Appendix A: Transmitter Output Power

1 Result Table

1.1 Channel Power, Total

NOTE 1: If applicable, the EIRP [W] = 10 ^ ((Channel Power [dBm] + Antenna Gain [dBi]) / 10 - 3), and the ERP [W] = EIRP [W] / 1.64.

NOTE 2: When the EUT is put into service, the practical maximum antenna gain may exceed the value as below, and if exceed, the combination of the practical output power and the practical antenna gain should NOT exceed the required ERP/EIRP limit.

EUT Conf.	Output Power [dBm]	Verdict
1L_5M_B	45.9	Pass
1L_5M_M	46.42	Pass
1L_5M_T	46.13	Pass
1L_10M_B	45.86	Pass
1L_10M_M	46.42	Pass
1L_10M_T	46.22	Pass
1L_15M_B	45.86	Pass
1L_15M_M	46.31	Pass
1L_15M_T	46.11	Pass
1L_20M_B	45.97	Pass
1L_20M_M	46.42	Pass
1L_20M_T	46.23	Pass
2L_5M_B	42.97, 42.72	Pass
2L_5M_T	43.29, 42.84	Pass

1.2 Power Spectral Density

NOTE 1: If applicable, the EIRP [W/MHz] = 10 ^ ((Power Spectral Density [dBm/MHz] + Antenna Gain [dBi]) / 10 - 3), and the ERP [W/MHz] = EIRP [W/MHz] / 1.64.

NOTE 2: When the EUT is put into service, the practical maximum antenna gain may exceed the value as below, and if exceed, the combination of the practical output power and the practical antenna gain should NOT exceed the required ERP/EIRP limit.

EUT Conf.	Power Spectral Density [dBm/MHz]	Verdict
1L_5M_B	40.05	Pass
1L_5M_M	40.57	Pass
1L_5M_T	40.22	Pass
1L_10M_B	36.96	Pass
1L_10M_M	37.65	Pass
1L_10M_T	37.52	Pass
1L_15M_B	35.35	Pass

EUT Conf.	Power Spectral Density [dBm/MHz]	Verdict
1L_15M_M	35.76	Pass
1L_15M_T	35.59	Pass
1L_20M_B	34.41	Pass
1L_20M_M	34.71	Pass
1L_20M_T	34.33	Pass

1.3 Peak-to-Average Ratio

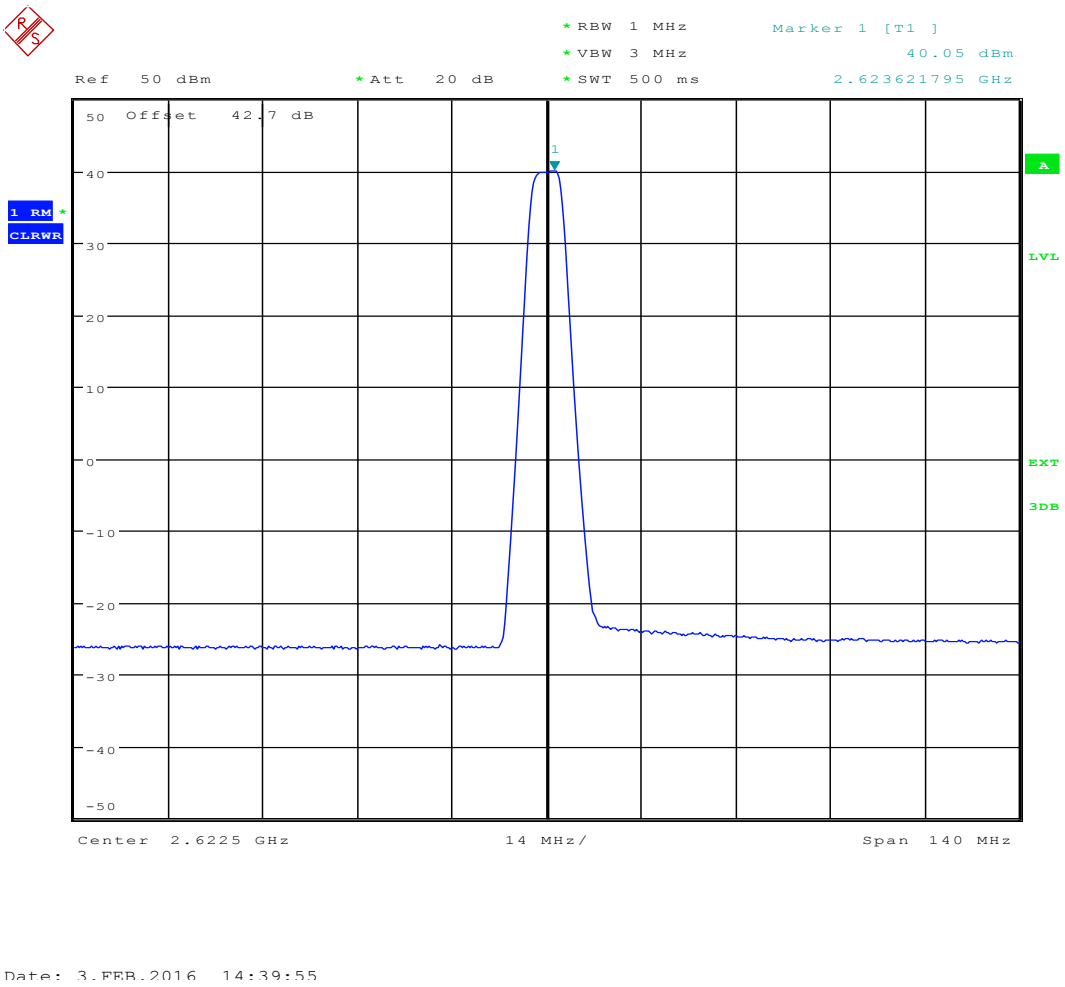
(Not applicable)

2 Test Plot

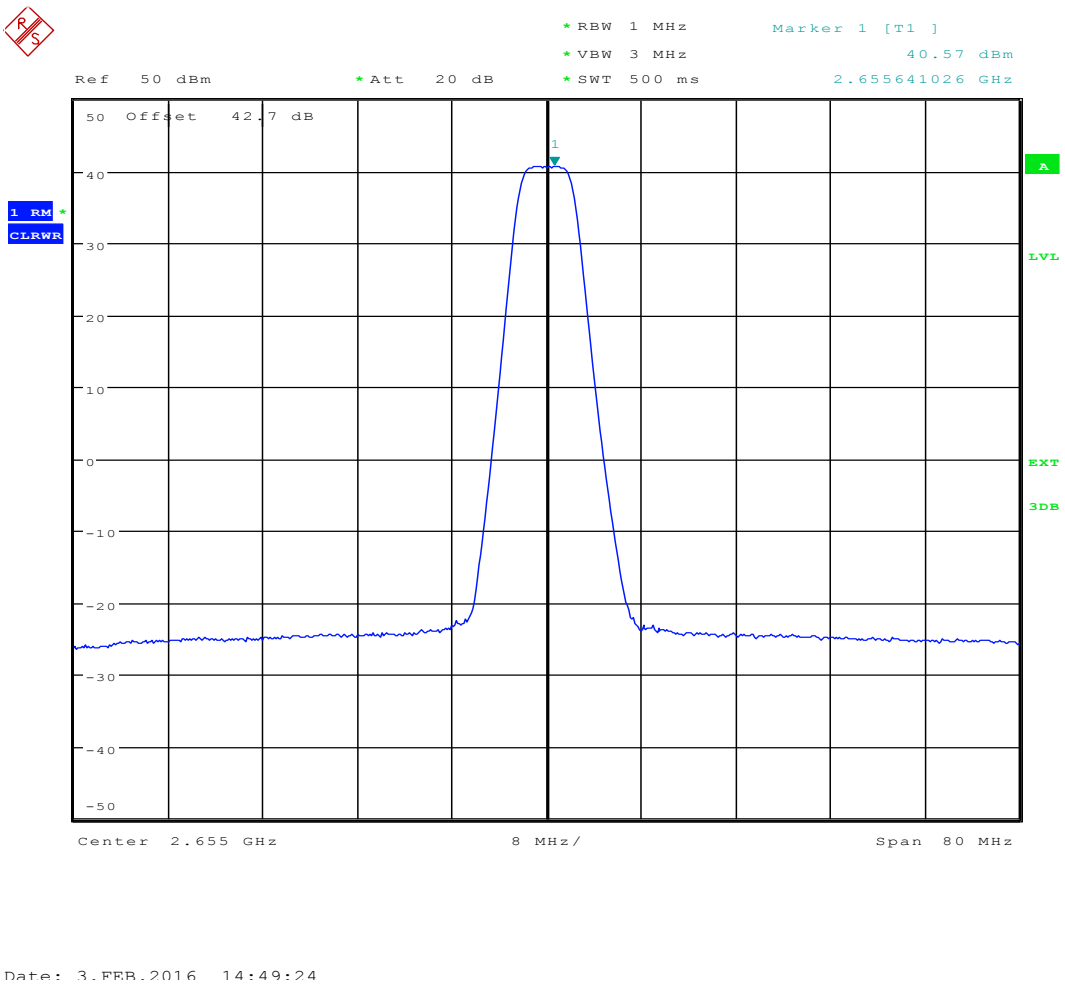
NOTE: Only the test plots for the measurements of Spectral Density and Peak-to-Average Ratio are supplied.

2.1 Power Spectral Density

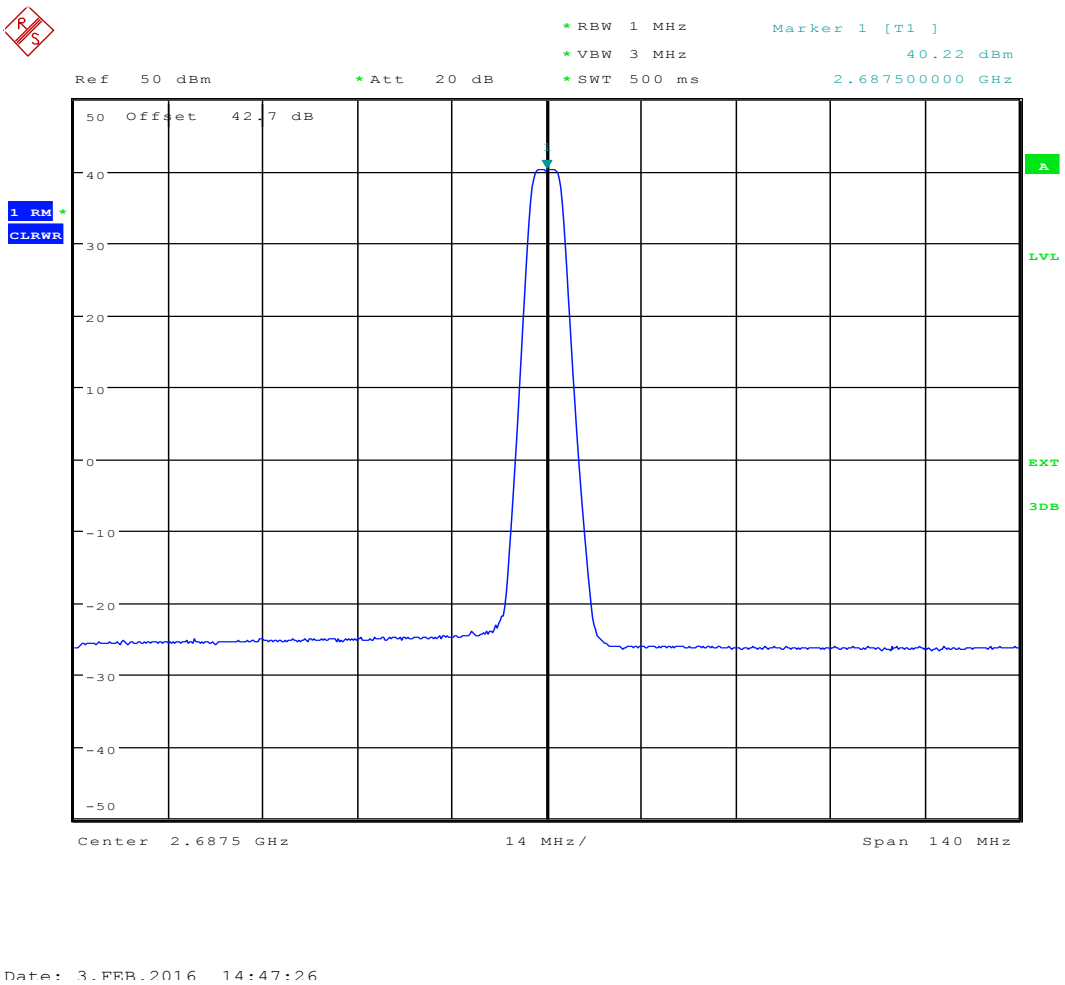
2.1.1 1L_5M_B



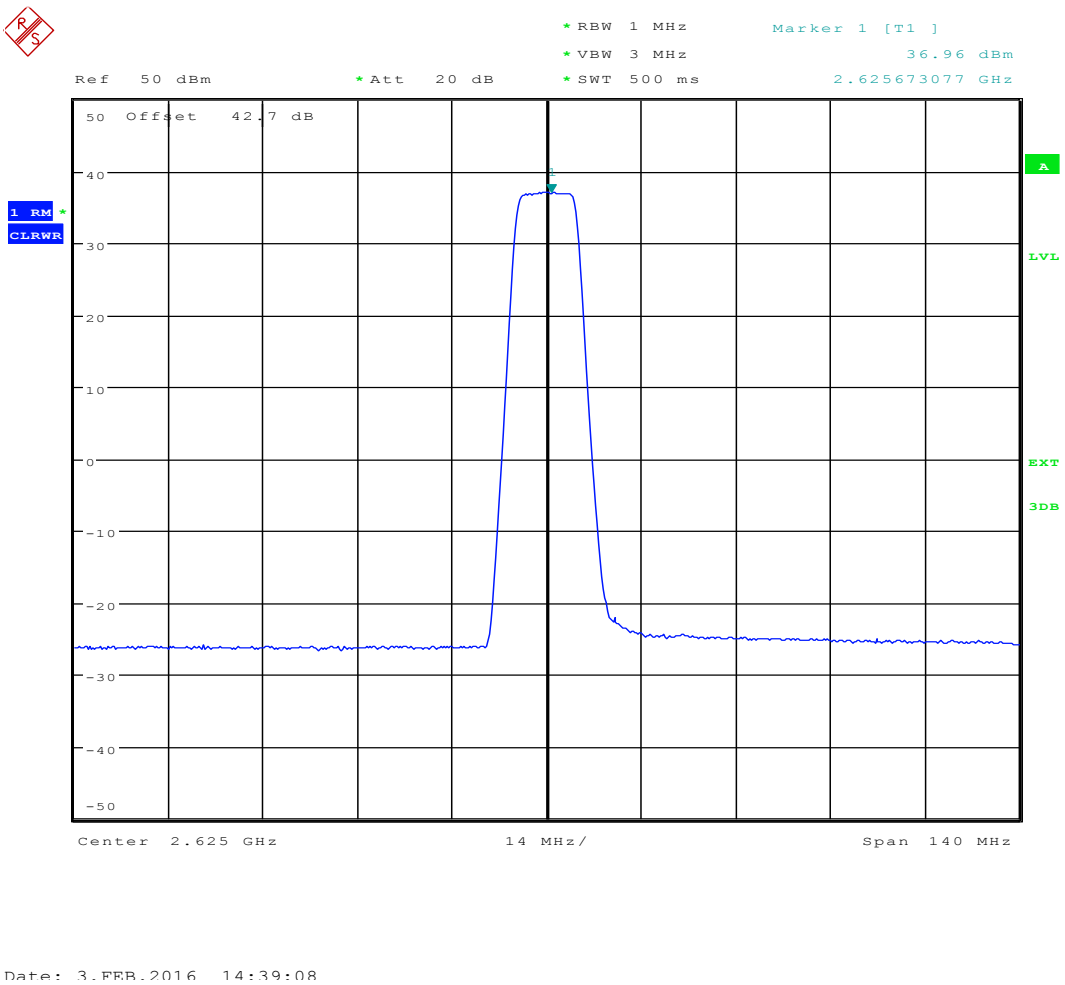
2.1.2 1L_5M_M



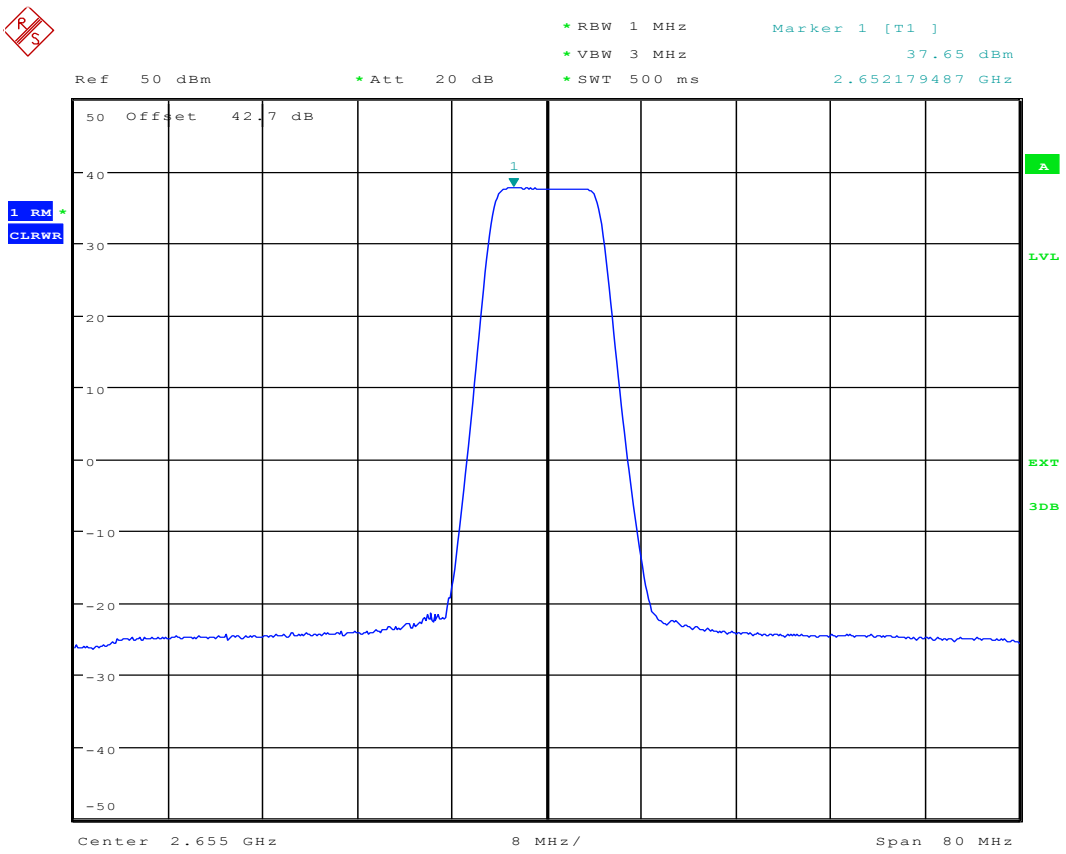
2.1.3 1L_5M_T



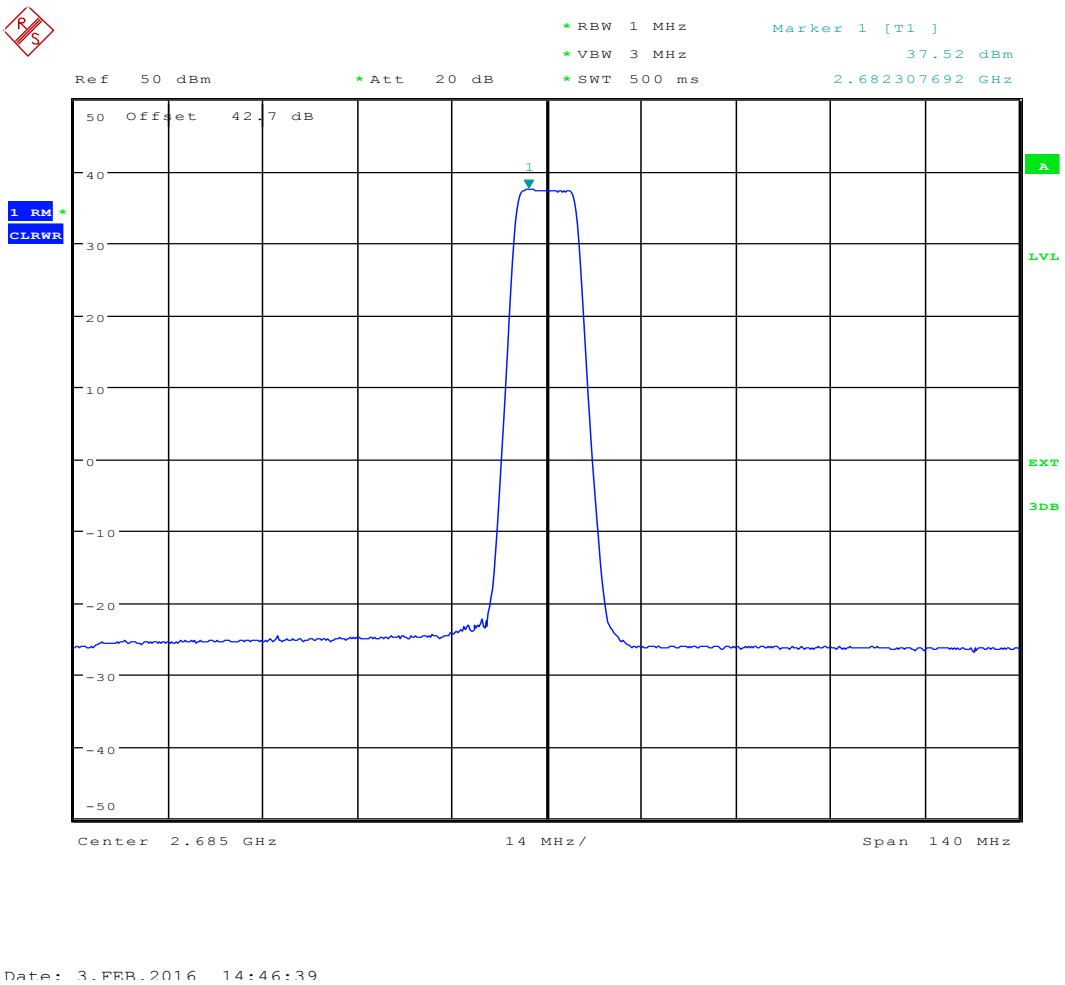
2.1.4 1L_10M_B



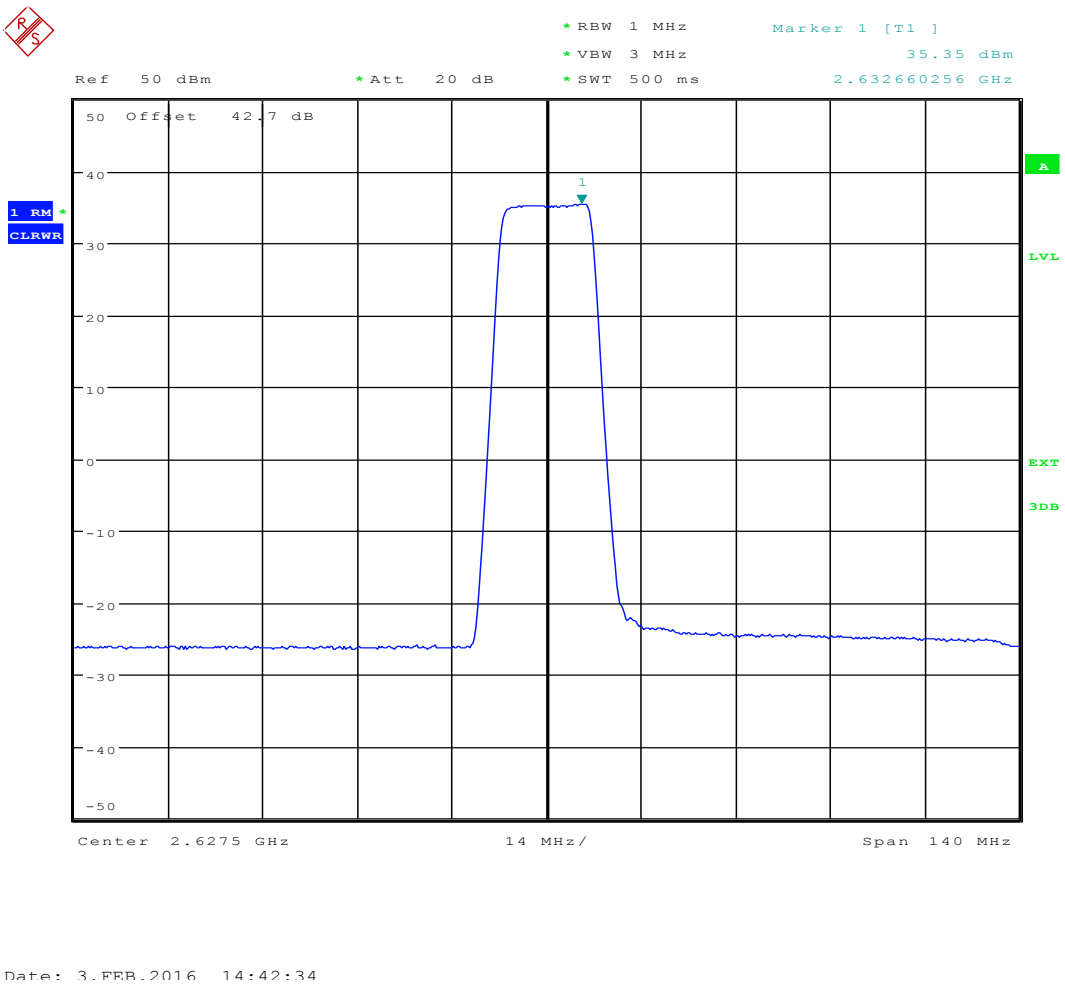
2.1.5 1L_10M_M



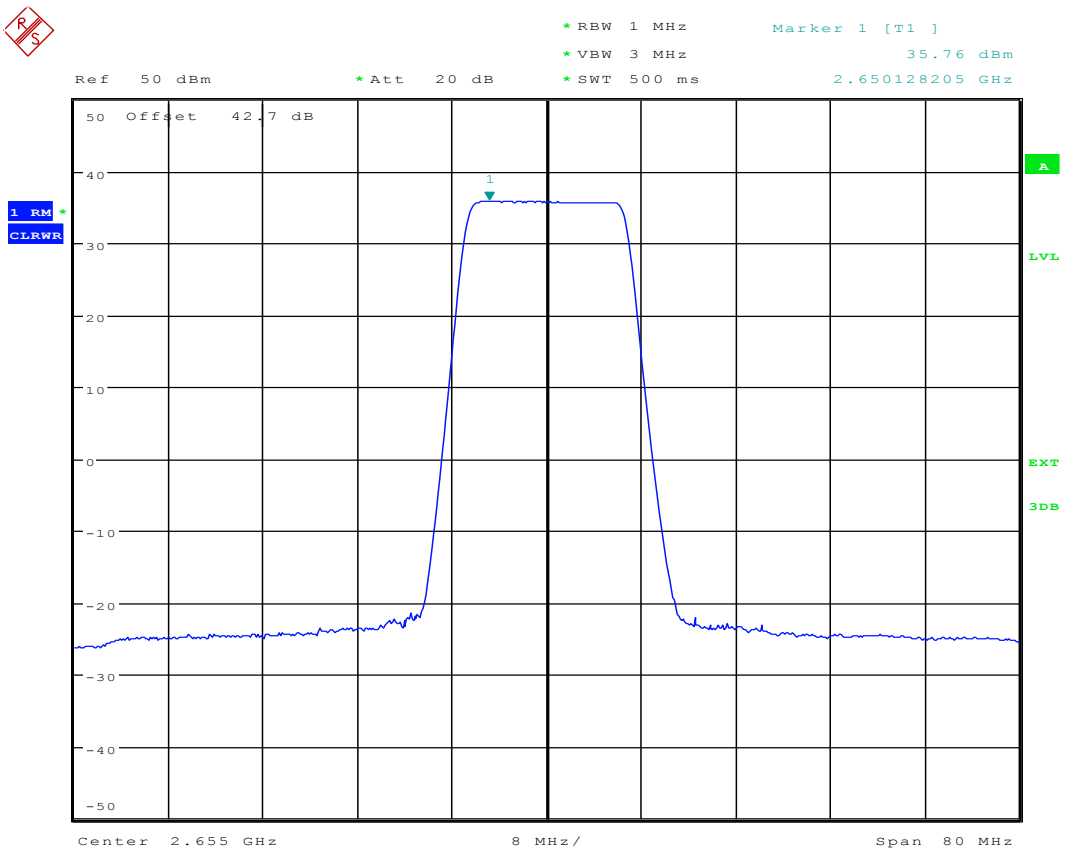
2.1.6 1L_10M_T



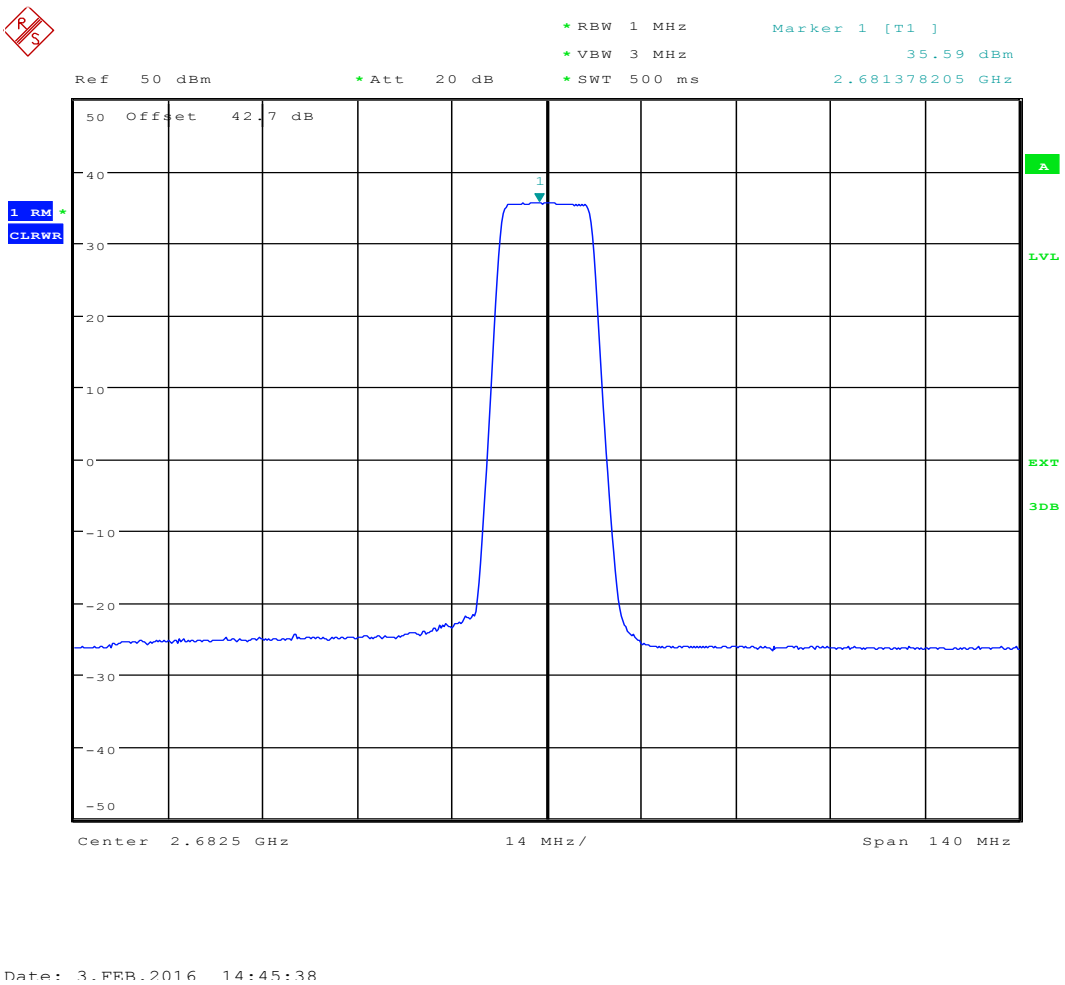
2.1.7 1L_15M_B



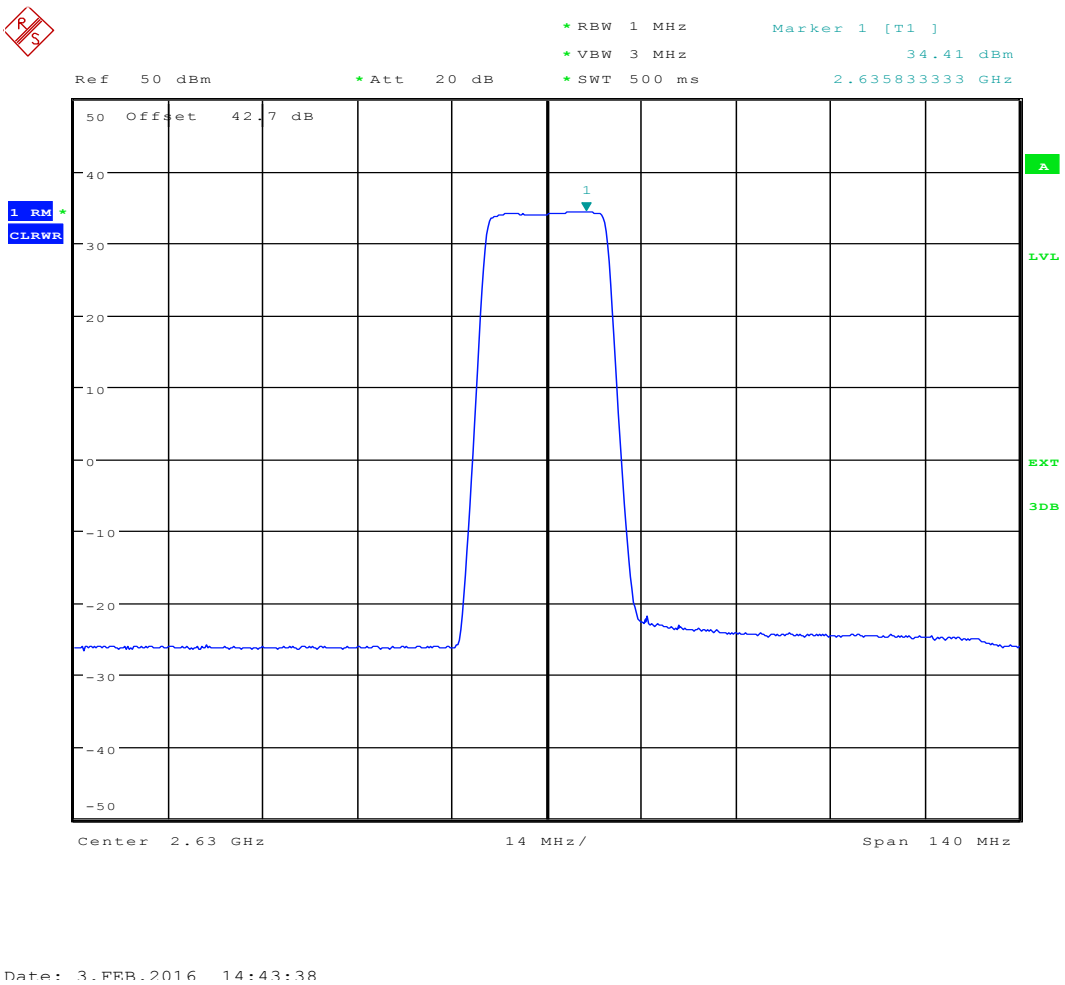
2.1.8 1L_15M_M



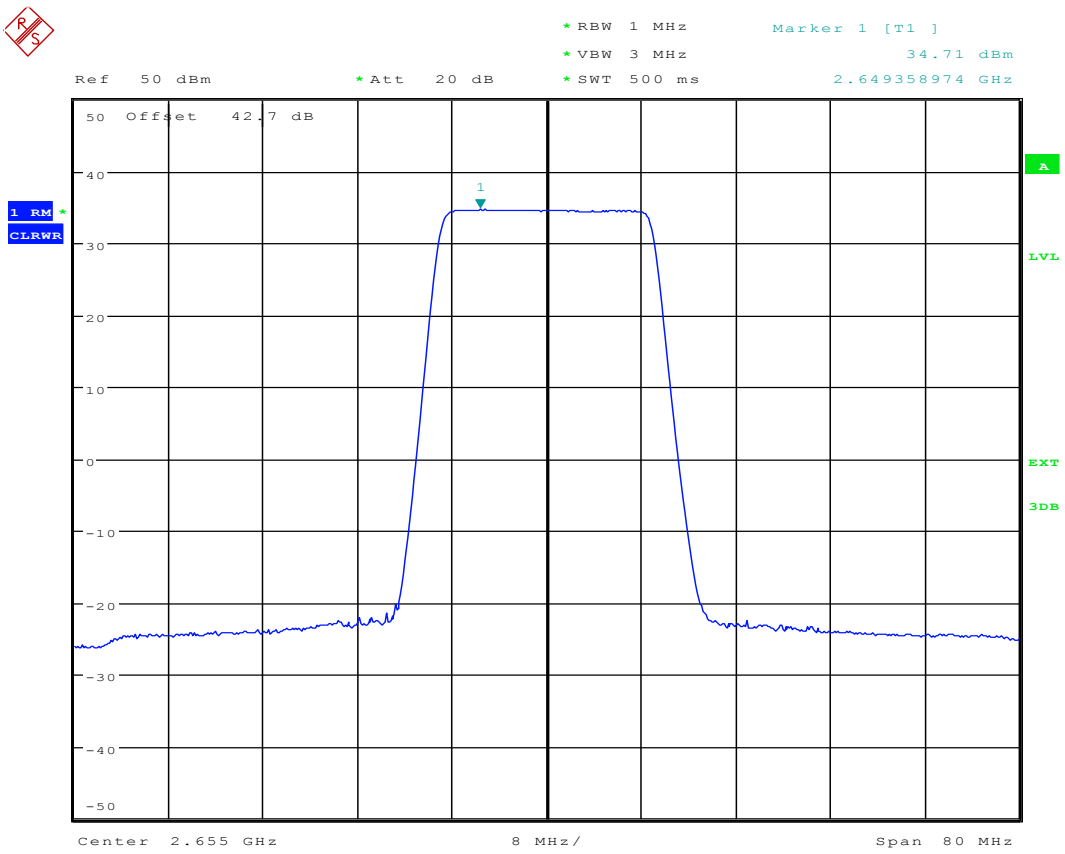
2.1.9 1L_15M_T



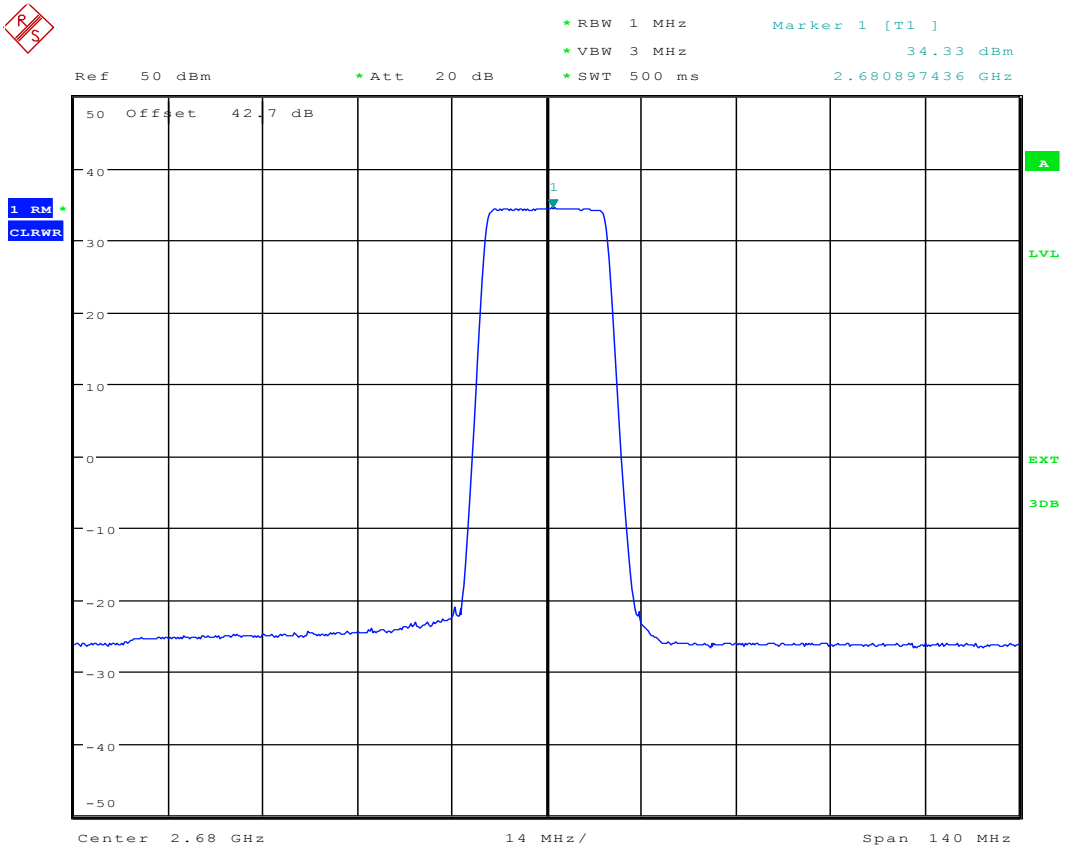
2.1.10 1L_20M_B



2.1.11 1L_20M_M



2.1.12 1L_20M_T



2.2 Peak-to-Average Ratio

(Not applicable)

Appendix B: Bandwidth

1 Result Table

1.1 Occupied Bandwidth

EUT Conf.	Occupied Bandwidth [MHz]	Verdict
1L_5M_B	4.487179487	Pass
1L_5M_M	4.487179487	Pass
1L_5M_T	4.487179487	Pass
1L_10M_B	8.942307692	Pass
1L_10M_M	8.942307692	Pass
1L_10M_T	8.910256410	Pass
1L_15M_B	13.413461538	Pass
1L_15M_M	13.365384615	Pass
1L_15M_T	13.365384615	Pass
1L_20M_B	17.820512821	Pass
1L_20M_M	17.820512821	Pass
1L_20M_T	17.820512821	Pass

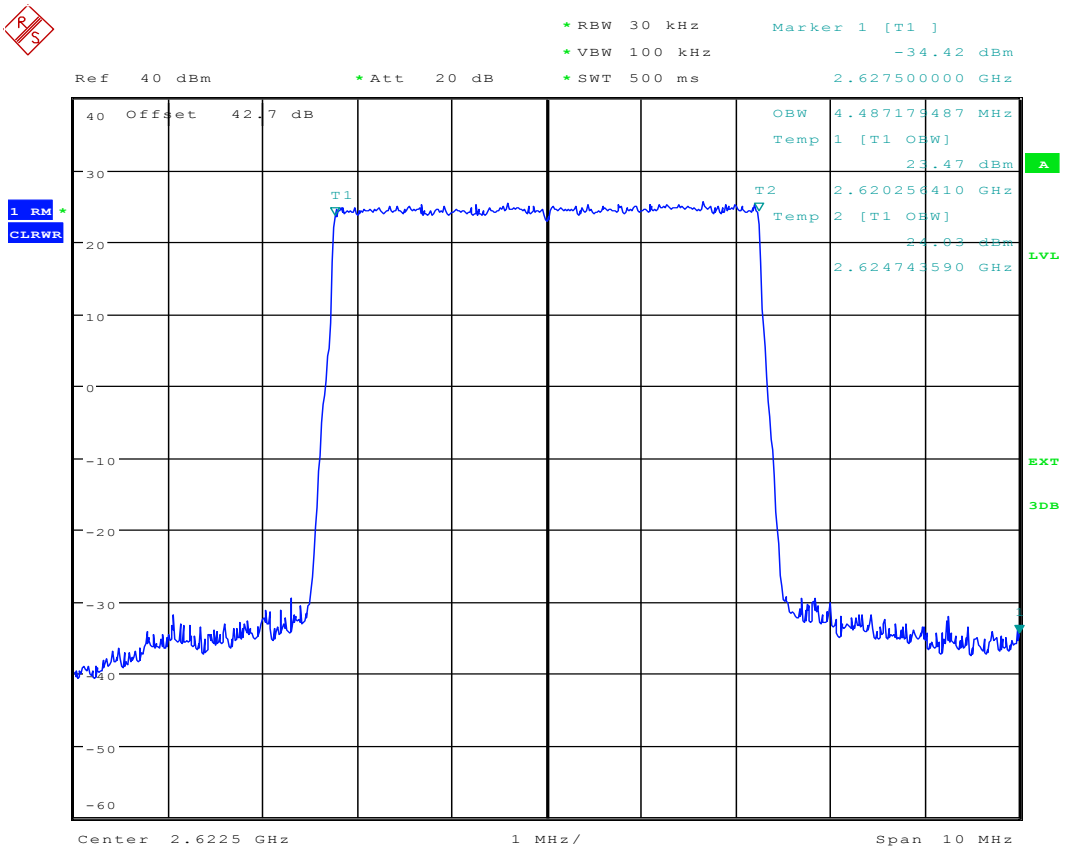
1.2 Emission Bandwidth

EUT Conf.	Emission Bandwidth, -26 dBc [MHz]	Emission Bandwidth, -20 dBc [MHz]	Verdict
1L_5M_B	4.775642	---	Pass
1L_5M_M	4.775642	---	Pass
1L_5M_T	4.775642	---	Pass
1L_10M_B	9.350962	---	Pass
1L_10M_M	9.350962	---	Pass
1L_10M_T	9.326924	---	Pass
1L_15M_B	13.910256	---	Pass
1L_15M_M	13.910256	---	Pass
1L_15M_T	13.878205	---	Pass
1L_20M_B	18.461538	---	Pass
1L_20M_M	18.557692	---	Pass
1L_20M_T	18.509615	---	Pass

2 Test Plot

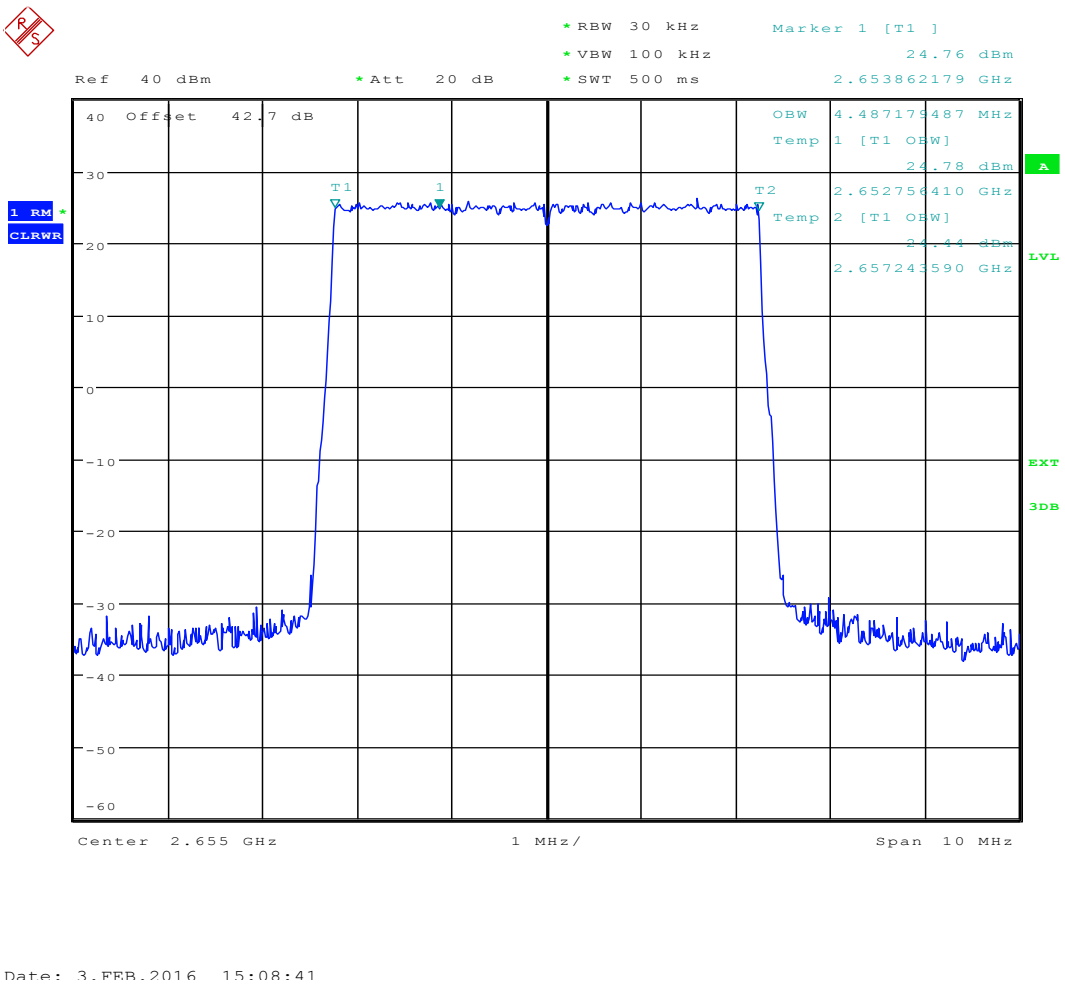
2.1 Occupied Bandwidth

2.1.1 1L_5M_B



Date: 3.FEB.2016 14:58:29

2.1.2 1L_5M_M



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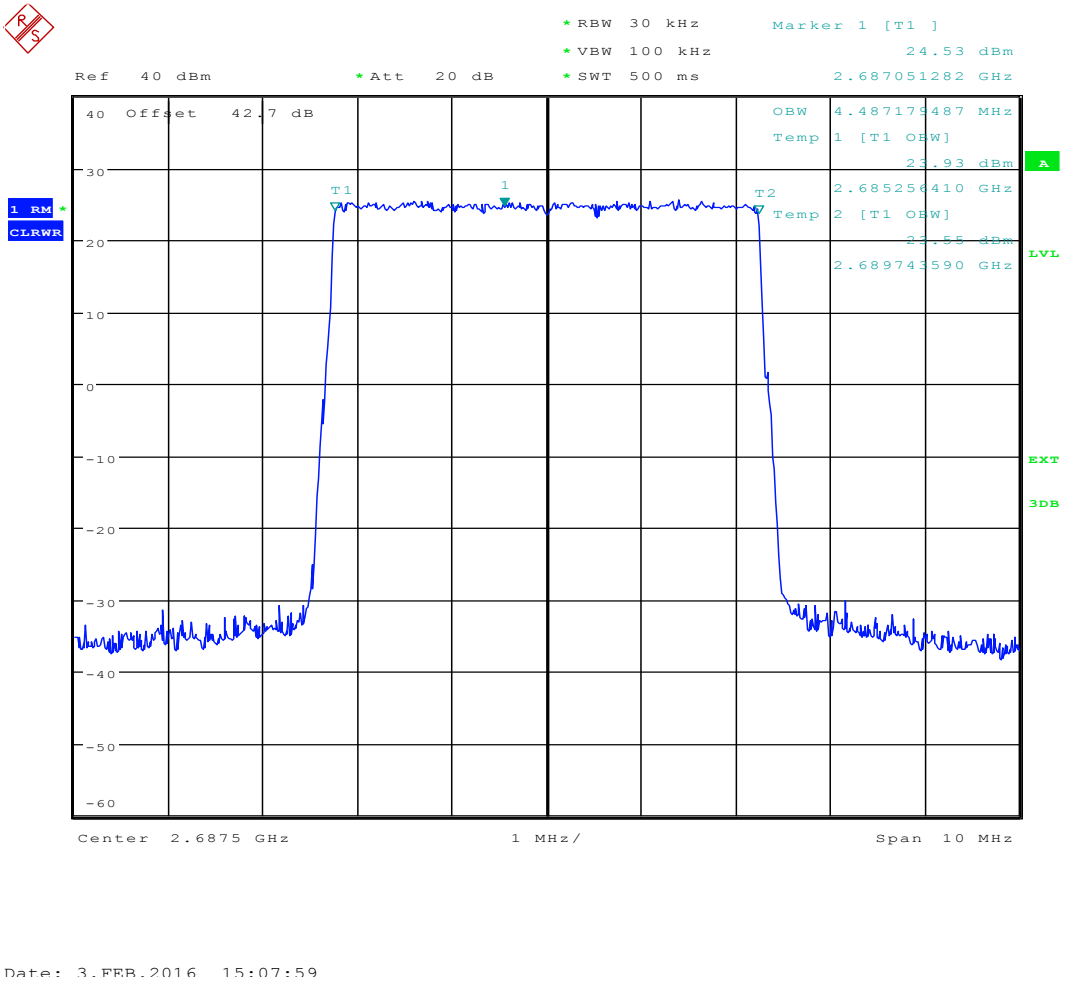
2.1.3 1L_5M_T



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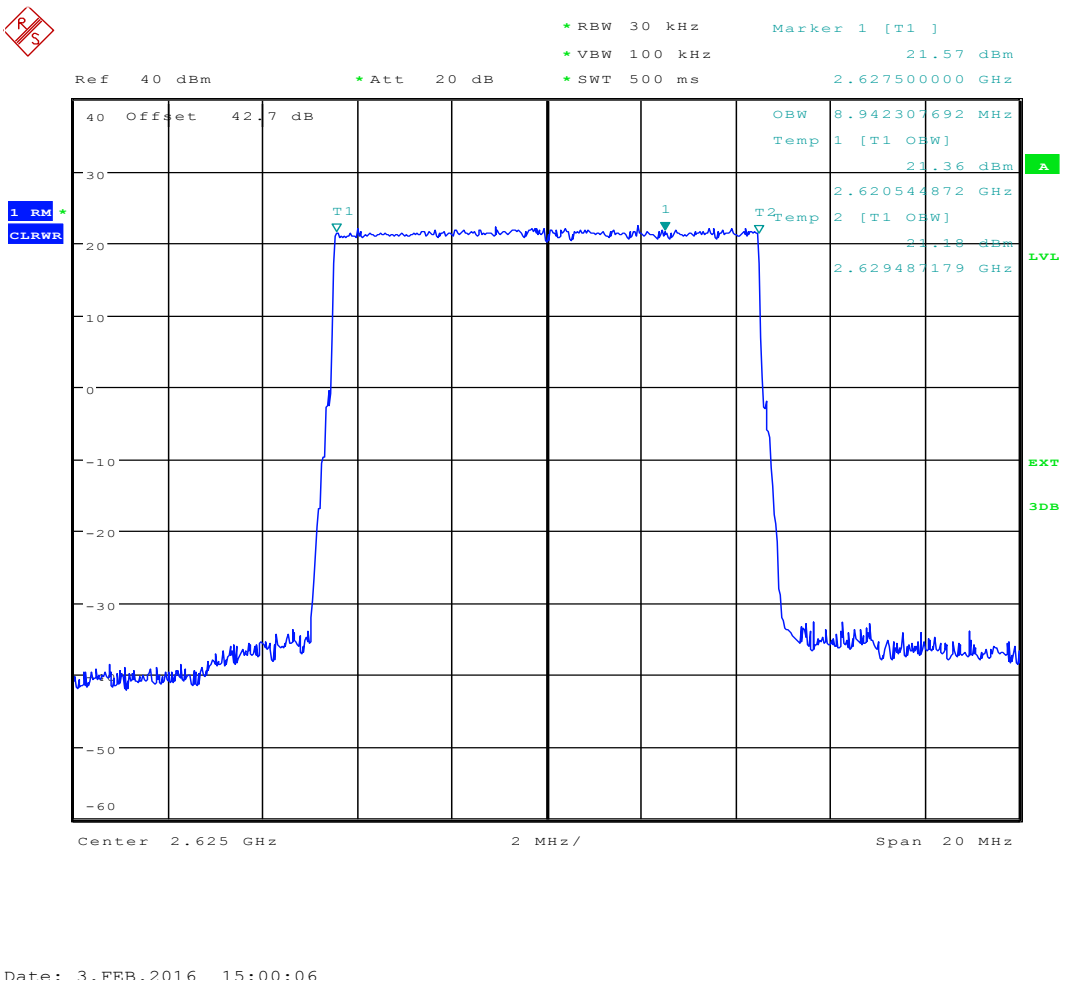
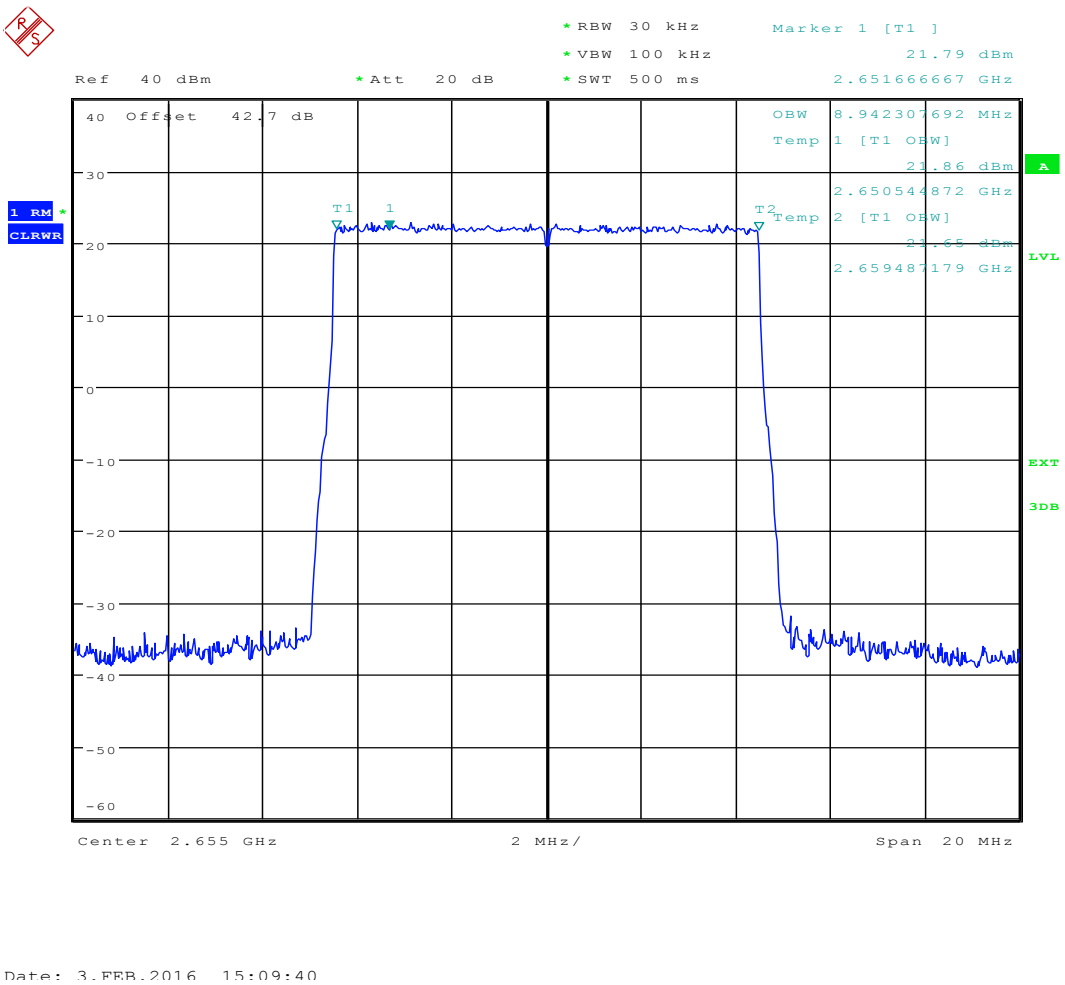
2.1.4 1L_10M_B



2.1.5 1L_10M_M



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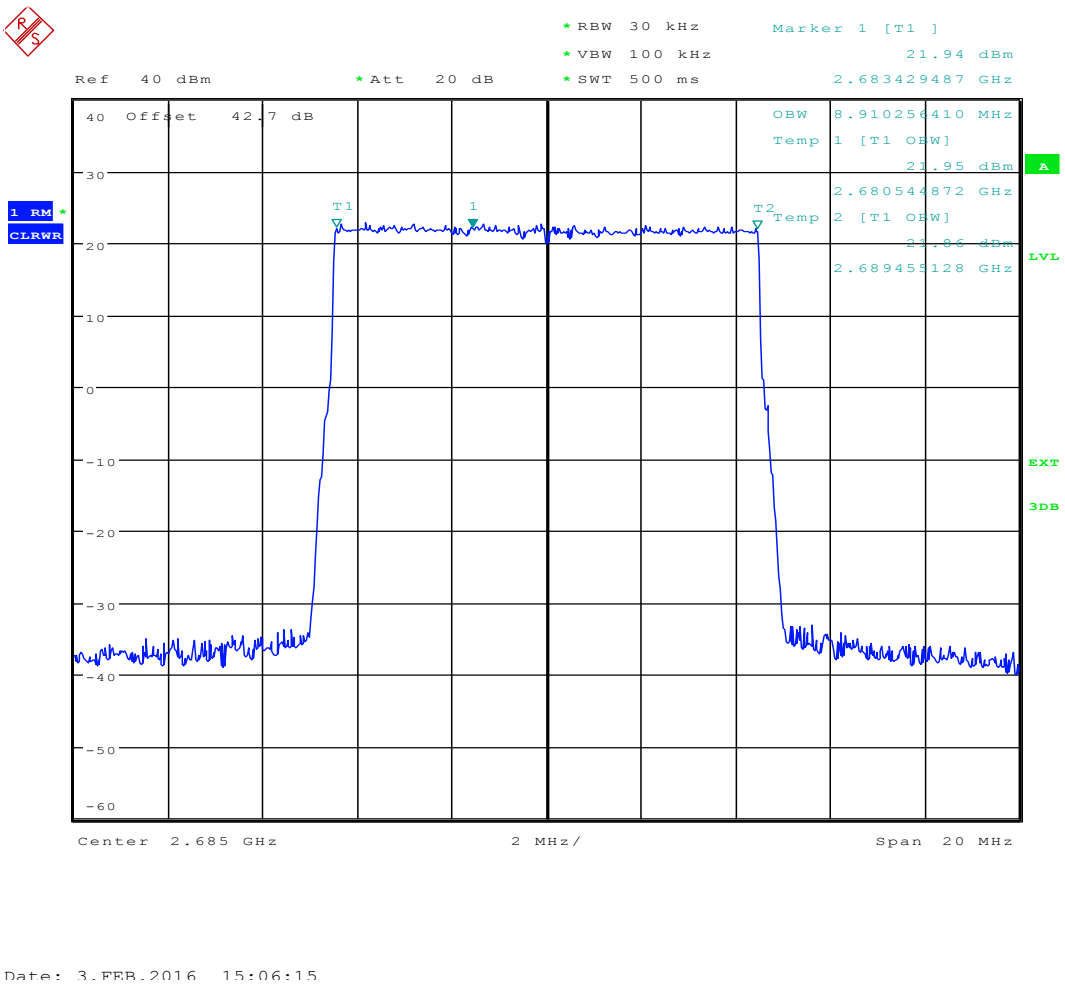
2.1.6 1L_10M_T



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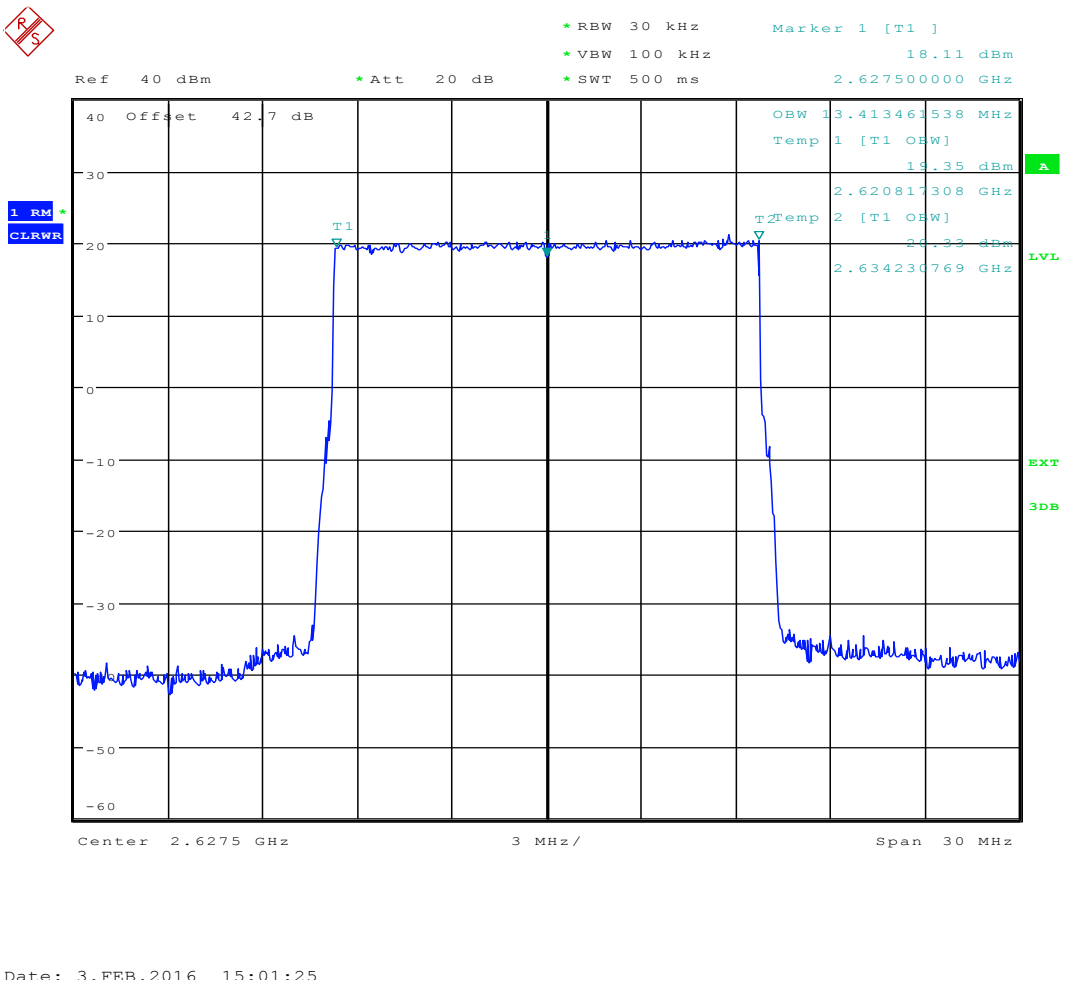
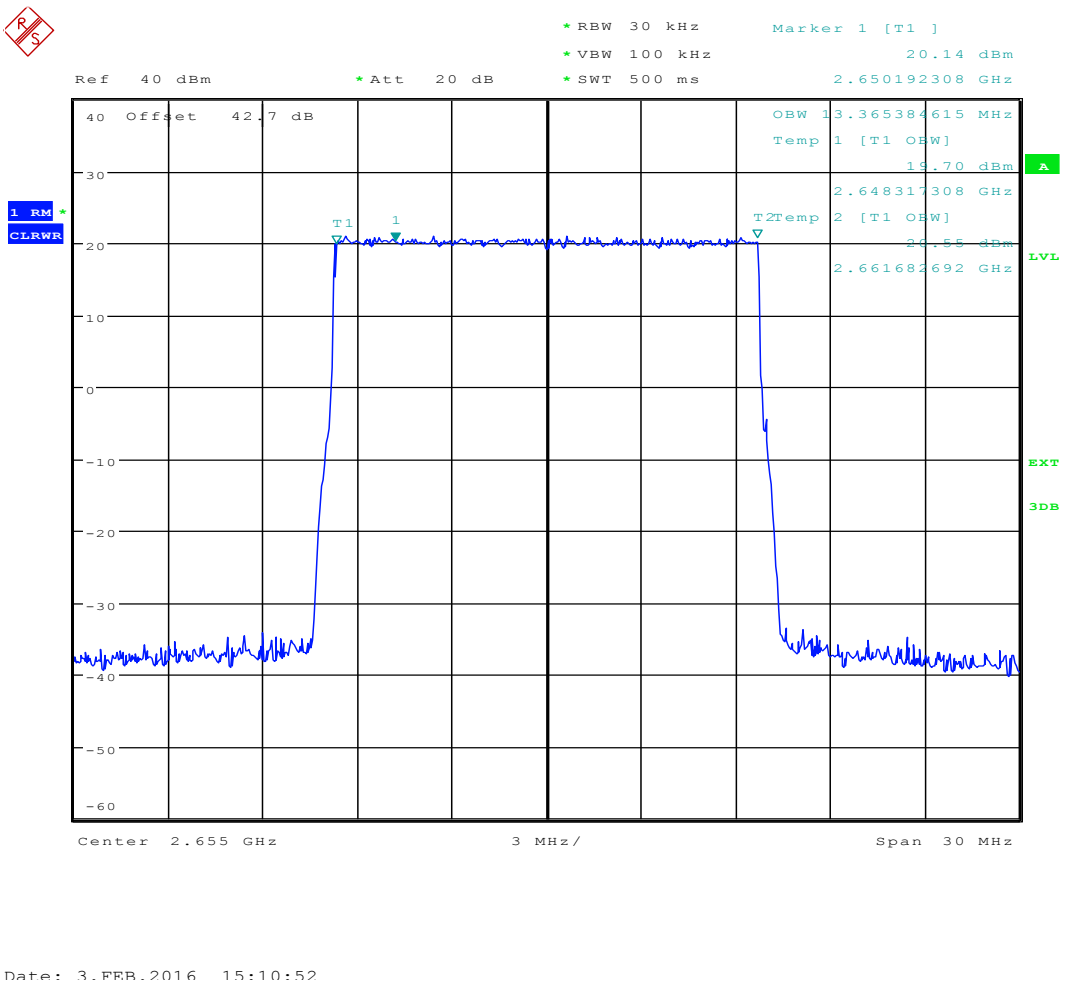
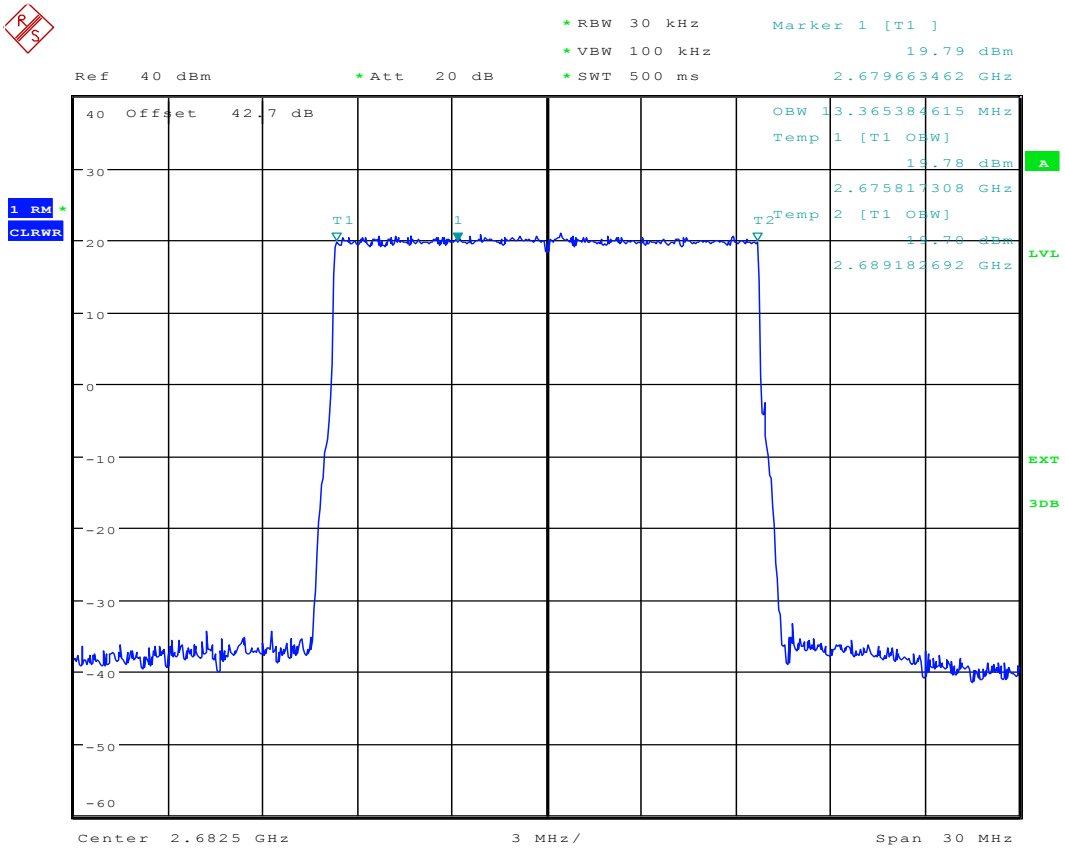
2.1.7 1L_15M_B



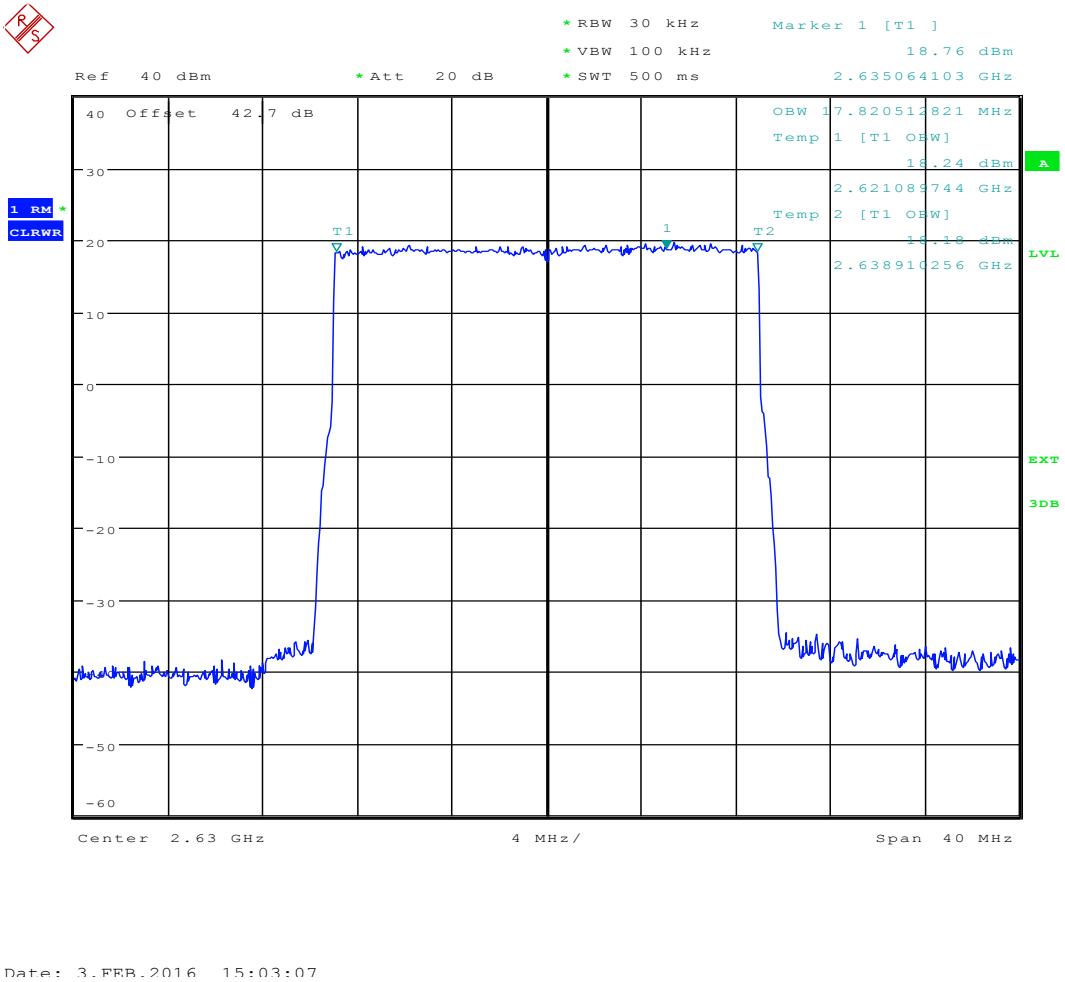
2.1.8 1L_15M_M



2.1.9 1L_15M_T



2.1.10 1L_20M_B



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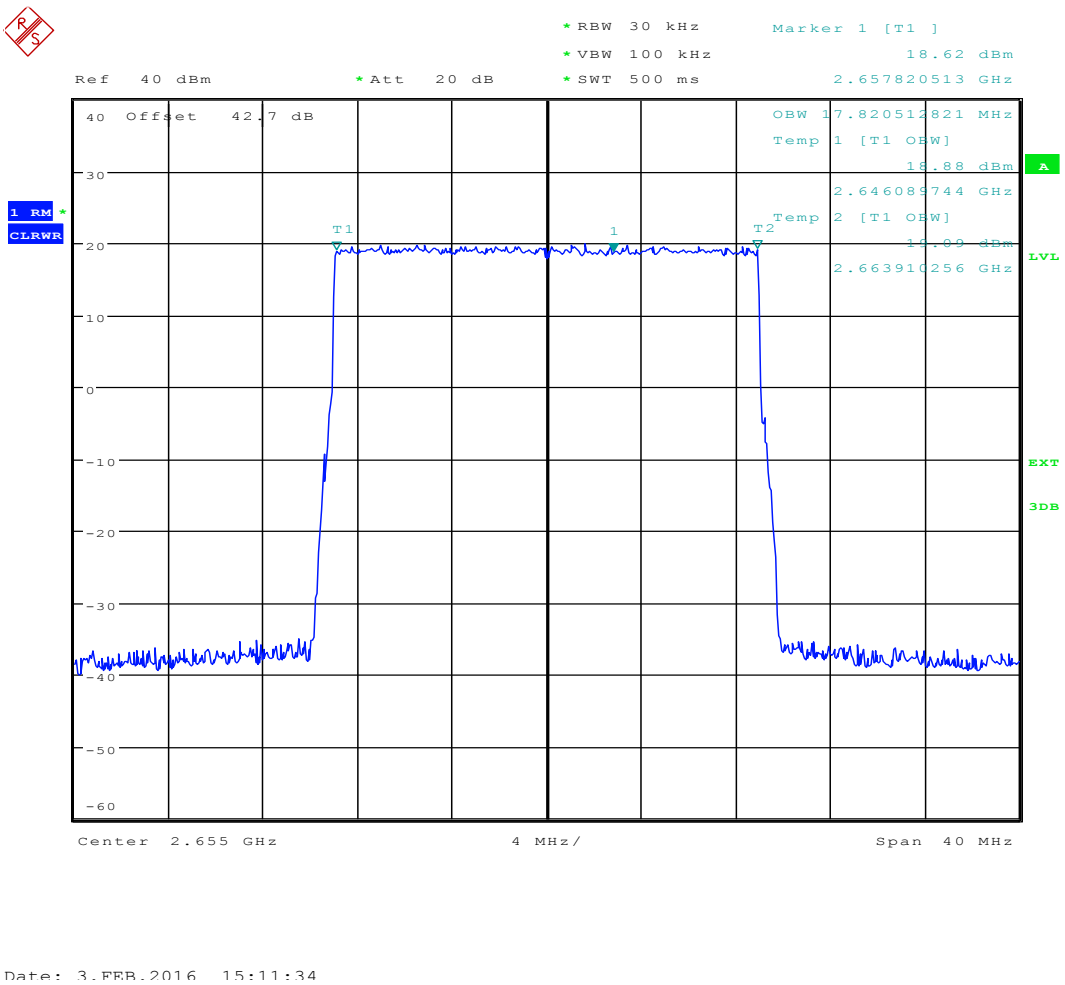
2.1.11 1L_20M_M



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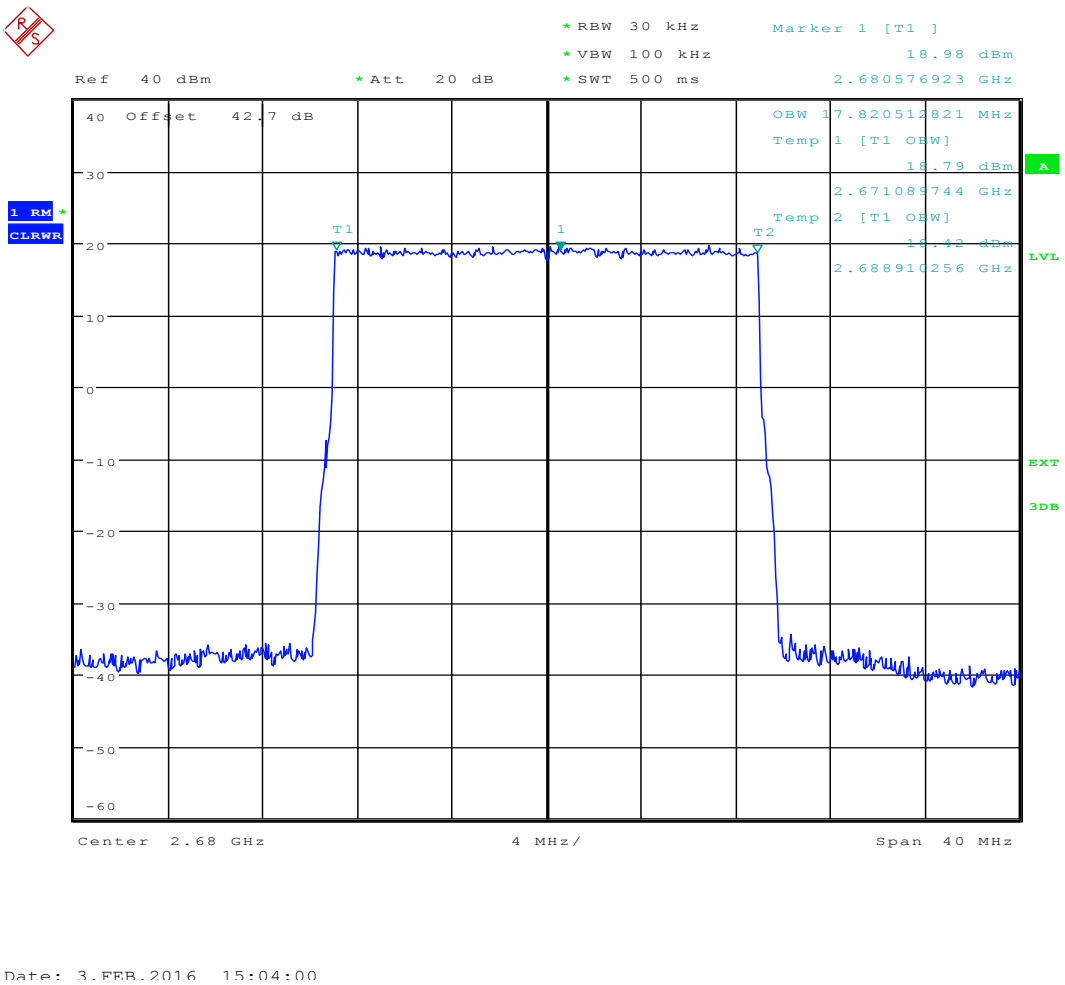
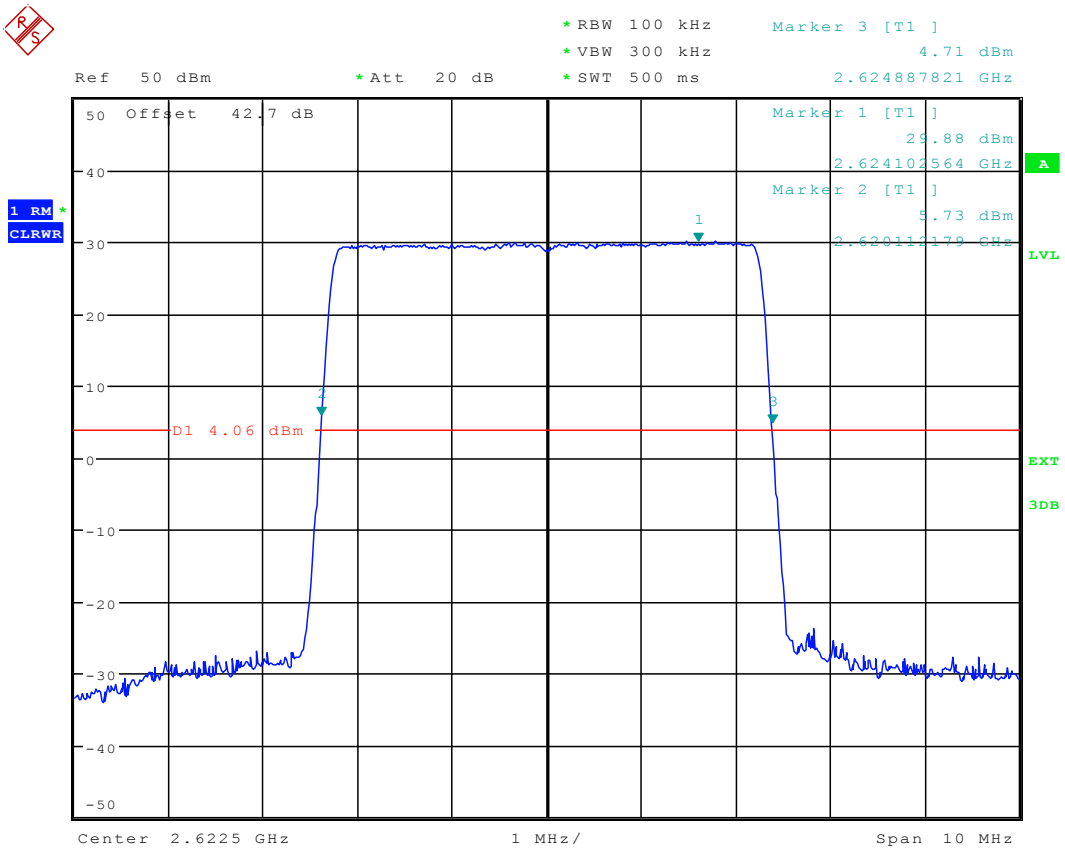
2.1.12 1L_20M_T



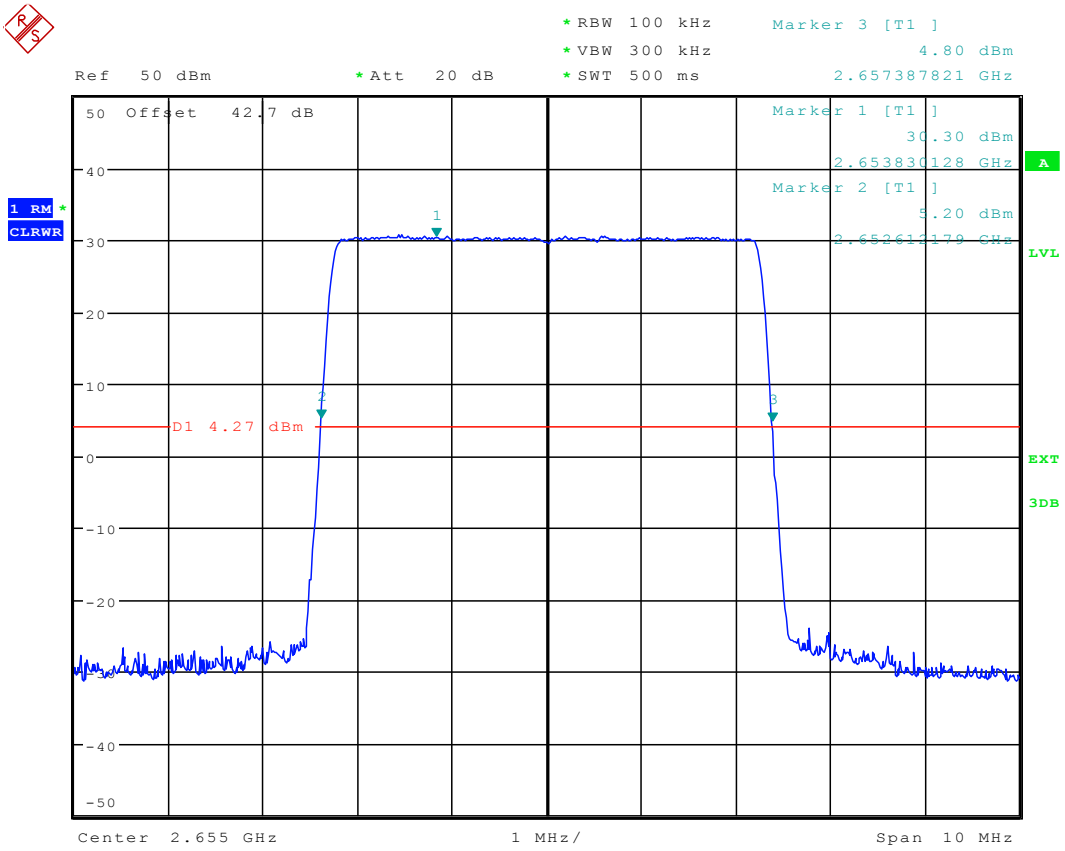
Date: 3.FEB.2016 15:04:00

2.2 Emission Bandwidth

2.2.1 1L_5M_B



2.2.2 1L_5M_M



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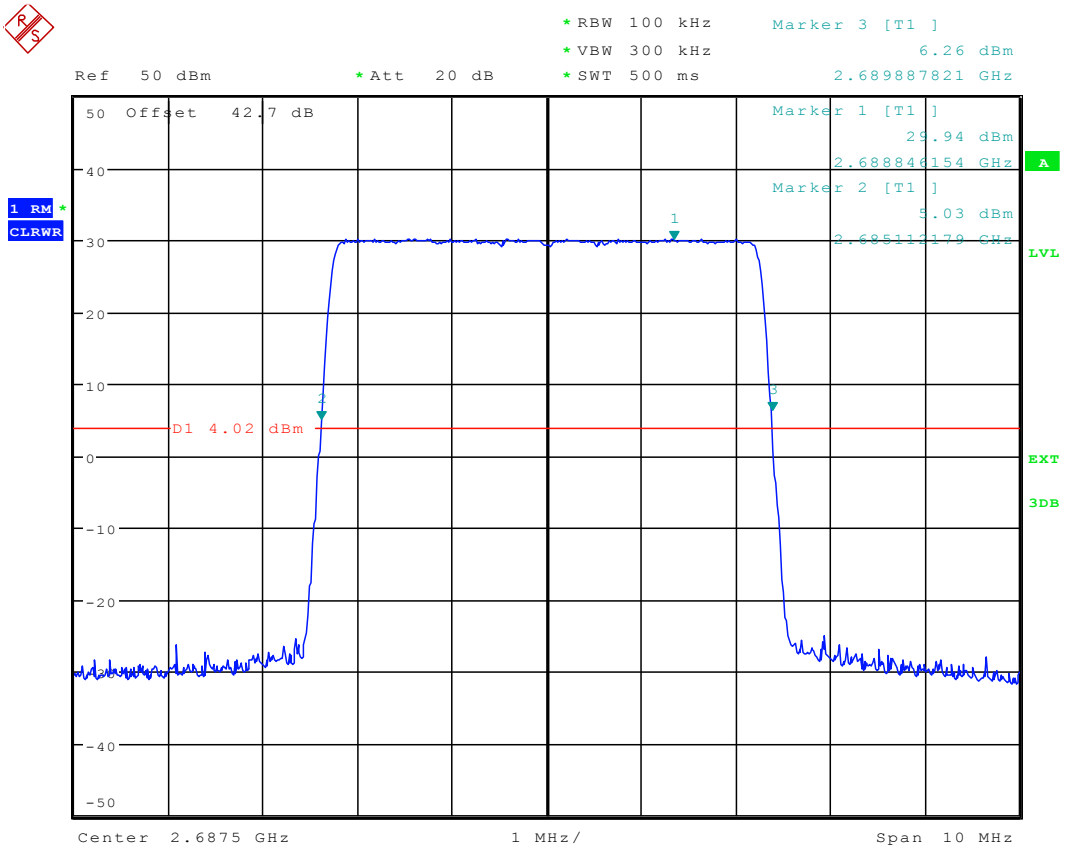
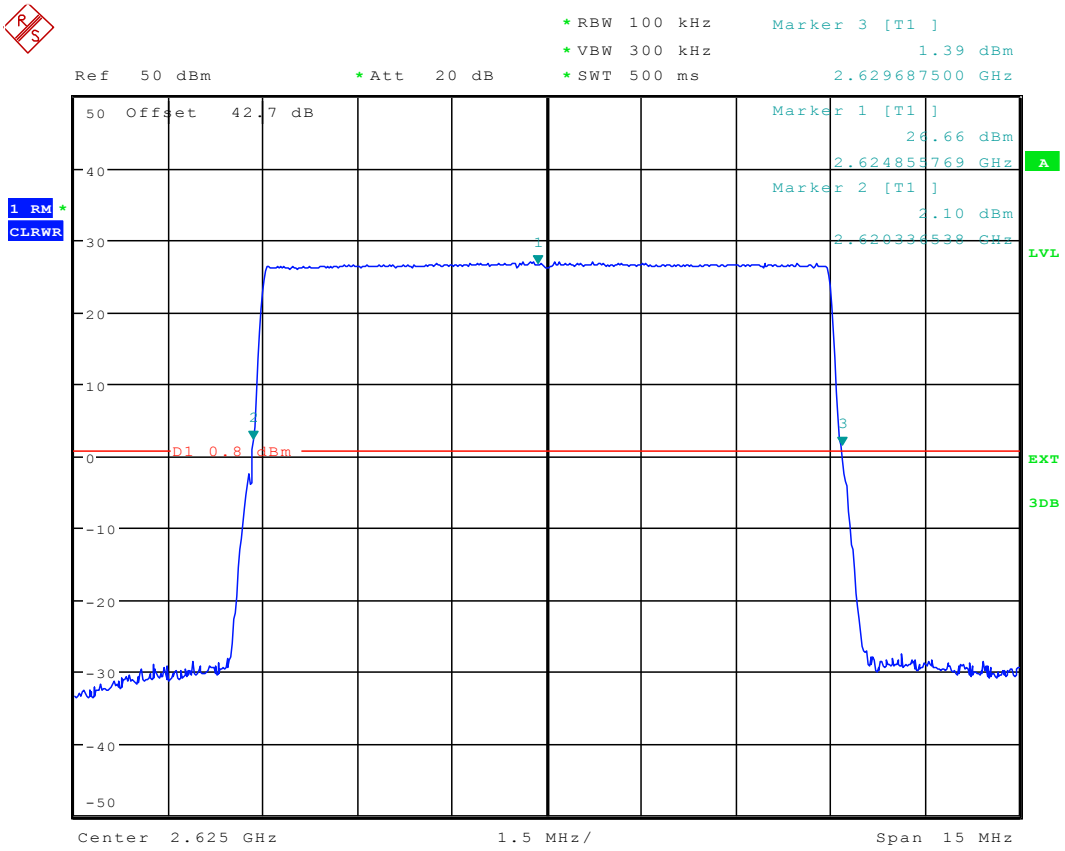
2.2.3 1L_5M_T



2.2.4 1L_10M_B



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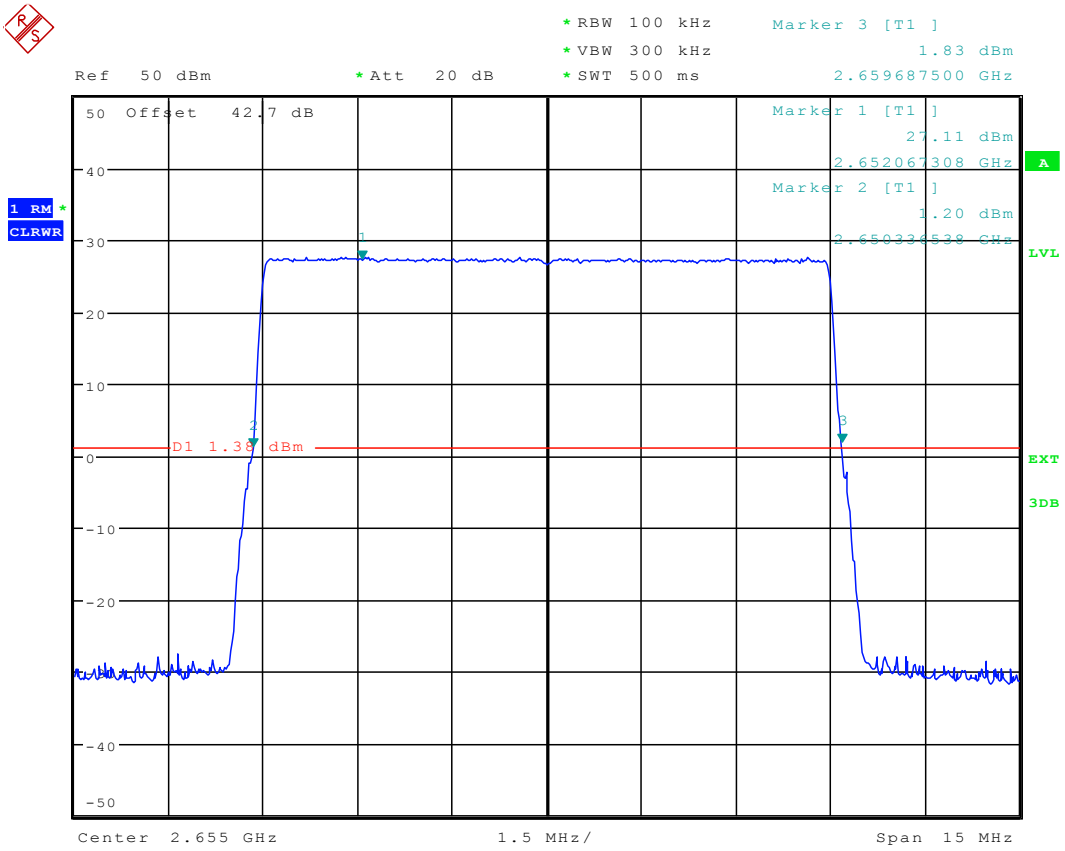
2.2.5 1L_10M_M



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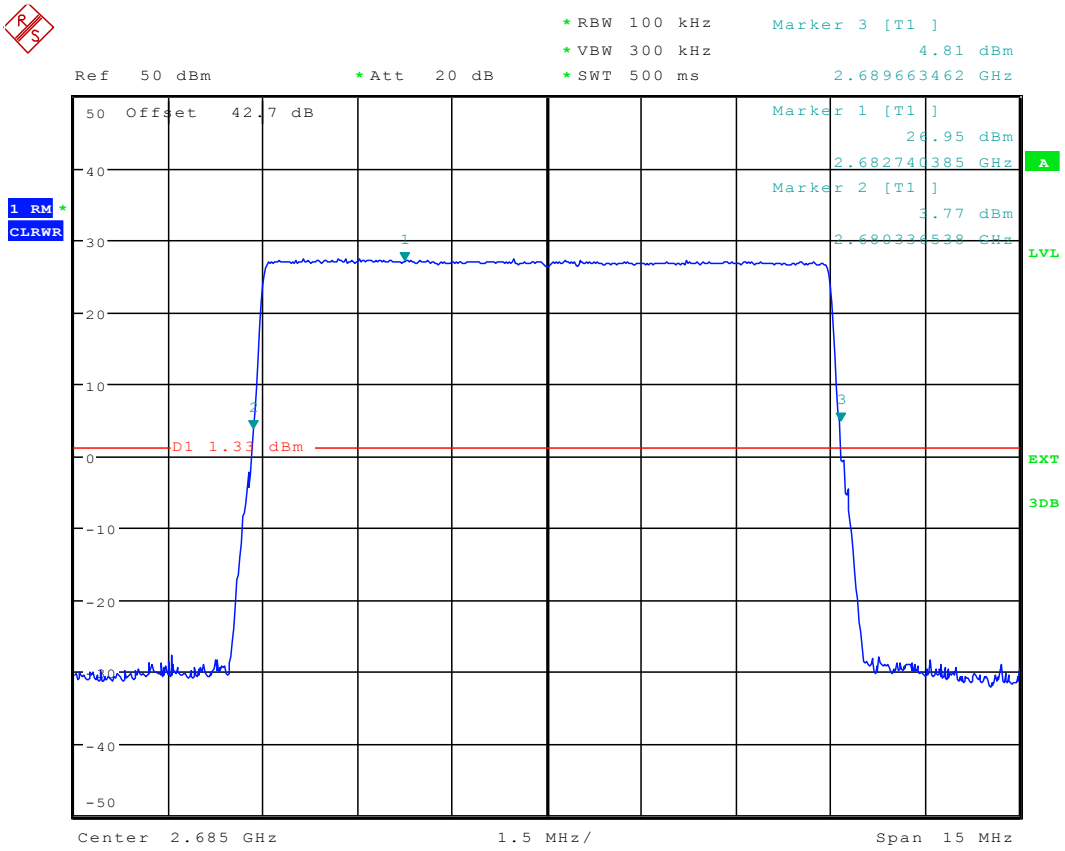
2.2.6 1L_10M_T



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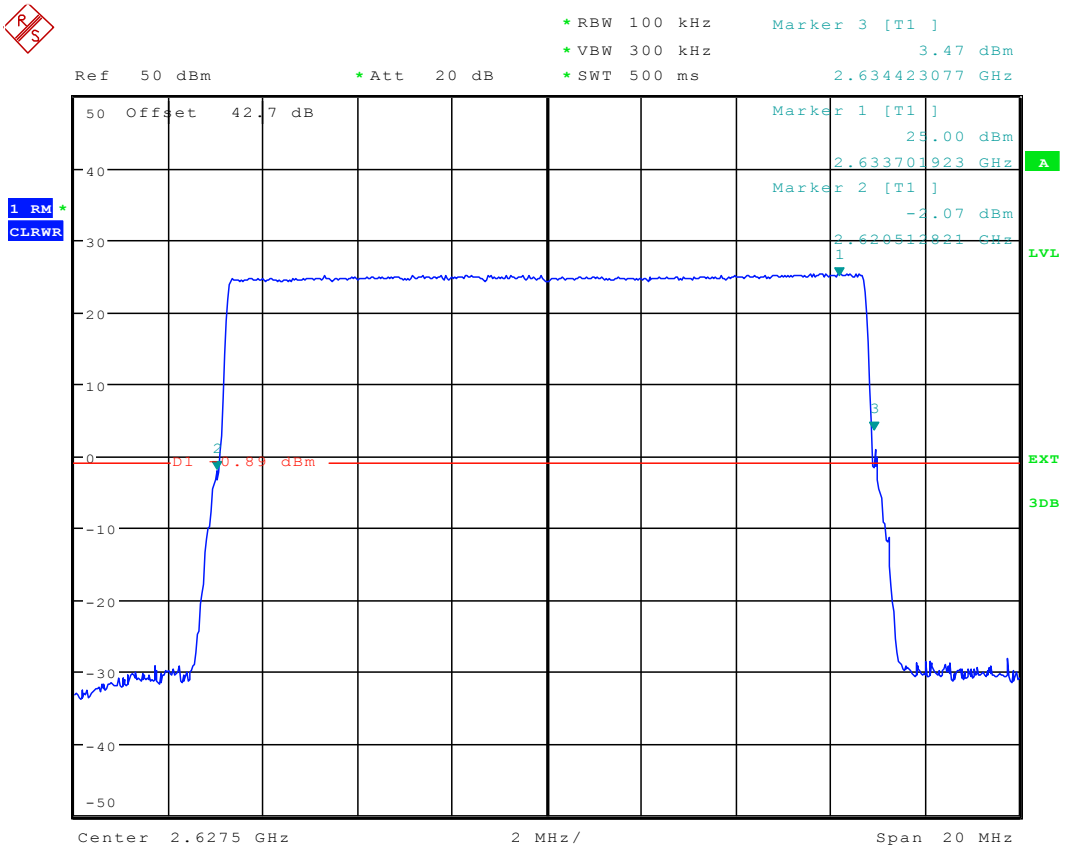
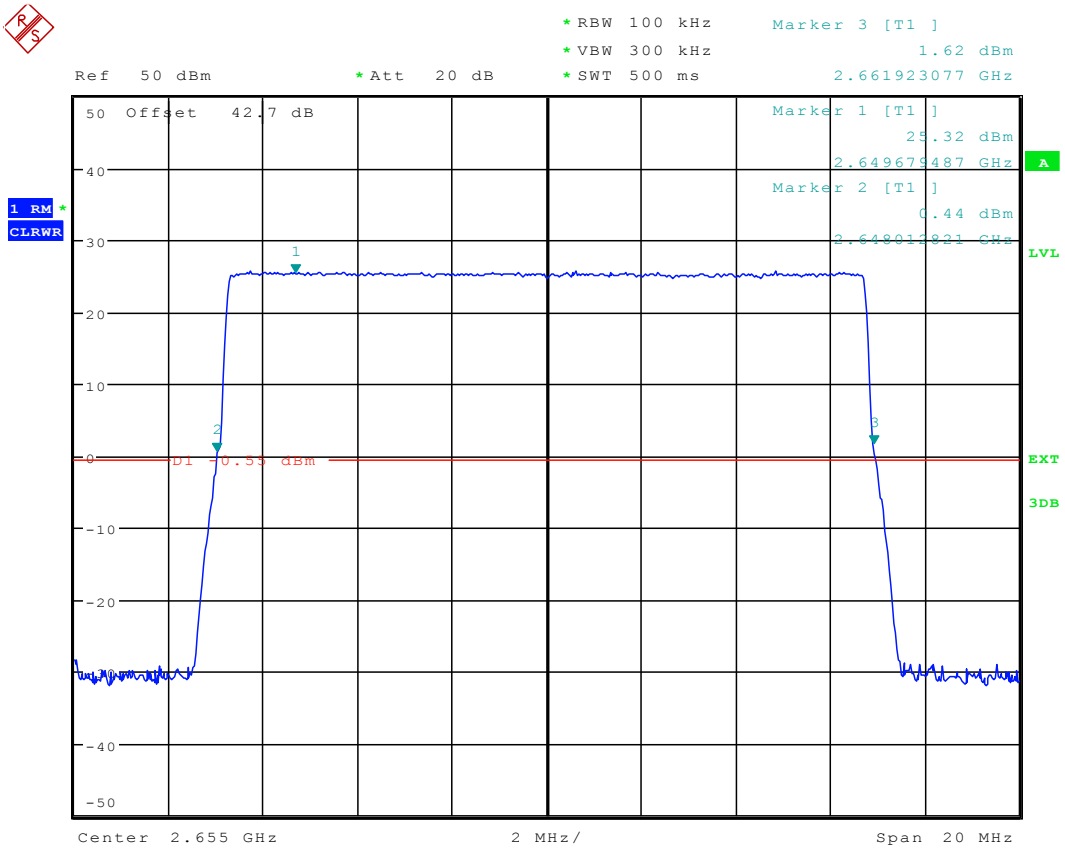
2.2.7 1L_15M_B



2.2.8 1L_15M_M



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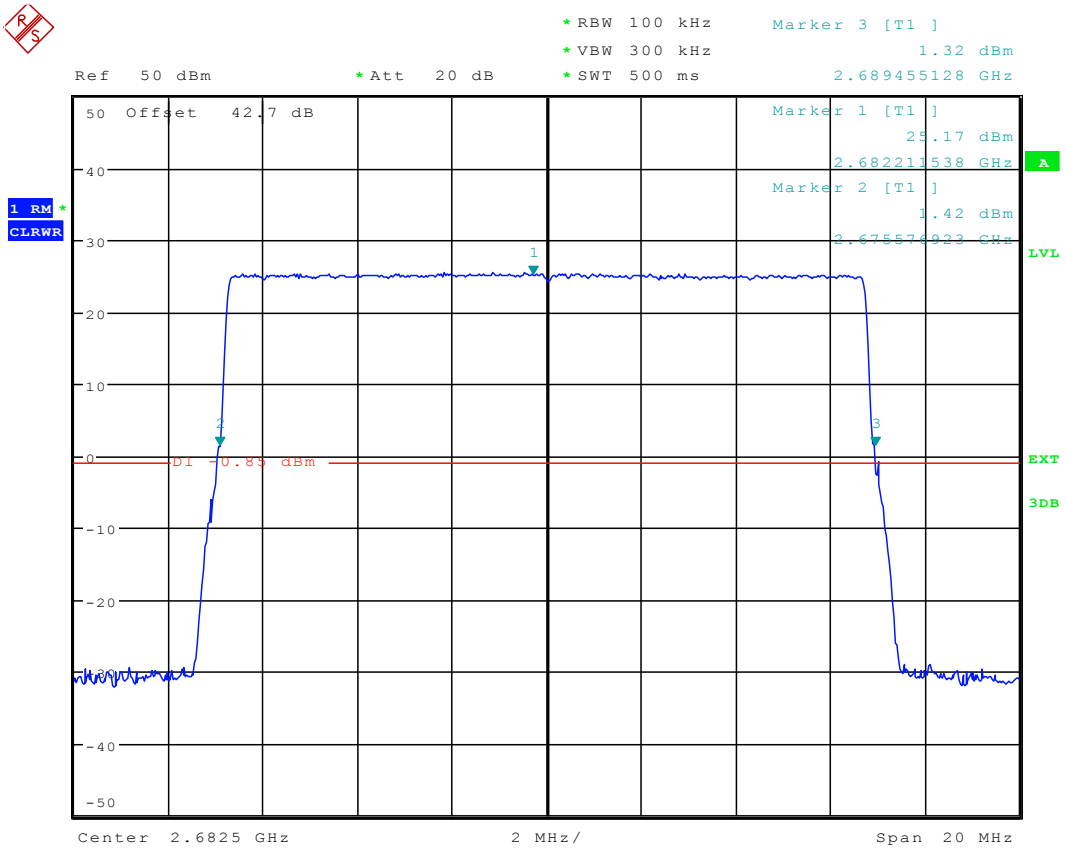
2.2.9 1L_15M_T



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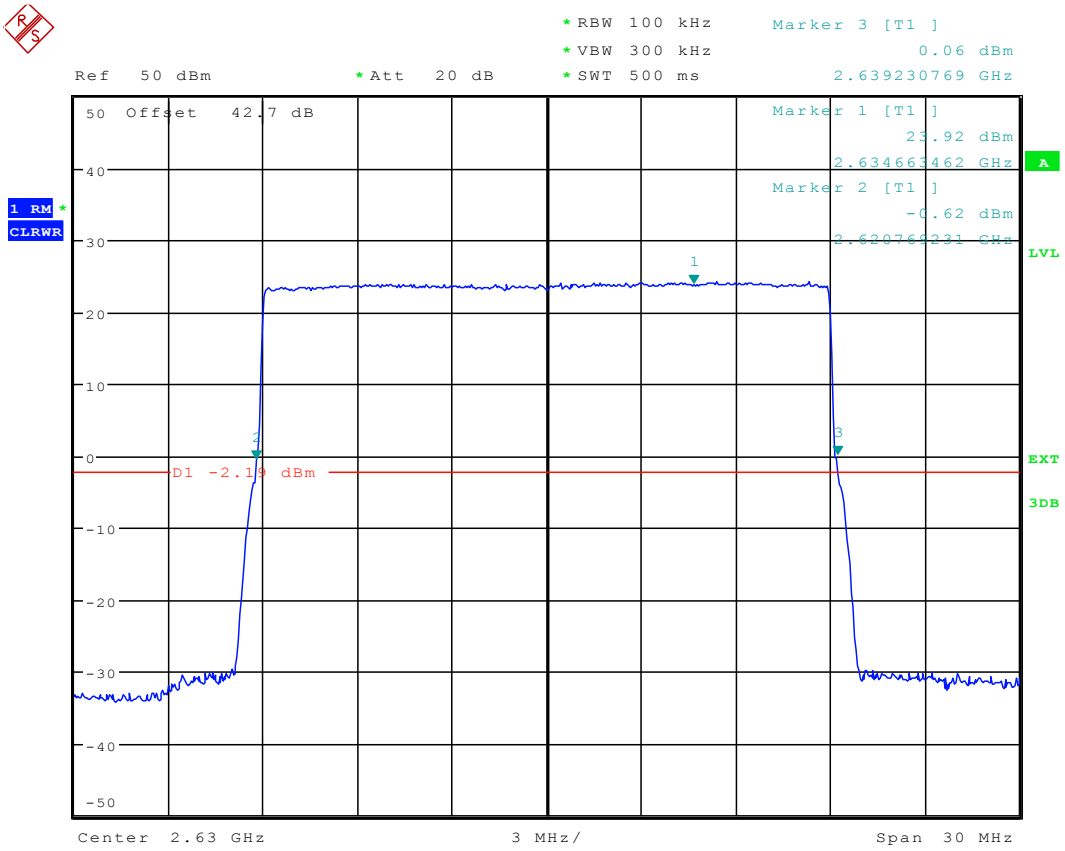
2.2.10 1L_20M_B



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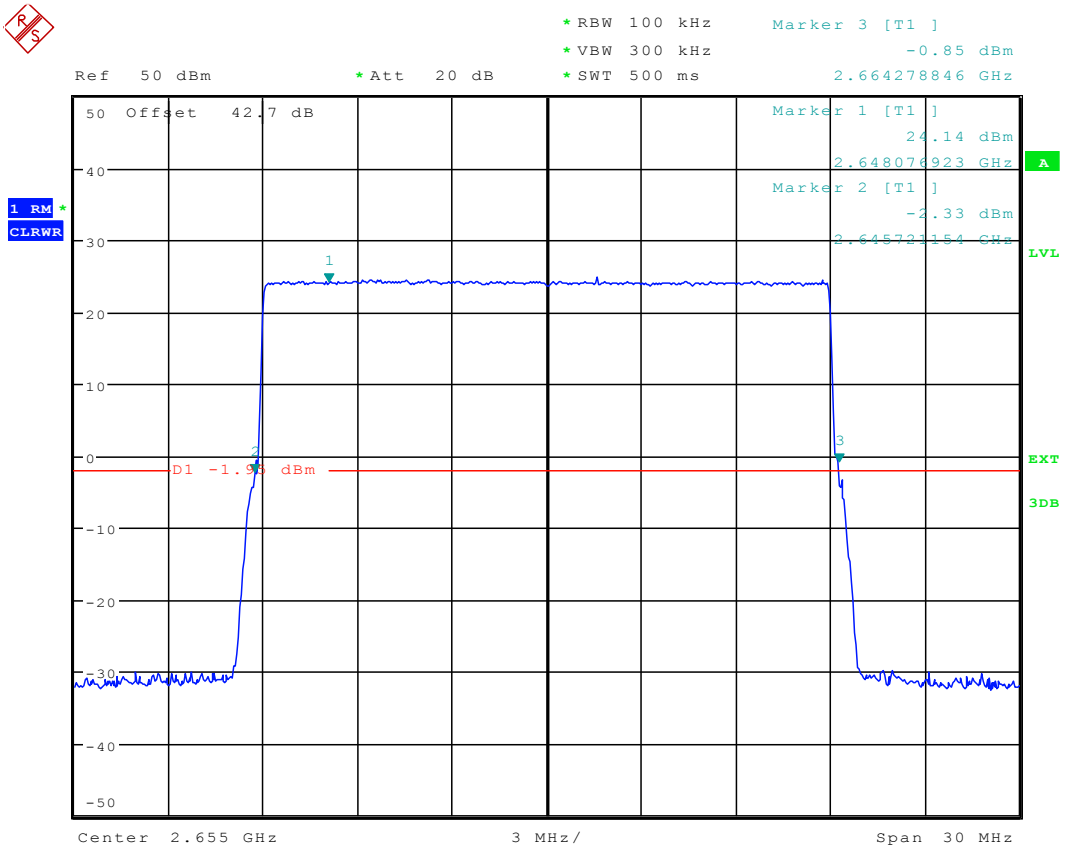
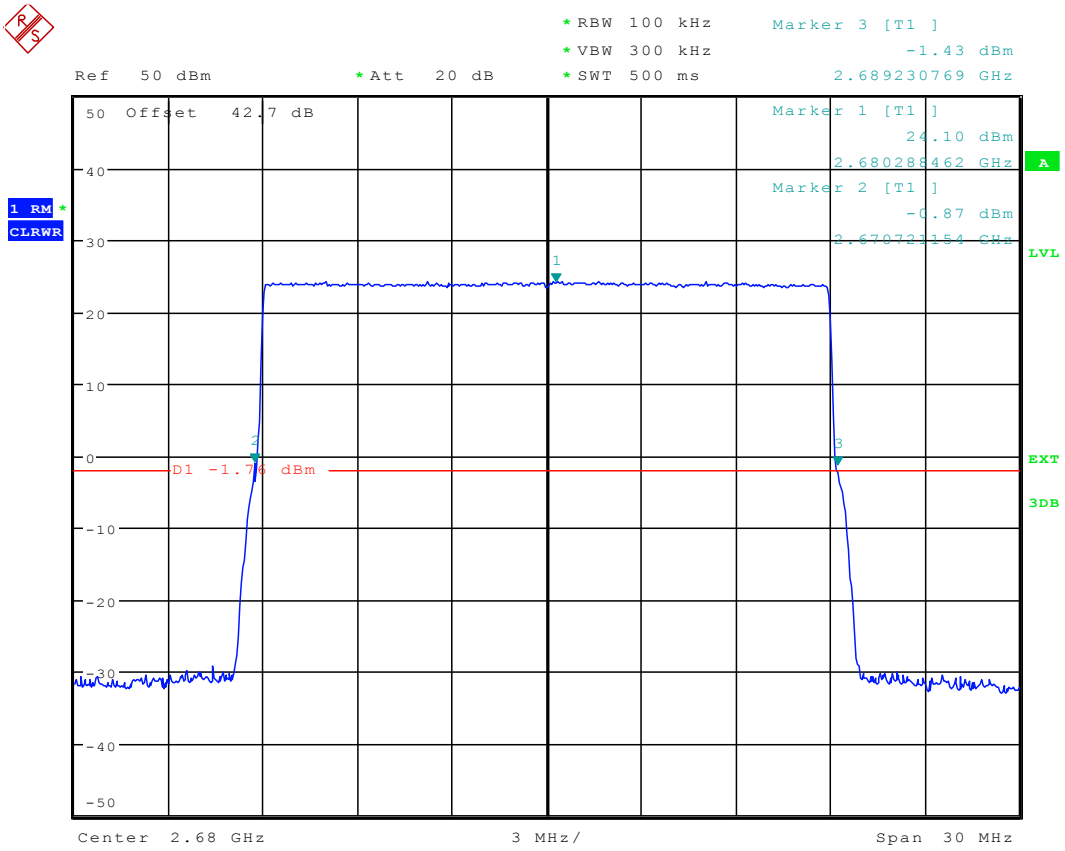
2.2.11 1L_20M_M



2.2.12 1L_20M_T



Appendix C: Band Edges Compliance / Emission Mask

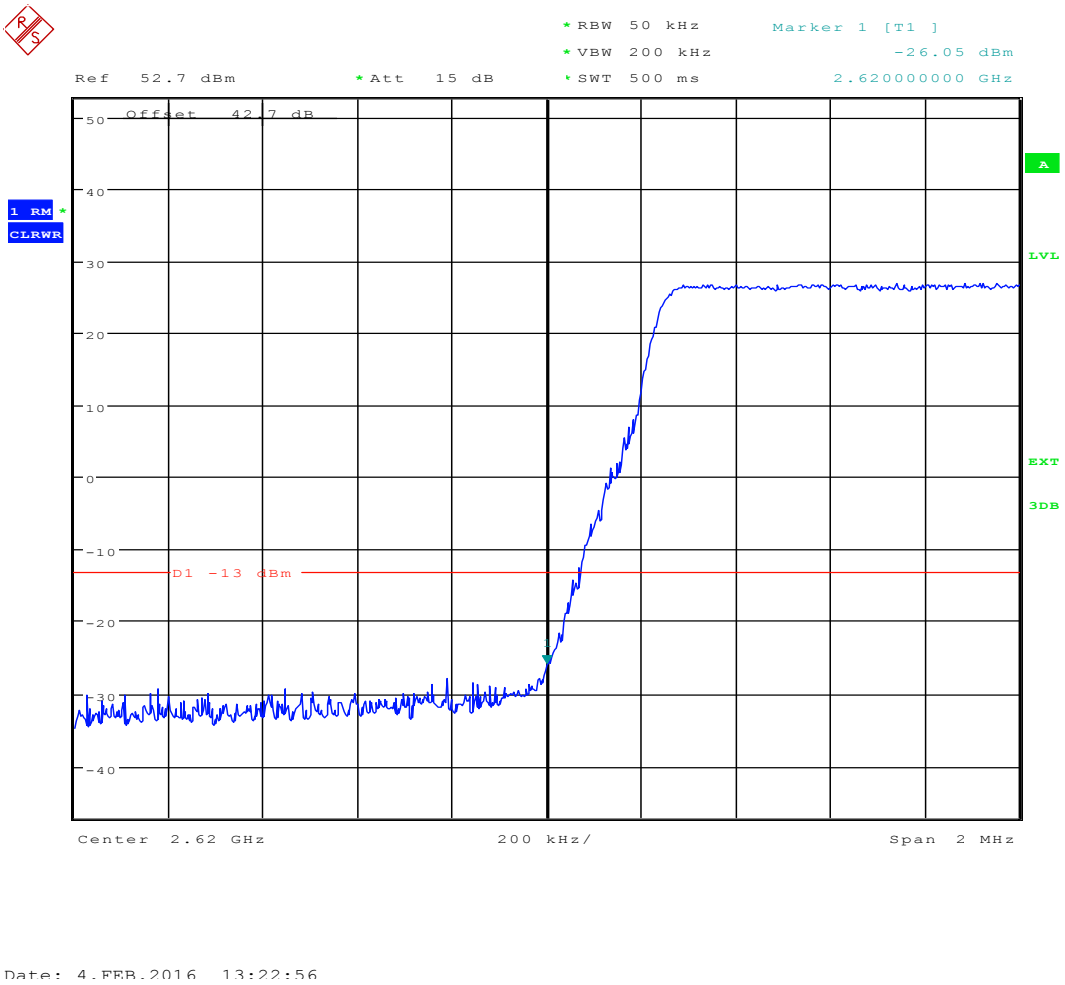
1 Result Table

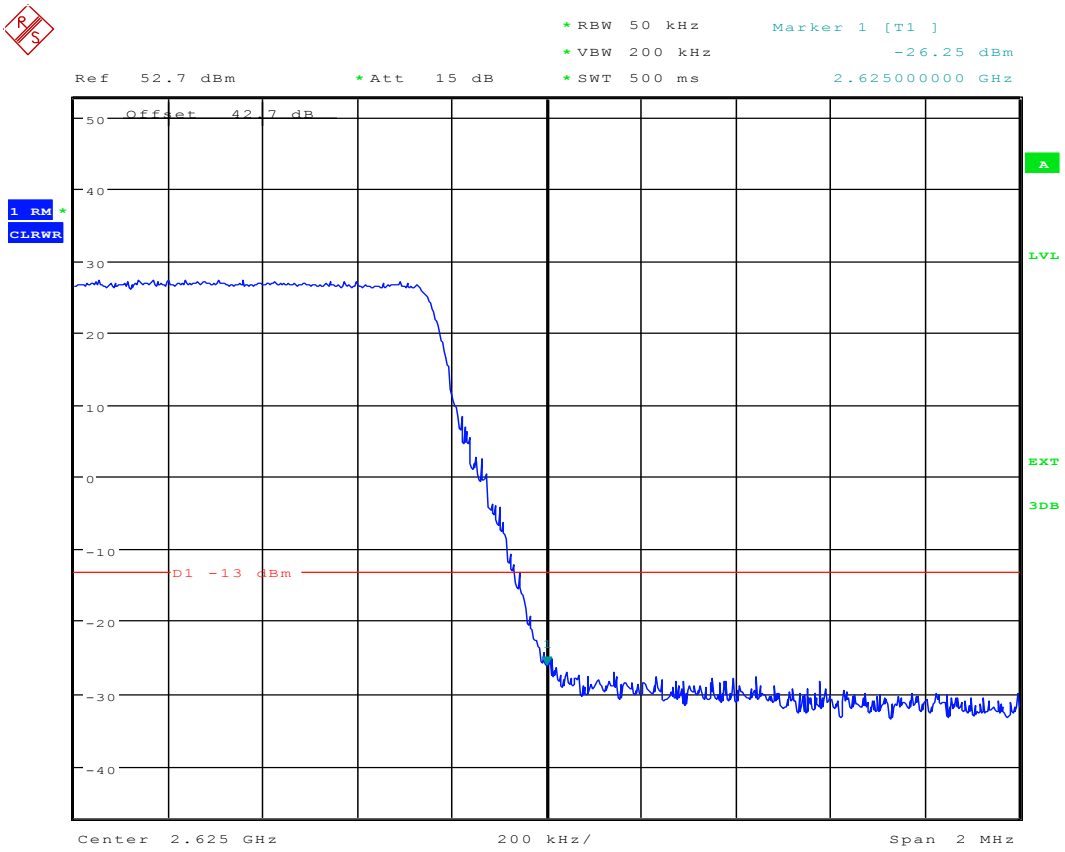
NOTE: If applicable, the offset of measurement filter -3dB point may be considered when identifying the maximum emission for e.g. the CDMA, WCDMA, WiMAX, LTE systems.

EUT Conf.	Maximum Emission [dBm]		Verdict
	Low offset emission	High offset emission	
1L_5M_B	<-13	<-13	Pass
1L_5M_M	<-13	<-13	Pass
1L_5M_T	<-13	<-13	Pass
1L_20M_B	<-13	<-13	Pass
1L_20M_M	<-13	<-13	Pass
1L_20M_T	<-13	<-13	Pass

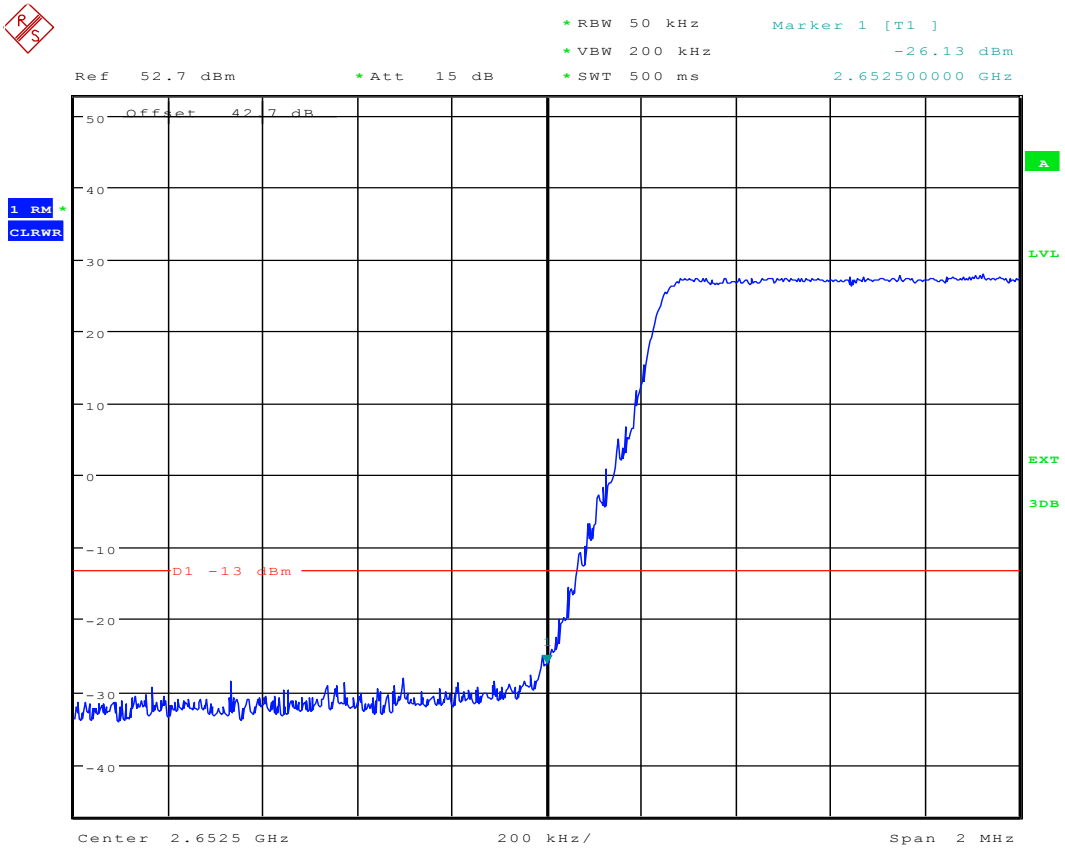
2 Test Plot

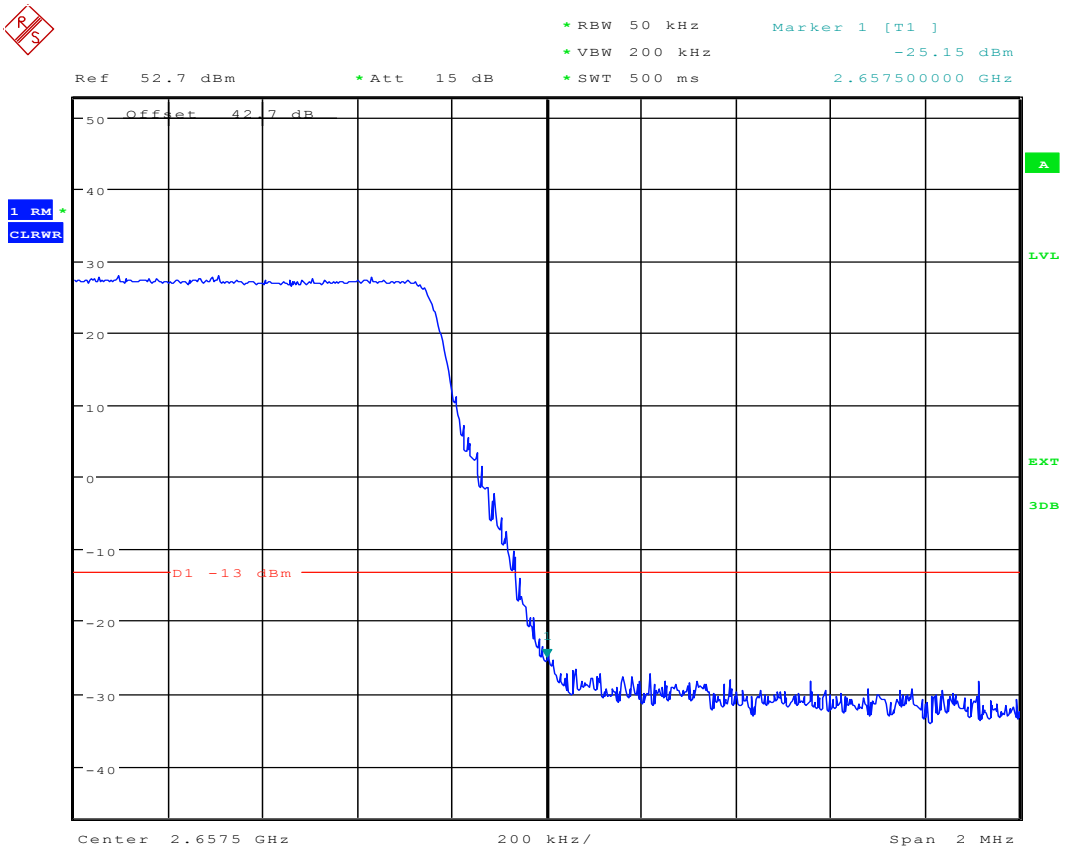
2.1 1L_5M_B



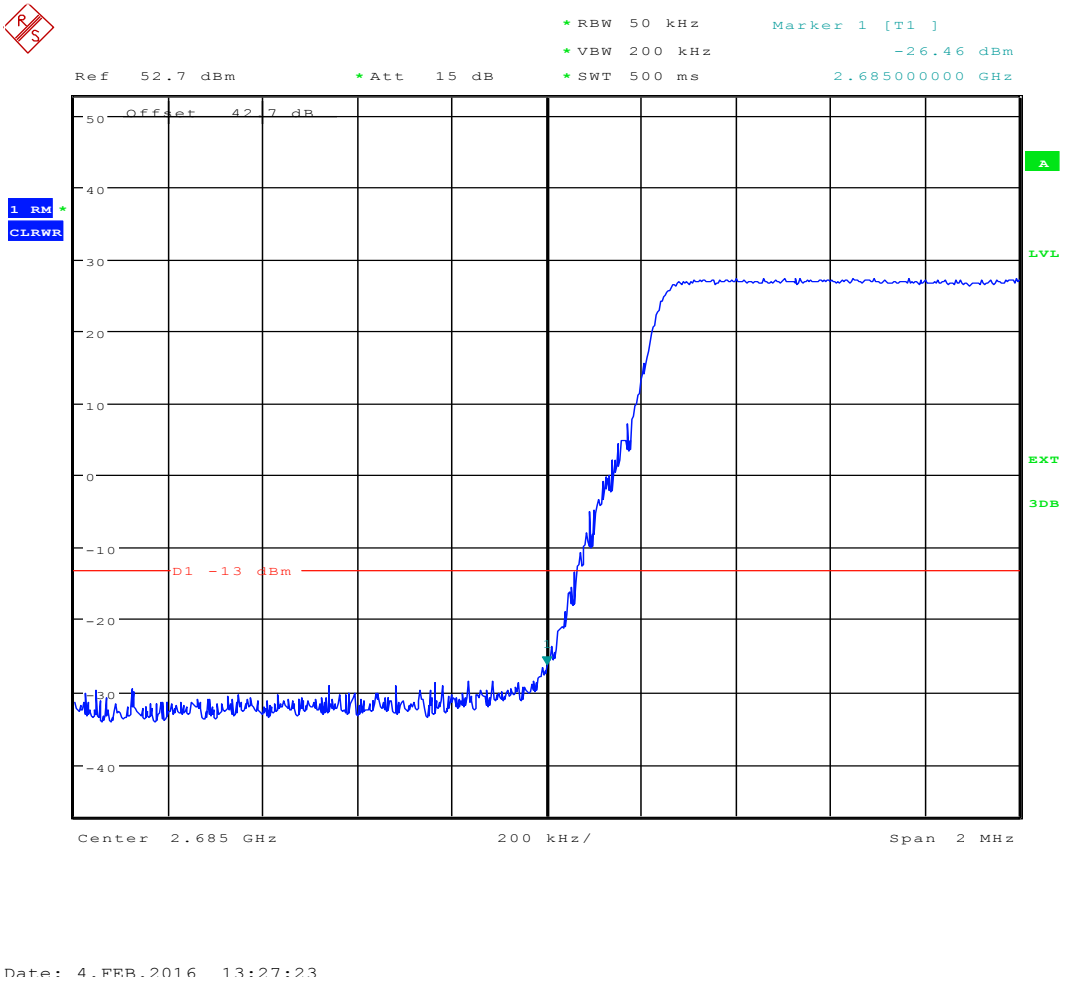


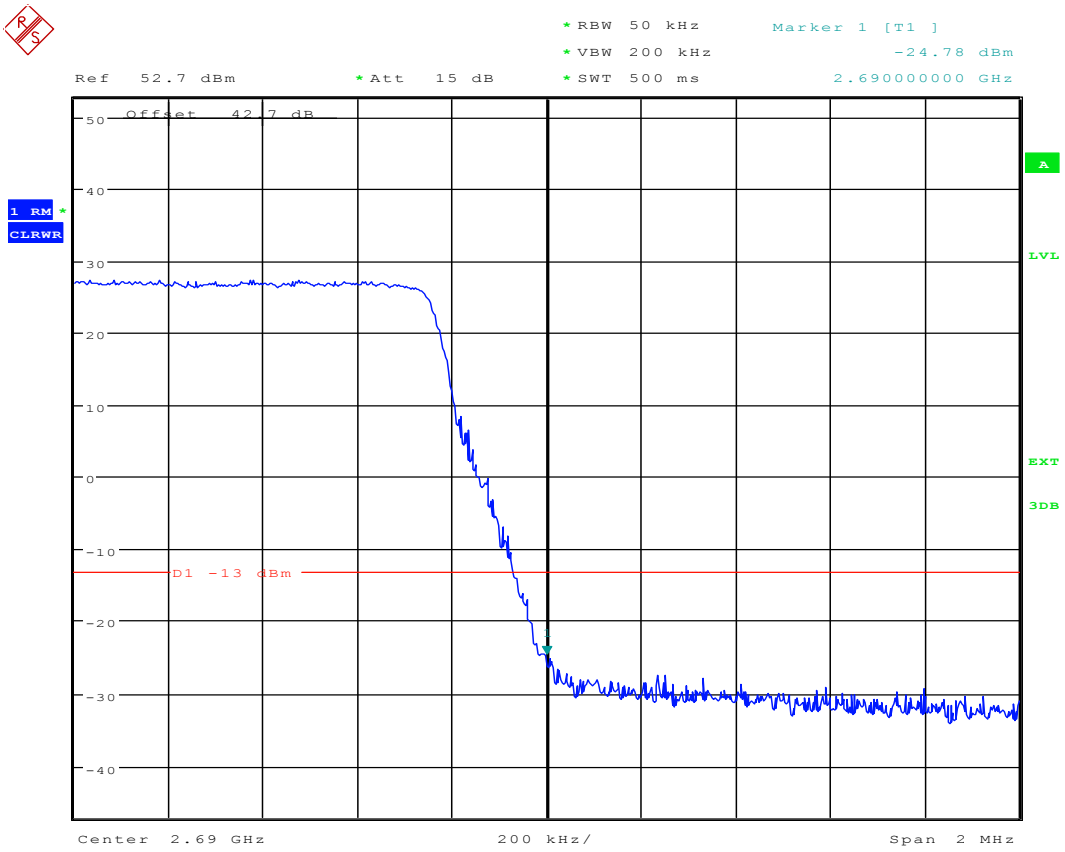
2.2 1L_5M_M





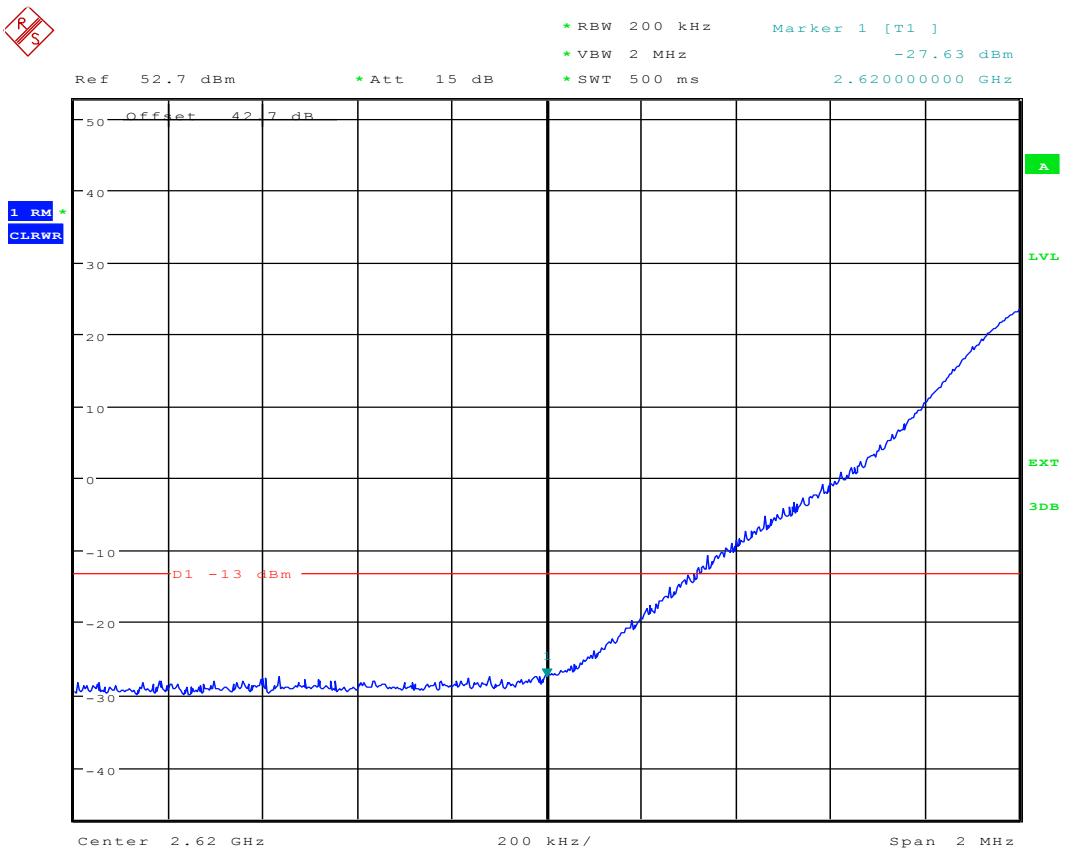
2.3 1L_5M_T

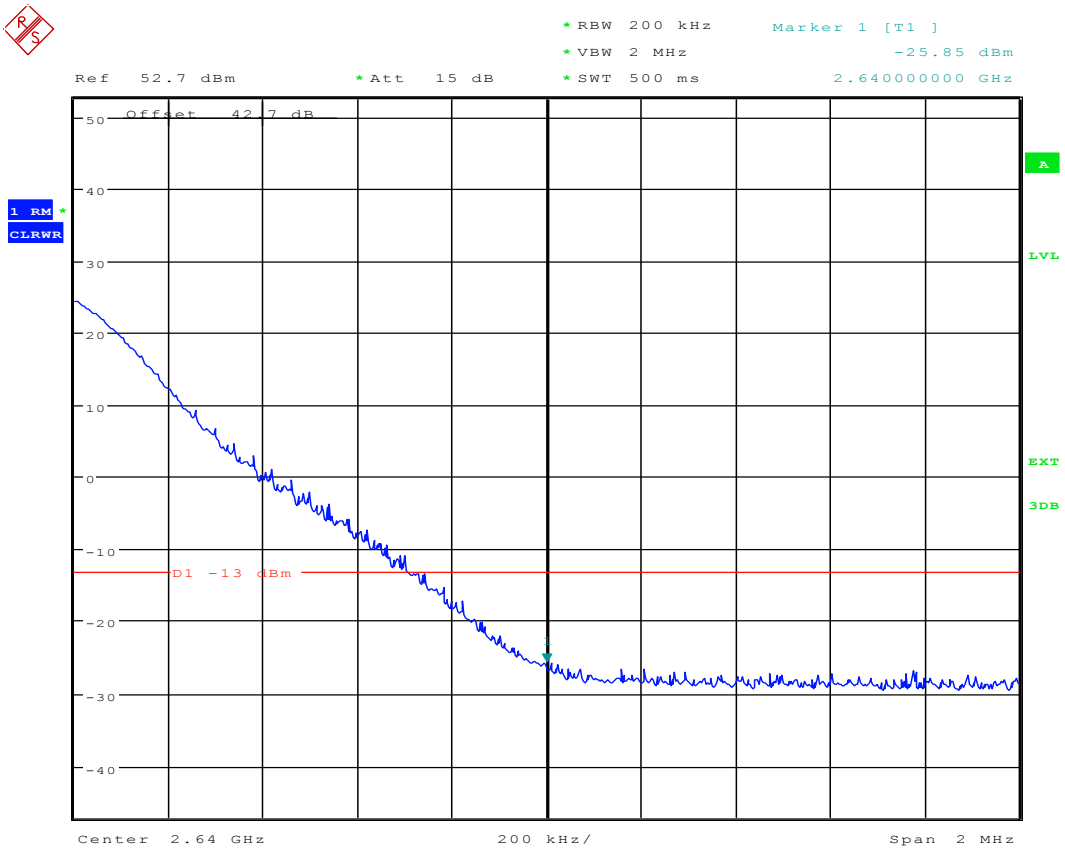




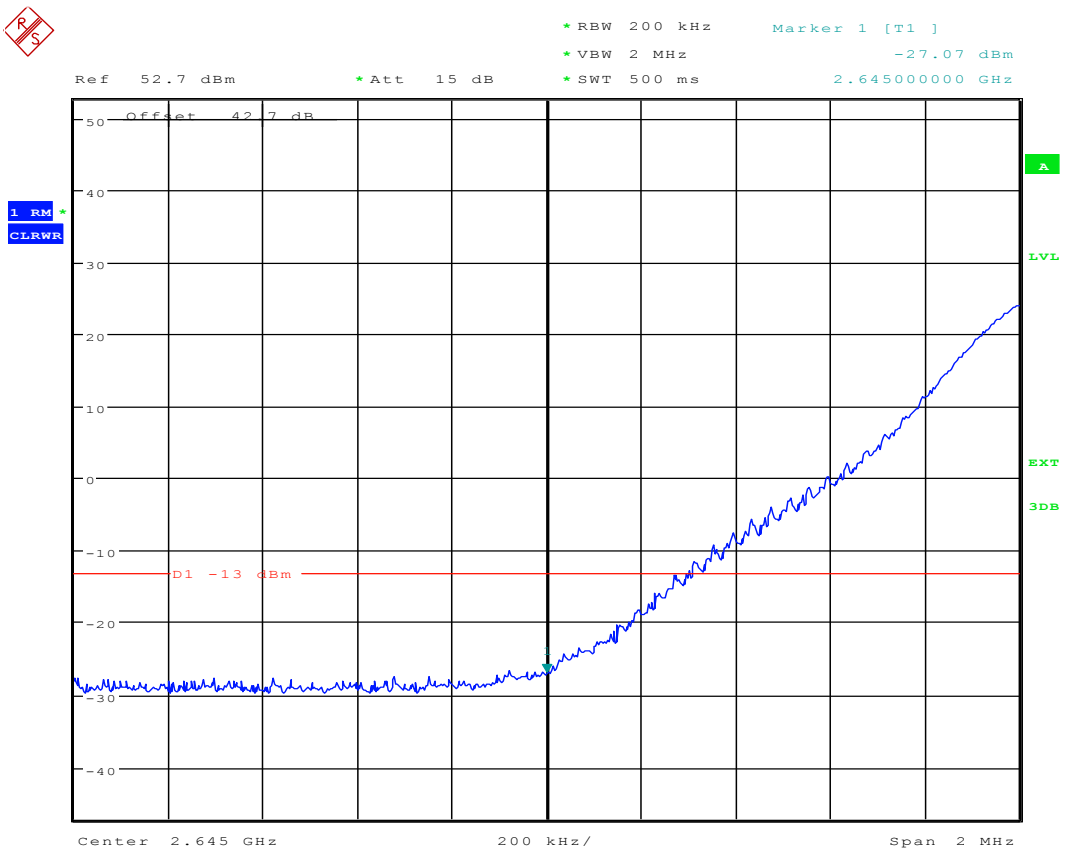
Date: 4.FEB.2016 13:28:12

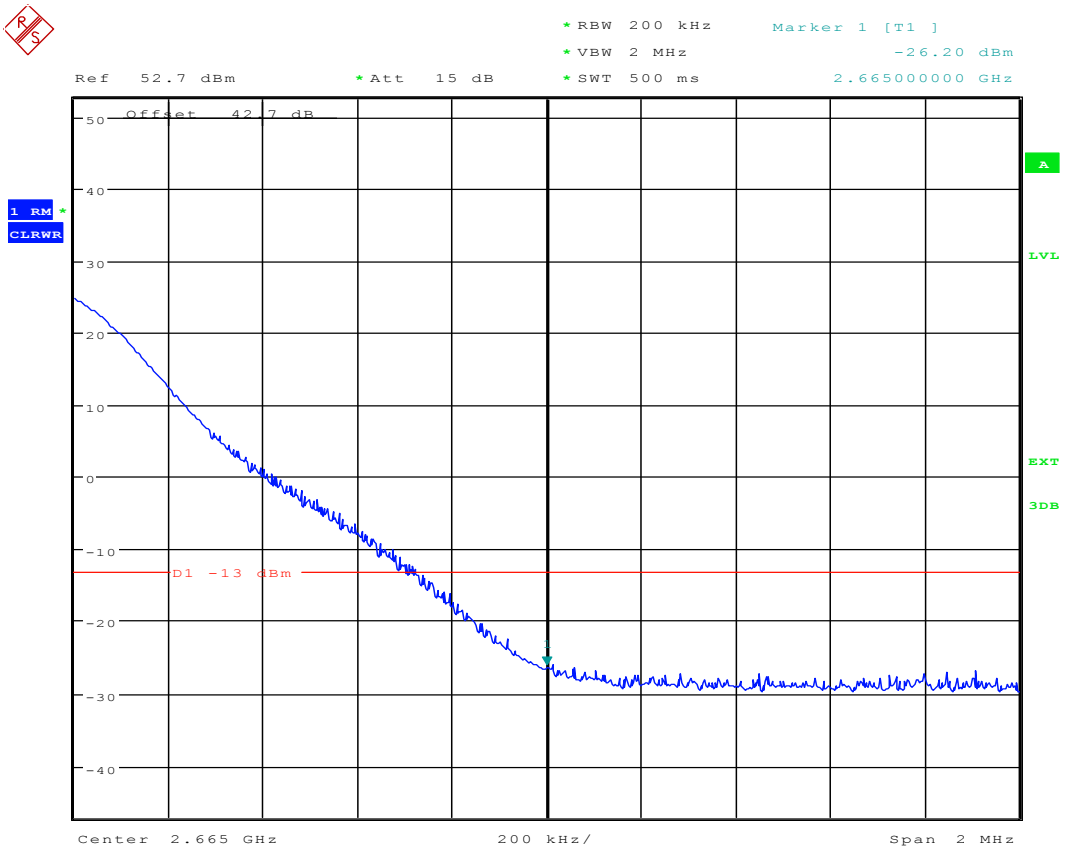
2.4 1L_20M_B





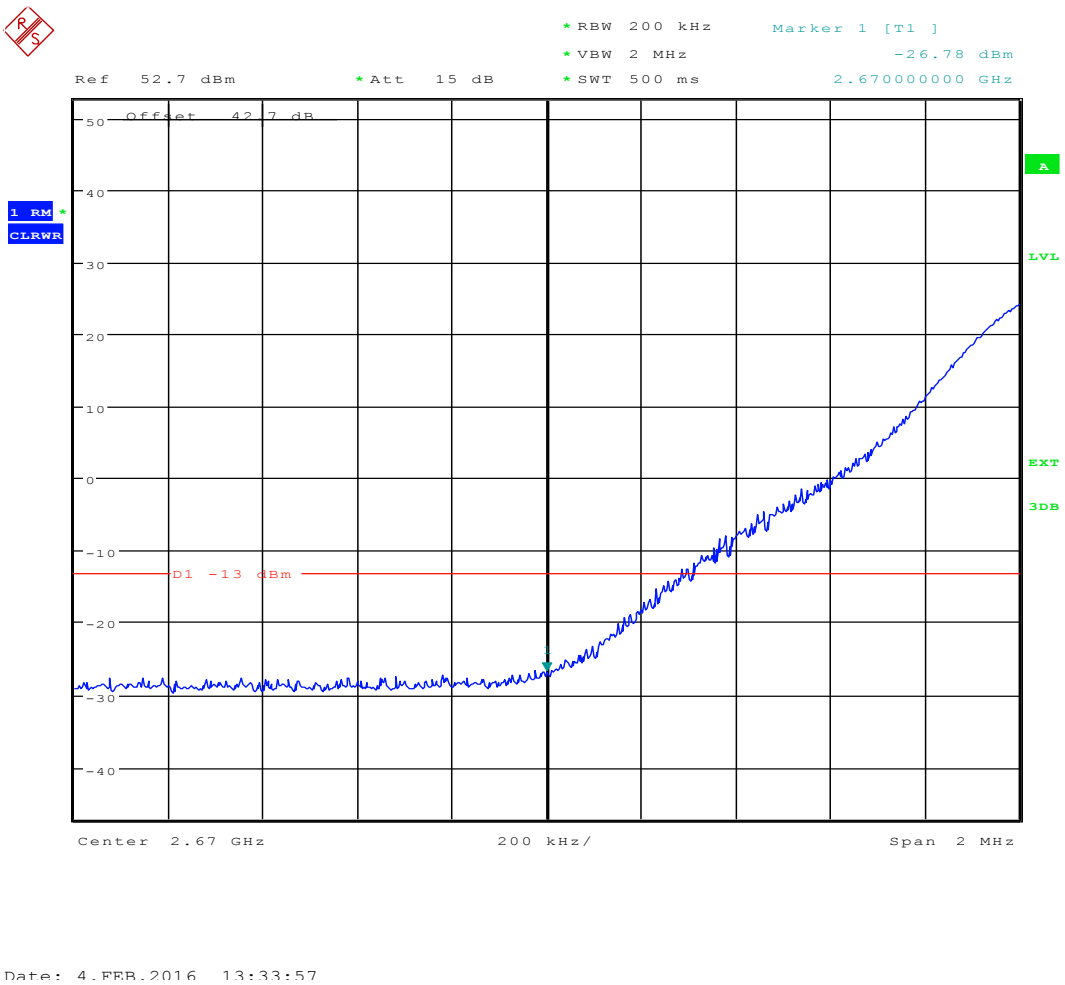
2.5 1L_20M_M

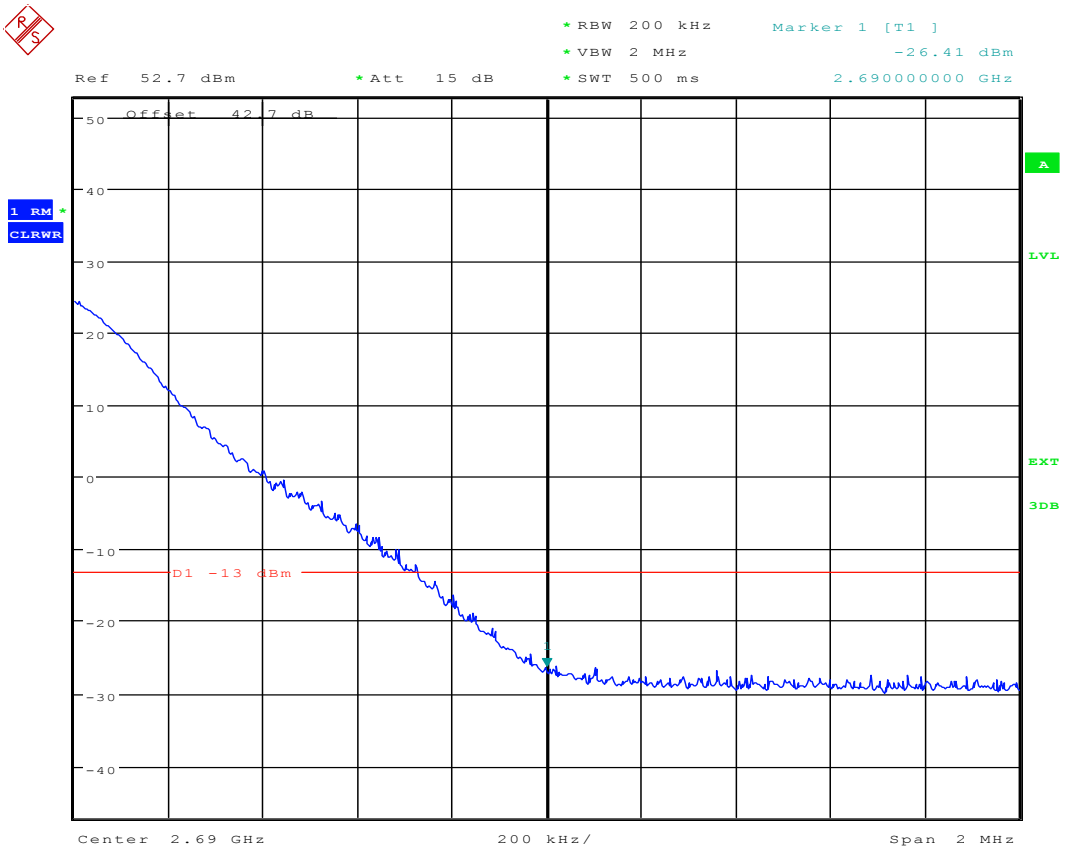




Date: 4.FEB.2016 13:33:05

2.6 1L_20M_T





Appendix D: Spurious Emission at Antenna Terminals

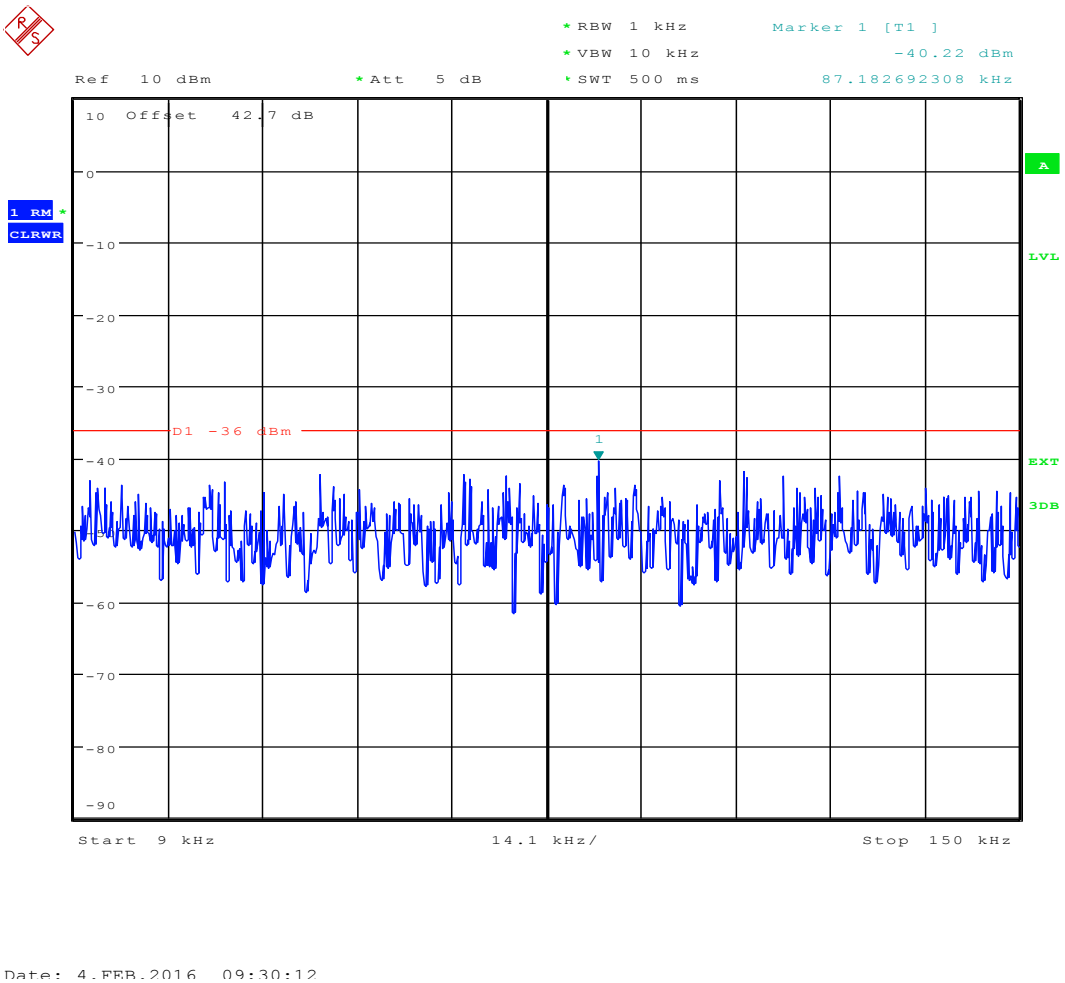
1 Result Table

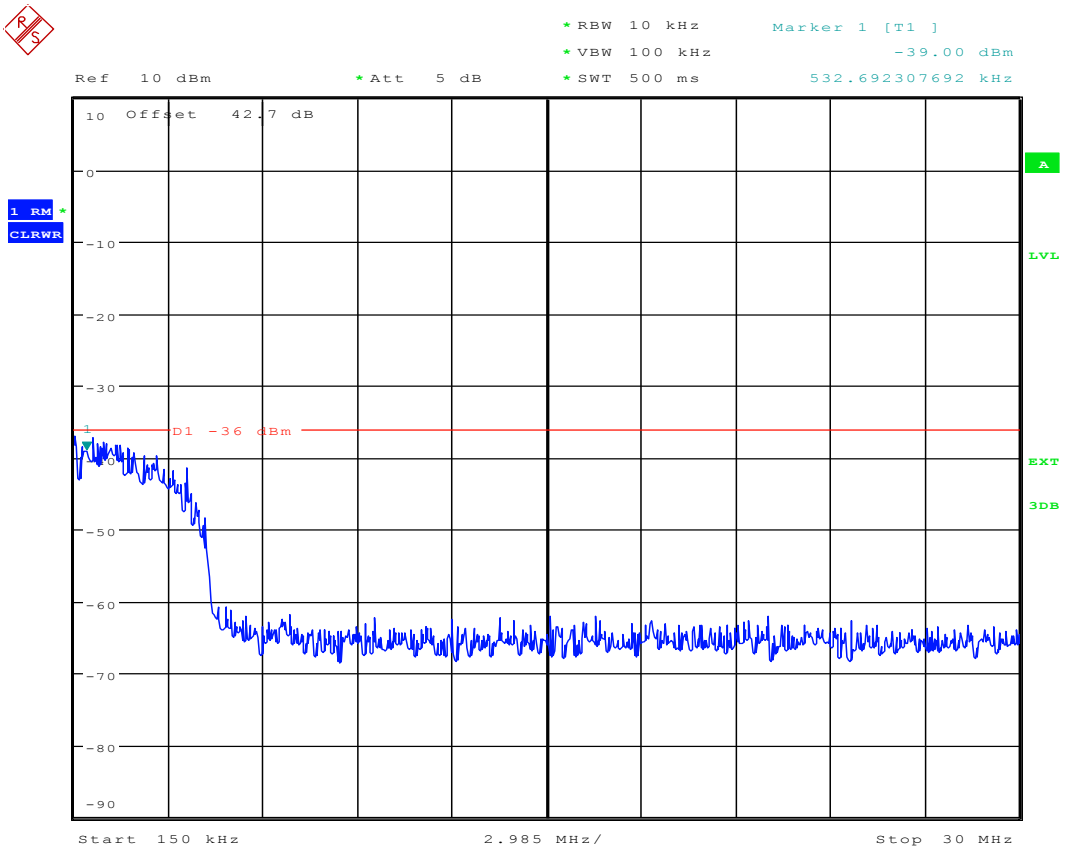
EUT Conf.	Maximum Emission [dBm]	Verdict
1L_5M_B	<-13	Pass
1L_5M_M	<-13	Pass
1L_5M_T	<-13	Pass
1L_20M_B	<-13	Pass
1L_20M_M	<-13	Pass
1L_20M_T	<-13	Pass
2L_5M_B	<-13	Pass
2L_5M_T	<-13	Pass

2 Test Plot

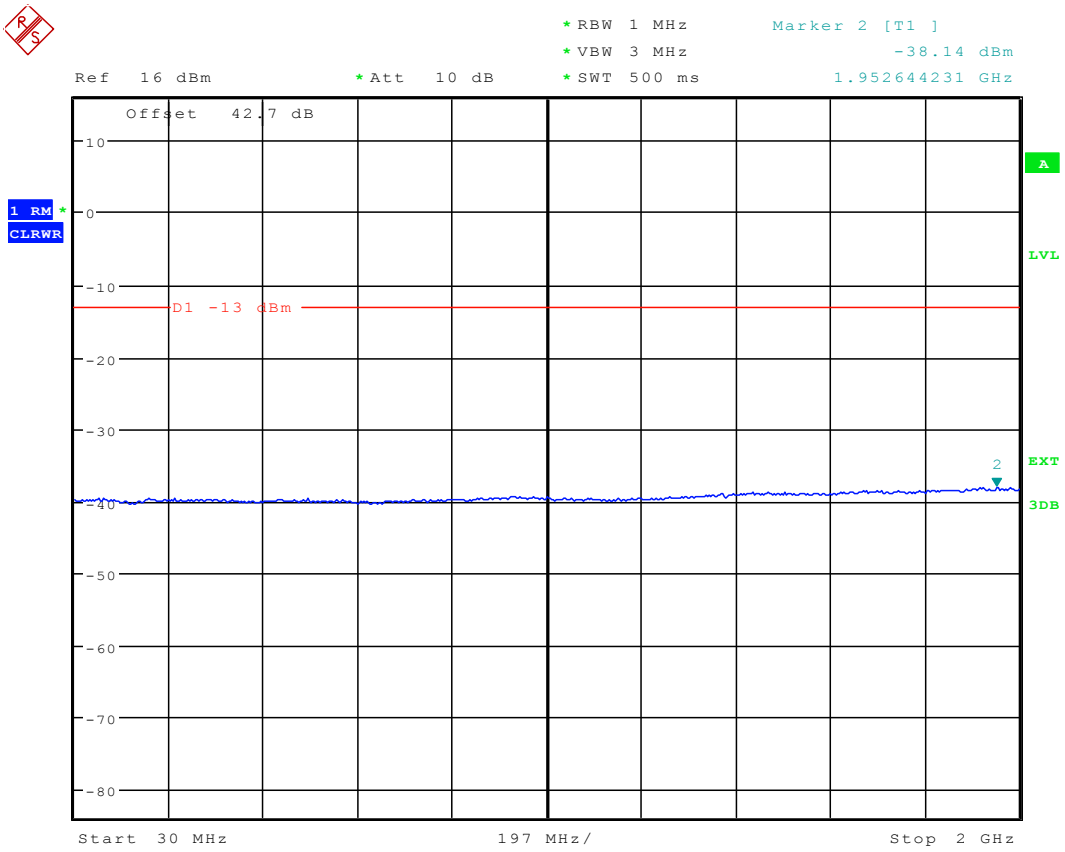
2.1 1L_5M_B

Start Frequency [MHz]	Stop Frequency [MHz]	RBW [MHz]	Detector	Limit [dBm]	Verdict
0.009	0.15	0.001	RMS	-13	Pass
0.15	30	0.01	RMS	-13	Pass
30	2000	1	RMS	-13	Pass
2000	3000	1	RMS	-13	---
3000	26500	1	RMS	-13	Pass





Date: 4.FEB.2016 09:31:40



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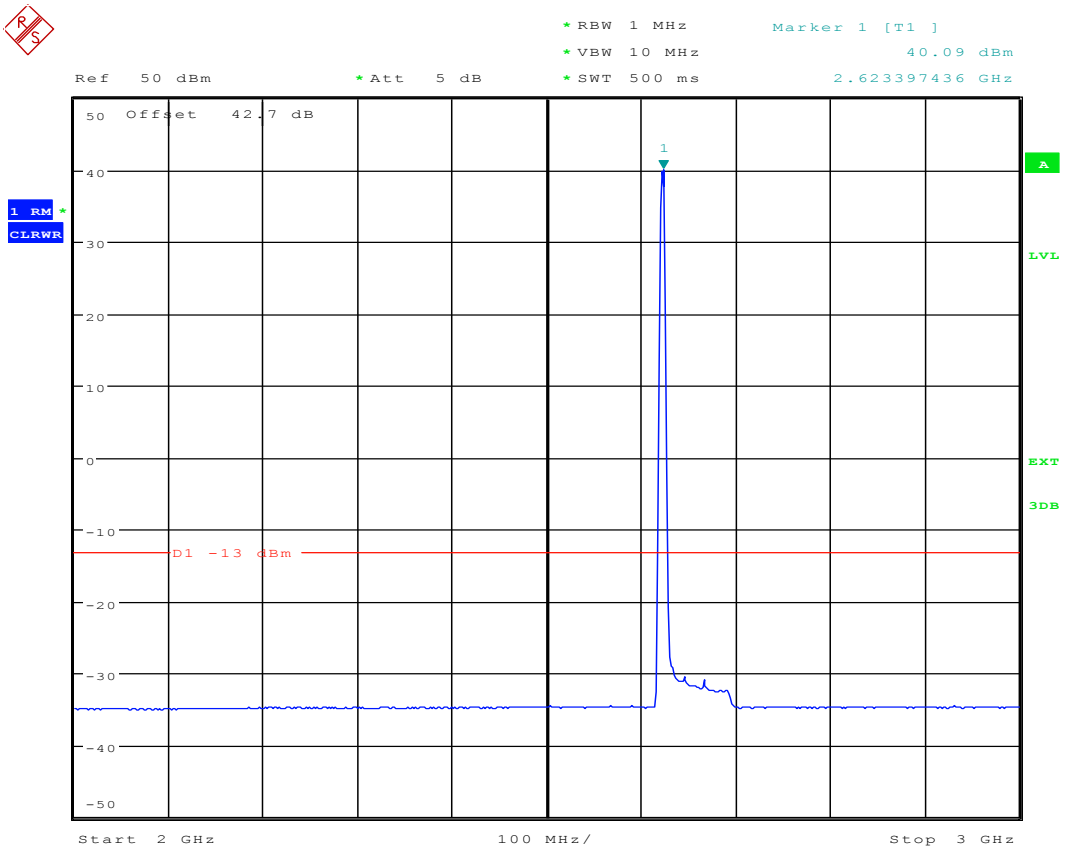
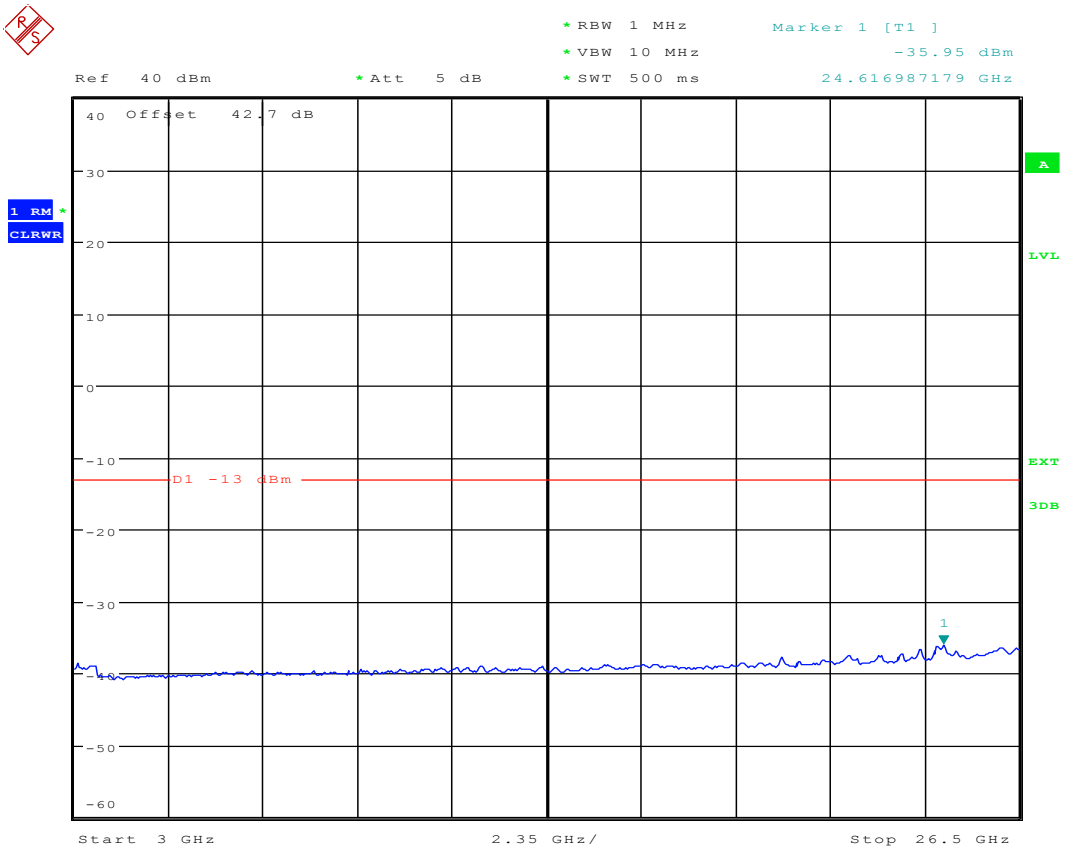
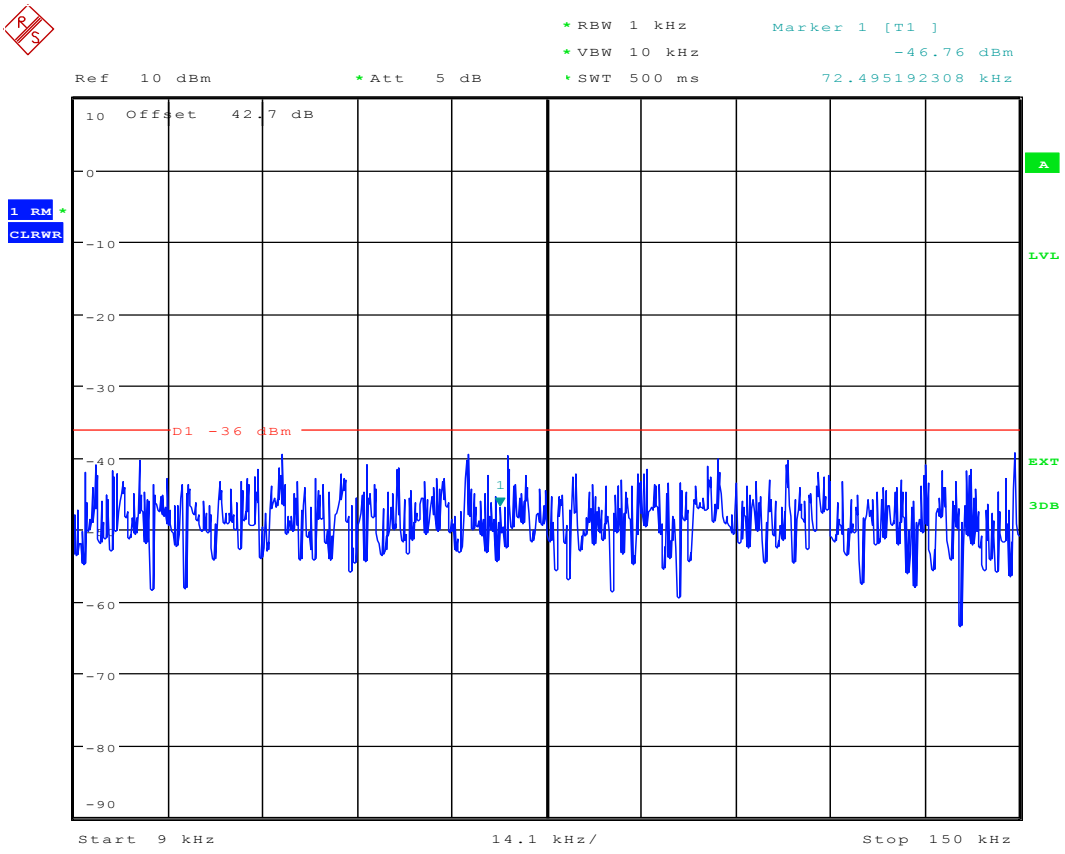




2.2 1L_5M_M

Start Frequency [MHz]	Stop Frequency [MHz]	RBW [MHz]	Detector	Limit [dBm]	Verdict
0.009	0.15	0.001	RMS	-13	Pass
0.15	30	0.01	RMS	-13	Pass
30	2000	1	RMS	-13	Pass
2000	3000	1	RMS	-13	---
3000	26500	1	RMS	-13	Pass



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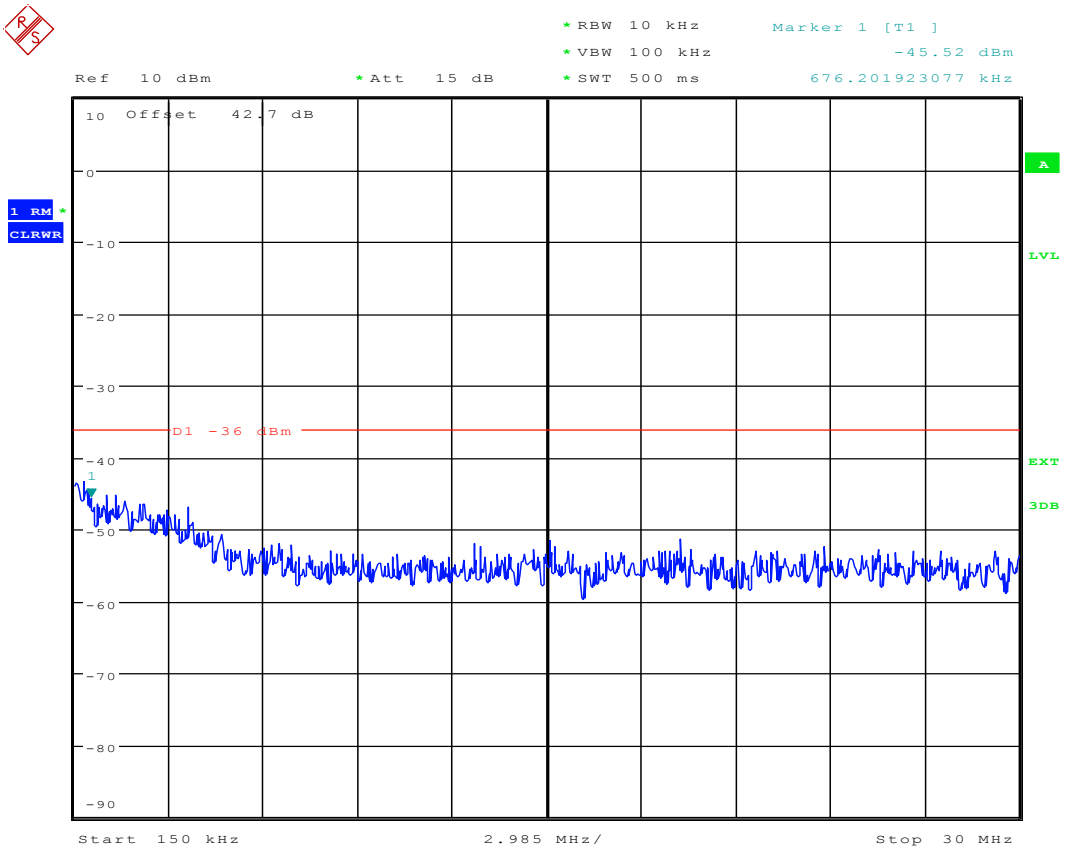

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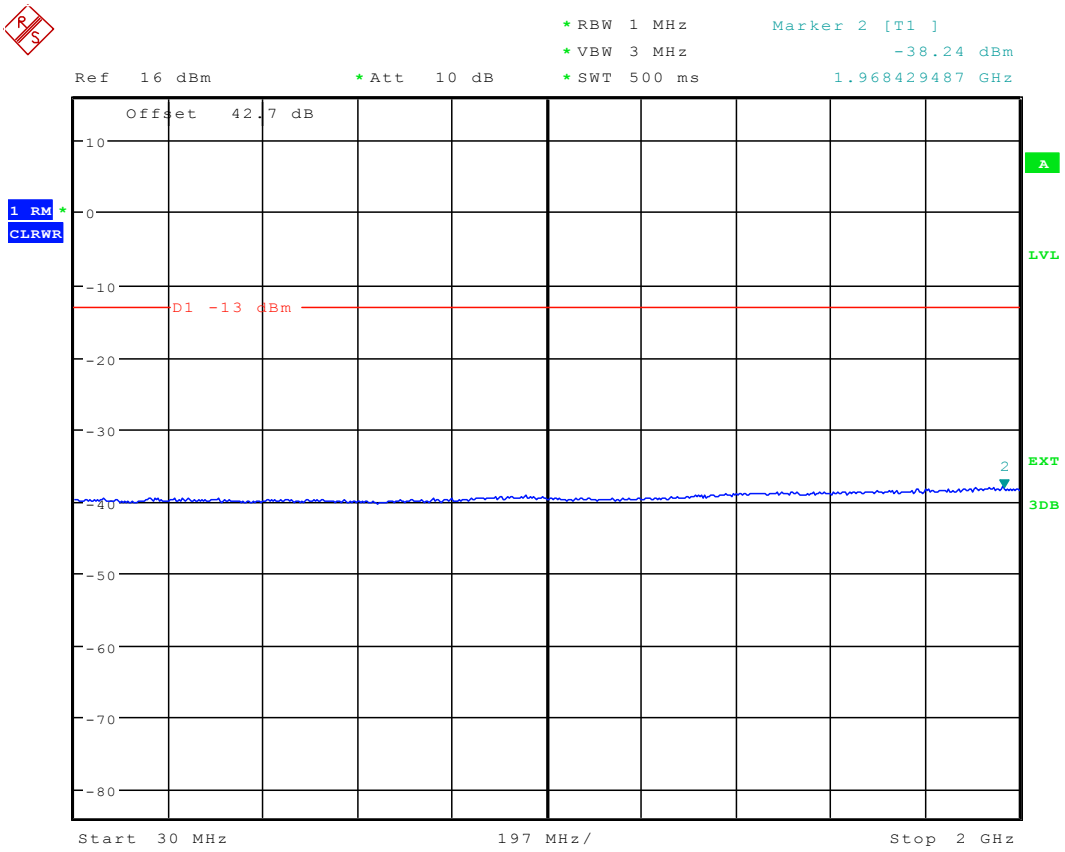

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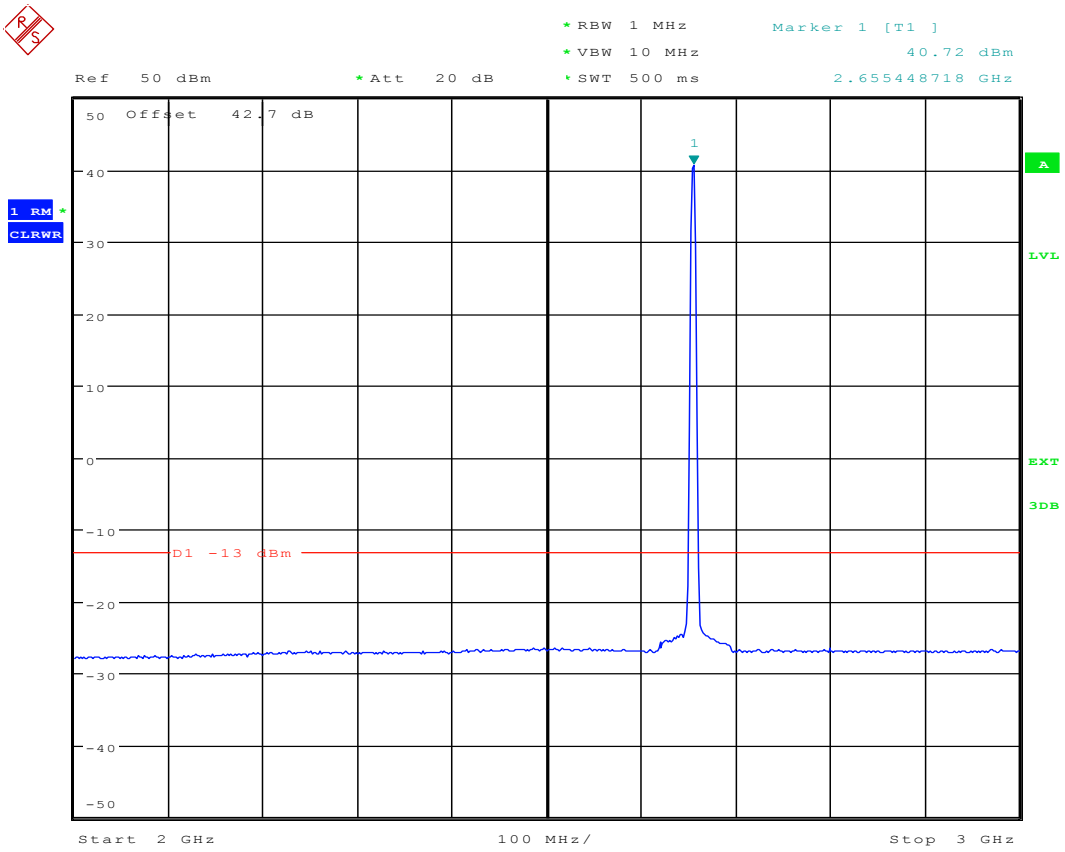
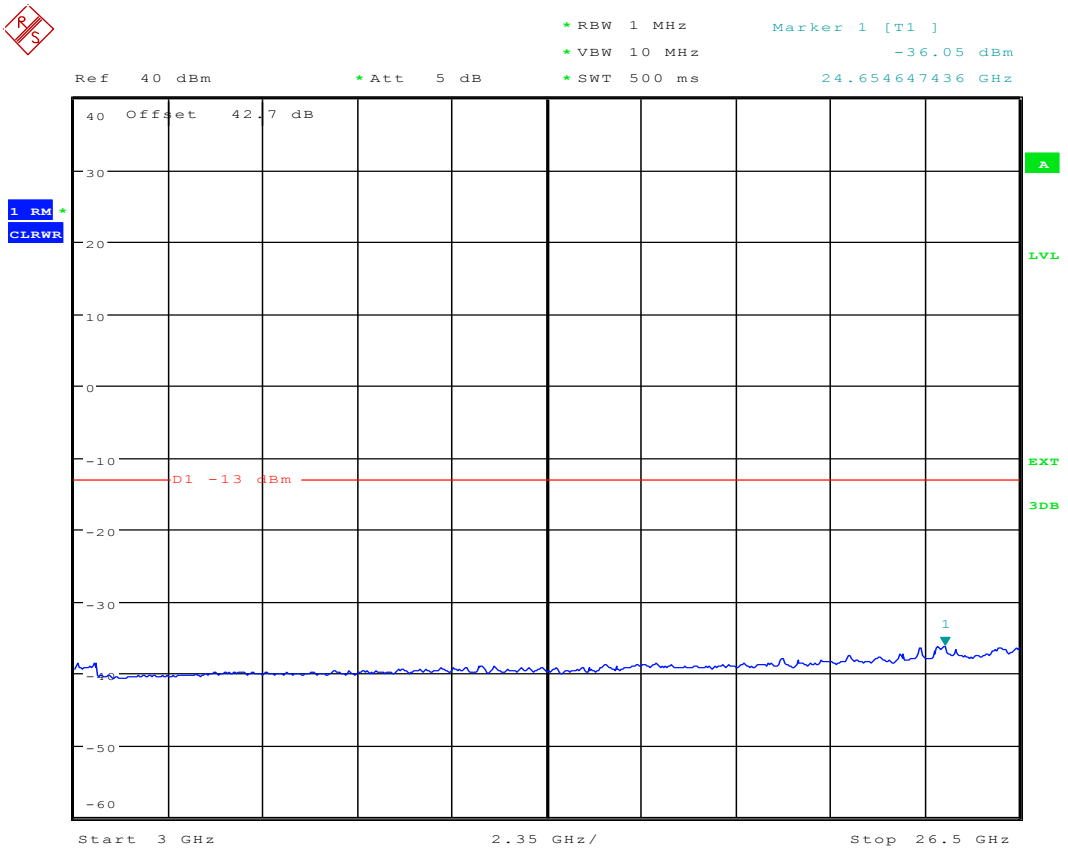
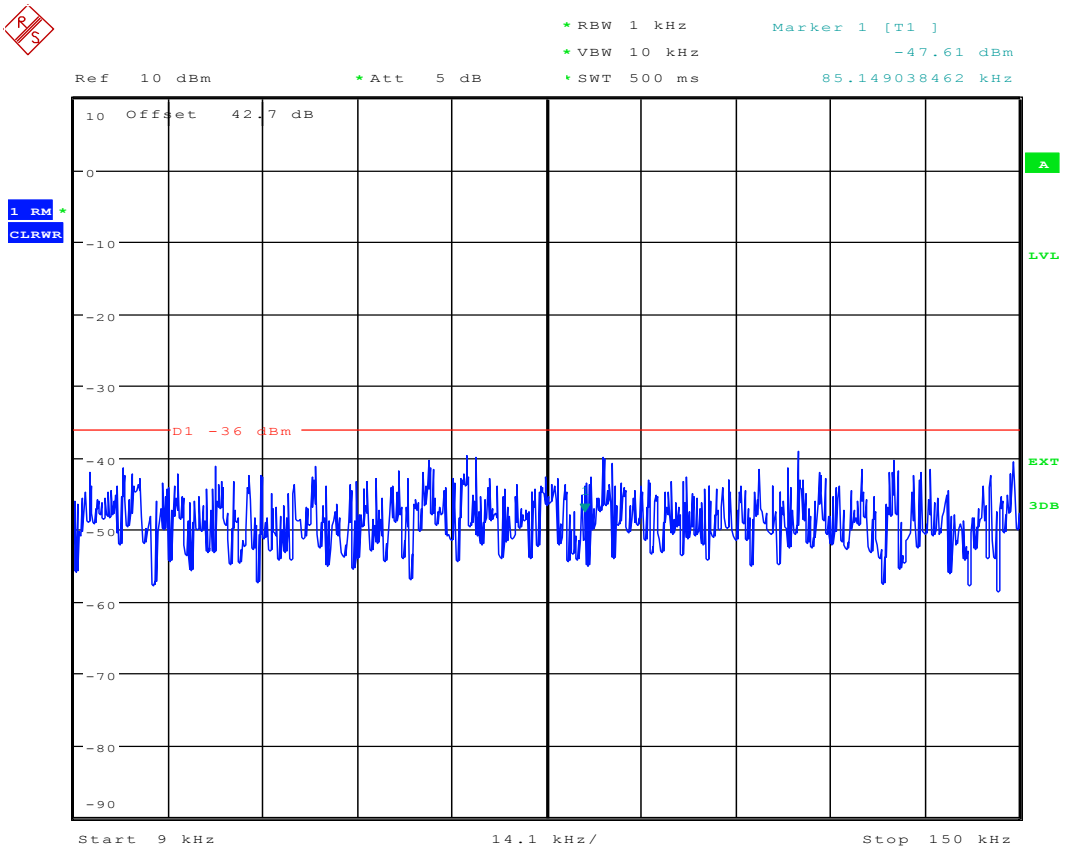




2.3 1L_5M_T

Start Frequency [MHz]	Stop Frequency [MHz]	RBW [MHz]	Detector	Limit [dBm]	Verdict
0.009	0.15	0.001	RMS	-13	Pass
0.15	30	0.01	RMS	-13	Pass
30	2000	1	RMS	-13	Pass
2000	3000	1	RMS	-13	---
3000	26500	1	RMS	-13	Pass



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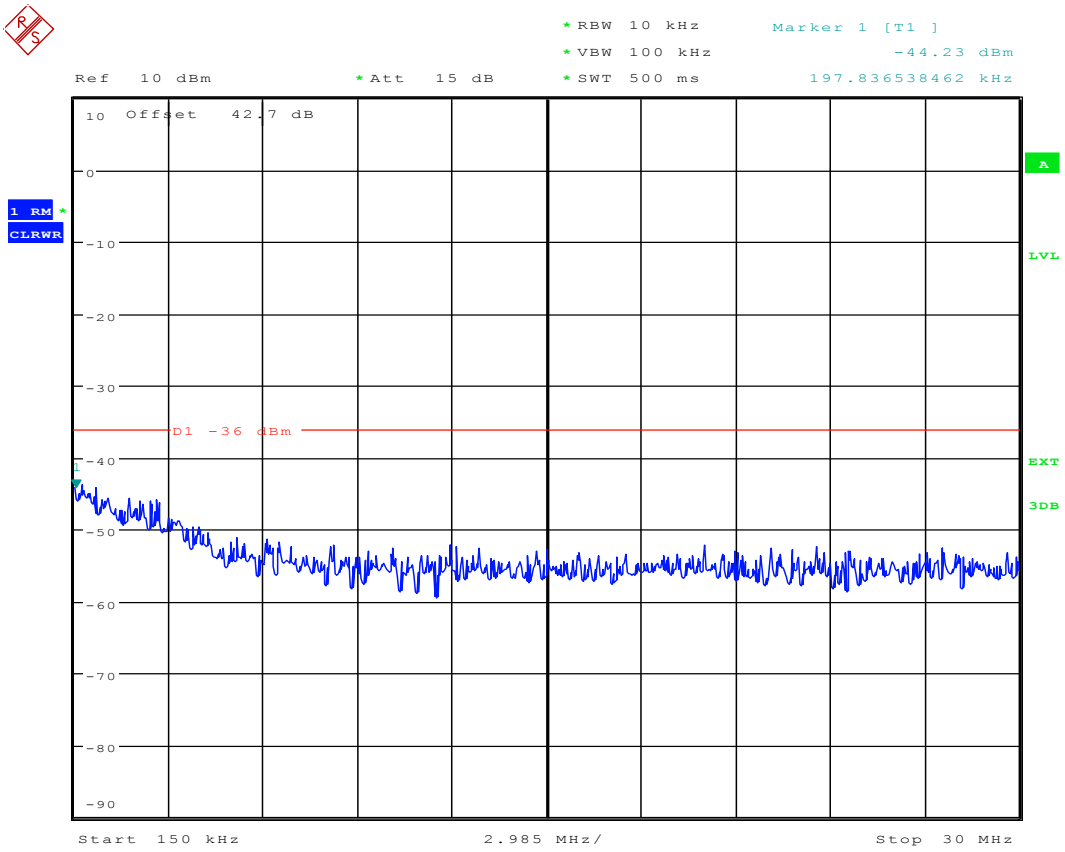
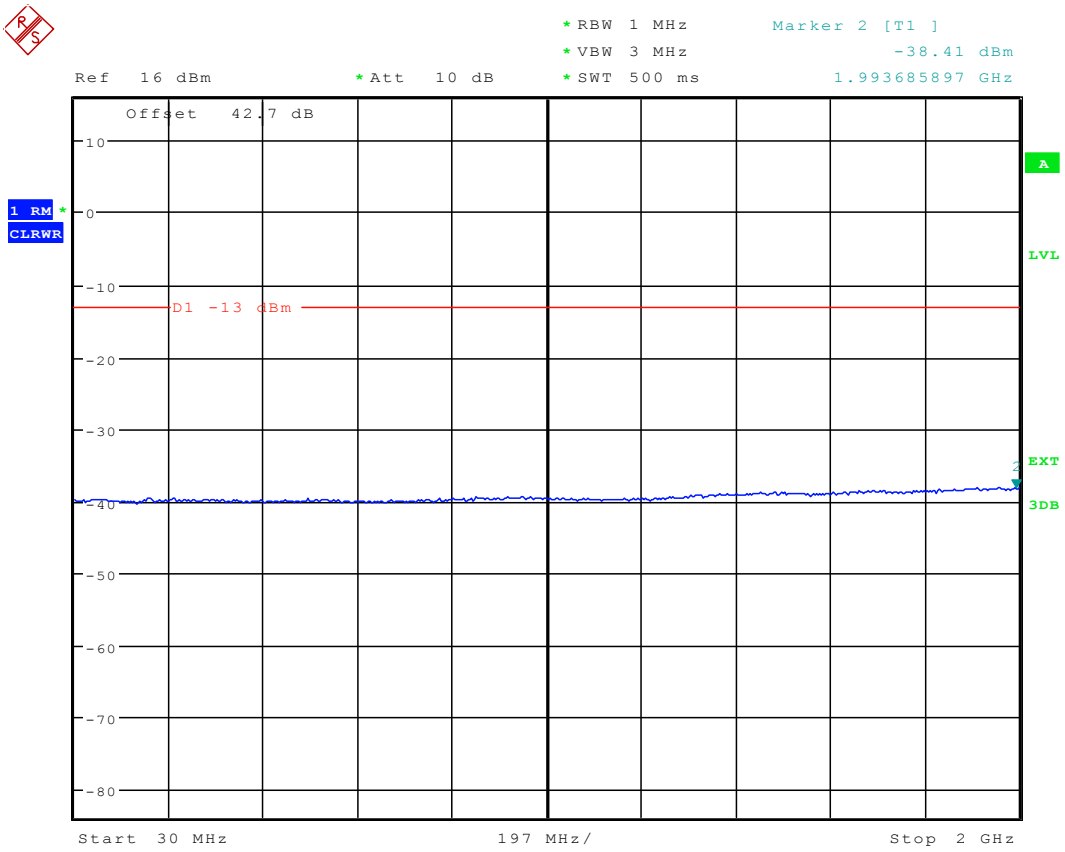


Date: 4.FEB.2016 09:50:28



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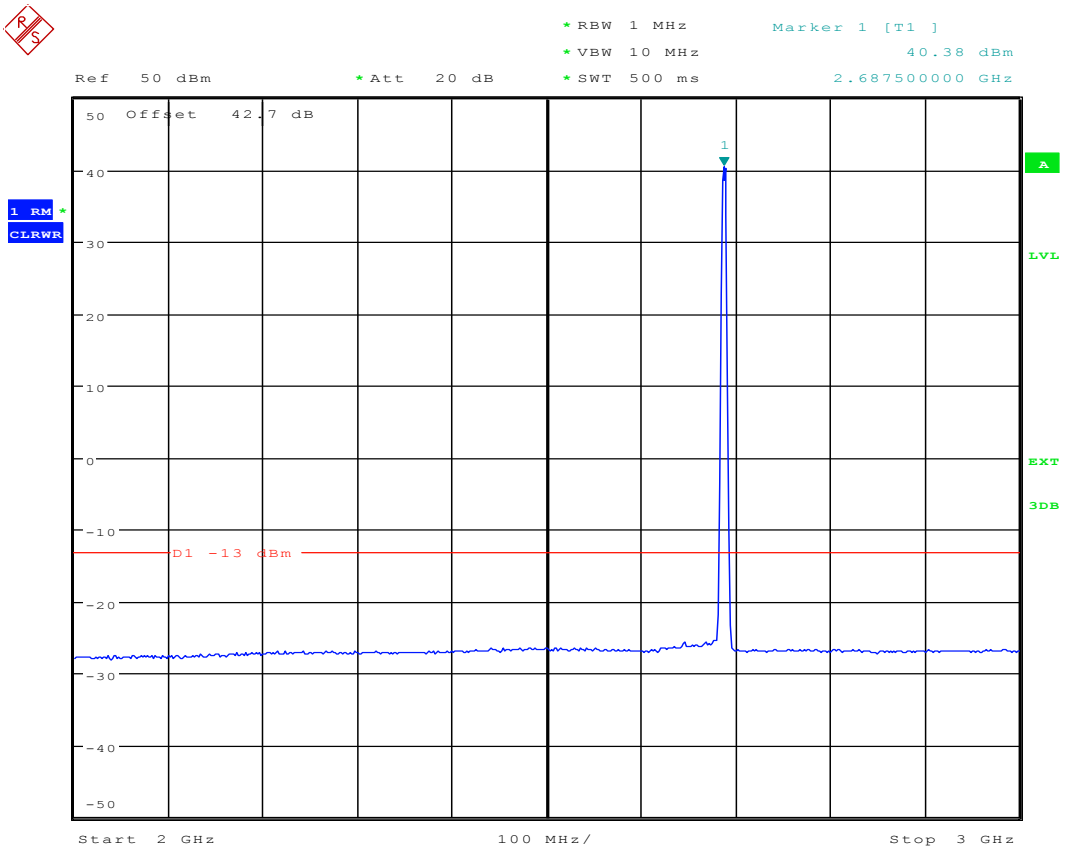
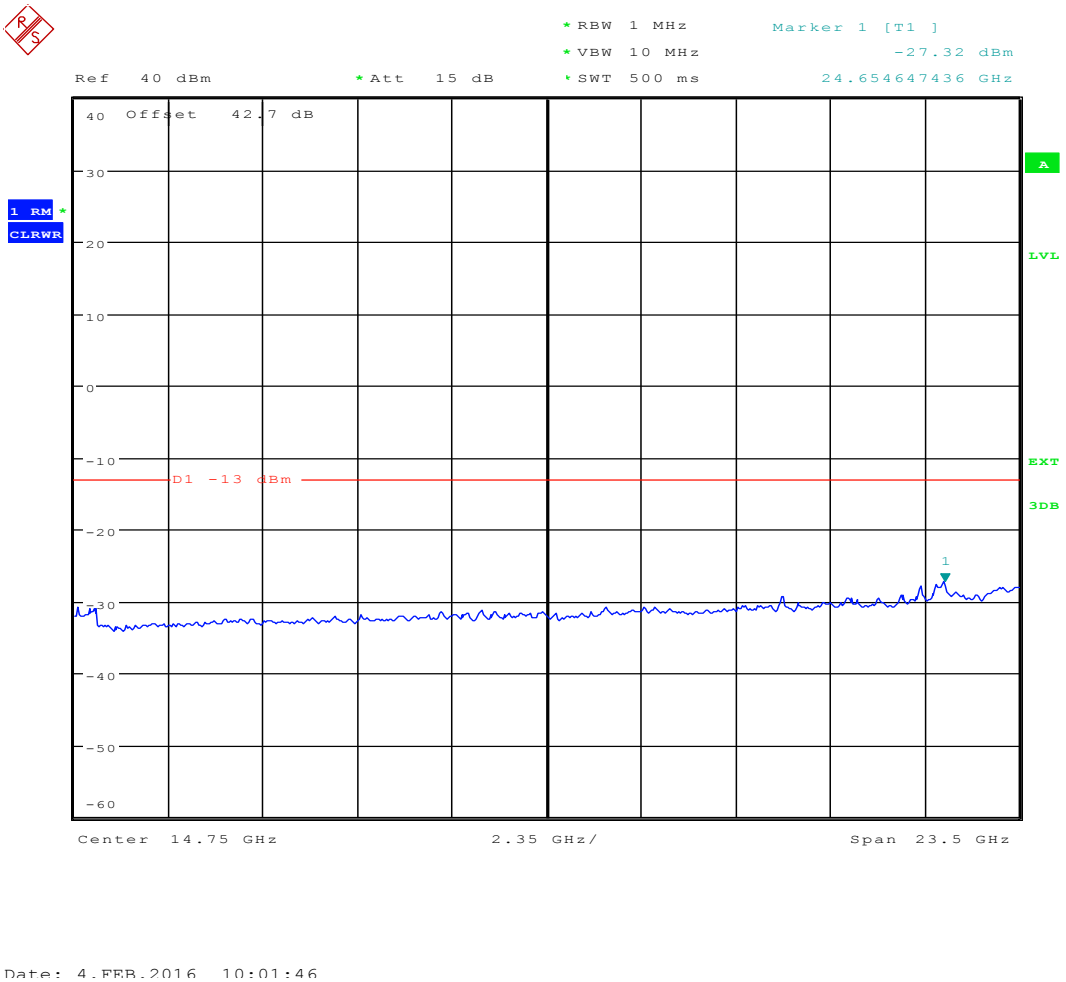
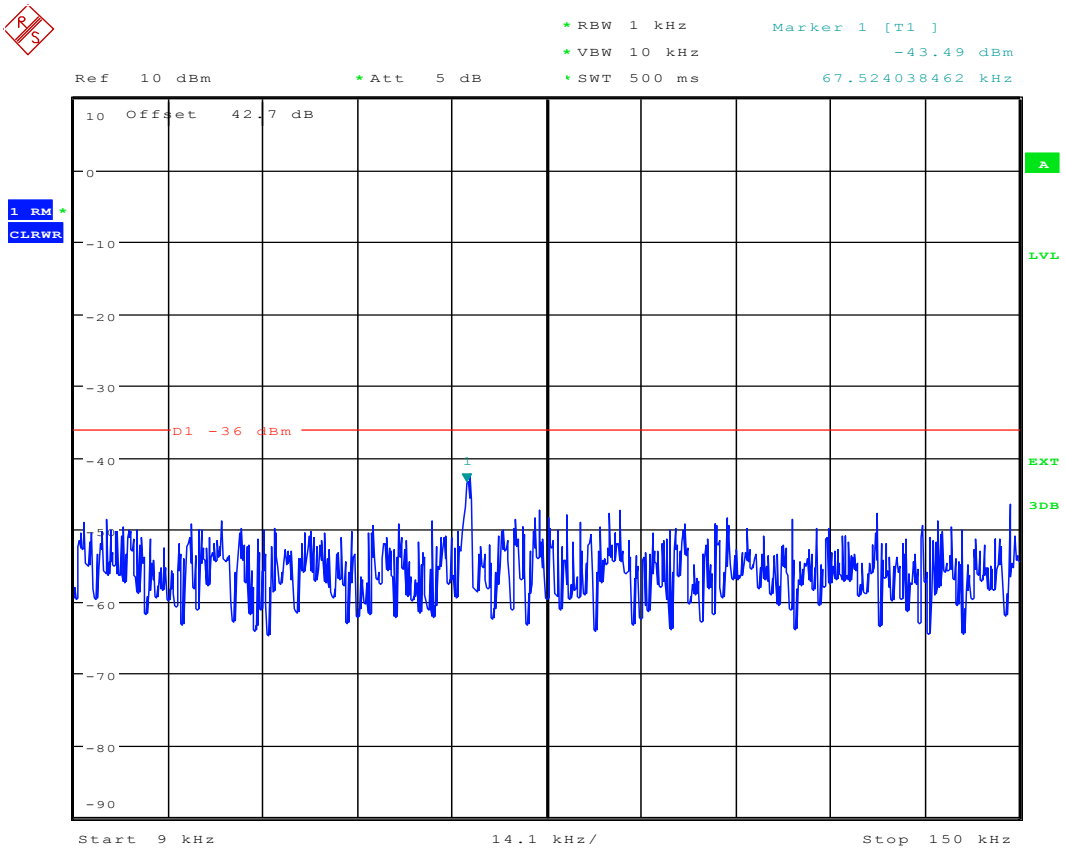


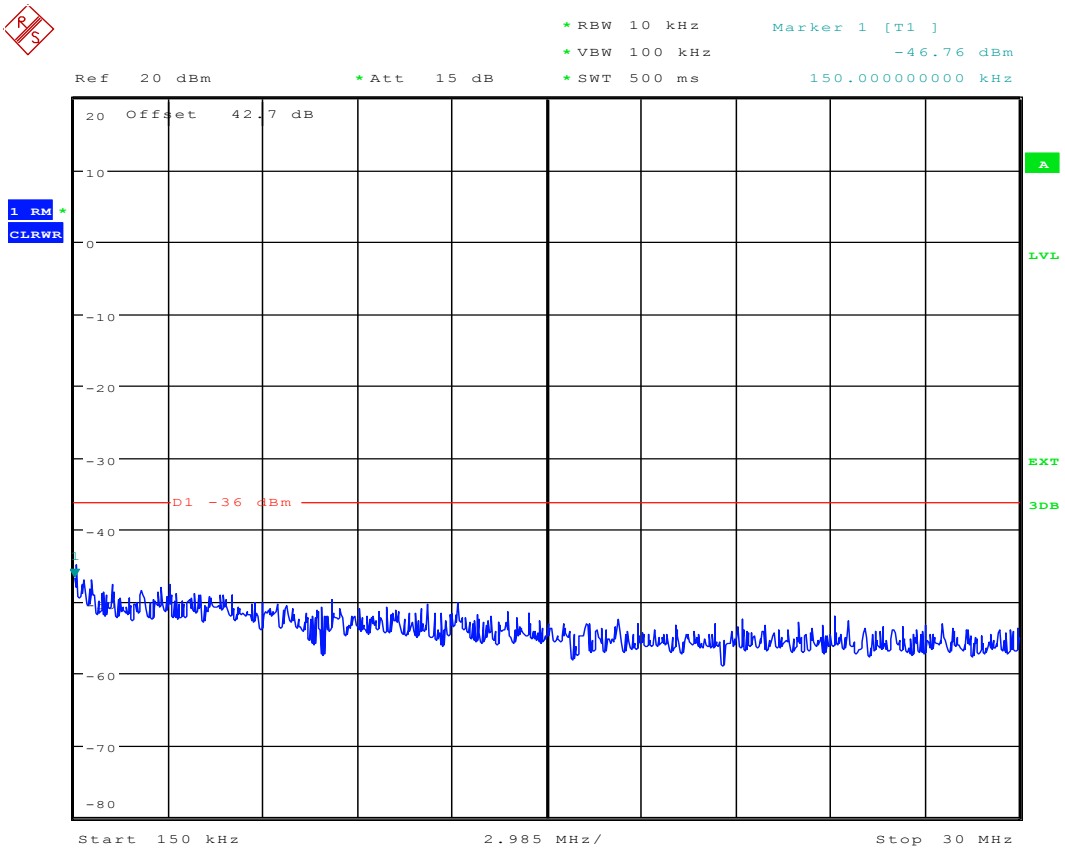


2.4 1L_20M_B

Start Frequency [MHz]	Stop Frequency [MHz]	RBW [MHz]	Detector	Limit [dBm]	Verdict
0.009	0.15	0.001	RMS	-13	Pass
0.15	30	0.01	RMS	-13	Pass
30	2000	1	RMS	-13	Pass
2000	3000	1	RMS	-13	---
3000	26500	1	RMS	-13	Pass



Date: 4.FEB.2016 10:40:51



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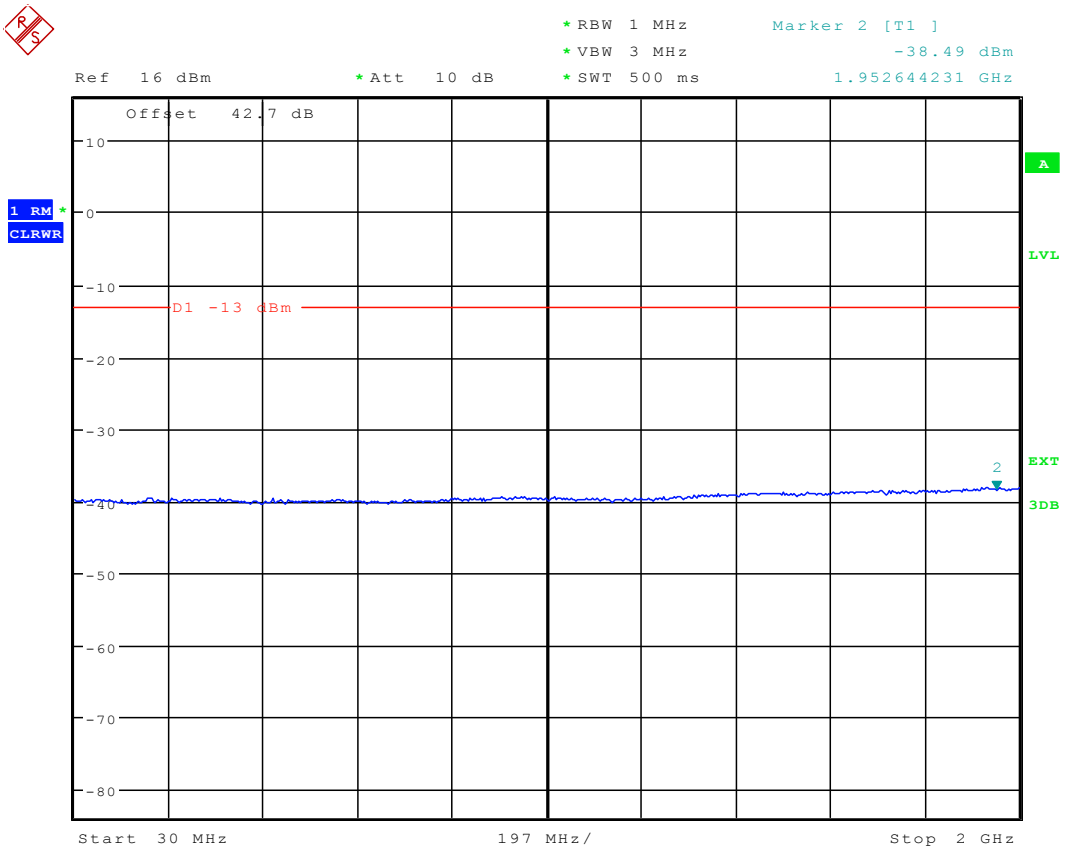

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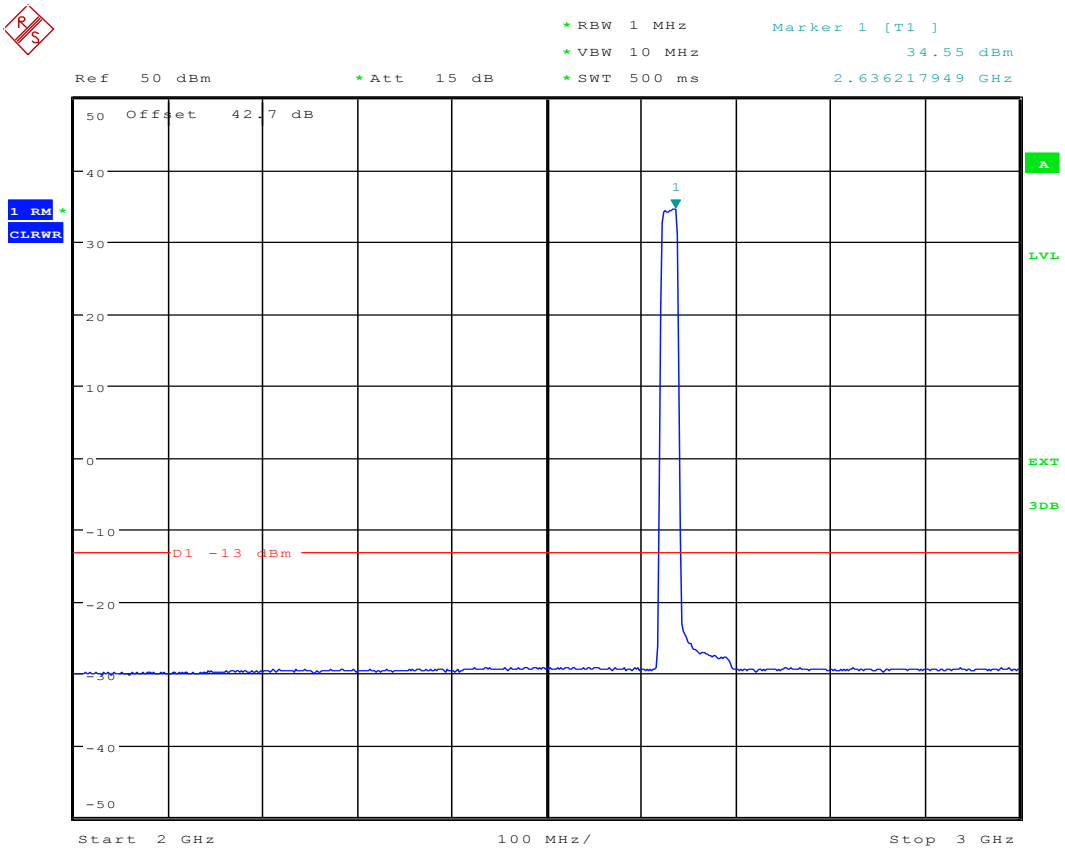
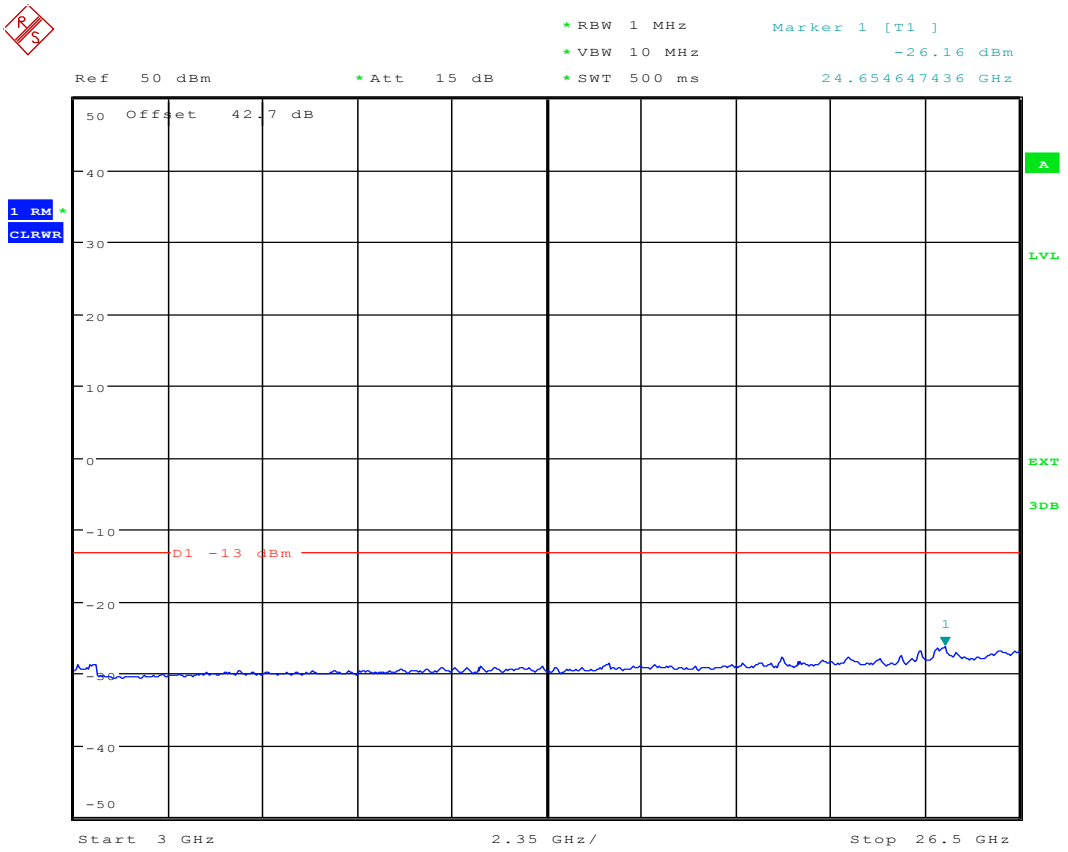
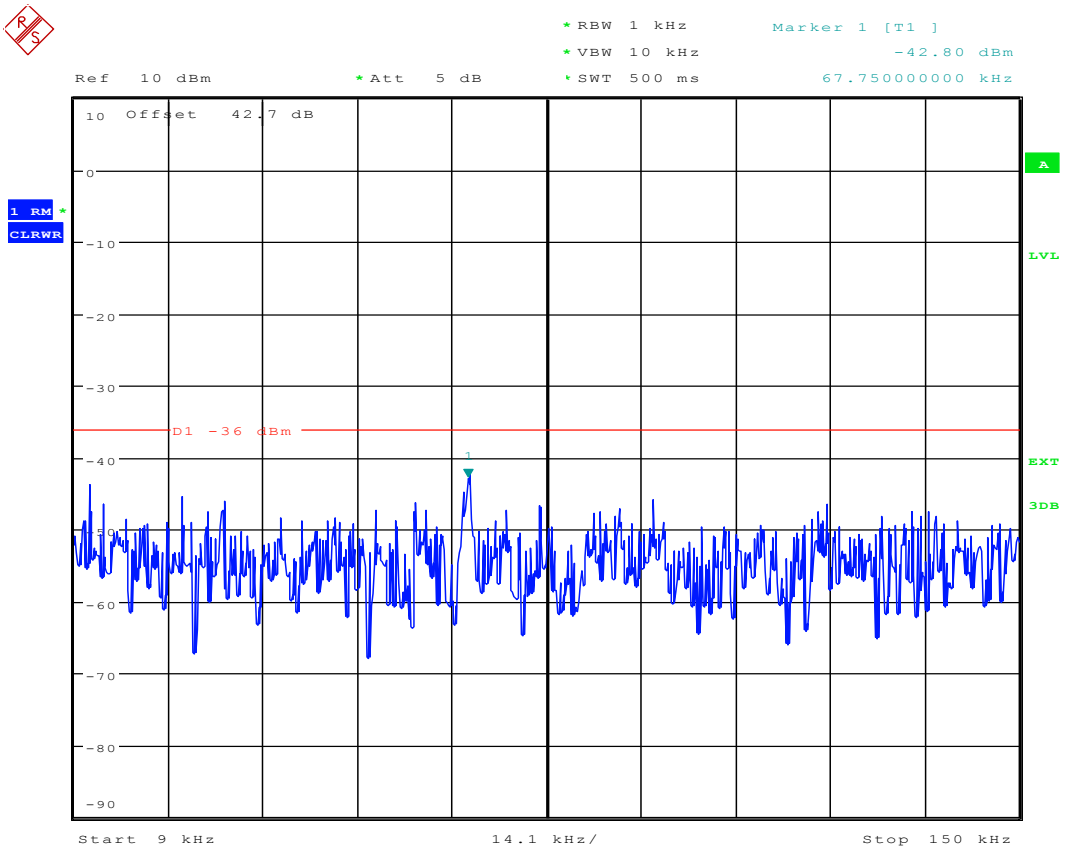




2.5 1L_20M_M

Start Frequency [MHz]	Stop Frequency [MHz]	RBW [MHz]	Detector	Limit [dBm]	Verdict
0.009	0.15	0.001	RMS	-13	Pass
0.15	30	0.01	RMS	-13	Pass
30	2000	1	RMS	-13	Pass
2000	3000	1	RMS	-13	---
3000	26500	1	RMS	-13	Pass



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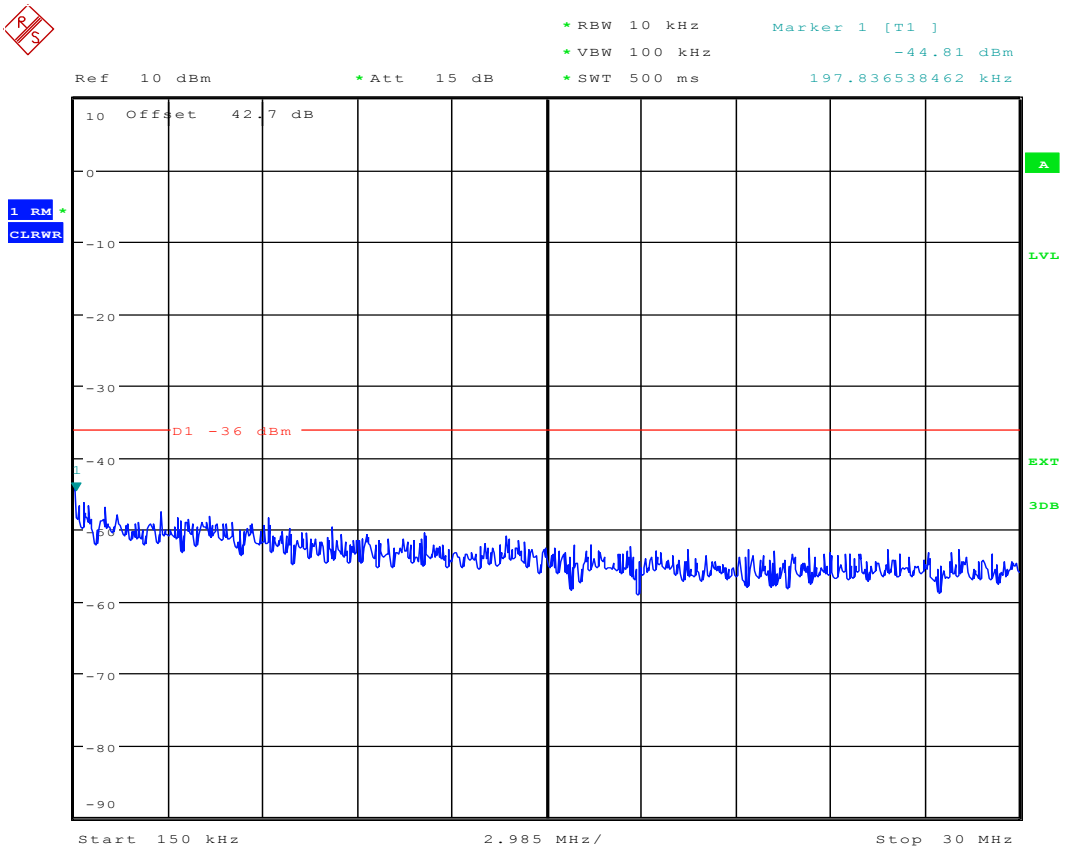

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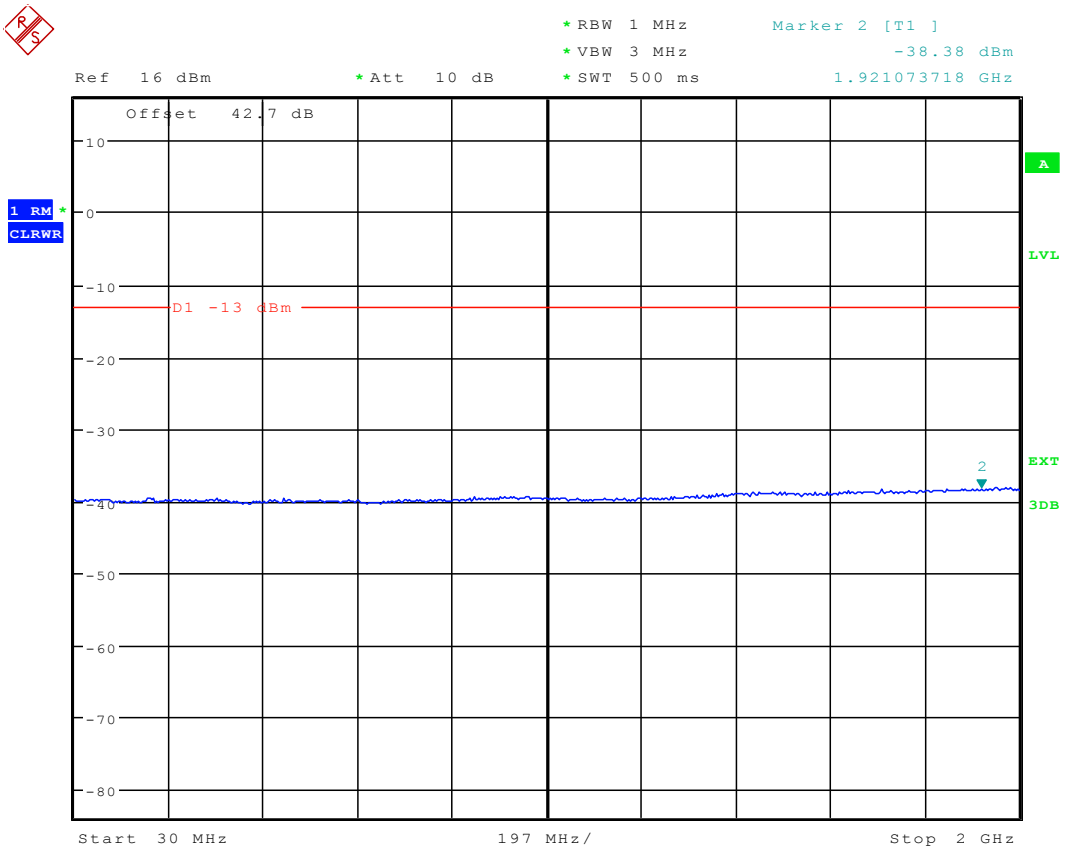

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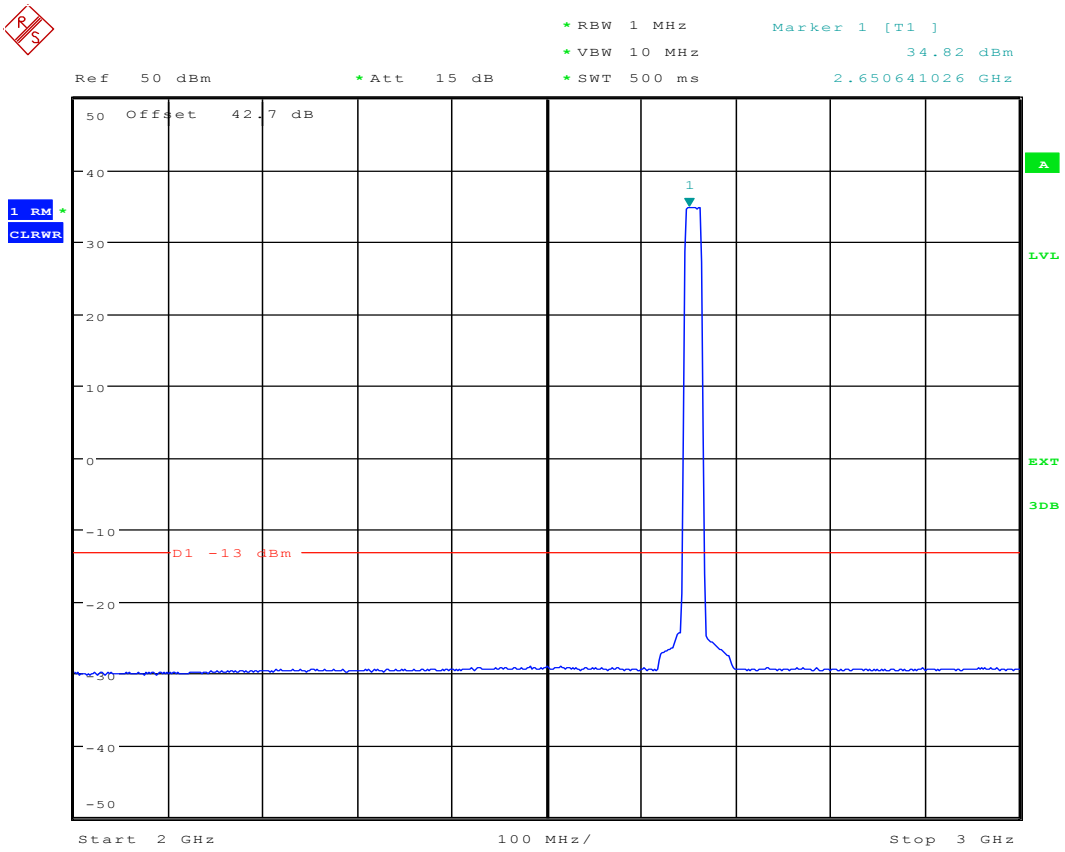
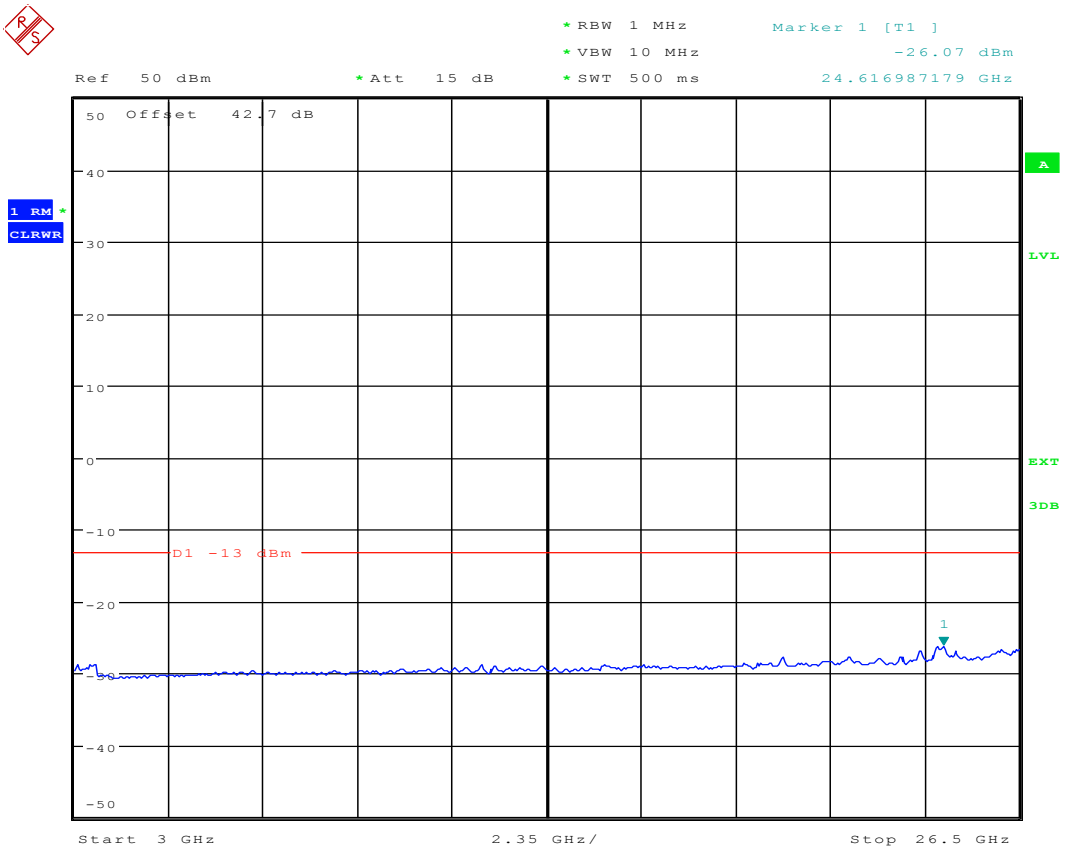
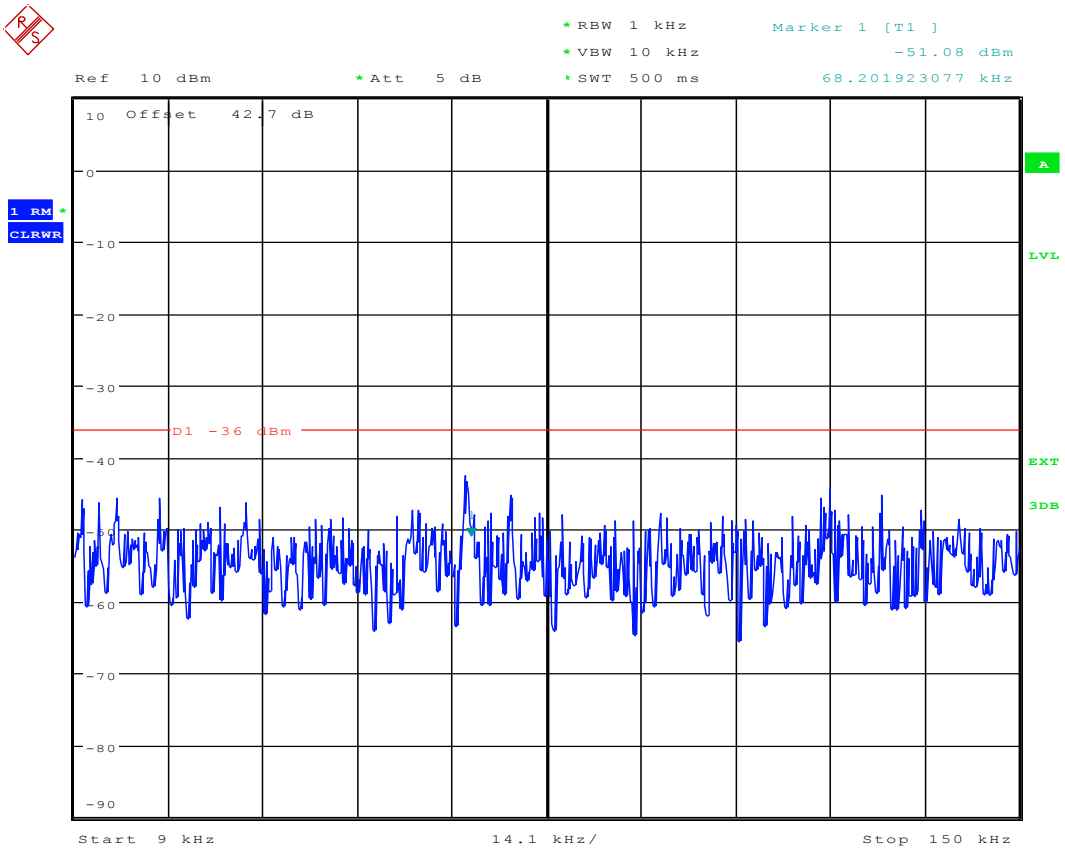
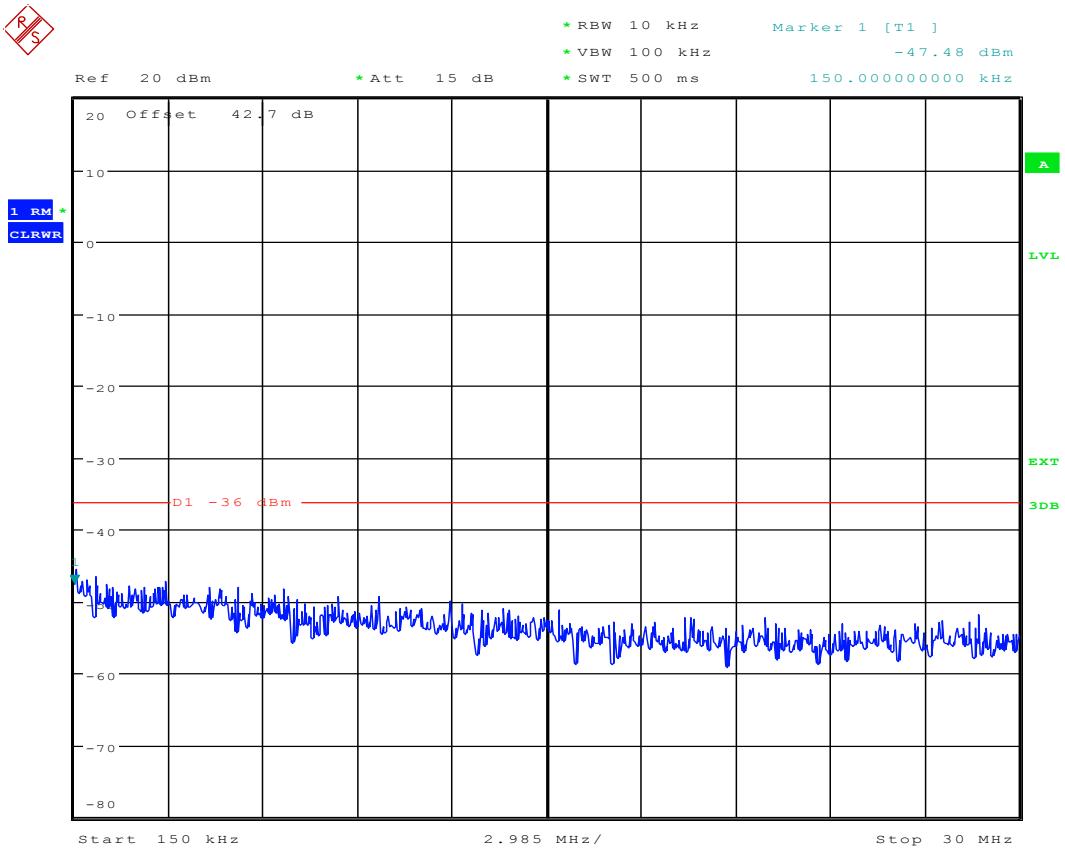


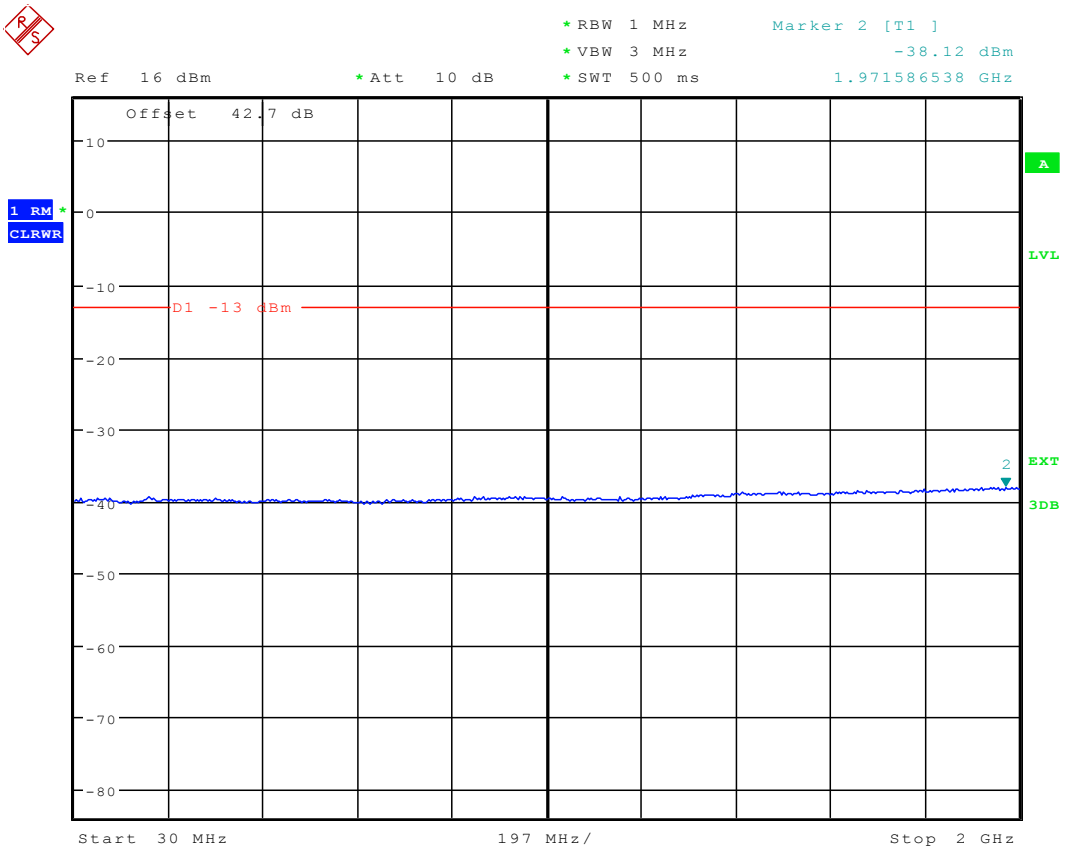


2.6 1L_20M_T

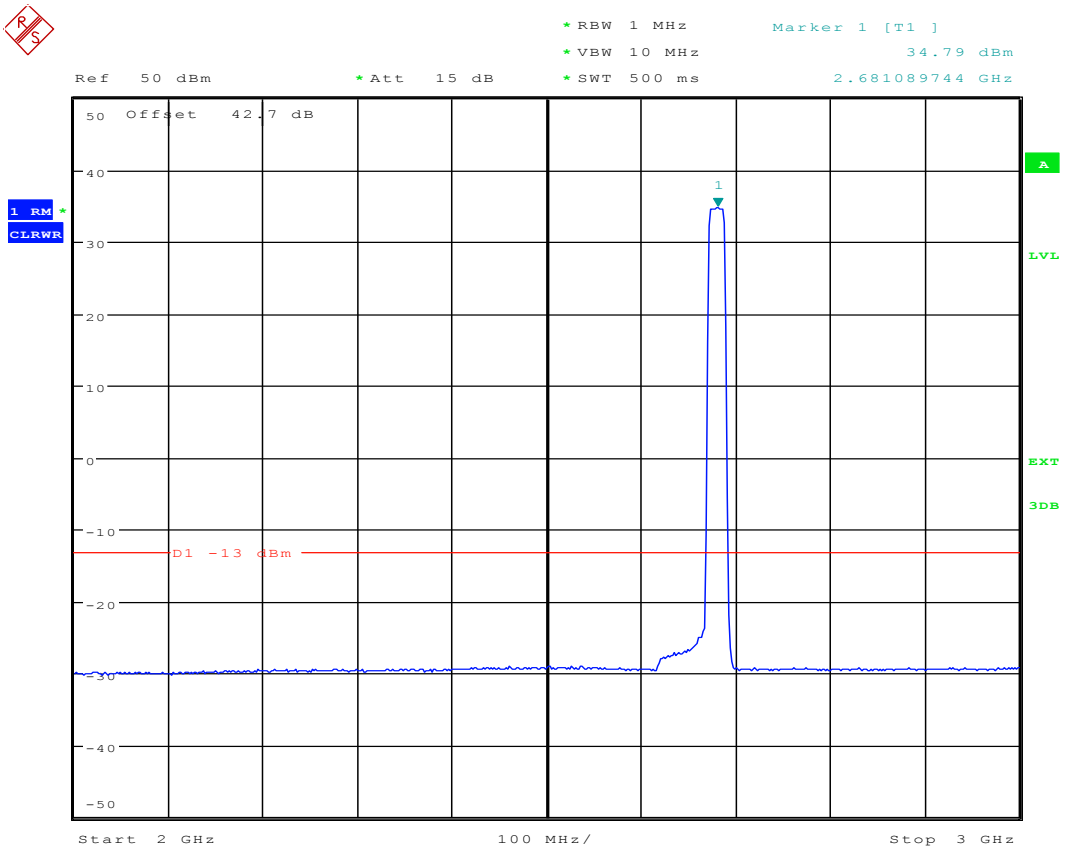
Start Frequency [MHz]	Stop Frequency [MHz]	RBW [MHz]	Detector	Limit [dBm]	Verdict
0.009	0.15	0.001	RMS	-13	Pass
0.15	30	0.01	RMS	-13	Pass
30	2000	1	RMS	-13	Pass
2000	3000	1	RMS	-13	---
3000	26500	1	RMS	-13	Pass

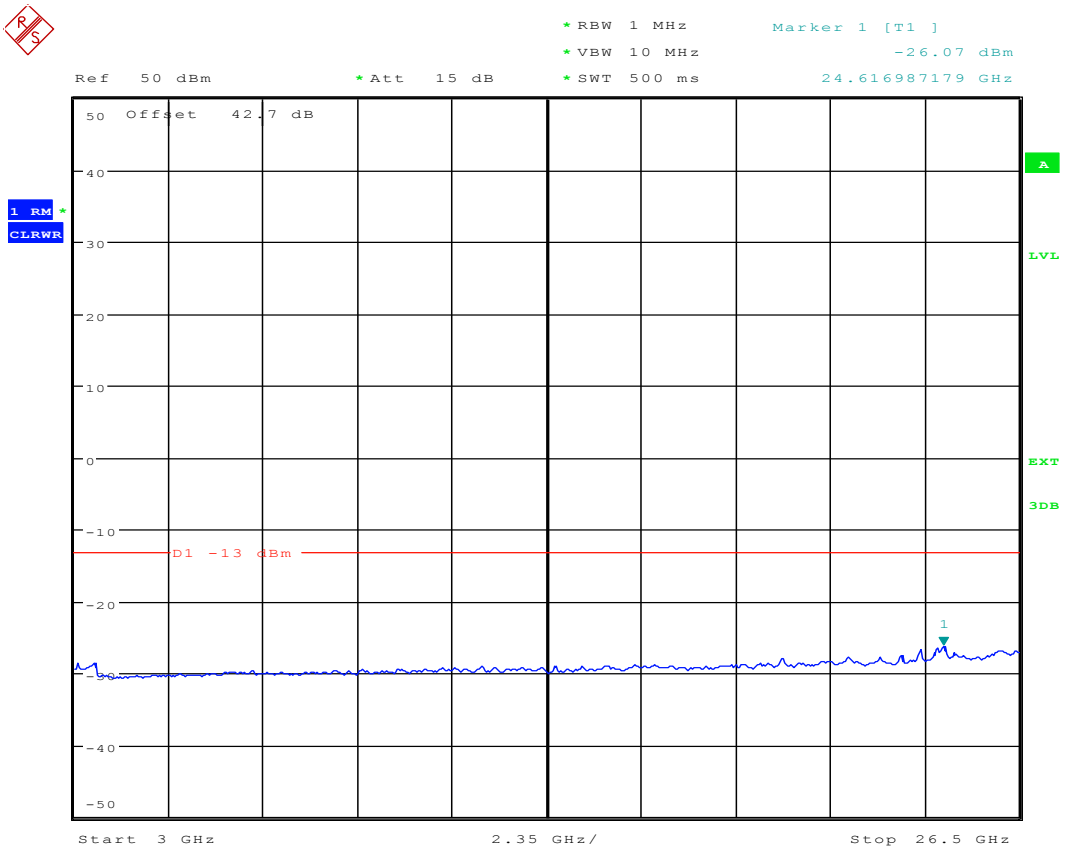






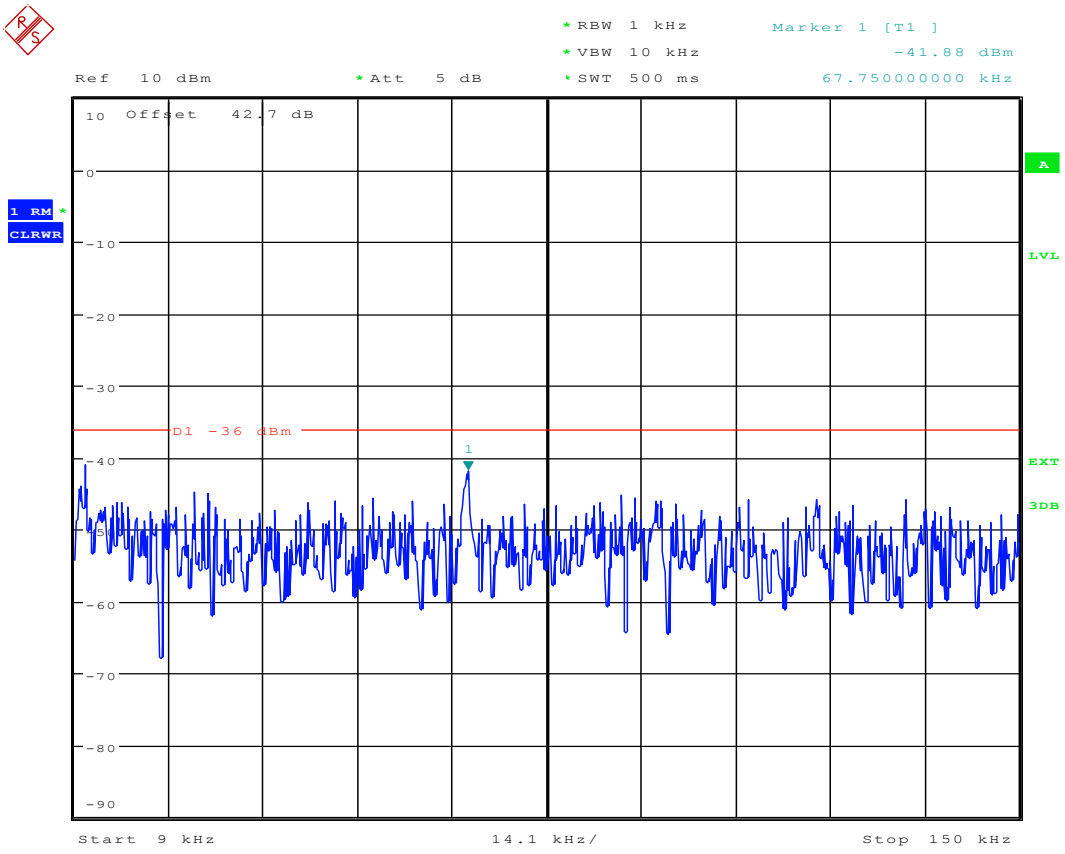
Date: 14.FEB.2016 09:37:36



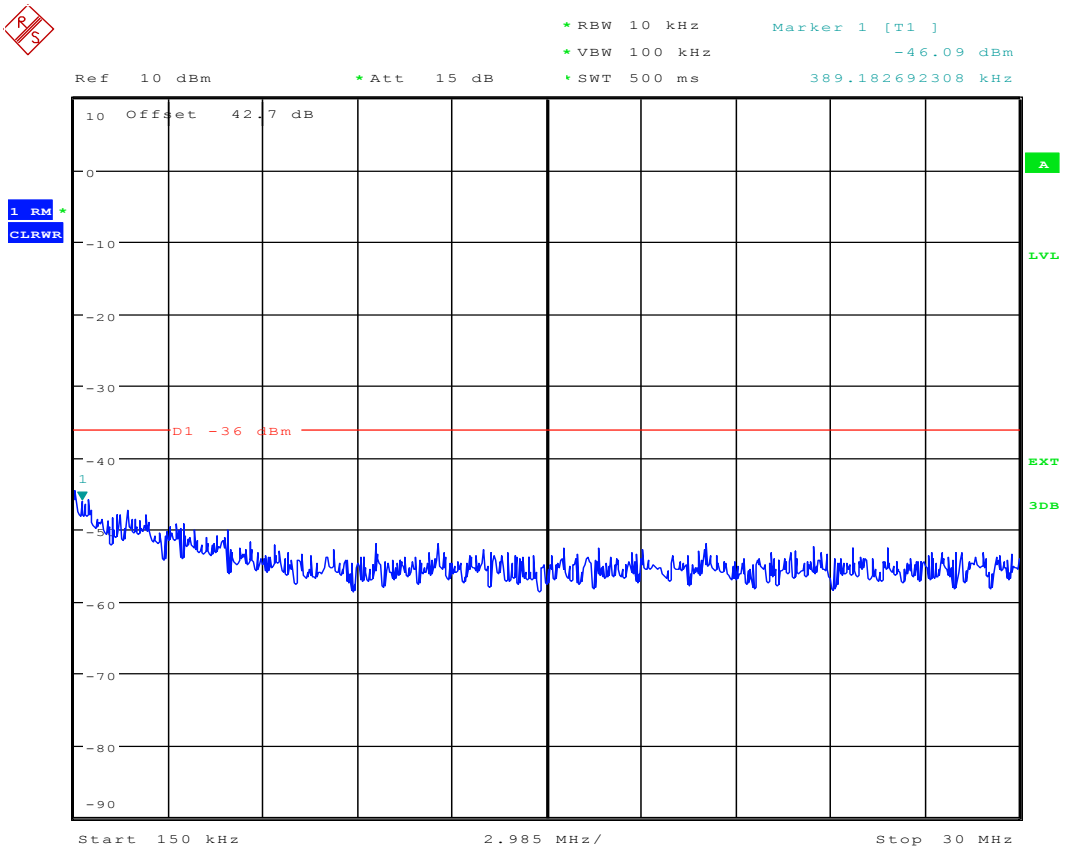


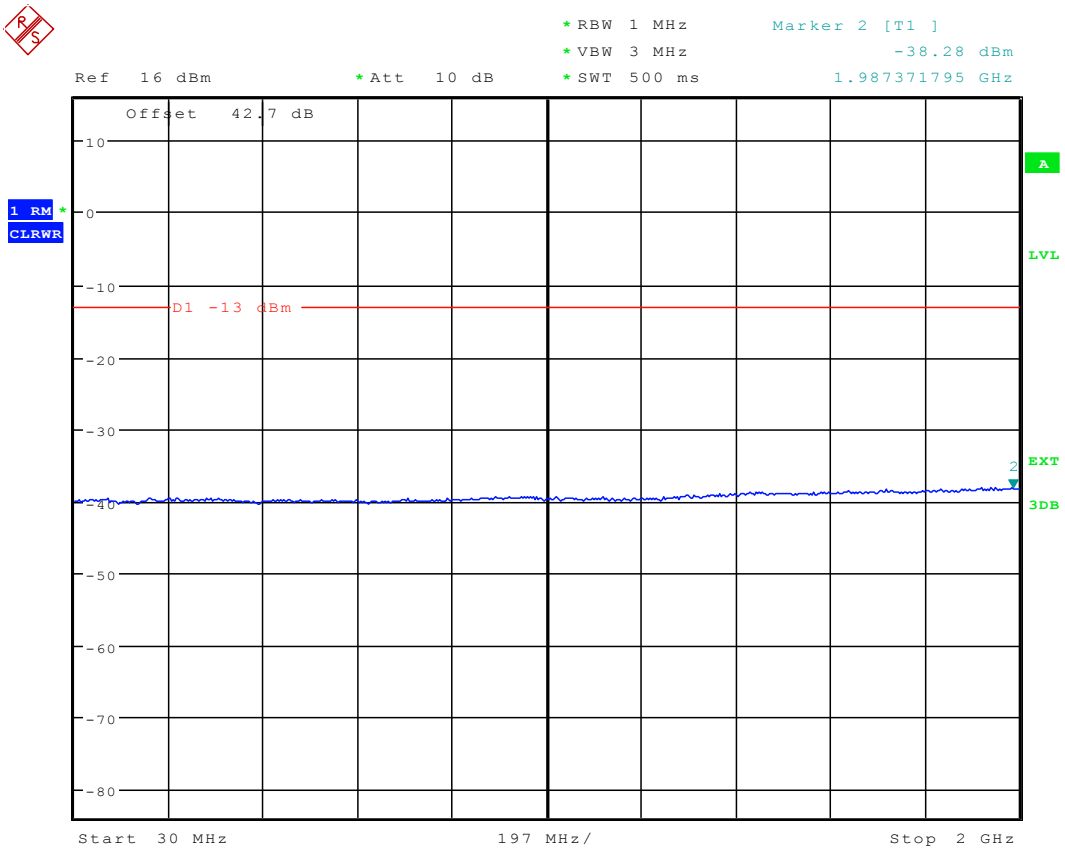
2.7 2L_5M_B

Start Frequency [MHz]	Stop Frequency [MHz]	RBW [MHz]	Detector	Limit [dBm]	Verdict
0.009	0.15	0.001	RMS	-13	Pass
0.15	30	0.01	RMS	-13	Pass
30	2000	1	RMS	-13	Pass
2000	3000	1	RMS	-13	---
3000	26500	1	RMS	-13	Pass



Date: 4.FEB.2016 10:53:59





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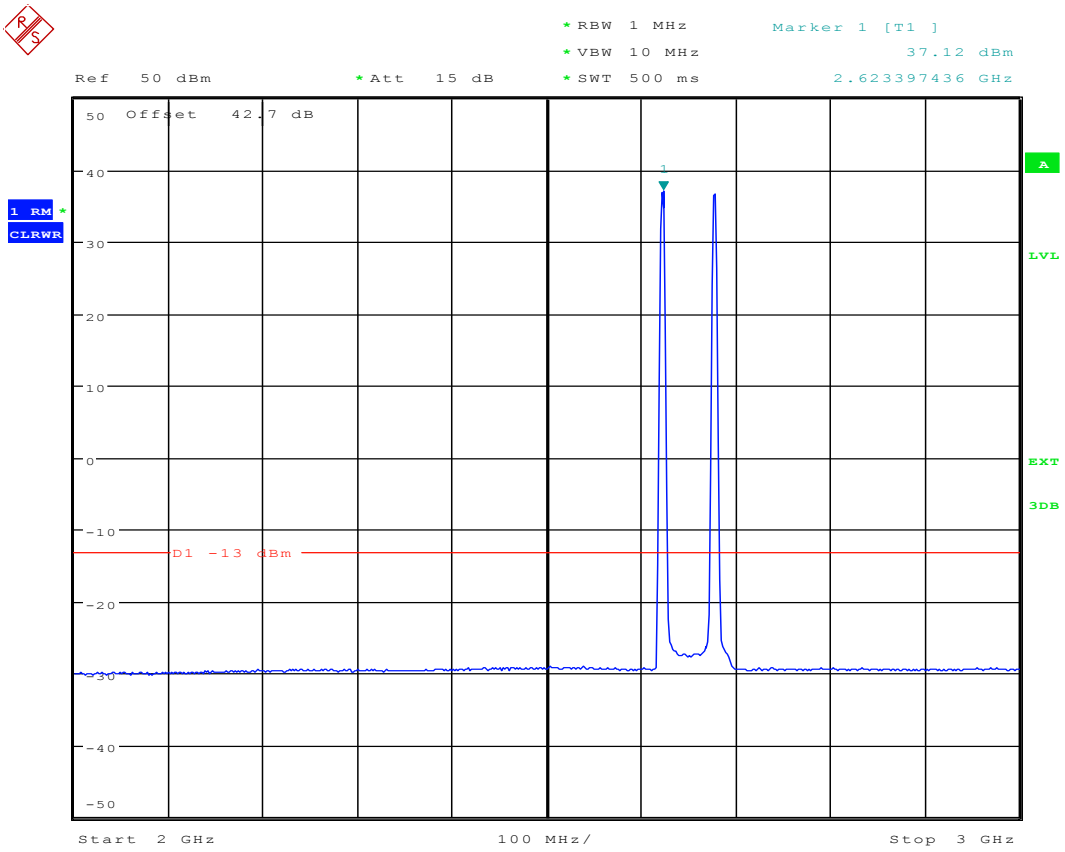
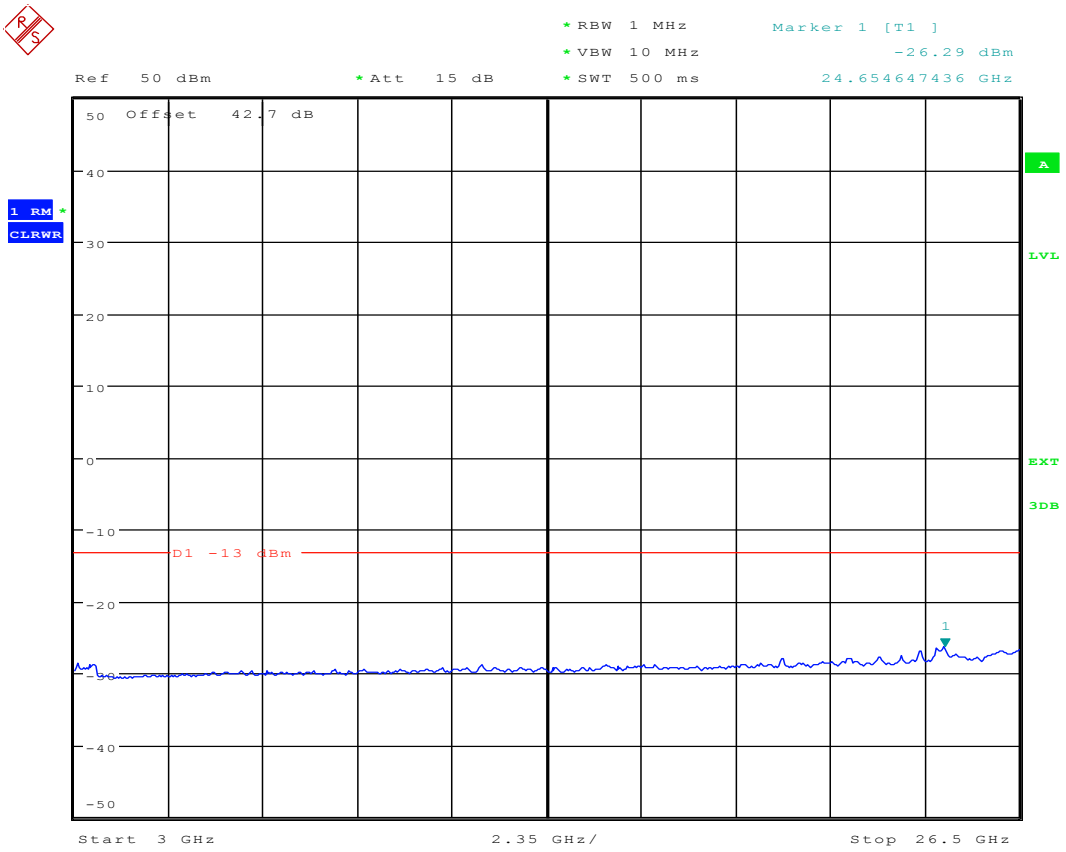
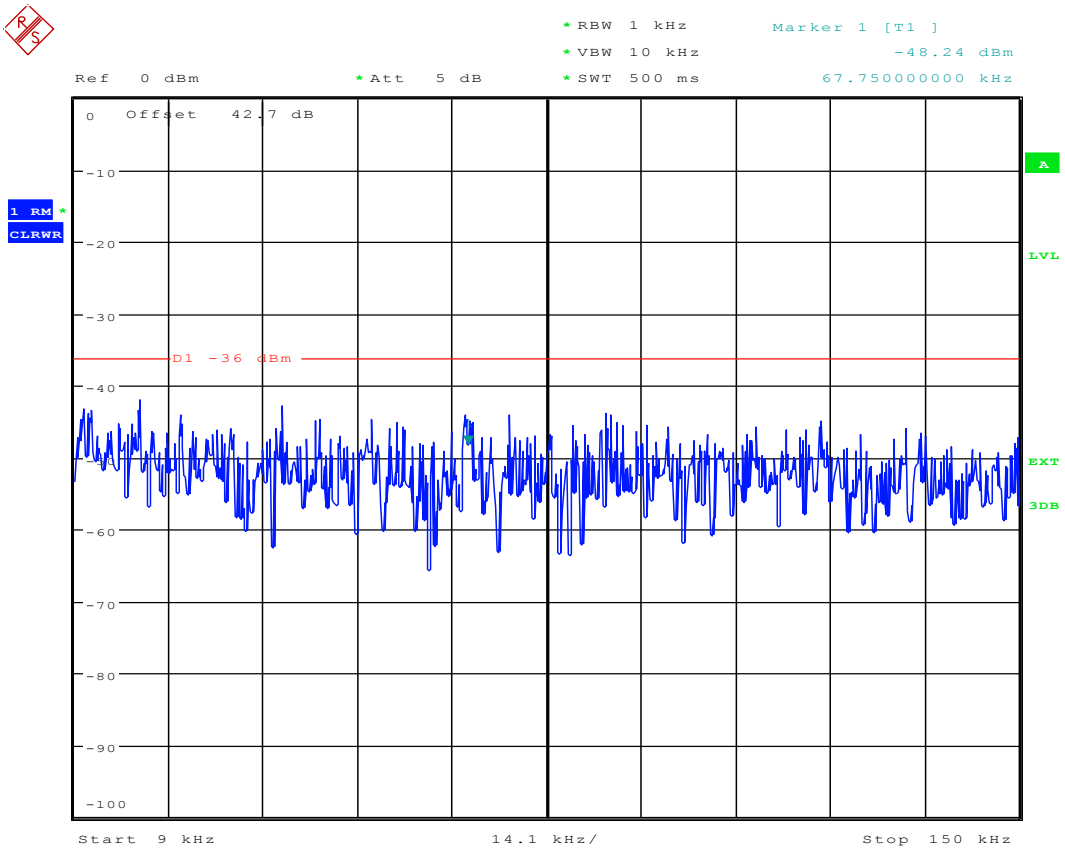
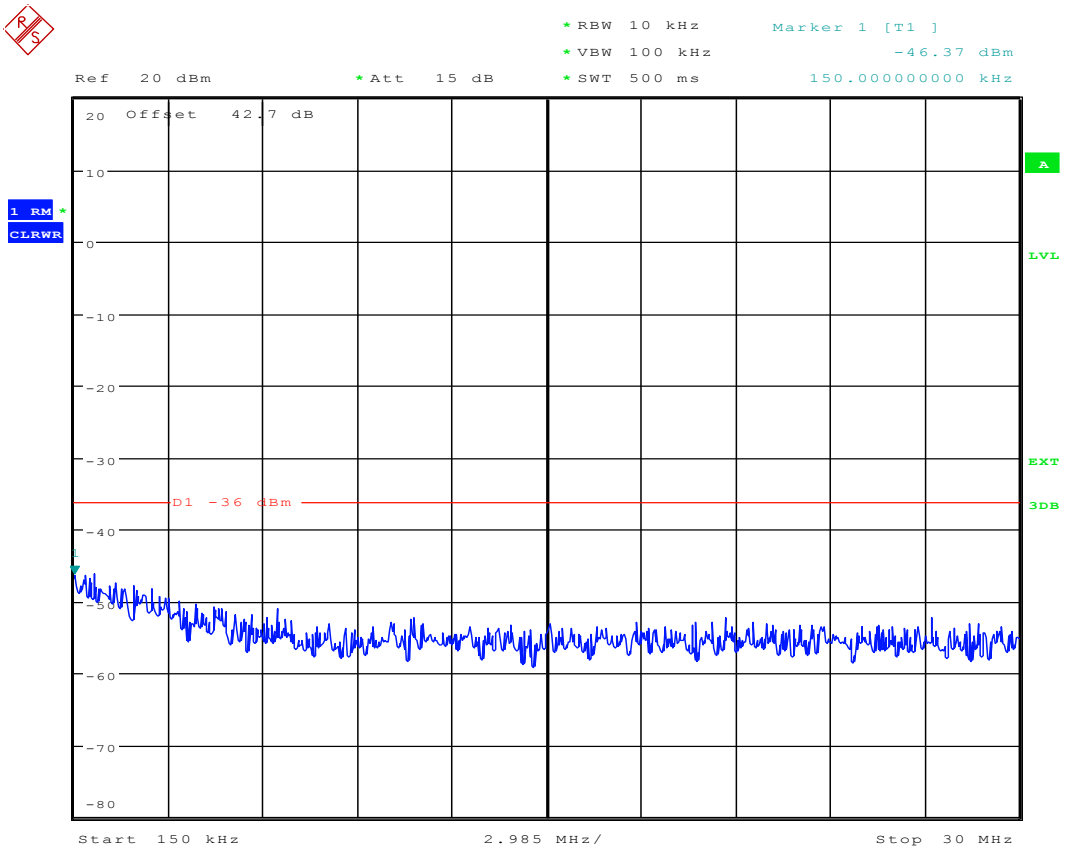


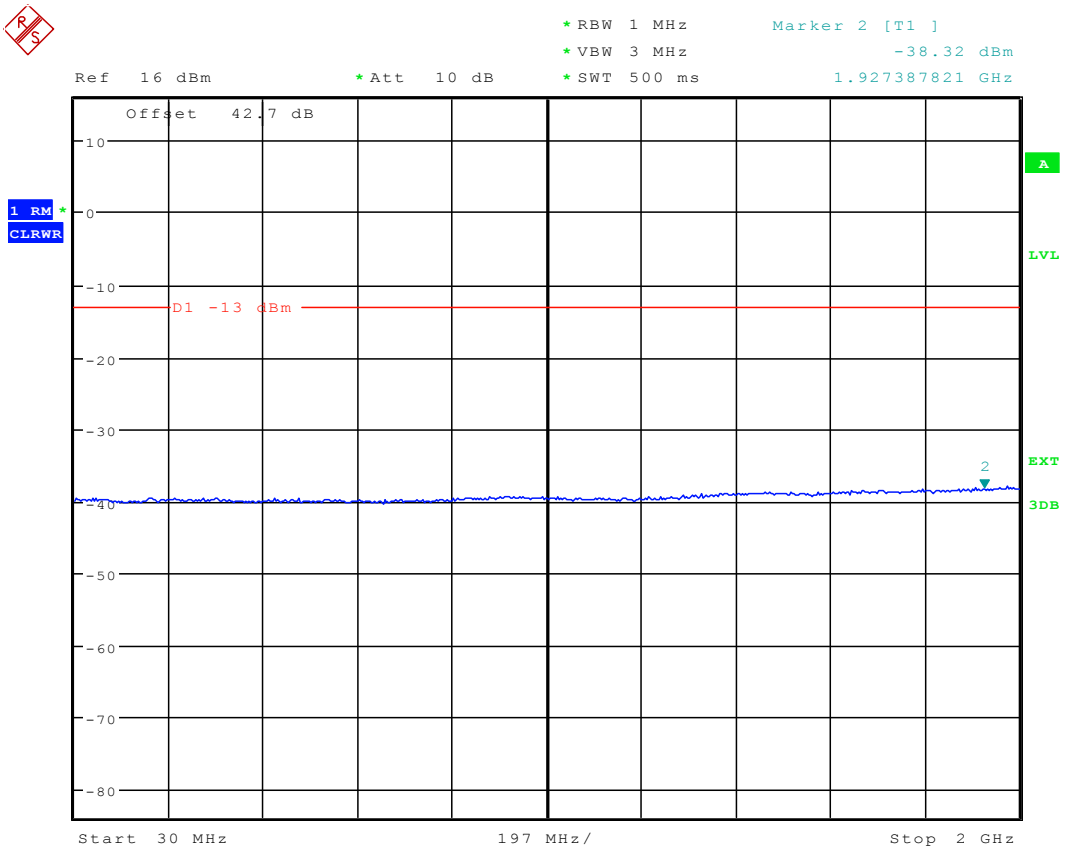


2.8 2L_5M_T

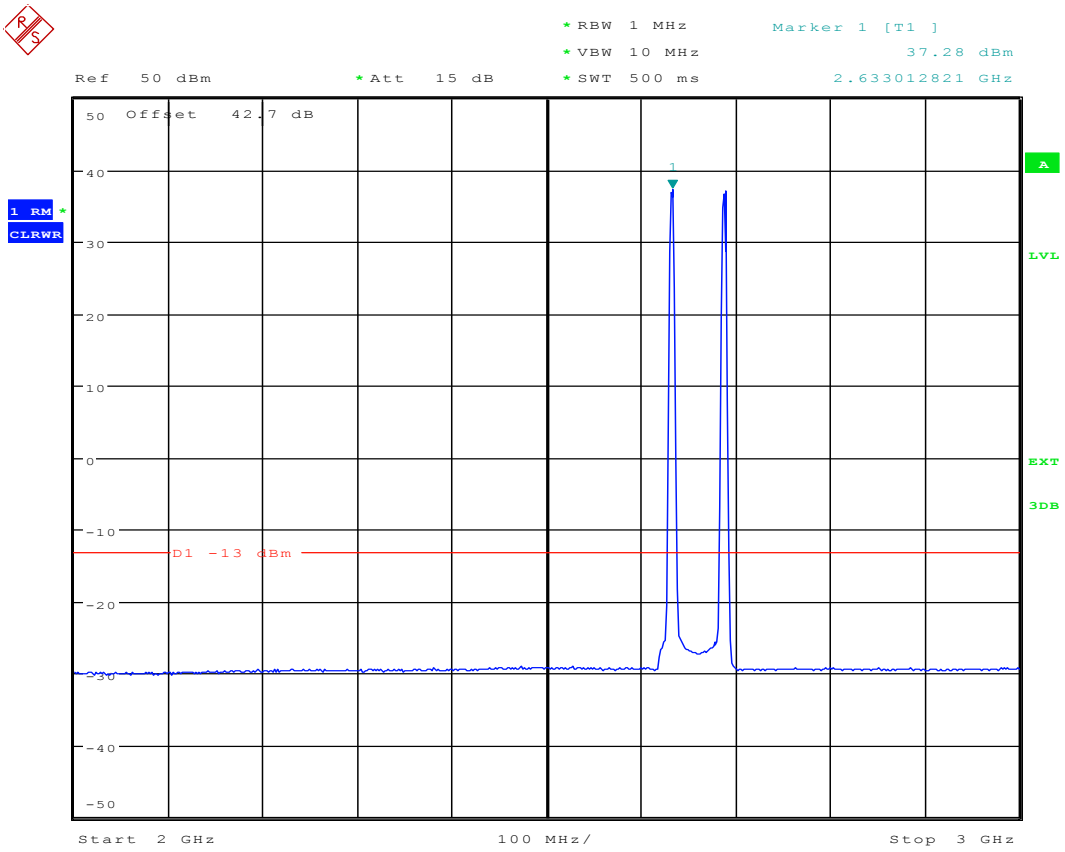
Start Frequency [MHz]	Stop Frequency [MHz]	RBW [MHz]	Detector	Limit [dBm]	Verdict
0.009	0.15	0.001	RMS	-13	Pass
0.15	30	0.01	RMS	-13	Pass
30	2000	1	RMS	-13	Pass
2000	3000	1	RMS	-13	---
3000	26500	1	RMS	-13	Pass

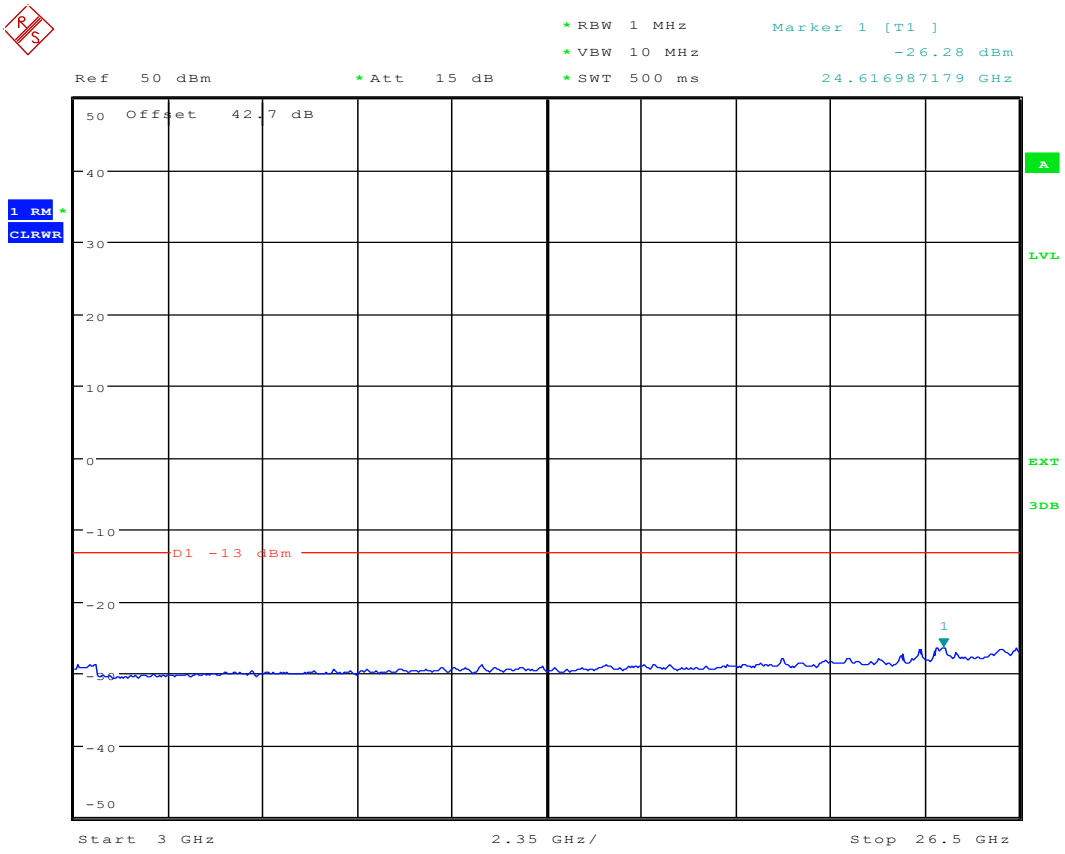






Date: 14.FEB.2016 09:41:01





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Appendix E: Field Strength of Spurious Radiation / Radiated Spurious Emissions

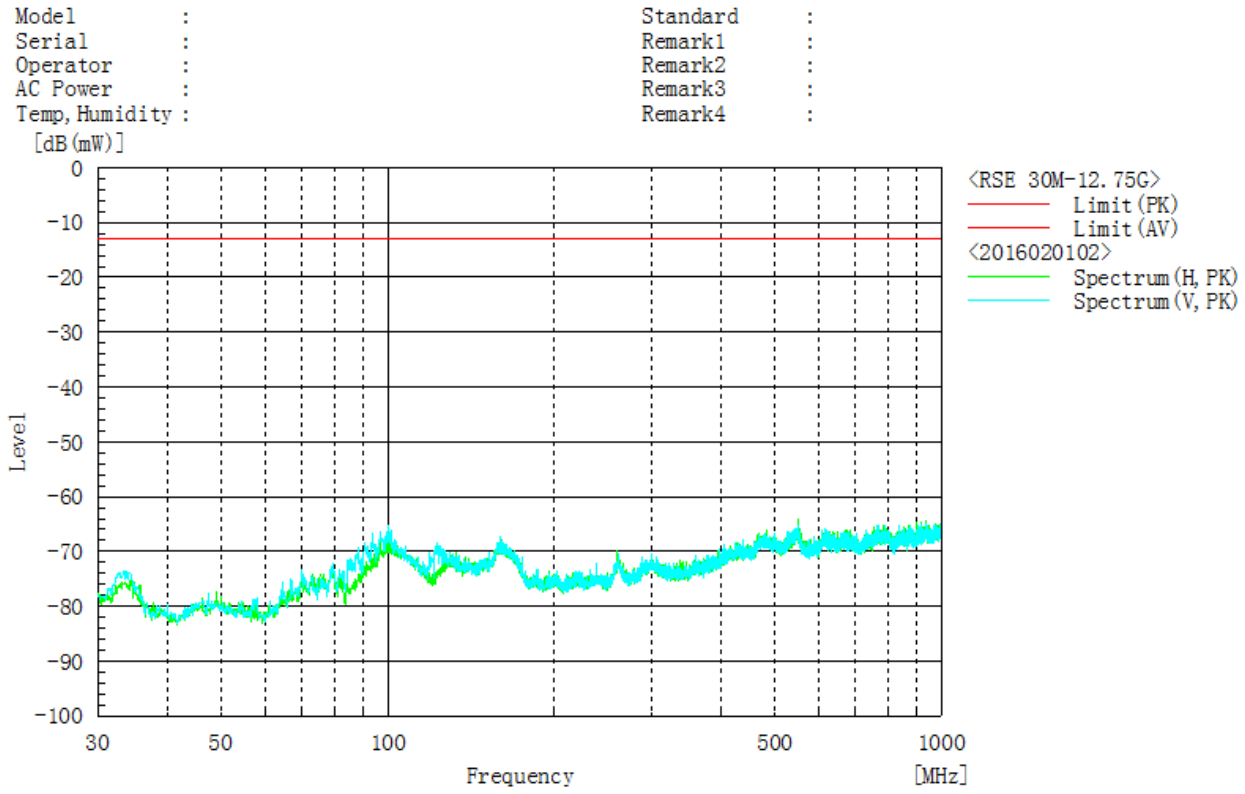
1 Result Table

NOTE: If applicable, according to FCC KDB 971168 §5.8.3, for the requirement of a fixed limit (e.g. -13 dBm), the power limit can be mathematically converted to an equivalent field strength limit. The relationship is:
(1) E [dBμV/m] = EIRP [dBm] - 20*lg(D) + 104.8; where D is the measurement distance in meters.
(2) EIRP [dBm] = ERP [dBm] + 2.15.
Also according to FCC §2.1053(a), emissions are assumed radiated from halfwave dipole antennas, so the power limit refer to the ERP.
(For example, the fixed power limit -13 dBm can be converted to the field strength limit 84.4 dBμV/m at 3 m measurement distance, and to 93.95 dBμV/m at 1 m measurement distance assuming in the far-field region of both the transmit and receive antennas.)

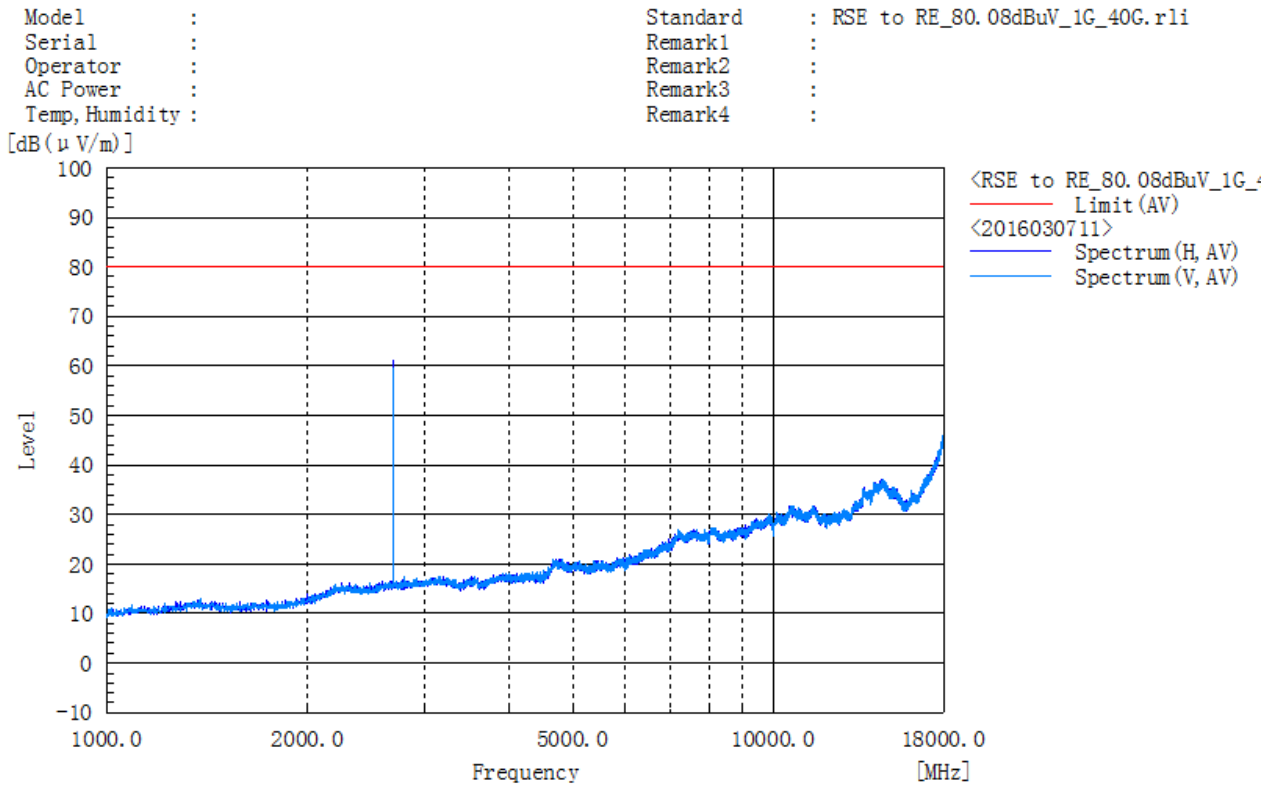
Test Range	EUT Conf.	Maximum Emission	Verdict
30 MHz to 1 GHz	1L_5M_M (Worst Case)	< Limit	Pass
1 GHz to 18 GHz	1L_5M_M (Worst Case)	< Limit	Pass
18 GHz to 26.5 GHz	1L_5M_M (Worst Case)	< Limit	Pass

2 Test Plot

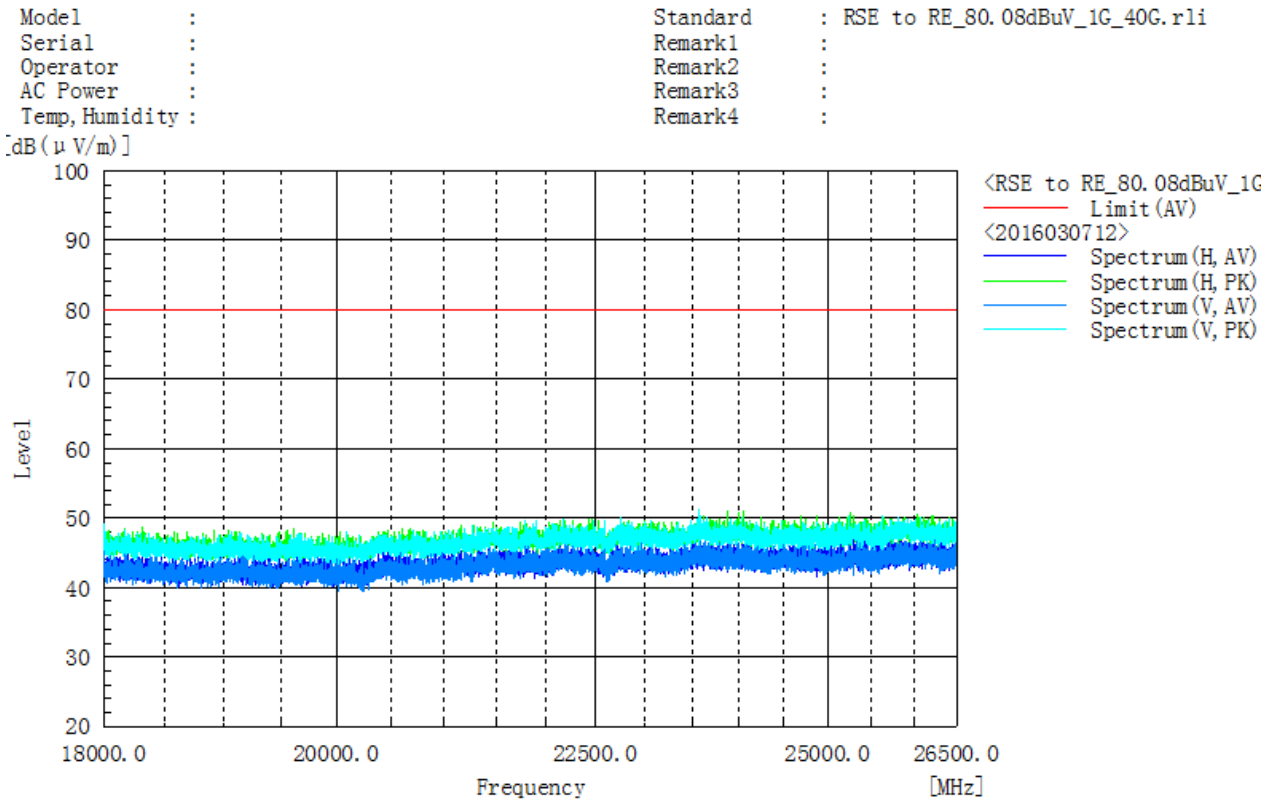
2.1 Test range of "30 MHz to 1 GHz"



2.2 Test range of "1 GHz to 18 GHz"



2.3 Test range of “18 GHz to 26.5 GHz”



Appendix F: Frequency Stability

1 Result Table

1.1 Frequency Error

EUT Conf.	Temperature	Voltage	Freq. Error, f(offset) [Hz]	Freq. vs. rated [ppm]	Freq. vs. 20 °C [ppm]	Verdict
1L_5M_M	-30 °C	100%	2.05	0.00077	0.00019	Pass
	-20 °C	100%	1.31	0.00049	-0.00009	Pass
	-10 °C	100%	2.72	0.00102	0.00044	Pass
	0 °C	100%	1.84	0.00069	0.00011	Pass
	+10 °C	100%	3.13	0.00118	0.00060	Pass
	+20 °C	85 %	3.24	0.00122	0.00064	Pass
	+20 °C	100 %	1.55	0.00058	---	Pass
	+20 °C	115 %	1.9	0.00072	0.00013	Pass
	+30 °C	100%	2.51	0.00095	0.00036	Pass
	+40 °C	100%	2.26	0.00085	0.00027	Pass
	+50 °C	100%	2.22	0.00084	0.00025	Pass

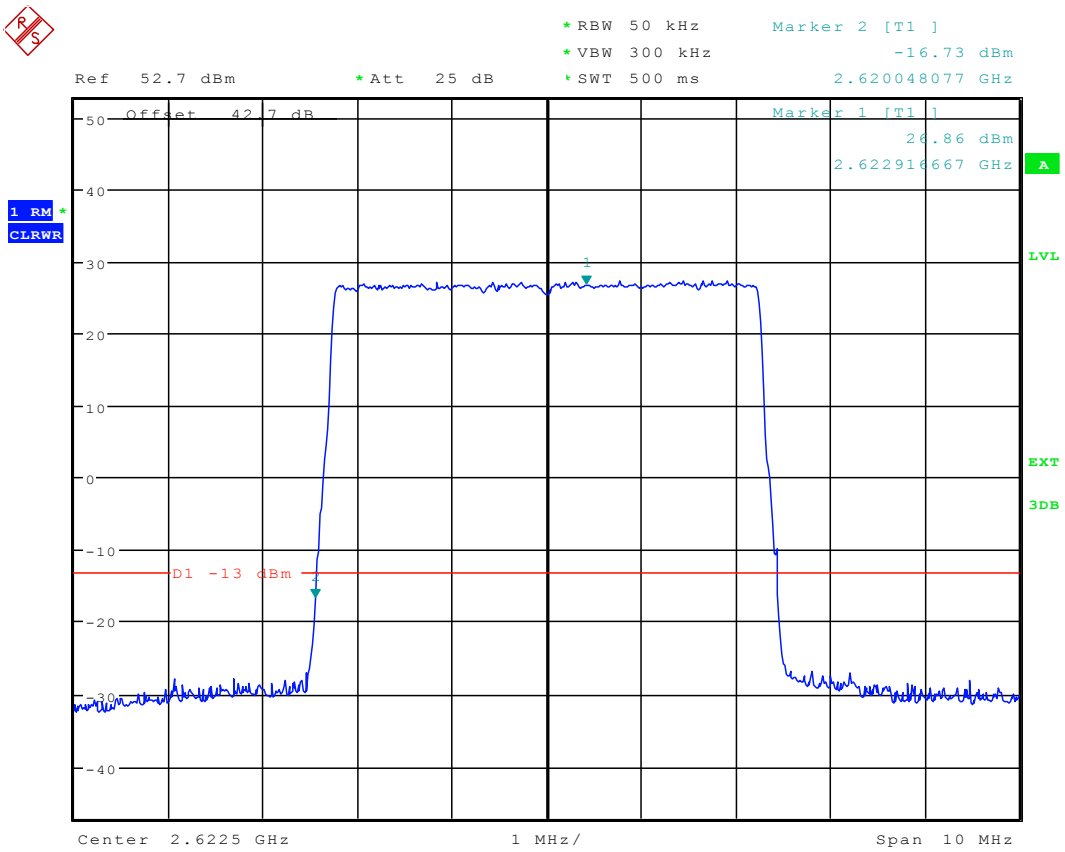
1.2 Frequency Range

EUT Conf.	Reference Point, fL/fH [MHz]	Frequency Range, fL – |f(offset)| or fH + |f(offset)| [MHz]	Verdict
1L_5M_B	2620.048077	2620.048075	Pass
1L_5M_T	2689.951923	2689.951925	Pass
1L_10M_B	2620.096154	2620.096152	Pass
1L_10M_T	2689.935897	2689.935899	Pass
1L_15M_B	2620.096154	2620.096152	Pass
1L_15M_T	2689.903846	2689.903848	Pass
1L_20M_B	2620.256410	2620.256408	Pass
1L_20M_T	2689.807692	2689.807694	Pass

2 Test Plot

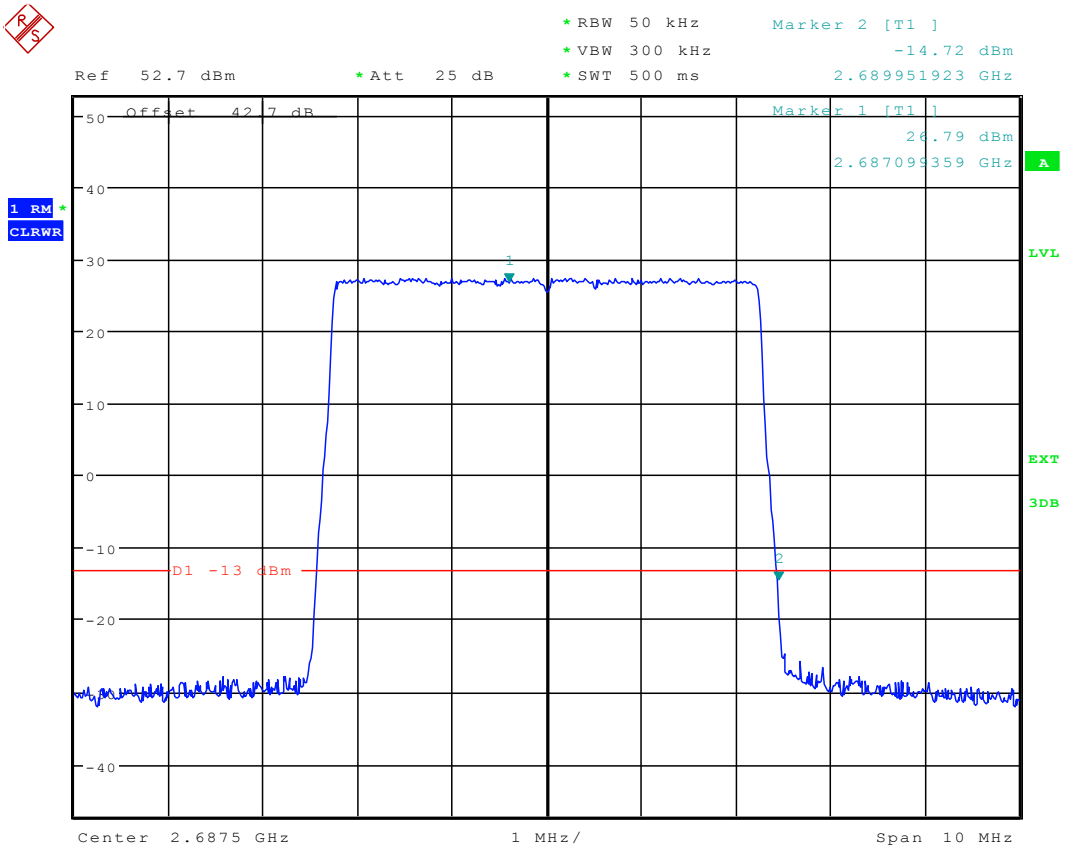
NOTE: Only the test plots for the measurements of Frequency Range are supplied.

2.1 1L_5M_B



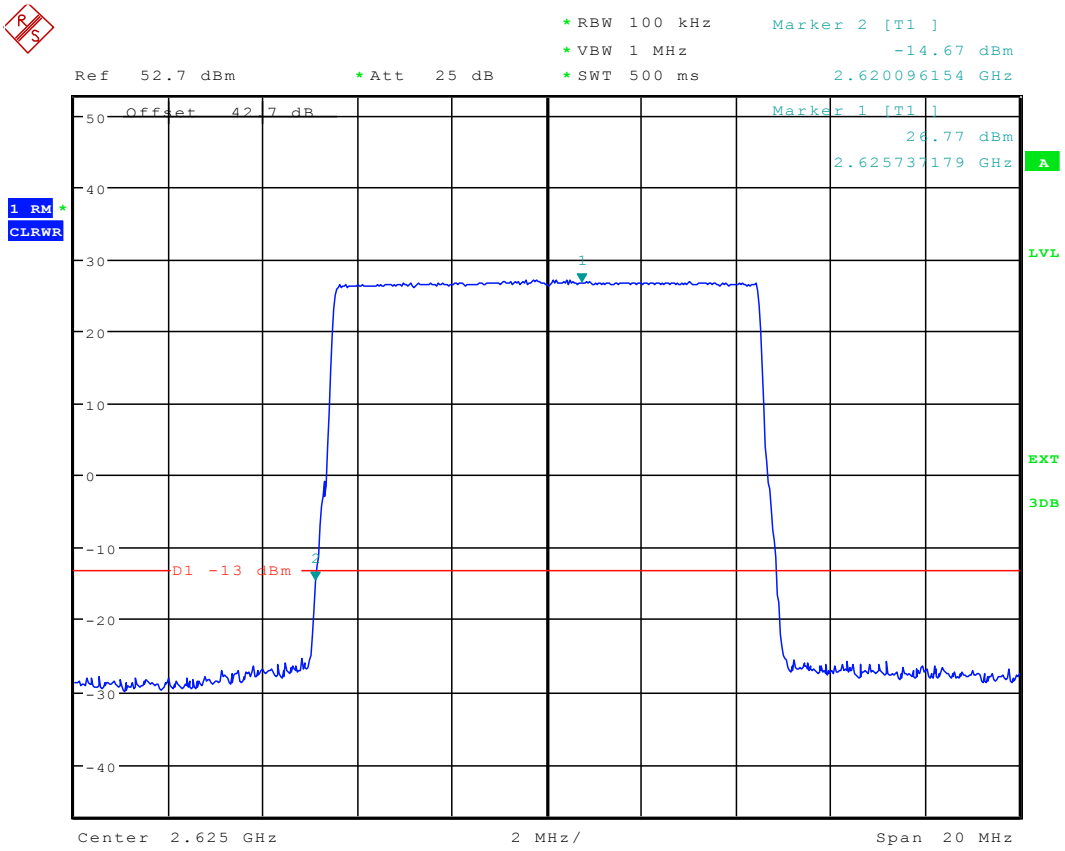
Date: 3.FEB.2016 15:32:20

2.2 1L_5M_T



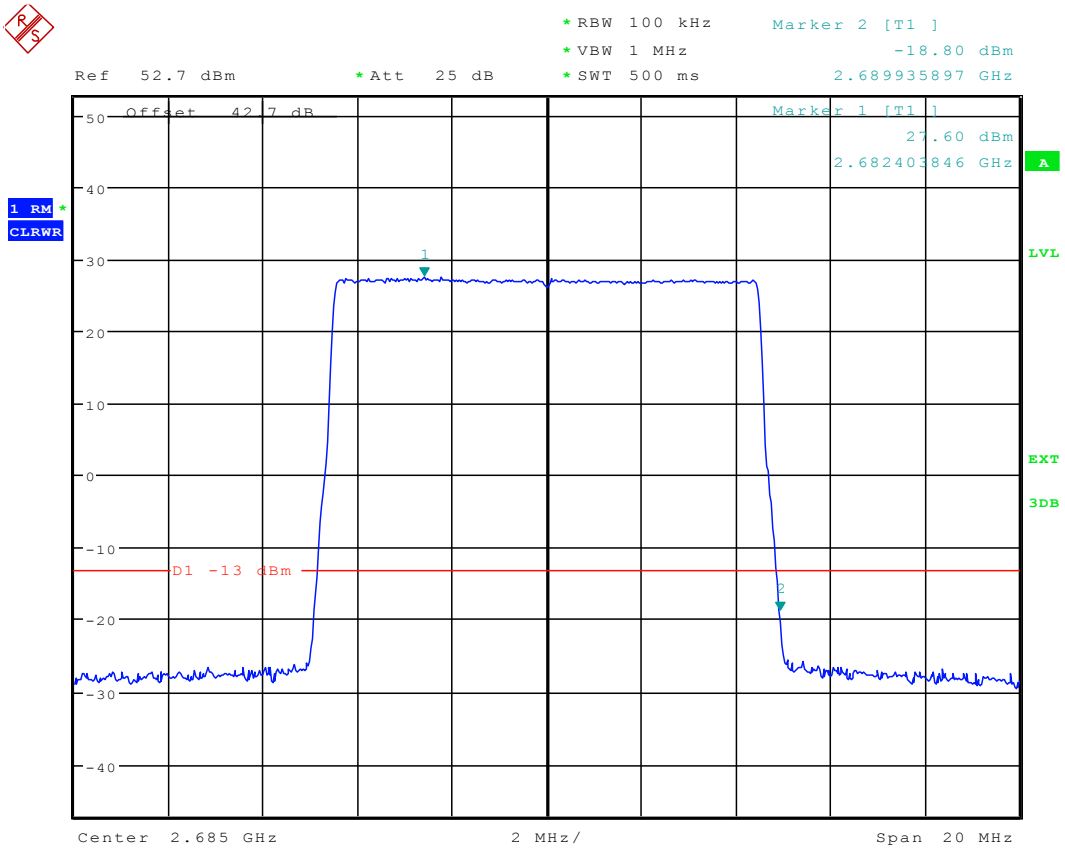
Date: 3.FEB.2016 15:33:54

2.3 1L_10M_B



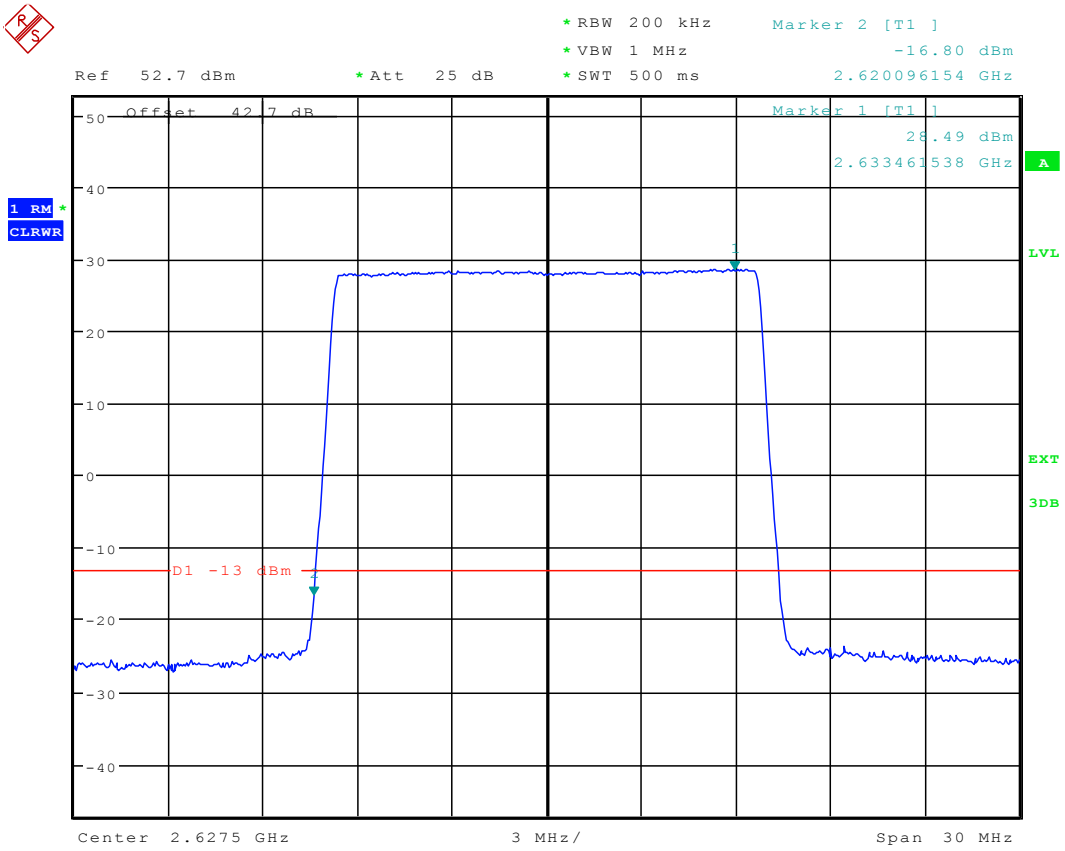
Date: 3.FEB.2016 15:34:44

2.4 1L_10M_T

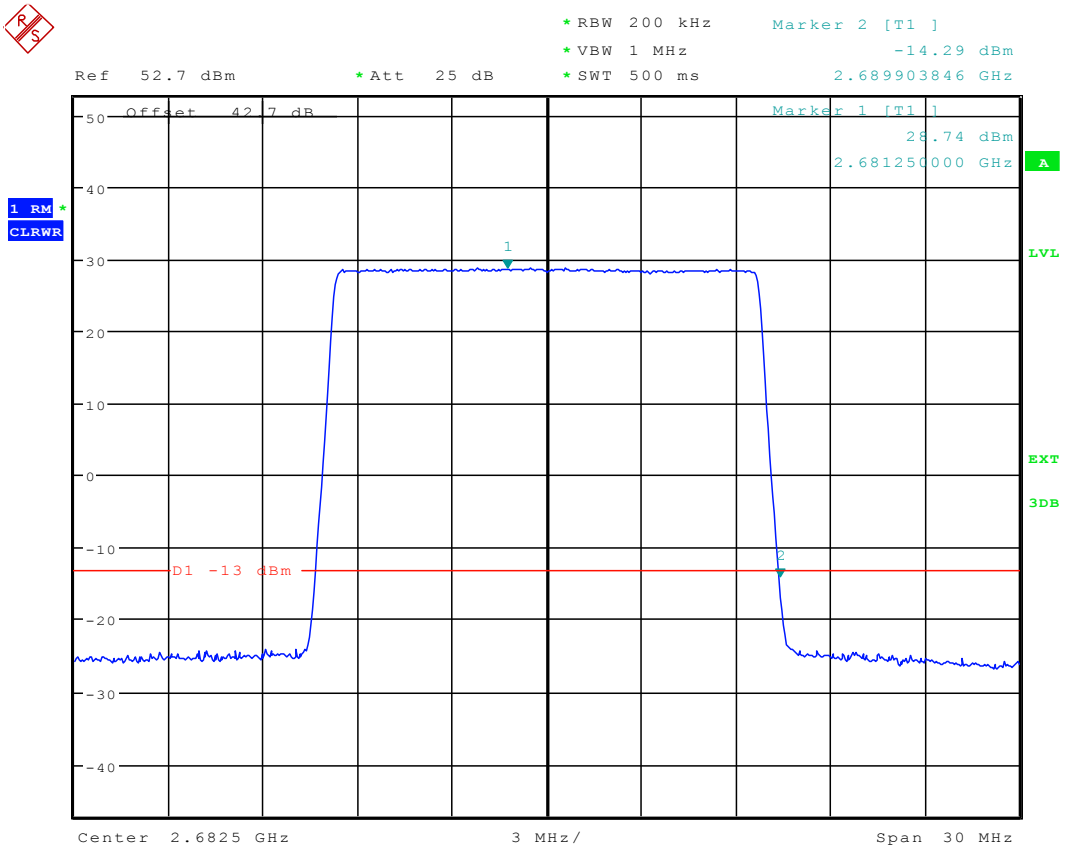


Date: 3.FEB.2016 15:35:28

2.5 1L_15M_B

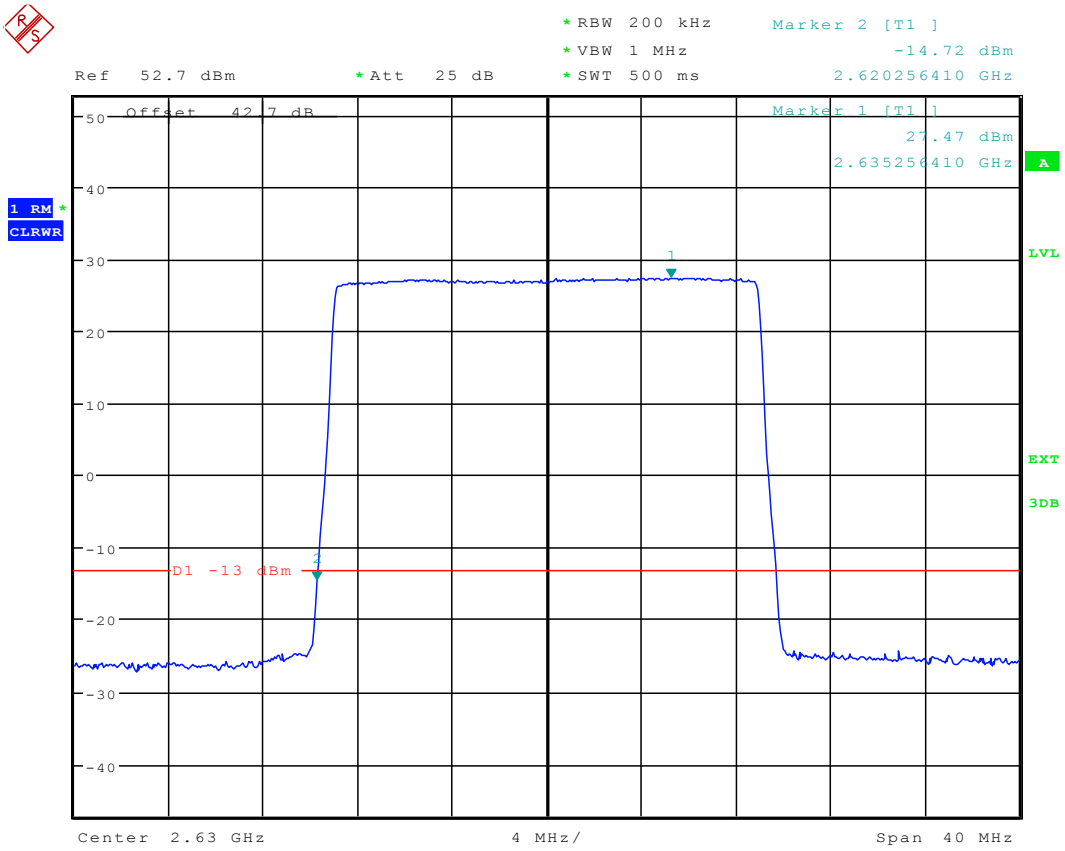


2.6 1L_15M_T

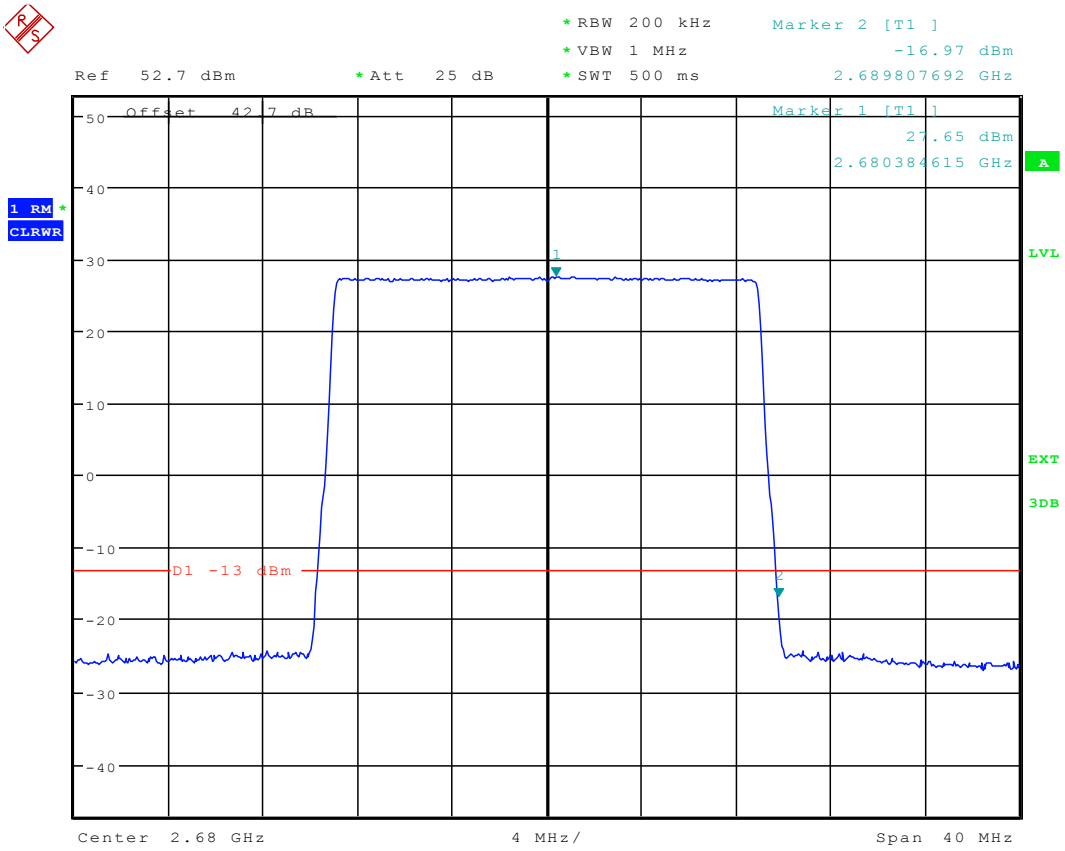


Date: 3.FEB.2016 15:37:15

2.7 1L_20M_B



2.8 1L_20M_T



Date: 3.FEB.2016 15:38:43

Appendix G: Receiver Spurious Emissions

1 Result Table

(Not applicable)

END