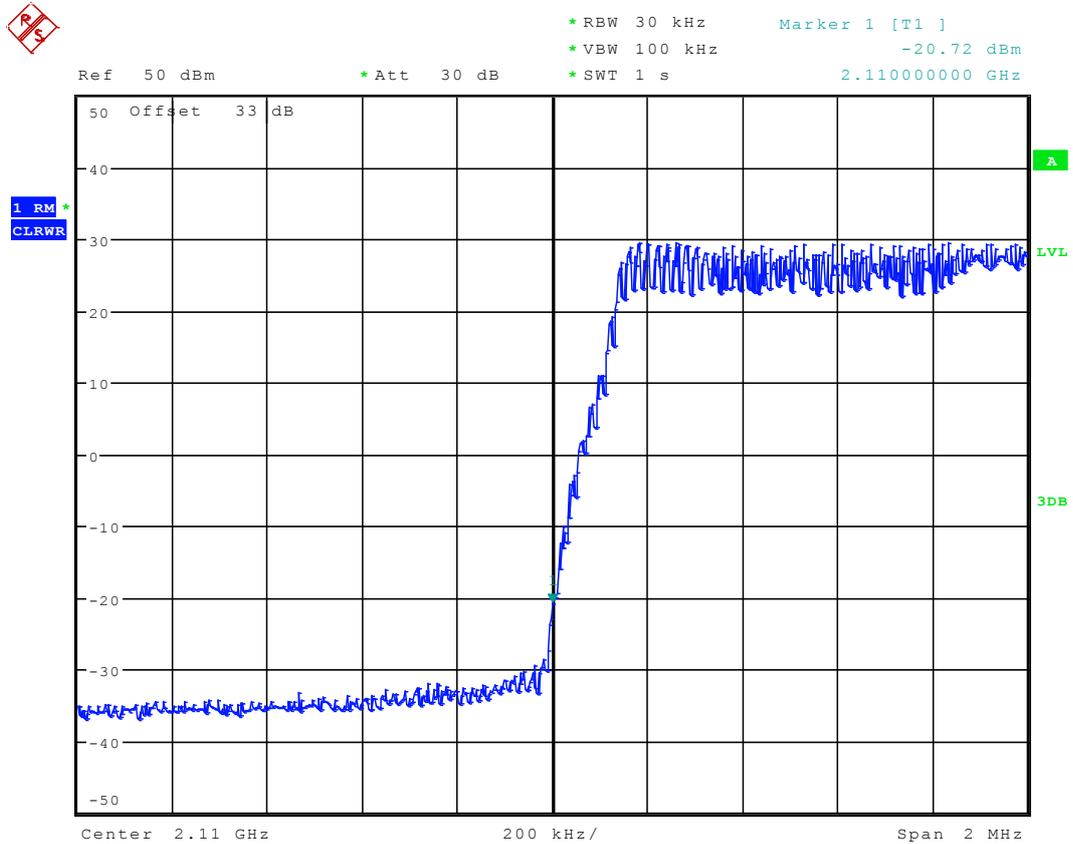
2.3.1.2 Ch. T



Date: 21.OCT.2021 15:44:14

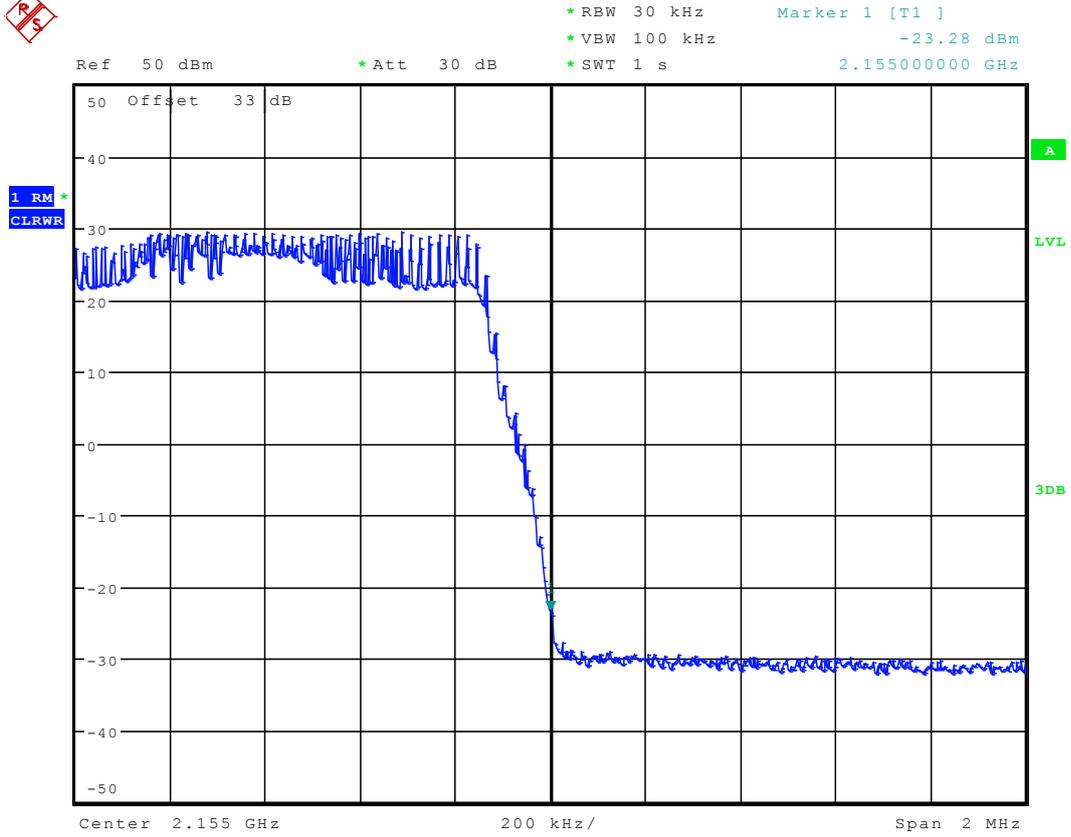
2.3.2 Carrier Conf. = 3M

2.3.2.1 Ch. B



Date: 21.OCT.2021 14:53:02

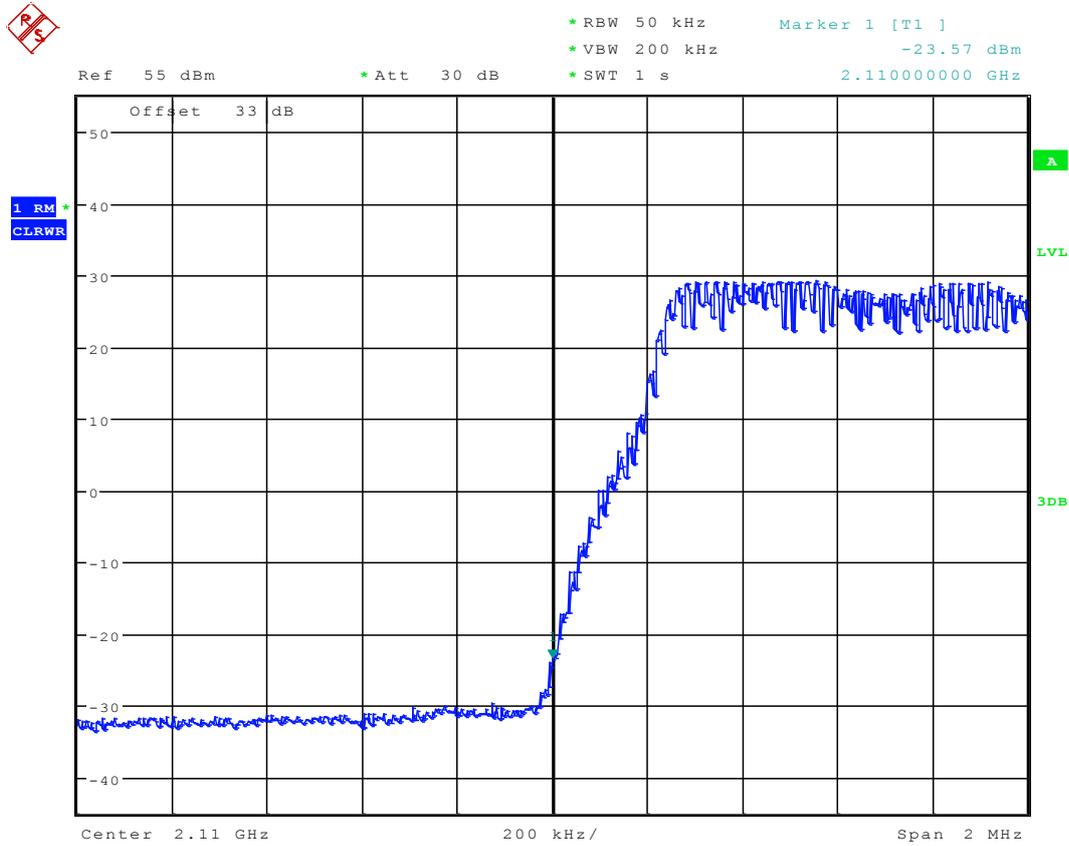
2.3.2.2 Ch. T



Date: 21.OCT.2021 14:55:36

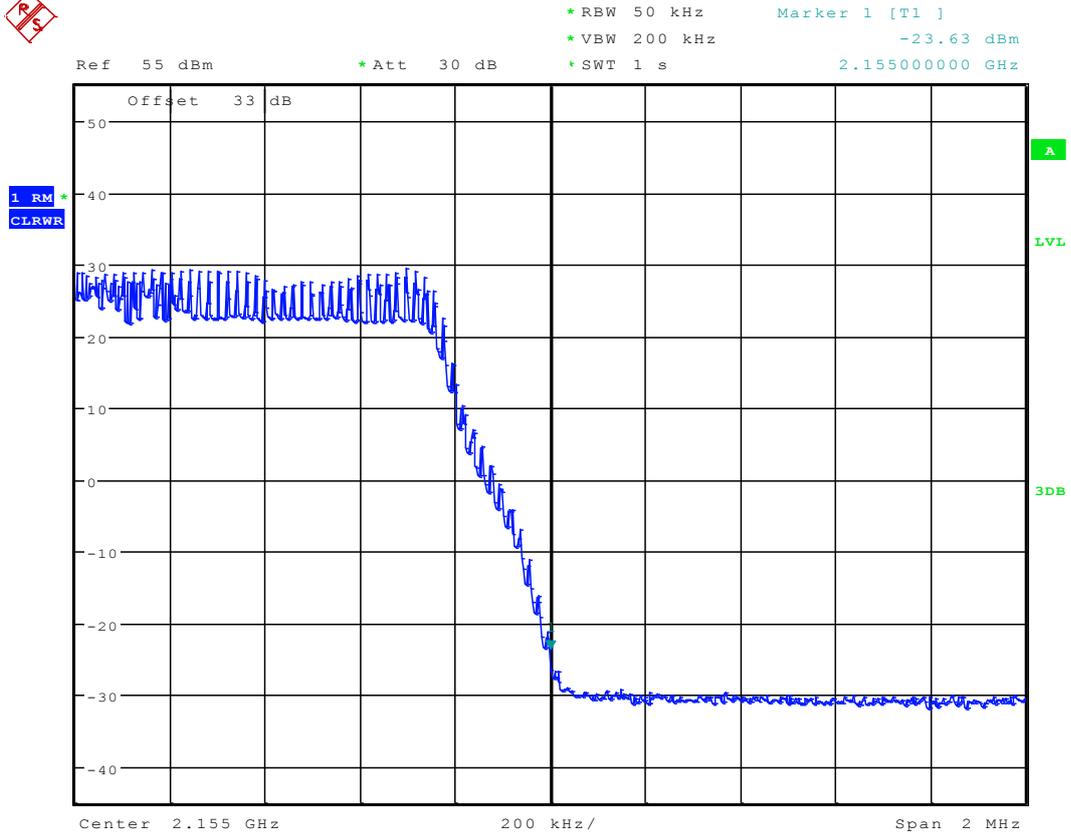
2.3.3 Carrier Conf. = 5M

2.3.3.1 Ch. B



Date: 21.OCT.2021 11:19:36

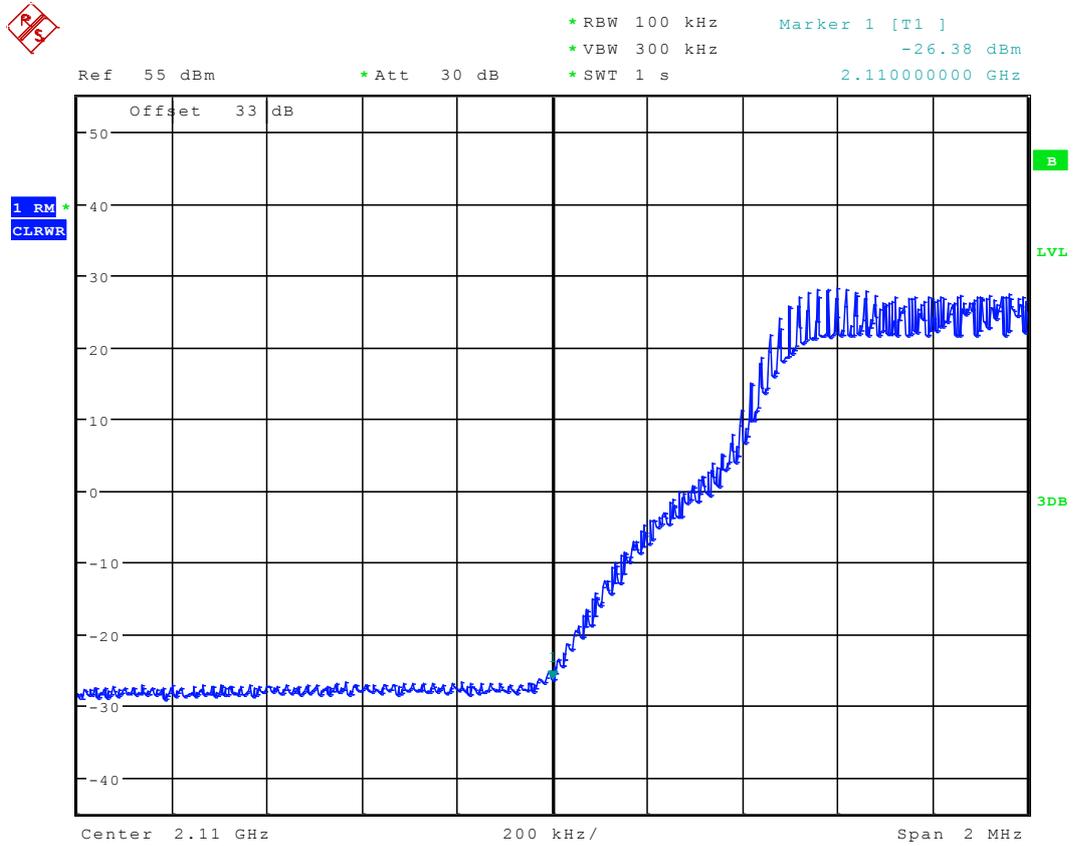
2.3.3.2 Ch. T



Date: 21.OCT.2021 11:16:31

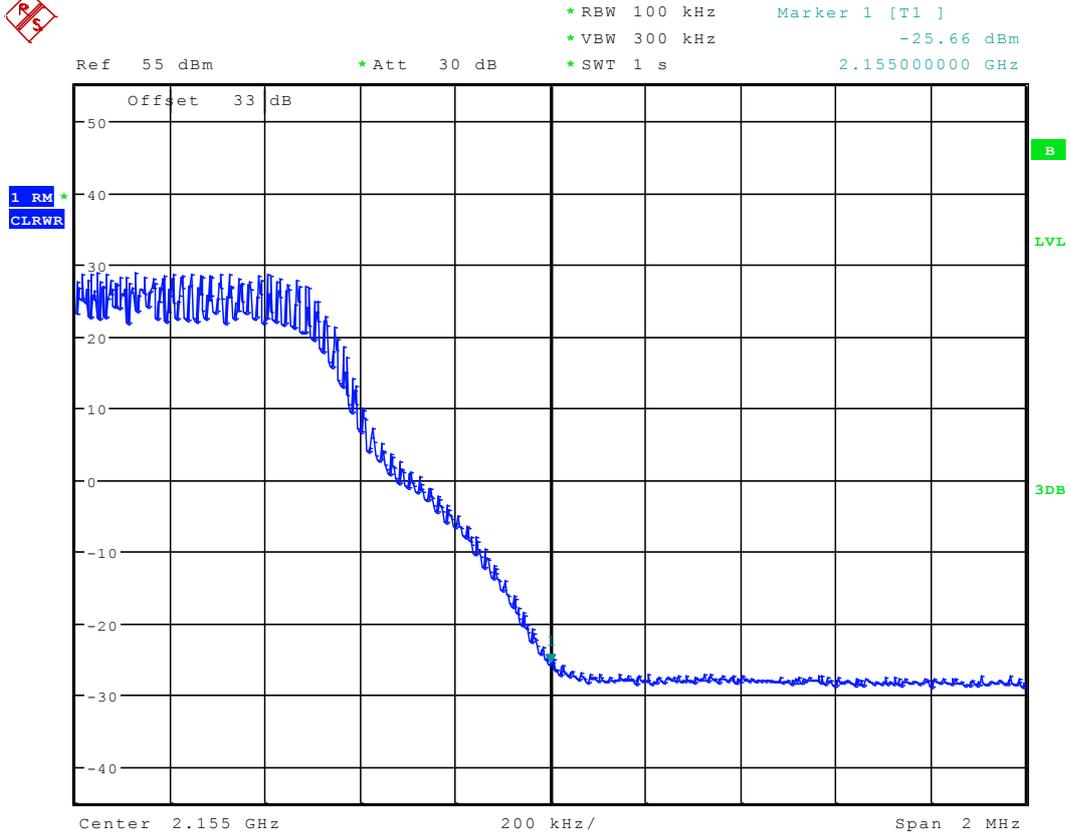
2.3.4 Carrier Conf. = 10M

2.3.4.1 Ch. B



Date: 12.OCT.2021 10:58:44

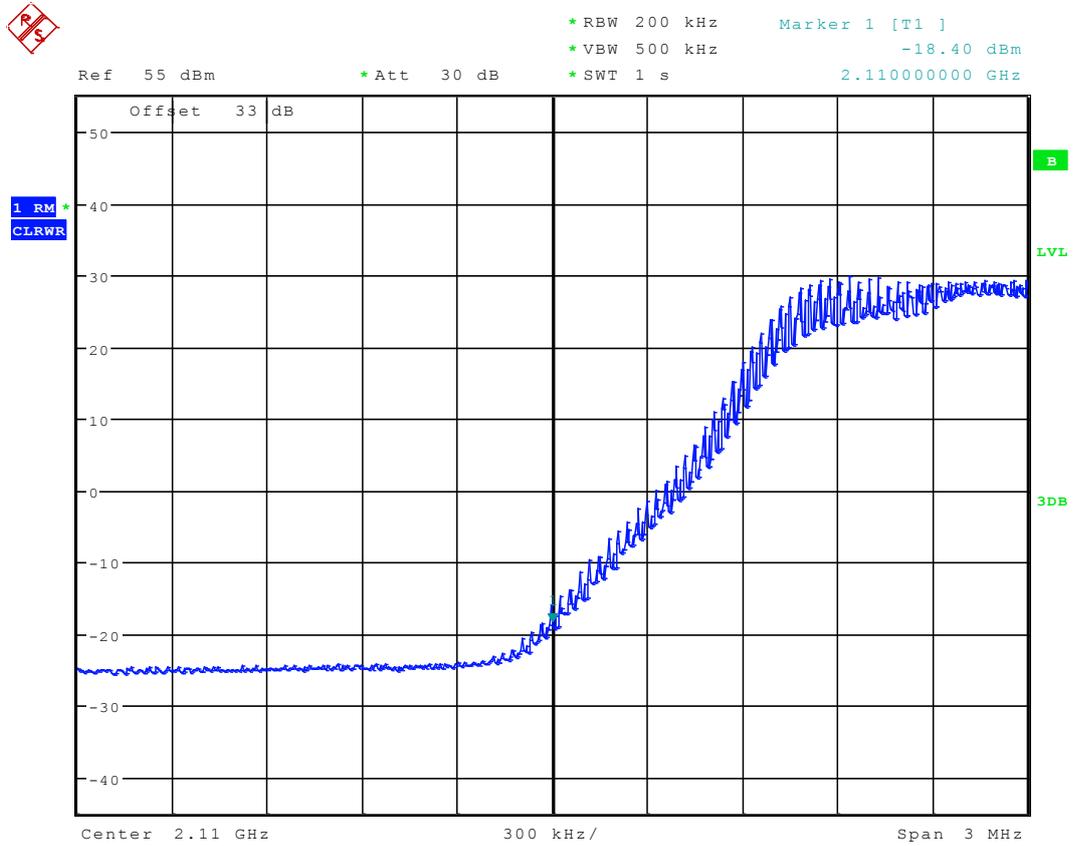
2.3.4.2 Ch. T



Date: 12.OCT.2021 11:14:45

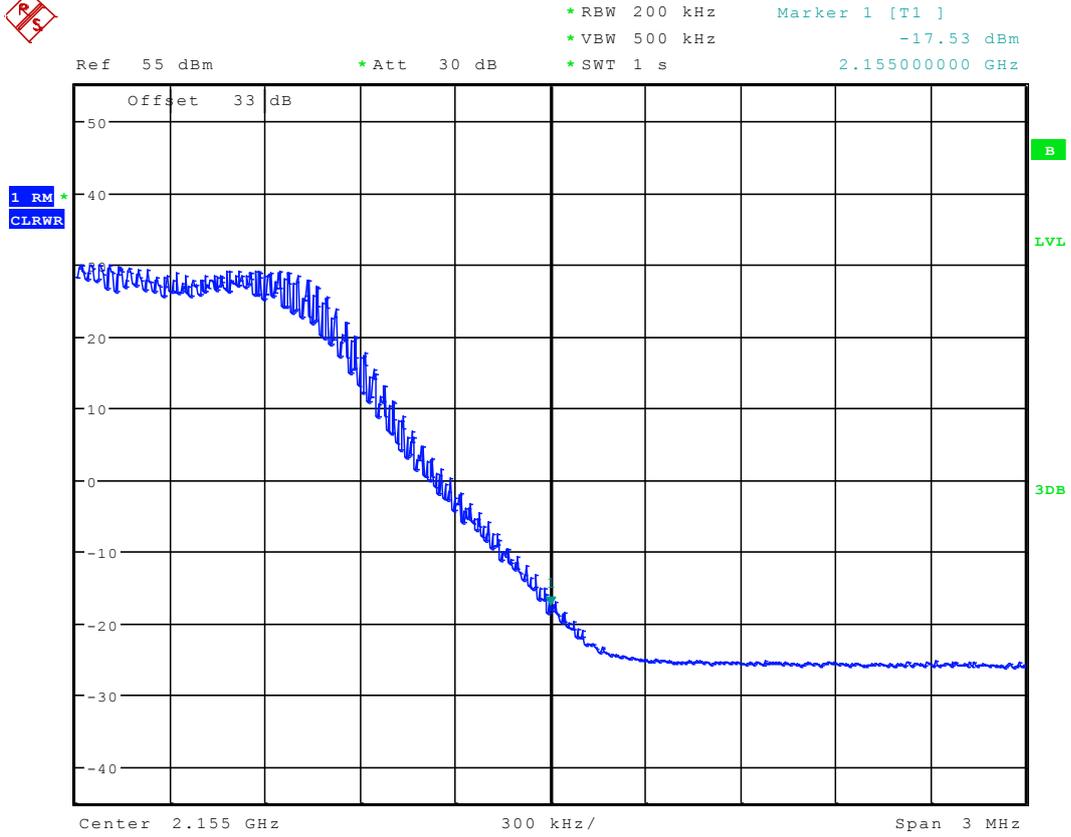
2.3.5 Carrier Conf. = 15M

2.3.5.1 Ch. B



Date: 12.OCT.2021 10:51:37

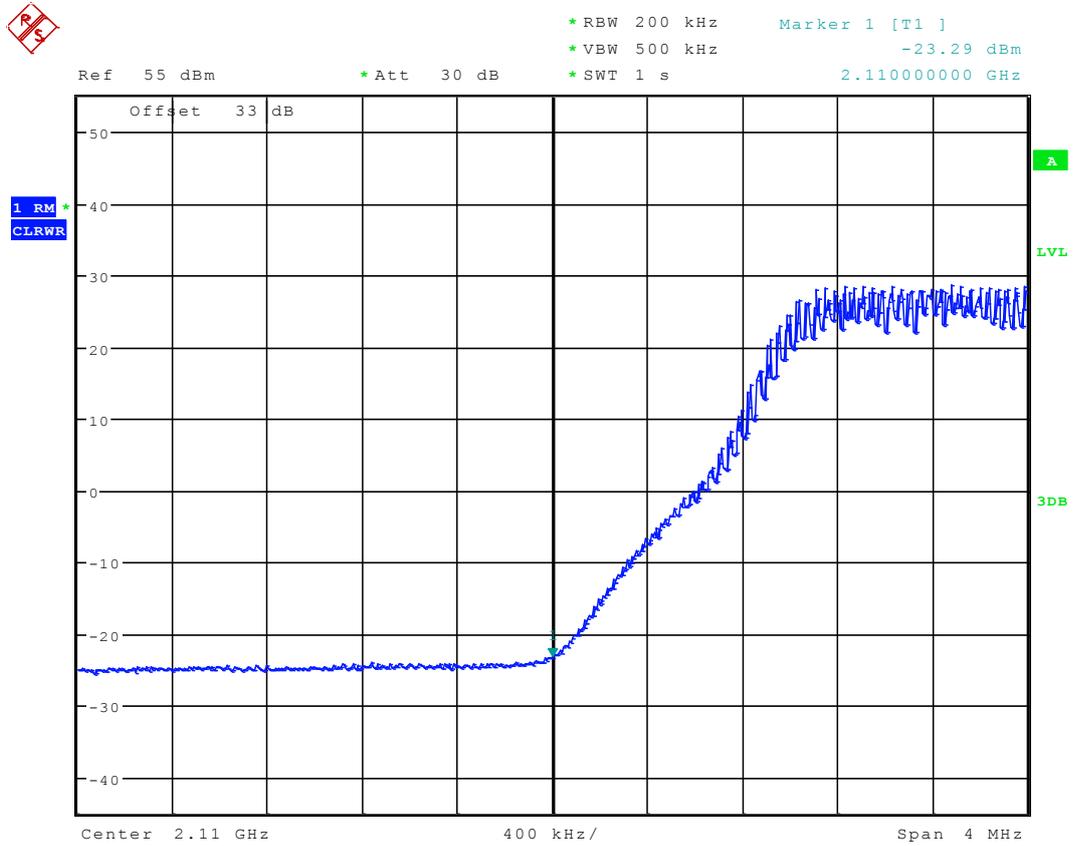
2.3.5.2 Ch. T



Date: 12.OCT.2021 10:46:30

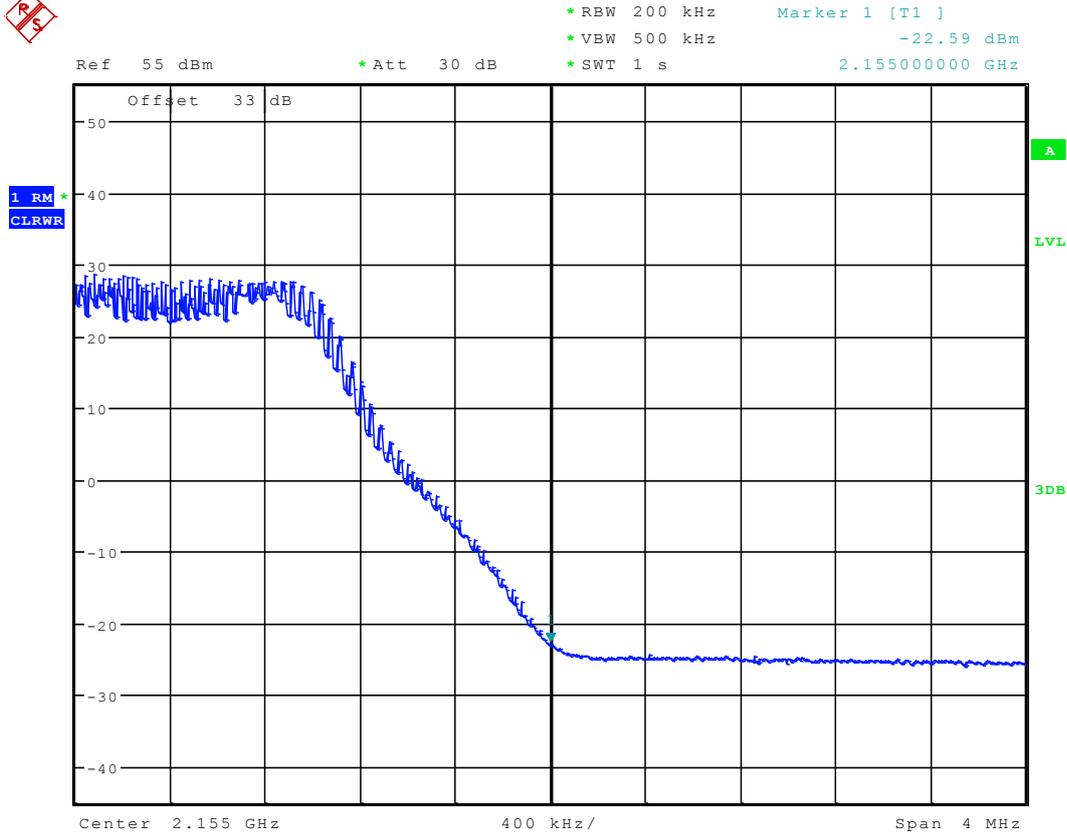
2.3.6 Carrier Conf. = 20M

2.3.6.1 Ch. B



Date: 12.OCT.2021 10:15:34

2.3.6.2 Ch. T



Date: 12.OCT.2021 10:18:05



Appendix E: Spurious Emission at Antenna Terminals



1 Result Table

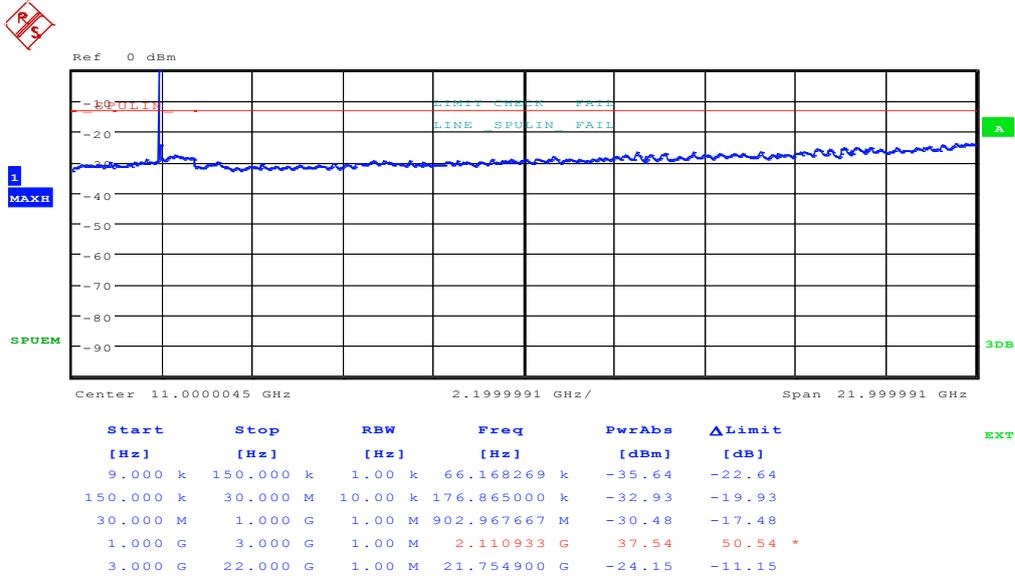
Test Mode	Carrier Conf.	RF Ch.	Spurious Emission at Antenna Terminals [dBm]	Verdict
TM 1	MC 1	B	-24.15	Pass
		M	-23.61	Pass
		T	-23.68	Pass
	MC 4	B	-24.00	Pass
		M	-24.31	Pass
		T	-23.91	Pass
E-TM 1.1	1.4M	B	-17.35	Pass
		M	-17.39	Pass
		T	-17.53	Pass
	3M	B	-17.73	Pass
		M	-18.01	Pass
		T	-17.84	Pass
	5M	B	-19.87	Pass
		M	-19.01	Pass
		T	-17.14	Pass
	10M	B	-17.07	Pass
		M	-18.71	Pass
		T	-18.61	Pass
	15M	B	-17.08	Pass
		M	-17.53	Pass
		T	-18.00	Pass
	20M	B	-15.74	Pass
		M	-15.51	Pass
		T	-17.90	Pass

2 Test Plot

2.1 Test Mode = TM 1

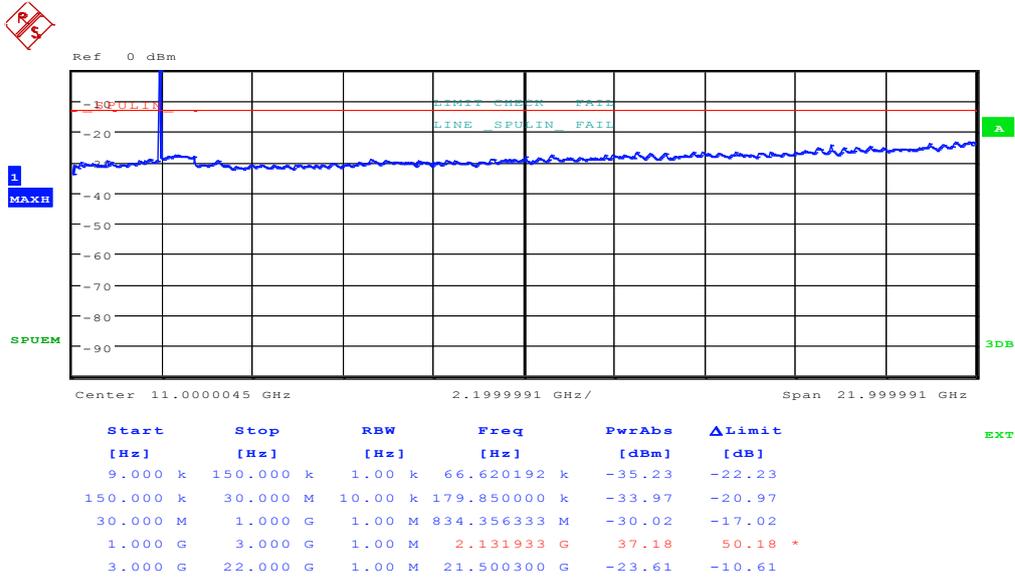
2.1.1 Carrier Conf. = MC 1

2.1.1.1 Ch. B



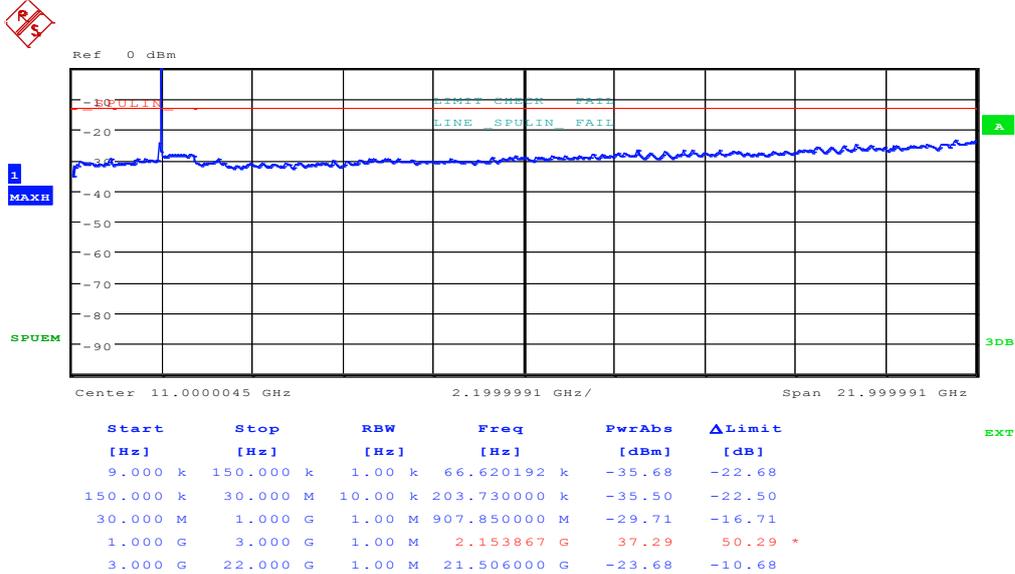
Date: 10.MAR.2010 15:01:52

2.1.1.2 Ch. M



Date: 10.MAR.2010 15:45:56

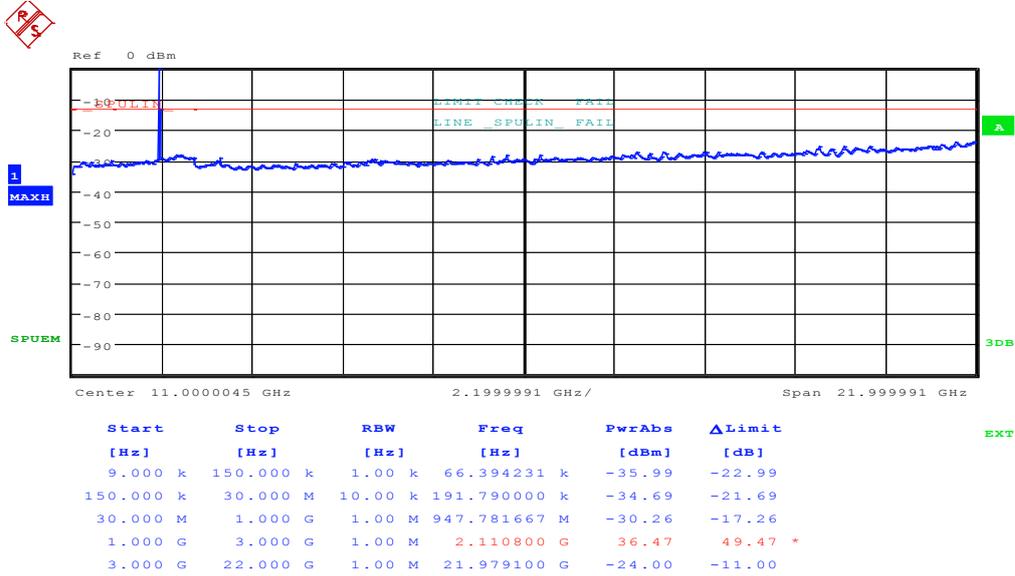
2.1.1.3 Ch. T



Date: 10.MAR.2010 15:53:10

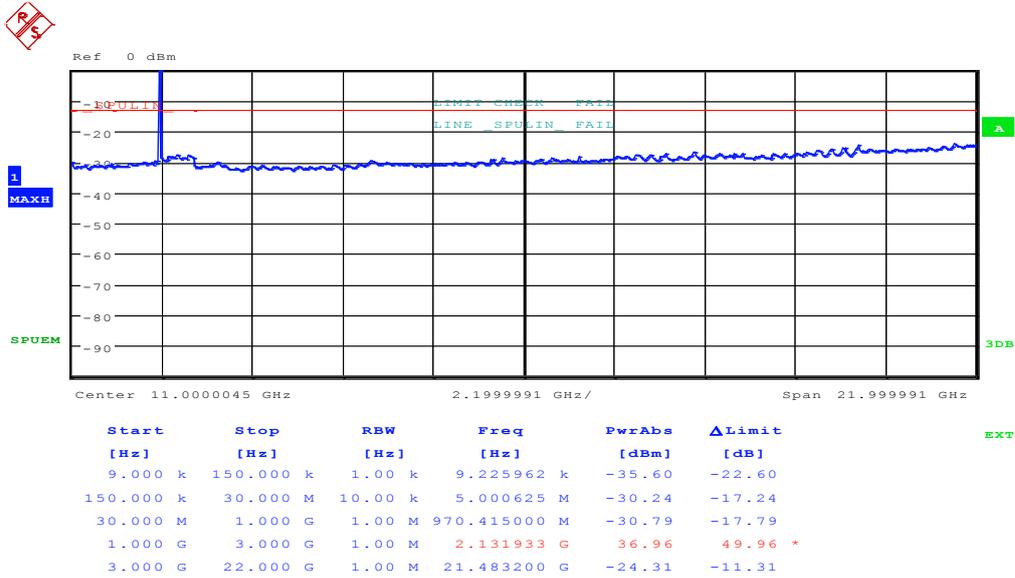
2.1.2 Carrier Conf. = MC 4

2.1.2.1 Ch. B



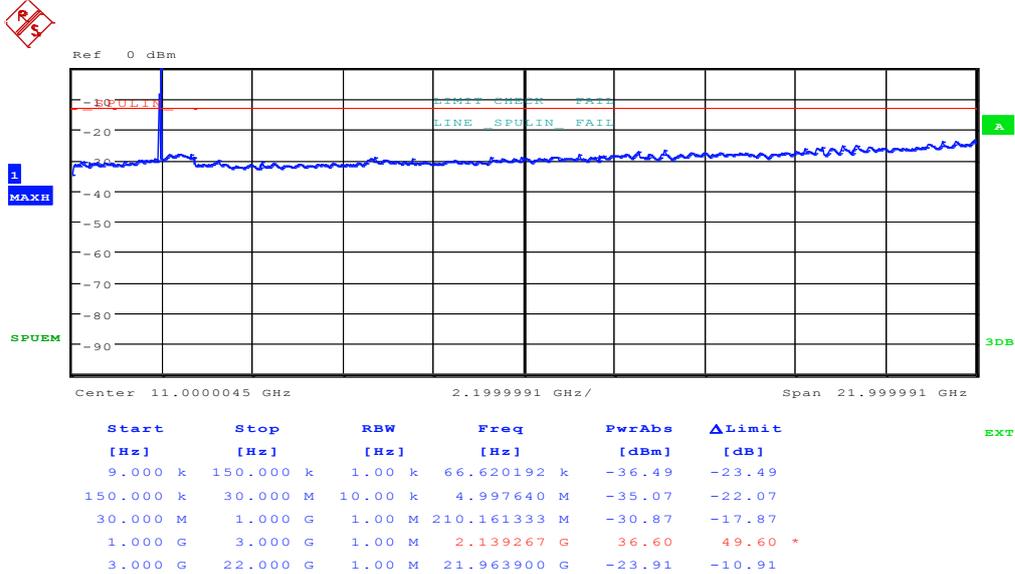
Date: 10.MAR.2010 18:37:19

2.1.2.2 Ch. M



Date: 10.MAR.2010 19:01:35

2.1.2.3 Ch. T

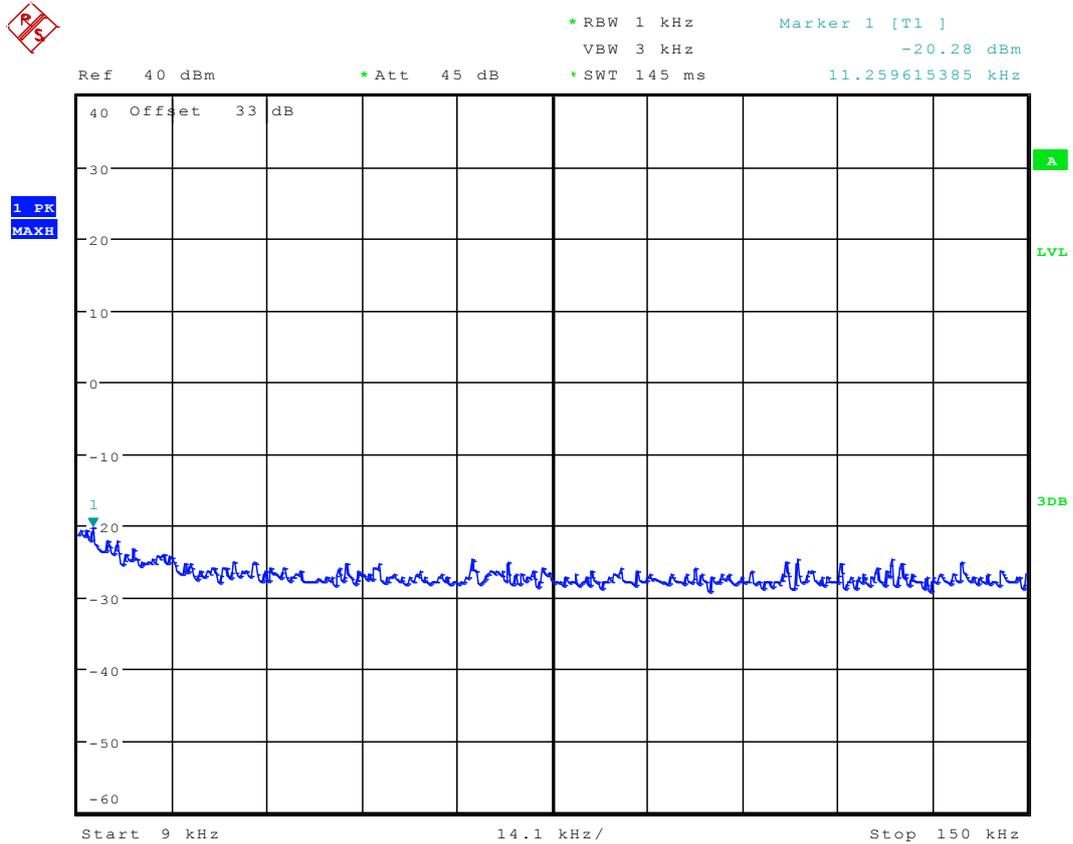


Date: 10.MAR.2010 19:19:26

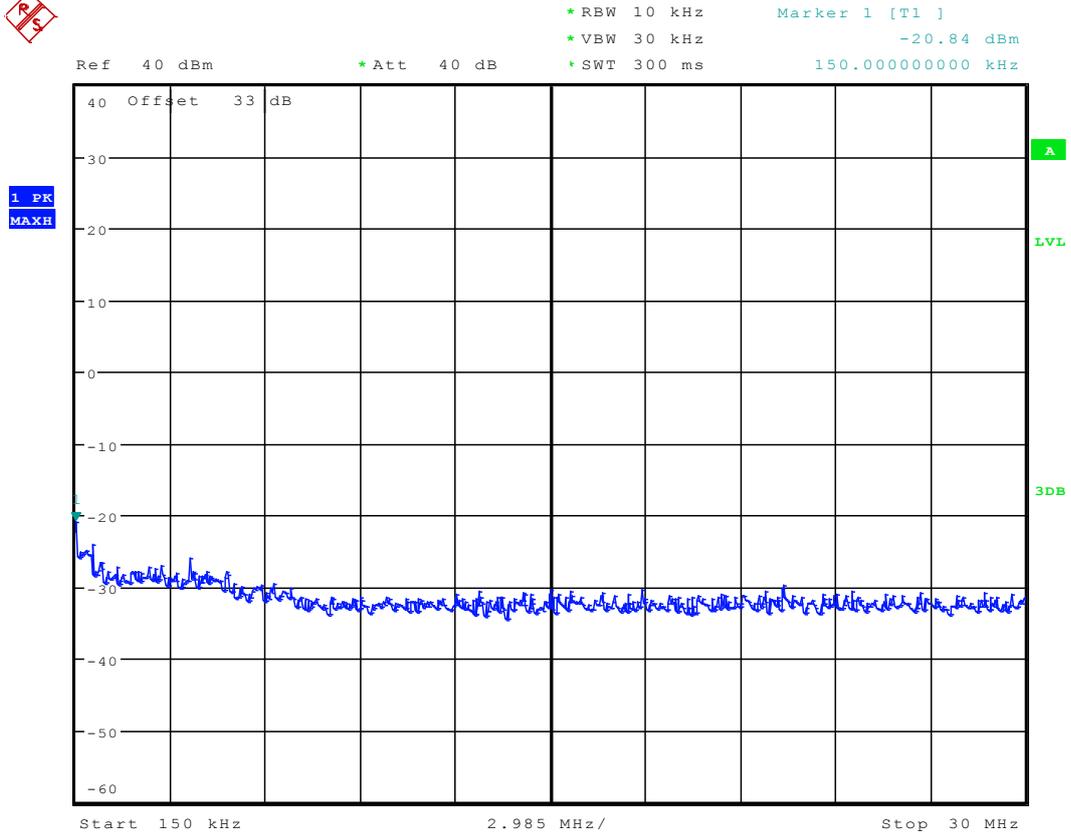
2.2 Test Mode = E-TM 1.1

2.2.1 Carrier Conf. = 1.4M

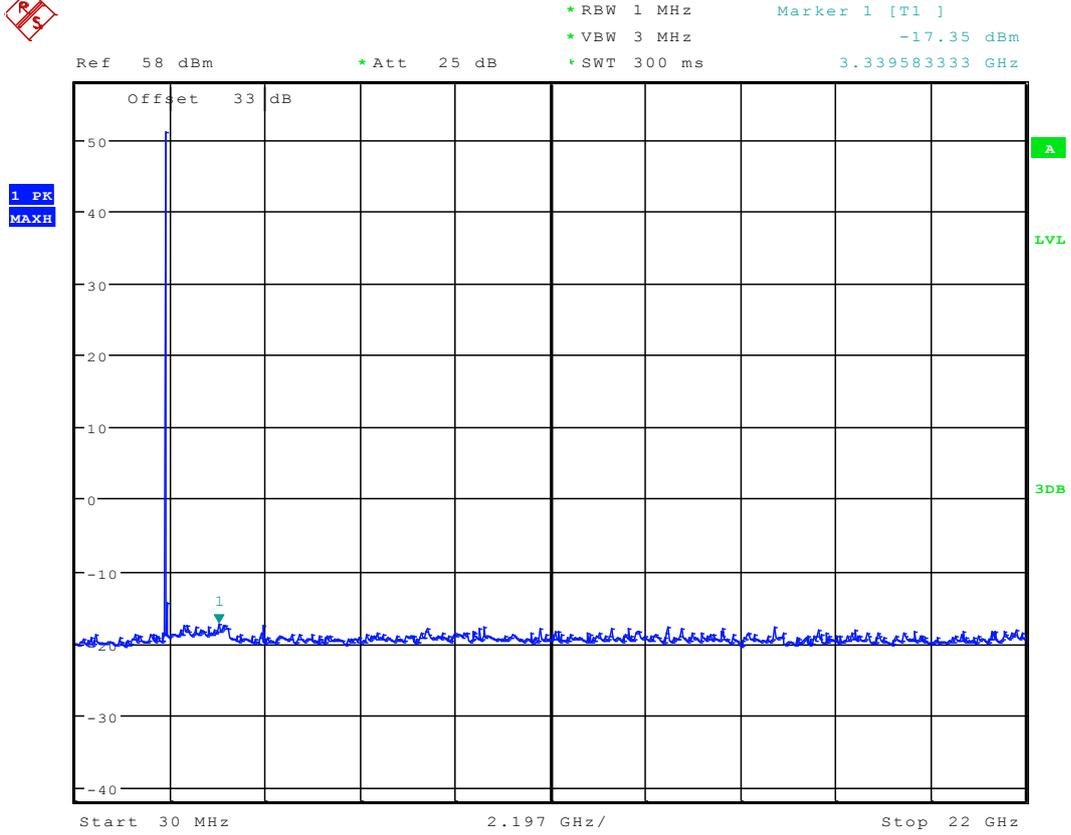
2.2.1.1 Ch. B



Date: 17.OCT.2021 11:38:00

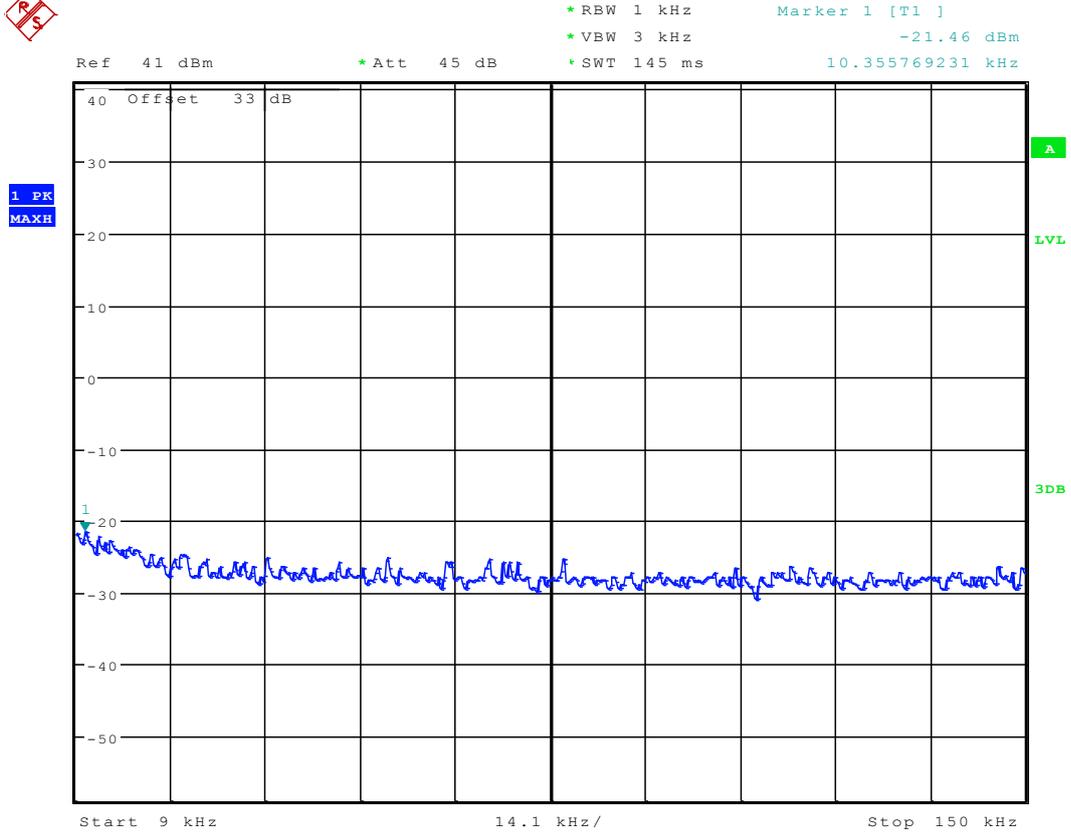


Date: 17.OCT.2021 11:40:01

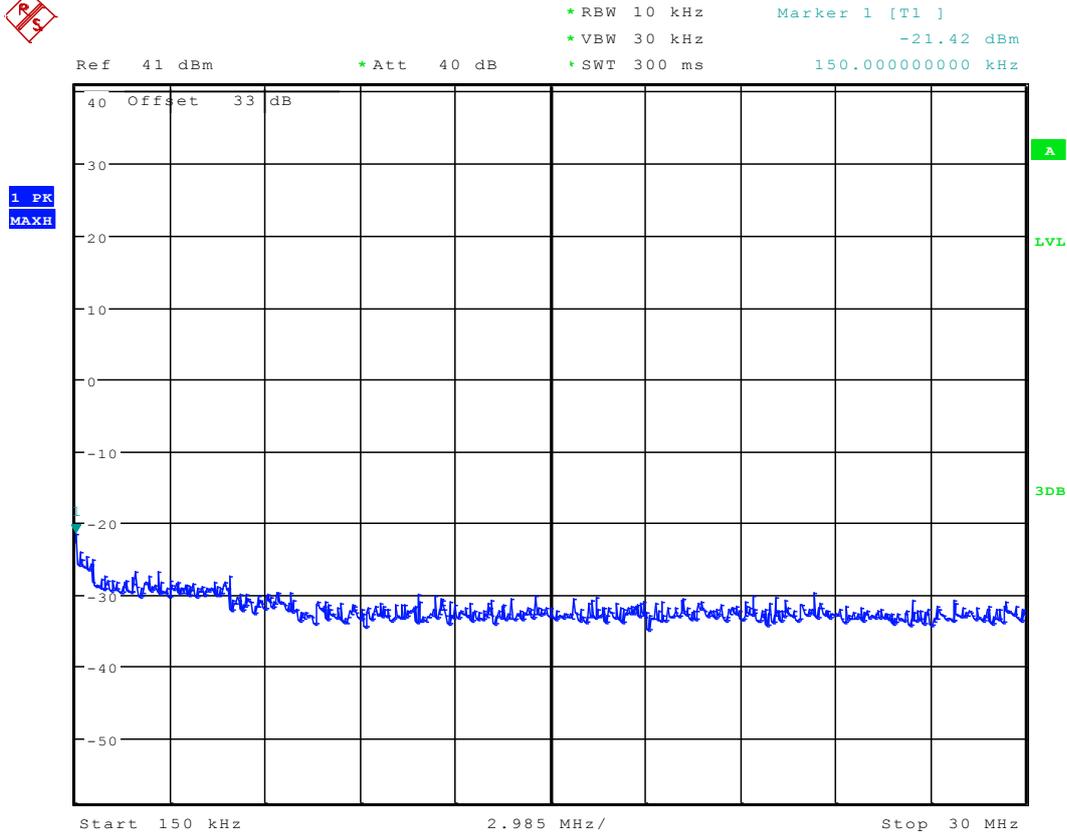


Date: 17.OCT.2021 11:41:36

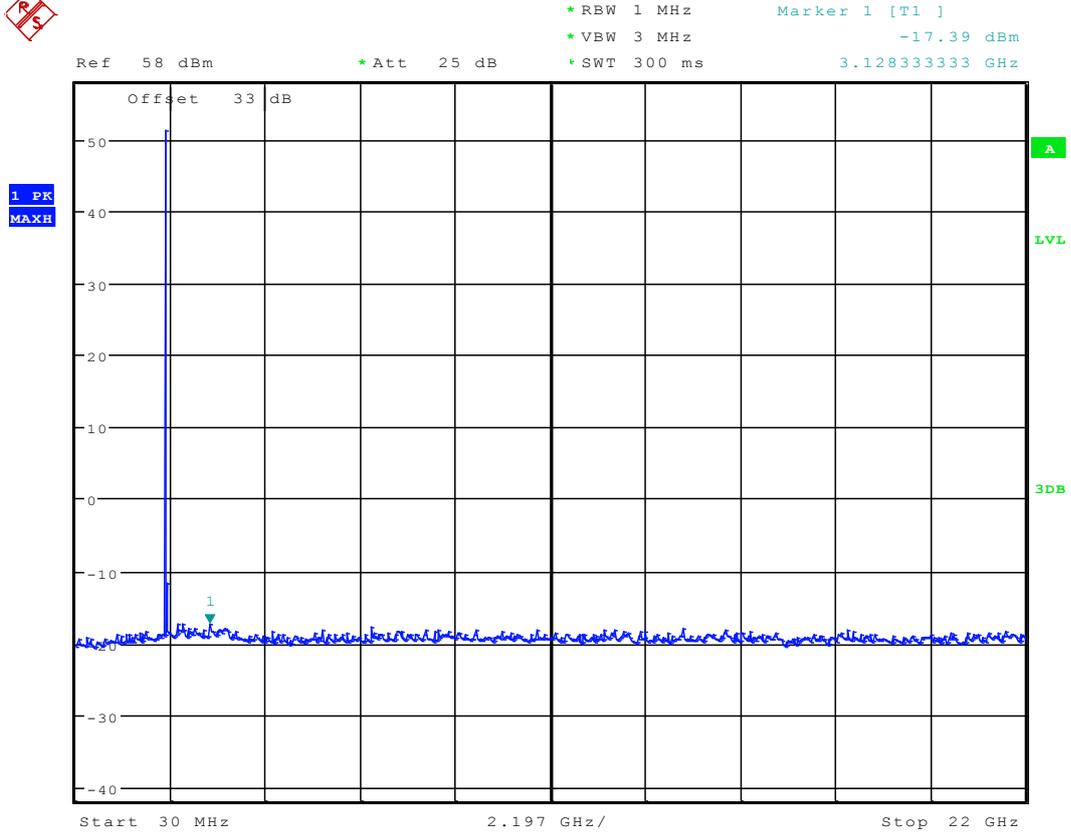
2.2.1.2 Ch. M



Date: 17.OCT.2021 11:46:10

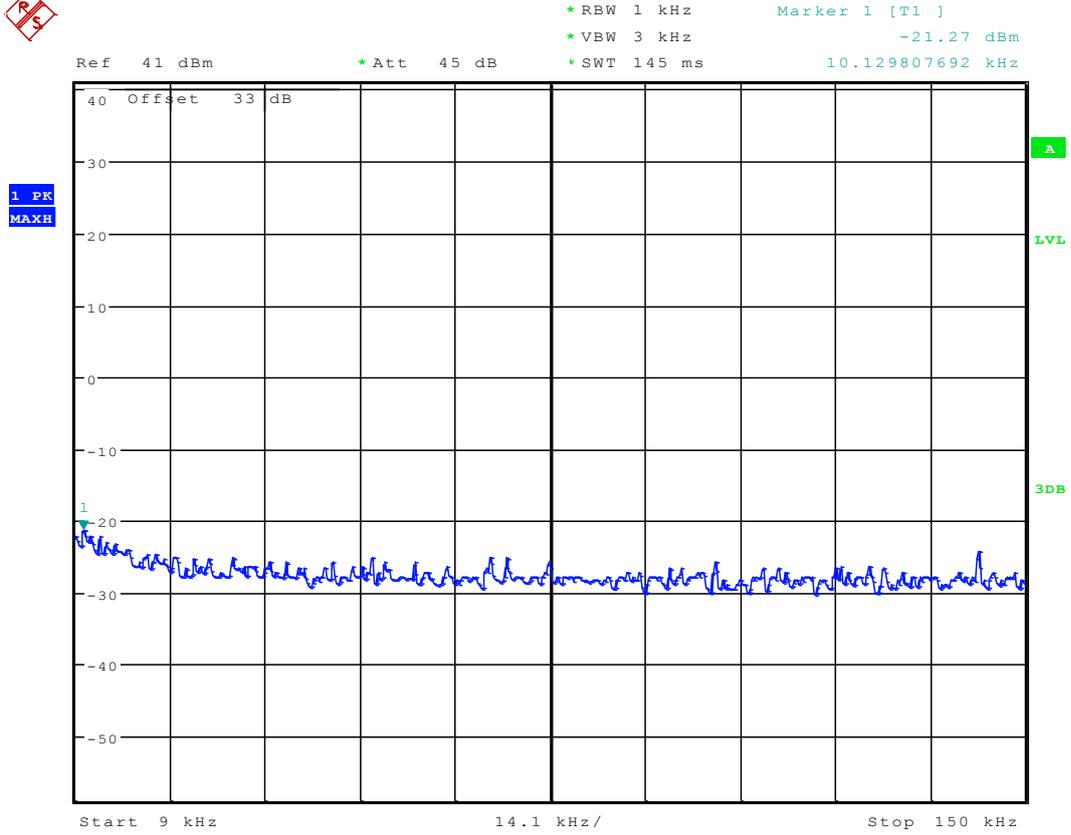


Date: 17.OCT.2021 11:45:07

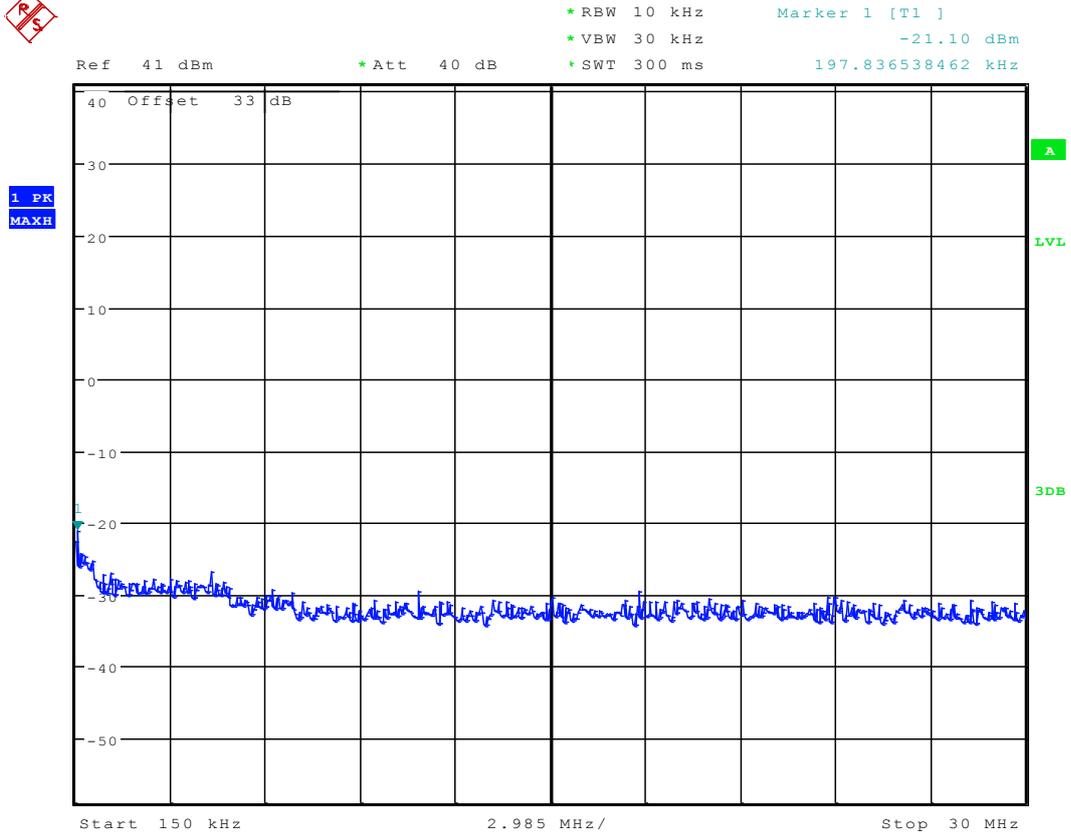


Date: 17.OCT.2021 11:43:36

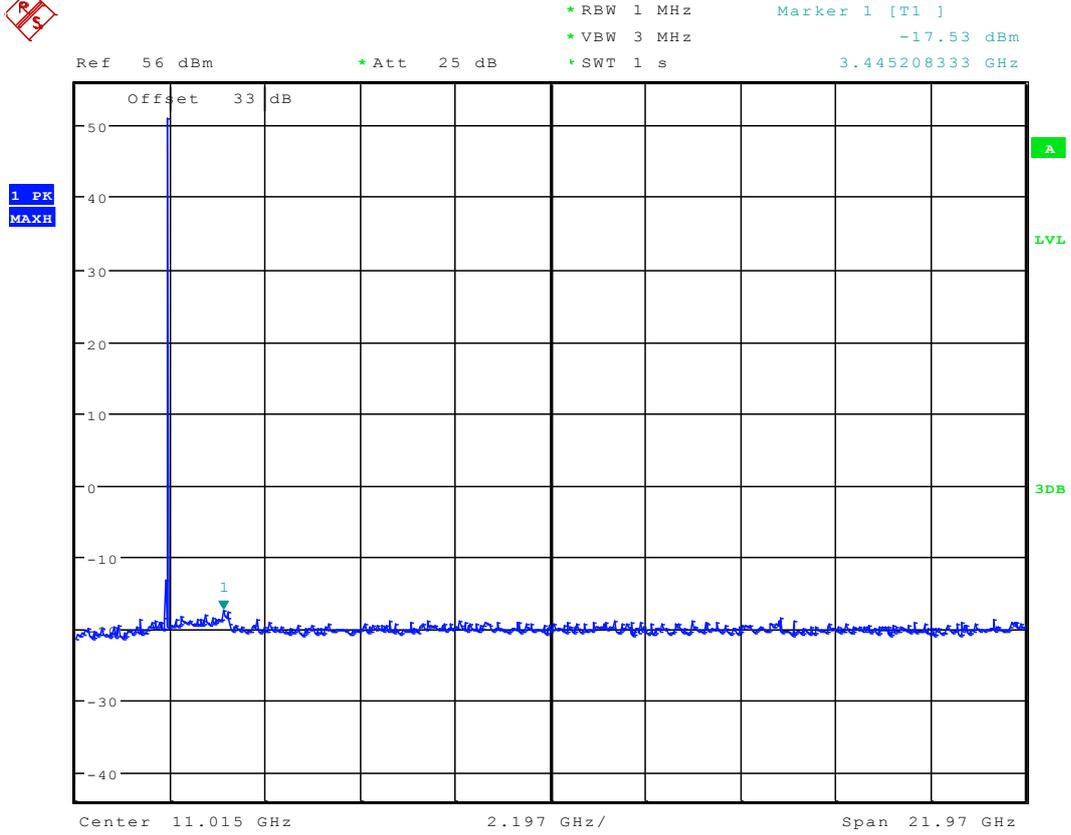
2.2.1.3 Ch. T



Date: 17.OCT.2021 11:47:34



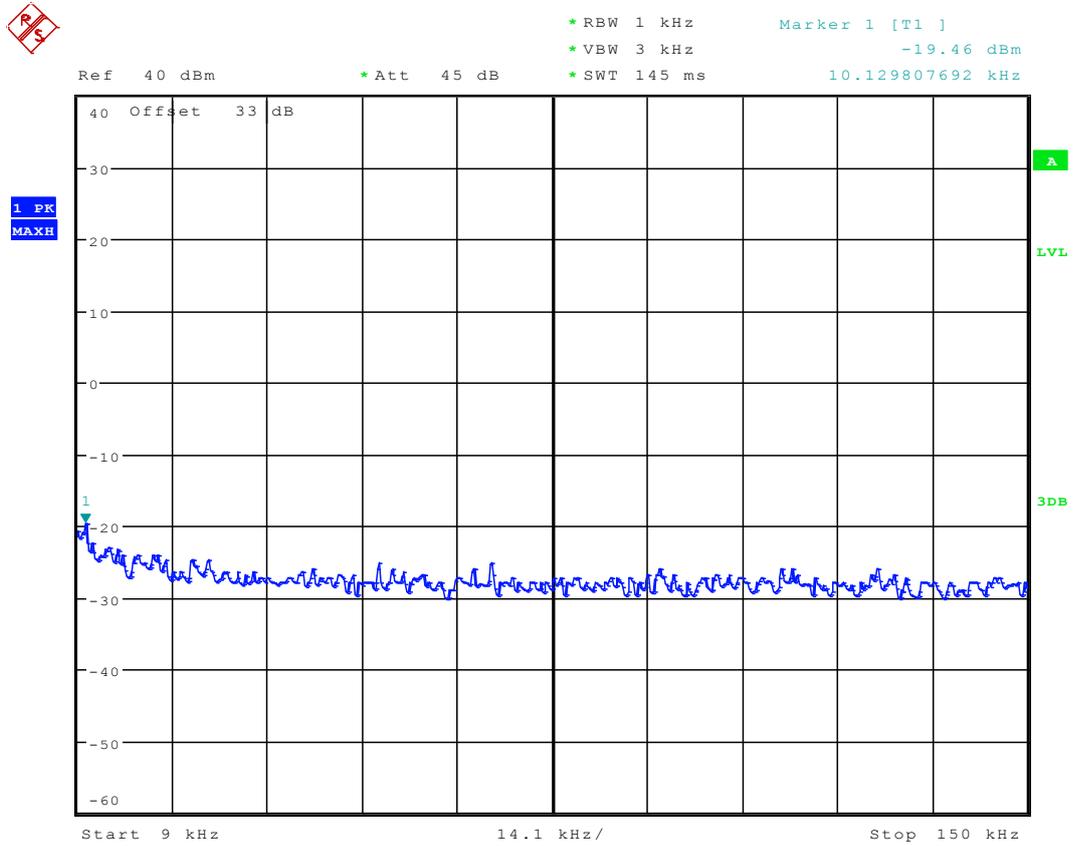
Date: 17.OCT.2021 11:48:22



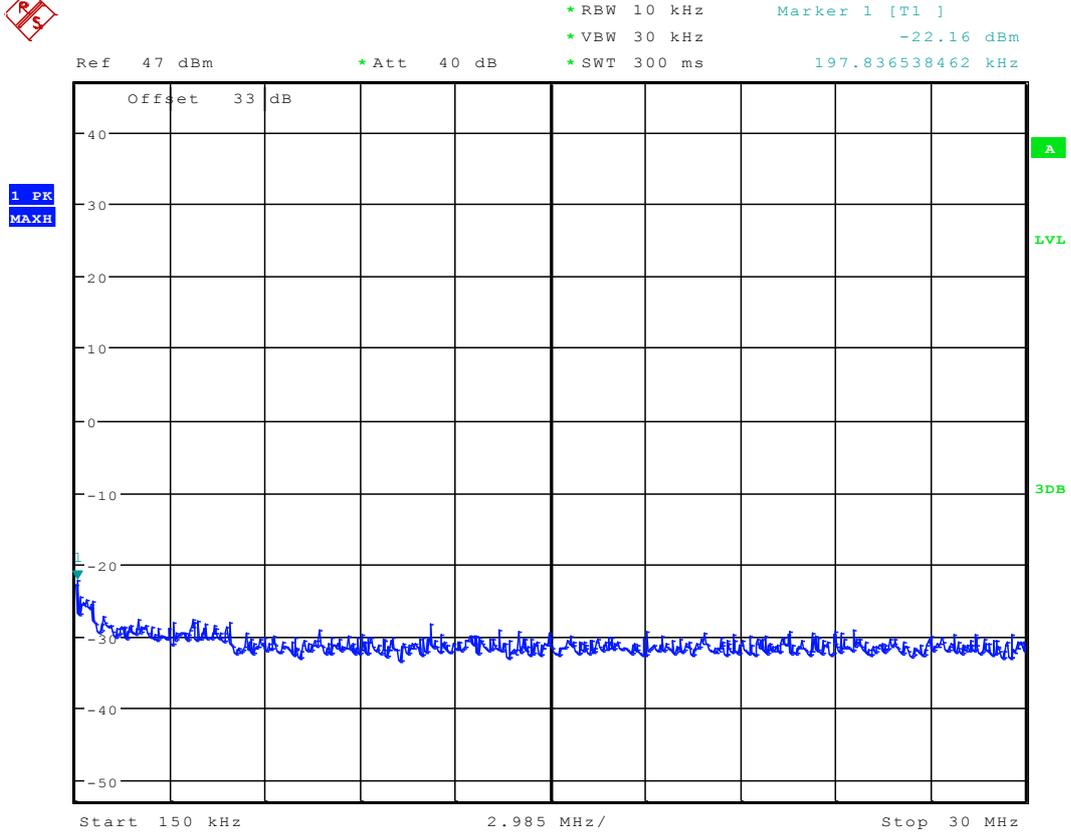
Date: 17.OCT.2021 11:49:22

2.2.2 Carrier Conf. = 3M

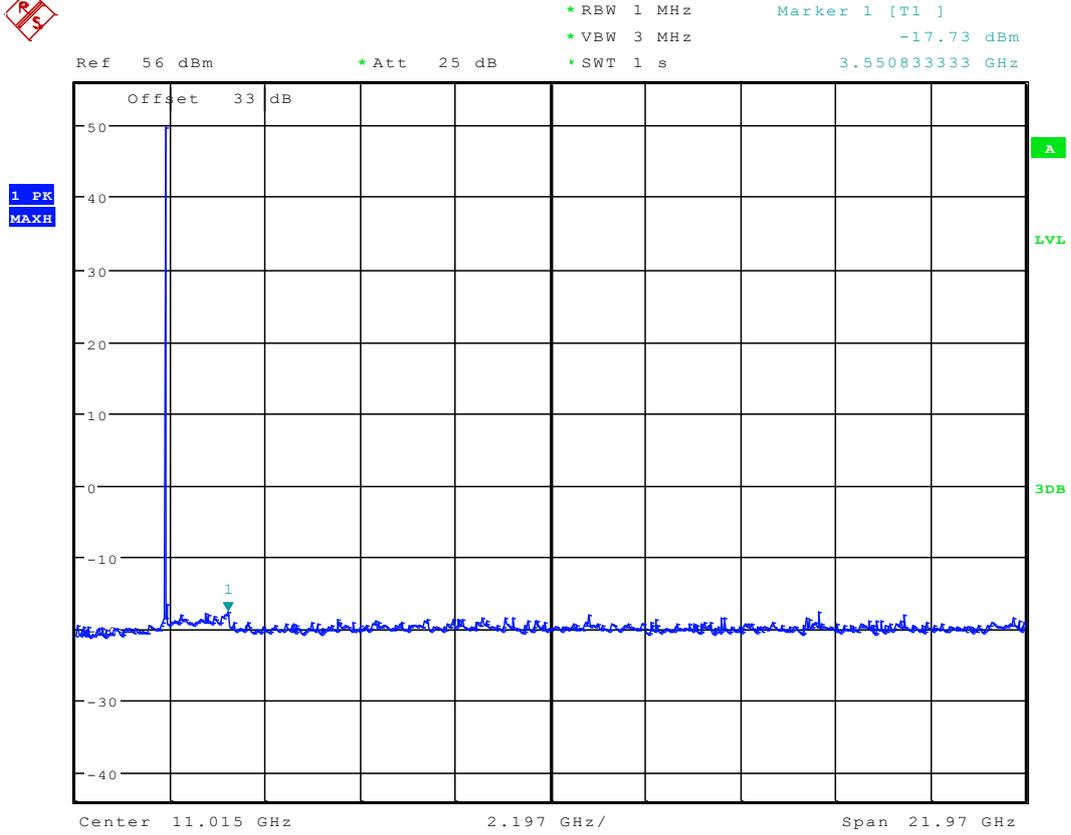
2.2.2.1 Ch. B



Date: 17.OCT.2021 11:55:11

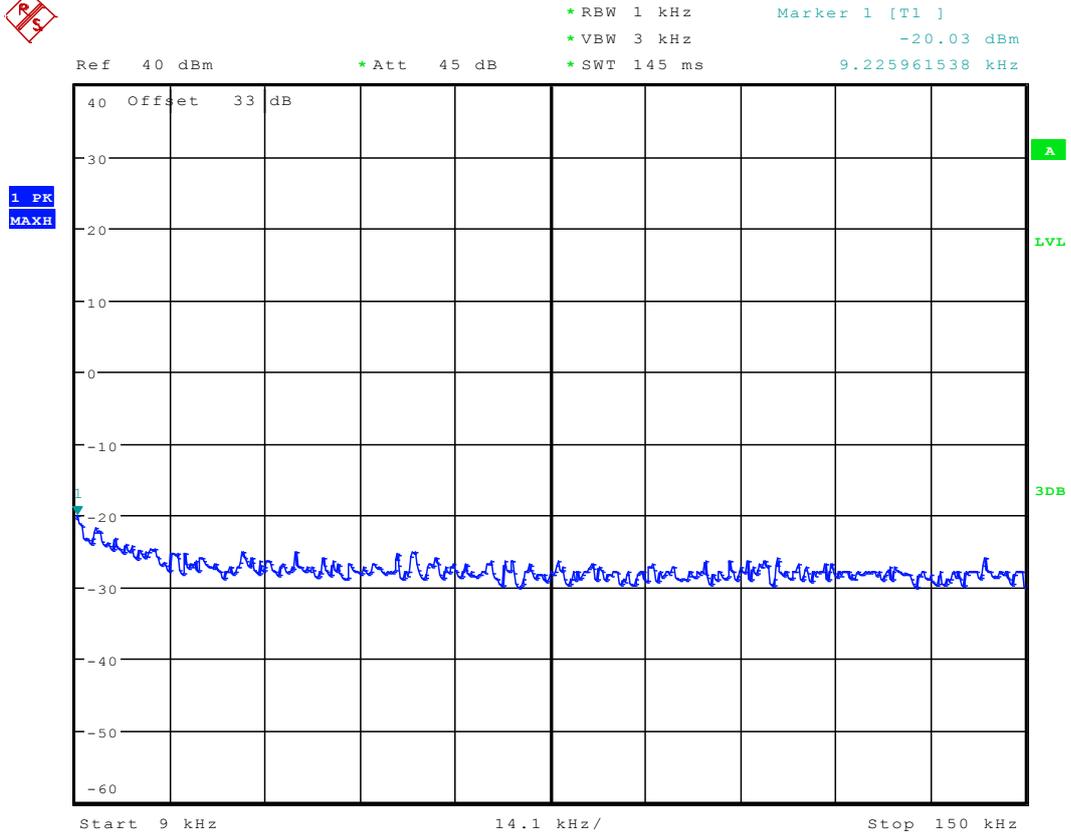


Date: 17.OCT.2021 11:53:59

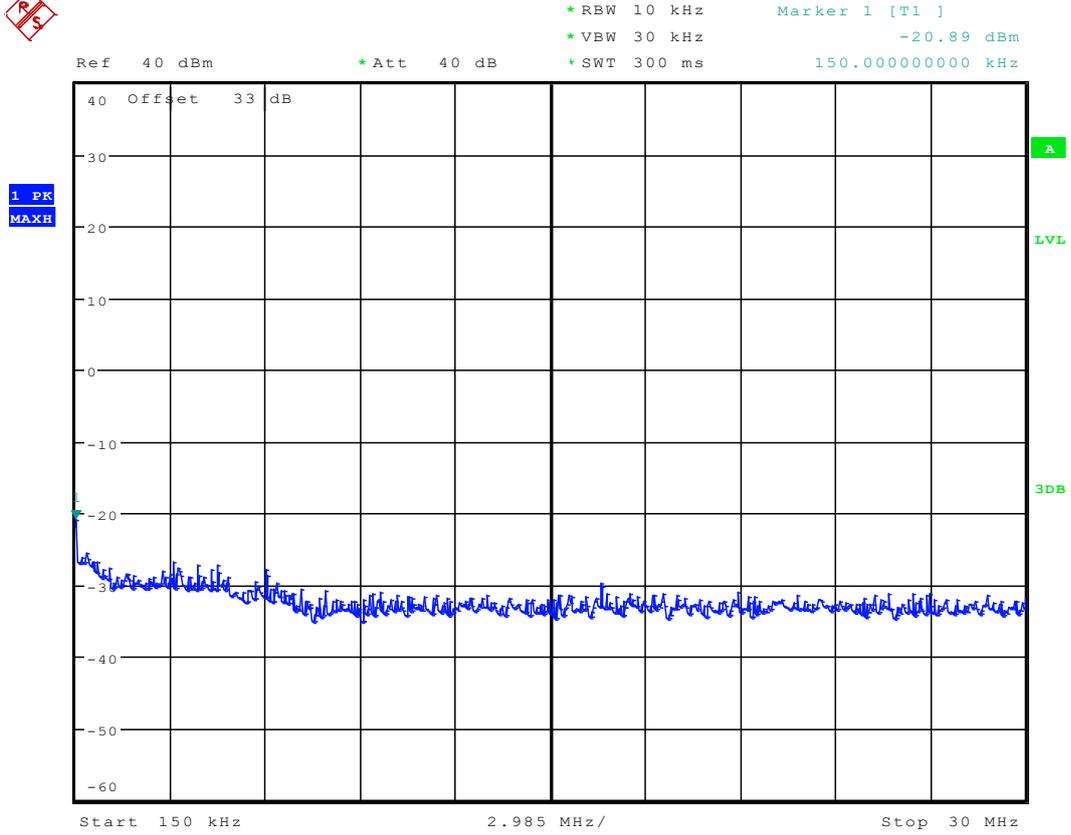


Date: 17.OCT.2021 11:51:37

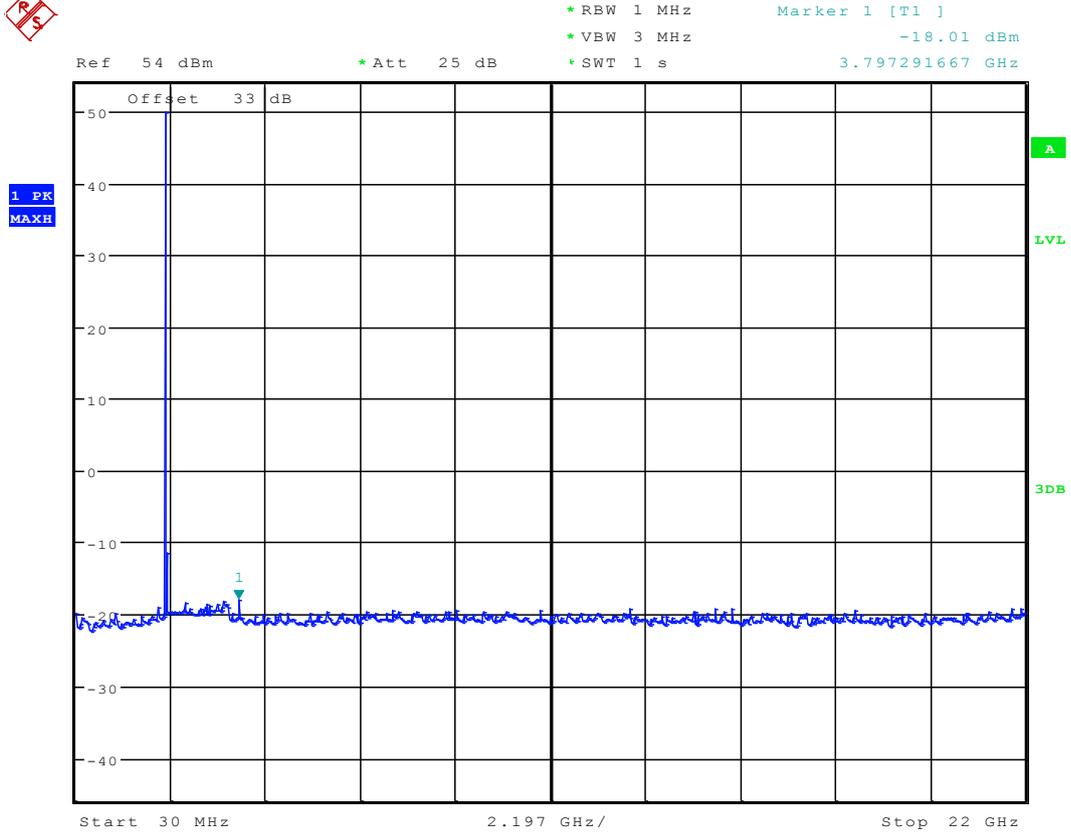
2.2.2.2 Ch. M



Date: 17.OCT.2021 11:56:22

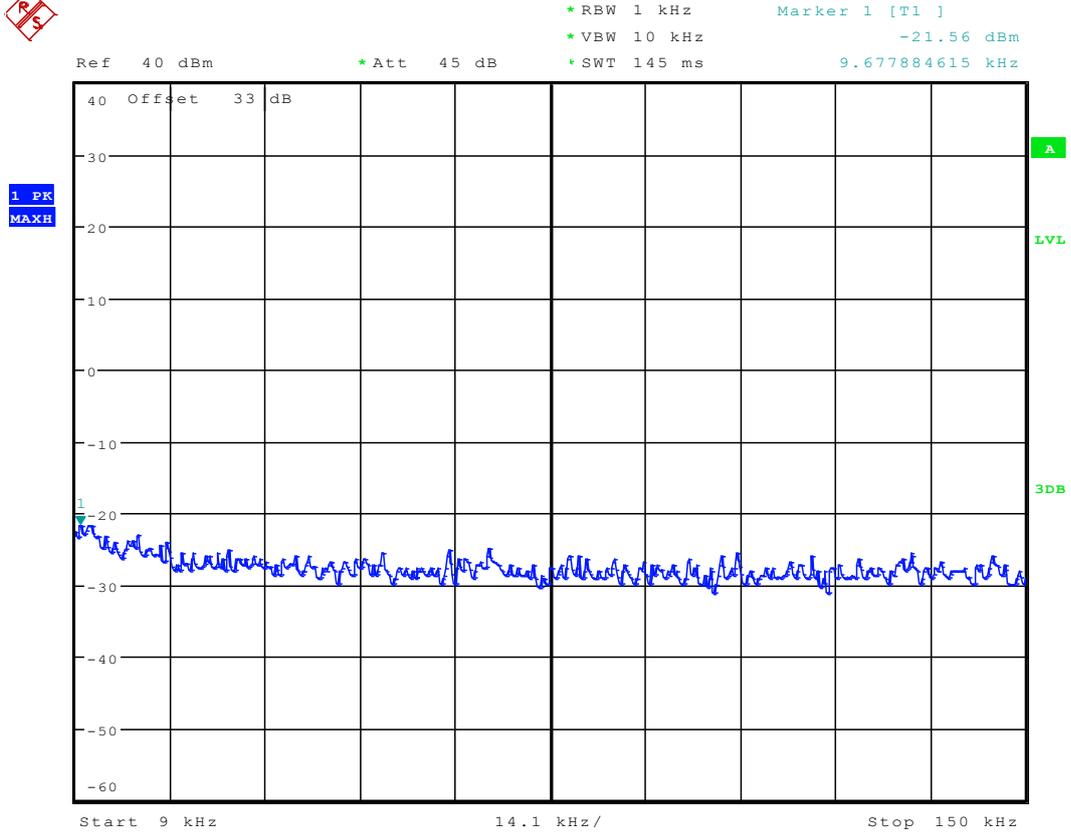


Date: 17.OCT.2021 11:57:05

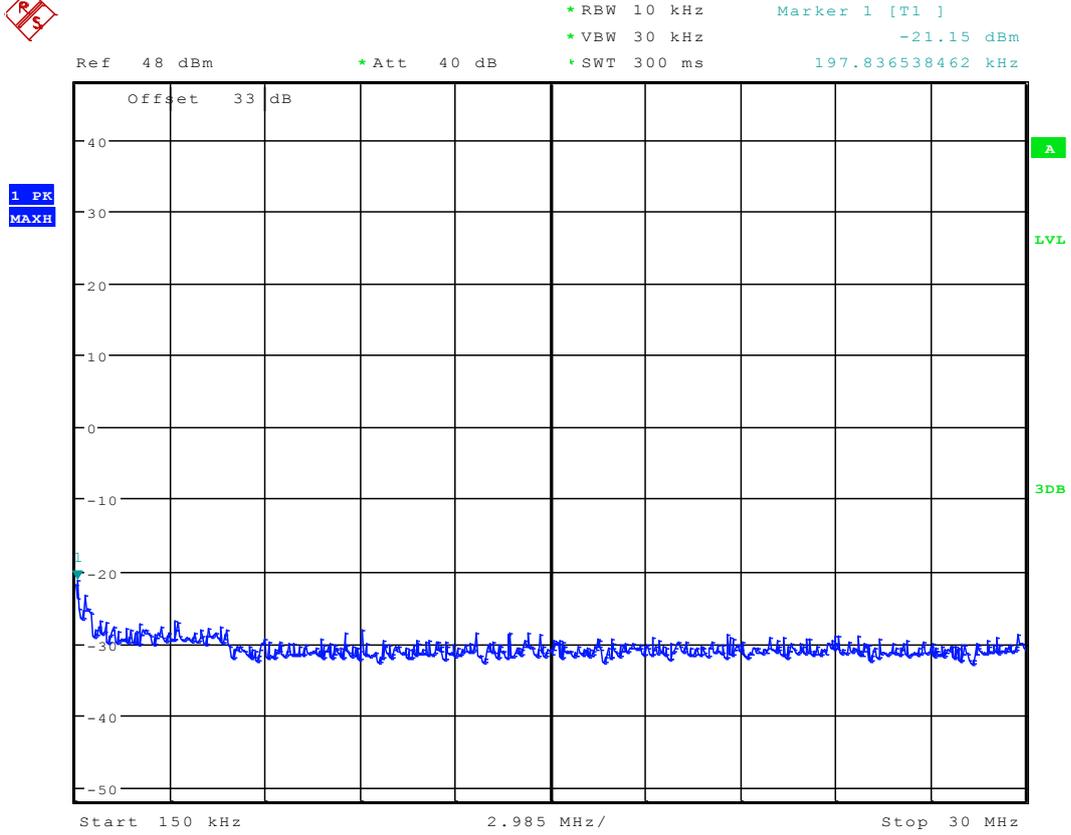


Date: 17.OCT.2021 11:57:57

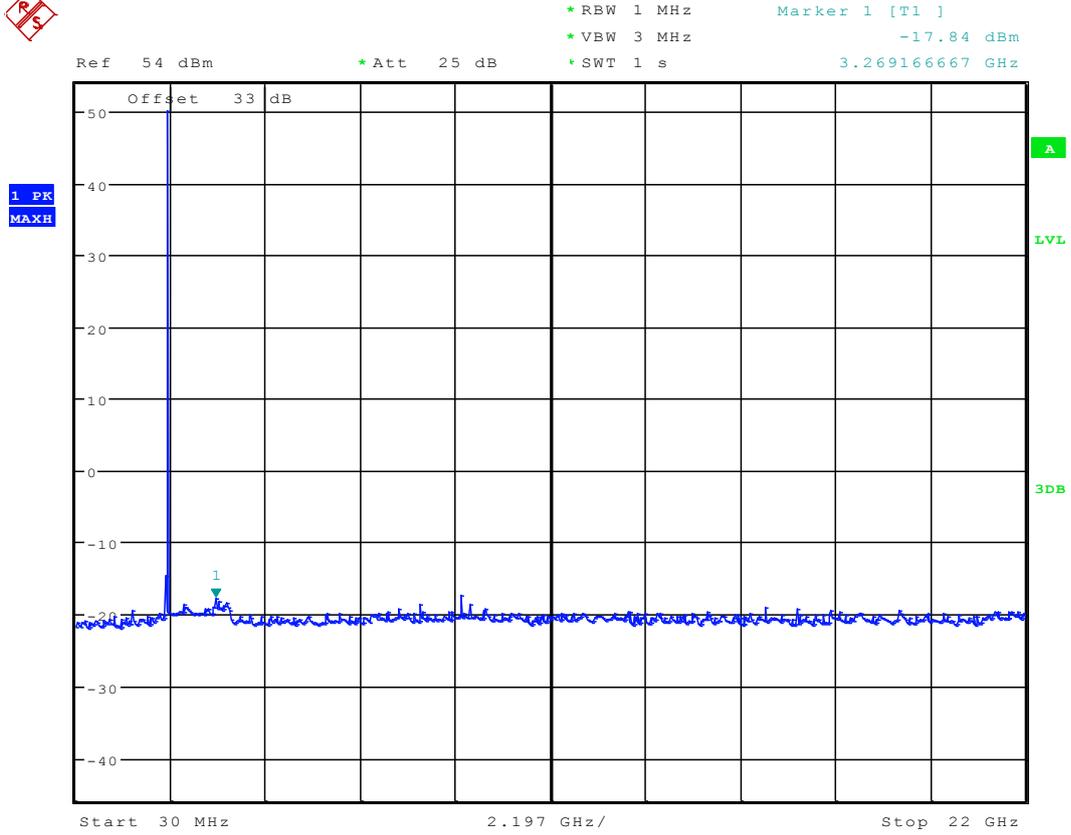
2.2.2.3 Ch. T



Date: 17.OCT.2021 12:01:44



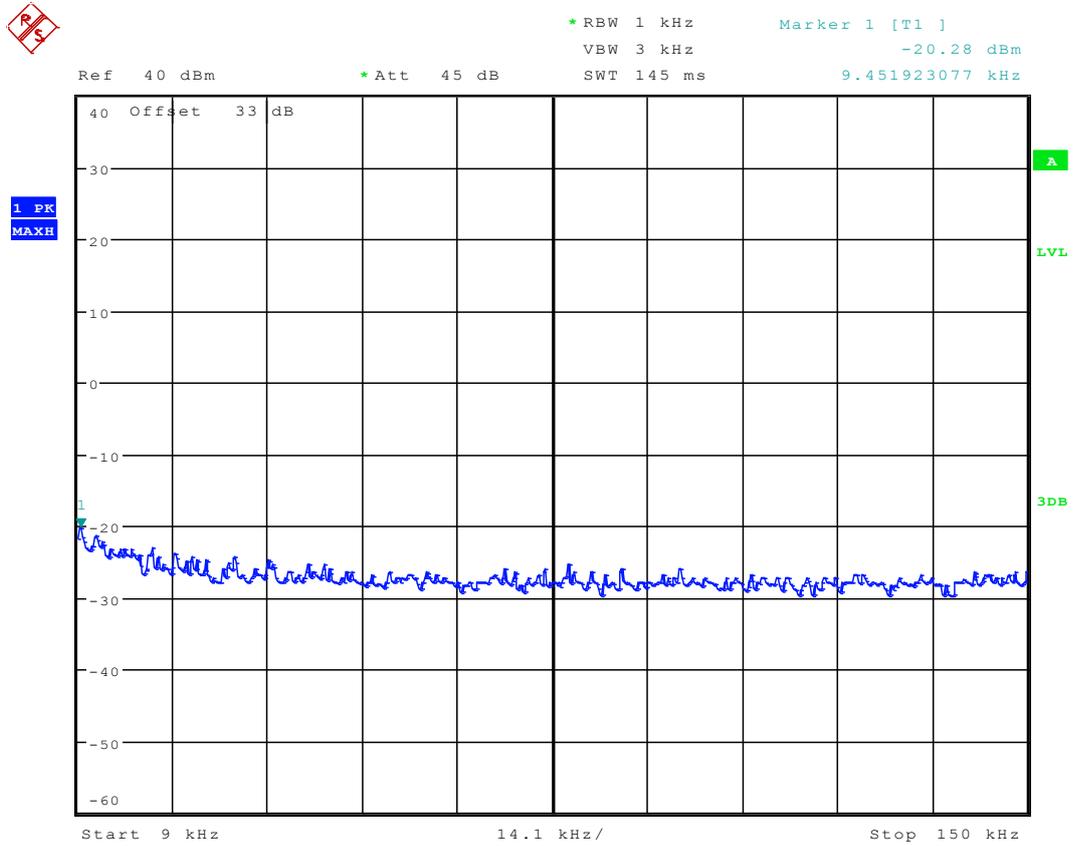
Date: 17.OCT.2021 12:00:35



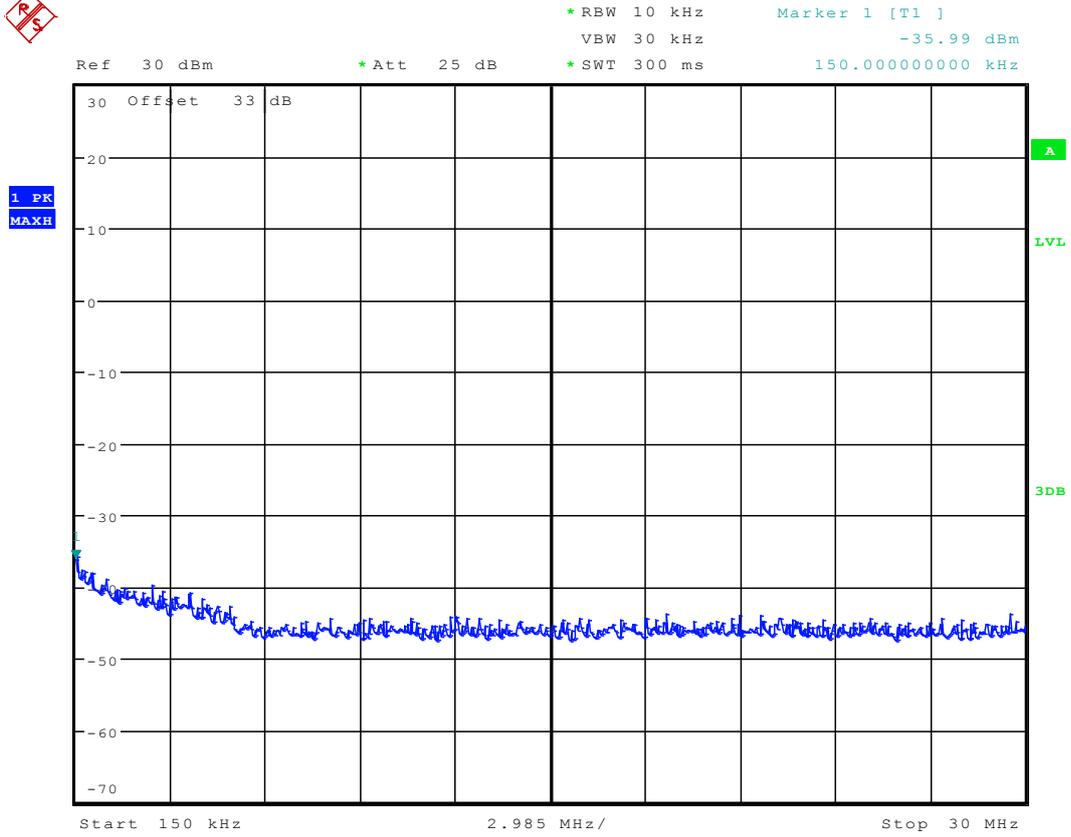
Date: 17.OCT.2021 11:59:43

2.2.3 Carrier Conf. = 5M

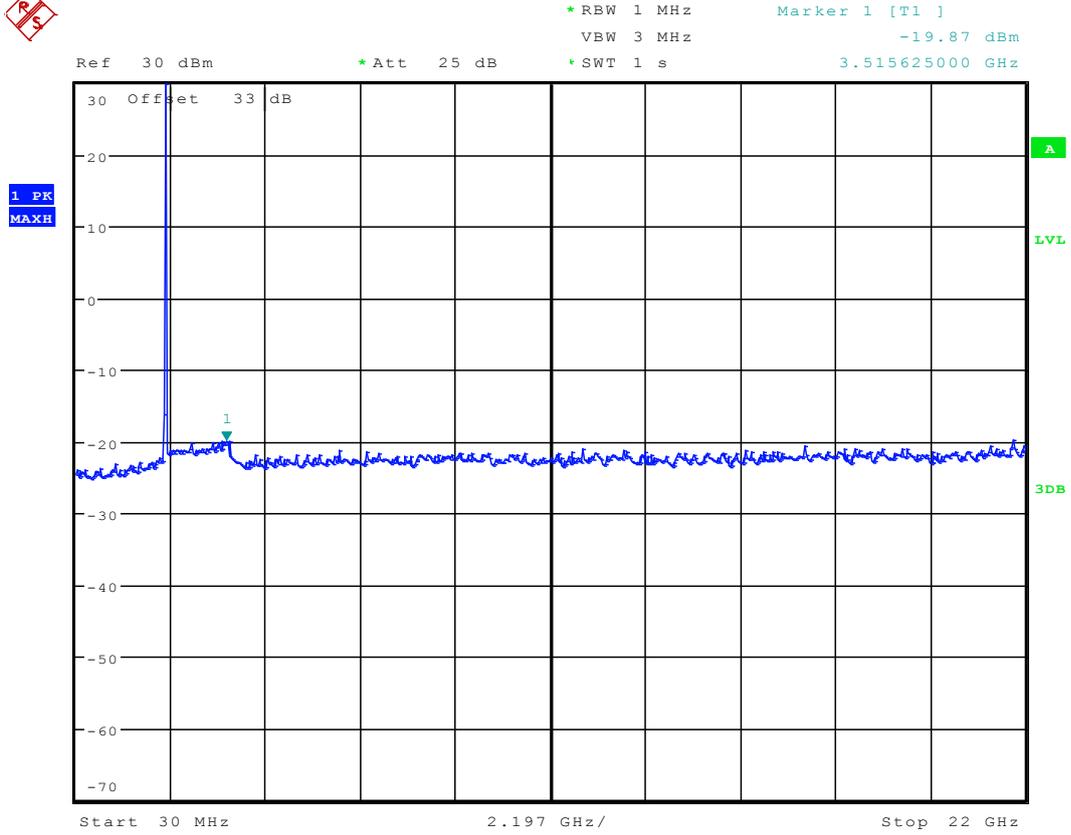
2.2.3.1 Ch. B



Date: 11.OCT.2021 17:13:20

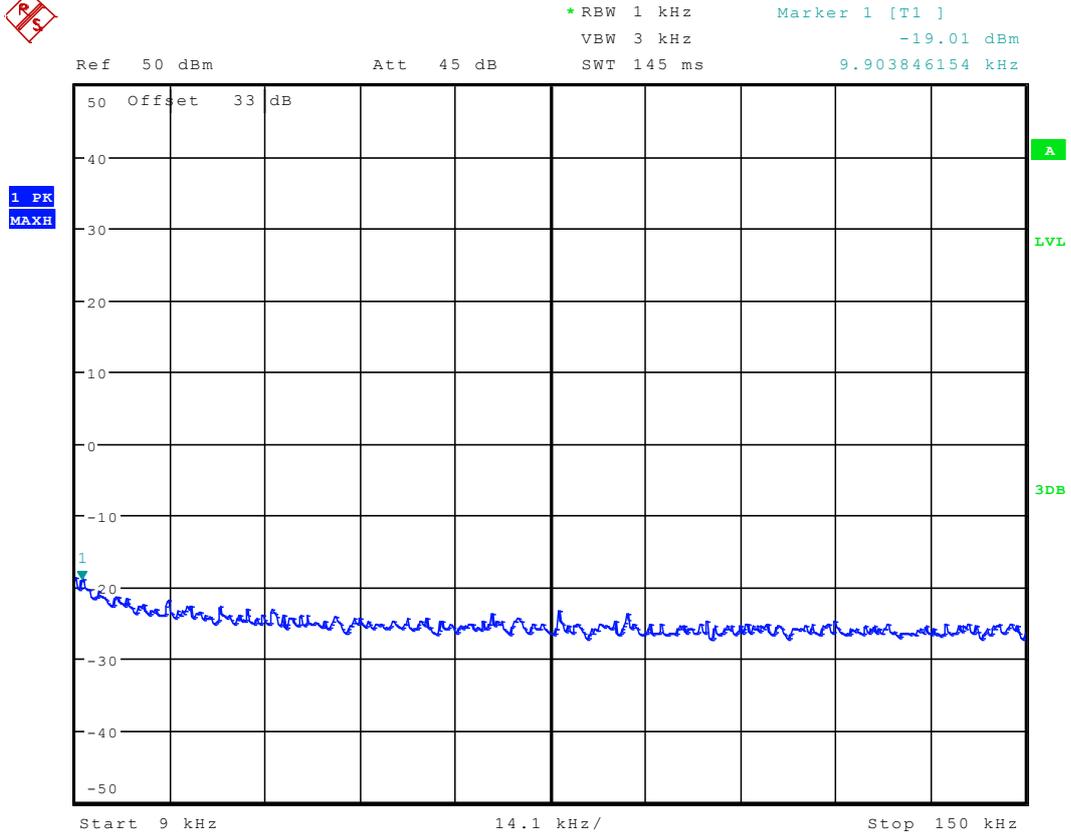


Date: 11.OCT.2021 17:07:35

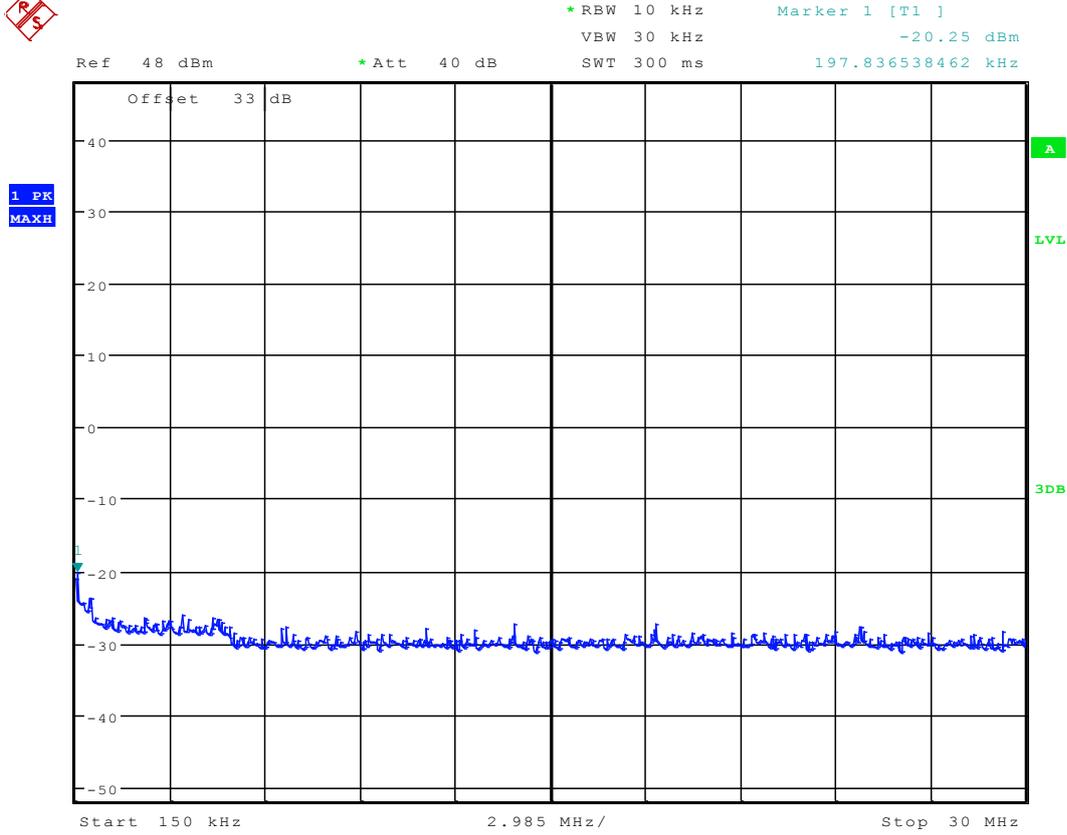


Date: 11.OCT.2021 17:05:23

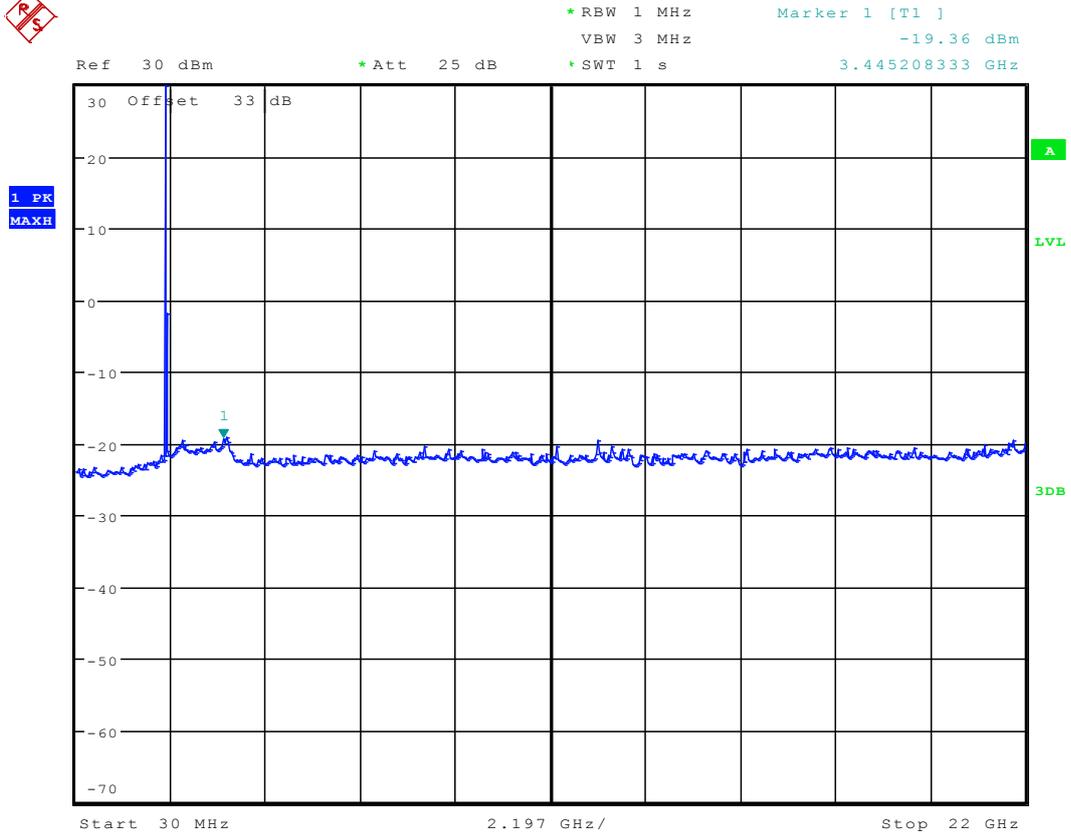
2.2.3.2 Ch. M



Date: 11.OCT.2021 16:26:45

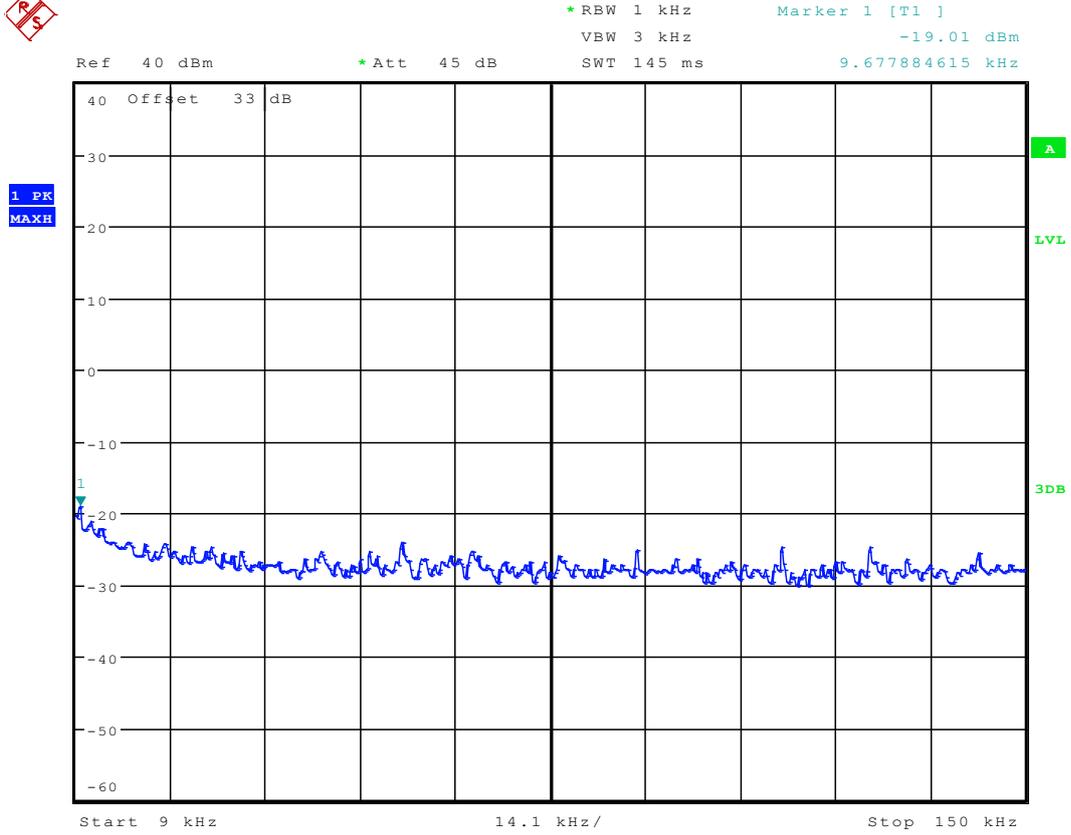


Date: 14.OCT.2021 17:44:01



Date: 11.OCT.2021 16:59:22

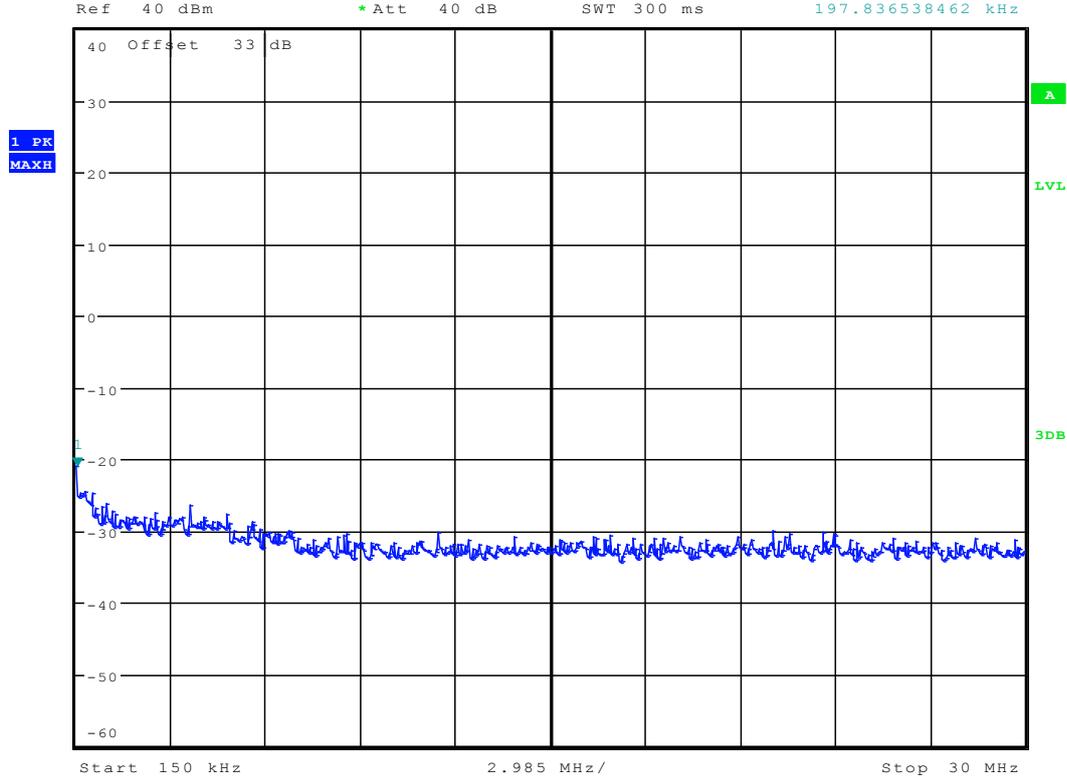
2.2.3.3 Ch. T



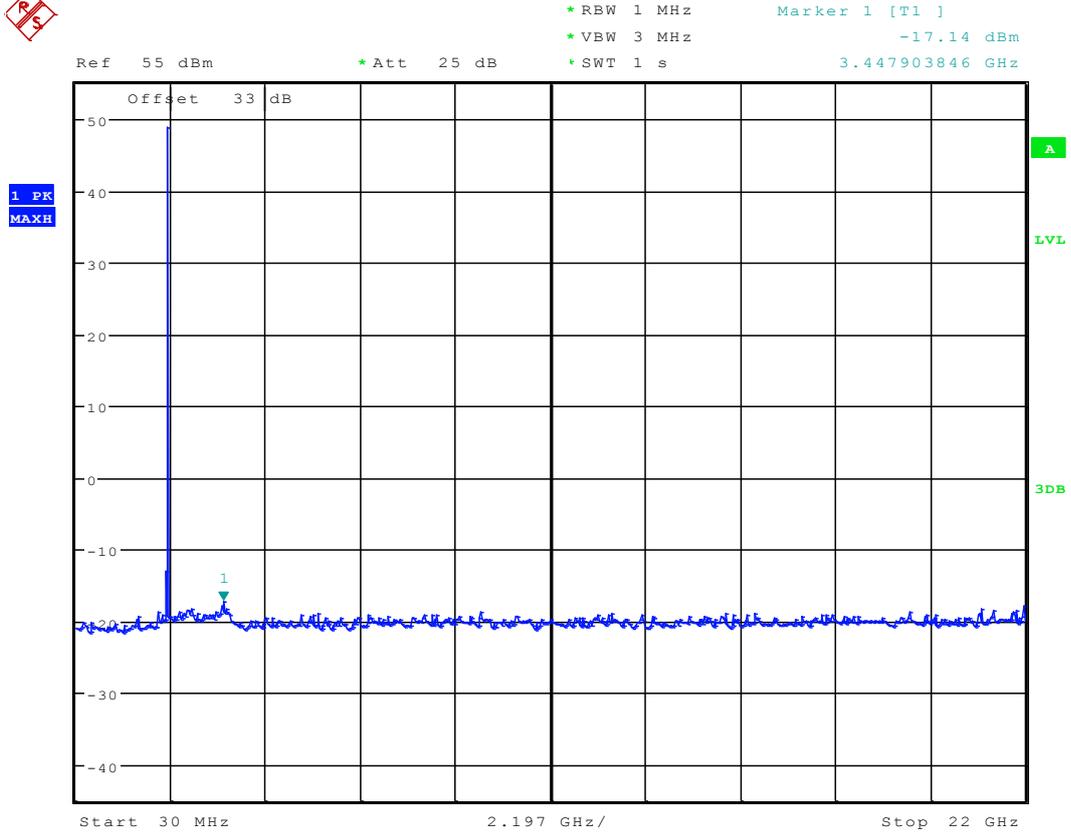
Date: 11.OCT.2021 17:15:09



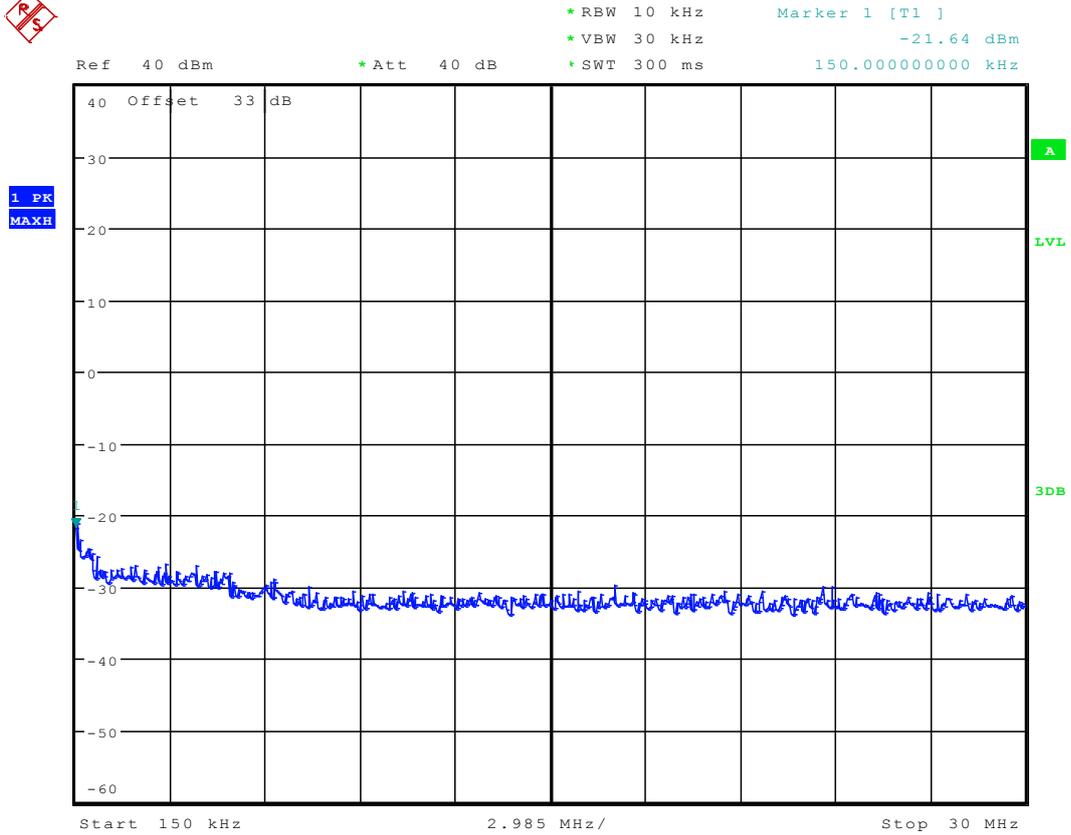
*RBW 10 kHz Marker 1 [T1]
VBW 30 kHz -21.05 dBm
SWT 300 ms 197.836538462 kHz



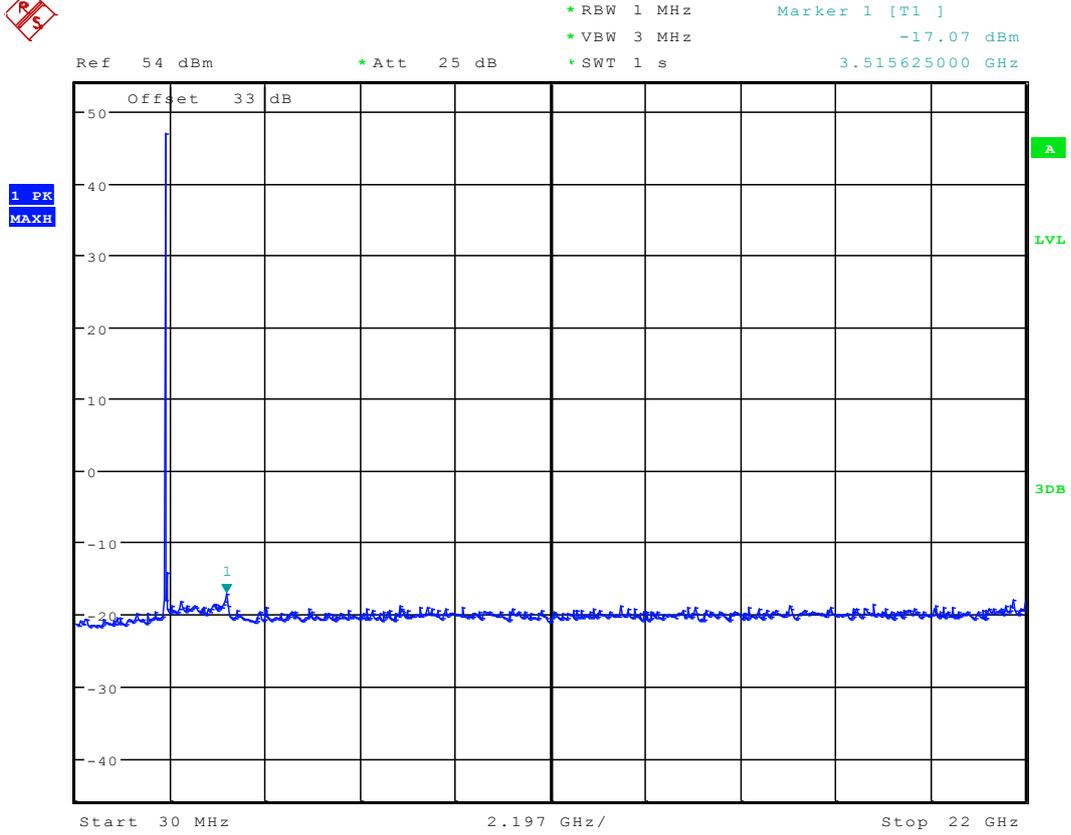
Date: 11.OCT.2021 17:16:42



Date: 21.OCT.2021 11:46:34

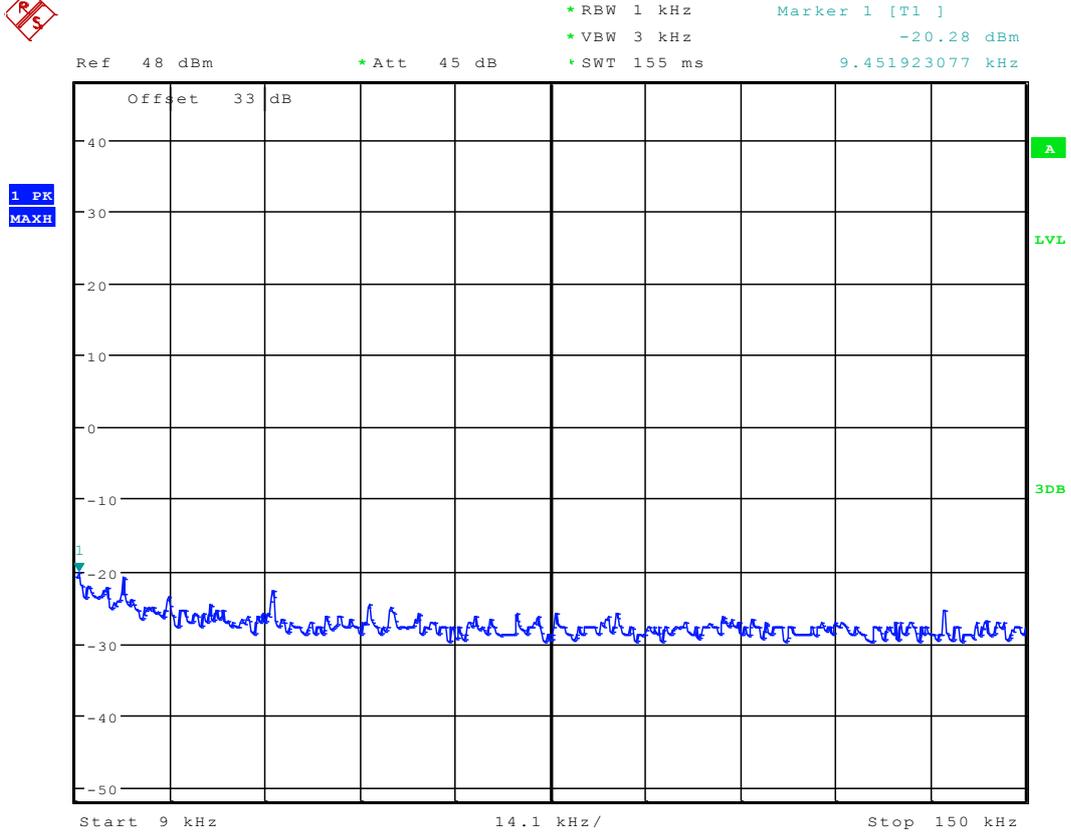


Date: 11.OCT.2021 17:50:11

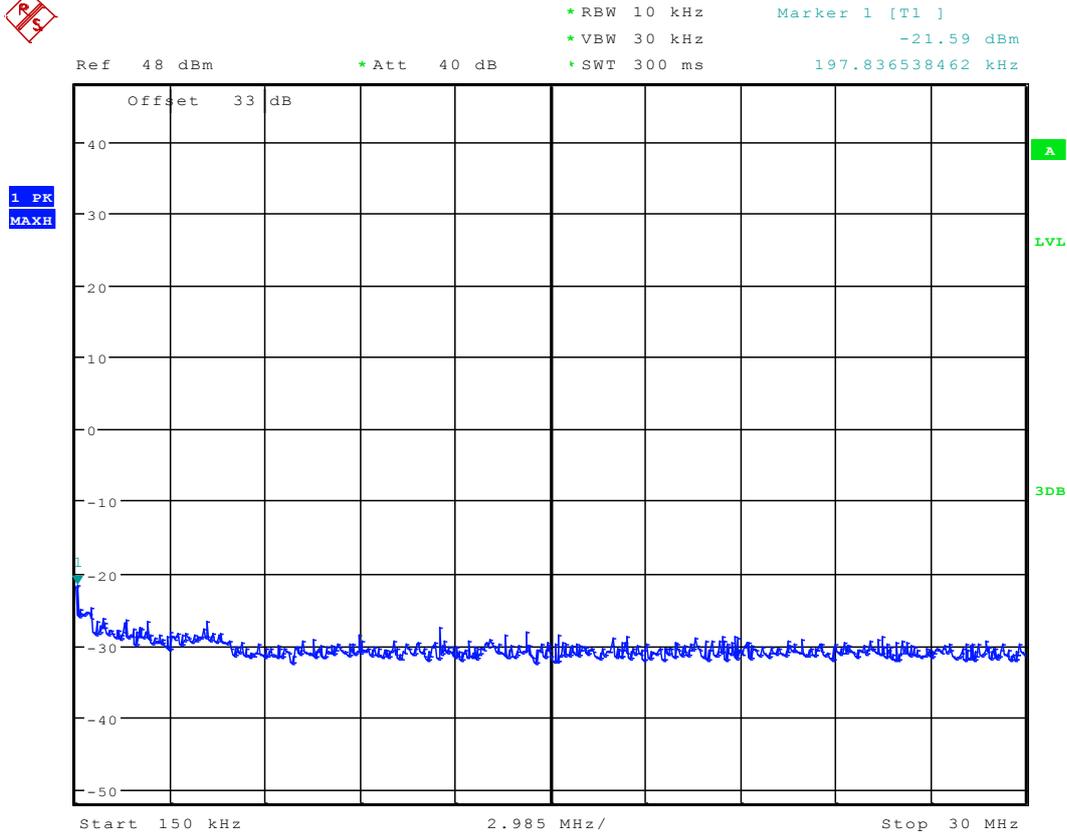


Date: 11.OCT.2021 17:52:15

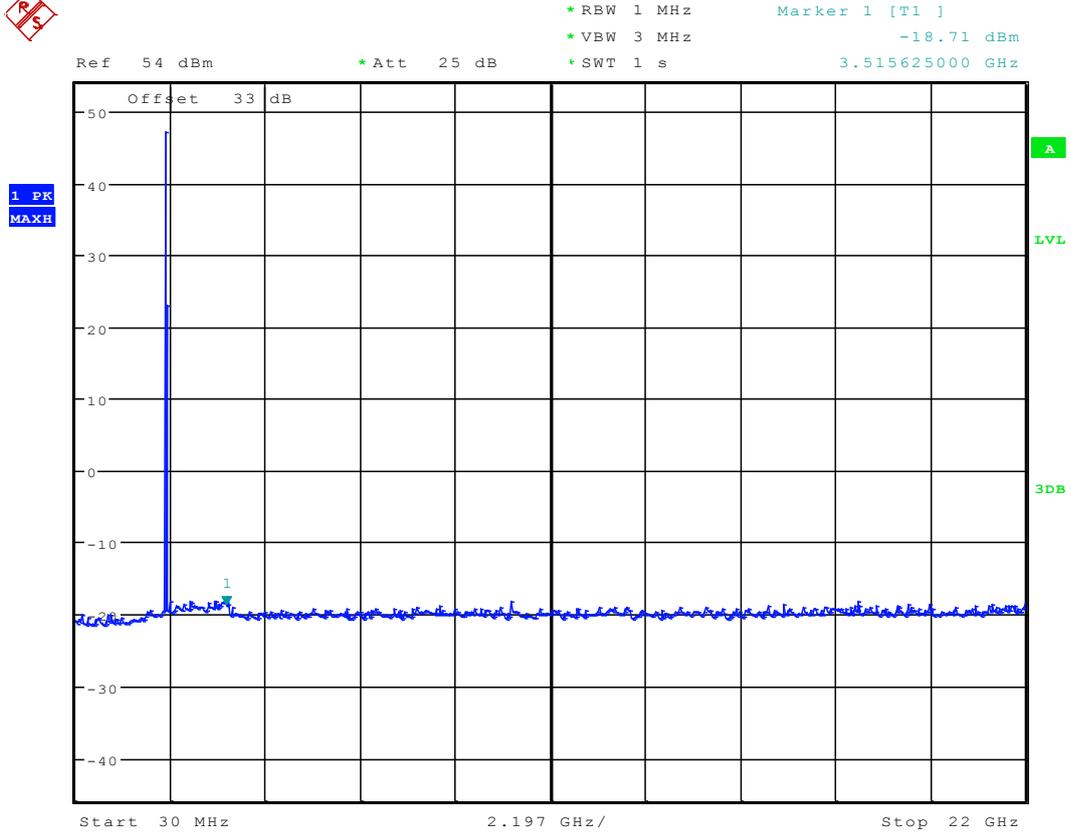
2.2.4.2 Ch. M



Date: 11.OCT.2021 18:49:34

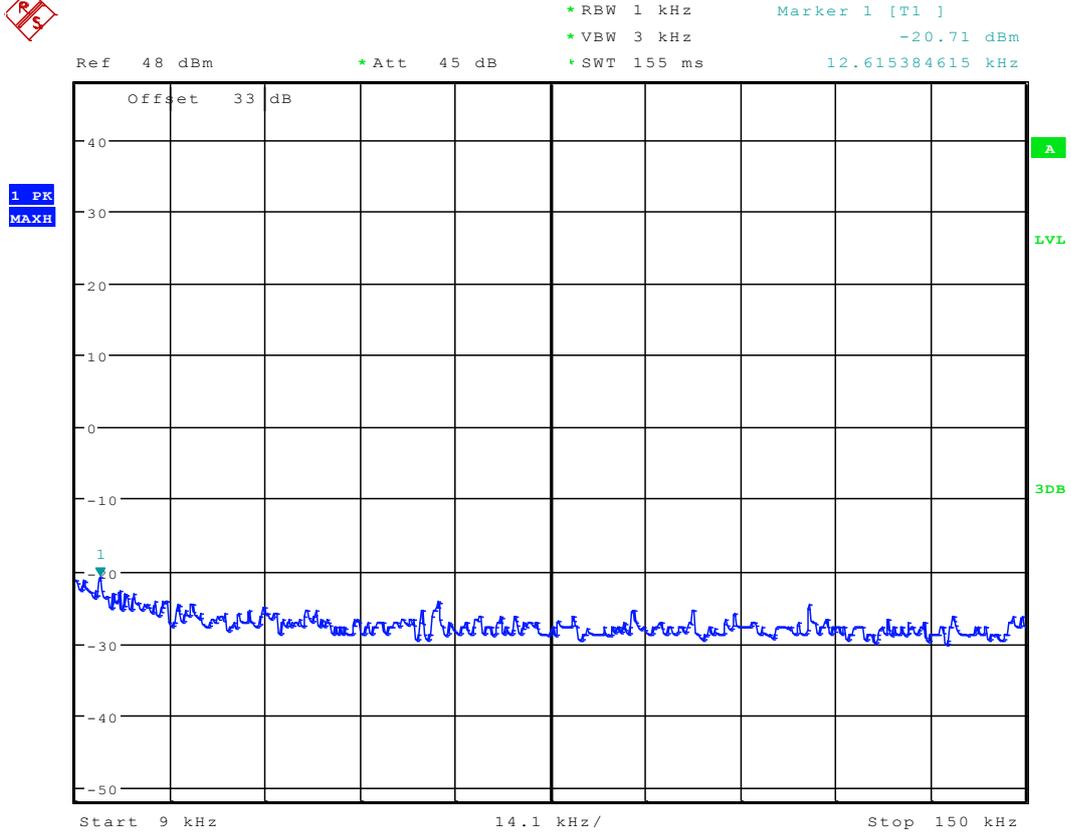


Date: 11.OCT.2021 18:48:19

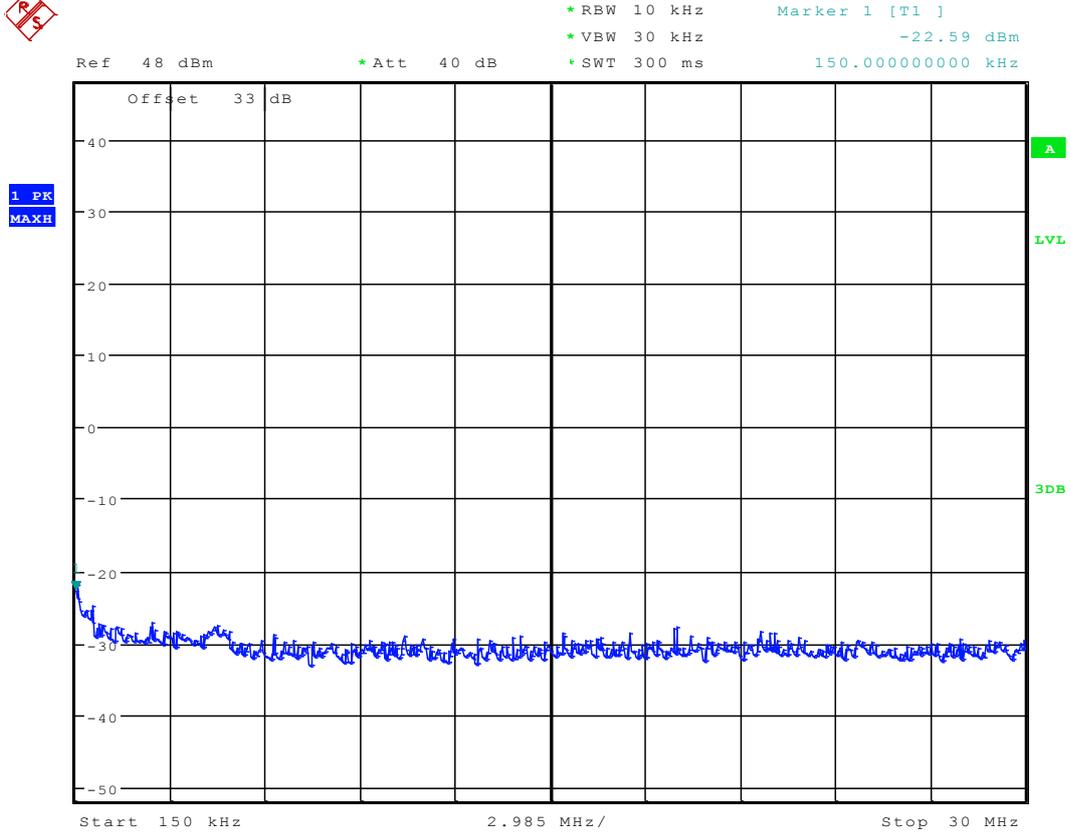


Date: 11.OCT.2021 18:46:50

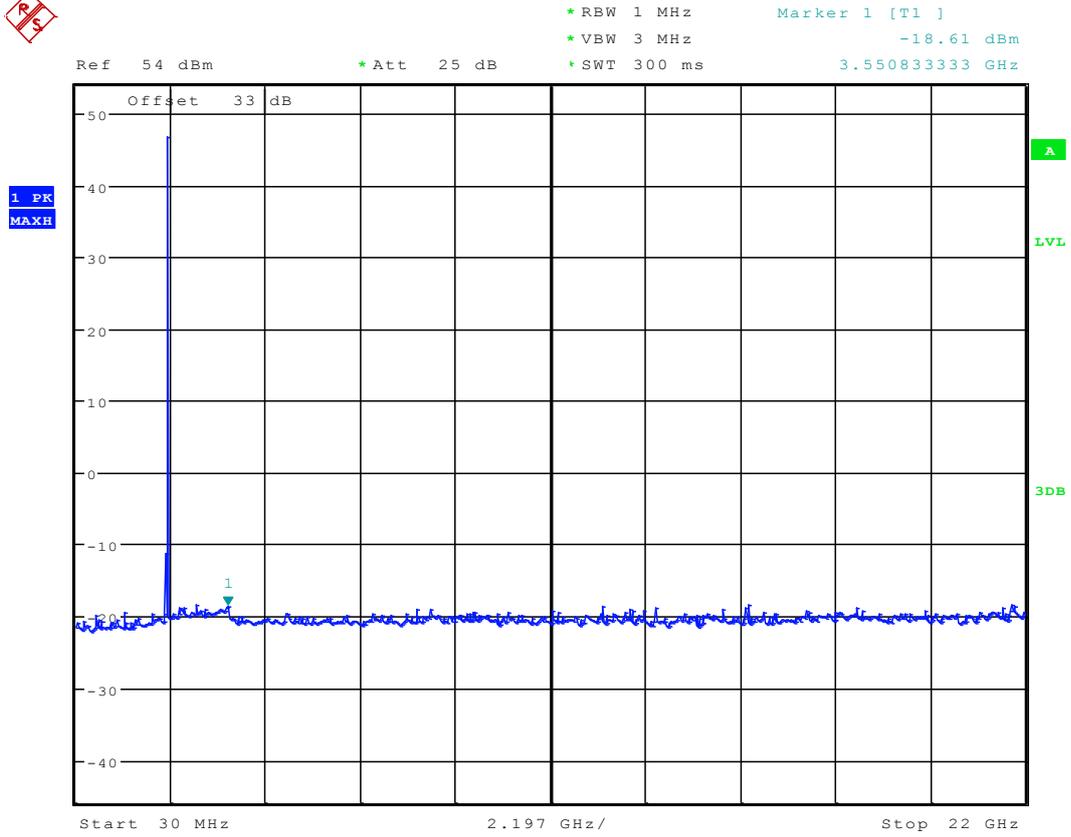
2.2.4.3 Ch. T



Date: 11.OCT.2021 20:17:54



Date: 11.OCT.2021 20:18:53

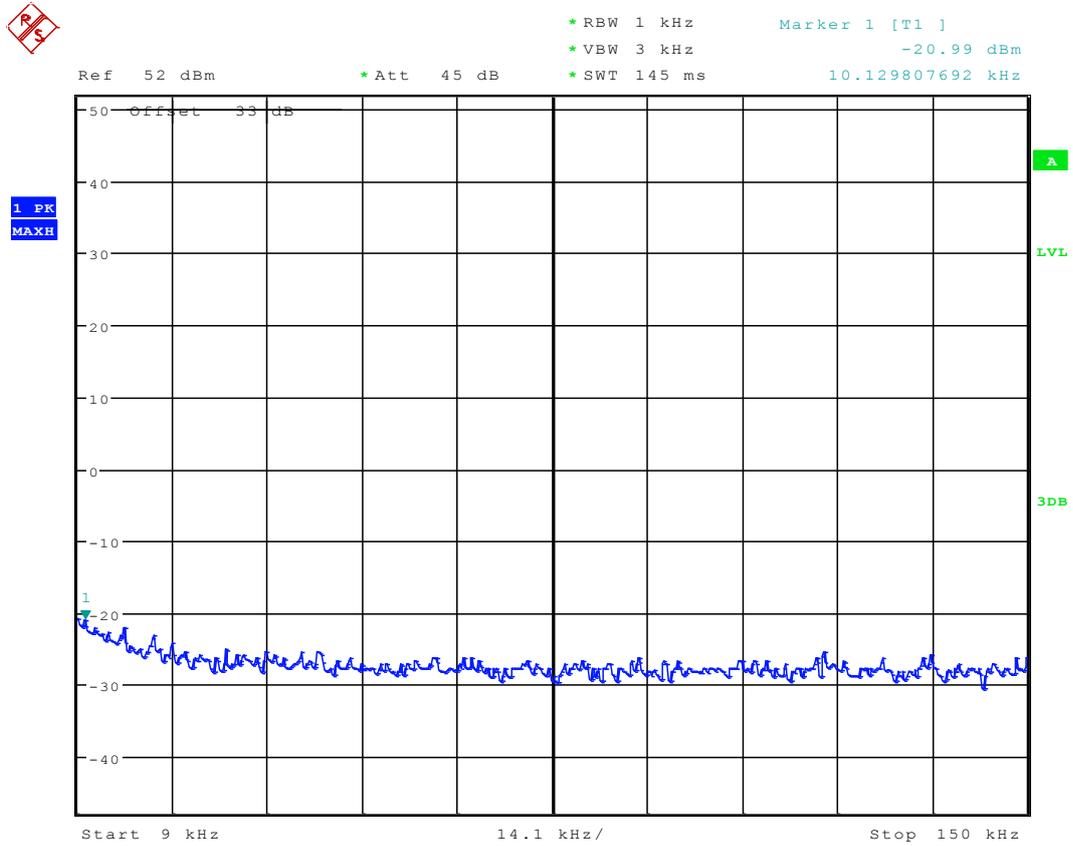


Date: 11.OCT.2021 20:19:58



2.2.5 Carrier Conf. = 15M

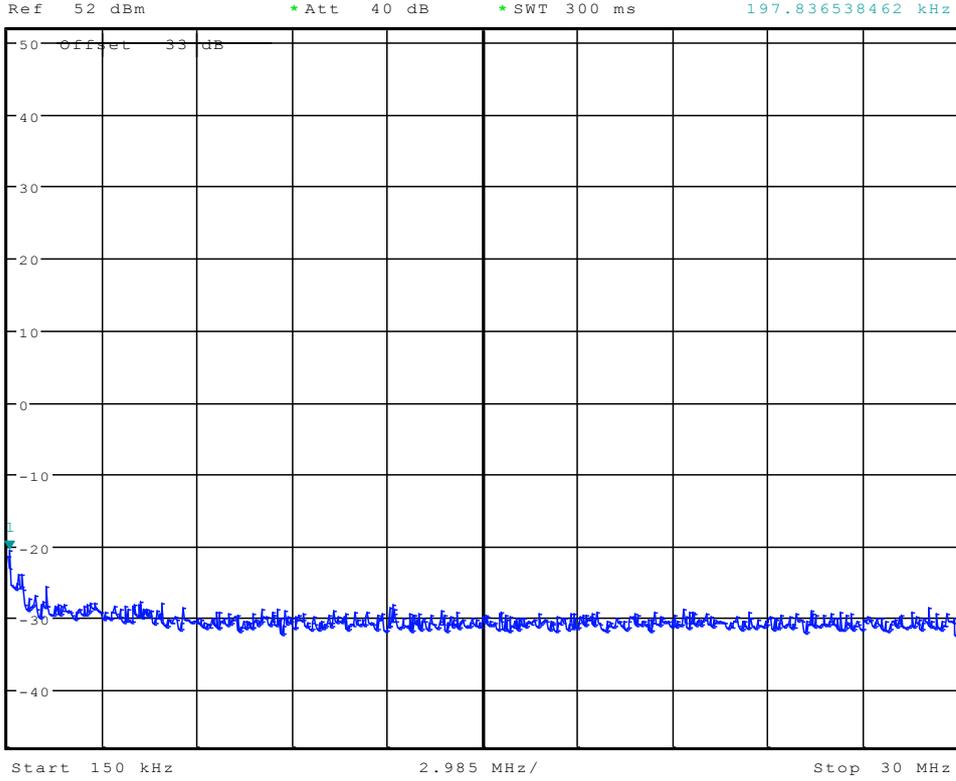
2.2.5.1 Ch. B



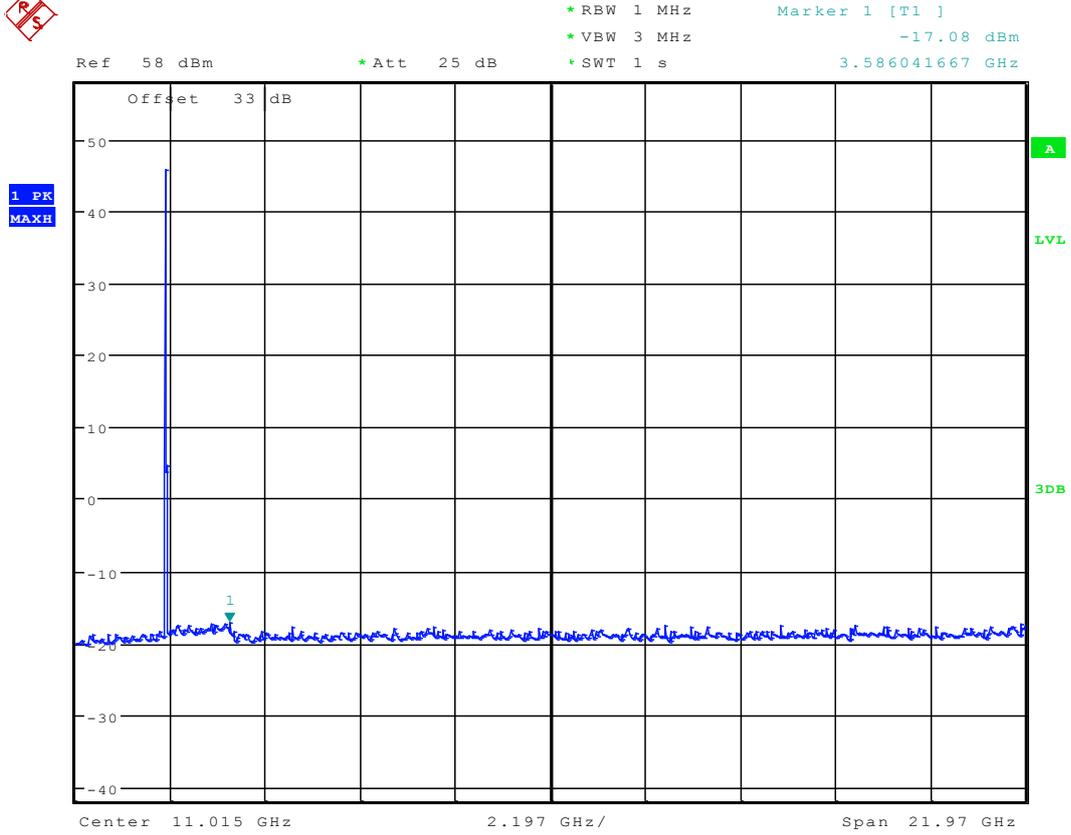
Date: 11.OCT.2021 20:32:32



* RBW 10 kHz Marker 1 [T1]
* VBW 30 kHz -20.64 dBm
* SWT 300 ms 197.836538462 kHz



Date: 11.OCT.2021 20:30:47



Date: 11.OCT.2021 20:29:51

2.2.5.2 Ch. M

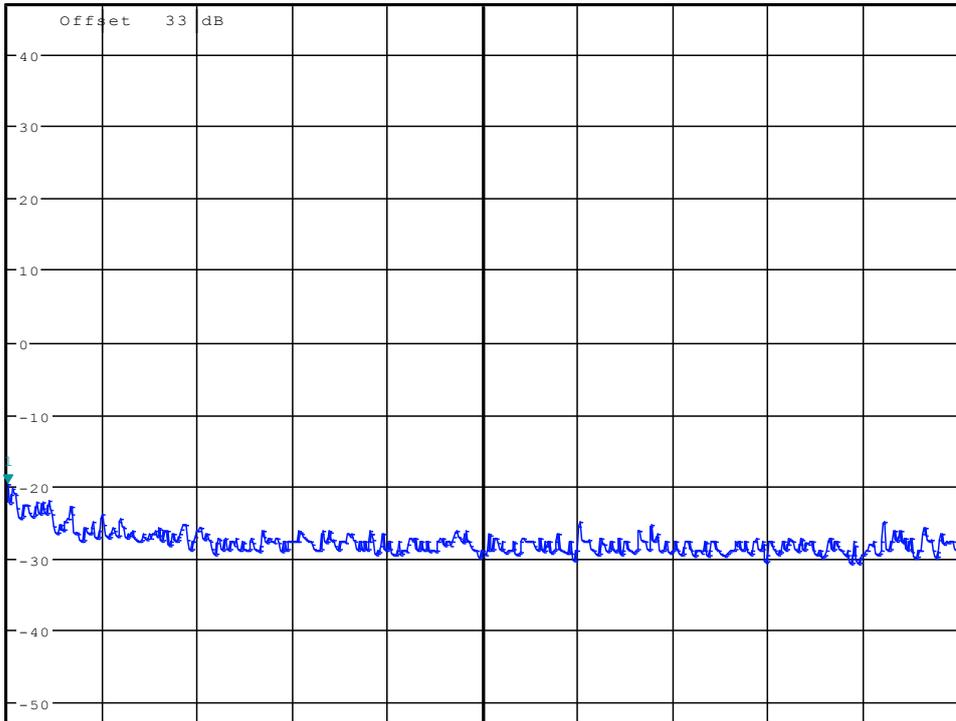


* RBW 1 kHz Marker 1 [T1]
* VBW 3 kHz -19.62 dBm
* SWT 155 ms 9.000000000 kHz

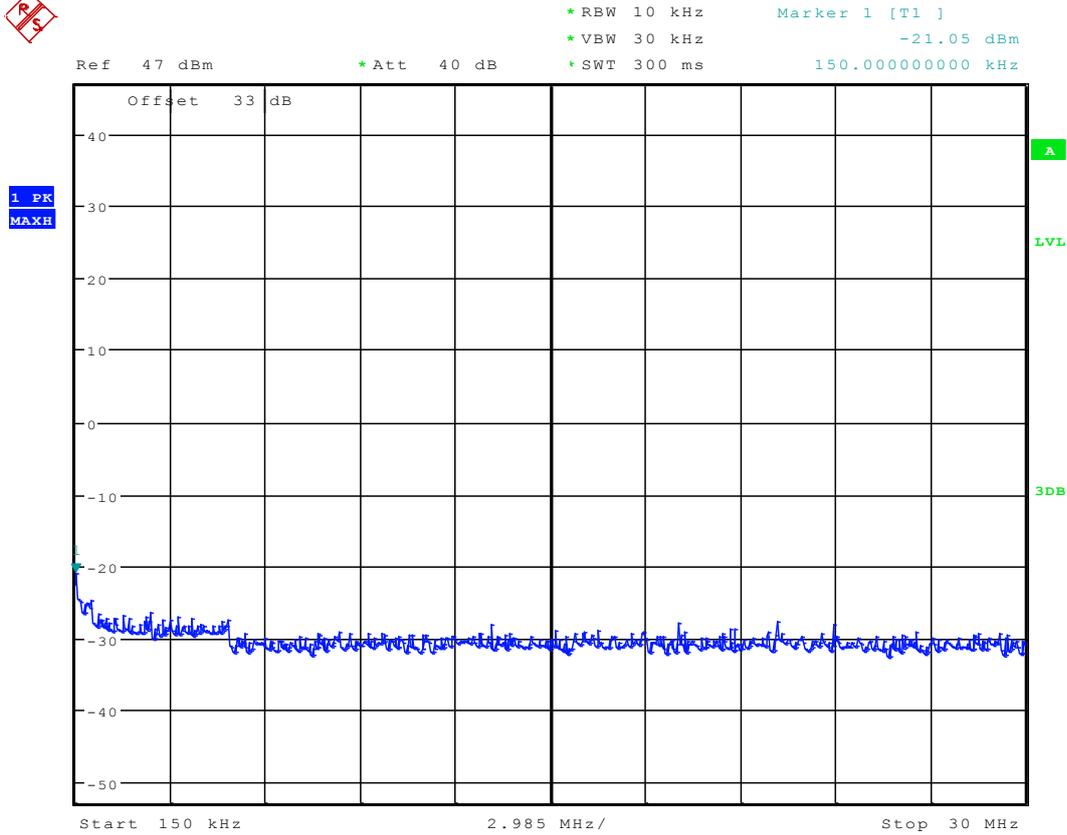
Ref 47 dBm

* Att 45 dB

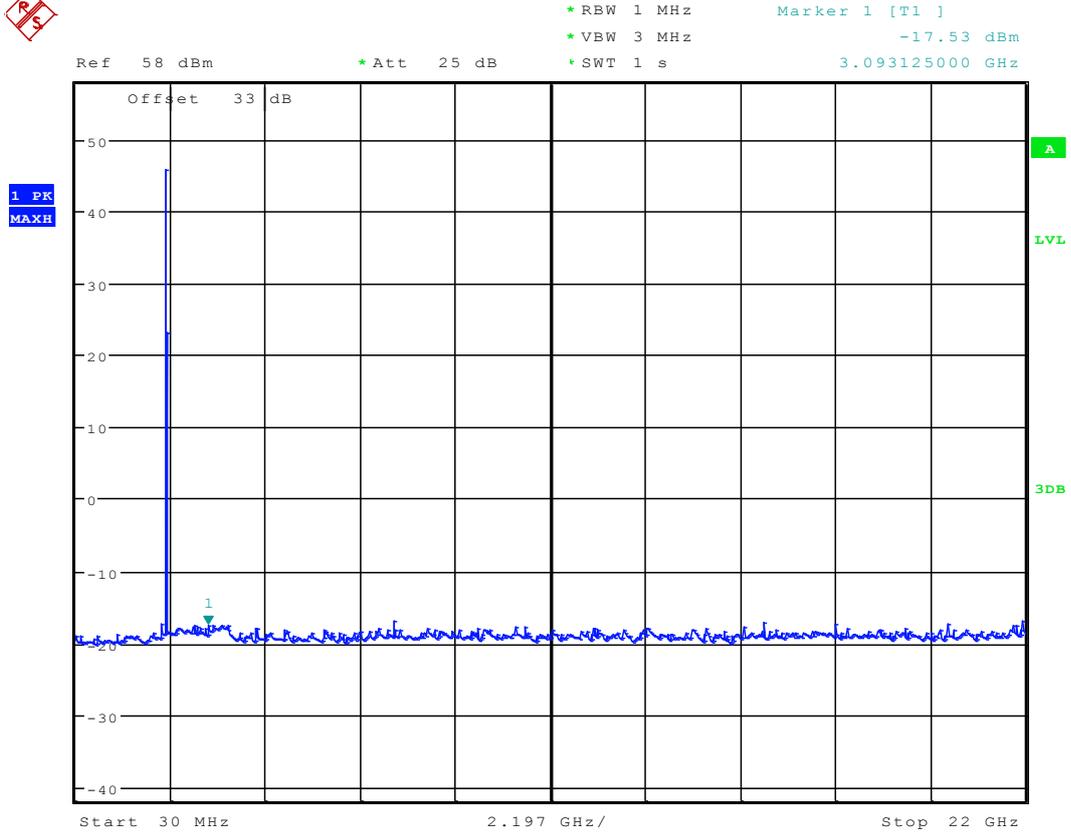
1 PK
MAXH



Date: 11.OCT.2021 20:25:26

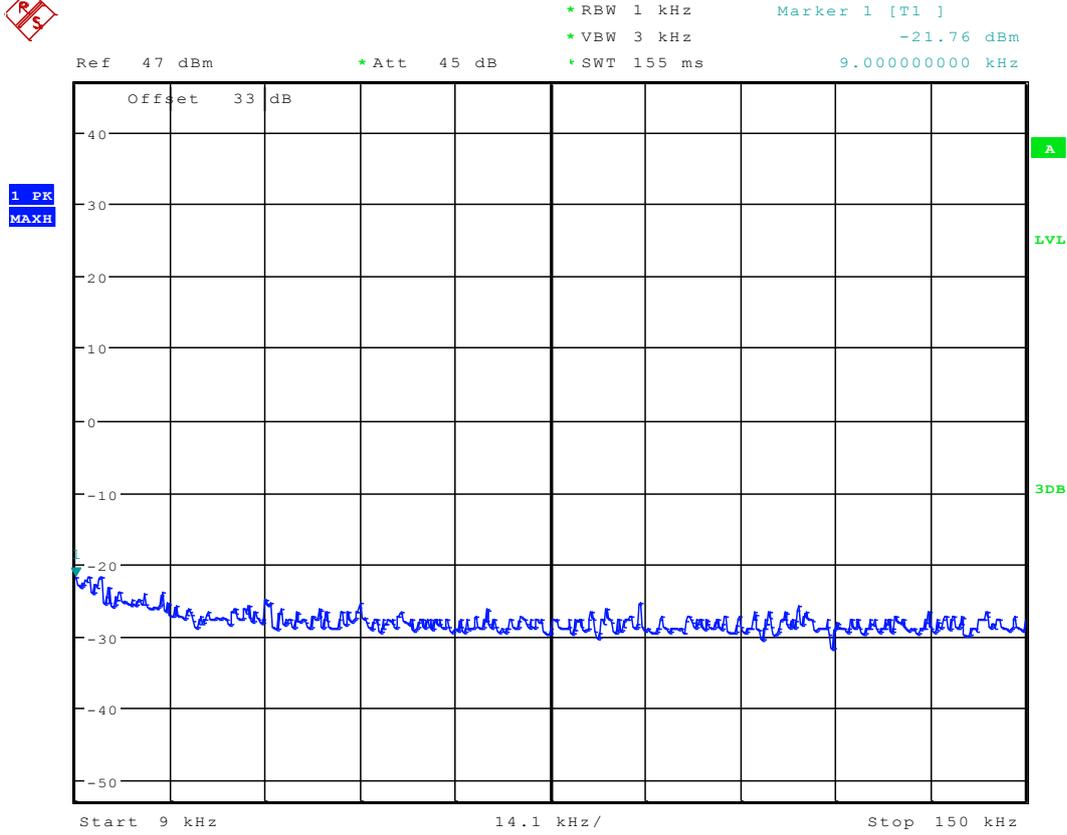


Date: 11.OCT.2021 20:26:33

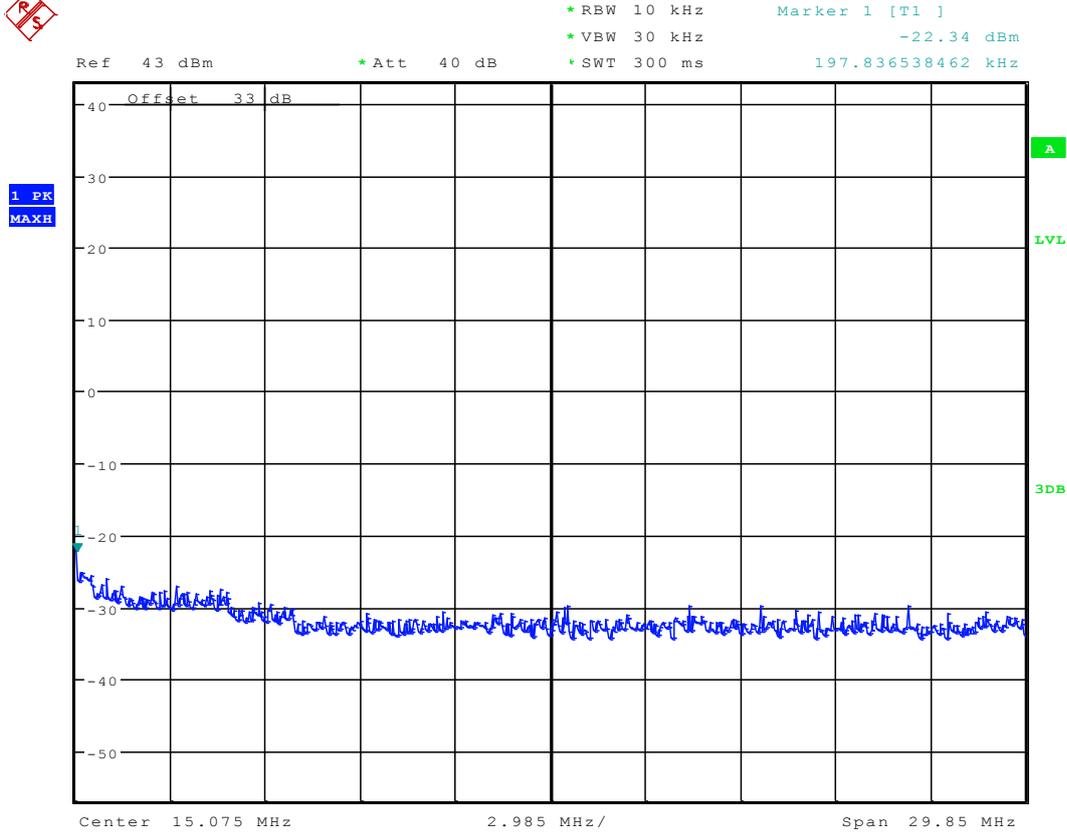


Date: 11.OCT.2021 20:27:30

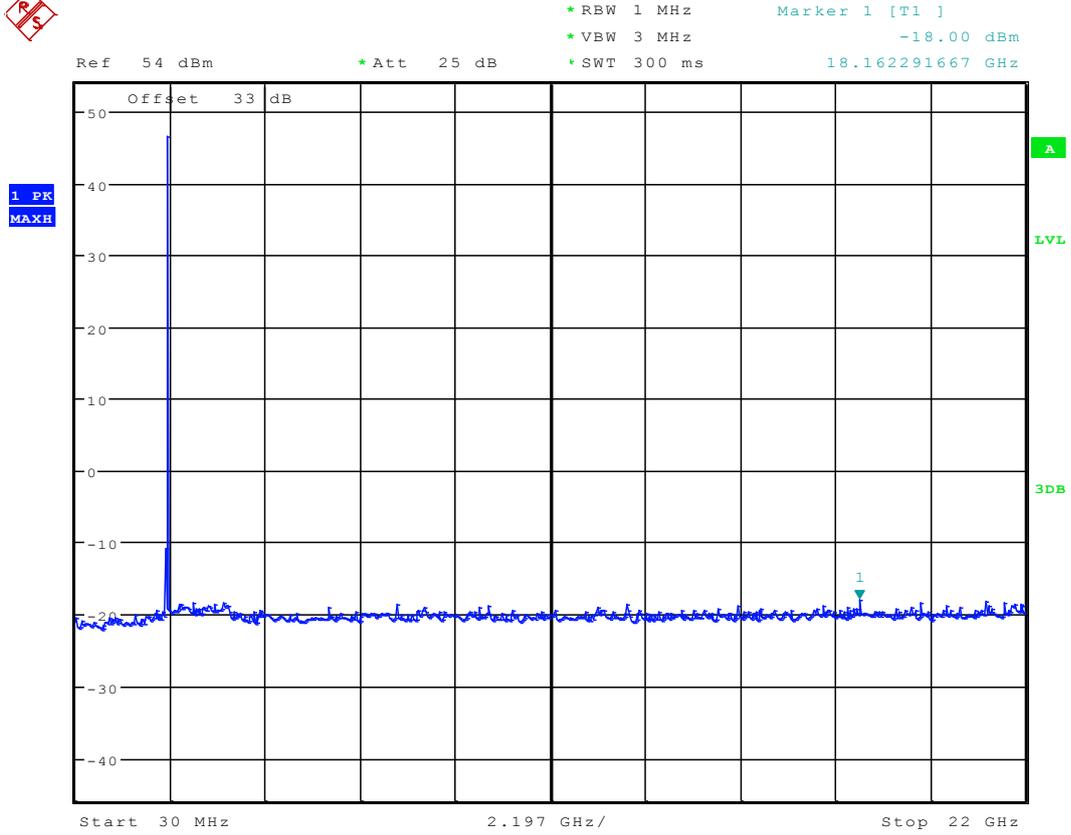
2.2.5.3 Ch. T



Date: 11.OCT.2021 20:23:45



Date: 11.OCT.2021 20:22:37

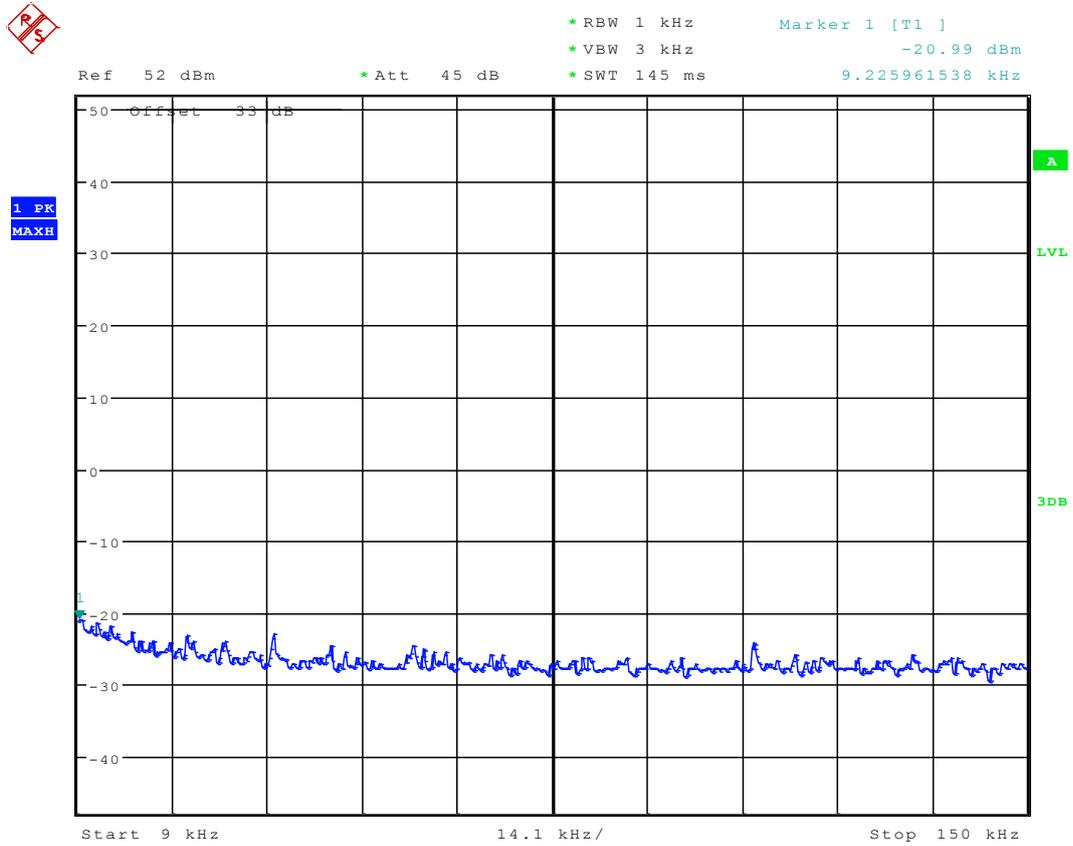


Date: 11.OCT.2021 20:21:25



2.2.6 Carrier Conf. = 20M

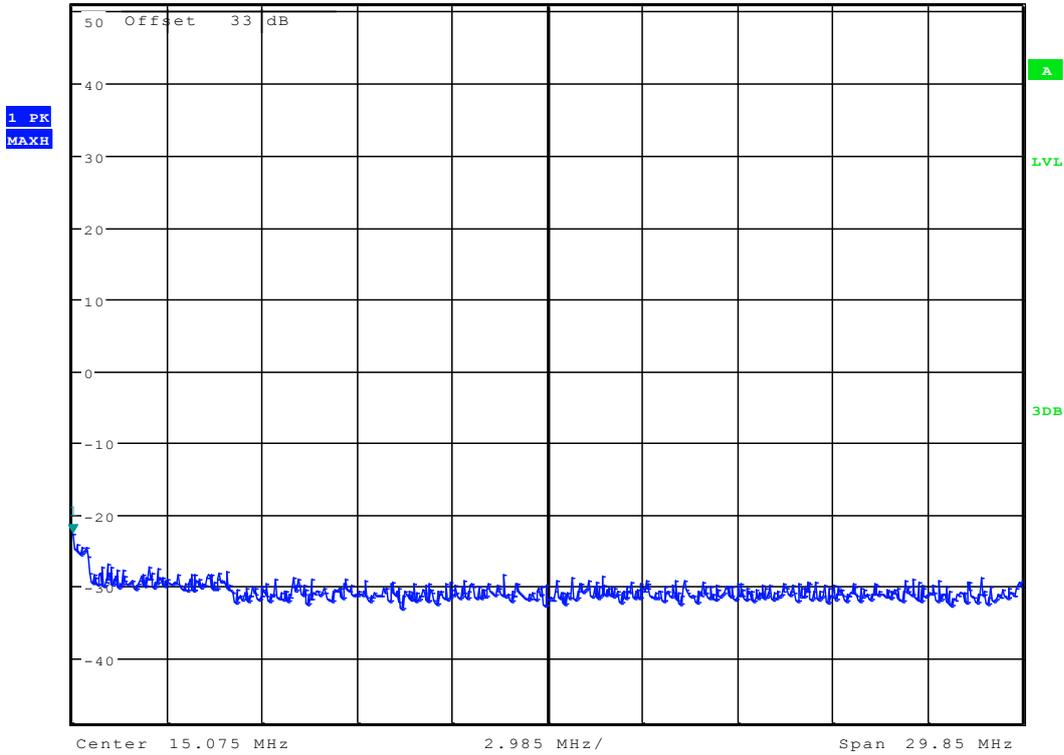
2.2.6.1 Ch. B



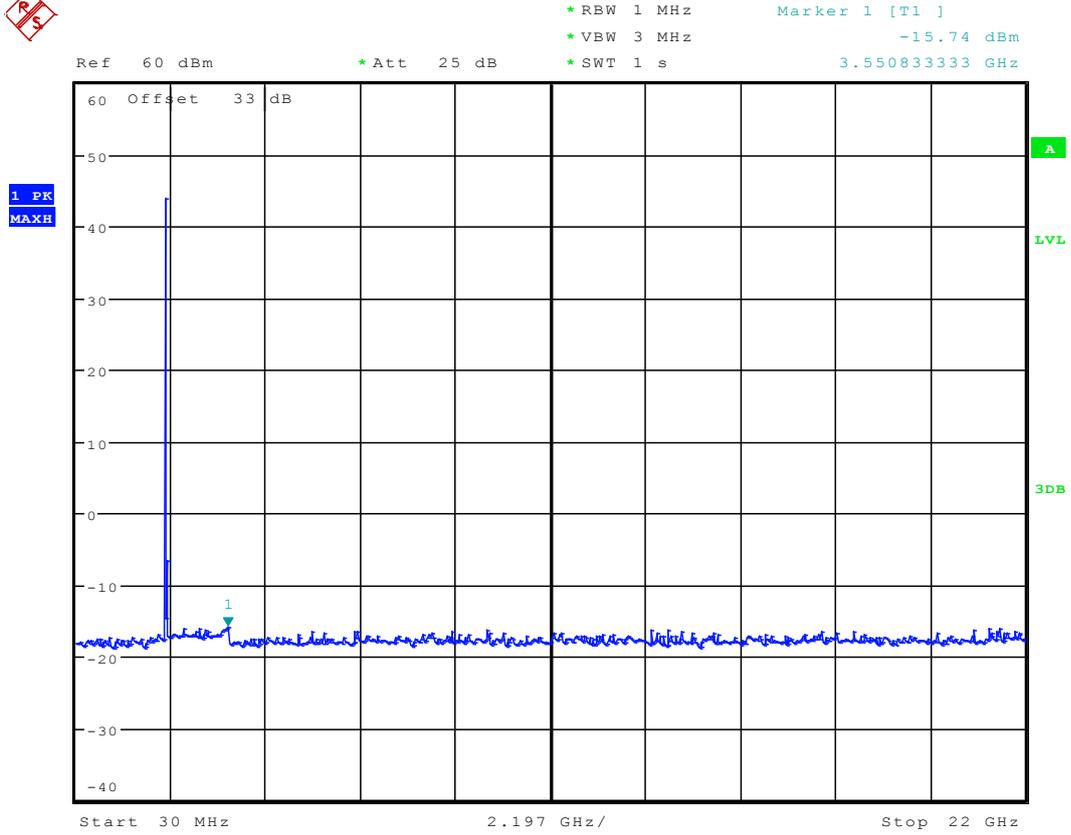
Date: 11.OCT.2021 20:38:21



Ref 51 dBm * Att 40 dB * RBW 10 kHz Marker 1 [T1]
* VBW 30 kHz -22.59 dBm
* SWT 300 ms 150.00000000 kHz

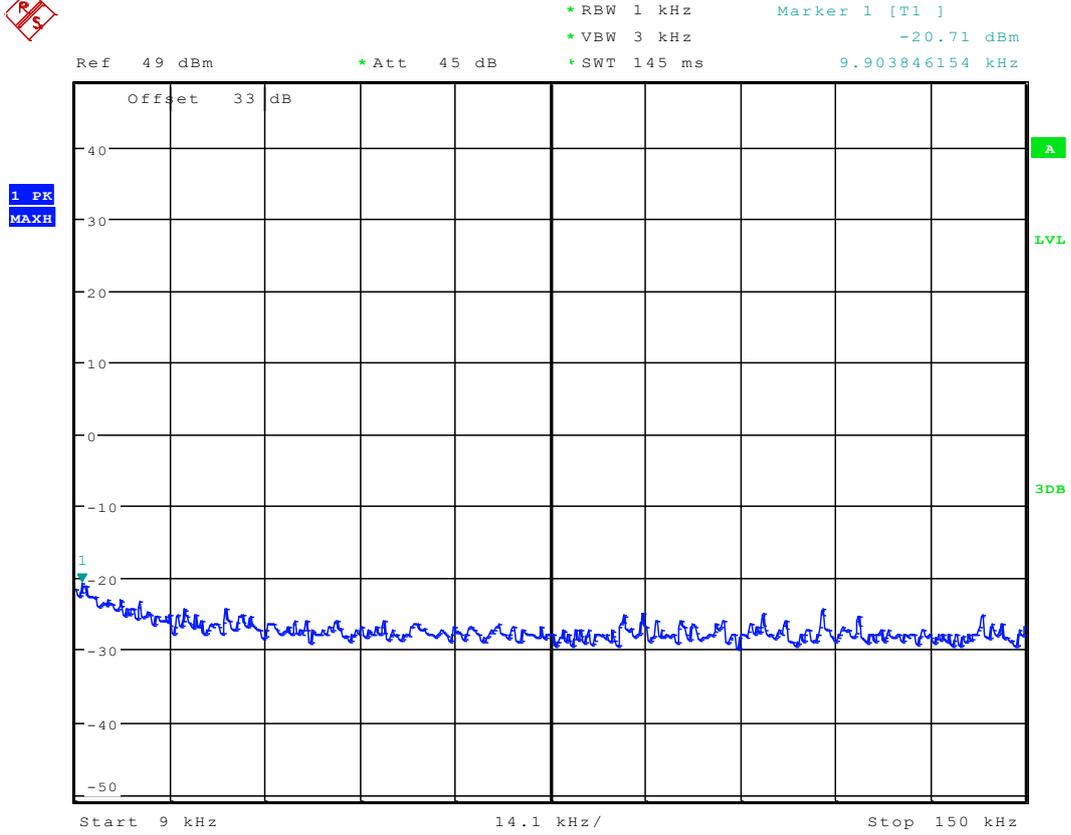


Date: 11.OCT.2021 20:39:17

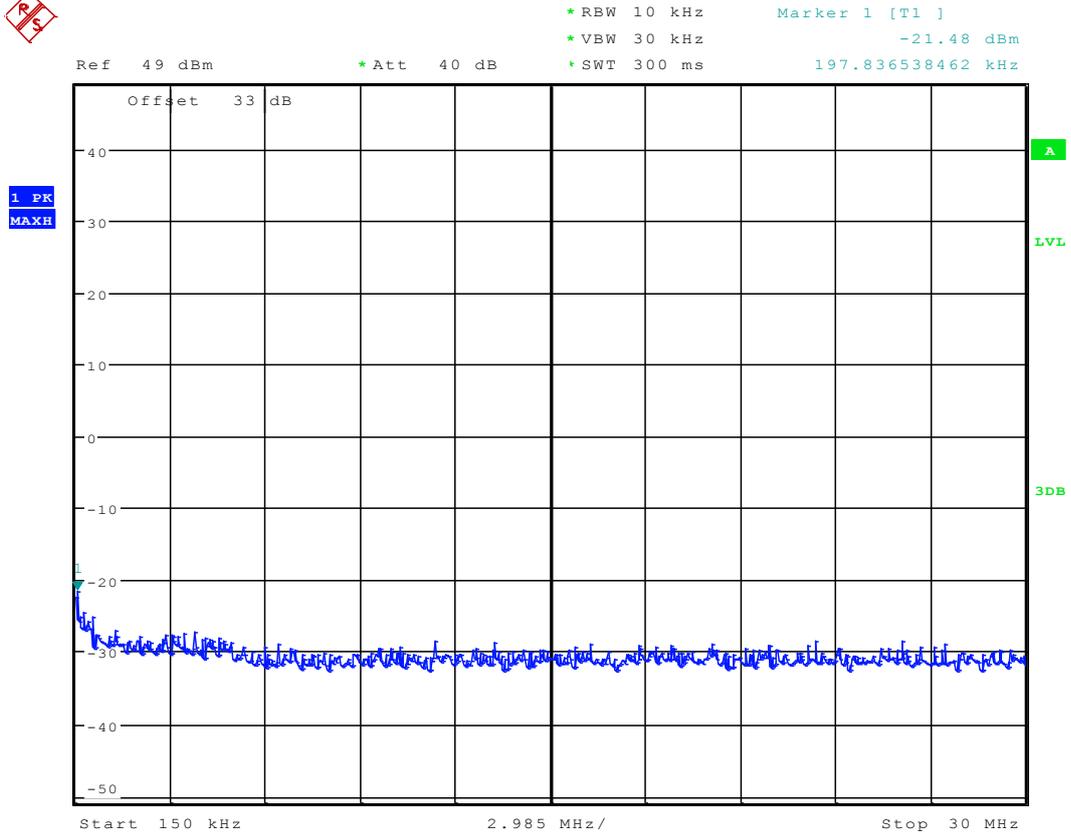


Date: 11.OCT.2021 20:41:13

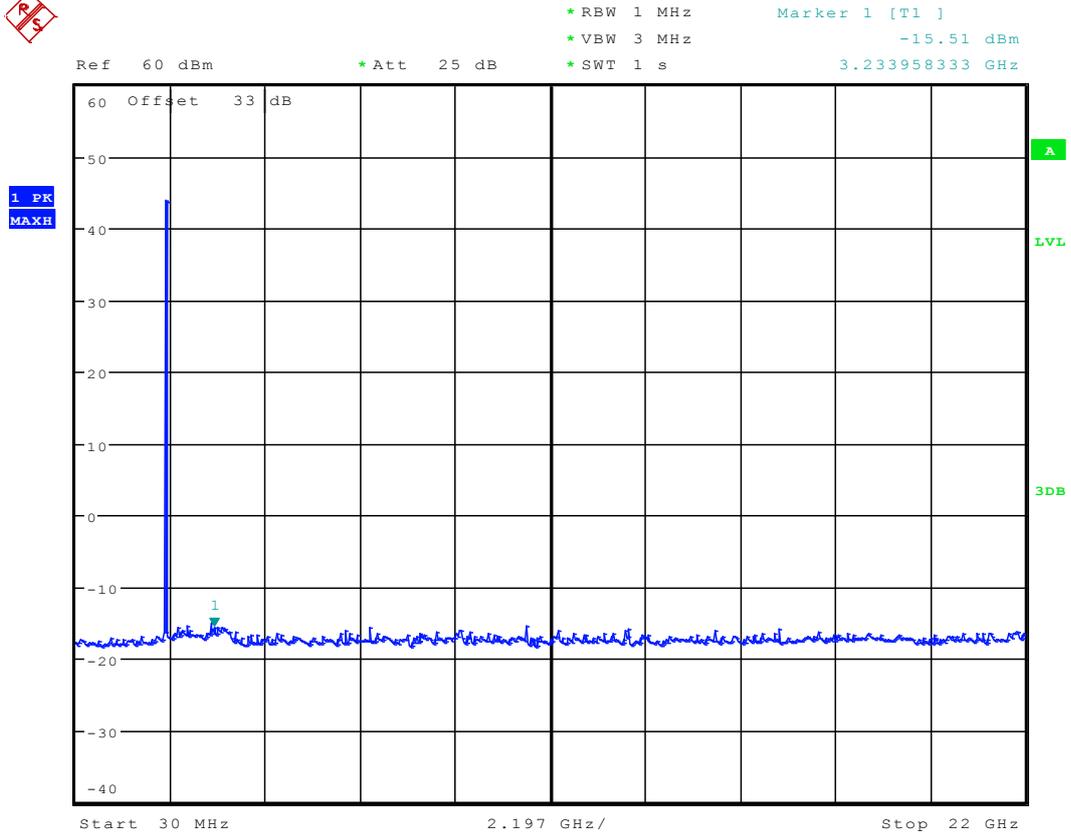
2.2.6.2 Ch. M



Date: 11.OCT.2021 20:45:37

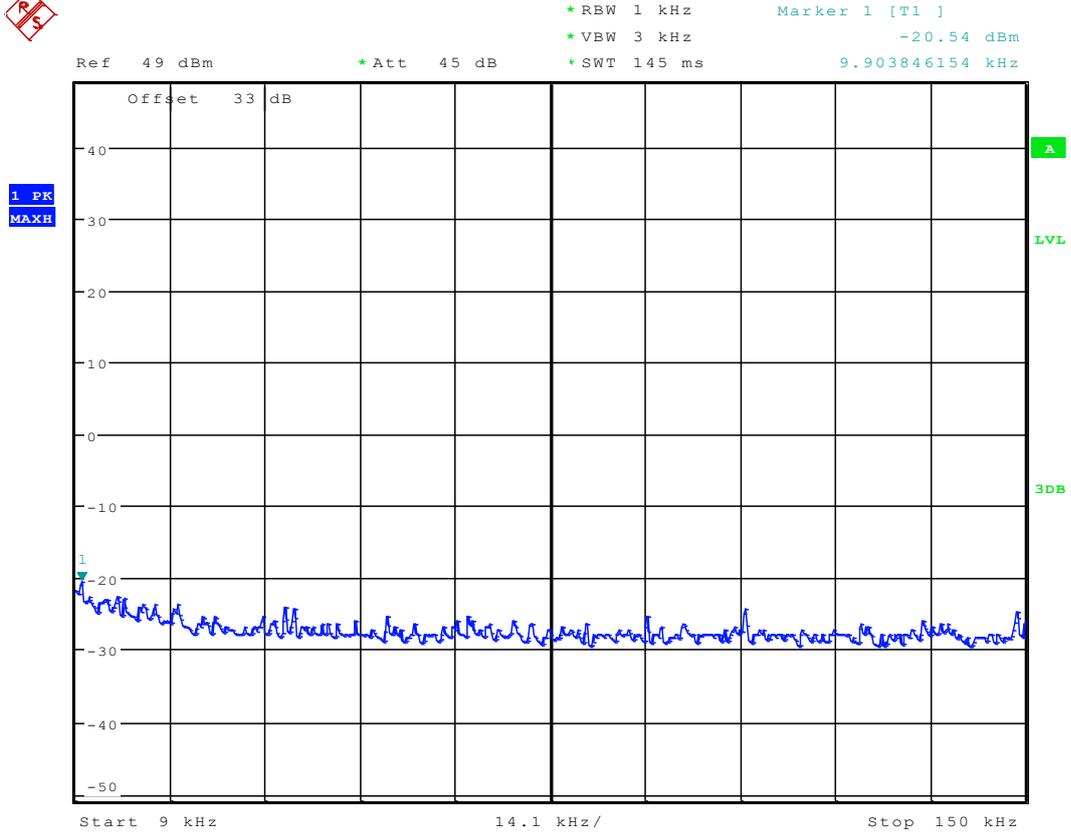


Date: 11.OCT.2021 20:44:34



Date: 11.OCT.2021 20:43:28

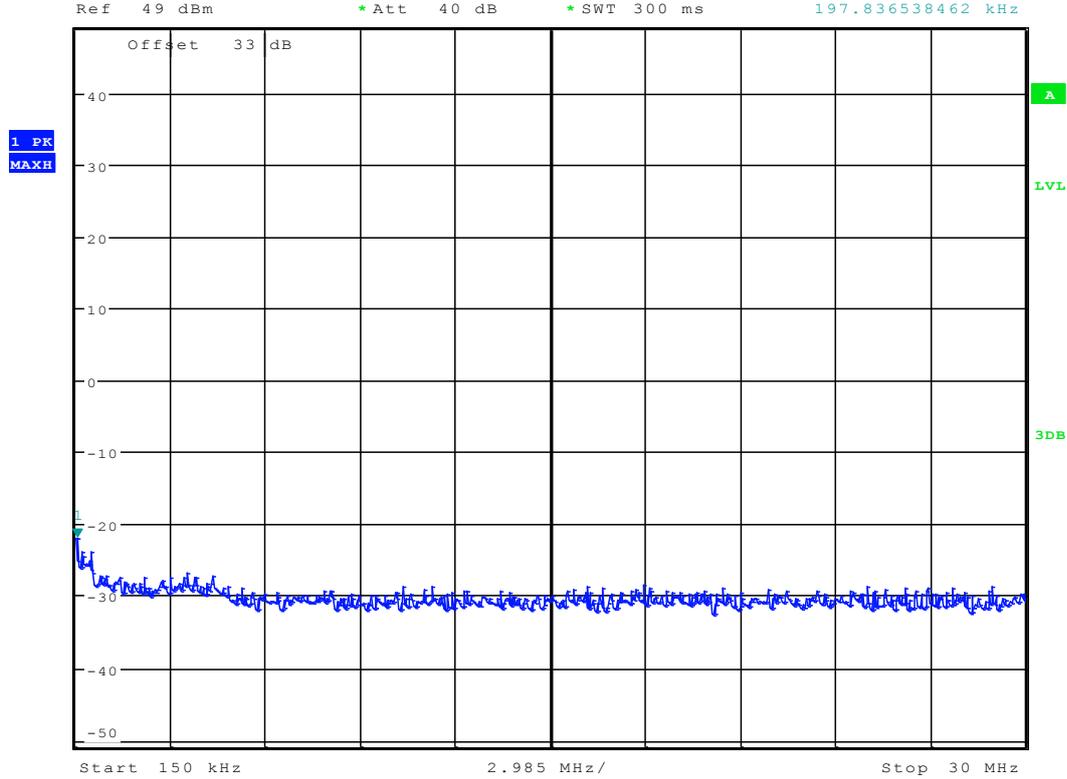
2.2.6.3 Ch. T



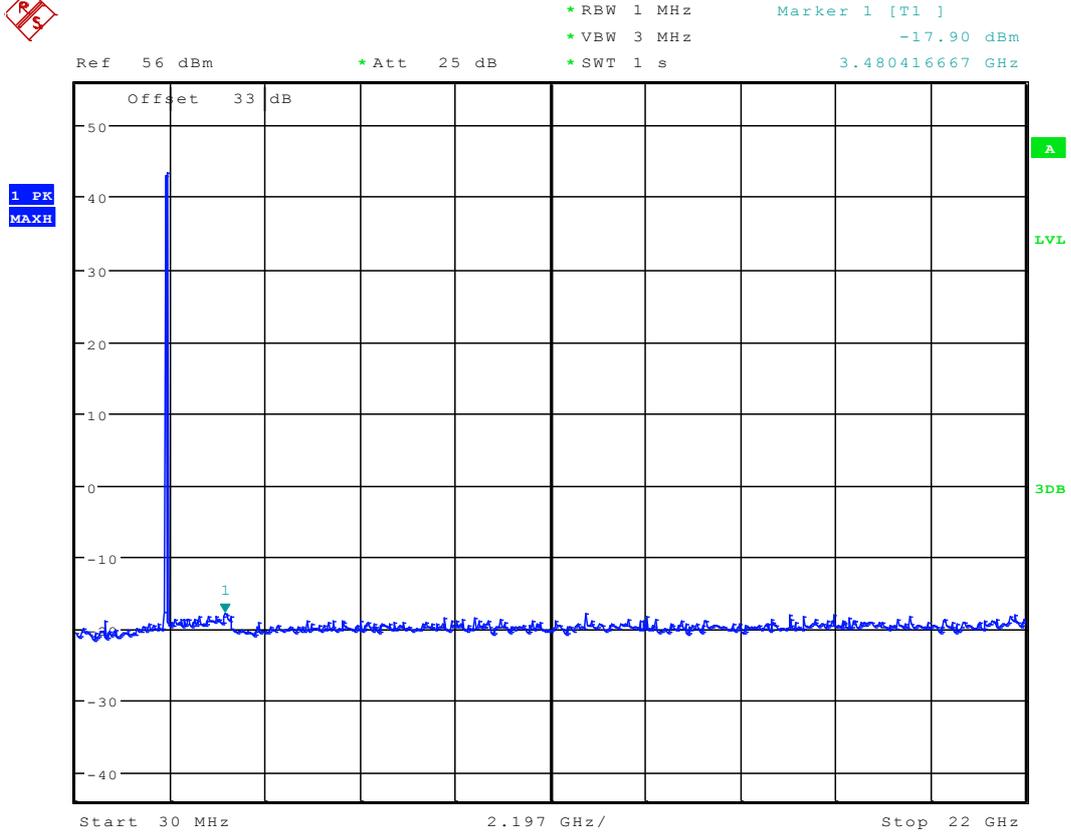
Date: 11.OCT.2021 20:46:51



* RBW 10 kHz Marker 1 [T1]
* VBW 30 kHz -21.81 dBm
* SWT 300 ms 197.836538462 kHz



Date: 11.OCT.2021 20:47:45



Date: 11.OCT.2021 20:48:38



Appendix F: Field Strength of Spurious Radiation



1 Result Table

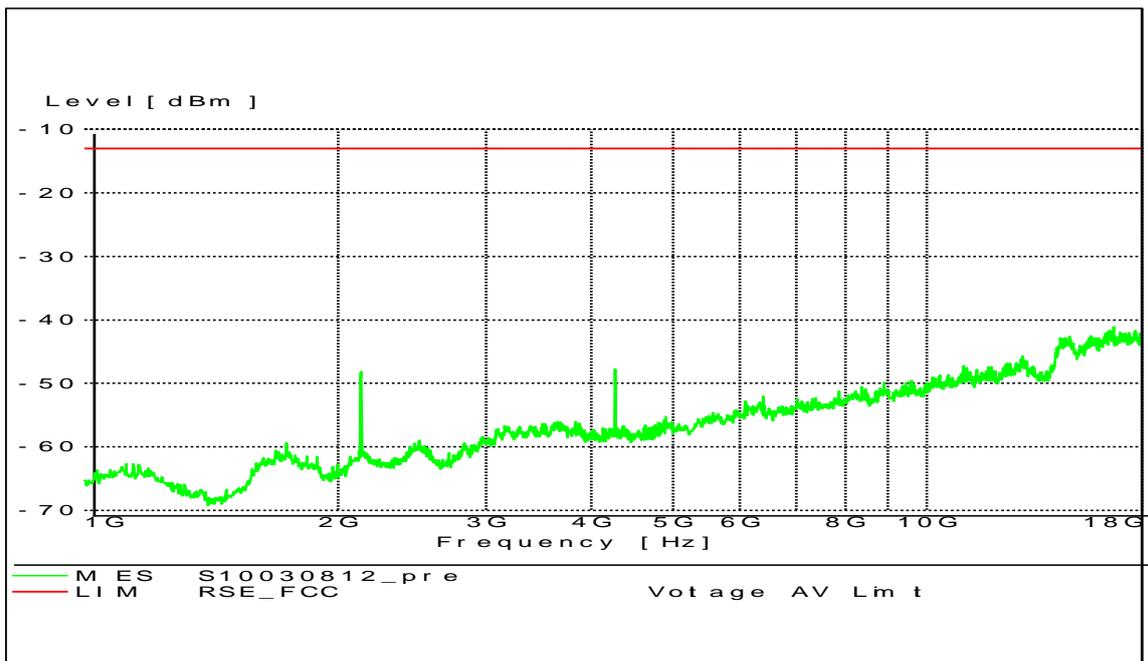
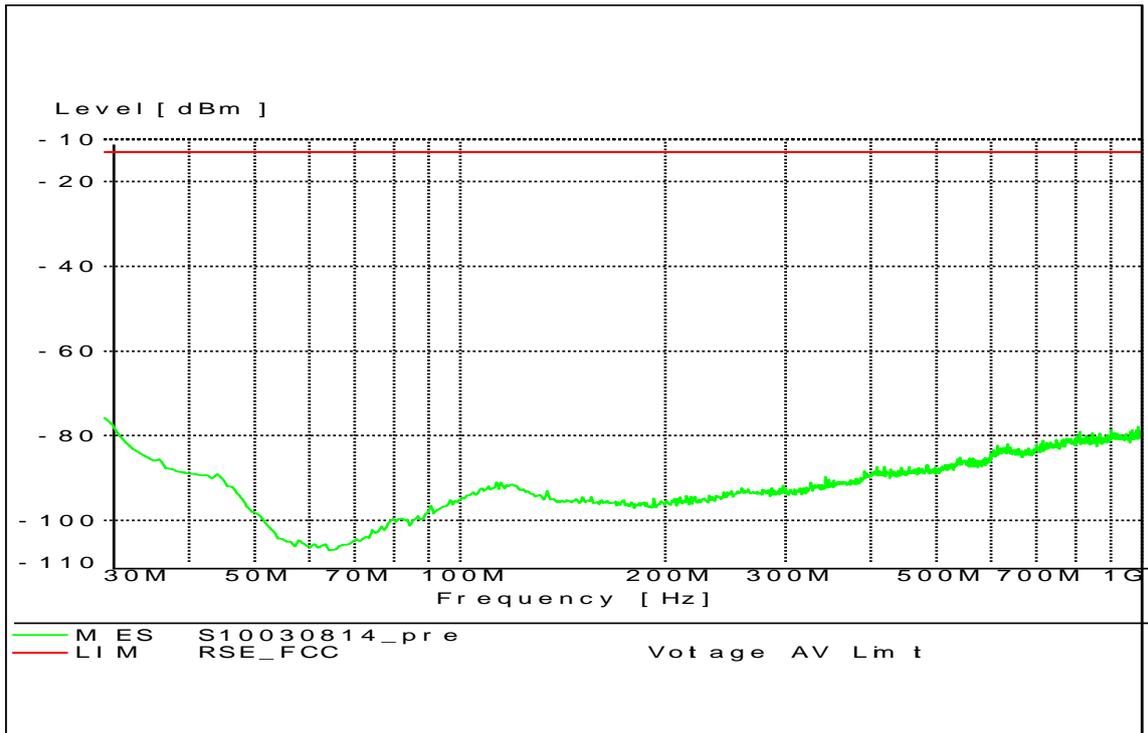
Test Mode	Carrier Conf.	RF Ch.	Field Strength of Spurious Radiation [dBm]	Verdict
TM 1	Worst case	M	< -13	Pass
E-TM 1.1	Worst case	M	< -13	Pass

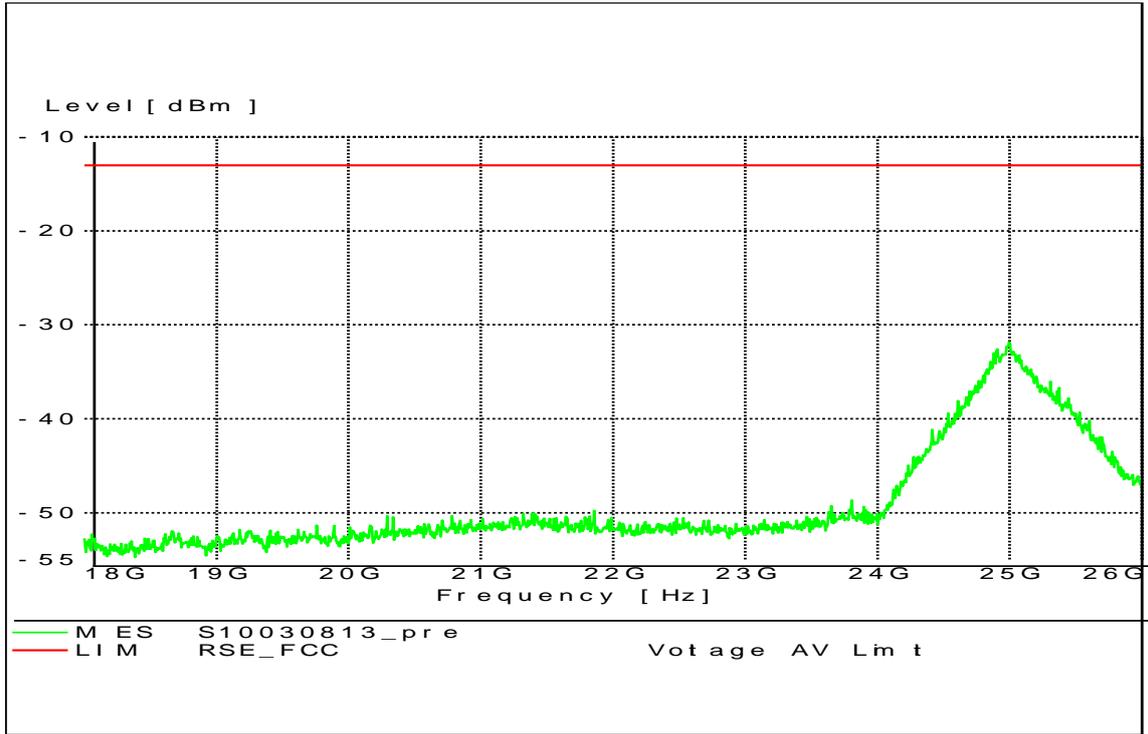
2 Test Plot

2.1 Test Mode = TM 1

2.1.1 Carrier Conf. = Worst case

2.1.1.1 Ch. M

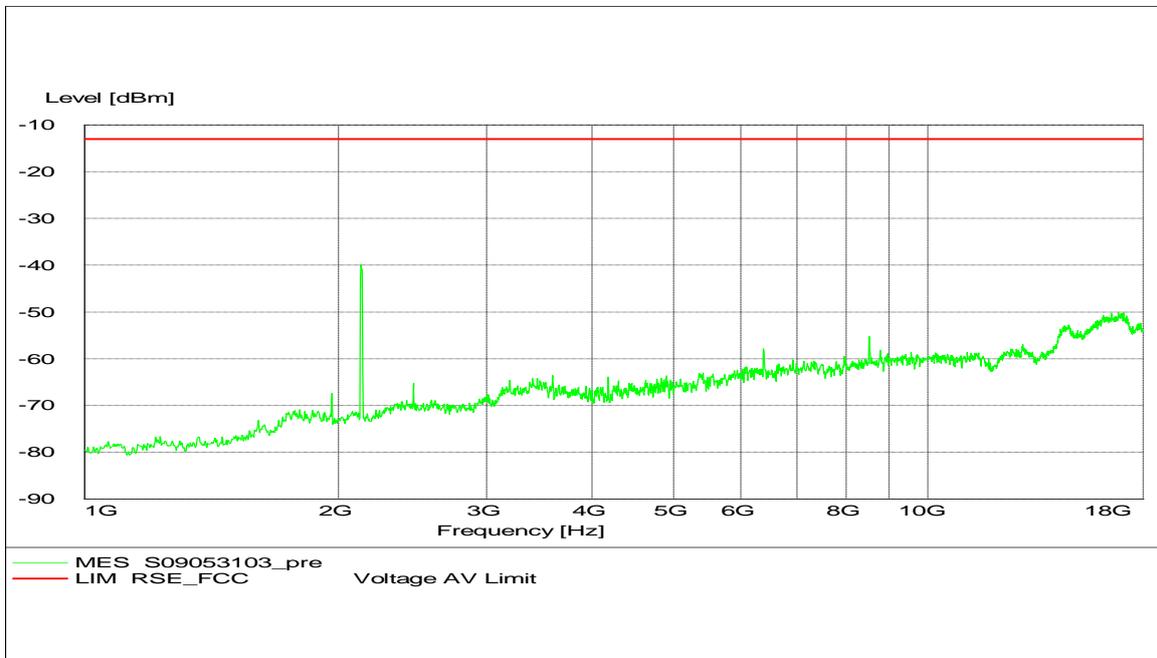
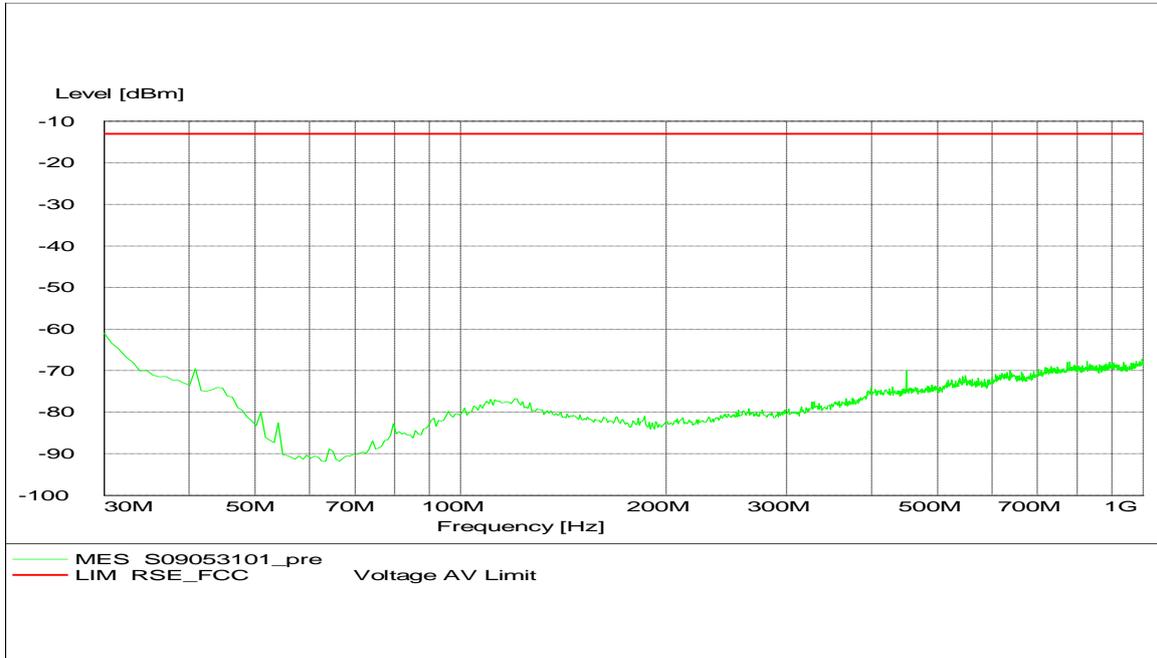


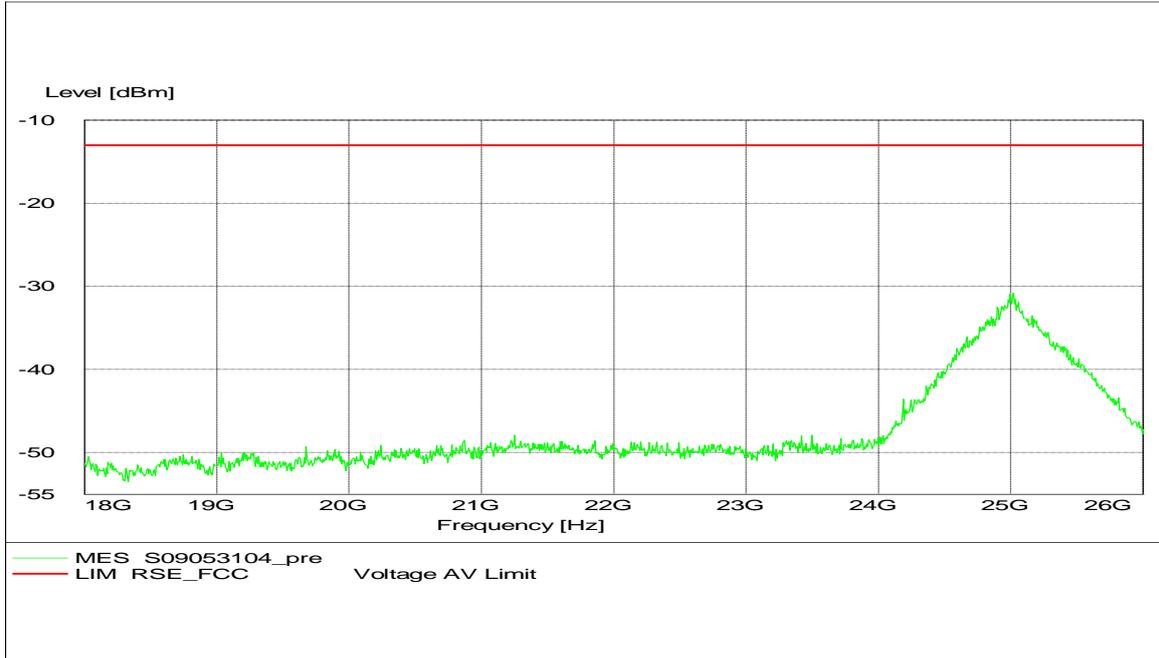


2.2 Test Mode = E-TM 1.1

2.2.1 Carrier Conf. = Worst case

2.2.1.1 Ch. M







Appendix G: Frequency Stability



1 Frequency Error vs. Temperature:

Test Mode	Carrier Conf.	RF Ch.	Volt.	Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Freq. vs. 20 °C [ppm]	Verdict
TM 1	MC 1	M	100%	-30 °C	5.98	0.003	---	Pass
				-20 °C	6.56	0.003	---	Pass
				-10 °C	12.09	0.006	---	Pass
				0 °C	10.32	0.005	---	Pass
				10 °C	7.89	0.004	---	Pass
				20 °C	12.88	0.006	---	Pass
				30 °C	10.56	0.005	---	Pass
				40 °C	9.45	0.004	---	Pass
				50 °C	11.34	0.005	---	Pass

2 Frequency Error vs. Voltage:

Test Mode	Carrier Conf.	RF Ch.	Temp.	Volt.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Freq. vs. 20 °C [ppm]	Verdict
TM 1	MC 1	M	Ambient	85 %	9.78	0.005	---	Pass
				100 %	12.88	0.006	---	Pass
				115 %	10.34	0.005	---	Pass



Appendix H: Receiver Spurious Emissions (Conducted)



NOTE: The requirements are only applicable to IC requirements.

(Not applicable)



Appendix I: Photos of Test Setup

1 Test Setup 3

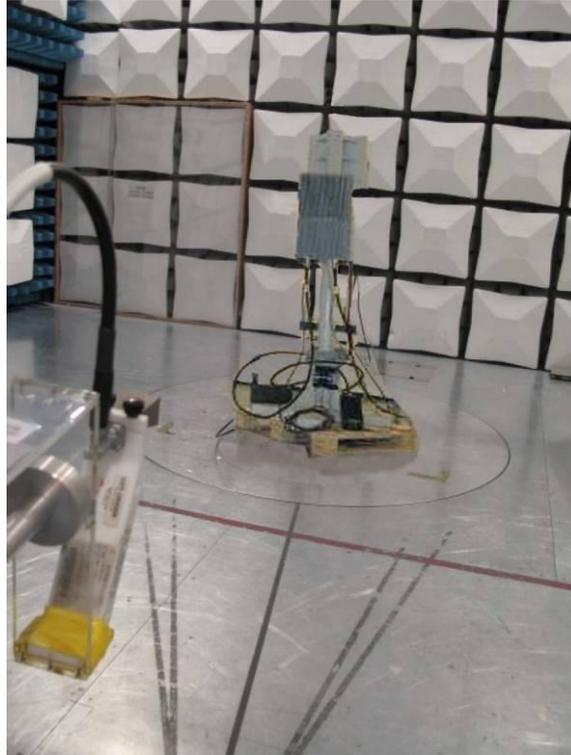
1.1 Frequency range 30 MHz to 1 GHz



1.2 Frequency range 1 GHz to 18 GHz



1.3 Frequency range 18 GHz to 26.5 GHz



END