FCC Part 27
Measurement and Test Report

For

Etung Technology Co., Ltd

2nd/Floor No.216, 3rd Building, Beike Industrial Park, Haidian District,

Beijing, China

FCC ID: 2AEWI-ER-600

FCC Rule(s):	FCC Part 27
Product Description:	ROUTER
Model:	ER-600
Brand:	驿唐
Report No.:	BSL190412535202RF
Tested Date:	Aug. 07-Aug 12, 2019
Issued Date:	Aug 12, 2019
Tested By:	Cindy Zheng/ Engineer
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1. GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

Client Information

Applicant:	Etung Technology Co., Ltd
Address of applicant:	2nd/Floor No.216, 3rd Building, Beike Industrial Park, Haidian District, Beijing, China
Manufacturer:	Etung Technology Co., Ltd
Address of manufacturer:	2nd/Floor No.216, 3rd Building, Beike Industrial Park, Haidian District, Beijing, China

General Description of EUT:	
Product Name:	ROUTER
Brand Name:	驿唐
Model No.:	ER-600,ER-600-4G,ER-600-W0,ER-600-N4G
Hardware version:	V1.0
Software version:	V1.0
Rated Voltage:	AC 100-240V~50/60Hz 0.8A
Adapter information:	DC 12V/2.0A
Note: The test data is gathered from a production sample provided by the manufacturer.	

Technical Characteristics of EUT: Main board	
4G	
Support Networks:	FDD-LTE
Support Band:	FDD-LTE Band 7
Uplink Frequency:	FDD-LTE Band 7: Tx: 2500-2570MHz,
Downlink Frequency:	FDD-LTE Band 7: Rx: 2620-2690MHz,
RF Output Power:	FDD-LTE Band 7: 23.63
Type of Emission:	FDD-LTE Band 7: 18M1G7D, 18M0W7D
Type of Modulation:	QPSK, 16QAM
Antenna Type:	PR-SAM antenna
Antenna Gain:	FDD-LTE Band 7: 0dBi,

1.2 Test Standards

The following report is prepared on behalf of the Etung Technology Co., Ltd in accordance with FCC Part 27 of the Federal Communication Commissions rules.

The objective is to determine compliance with FCC Part 27 of the Federal Communication Commissions rules.

Maintenance of compliance is the responsibility of the manufacturer. Any modification of the product, which result in lowering the emission, should be checked to ensure compliance has been maintained.

1.3 Test Methodology

All measurements contained in this report were conducted with ANSI/TIA-603-D: 2010 and ANSI C63.4-2014, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz. The measurement guide KDB 971168 D01 Power Meas License Digital Systems v02r02 shall be performed also.

1.4 Test Facility

BSL Testing Co.,LTD.
NO. 24, ZH Park, Nantou, Shenzhen, 518000 China
Designation Number : CN1217
Test Firm Registration Number: 866035

1.5 EUT Setup and Test Mode

The EUT was operated in the engineering mode to fix the Tx frequency that was for the purpose of the measurements. All testing shall be performed under maximum output power condition, and to measure its highest possible emissions level, more detailed description as follows:

Test Mode List		
Test Mode	Description	Remark
TM1	FDD-LTE Band 7	Low, Middle, High Channels
TM2		
TM3		
TM4		

EUT Cable List and Details

Cable Description	Length (M)	Shielded/Unshielded	With Core/Without Core
/	/	/	/
/	/	/	/

Auxiliary Equipment List and Details

Description	Manufacturer	Model	Serial Number
/	/	/	/

Special Cable List and Details

Cable Description	Length (M)	Shielded/Unshielded	With Core/Without Core
/	/	/	/

EUT Exercise Software

The test software: ‘CC 4.0 BY-SA’ was used in test.

The worst condition (maximum power) was configured by default setting.

1.6 Measurement Uncertainty

Measurement uncertainty		
Parameter	Conditions	Uncertainty
RF Output Power	Conducted	±0.42dB
Occupied Bandwidth	Conducted	±1.5%
Frequency Stability	Conducted	2.3%
Transmitter Spurious Emissions	Radiated	±5.1dB
Transmitter Spurious Emissions	Conducted	±0.42dB

1.7 Test Equipment List and Details

Description	Manufacturer	Model	Serial No.	Cal Date	Due. Date
Communication Tester	Rohde & Schwarz	CMW500	100358	2018-10-21	2019-10-20
Spectrum Analyzer	R&S	FSP40	100550	2018-10-21	2019-10-20
Test Receiver	R&S	ESCI7	US47140102	2018-10-21	2019-10-20
Signal Generator	HP	83630B	3844A01028	2018-10-22	2019-10-21
Test Receiver	R&S	ESPI-3	100180	2018-10-21	2019-10-20
Amplifier	Agilent	8449B	4035A00116	2018-10-22	2019-10-21
Amplifier	HP	8447E	2945A02770	2018-10-22	2019-10-21
Signal Generator	IFR	2023A	202307/242	2018-10-22	2019-10-21
Broadband Antenna	SCHAFFNER	2774	2774	2018-10-17	2019-10-16
Biconical and log periodic antennas	ELECTRO-METRICS	EM-6917B-1	171	2018-10-17	2019-10-16
Horn Antenna	R&S	HF906	100253	2018-10-17	2019-10-16
Horn Antenna	EM	EM-6961	6462	2018-10-17	2019-10-16
LISN	R&S	ESH3-Z5	100196	2018-10-17	2019-10-16
LISN	COM-POWER	LI-115	02027	2018-10-17	2019-10-16
3m Semi-Anechoic Chamber	Chengyu Electron	9 (L)*6 (W)* 6 (H)	BSL086	2018-10-21	2019-10-20
Horn Antenna	A-INFOMW	LB-180400KF	BSL088	2018-10-21	2019-10-20
power meter	DARE	RPR3006W	15I00041SNO03	2018-10-21	2019-10-20
EZ	EMC test software	/	/	/	/

2. SUMMARY OF TEST RESULTS

FCC Rules	Description of Test Item	Result
§ 1.1307, § 2.1093	RF Exposure	Compliant
§27.50	RF Output Power	Compliant
§ 27.50	Peak-to-average Ratio (PAR) of Transmitter	Compliant
§ 27.53	Emission Bandwidth	Compliant
§ 27.53	Spurious Emissions at Antenna Terminal	Compliant
§ 27.53	Spurious Radiation Emissions	Compliant
§ 27.53	Out of Band Emissions	Compliant
§ 27.54	Frequency Stability	Compliant

3. RF Exposure

3.1 Standard Applicable

According to § 1.1307 and § 2.1093, the portable transmitter must comply the RF exposure requirements.

3.2 Test Result

This product complied with the requirement of the RF exposure, please see the SAR report.

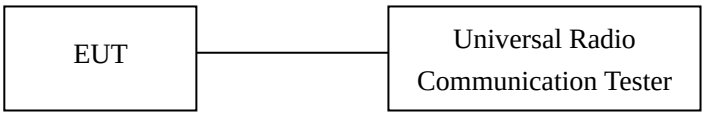
4. RF Output Power

4.1 Standard Applicable

According to §27.50, the maximum EIRP must not exceed 1Watts (30 dBm).

4.2 Test Procedure

Conducted output power test method:



Radiated power test method:

1.The setup of EUT is according with per ANSI/TIA Standard 603D and ANSI C63.4-2014 measurement procedure.

2. The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and polarization as well as EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. The test was performed by placing the EUT on 3-orthogonal axis.

3. The frequency range up to tenth harmonic of the fundamental frequency was investigated.

4. Remove the EUT and replace it with substitution antenna. A signal generator was connected to the substitution antenna by a non-radiating cable. The absolute levels of the spurious emissions were measured by the substitution.

4.3 Environmental Conditions

Temperature:	24 °C
Relative Humidity:	54%
ATM Pressure:	1011 mbar

4.4 Summary of Test Results/Plots

Max. Radiated Power:

FDD-LTE Band 7

Channel Bandwidth: 5 MHz			
Modulation	Channel	E.i.r.p [dBm]	Verdict
QPSK	LCH	22.27	PASS
	MCH	21.33	PASS
	HCH	21.59	PASS
16QAM	LCH	21.83	PASS
	MCH	21.08	PASS
	HCH	21.61	PASS
Channel Bandwidth: 10 MHz			
Modulation	Channel	E.i.r.p [dBm]	Verdict
QPSK	LCH	22.57	PASS
	MCH	22.34	PASS
	HCH	22.18	PASS
16QAM	LCH	21.59	PASS
	MCH	21.56	PASS
	HCH	21.31	PASS
Channel Bandwidth: 15 MHz			
Modulation	Channel	E.i.r.p [dBm]	Verdict
QPSK	LCH	22.57	PASS
	MCH	22.29	PASS
	HCH	21.74	PASS
16QAM	LCH	21.18	PASS
	MCH	21.67	PASS
	HCH	21.55	PASS
Channel Bandwidth: 20 MHz			
Modulation	Channel	E.i.r.p [dBm]	Verdict
QPSK	LCH	22.28	PASS
	MCH	22.15	PASS
	HCH	23.03	PASS
16QAM	LCH	21.64	PASS
	MCH	21.98	PASS
	HCH	21.22	PASS

Max. Conducted Output Power

Channel Bandwidth: 5 MHz			
Modulation	Channel	Average Power [dBm]	Verdict
QPSK	LCH	22.67	PASS
	MCH	21.11	PASS
	HCH	22.34	PASS
16QAM	LCH	21.09	PASS
	MCH	21.68	PASS
	HCH	21.41	PASS
Channel Bandwidth: 10 MHz			
Modulation	Channel	Average Power [dBm]	Verdict
QPSK	LCH	22.32	PASS
	MCH	22.57	PASS
	HCH	22.46	PASS
16QAM	LCH	21.81	PASS
	MCH	21.45	PASS
	HCH	21.53	PASS
Channel Bandwidth: 15 MHz			
Modulation	Channel	Average Power [dBm]	Verdict
QPSK	LCH	22.51	PASS
	MCH	22.68	PASS
	HCH	21.45	PASS
16QAM	LCH	21.12	PASS
	MCH	21.24	PASS
	HCH	21.62	PASS
Channel Bandwidth: 20 MHz			
Modulation	Channel	Average Power [dBm]	Verdict
QPSK	LCH	22.55	PASS
	MCH	22.31	PASS
	HCH	23.63	PASS
16QAM	LCH	21.48	PASS
	MCH	21.17	PASS
	HCH	21.04	PASS

Test result: Pass

5. Peak-to-average Ratio (PAR) of Transmitter

5.1 Standard Applicable

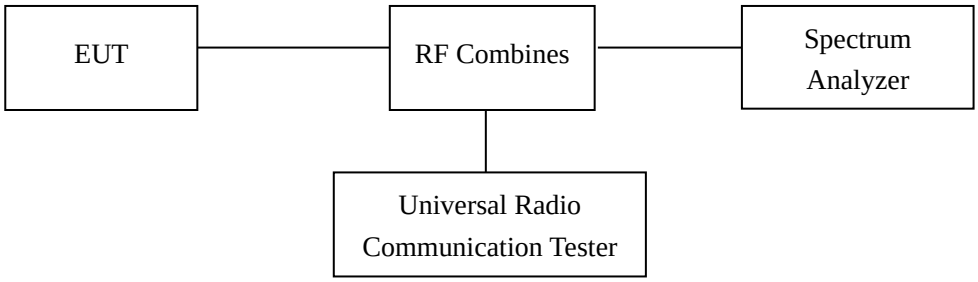
According to §24.232(d), Power measurements for transmissions by stations authorized under this section may be made either in accordance with a Commission-approved average power technique or in compliance with paragraph (e) of this section. In both instances, equipment employed must be authorized in accordance with the provisions of §24.51. In measuring transmissions in this band using an average power technique, the peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.

According to §27.50(B), the peak-to-average power ratio (PAPR) of the transmitter output power must not exceed 13 dB. The PAPR measurements should be made using either an instrument with complementary cumulative distribution function (CCDF) capabilities to determine that PAPR will not exceed 13 dB for more than 0.1 percent of the time or other Commission approved procedure. The measurement must be performed using a signal corresponding to the highest PAPR expected during periods of continuous transmission.

5.2 Test Procedure

The RF output terminal of the transmitter was connected to the input of the spectrum analyzer via a suitable attenuation. The RBW of the spectrum analyzer was set to 30kHz and the peak-to-average ratio (PAR) of the transmission was recorded. Record the maximum PAPR level associated with a probability of 0.1%.

Test Configuration for the emission bandwidth testing:



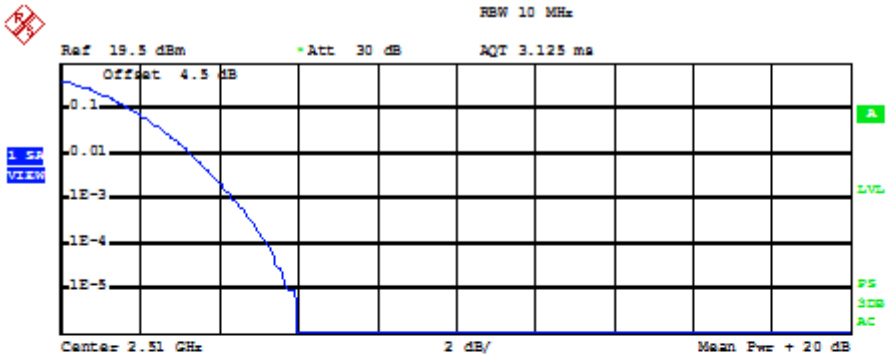
5.3 Environmental Conditions

Temperature:	25 °C
Relative Humidity:	54%
ATM Pressure:	1011 mbar

5.4 Summary of Test Results

Low Channel (dB)	Middle Channel (dB)	High Channel (dB)	Limit (dB)	Result
4.38	4.43	4.63	≦ 13	PASS

Low Channel:

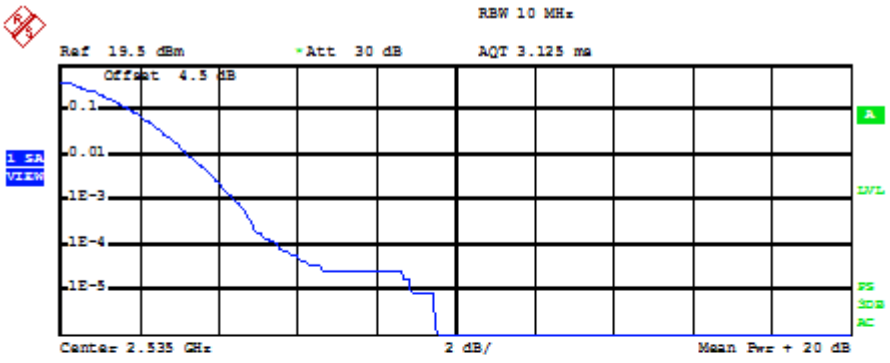


Complementary Cumulative Distribution Function (100000 samples)

Trace 1

Mean	-25.95	dBm
Peak	-20.01	dBm
Crest	5.99	dB
10 %	1.81	dB
1 %	3.33	dB
.1 %	4.38	dB
.01 %	5.28	dB

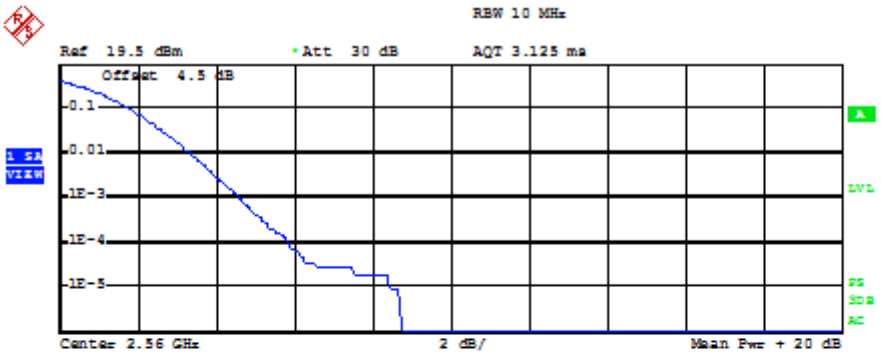
Middle Channel:



Complementary Cumulative Distribution Function (100000 samples)

	Trace 1
Mean	-25.44 dBm
Peak	-15.92 dBm
Crest	9.52 dB
10 %	1.84 dB
1 %	3.28 dB
.1 %	4.43 dB
.01 %	5.53 dB

High Channel:



Complementary Cumulative Distribution Function (100000 samples)

	Trace 1
Mean	-26.04 dBm
Peak	-17.34 dBm
Crest	8.73 dB
10 %	1.83 dB
1 %	3.33 dB
.1 %	4.63 dB
.01 %	5.83 dB

6. Emission Bandwidth

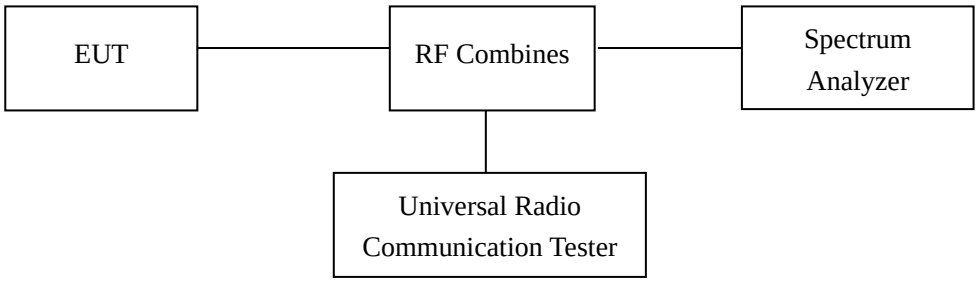
6.1 Standard Applicable

According to §27.53, The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

6.2 Test Procedure

The RF output terminal of the transmitter was connected to the input of the spectrum analyzer via a suitable attenuation. The RBW of the spectrum analyzer was set to 30kHz and the 26dB bandwidth was recorded.

Test Configuration for the emission bandwidth testing:



6.3 Environmental Conditions

Temperature:	25 °C
Relative Humidity:	54%
ATM Pressure:	1011 mbar

6.4 Summary of Test Results/Plots

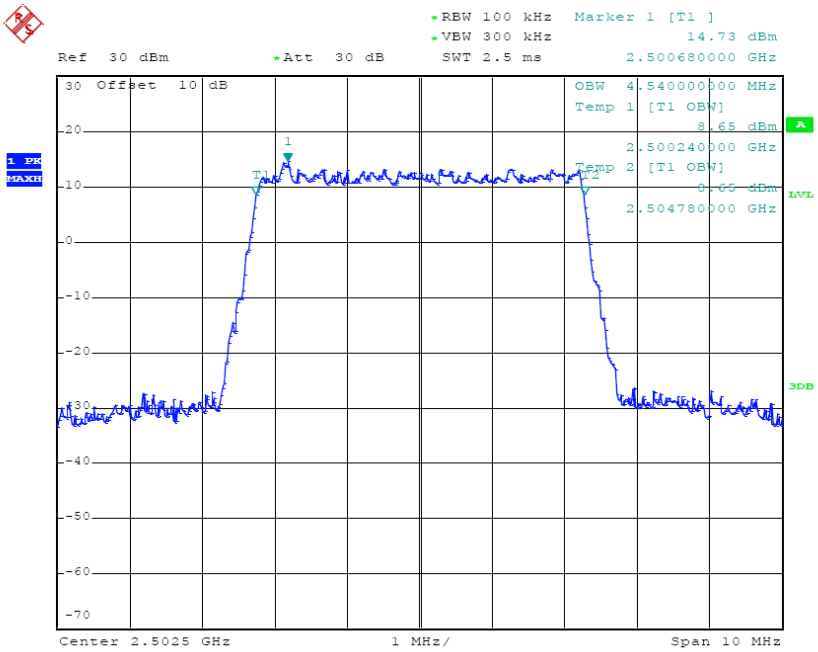
Test result: Pass

Band 7:

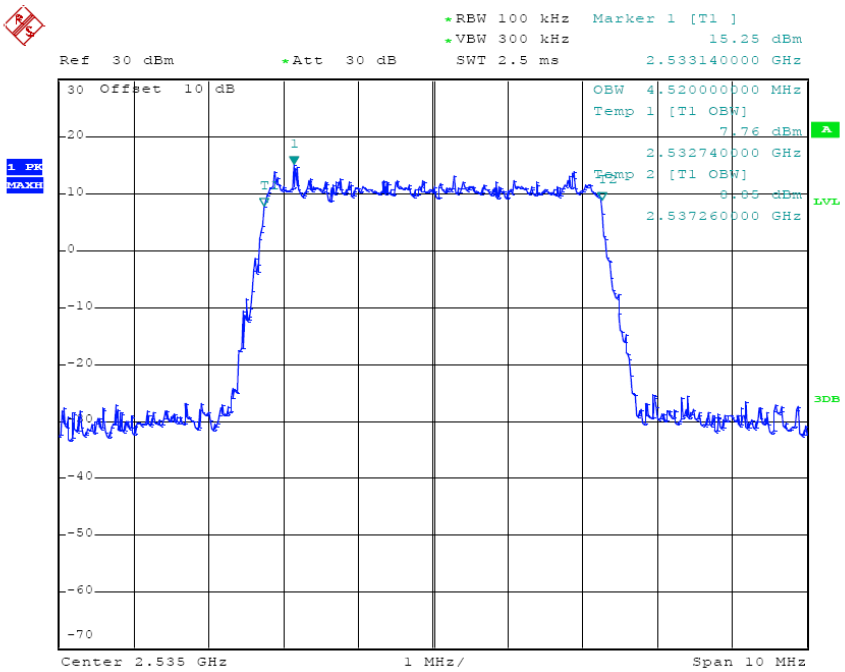
99% Occupied Bandwidth		Low channel （MHz）	Middle channel （MHz）	High channel （MHz）
5.0 MHz	QPSK	4.540	4.520	4.540
	16QAM	4.520	4.520	4.520
10.0 MHz	QPSK	9.160	9.160	9.120
	16QAM	9.160	9.160	9.080
15.0 MHz	QPSK	13.56	13.56	13.56
	16QAM	13.62	13.30	13.62
20.0 MHz	QPSK	18.08	18.08	18.00
	16QAM	18.00	18.00	18.00

26 dB Emission Bandwidth		Low channel （MHz）	Middle channel （MHz）	High channel （MHz）
5.0 MHz	QPSK	5.040	5.000	4.960
	16QAM	4.900	4.920	4.940
10.0 MHz	QPSK	10.08	10.08	10.04
	16QAM	10.00	10.08	10.00
15.0 MHz	QPSK	14.54	14.64	14.70
	16QAM	14.52	14.58	14.58
20.0 MHz	QPSK	19.20	19.20	19.12
	16QAM	19.12	19.12	19.12

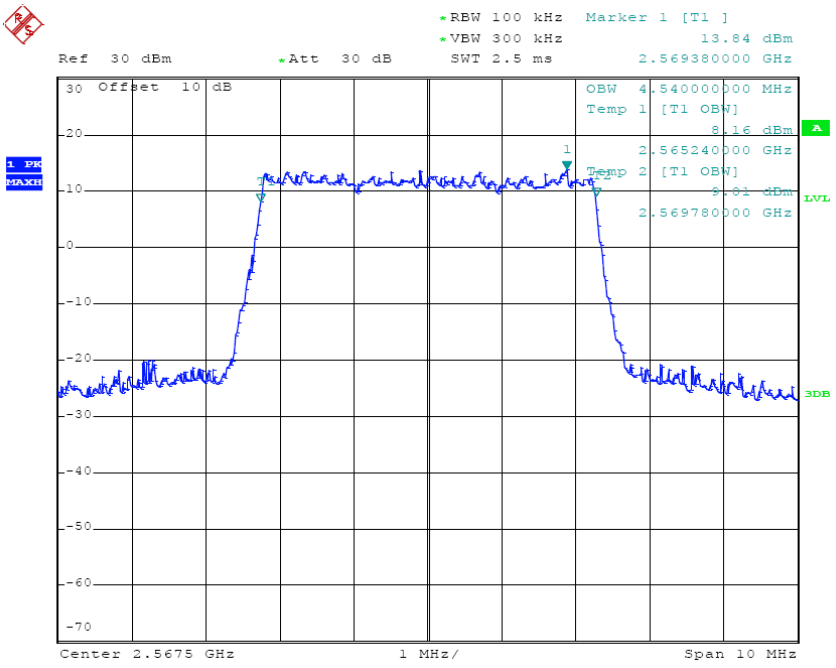
QPSK (5.0 MHz) - 99% Occupied Bandwidth, Low channel



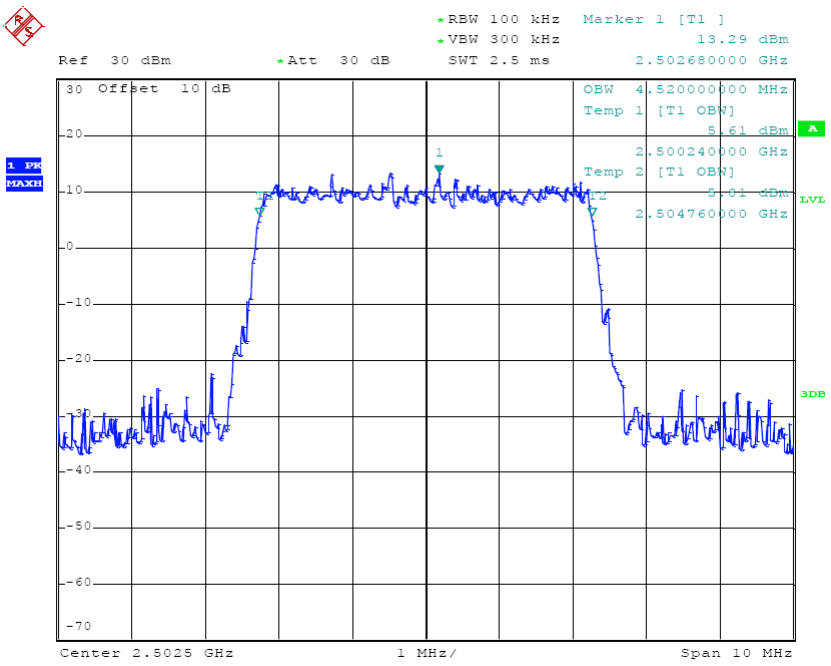
QPSK (5.0 MHz) - 99% Occupied Bandwidth, Middle channel



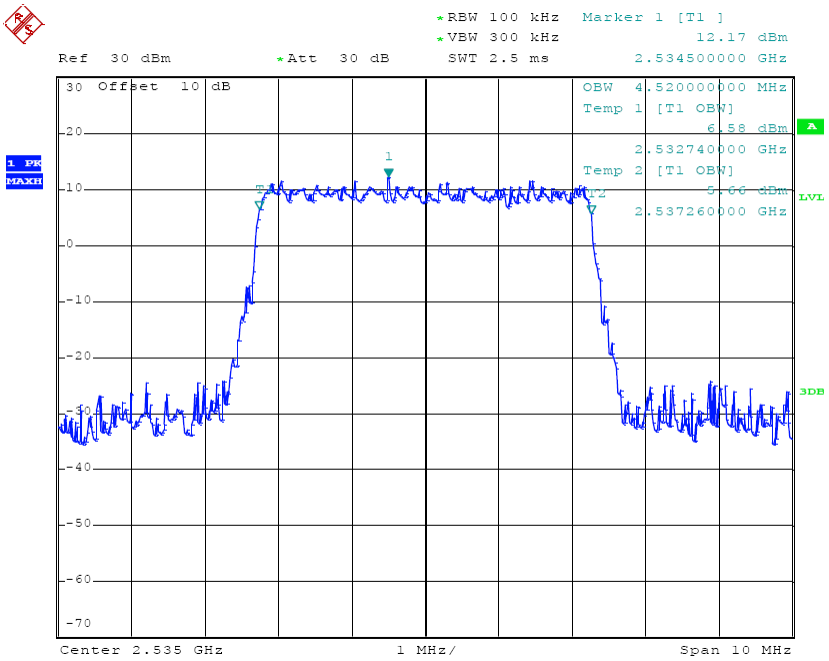
QPSK (5.0 MHz) - 99% Occupied Bandwidth, High channel



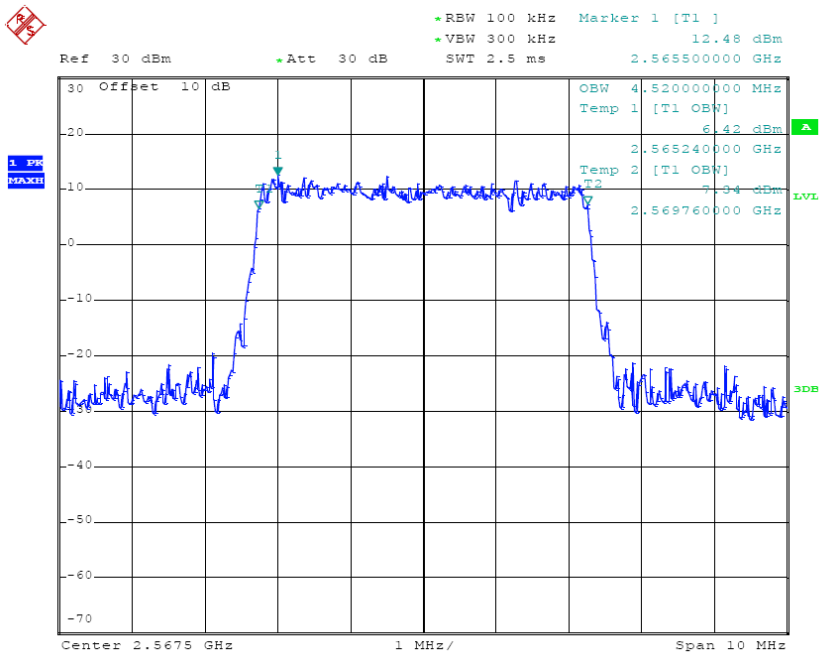
16-QAM (5.0 MHz) - 99% Occupied Bandwidth, Low channel



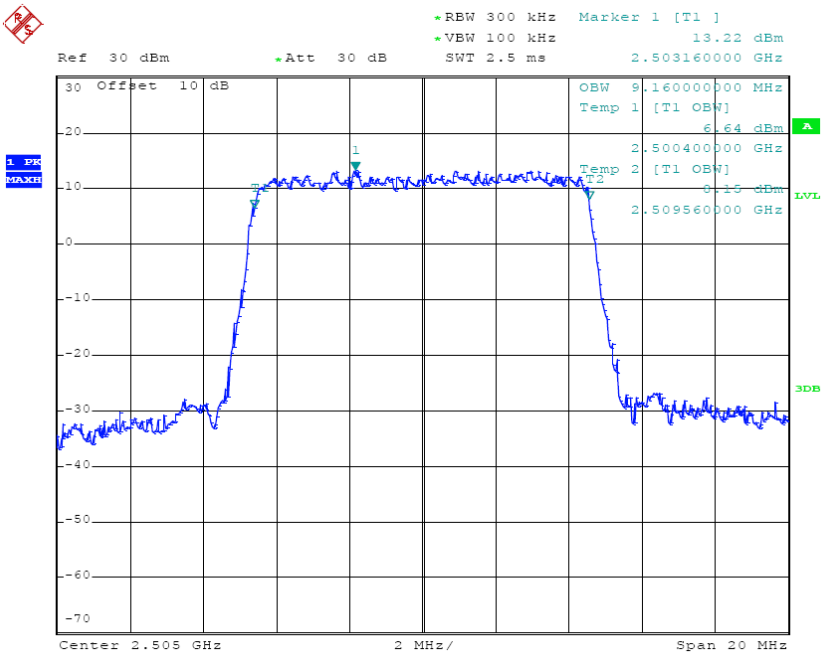
16-QAM (5.0 MHz) - 99% Occupied Bandwidth, Middle channel



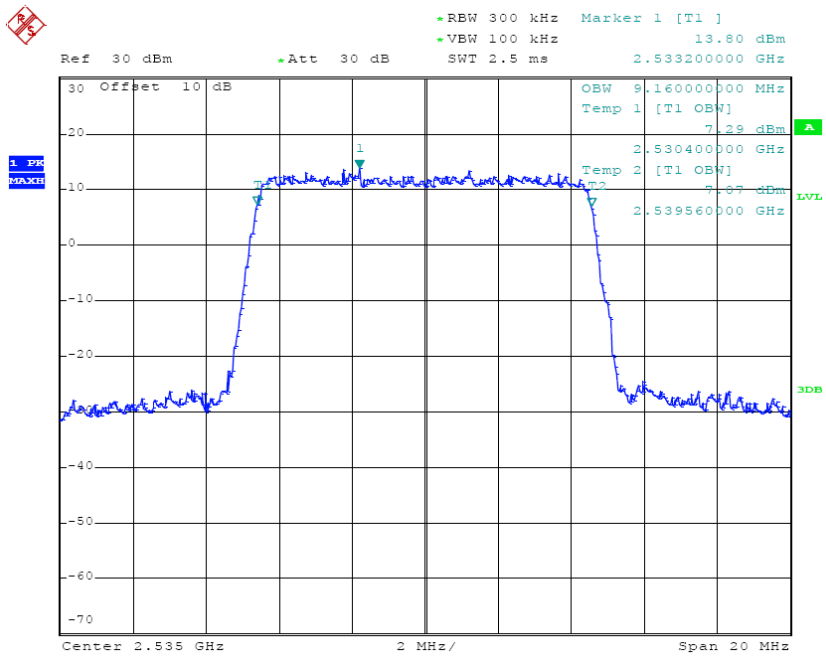
16-QAM (5.0 MHz) - 99% Occupied Bandwidth, High channel



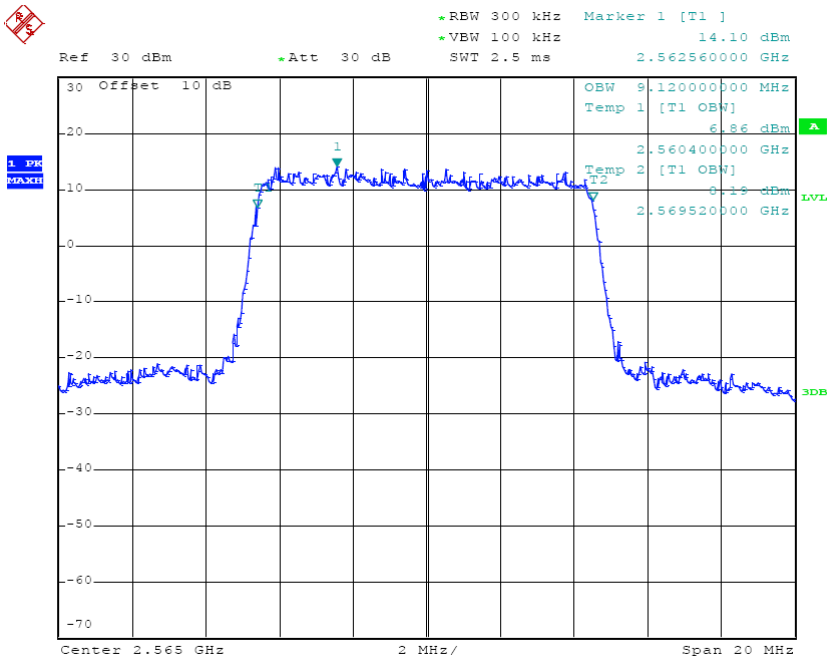
QPSK (10.0 MHz) - 99% Occupied Bandwidth, Low channel



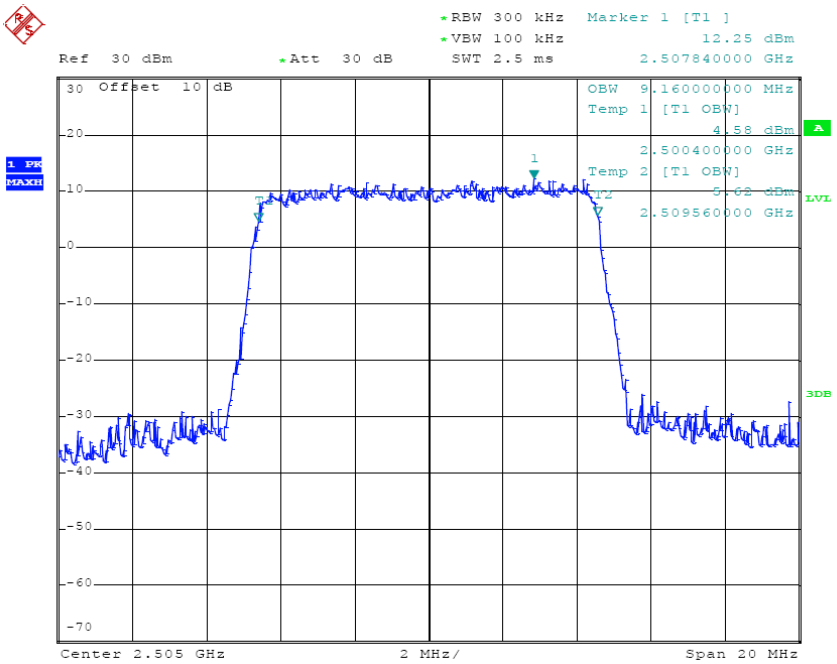
QPSK (10.0 MHz) - 99% Occupied Bandwidth, Middle channel



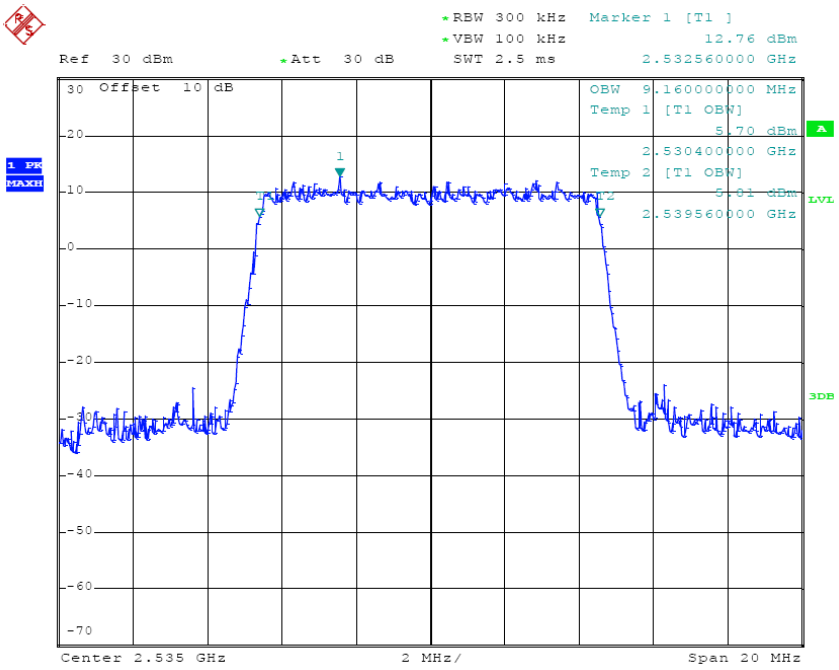
QPSK (10.0 MHz) - 99% Occupied Bandwidth, High channel



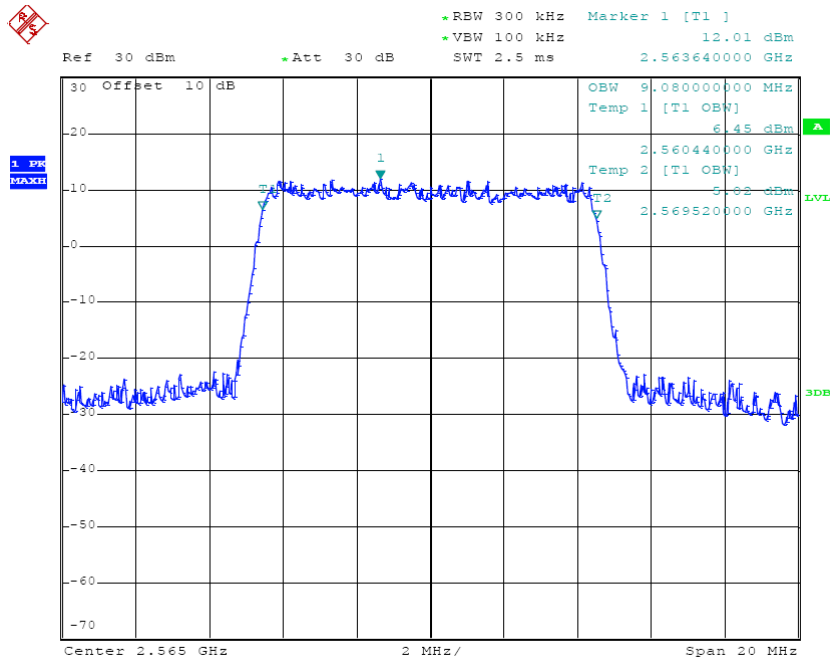
16-QAM (10.0 MHz) - 99% Occupied Bandwidth, Low channel



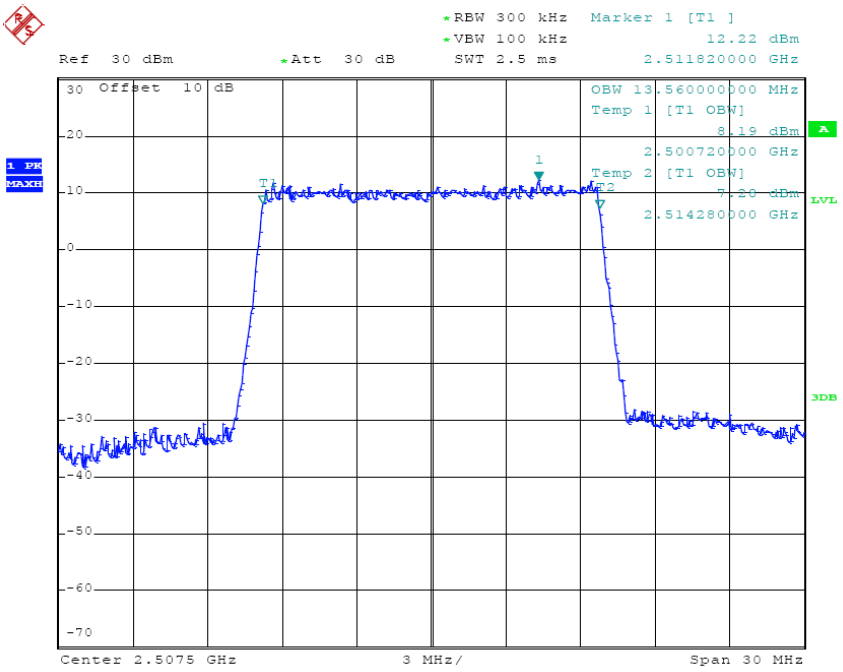
16-QAM (10.0 MHz) - 99% Occupied Bandwidth, Middle channel



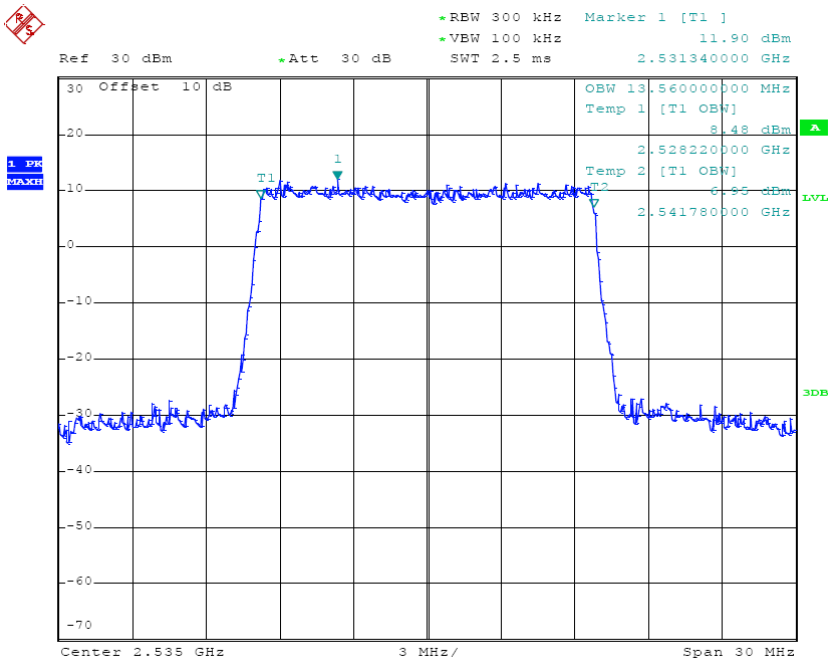
16-QAM (10.0 MHz) - 99% Occupied Bandwidth, High channel



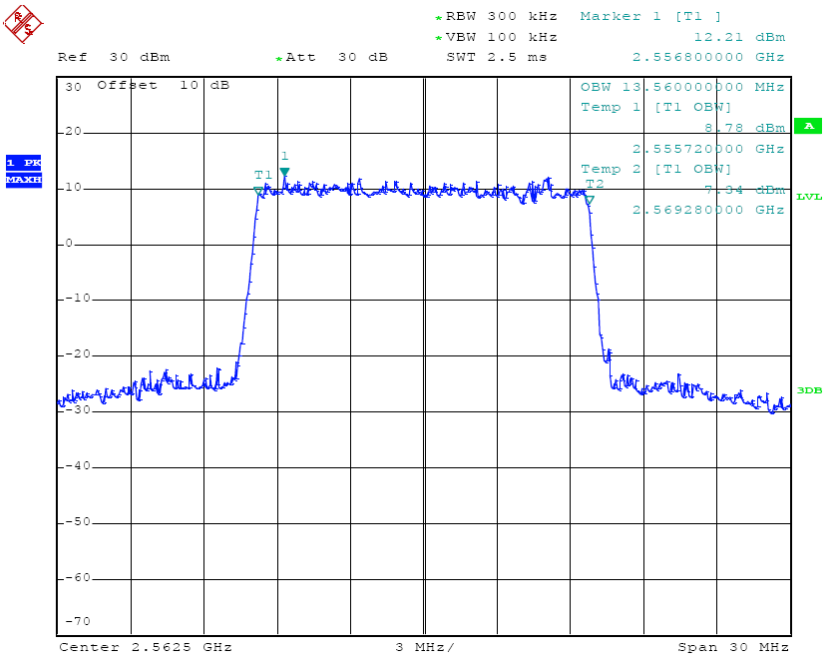
QPSK (15.0 MHz) - 99% Occupied Bandwidth, Low channel



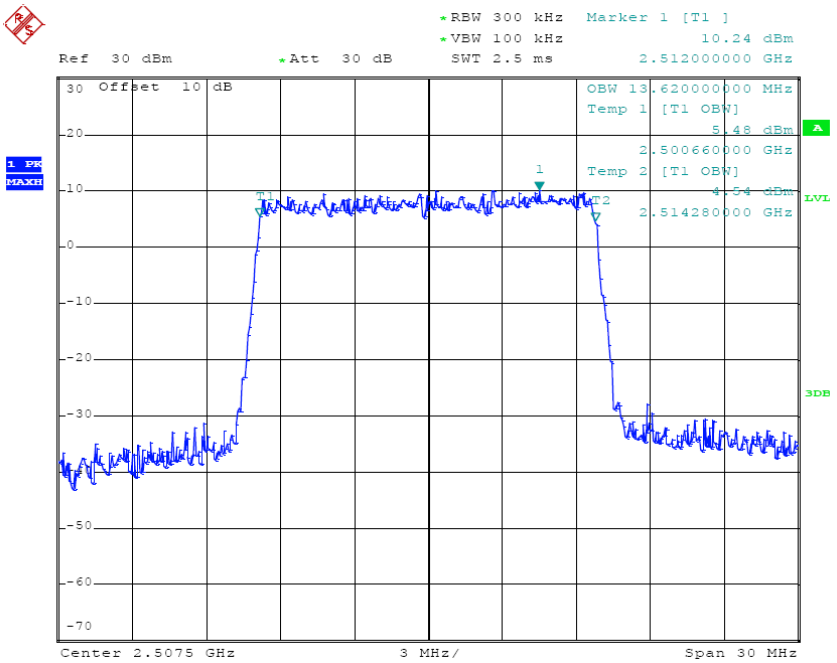
QPSK (15.0 MHz) - 99% Occupied Bandwidth, Middle channel



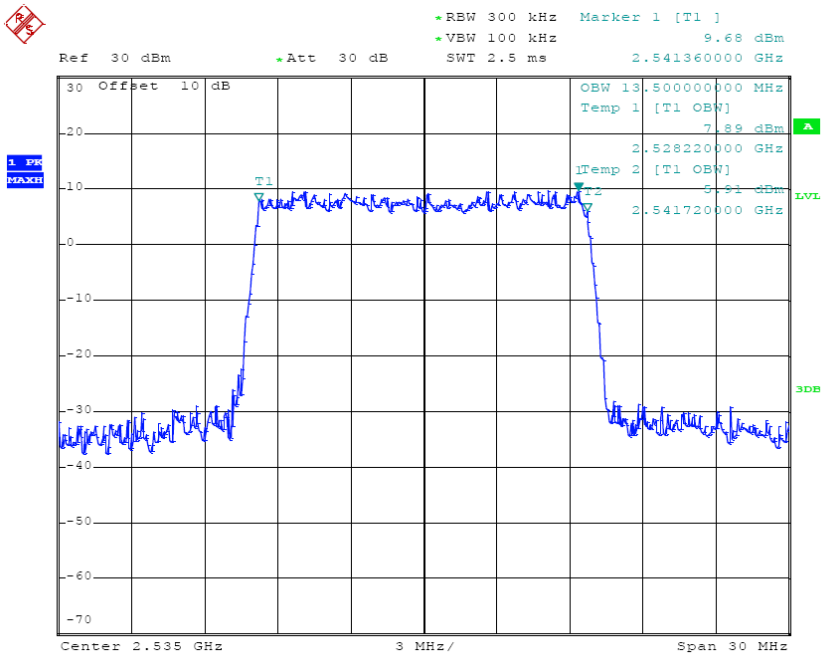
QPSK (15.0 MHz) - 99% Occupied Bandwidth, High channel



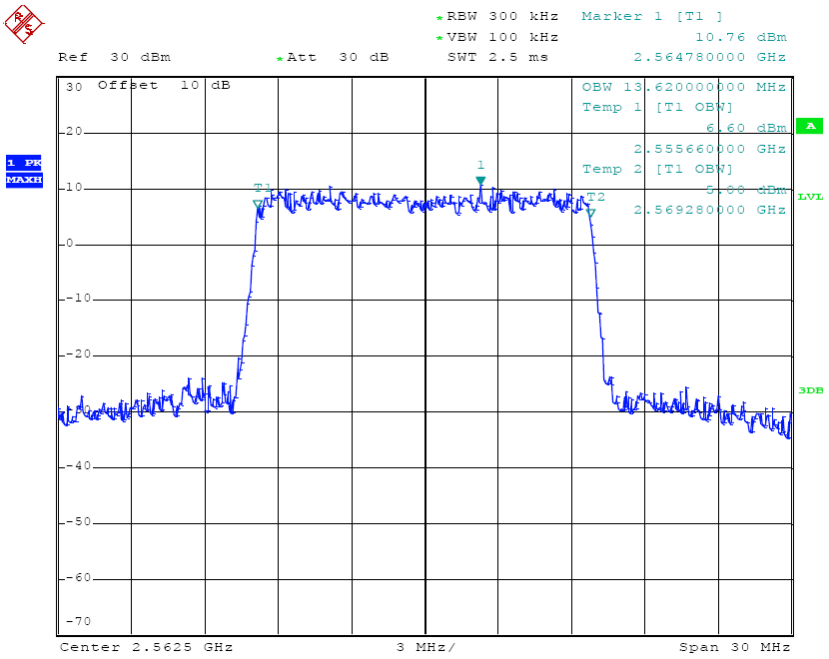
16-QAM (15.0 MHz) - 99% Occupied Bandwidth, Low channel



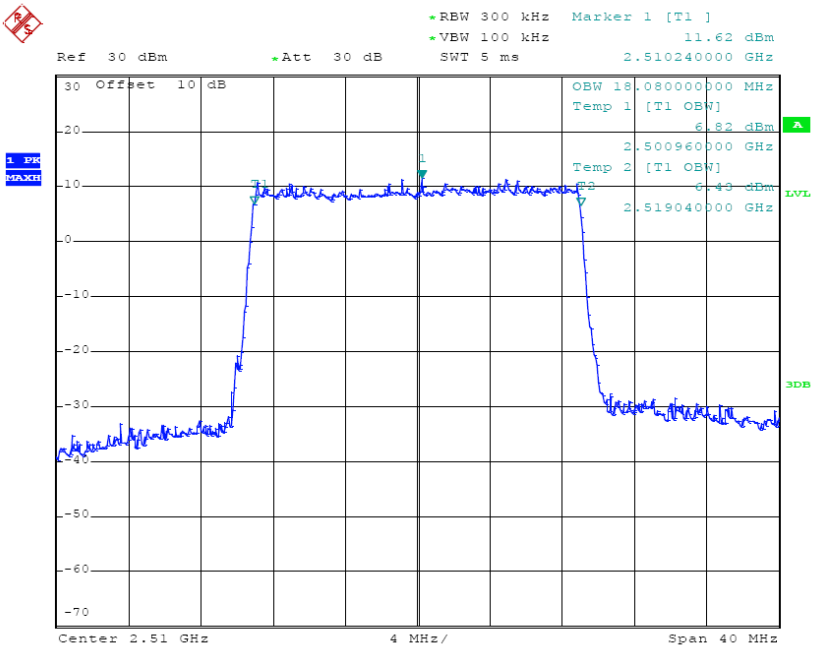
16-QAM (15.0 MHz) - 99% Occupied Bandwidth, Middle channel



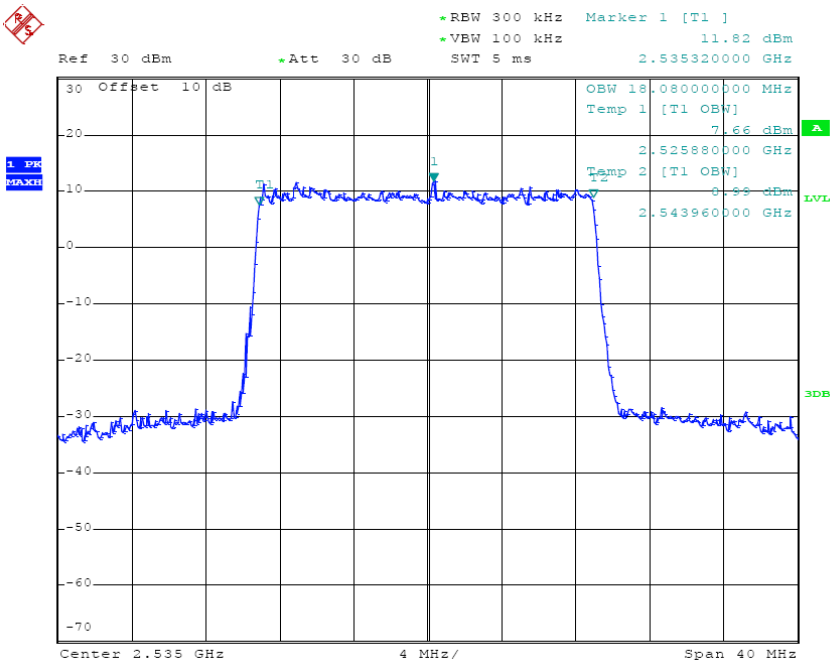
16-QAM (15.0 MHz) - 99% Occupied Bandwidth, High channel



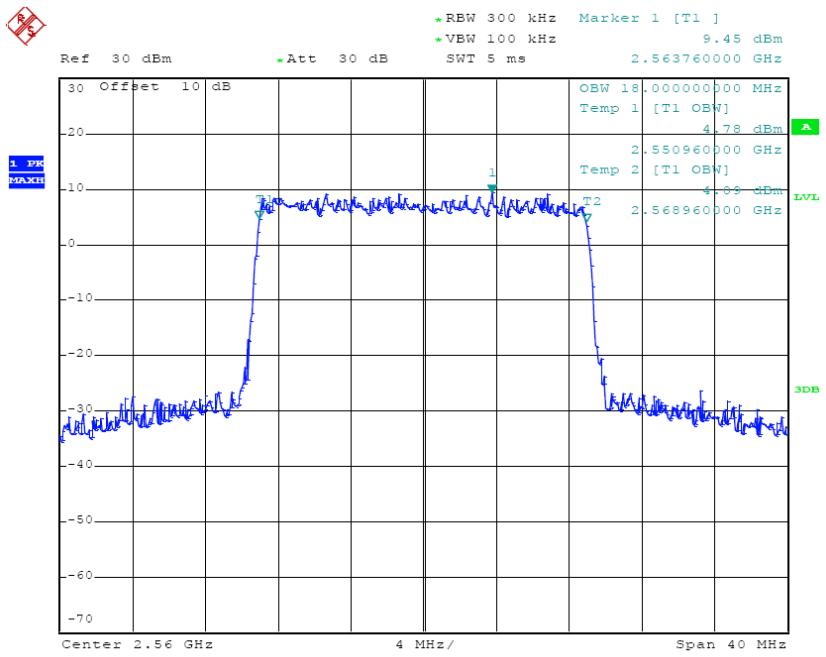
QPSK (20.0 MHz) - 99% Occupied Bandwidth, Low channel



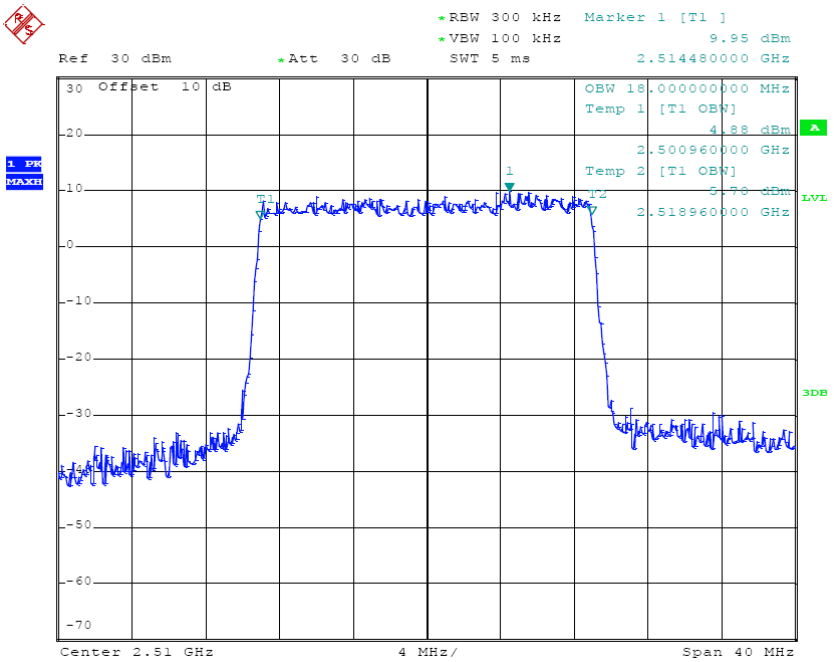
QPSK (20.0 MHz) - 99% Occupied Bandwidth, Middle channel



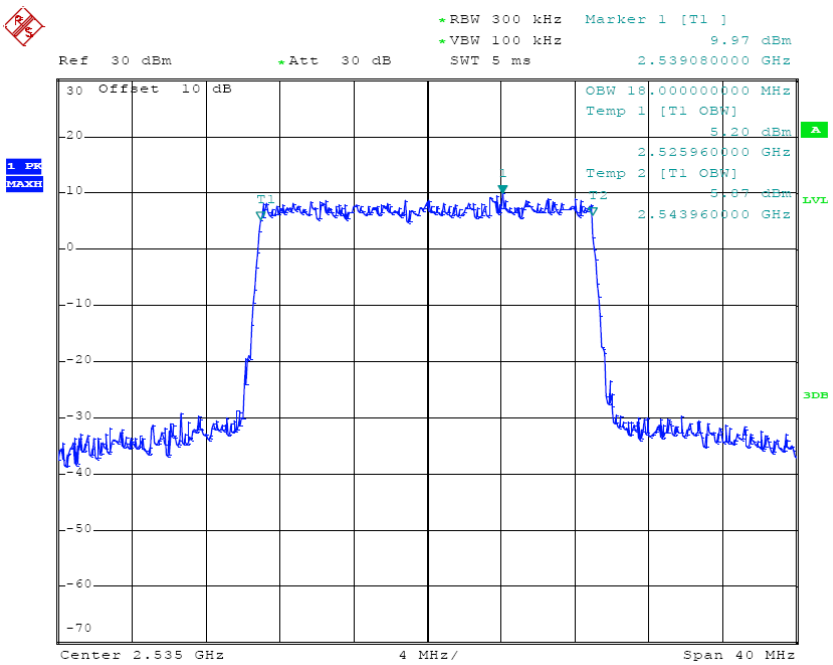
QPSK (20.0 MHz) - 99% Occupied Bandwidth, High channel



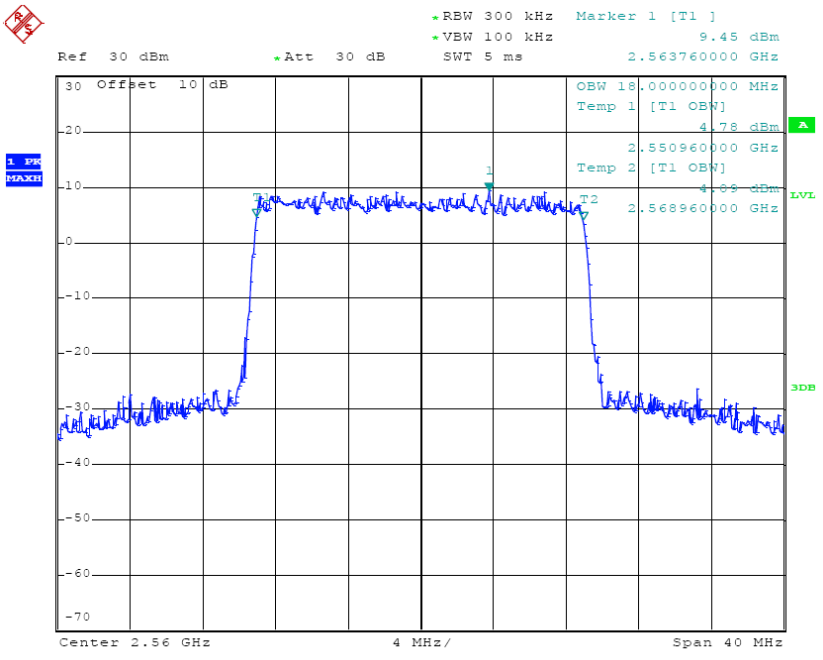
16-QAM (20.0 MHz) - 99% Occupied Bandwidth, Low channel



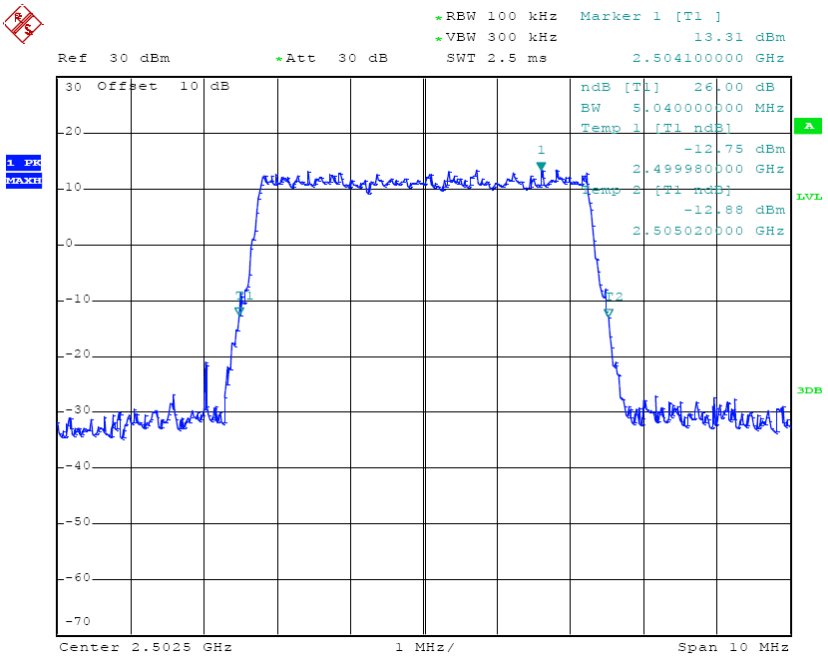
16-QAM (20.0 MHz) - 99% Occupied Bandwidth, Middle channel



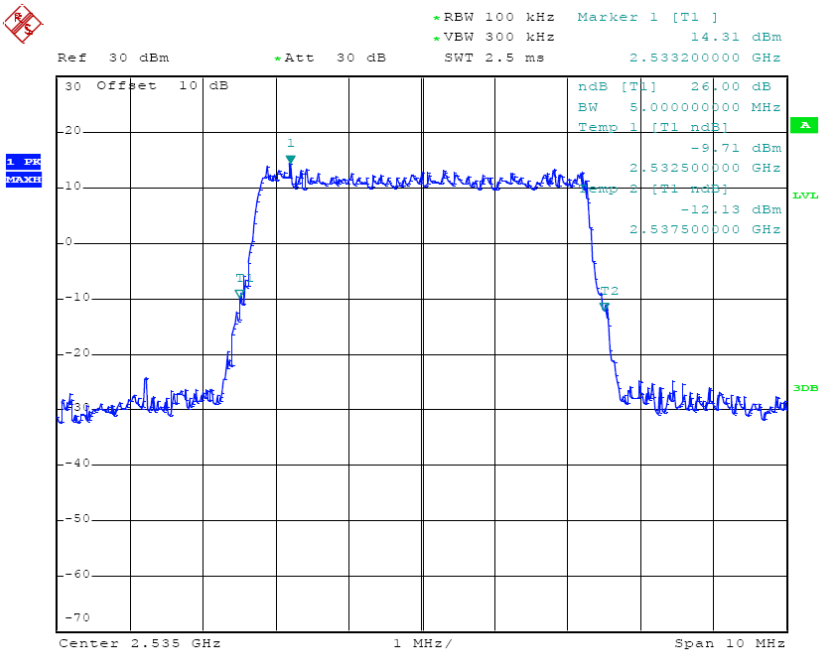
16-QAM (20.0 MHz) - 99% Occupied Bandwidth, High channel



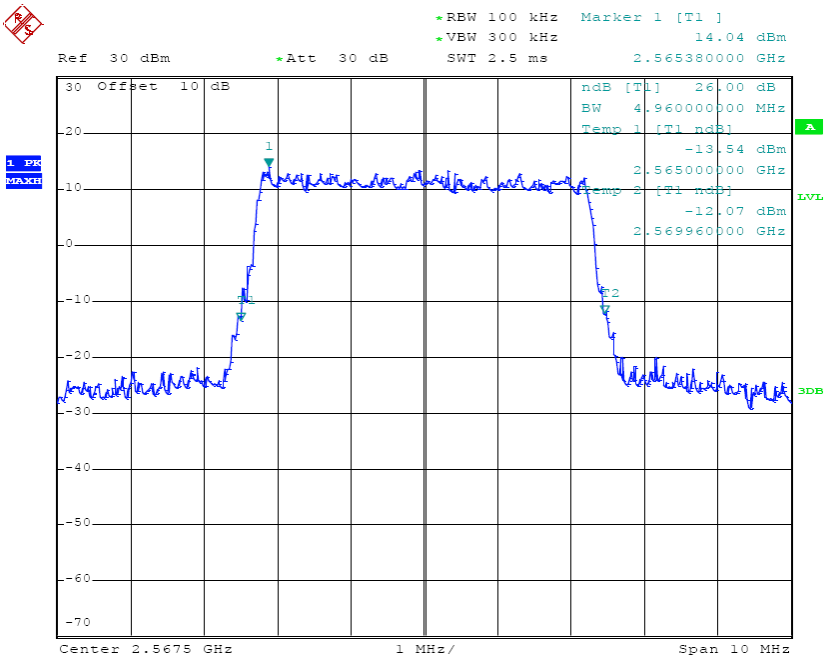
QPSK (5.0 MHz) - 26 dB Bandwidth, Low channel



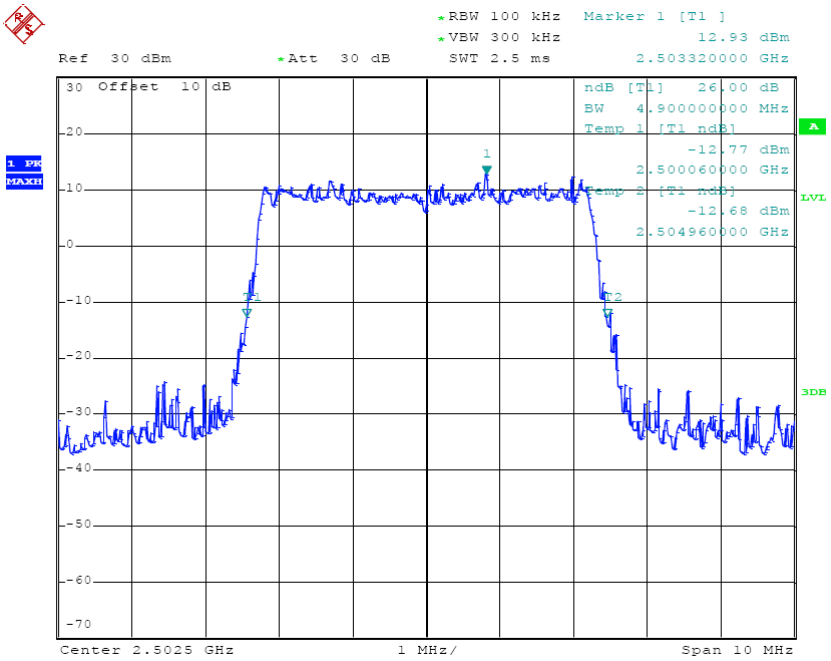
QPSK (5.0 MHz) - 26 dB Bandwidth, Middle channel



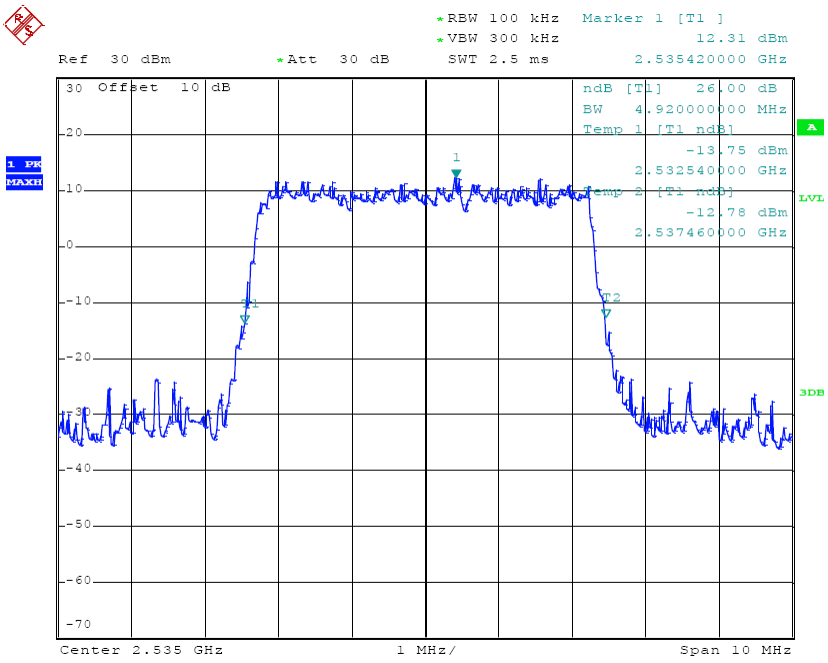
QPSK (5.0 MHz) - 26 dB Bandwidth, High channel



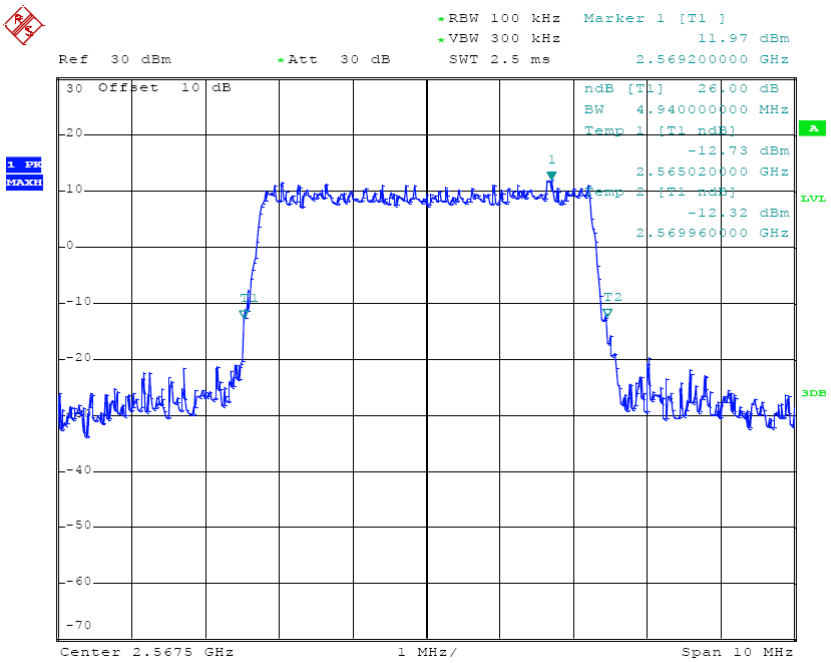
16-QAM (5.0 MHz) - 26 dB Bandwidth, Low channel



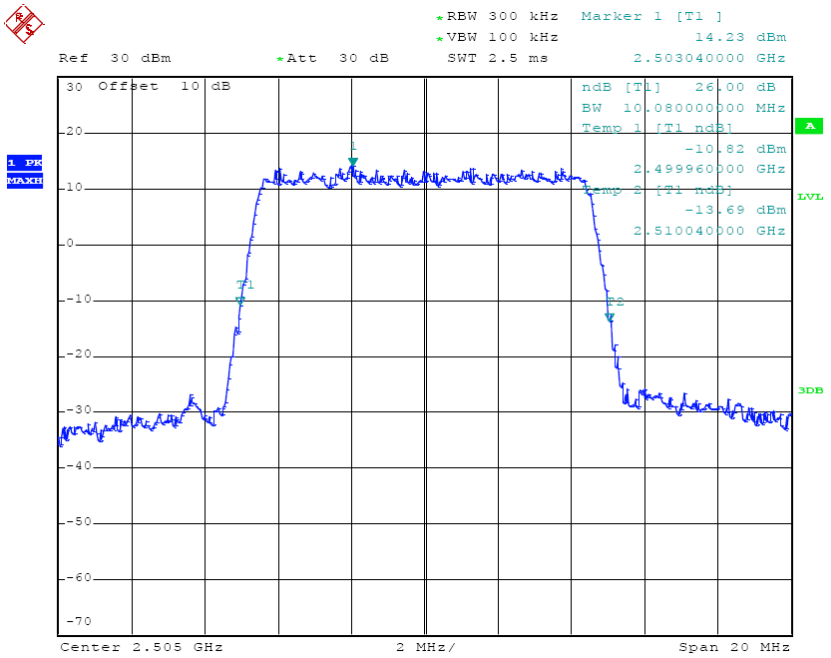
16-QAM (5.0 MHz) - 26 dB Bandwidth, Middle channel



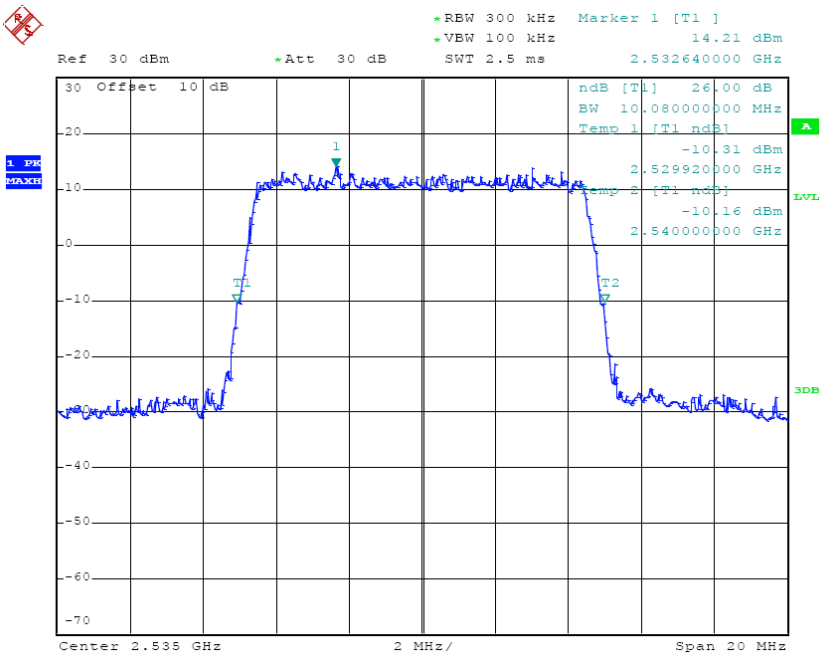
16-QAM (5.0 MHz) - 26 dB Bandwidth, High channel



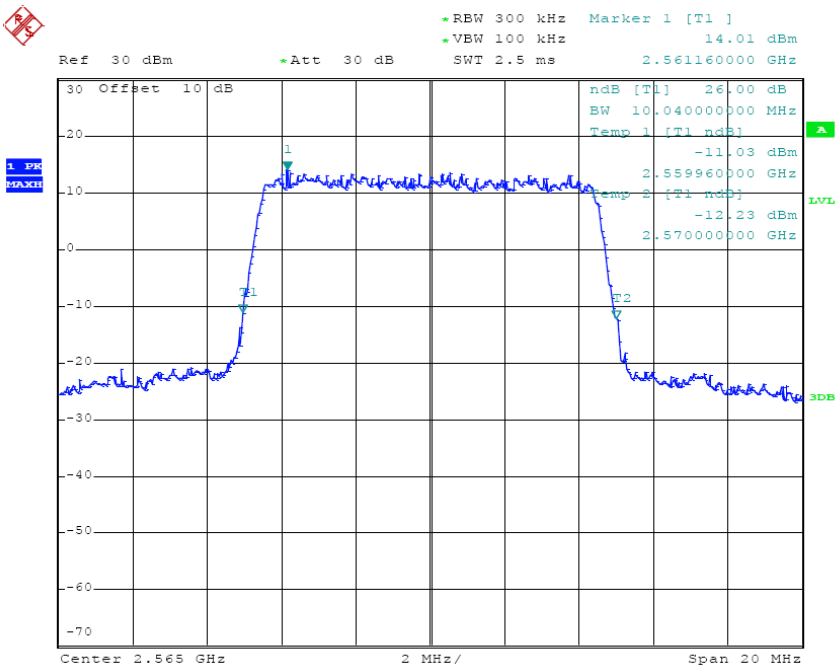
QPSK (10.0 MHz) - 26 dB Bandwidth, Low channel



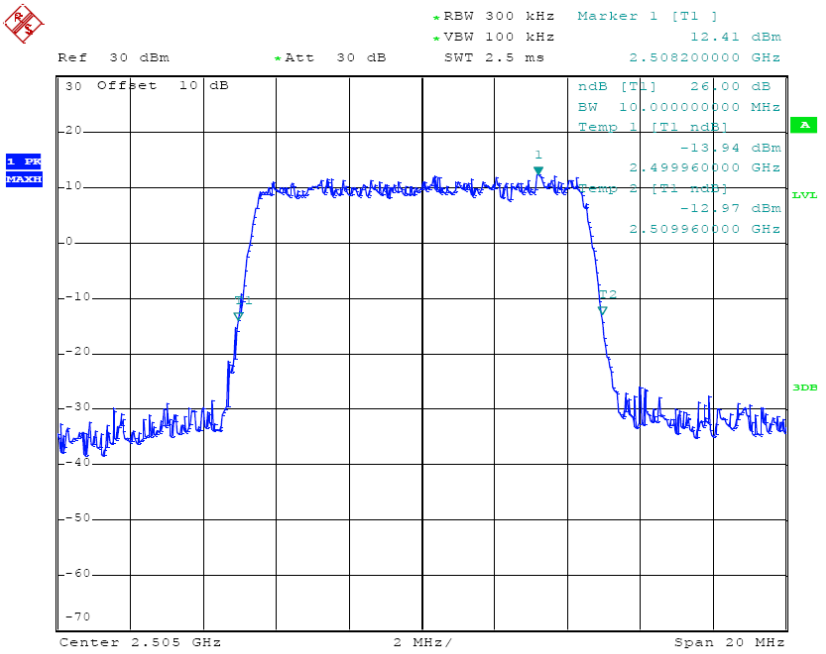
QPSK (10.0 MHz) - 26 dB Bandwidth, Middle channel



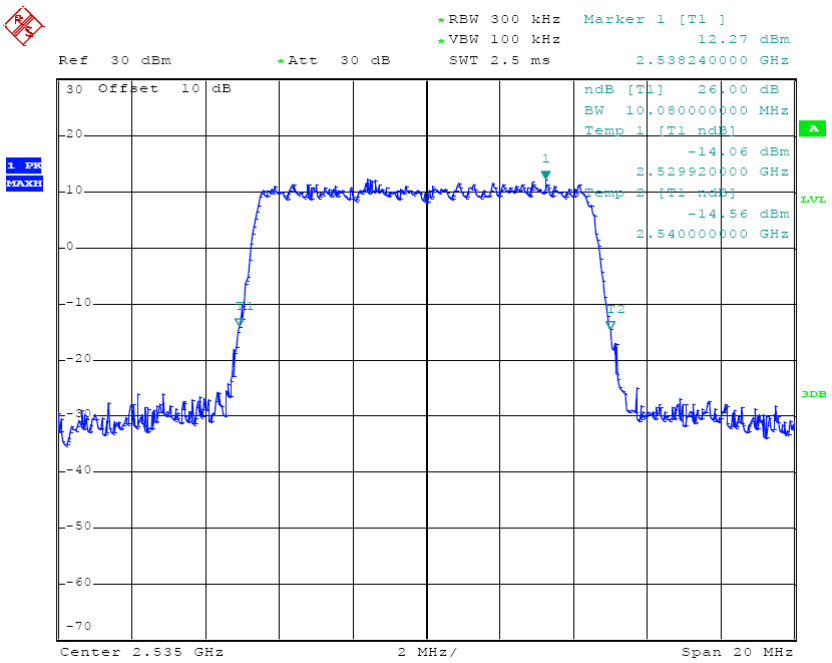
QPSK (10.0 MHz) - 26 dB Bandwidth, High channel



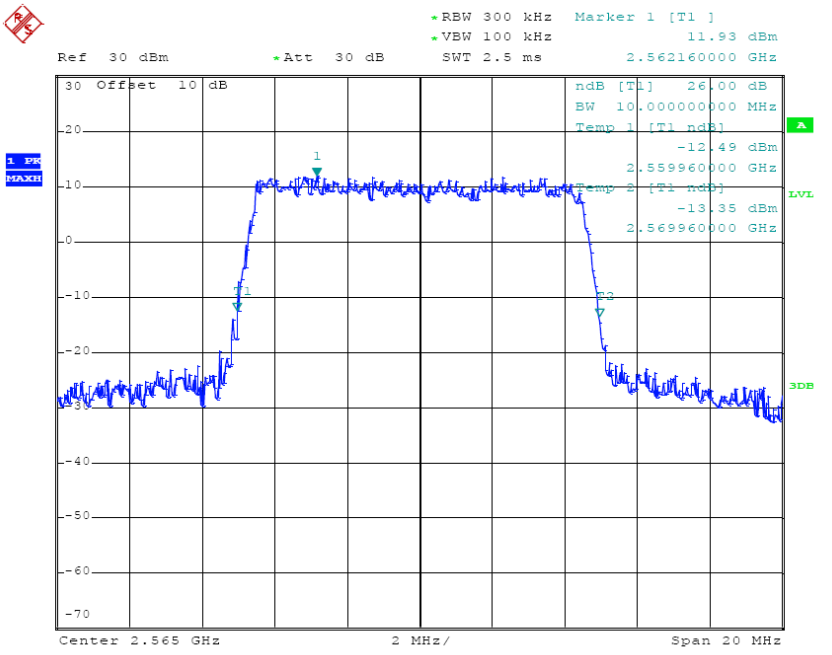
16-QAM (10.0 MHz) - 26 dB Bandwidth, Low channel



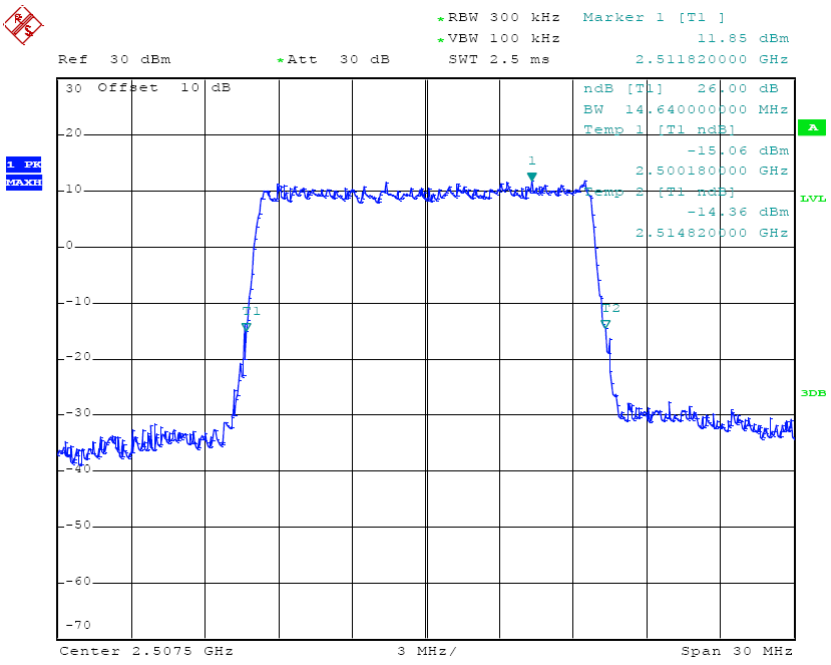
16-QAM (10.0 MHz) - 26 dB Bandwidth, Middle channel



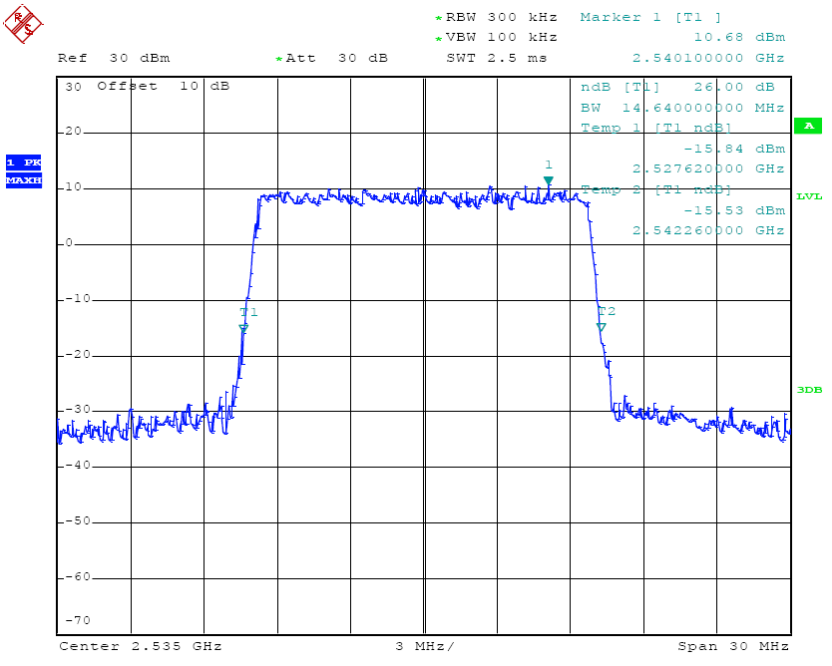
16-QAM (10.0 MHz) - 26 dB Bandwidth, High channel



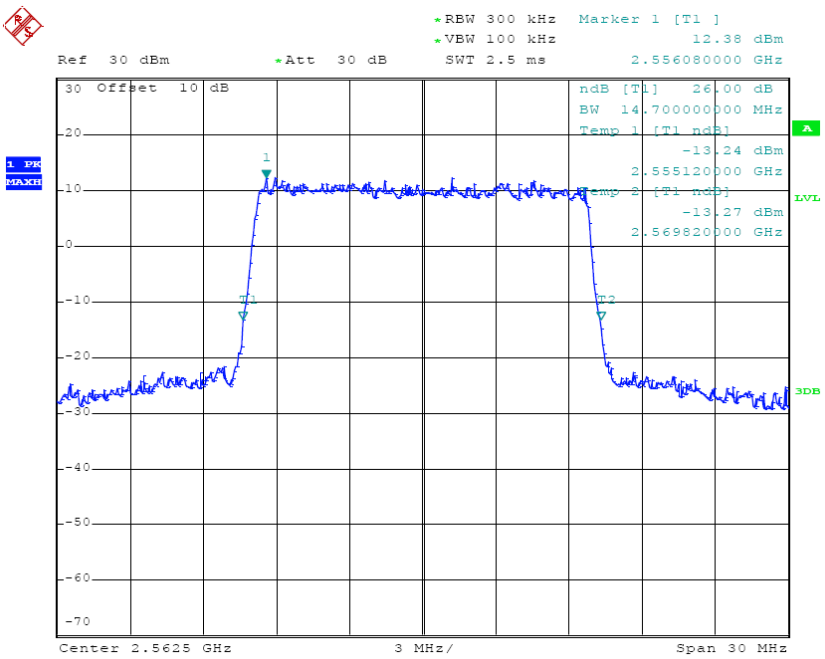
QPSK (15.0 MHz) - 26 dB Bandwidth, Low channel



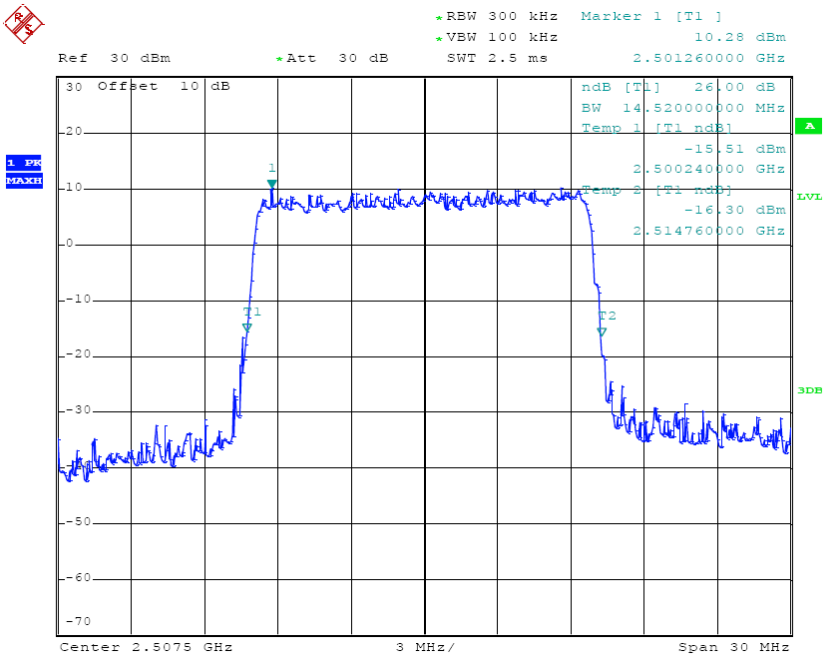
QPSK (15.0 MHz) - 26 dB Bandwidth, Middle channel



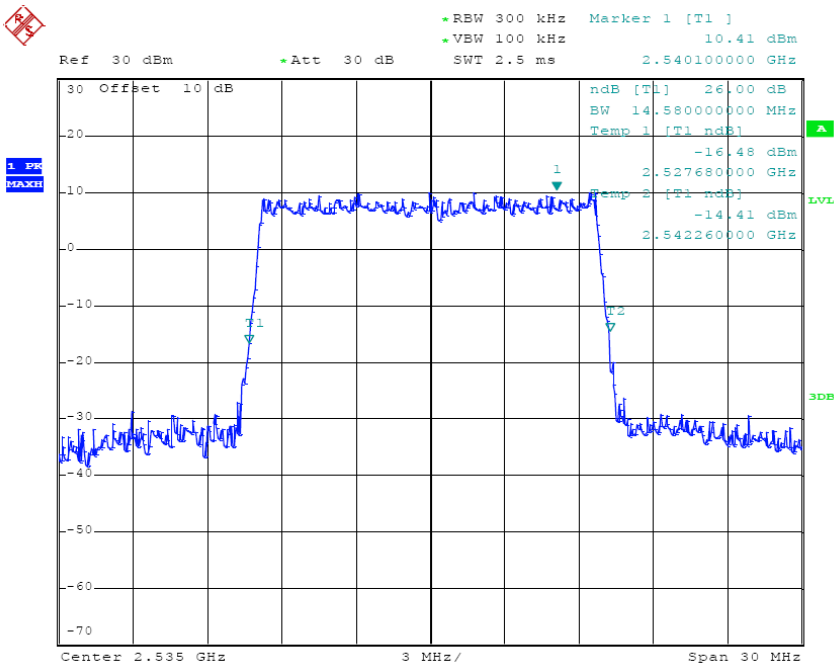
QPSK (15.0 MHz) - 26 dB Bandwidth, High channel



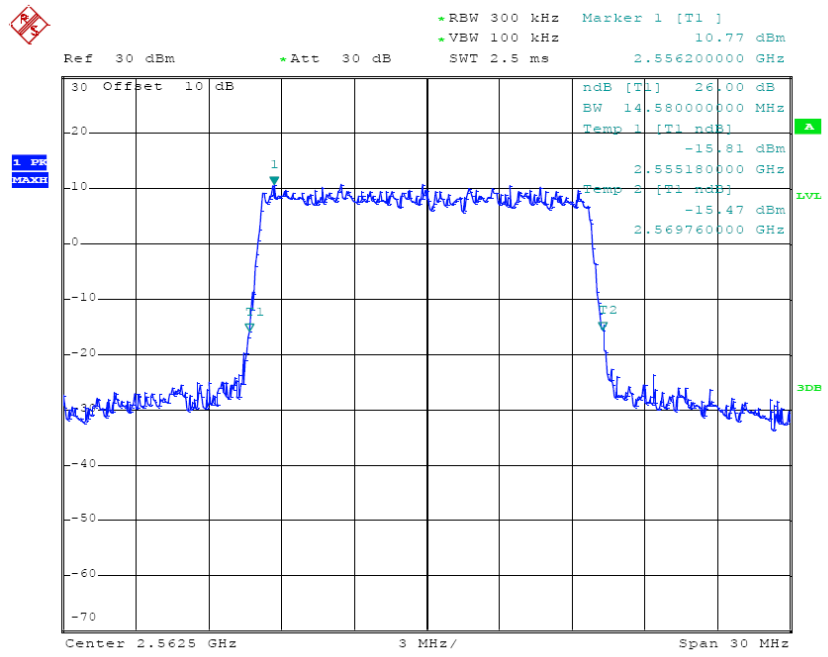
16-QAM (15.0 MHz) - 26 dB Bandwidth, Low channel



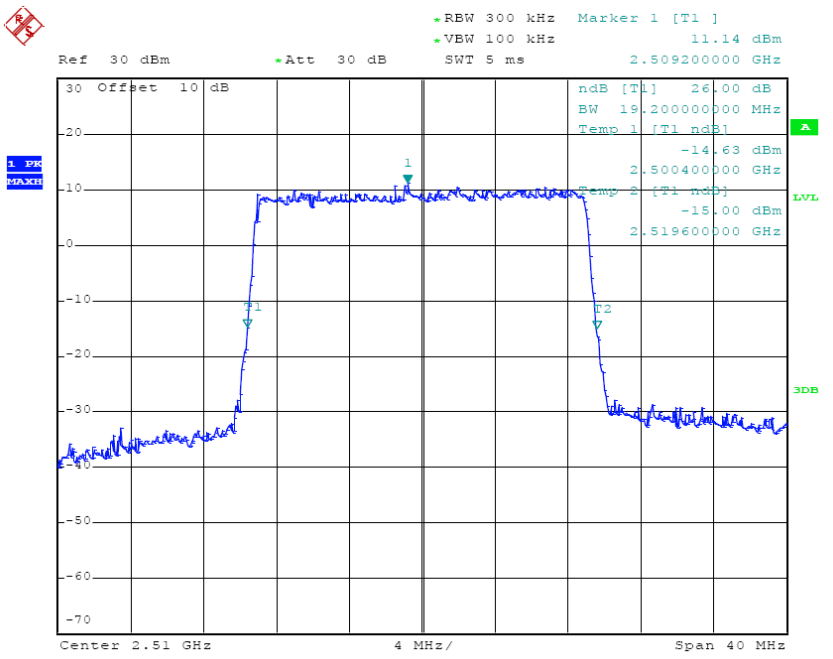
16-QAM (15.0 MHz) - 26 dB Bandwidth, Middle channel



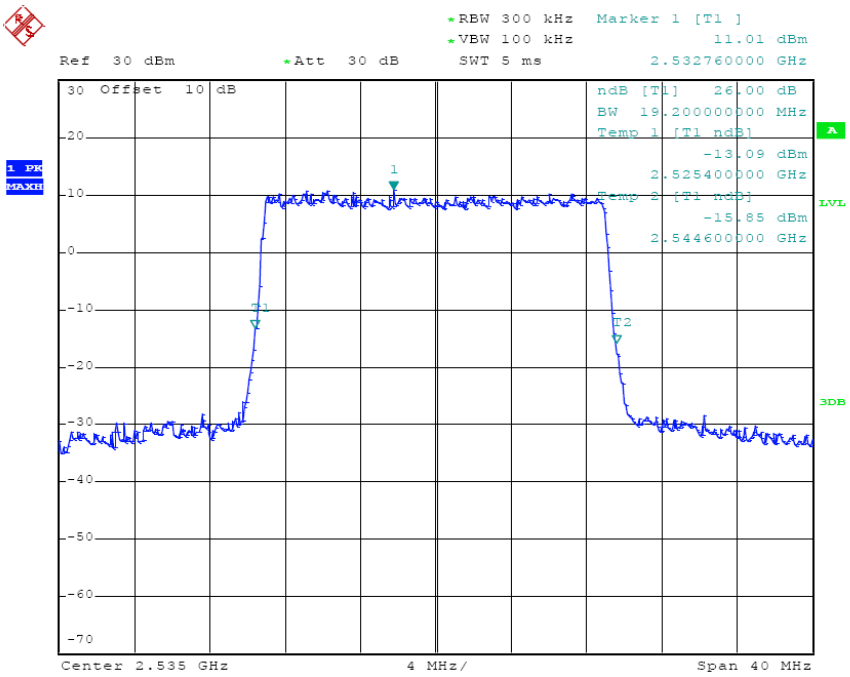
16-QAM (15.0 MHz) - 26 dB Bandwidth, High channel



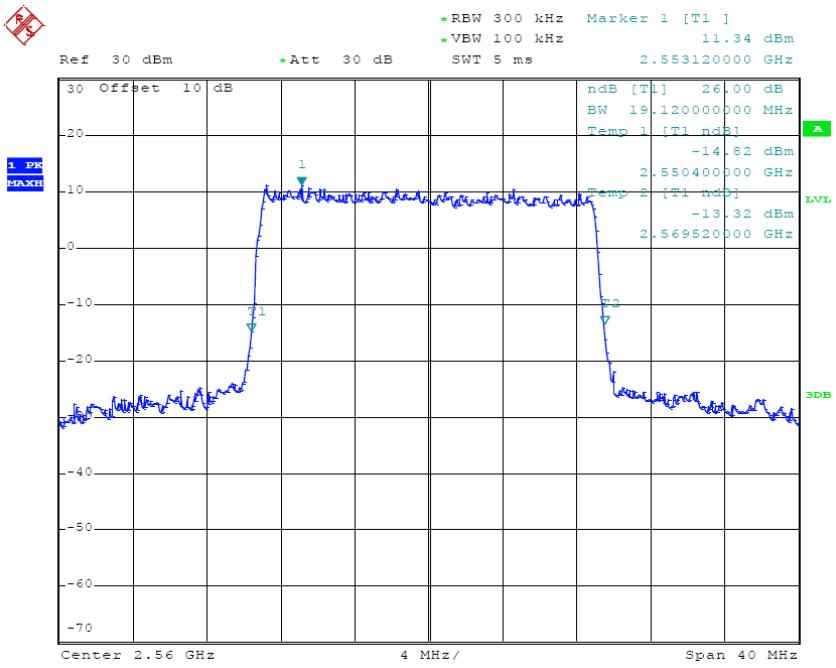
QPSK (20.0 MHz) - 26 dB Bandwidth, Low channel



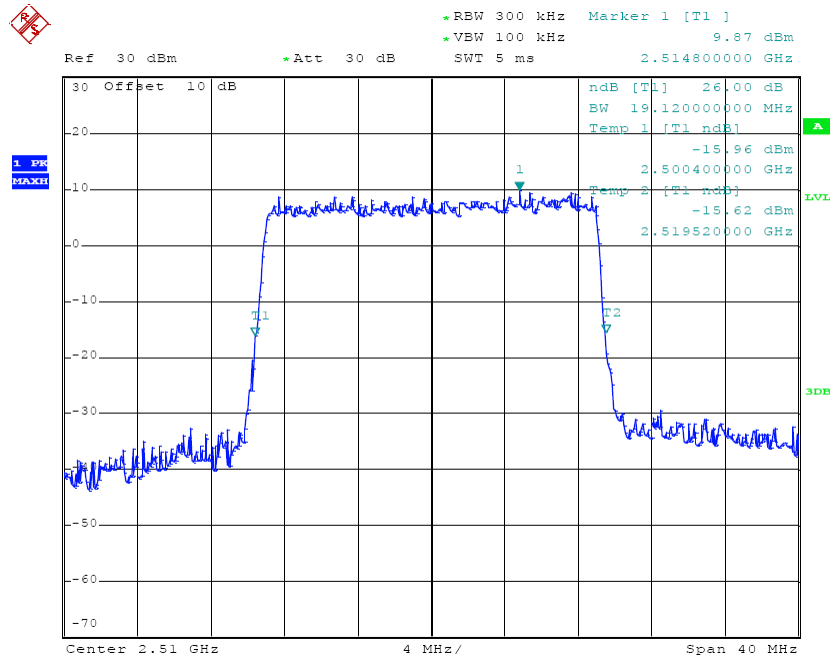
QPSK (20.0 MHz) - 26 dB Bandwidth, Middle channel



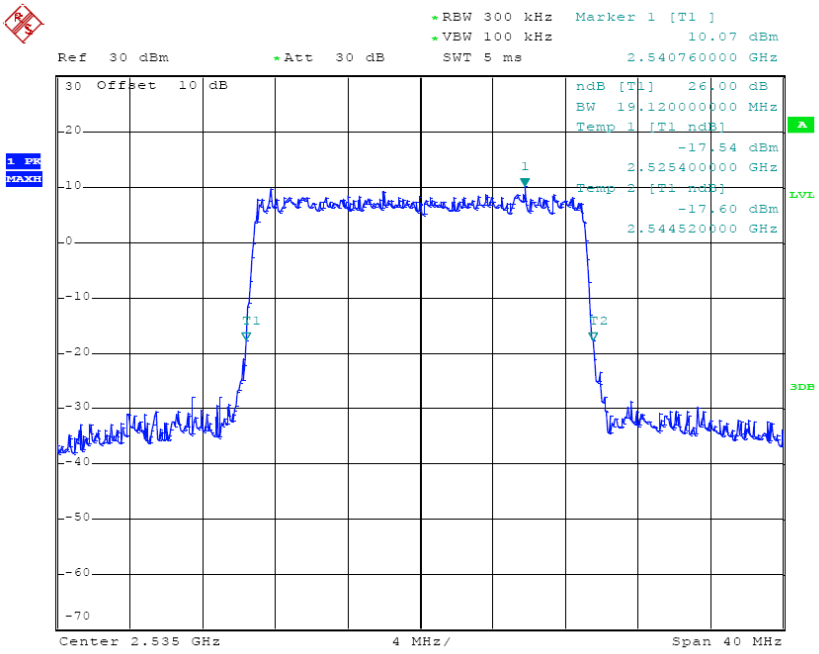
QPSK (20.0 MHz) - 26 dB Bandwidth, High channel



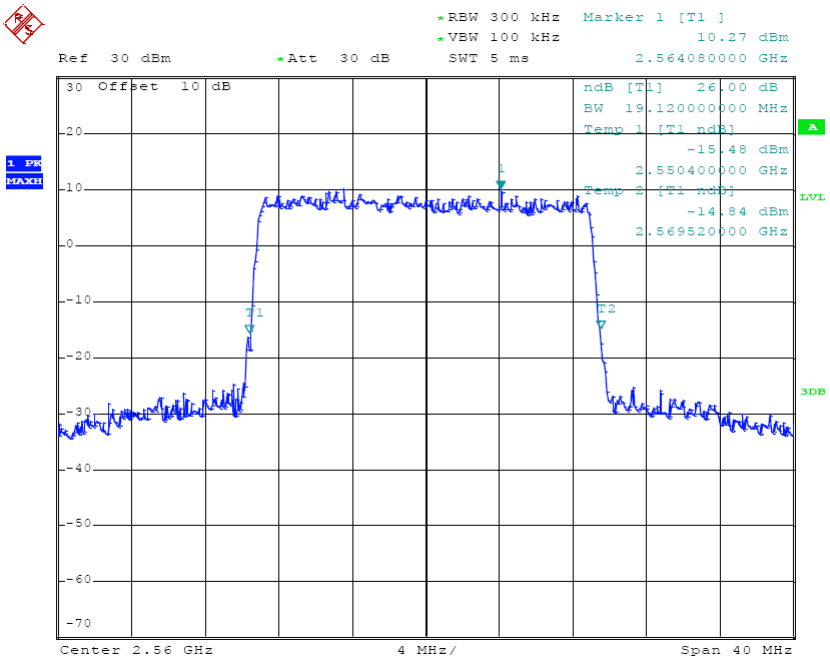
16-QAM (20.0 MHz) - 26 dB Bandwidth, Low channel



16-QAM (20.0 MHz) - 26 dB Bandwidth, Middle channel



16-QAM (20.0 MHz) - 26 dB Bandwidth, High channel



7. Out of Band Emissions at Antenna Terminal

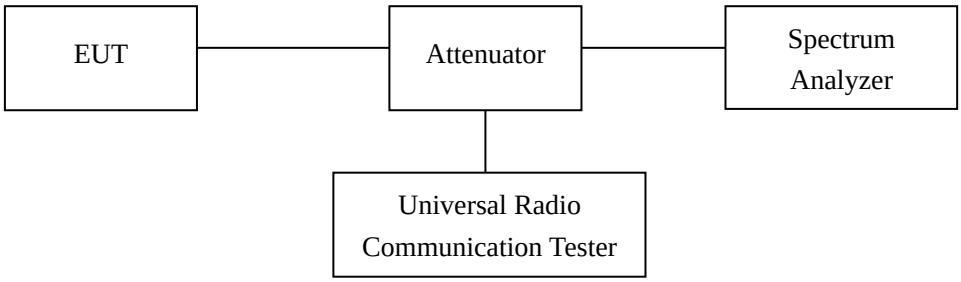
7.1 Standard Applicable

According to §27.53, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least 43 + 10 log10 (P) dB.

7.2 Test Procedure

The RF output terminal of the transmitter was connected to the input of the spectrum analyzer via a suitable attenuation. The RBW of the spectrum analyzer was set to 100kHz and 1MHz for the scan frequency from 30MHz to 1GHz and the scan frequency from 1GHz to up to 10th harmonic.

Test Configuration for the out of band emissions testing:



7.3 Environmental Conditions

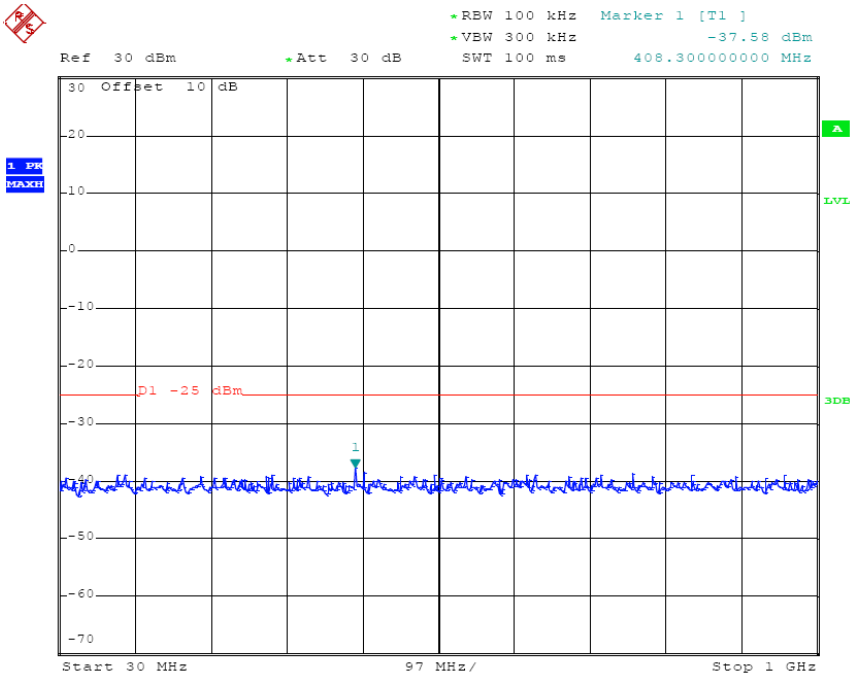
Temperature:	25 °C
Relative Humidity:	53%
ATM Pressure:	1018 mbar

7.4 Summary of Test Results/Plots

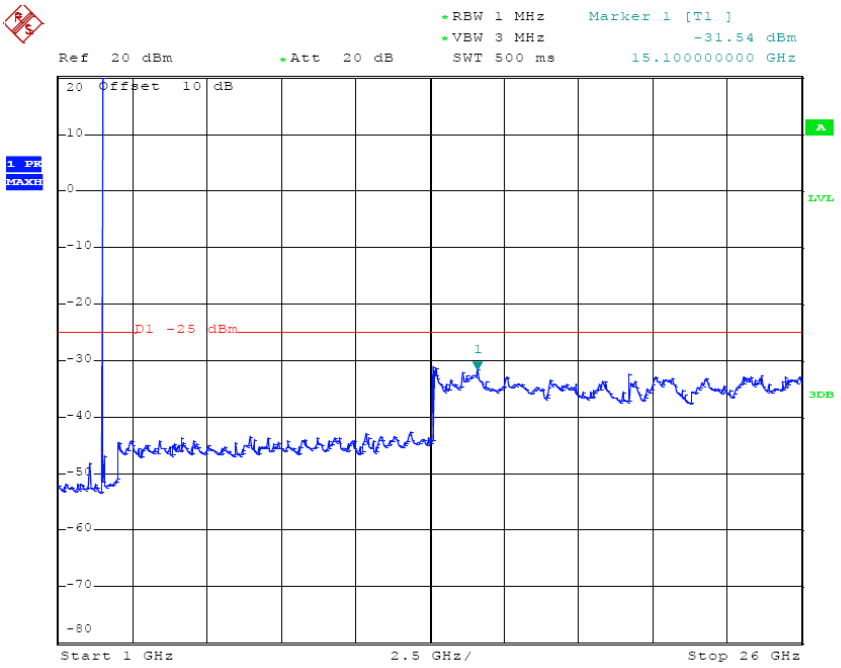
Test result: Pass

Band 7:(Worst case)

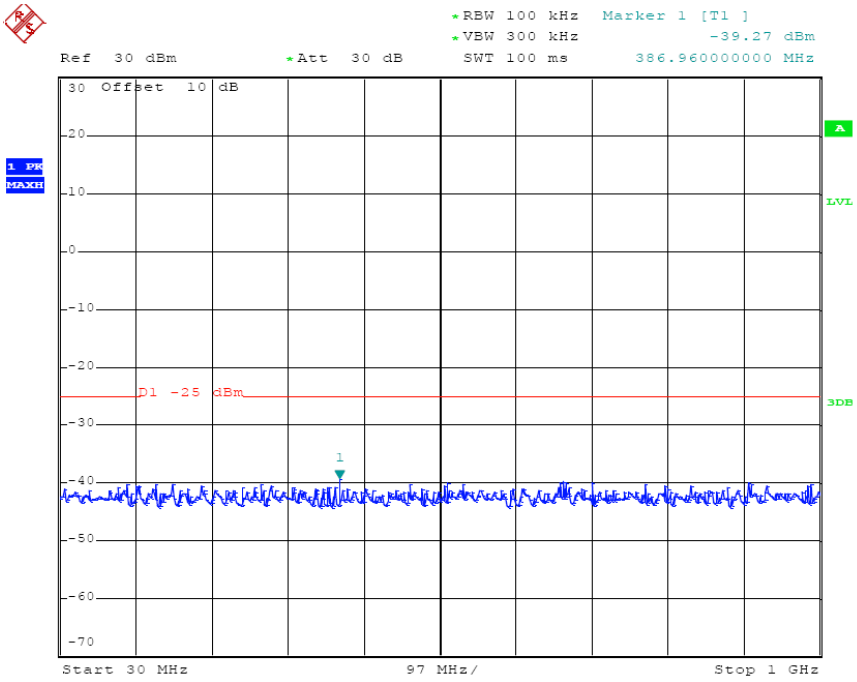
30 MHz - 1 GHz (5.0 MHz, Middle Channel)



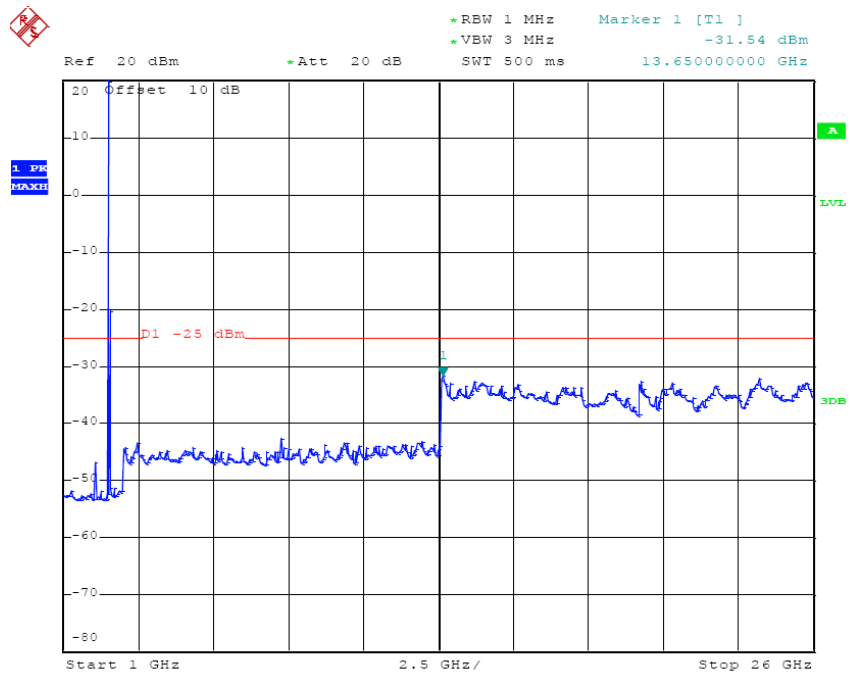
1GHz - 26G GHz (5.0 MHz, Middle Channel)



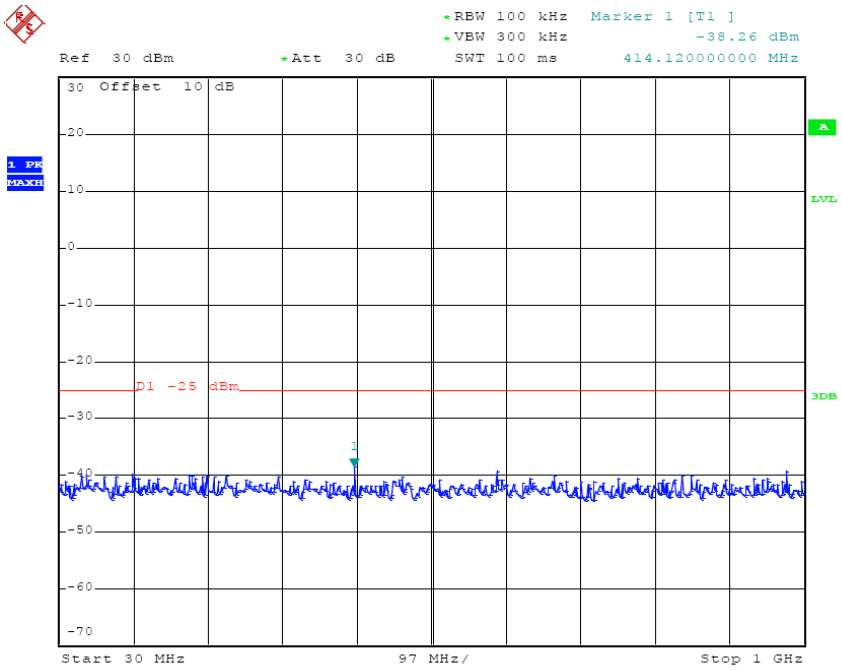
30 MHz - 1 GHz (10.0 MHz, Middle Channel)



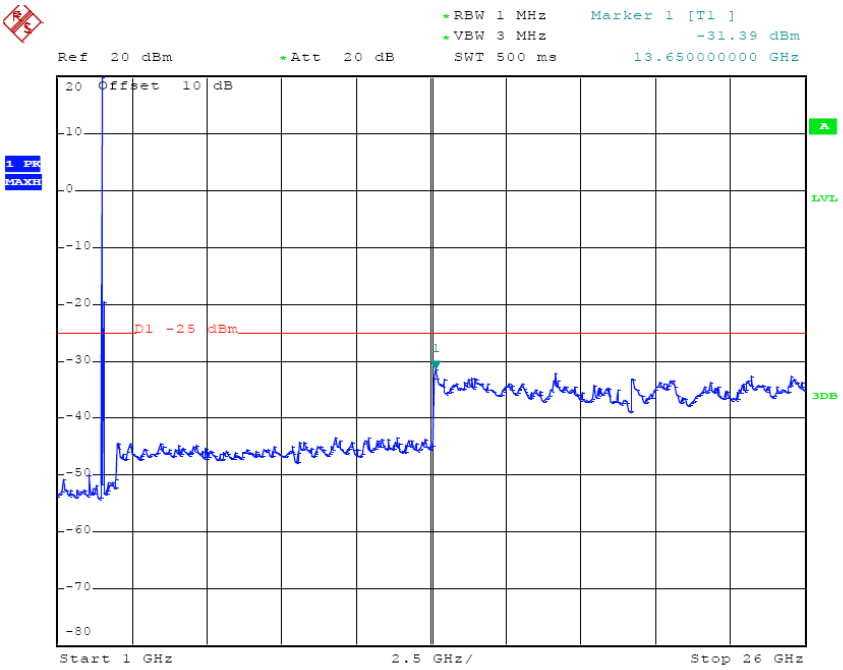
1GHz - 26 GHz (10.0 MHz, Middle Channel)



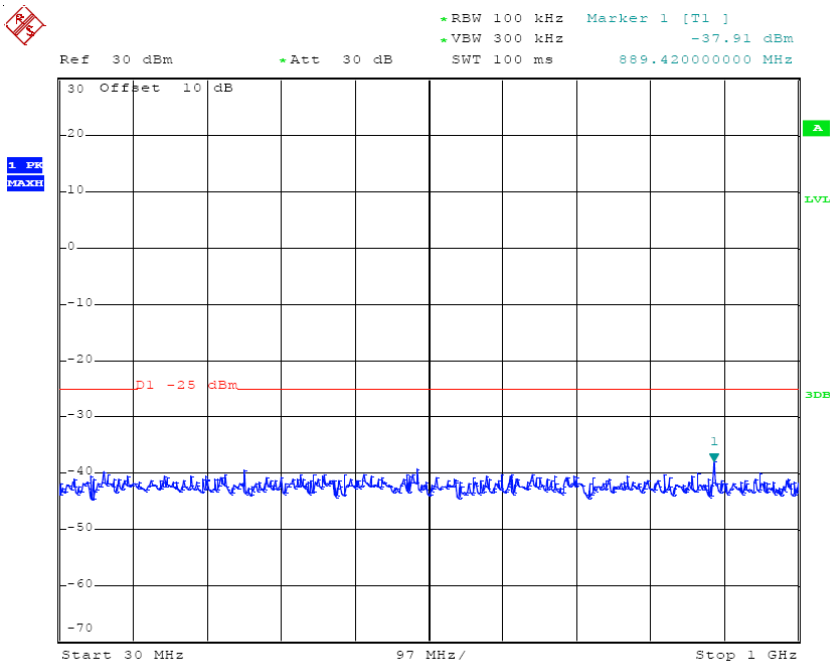
30 MHz - 1 GHz (15.0 MHz, Middle Channel)



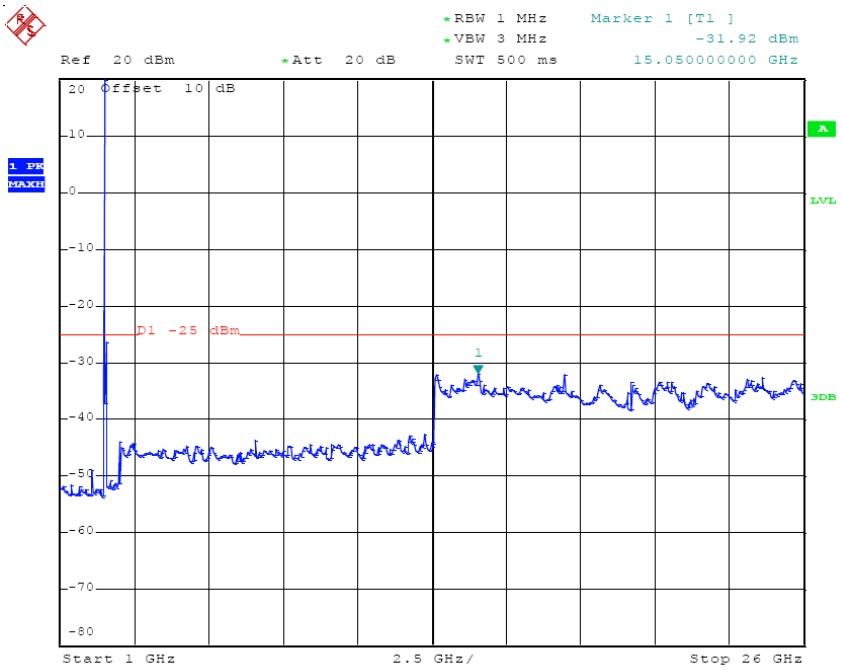
1GHz - 26 GHz (15.0 MHz, Middle Channel)



30 MHz - 1 GHz (20.0 MHz, Middle Channel)



1GHz - 26 GHz (20.0 MHz, Middle Channel)



8. Spurious Radiated Emissions

8.1 Standard Applicable

According to §27.53, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least 43 + 10 log10 (P) dB.

8.2 Test Procedure

1. The setup of EUT is according with per ANSI/TIA-603-D: 2010 and ANSI C63.4-2014 measurement procedure.
2. The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and polarization as well as EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. The test was performed by placing the EUT on 3-orthogonal axis.
3. The frequency range up to tenth harmonic of the fundamental frequency was investigated.
4. Remove the EUT and replace it with substitution antenna. A signal generator was connected to the substitution antenna by a non-radiating cable. The absolute levels of the spurious emissions were measured by the substitution.

Spurious attenuation limit in dB =43+10 Log_{10} (power out in Watts)

8.3 Environmental Conditions

Temperature:	25 °C
Relative Humidity:	52%
ATM Pressure:	1012 mbar

8.4 Summary of Test Results/Plots

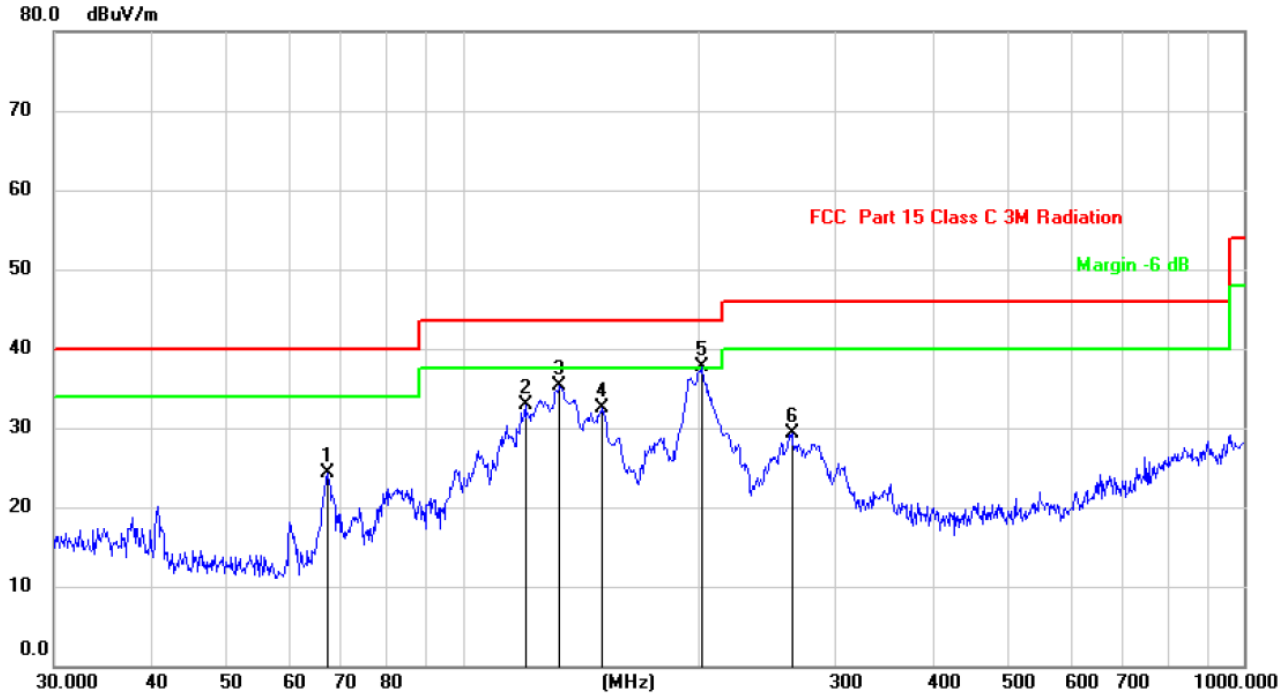
According to the data below, the FCC Part 27 standards, and had the worst margin of:

Note: 1. this EUT was tested in 3 orthogonal positions and the worst case position data was reported.

2. All test modes (different bandwidth and different modulation) are performed, but only the worst case is recorded in this report.

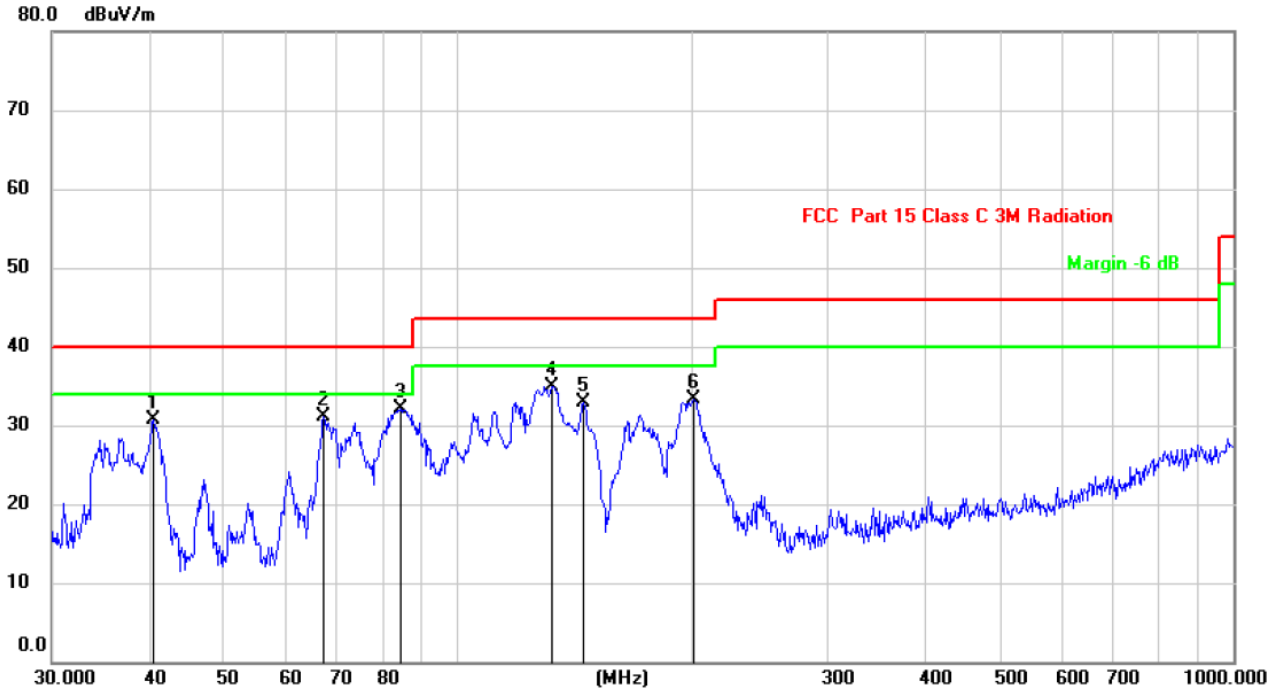
Spurious Emission From 30MHz to 1GHz
For FDD_LTE Band 7Mode

Horizontal:



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dBuV/m	dBuV/m	dBuV/m	dB	Detector	Comment
1		67.2022	24.40	-0.06	24.34	40.00	-15.66	QP	
2		120.2766	30.31	2.68	32.99	43.50	-10.51	QP	
3		133.1511	33.49	1.81	35.30	43.50	-8.20	QP	
4		151.0665	31.30	1.14	32.44	43.50	-11.06	QP	
5	*	202.1005	36.22	1.50	37.72	43.50	-5.78	QP	
6		263.8190	26.26	3.13	29.39	46.00	-16.61	QP	

Vertical:



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dBuV/m	dBuV/m	dBuV/m	dB	Detector	Comment
1		40.5591	28.32	2.32	30.64	40.00	-9.36	QP	
2		67.2022	31.13	-0.06	31.07	40.00	-8.93	QP	
3	*	84.4054	32.45	-0.33	32.12	40.00	-7.88	QP	
4		132.2205	33.13	1.83	34.96	43.50	-8.54	QP	
5		145.3505	31.48	1.39	32.87	43.50	-10.63	QP	
6		201.3930	31.82	1.50	33.32	43.50	-10.18	QP	

Spurious Emissions Above 1GHz

For FDD_LTE Band 7 Mode

Frequency	Result	Limit	Margin	Polar
(MHz)	(dBm)	(dBm)	(dB)	H/V
Low Channel (2502.5MHz)				
5005.00	-40.62	-25	-15.62	H
7507.50	-40.12	-25	-15.12	H
5005.00	-37.31	-25	-12.31	V
7507.50	-38.42	-25	-13.42	V
Middle Channel (2535MHz)				
5070.00	-42.27	-25	-17.27	H
7605.00	-41.08	-25	-16.08	H
5070.00	-36.65	-25	-11.65	V
7605.00	-35.42	-25	-10.42	V
High Channel (2567.50MHz)				
5135.00	-40.58	-25	-15.58	H
7702.50	-40.71	-25	-15.71	H
5135.00	-37.22	-25	-12.22	V
7702.50	-36.64	-25	-11.64	V

Note: Result=Reading+ Correct, Margin= Result- Limit

Testing is carried out with frequency rang 9kHz to 20GHz, which above 3th Harmonics are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured, so the data is not display.

9. Frequency Stability

9.1 Standard Applicable

According to §27.54 The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

9.2 Test Procedure

According to §2.1055, the following test procedure was performed.
The Frequency Stability is measured directly with a Frequency Domain Analyzer. Frequency Deviation in ppm is calculated from the measured peak to peak value.
The Carrier Frequency Stability over Power Supply Voltage and over Temperature is measured with a Frequency Domain Analyzer in histogram mode

Temperature:	Supply Voltage
20°C	DC 3.5-4.35V declared by manufacturer
-30°C to +50°C	Normal

9.3 Environmental Conditions

Temperature:	20°C
Relative Humidity:	54%
ATM Pressure:	1011 mbar

9.4 Summary of Test Results/Plots

Test result: Pass

	Temperature(ºC)	QPSK(Hz)	QPSK (ppm)
10.0 MHz, Middle Channel, 2535MHz	-30	-24	-0.0095
	-20	-21	-0.0083
	-10	-22	-0.0087
	0	-20	-0.0079
	10	-18	-0.0071
	20	-25	-0.0099
	30	-24	-0.0095
	40	-23	-0.0091
	50	-22	-0.0087
	Voltage(Volt)	**QPSK(Hz)**	**QPSK (ppm)**
	3.7	-25	-0.0099
	3.5	-23	-0.0091
	4.35	-22	-0.0087

	Temperature(ºC)	16QAM(Hz)	16QAM (ppm)
10.0 MHz, Middle Channel, 2535MHz	-30	-23	-0.0091
	-20	-20	-0.0079
	-10	-23	-0.0091
	0	-22	-0.0087
	10	-19	-0.0075
	20	-24	-0.0095
	30	-25	-0.0099
	40	-21	-0.0083
	50	-23	-0.0091
	Voltage(Volt)	**16QAM(Hz)**	**16QAM (ppm)**
	3.7	-22	-0.0087
	3.5	-25	-0.0099
	4.35	-23	-0.0091

******* END OF REPORT *******