BACL
Bay Area Compliance Labs Corp.

FCC PART 22H, PART 24E,PART 27
TEST REPORT

For

Bolt Modus Corp

Oficina N.33 Edificio Ofidepositos Central, Calidonia - Distrito Federal, Panama

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FCC ID: 2APW4MAX2PLUS

Report Type:	Product Type:
Original Report	Mobile phone

Report Number:	SZ1210518-17883E-00C
Report Date:	2021-06-16
Reviewed By:	Gavin Xu RF Engineer
Test Laboratory:	Bay Area Compliance Laboratories Corp. (Dongguan) No.12, Pulong East 1st Road, Tangxia Town, Dongguan, Guangdong, China Tel: +86-769-86858888 Fax: +86-769-86858891 www.baclcorp.com.cn

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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

EUT Name:	Mobile phone	
EUT Model:	MAX 2 PLUS	
Rated Input Voltage:	DC 3.85V from battery or DC 5V from Adapter	
Serial Number:	SZ1210518-17883E-RF-S1	
Adapter Information	**Model:**	CMAX2P
	Input:	110-240Vac 50/60Hz
	Output:	5.0Vdc 1.0A
EUT Received Date:	2021.05.18	
EUT Received Status:	Good	

Technical Specification

Operation Modes:	GSM(Voice), GPRS/EDGE(Data) WCDMA(Voice+Data), HSDPA, HSUPA, DC-HSDPA, HSPA+ FDD-LTE
Operation Frequency Range (MHz):	GSM 850: 824-849 MHz(TX); 869-894 MHz(RX) PCS 1900: 1850-1910 MHz(TX); 1930-1990 MHz(RX) WCDMA Band II: 1850-1910 MHz(TX); 1930-1990 MHz(RX) WCDMA Band V: 824-849 MHz(TX); 869-894 MHz(RX) LTE Band 2:1850-1910 MHz(TX), 1930-1990 MHz(RX) LTE Band 4:1710-1755 MHz(TX), 2110-2155 MHz(RX) LTE Band 7: 2500-2570 MHz(TX); 2620-2690 MHz(RX) LTE Band 12: 699-716 MHz(TX), 729-746 MHz(RX) LTE Band 17: 704-716 MHz(TX), 734-746 MHz(RX)
Antenna Gain (dBi)▲:	GSM 850/WCDMA Band V: -0.43 PCS 1900/WCDMA Band II/LTE Band 2: 1.25 LTE Band 4: 1.4 LTE Band 7: 0.8 LTE Band 12/17: -1.8
EUT Coaxial Cable Loss▲:	0.3 (below 1G) / 0.6 (above 1G)
Modulation Type:	GSM/GPRS/EDGE: GMSK, 8PSK WCDMA: BPSK, QPSK, 16-QAM LTE: QPSK, 16-QAM

Objective

This report is prepared on behalf of ***Bolt Modus Corp*** in accordance with: Part 2-Subpart J, Part 22-Subpart H, Part 24-Subpart E, Part 27of the Federal Communications Commission's rules.

The objective is to determine compliance with FCC Rules for output power, modulation characteristic, occupied bandwidth, spurious emissions at antenna terminal, spurious radiated emission, frequency stability and band edge.

Related Submittal(s)/Grant(s)

FCC Part 15C DSS submissions with FCC ID:2APW4MAX2PLUS.
FCC Part 15C DTS submissions with FCC ID:2APW4MAX2PLUS.

Test Methodology

All tests and measurements indicated in this document were performed in accordance with:

the Code of federal Regulations Title 47, Part 2, Part 22H, Part 24E, Part 27.

ANSI C63.26-2015, American National Standard for Compliance Testing of Transmitters Used in Licensed Radio Services

All emissions measurement was performed at Bay Area Compliance Laboratories Corp. (Dongguan). The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

Measurement Uncertainty

Parameter	Measurement Uncertainty
Occupied Channel Bandwidth	±5 %
RF output power, conducted	±0.61dB
Unwanted Emissions, radiated	30MHz ~ 1GHz:5.85 dB 1G~26.5GHz: 5.23 dB
Unwanted Emissions, conducted	±1.5 dB
Temperature	±1℃
Humidity	±5%
DC and low frequency voltages	±0.4%
Duty Cycle	1%

Note: Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty. The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor K with the 95% confidence interval.

Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Dongguan) to collect test data is located on the No.12, Pulong East 1st Road, Tangxia Town, Dongguan, Guangdong, China.

The lab has been recognized as the FCC accredited lab under the KDB 974614 D01 and is listed in the FCC Public Access Link (PAL) database, FCC Registration No. : 897218, the FCC Designation No. : CN1220.

The lab has been recognized by Innovation, Science and Economic Development Canada to test to Canadian radio equipment requirements, the CAB identifier: CN0022.

Declarations

BACL is not responsible for the authenticity of any test data provided by the applicant. Data included from the applicant that may affect test results are marked with a triangle symbol "▲". Customer model name, addresses, names, trademarks etc. are not considered data.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.

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SYSTEM TEST CONFIGURATION

Description of Test Configuration

The EUT was configured for testing according to ANSI C63.26-2015.

The test items were performed with the EUT operating at testing mode. The device operates on GSM Band 850/1900MHz,WCDMA Band 2/5, and LTE band 2/4/7/12/17, test was performed with channels as below table:

Frequency Bands	Bandwidth (MHz)	Test Frequency(MHz)		
		Low	Middle	High
GSM/GPRS/EDGE 850	0.25	824.2	836.6	848.8
GSM/GPRS/EDGE 1900	0.25	1850.2	1880	1909.8
WCDMA Band II	4.2	1852.4	1880	1907.6
WCDMA Band V	4.2	826.4	836.6	846.6
LTE Band 2	1.4	1850.7	1880	1909.3
	3	1851.5	1880	1908.5
	5	1852.5	1880	1907.5
	10	1855	1880	1905
	15	1857.5	1880	1902.5
	20	1860	1880	1900
LTE Band 4	1.4	1710.7	1732.5	1754.3
	3	1711.5	1732.5	1753.5
	5	1712.5	1732.5	1752.5
	10	1715	1732.5	1750
	15	1717.5	1732.5	1747.5
	20	1720	1732.5	1745
LTE Band 7	5	2502.5	2535	2567.5
	10	2505	2535	2565
	15	2507.5	2535	2562.5
	20	2510	2535	2560
LTE Band 12	1.4	699.7	707.5	715.3
	3	700.5	707.5	714.5
	5	701.5	707.5	713.5
	10	704	707.5	711
LTE Band 17	5	706.5	710	713.5
	10	709	710	711

The extreme test voltage which were declared by the manufacturer and the normal one are as below:
NV: Normal Voltage $3.85V_{DC}$
LV: Low Voltage $3.4V_{DC}$
HV: High Voltage $4.35V_{DC}$

Equipment Modifications

No modification was made to the EUT.

Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
R&S	Universial Radio Communication Tester	CMU200	106 891
R&S	Wideband Radio Communication Tester	CMW500	147 473
/	Antenna	/	/

Support Cable List and Details

Cable Description	Shielding Type	Ferrite Core	Length (m)	From Port	To
Coaxial Cable	Yes	No	2	CMU200/CMW500	Antenna

Block Diagram of Test Setup
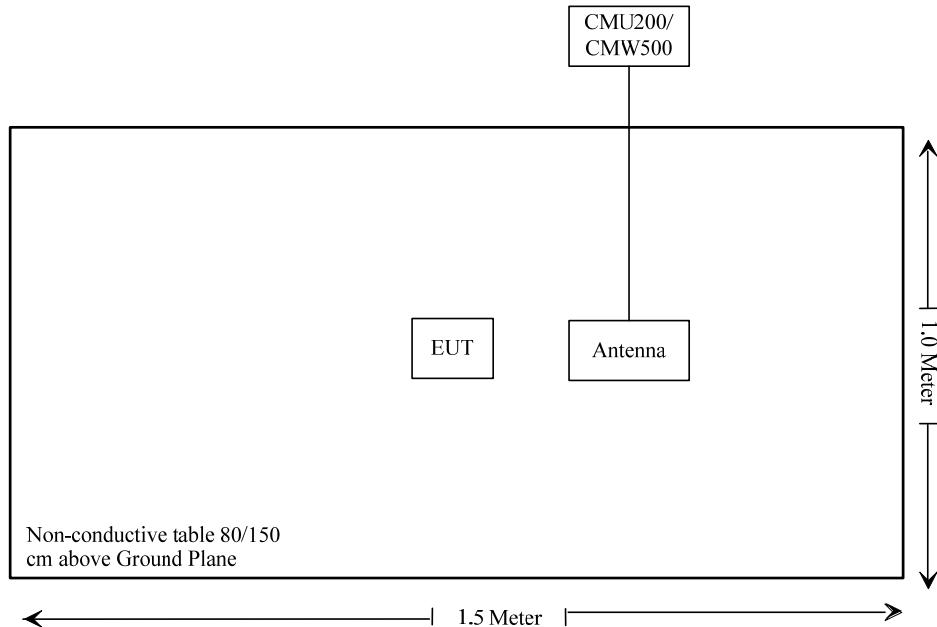
Test Equipment List

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Radiation Below 1GHz Test					
Sunol Sciences	Antenna	JB3	A060611-2	2020-08-25	2023-08-25
R&S	EMI Test Receiver	ESCI	100224	2020-09-12	2021-09-12
Unknown	Coaxial Cable	C-NJNJ-50	C-1000-01	2020-09-05	2021-09-05
Unknown	Coaxial Cable	C-NJNJ-50	C-0400-02	2020-09-05	2021-09-05
Unknown	Coaxial Cable	C-NJNJ-50	C-0530-01	2020-09-24	2021-09-24
Sonoma	Amplifier	310N	185914	2020-10-13	2021-10-13
Farad	Test Software	EZ-EMC	V1.1.4.2	N/A	N/A
EMCO	Adjustable Dipole Antenna	3121C	9109-753	N/A	N/A
Unknown	Coaxial Cable	C-NJNJ-50	C-0200-02	2020-09-05	2021-09-05
Agilent	Signal Generator	E8247C	MY43321350	2021-04-25	2022-04-24
Radiation Above 1GHz Test					
ETS-Lindgren	Horn Antenna	3115	9912-5985	2020-10-13	2023-10-12
Ducommun Technolagies	Horn Antenna	ARH-4223-02	1007726-01 1304	2020-12-05	2023-12-04
Agilent	Spectrum Analyzer	E4440A	MY44303352	2020-04-25	2021-04-24
HUBER+SUHNER	Coaxial Cable	SUCOFLEX 126EA	MY369/26/26EA	2020-09-25	2021-09-25
Mini	Pre-amplifier	ZVA-183-S+	5969001149	2020-09-05	2021-09-05
Quinstar	Amplifier	QLW-18405536-JO	15964001001	2020-06-27	2021-06-27
E-Microwave	Band-stop Filters	OBSF-2400-2483.5-S	OE01601525	2020-06-16	2021-06-16
Mini Circuits	High Pass Filter	VHF-6010+	31118	2020-06-16	2021-06-16
ETS-Lindgren	Horn Antenna	3115	9912-5985	2020-10-13	2023-10-12
Ducommun Technolagies	Horn Antenna	ARH-4223-02	1007726-02 1304	2020-12-05	2023-12-04
Unknown	Coaxial Cable	C-NJNJ-50	C-0200-02	2020-09-05	2021-09-05
Agilent	Signal Generator	E8247C	MY43321350	2021-04-25	2022-04-24
RF Conducted					
Unknown	Coaxial Cable	C-SJ00-0010	C0010/04	Each time	N/A
yzjingcheng	Coaxial Cable	KTRFBU-141-50	41005012	2020-09-05	2021-09-05
E-Microwave	Blocking Control	EMDCB-00036	0E01201048	Each time	N/A
E-Microwave	Coaxial Attenuators	EMCA10-5RN-6	OE01203239	Each time	N/A
R&S	Universal Radio Communication Tester	CMU200	106 891	2020-09-12	2021-09-12
R&S	Wideband Radio Communication Tester	CMW500	149216	2020-09-12	2021-09-12
R&S	Spectrum Analyzer	FSV40	101474	2020-07-07	2021-07-07
R&S	Spectrum Analyzer	FSV40	101591	2020-06-29	2021-06-28
R&S	Spectrum Analyzer	FSP 38	100478	2020-07-07	2021-07-07
E-Microwave	Two-way Splitter	ZFRSC-183-S+	SF448201614	Each time	N/A
ESPEC	Constant temperature and humidity Tester	ESX-4CA	018 463	2021-03-10	2022-03-09
UNI-T	Multimeter	UT39A	M130199938	2020-07-24	2021-07-24
Pro instrument	DC Power Supply	pps3300	3300012	N/A	N/A

* Statement of Traceability: Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Environmental Conditions

Test Items	RE (Below 1GHz)	RE (Above 1GHz)	RF Conducted
Temperature:	26.8°C	23.5°C	27.7~28.1 °C
Relative Humidity:	52%	50.1%	49~65%
ATM Pressure:	100.3 kPa	100kPa	100.3~100.4kPa
Tester:	Walker Yuan	Joker Chen	Lay Lei
Test Date:	2021-06-03	2021-06-05	2021-05-27~2021-06-21

SUMMARY OF TEST RESULTS

S/N	Rules	Description of Test	Result
1	§1.1310 §2.1093	RF Exposure	Compliance*
2	§2.1046 § 22.913 (a) § 24.232 (c) §27.50	RF Output Power	Compliance
3	§ 2.1047	Modulation Characteristics	Not Applicable
4	§ 2.1049 § 22.905 § 22.917 § 24.238 §27.53	Occupied Bandwidth	Compliance
5	§ 2.1051 § 22.917 (a) § 24.238 (a) §27.53	Spurious Emissions at Antenna Terminal	Compliance
6	§ 2.1053 § 22.917 (a) § 24.238 (a) §27.53	Field Strength of Spurious Radiation	Compliance
7	§ 22.917 (a) § 24.238 (a) §27.53	Out of band emission, Band Edge	Compliance
8	§ 2.1055 § 22.355 § 24.235 §27.54	Frequency stability vs. temperature Frequency stability vs. voltage	Compliance

Note:
Compliance*: Please refer to the SAR report: SZ1210508-17895E-SA.
Not applicable: There is no specific requirement for digital modulation.

2 - RF OUTPUT POWER

Applicable Standard

According to FCC §2.1046 and §22.913 (a), the ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 watts.

According to FCC §2.1046 and §24.232 (C), mobile and portable stations are limited to 2 watts EIRP and the equipment must employ a means for limiting power to the minimum necessary for successful communications.

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

(a)(3) Mobile and portable stations. (i) For mobile and portable stations transmitting in the 2305-2315 MHz band or the 2350-2360 MHz band, the average EIRP must not exceed 50 milliwatts within any 1 megahertz of authorized bandwidth, except that for mobile and portable stations compliant with 3GPP LTE standards or another advanced mobile broadband protocol that avoids concentrating energy at the edge of the operating band the average EIRP must not exceed 250 milliwatts within any 5 megahertz of authorized bandwidth but may exceed 50 milliwatts within any 1 megahertz of authorized bandwidth. For mobile and portable stations using time division duplexing (TDD) technology, the duty cycle must not exceed 38 percent in the 2305-2315 MHz and 2350-2360 MHz bands. Mobile and portable stations using FDD technology are restricted to transmitting in the 2305-2315 MHz band. Power averaging shall not include intervals in which the transmitter is off.

(b)(10) Portable stations (hand-held devices) transmitting in the 746-757 MHz, 776-788 MHz, and 805-806 MHz bands are limited to 3 watts ERP.

(c) (10) Portable stations (hand-held devices) in the 600 MHz uplink band and the 698-746 MHz band, and fixed and mobile stations in the 600 MHz uplink band are limited to 3 watts ERP.

(d), (4) Fixed, mobile, and portable (hand-held) stations operating in the 1710-1755 MHz band and mobile and portable stations operating in the 1695-1710 MHz and 1755-1780 MHz bands are limited to 1 watt EIRP. Fixed stations operating in the 1710-1755 MHz band are limited to a maximum antenna height of 10 meters above ground. Mobile and portable stations operating in these bands must employ a means for limiting power to the minimum necessary for successful communications.

(h),(2) Mobile stations are limited to 2.0 watts EIRP. All user stations are limited to 2.0 watts transmitter output power.

Test Procedure

GSM/GPRS/EGPRS

Function: Menu select > GSM Mobile Station > GSM 850/1900
Press Connection control to choose the different menus
Press RESET > choose all the reset all settings
Connection   Press Signal Off to turn off the signal and change settings
Network Support > GSM + GPRS or GSM + EGSM
Main Service > Packet Data
Service selection > Test Mode A – Auto Slot Config. off
MS Signal   Press Slot Config Bottom on the right twice to select and change the number of time slots and power setting
          > Slot configuration   > Uplink/Gamma
          > 33 dBm for GPRS 850
          > 30 dBm for GPRS 1900
          > 27 dBm for EGPRS 850
          > 26 dBm for EGPRS 1900
BS Signal   Enter the same channel number for TCH channel (test channel) and BCCH channel
Frequency Offset >   + 0 Hz
Mode >   BCCH and TCH

BCCH Level >   -85 dBm (May need to adjust if link is not stable)
BCCH Channel >   choose desire test channel [Enter the same channel number for TCH channel (test channel) and BCCH channel]

Channel Type >   Off
P0 >   4 dB
Slot Config >   Unchanged (if already set under MS signal)
TCH >   choose desired test channel
Hopping >   Off
Main Timeslot >   3
Network   Coding Scheme >   CS4 (GPRS) and MCS5 (EGPRS)

 Bit Stream >   2E9-1 PSR Bit Stream
AF/RF   Enter appropriate offsets for Ext. Att. Output and Ext. Att. Input
Connection   Press Signal on to turn on the signal and change settings

WCDMA-Release 99

The following tests were conducted according to the test requirements outlines in section 5.2 of the 3GPP TS34.121-1 specification. The EUT has a nominal maximum output power of 24dBm (+1.7/-3.7).

WCDMA General Settings	Loopback Mode	Test Mode 1
	Rel99 RMC	12.2kbps RMC
	Power Control Algorithm	Algorithm2
	βc / βd	8/15

WCDMA HSDPA

The following tests were conducted according to the test requirements outlines in section 5.2 of the 3GPP TS34.121-1 specification.

	Mode	HSDPA	HSDPA	HSDPA	HSDPA
	Subset	1	2	3	4
WCDMA General Settings	Loopback Mode	Test Mode 1			
	Rel99 RMC	12.2kbps RMC			
	HSDPA FRC	H-Set1			
	Power Control Algorithm	Algorithm2			
	βc	2/15	12/15	15/15	15/15
	βd	15/15	15/15	8/15	4/15
	βd (SF)	64			
	βc/ βd	2/15	12/15	15/8	15/4
	βhs	4/15	24/15	30/15	30/15
	MPR(dB)	0	0	0.5	0.5
HSDPA Specific Settings	DACK	8			
	DNAK	8			
	DCQI	8			
	Ack-Nack repetition factor	3			
	CQI Feedback	4ms			
	CQI Repetition Factor	2			
	Ahs=βhs/ βc	30/15			

WCDMA HSUPA

The following tests were conducted according to the test requirements outlines in section 5.2 of the 3GPP TS34.121-1 specification.

	Mode	HSUPA	HSUPA	HSUPA	HSUPA	HSUPA
	Subset	1	2	3	4	5
WCDMA General Settings	Loopback Mode	Test Mode 1				
	Rel99 RMC	12.2kbps RMC				
	HSDPA FRC	H-Set1				
	HSUPA Test	HSUPA Loopback				
	Power Control Algorithm	Algorithm2				
	βc	11/15	6/15	15/15	2/15	15/15
	βd	15/15	15/15	9/15	15/15	0
	βec	209/225	12/15	30/15	2/15	5/15
	βc/ βd	11/15	6/15	15/9	2/15	-
	βhs	22/15	12/15	30/15	4/15	5/15
	CM(dB)	1.0	3.0	2.0	3.0	1.0
	MPR(dB)	0	2	1	2	0
HSDPA Specific Settings	DACK	8				
	DNAK	8				
	DCQI	8				
	Ack-Nack repetition factor	3				
	CQI Feedback	4ms				
	CQI Repetition Factor	2				
	Ahs=βhs/ βc	30/15				

	DE-DPCCH	6	8	8	5	7
	DHARQ	0	0	0	0	0
	AG Index	20	12	15	17	21
	ETFCI	75	67	92	71	81
	Associated Max UL Data Rate kbps	242.1	174.9	482.8	205.8	308.9
HSUPA Specific Settings	Reference E_FCls	E-TFCI 11 E E-TFCI PO 4 E-TFCI 67 E-TFCI PO 18 E-TFCI 71 E-TFCI PO23 E-TFCI 75 E-TFCI PO26 E-TFCI 81 E-TFCI PO 27		E-TFCI 11 E-TFCI PO4 E-TFCI 92 E-TFCI PO 18	E-TFCI 11 E E-TFCI PO 4 E-TFCI 67 E-TFCI PO 18 E-TFCI 71 E-TFCI PO23 E-TFCI 75 E-TFCI PO26 E-TFCI 81 E-TFCI PO 27	

HSPA+

The following tests were conducted according to the test requirements in Table C.11.1.4 of 3GPP TS 34.121-1

Sub-test	β_c (Note3)	β_d	β_{HS} (Note1)	β_{ec}	β_{ed} (2xSF2) (Note 4)	β_{ed} (2xSF4) (Note 4)	CM (dB) (Note 2)	MPR (dB) (Note 2)	AG Index (Note 4)	E-TFCI (Note 5)	E-TFCI (boost)
1	1	0	30/15	30/15	β_{ed}1: 30/15 β_{ed}2: 30/15	β_{ed}3: 24/15 β_{ed}4: 24/15	3.5	2.5	14	105	105

Note 1:　Δ_{ACK}, Δ_{NACK} and Δ_{CQI} = 30/15 with β_{hs} = 30/15 * β_c .

Note 2:　CM = 3.5 and the MPR is based on the relative CM difference, MPR = MAX(CM-1,0).

Note 3:　DPDCH is not configured, therefore the β_c is set to 1 and β_d = 0 by default.

Note 4:　β_{ed} can not be set directly; it is set by Absolute Grant Value.

Note 5:　All the sub-tests require the UE to transmit 2SF2+2SF4 16QAM EDCH and they apply for UE using E-DPDCH category 7. E-DCH TTI is set to 2ms TTI and E-DCH table index = 2. To support these E-DCH configurations DPDCH is not allocated. The UE is signalled to use the extrapolation algorithm.

DC-HSDPA

The following tests were conducted according to the test requirements in Table C.8.1.12 of 3GPP TS 34.121-1

Table C.8.1.12: Fixed Reference Channel H-Set 12

Parameter	Unit	Value
Nominal Avg. Inf. Bit Rate	kbps	60
Inter-TTI Distance	TTI's	1
Number of HARQ Processes	Proces ses	6
Information Bit Payload (N_{INF})	Bits	120
Number Code Blocks	Blocks	1
Binary Channel Bits Per TTI	Bits	960
Total Available SML's in UE	SML's	19200
Number of SML's per HARQ Proc.	SML's	3200
Coding Rate		0.15
Number of Physical Channel Codes	Codes	1
Modulation		QPSK
Note 1:　The RMC is intended to be used for DC-HSDPA mode and both cells shall transmit with identical parameters as listed in the table.		
Note 2:　Maximum number of transmission is limited to 1, i.e., retransmission is not allowed. The redundancy and constellation version 0 shall be used.		

LTE (FDD):

The following tests were conducted according to the test requirements in 3GPP TS36.101

The following tests were conducted according to the test requirements outlined in section 6.2 of the 3GPP TS36.101 specification.

UE Power Class: 3 (23 +/- 2dBm). The allowed Maximum Power Reduction (MPR) for the maximum output power due to higher order modulation and transmit bandwidth configuration (resource blocks) is specified in Table 6.2.3-1 of the 3GPP TS36.101.

Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 3

Modulation	Channel bandwidth / Transmission bandwidth (RB)						MPR (dB)
	1.4 MHz	3.0 MHz	5 MHz	10 MHz	15 MHz	20 MHz	
QPSK	> 5	> 4	> 8	> 12	> 16	> 18	≤ 1
16 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 1
16 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 2

The allowed A-MPR values specified below in Table 6.2.4.-1 of 3GPP TS36.101 are in addition to the allowed MPR requirements. All the measurements below were performed with A-MPR disabled, by using Network Signaling Value of "NS_01".

Table 6.2.4-1: Additional Maximum Power Reduction (A-MPR)

Network Signalling value	Requirements (sub-clause)	E-UTRA Band	Channel bandwidth (MHz)	Resources Blocks (N_{RB})	A-MPR (dB)
NS_01	6.6.2.1.1	Table 5.5-1	1.4, 3, 5, 10, 15, 20	Table 5.6-1	NA
NS_03	6.6.2.2.1	2, 4, 10, 23, 25, 35, 36	3	>5	≤ 1
			5	>6	≤ 1
			10	>6	≤ 1
			15	>8	≤ 1
			20	>10	≤ 1
NS_04	6.6.2.2.2	41	5	>6	≤ 1
			10, 15, 20	See Table 6.2.4-4	
NS_05	6.6.3.3.1	1	10,15,20	≥ 50	≤ 1
NS_06	6.6.2.2.3	12, 13, 14, 17	1.4, 3, 5, 10	Table 5.6-1	n/a
NS_07	6.6.2.2.3 6.6.3.3.2	13	10	Table 6.2.4-2	Table 6.2.4-2
NS_08	6.6.3.3.3	19	10, 15	> 44	≤ 3
NS_09	6.6.3.3.4	21	10, 15	> 40	≤ 1
				> 55	≤ 2
NS_10		20	15, 20	Table 6.2.4-3	Table 6.2.4-3
NS_11	6.6.2.2.1	23[1]	1.4, 3, 5, 10	Table 6.2.4-5	Table 6.2.4-5
...					
NS_32	.	.	.	.	.

Note 1:　Applies to the lower block of Band 23, i.e. a carrier placed in the 2000-2010 MHz region.

Test Data

Test Mode: Transmitting

Test Result: Compliance. Please refer to following tables.

Cellular Band & PCS Band

Conducted Output Power

Band	Channel No.	Conducted Peak Output Power (dBm)								
		GSM	GPRS 1TX Slot	GPRS 2TX Slots	GPRS 3TX Slots	GPRS 4TX Slots	EGPRS 1TX Slot	EGPRS 2TX Slots	EGPRS 3TX Slots	EGPRS 4TX Slots
Cellular	128	31.87	32.54	30.76	28.16	26.98	27.26	25.62	23.26	21.56
	190	32.24	32.63	30.82	28.58	27.12	27.31	25.68	23.27	21.57
	251	32.35	32.36	30.75	28.87	26.88	27.27	25.78	23.29	21.76
PCS	512	30.14	30.18	28.04	26.36	24.42	26.74	25.48	23.25	21.95
	661	30.25	30.16	27.57	26.12	24.27	26.83	25.57	23.57	21.81
	810	29.94	30.02	26.82	25.68	24.08	26.65	25.26	22.73	21.54

ERP/EIRP

Band	Mode	Channel	Conducted Power (dBm)	Antenna Gain (dBi/dBd)	Cable Loss (dB)	Result (dBm)	Limit (dBm)
Cellular	GSM/GPRS	Low	32.54	-2.58	0.3	29.66	38.45
		Middle	32.63	-2.58	0.3	29.75	38.45
		High	32.36	-2.58	0.3	29.48	38.45
	EGPRS	Low	27.26	-2.58	0.3	24.38	38.45
		Middle	27.31	-2.58	0.3	24.43	38.45
		High	27.27	-2.58	0.3	24.39	38.45
PCS	GSM/GPRS	Low	30.18	1.25	0.6	30.83	33
		Middle	30.25	1.25	0.6	30.90	33
		High	30.02	1.25	0.6	30.67	33
	EGPRS	Low	26.74	1.25	0.6	27.39	33
		Middle	26.83	1.25	0.6	27.48	33
		High	26.65	1.25	0.6	27.30	33

Note:
1) The unit of Antenna Gain is dBd for frequency below 1GHz, and dBi for frequency above 1GHz.
2) Result = Conducted Power - Cable loss + Antenna Gain
3) Antenna gain(dBd)= Antenna gain(dBi)-2.15
4) Antenna gain and cable loss please refer to the Technical Specification which provided by manufacturer.

WCDMA

Conducted Output Power and PAR:

Band	Mode	3GPP Sub Test	Low Channel		Middle Channel		High Channel	
			Ave. Power (dBm)	PAR (dB)	Ave. Power (dBm)	PAR (dB)	Ave. Power (dBm)	PAR (dB)
II	RMC	1	23.03	2.99	22.87	3.04	22.75	2.87
	HSDPA	1	22.88	3.22	22.69	3.39	22.41	3.28
		2	21.89	3.63	21.57	3.86	21.82	3.31
		3	21.82	3.82	21.79	3.83	21.73	3.58
		4	22.07	3.67	21.56	3.56	21.62	3.62
	HSUPA	1	21.57	3.80	22.24	3.36	21.84	3.30
		2	21.95	3.71	21.97	3.42	21.91	3.78
		3	22.10	3.46	21.82	3.31	21.77	3.87
		4	22.28	3.22	21.72	3.42	21.34	3.62
		5	22.16	3.36	21.93	3.29	21.72	3.53
	DC-HSDPA	1	22.25	3.21	21.45	3.37	21.89	3.25
		2	22.17	3.39	21.76	3.35	21.91	3.31
		3	22.12	3.21	21.62	3.37	21.83	3.42
		4	22.15	3.36	21.73	3.31	21.51	3.29
	HSPA+ (16QAM)	1	21.07	2.37	20.83	2.14	20.29	2.41
V	RMC	1	22.57	3.19	22.97	3.16	22.71	3.19
	HSDPA	1	22.28	3.77	22.38	3.51	22.28	3.57
		2	21.97	3.18	22.45	3.25	22.34	3.27
		3	22.13	3.47	22.31	3.31	22.21	3.74
		4	21.68	3.68	21.96	3.26	21.93	3.91
	HSUPA	1	22.45	3.71	21.29	4.14	21.82	3.94
		2	21.97	3.61	21.56	3.22	21.14	3.24
		3	21.62	3.71	21.78	3.23	21.43	3.35
		4	21.48	3.59	21.52	3.71	21.32	3.38
		5	21.42	3.52	21.51	3.49	21.04	3.43
	DC-HSDPA	1	21.38	3.76	21.78	3.58	21.34	3.37
		2	21.59	3.67	21.52	3.52	21.59	3.32
		3	21.28	3.24	21.83	3.27	21.74	3.37
		4	21.22	3.63	21.39	3.29	21.47	3.24
	HSPA+ (16QAM)	1	20.57	3.09	20.45	3.35	20.26	3.22

ERP/EIRP

Band	Channel	Conducted Power (dBm)	Antenna Gain (dBi/dBd)	Cable Loss (dB)	Result (dBm)	Limit (dBm)
II	Low	23.03	1.25	0.6	23.68	33
	Middle	22.87	1.25	0.6	23.52	33
	High	22.75	1.25	0.6	23.40	33
V	Low	22.57	-2.58	0.3	19.69	38.45
	Middle	22.97	-2.58	0.3	20.09	38.45
	High	22.71	-2.58	0.3	19.83	38.45

Note:
1) The unit of Antenna Gain is dBd for frequency below 1GHz, and dBi for frequency above 1GHz.
2) Result = Conducted Power - Cable loss + Antenna Gain
3) Antenna gain(dBd)= Antenna gain(dBi)-2.15
4) Antenna gain and cable loss please refer to the Technical Specification which provided by manufacturer.

LTE Band 2

Conducted Output Power:

Channel Bandwidth	Modulation	Resource Block & RB offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
1.4MHz	QPSK	RB1#0	22.47	22.44	22.60
		RB1#3	22.52	22.44	22.62
		RB1#5	22.54	22.43	22.60
		RB3#0	22.62	22.72	22.74
		RB3#3	22.60	22.68	22.76
		RB6#0	21.43	21.65	21.71
	16QAM	RB1#0	21.64	22.10	21.49
		RB1#3	21.69	22.08	21.56
		RB1#5	22.16	22.09	21.52
		RB3#0	21.60	21.51	21.85
		RB3#3	21.40	21.51	21.76
		RB6#0	20.56	21.09	20.95
3MHz	QPSK	RB1#0	22.49	22.51	22.59
		RB1#8	22.57	22.56	22.61
		RB1#14	22.44	22.47	22.66
		RB6#0	21.52	21.60	21.66
		RB6#9	21.36	21.61	21.65
		RB15#0	21.60	21.46	21.66
	16QAM	RB1#0	21.75	22.14	21.56
		RB1#8	21.75	22.18	21.48
		RB1#14	21.63	22.14	21.51
		RB6#0	20.76	21.04	20.93
		RB6#9	20.60	20.76	20.98
		RB15#0	20.71	20.88	20.78
5MHz	QPSK	RB1#0	22.49	22.72	22.65
		RB1#13	22.40	22.58	22.64
		RB1#24	22.42	22.66	22.65
		RB15#0	21.62	21.57	21.70
		RB15#10	21.44	21.52	21.64
		RB25#0	21.45	21.52	21.72
	16QAM	RB1#0	20.82	21.79	21.34
		RB1#13	20.77	21.75	21.37
		RB1#24	20.72	21.77	21.41
		RB15#0	20.69	20.87	20.78
		RB15#10	20.63	20.61	20.82
		RB25#0	20.68	20.96	20.61
10MHz	QPSK	RB1#0	22.48	22.64	22.71
		RB1#25	22.40	22.69	22.71
		RB1#49	22.43	22.69	22.69
		RB25#0	21.46	21.57	21.75
		RB25#25	21.43	21.68	21.71
		RB50#0	21.56	21.53	21.60
	16QAM	RB1#0	21.80	21.74	21.16
		RB1#25	21.70	21.73	21.16
		RB1#49	21.78	21.80	21.24
		RB25#0	20.54	20.76	20.89
		RB25#25	20.69	20.80	20.88
		RB50#0	20.58	21.01	20.69

15MHz	QPSK	RB1#0	22.49	22.51	22.59
		RB1#38	22.48	22.58	22.64
		RB1#74	22.49	22.62	22.65
		RB36#0	21.58	21.61	21.63
		RB36#39	21.48	21.61	21.72
		RB75#0	21.63	21.63	21.62
	16QAM	RB1#0	22.03	21.80	21.97
		RB1#38	21.92	21.75	22.10
		RB1#74	21.99	21.92	22.06
		RB36#0	20.53	20.70	20.71
		RB36#39	20.71	20.78	20.77
		RB75#0	20.61	20.96	20.75
20MHz	QPSK	RB1#0	22.64	22.61	22.73
		RB1#50	22.59	22.66	22.82
		RB1#99	22.71	22.78	22.82
		RB50#0	21.46	21.61	21.75
		RB50#50	21.64	21.75	21.61
		RB100#0	21.57	21.67	21.66
	16QAM	RB1#0	21.82	21.52	22.34
		RB1#50	21.77	21.61	22.35
		RB1#99	21.84	21.71	22.40
		RB50#0	20.65	20.72	20.70
		RB50#50	20.78	20.76	20.79
		RB100#0	20.67	21.00	20.72

PAR:

Test Modulation		Channel Bandwidth	Low Channel (dB)	Middle Channel (dB)	High Channel (dB)	Limit (dB)
QPSK	1 RB	20 MHz	4.56	4.28	3.84	13 .00
	100 RB		5.40	5.40	5.28	13.00
16QAM	1 RB	20 MHz	5.28	5.56	5.04	13.00
	100 RB		6.24	6.32	6.16	13.00

EIRP:

Channel Bandwidth	Modulation	Channel	Conducted Power (dBm)	Antenna Gain (dBi)	Cable Loss (dB)	Result (dBm)	Limit (dBm)
1.4MHz	QPSK	Low	22.62	1.25	0.60	23.27	33.00
		Middle	22.72	1.25	0.60	23.37	33.00
		High	22.76	1.25	0.60	23.41	33.00
	16QAM	Low	22.16	1.25	0.60	22.81	33.00
		Middle	22.10	1.25	0.60	22.75	33.00
		High	21.85	1.25	0.60	22.50	33.00
3MHz	QPSK	Low	22.57	1.25	0.60	23.22	33.00
		Middle	22.56	1.25	0.60	23.21	33.00
		High	22.66	1.25	0.60	23.31	33.00
	16QAM	Low	21.75	1.25	0.60	22.40	33.00
		Middle	22.18	1.25	0.60	22.83	33.00
		High	21.56	1.25	0.60	22.21	33.00
5MHz	QPSK	Low	22.49	1.25	0.60	23.14	33.00
		Middle	22.72	1.25	0.60	23.37	33.00
		High	22.65	1.25	0.60	23.30	33.00
	16QAM	Low	20.82	1.25	0.60	21.47	33.00
		Middle	21.79	1.25	0.60	22.44	33.00
		High	21.41	1.25	0.60	22.06	33.00
10MHz	QPSK	Low	22.48	1.25	0.60	23.13	33.00
		Middle	22.69	1.25	0.60	23.34	33.00
		High	22.71	1.25	0.60	23.36	33.00
	16QAM	Low	21.80	1.25	0.60	22.45	33.00
		Middle	21.80	1.25	0.60	22.45	33.00
		High	21.24	1.25	0.60	21.89	33.00
15MHz	QPSK	Low	22.49	1.25	0.60	23.14	33.00
		Middle	22.62	1.25	0.60	23.27	33.00
		High	22.65	1.25	0.60	23.30	33.00
	16QAM	Low	22.03	1.25	0.60	22.68	33.00
		Middle	21.92	1.25	0.60	22.57	33.00
		High	22.10	1.25	0.60	22.75	33.00
20MHz	QPSK	Low	22.71	1.25	0.60	23.36	33.00
		Middle	22.78	1.25	0.60	23.43	33.00
		High	22.82	1.25	0.60	23.47	33.00
	16QAM	Low	21.84	1.25	0.60	22.49	33.00
		Middle	21.71	1.25	0.60	22.36	33.00
		High	22.40	1.25	0.60	23.05	33.00

Note:
1) The unit of Antenna Gain is dBd for frequency below 1GHz, and dBi for frequency above 1GHz.
2) Result = Conducted Power - Cable loss + Antenna Gain
3) Antenna gain(dBd)= Antenna gain(dBi)-2.15
4) Antenna gain and cable loss please refer to the Technical Specification which provided by manufacturer.

LTE Band 4

Conducted Output Power:

Channel Bandwidth	Modulation	Resource Block & RB offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
1.4MHz	QPSK	RB1#0	22.25	22.21	22.38
		RB1#3	22.26	22.21	22.44
		RB1#5	22.24	22.27	22.44
		RB3#0	22.41	22.29	22.32
		RB3#3	22.38	22.35	22.34
		RB6#0	21.19	21.34	21.27
	16QAM	RB1#0	21.91	21.99	21.35
		RB1#3	21.98	21.98	21.30
		RB1#5	21.96	21.98	21.37
		RB3#0	21.35	21.24	21.19
		RB3#3	21.42	21.18	21.26
		RB6#0	20.55	20.52	20.56
3MHz	QPSK	RB1#0	22.28	22.21	22.40
		RB1#8	22.25	22.27	22.42
		RB1#14	22.27	22.26	22.41
		RB6#0	21.29	21.30	21.32
		RB6#9	21.29	21.32	21.27
		RB15#0	21.29	21.24	21.33
	16QAM	RB1#0	21.72	22.01	21.41
		RB1#8	21.74	22.04	21.34
		RB1#14	21.71	22.01	21.33
		RB6#0	20.24	20.45	20.60
		RB6#9	20.29	20.42	20.56
		RB15#0	20.41	20.25	20.39
5MHz	QPSK	RB1#0	22.32	22.27	22.09
		RB1#13	22.36	22.39	22.12
		RB1#24	22.25	22.40	22.11
		RB15#0	21.27	21.35	21.24
		RB15#10	21.29	21.15	21.17
		RB25#0	21.34	21.22	21.22
	16QAM	RB1#0	20.48	21.48	20.81
		RB1#13	20.48	21.41	20.89
		RB1#24	20.54	21.44	20.88
		RB15#0	20.44	20.22	20.40
		RB15#10	20.45	20.26	20.38
		RB25#0	20.49	20.37	20.30
10MHz	QPSK	RB1#0	22.23	22.29	22.50
		RB1#25	22.29	22.29	22.50
		RB1#49	22.22	22.34	22.46
		RB25#0	21.23	21.26	21.23
		RB25#25	21.30	21.34	21.30
		RB50#0	21.34	21.33	21.24
	16QAM	RB1#0	21.53	21.40	20.90
		RB1#25	21.51	21.37	20.92
		RB1#49	21.54	21.48	20.84
		RB25#0	20.39	20.49	20.49
		RB25#25	20.43	20.45	20.43
		RB50#0	20.42	20.42	20.46

		RB1#0	22.25	22.33	22.43
15MHz	QPSK	RB1#38	22.18	22.27	22.44
		RB1#74	22.21	22.37	22.49
		RB36#0	21.34	21.36	21.35
		RB36#39	21.28	21.27	21.22
		RB75#0	21.29	21.20	21.33
	16QAM	RB1#0	21.48	21.40	21.66
		RB1#38	21.52	21.41	21.71
		RB1#74	21.49	21.50	21.68
		RB36#0	20.51	20.45	20.47
		RB36#39	20.45	20.44	20.43
		RB75#0	20.45	20.33	20.38
20MHz	QPSK	RB1#0	22.31	22.34	22.19
		RB1#50	22.27	22.43	22.30
		RB1#99	22.38	22.52	22.32
		RB50#0	21.33	21.20	21.36
		RB50#50	21.25	21.34	21.29
		RB100#0	21.33	21.23	21.36
	16QAM	RB1#0	22.02	21.22	21.80
		RB1#50	22.01	21.28	21.85
		RB1#99	22.04	21.35	21.92
		RB50#0	20.37	20.42	20.50
		RB50#50	20.42	20.41	20.54
		RB100#0	20.41	20.31	20.39

PAR:

Test Modulation		Channel Bandwidth	Low Channel PAR (dB)	Middle Channel PAR (dB)	High Channel PAR (dB)	Limit (dB)
QPSK	1 RB	20 MHz	4.48	4.72	4.24	13
	100 RB		5.52	5.44	5.44	13
16QAM	1 RB	20 MHz	5.72	5.60	5.52	13
	100 RB		6.40	6.28	6.36	13

EIRP:

Channel Bandwidth	Modulation	Channel	Conducted Power (dBm)	Antenna Gain (dBi)	Cable Loss (dB)	Result (dBm)	Limit (dBm)
1.4MHz	QPSK	Low	22.41	1.40	0.60	23.21	30.00
		Middle	22.35	1.40	0.60	23.15	30.00
		High	22.44	1.40	0.60	23.24	30.00
	16QAM	Low	21.98	1.40	0.60	22.78	30.00
		Middle	21.99	1.40	0.60	22.79	30.00
		High	21.37	1.40	0.60	22.17	30.00
3MHz	QPSK	Low	22.28	1.40	0.60	23.08	30.00
		Middle	22.27	1.40	0.60	23.07	30.00
		High	22.42	1.40	0.60	23.22	30.00
	16QAM	Low	21.74	1.40	0.60	22.54	30.00
		Middle	22.04	1.40	0.60	22.84	30.00
		High	21.41	1.40	0.60	22.21	30.00
5MHz	QPSK	Low	22.36	1.40	0.60	23.16	30.00
		Middle	22.40	1.40	0.60	23.20	30.00
		High	22.12	1.40	0.60	22.92	30.00
	16QAM	Low	20.54	1.40	0.60	21.34	30.00
		Middle	21.48	1.40	0.60	22.28	30.00
		High	20.89	1.40	0.60	21.69	30.00
10MHz	QPSK	Low	22.29	1.40	0.60	23.09	30.00
		Middle	22.34	1.40	0.60	23.14	30.00
		High	22.50	1.40	0.60	23.30	30.00
	16QAM	Low	21.54	1.40	0.60	22.34	30.00
		Middle	21.48	1.40	0.60	22.28	30.00
		High	20.92	1.40	0.60	21.72	30.00
15MHz	QPSK	Low	22.25	1.40	0.60	23.05	30.00
		Middle	22.37	1.40	0.60	23.17	30.00
		High	22.49	1.40	0.60	23.29	30.00
	16QAM	Low	21.52	1.40	0.60	22.32	30.00
		Middle	21.50	1.40	0.60	22.30	30.00
		High	21.71	1.40	0.60	22.51	30.00
20MHz	QPSK	Low	22.38	1.40	0.60	23.18	30.00
		Middle	22.52	1.40	0.60	23.32	30.00
		High	22.32	1.40	0.60	23.12	30.00
	16QAM	Low	22.04	1.40	0.60	22.84	30.00
		Middle	21.35	1.40	0.60	22.15	30.00
		High	21.92	1.40	0.60	22.72	30.00

Note:
1) The unit of Antenna Gain is dBd for frequency below 1GHz, and dBi for frequency above 1GHz.
2) Result = Conducted Power - Cable loss + Antenna Gain
3) Antenna gain(dBd)= Antenna gain(dBi)-2.15
4) Antenna gain and cable loss please refer to the Technical Specification which provided by manufacturer.

LTE Band 7

Conducted Output Power:

Channel Bandwidth	Modulation	Resource Block & RB offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
5MHz	QPSK	RB1#0	22.15	22.08	22.02
		RB1#13	22.13	22.13	22.01
		RB1#24	22.18	22.18	22.06
		RB15#0	21.10	21.07	21.14
		RB15#10	21.16	21.15	21.18
		RB25#0	21.11	21.11	21.12
	16QAM	RB1#0	20.44	21.09	20.87
		RB1#13	20.44	21.20	20.77
		RB1#24	20.43	21.17	20.81
		RB15#0	20.21	20.06	20.27
		RB15#10	20.44	20.06	20.21
		RB25#0	20.49	20.19	20.13
10MHz	QPSK	RB1#0	21.58	21.59	21.81
		RB1#25	21.50	21.67	21.85
		RB1#49	21.66	21.69	21.85
		RB25#0	20.84	20.57	20.88
		RB25#25	20.65	20.78	20.71
		RB50#0	20.73	20.69	20.71
	16QAM	RB1#0	20.86	20.90	20.31
		RB1#25	20.85	20.90	20.31
		RB1#49	20.96	20.83	20.29
		RB25#0	20.05	19.84	19.95
		RB25#25	19.82	19.85	19.92
		RB50#0	19.86	19.83	19.84
15MHz	QPSK	RB1#0	21.59	21.59	21.78
		RB1#38	21.63	21.62	21.80
		RB1#74	21.78	21.67	21.85
		RB36#0	20.67	20.69	20.72
		RB36#39	20.61	20.67	20.71
		RB75#0	20.65	20.68	20.66
	16QAM	RB1#0	20.93	20.94	21.06
		RB1#38	20.99	21.11	21.10
		RB1#74	21.08	21.14	21.13
		RB36#0	19.84	19.79	19.83
		RB36#39	19.91	19.87	19.83
		RB75#0	19.90	19.78	19.75
20MHz	QPSK	RB1#0	21.79	21.62	21.80
		RB1#50	21.80	21.73	21.90
		RB1#99	21.82	21.83	21.96
		RB50#0	20.59	20.67	20.72
		RB50#50	20.80	20.80	20.86
		RB100#0	20.81	20.80	20.69
	16QAM	RB1#0	20.49	21.18	21.25
		RB1#50	20.69	21.21	21.21
		RB1#99	20.71	21.30	21.36
		RB50#0	19.89	19.90	19.80
		RB50#50	19.93	19.90	19.75
		RB100#0	19.78	19.70	19.82

PAR:

Test Modulation		Channel Bandwidth	Low Channel PAR (dB)	Middle Channel PAR (dB)	High Channel PAR (dB)	Limit (dB)
QPSK	1 RB	20 MHz	3.60	3.80	3.04	13
	100 RB		5.20	5.28	5.04	13
16QAM	1 RB	20 MHz	4.60	4.92	3.68	13
	100 RB		6.08	6.16	6.00	13

EIRP:

Channel Bandwidth	Modulation	Channel	Conducted Power (dBm)	Antenna Gain (dBi)	Cable Loss (dB)	Result (dBm)	Limit (dBm)
5MHz	QPSK	Low	22.18	0.80	0.60	22.38	33.00
		Middle	22.18	0.80	0.60	22.38	33.00
		High	22.06	0.80	0.60	22.26	33.00
	16QAM	Low	20.49	0.80	0.60	20.69	33.00
		Middle	21.20	0.80	0.60	21.40	33.00
		High	20.87	0.80	0.60	21.07	33.00
10MHz	QPSK	Low	21.66	0.80	0.60	21.86	33.00
		Middle	21.69	0.80	0.60	21.89	33.00
		High	21.85	0.80	0.60	22.05	33.00
	16QAM	Low	20.96	0.80	0.60	21.16	33.00
		Middle	20.90	0.80	0.60	21.10	33.00
		High	20.31	0.80	0.60	20.51	33.00
15MHz	QPSK	Low	21.78	0.80	0.60	21.98	33.00
		Middle	21.67	0.80	0.60	21.87	33.00
		High	21.85	0.80	0.60	22.05	33.00
	16QAM	Low	21.08	0.80	0.60	21.28	33.00
		Middle	21.14	0.80	0.60	21.34	33.00
		High	21.13	0.80	0.60	21.33	33.00
20MHz	QPSK	Low	21.82	0.80	0.60	22.02	33.00
		Middle	21.83	0.80	0.60	22.03	33.00
		High	21.96	0.80	0.60	22.16	33.00
	16QAM	Low	20.71	0.80	0.60	20.91	33.00
		Middle	21.30	0.80	0.60	21.50	33.00
		High	21.36	0.80	0.60	21.56	33.00

Note:
1) The unit of Antenna Gain is dBd for frequency below 1GHz, and dBi for frequency above 1GHz.
2) Result = Conducted Power - Cable loss + Antenna Gain
3) Antenna gain(dBd)= Antenna gain(dBi)-2.15
4) Antenna gain and cable loss please refer to the Technical Specification which provided by manufacturer.

LTE Band 12

Conducted Output Power:

Channel Bandwidth	Modulation	Resource Block & RB offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
1.4MHz	QPSK	RB1#0	22.55	22.53	22.65
		RB1#3	22.63	22.71	22.65
		RB1#5	22.60	22.67	22.60
		RB3#0	22.68	22.67	22.70
		RB3#3	22.71	22.69	22.66
		RB6#0	21.45	21.77	21.57
	16QAM	RB1#0	21.92	22.23	21.18
		RB1#3	21.98	22.38	21.15
		RB1#5	21.97	22.40	21.22
		RB3#0	21.61	21.55	21.77
		RB3#3	21.69	21.61	21.75
		RB6#0	21.21	20.56	21.27
3MHz	QPSK	RB1#0	22.72	22.56	22.70
		RB1#8	22.71	22.70	22.76
		RB1#14	22.67	22.63	22.64
		RB6#0	21.60	21.63	21.62
		RB6#9	21.66	21.72	21.67
		RB15#0	21.56	21.77	21.68
	16QAM	RB1#0	21.75	22.24	21.31
		RB1#8	21.84	22.36	21.25
		RB1#14	21.85	22.37	21.19
		RB6#0	21.02	20.57	21.25
		RB6#9	20.99	20.63	21.25
		RB15#0	20.99	20.66	21.07
5MHz	QPSK	RB1#0	22.68	22.51	22.60
		RB1#13	22.64	22.62	22.67
		RB1#24	22.62	22.64	22.55
		RB15#0	21.56	21.44	21.58
		RB15#10	21.54	21.74	21.69
		RB25#0	21.58	21.64	21.58
	16QAM	RB1#0	20.64	21.60	21.33
		RB1#13	20.65	21.73	21.22
		RB1#24	20.76	21.68	21.33
		RB15#0	21.04	20.53	21.06
		RB15#10	21.09	20.49	21.13
		RB25#0	21.15	20.58	20.99
10MHz	QPSK	RB1#0	22.54	22.46	22.77
		RB1#25	22.52	22.59	22.86
		RB1#49	22.61	22.66	22.82
		RB25#0	21.51	21.57	21.79
		RB25#25	21.67	21.75	21.73
		RB50#0	21.47	21.73	21.64
	16QAM	RB1#0	21.45	21.67	21.06
		RB1#25	21.63	21.91	21.23
		RB1#49	21.67	21.89	21.20
		RB25#0	21.03	20.72	20.66
		RB25#25	20.67	20.61	21.20
		RB50#0	20.67	20.57	20.54

PAR, Band 12

Test Modulation		Channel Bandwidth	Low Channel PAR (dB)	Middle Channel PAR (dB)	High Channel PAR (dB)	Limit (dB)
QPSK	1 RB	10 MHz	5.56	4.64	5.00	13
	50 RB		5.52	5.56	5.76	13
16QAM	1 RB	10 MHz	6.32	6.08	6.28	13
	50 RB		6.56	6.52	6.60	13

ERP:

Channel Bandwidth	Modulation	Channel	Conducted Power (dBm)	Antenna Gain (dBd)	Cable Loss (dB)	Result (dBm)	Limit (dBm)
1.4MHz	QPSK	Low	22.71	-3.95	0.30	18.46	34.77
		Middle	22.71	-3.95	0.30	18.46	34.77
		High	22.70	-3.95	0.30	18.45	34.77
	16QAM	Low	21.98	-3.95	0.30	17.73	34.77
		Middle	22.40	-3.95	0.30	18.15	34.77
		High	21.77	-3.95	0.30	17.52	34.77
3MHz	QPSK	Low	22.72	-3.95	0.30	18.47	34.77
		Middle	22.70	-3.95	0.30	18.45	34.77
		High	22.76	-3.95	0.30	18.51	34.77
	16QAM	Low	21.85	-3.95	0.30	17.60	34.77
		Middle	22.37	-3.95	0.30	18.12	34.77
		High	21.31	-3.95	0.30	17.06	34.77
5MHz	QPSK	Low	22.68	-3.95	0.30	18.43	34.77
		Middle	22.64	-3.95	0.30	18.39	34.77
		High	22.67	-3.95	0.30	18.42	34.77
	16QAM	Low	21.15	-3.95	0.30	16.90	34.77
		Middle	21.73	-3.95	0.30	17.48	34.77
		High	21.33	-3.95	0.30	17.08	34.77
10MHz	QPSK	Low	22.61	-3.95	0.30	18.36	34.77
		Middle	22.66	-3.95	0.30	18.41	34.77
		High	22.86	-3.95	0.30	18.61	34.77
	16QAM	Low	21.67	-3.95	0.30	17.42	34.77
		Middle	21.91	-3.95	0.30	17.66	34.77
		High	21.23	-3.95	0.30	16.98	34.77

Note:
1) The unit of Antenna Gain is dBd for frequency below 1GHz, and dBi for frequency above 1GHz.
2) Result = Conducted Power - Cable loss + Antenna Gain
3) Antenna gain(dBd)= Antenna gain(dBi)-2.15
4) Antenna gain and cable loss please refer to the Technical Specification which provided by manufacturer.

LTE Band 17

Conducted Output Power:

Channel Bandwidth	Modulation	Resource Block & RB offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
5 MHz	QPSK	RB1#0	22.66	22.61	22.70
		RB1#13	22.66	22.62	22.58
		RB1#24	22.77	22.71	22.61
		RB15#0	21.66	21.69	21.59
		RB15#10	21.73	21.69	21.70
		RB25#0	21.61	21.64	21.59
	16QAM	RB1#0	20.63	21.63	21.29
		RB1#13	20.81	21.59	21.22
		RB1#24	20.95	21.71	21.31
		RB15#0	20.73	20.38	21.06
		RB15#10	20.59	20.30	21.17
		RB25#0	20.65	20.55	20.93
10 MHz	QPSK	RB1#0	22.47	22.45	22.73
		RB1#25	22.57	22.54	22.82
		RB1#49	22.77	22.69	22.85
		RB25#0	21.54	21.66	21.64
		RB25#25	21.64	21.64	21.65
		RB50#0	21.68	21.63	21.70
	16QAM	RB1#0	21.48	21.83	21.06
		RB1#25	21.73	21.90	21.25
		RB1#49	21.68	21.84	21.19
		RB25#0	20.64	20.65	20.64
		RB25#25	21.06	21.13	21.20
		RB50#0	20.57	20.60	20.57

PAR:

Test Modulation		Channel Bandwidth	Low Channel PAR (dB)	Middle Channel PAR (dB)	High Channel PAR (dB)	Limit (dB)
QPSK	1 RB	10 MHz	4.96	4.84	4.64	13
	50 RB		5.72	5.64	5.64	13
16QAM	1 RB	10 MHz	6.08	5.64	6.00	13
	50 RB		6.60	6.68	6.60	13

ERP:

Channel Bandwidth	Modulation	Channel	Conducted Power (dBm)	Antenna Gain (dBd)	Cable Loss (dB)	Result (dBm)	Limit (dBm)
5MHz	QPSK	Low	22.77	-3.95	0.30	18.52	34.77
		Middle	22.71	-3.95	0.30	18.46	34.77
		High	22.70	-3.95	0.30	18.45	34.77
	16QAM	Low	20.95	-3.95	0.30	16.70	34.77
		Middle	21.71	-3.95	0.30	17.46	34.77
		High	21.31	-3.95	0.30	17.06	34.77
10MHz	QPSK	Low	22.77	-3.95	0.30	18.52	34.77
		Middle	22.69	-3.95	0.30	18.44	34.77
		High	22.85	-3.95	0.30	18.60	34.77
	16QAM	Low	21.73	-3.95	0.30	17.48	34.77
		Middle	21.90	-3.95	0.30	17.65	34.77
		High	21.25	-3.95	0.30	17.00	34.77

Note:
1) The unit of Antenna Gain is dBd for frequency below 1GHz, and dBi for frequency above 1GHz.
2) Result = Conducted Power - Cable loss + Antenna Gain
3) Antenna gain(dBd)= Antenna gain(dBi)-2.15
4) Antenna gain and cable loss please refer to the Technical Specification which provided by manufacturer.

4 - OCCUPIED BANDWIDTH

Applicable Standard

FCC §2.1049, §22.917, §22.905, §24.238 and §27.53.

Test Procedure

The RF output of the transmitter was connected to the simulator and the spectrum analyzer through sufficient attenuation.

The 26 dB & 99% bandwidth was recorded.
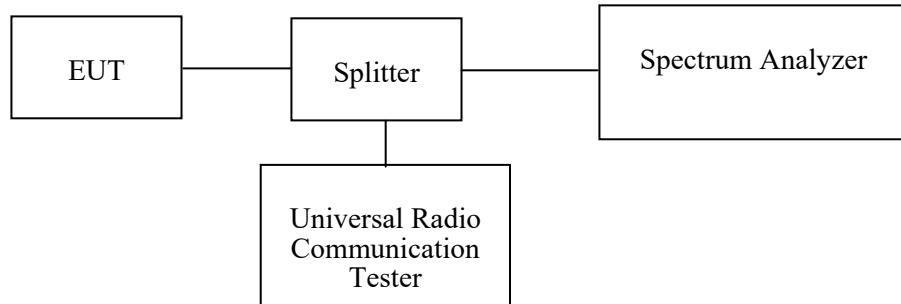
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                        │
                   ┌────┴─────────┐
                   │ Universal Radio│
                   │ Communication │
                   │    Tester     │
                   └──────────────┘
```

Test Data

Test Mode: Transmitting

Test Result: Compliance. Please refer to following tables and plots.

GSM:

Band	Operation Mode	99% Occupied Bandwidth (MHz)			26 dB Occupied Bandwidth (MHz)		
		Low Channel	Middle Channel	High Channel	Low Channel	Middle Channel	High Channel
Cellular	GSM	0.244	0.244	0.244	0.319	0.318	0.323
	EGPRS	0.242	0.246	0.246	0.314	0.311	0.317
PCS	GSM	0.248	0.248	0.246	0.321	0.321	0.319
	EGPRS	0.246	0.244	0.246	0.321	0.319	0.319

WCDMA:

Band	Operation Mode	99% Occupied Bandwidth (MHz)			26 dB Occupied Bandwidth (MHz)		
		Low Channel	Middle Channel	High Channel	Low Channel	Middle Channel	High Channel
Cellular	RMC	4.152	4.152	4.152	4.703	4.701	4.674
	HSDPA	4.192	4.152	4.172	4.697	4.708	4.713
	HSUPA	4.172	4.152	4.152	4.714	4.712	4.699
PCS	RMC	4.152	4.152	4.152	4.708	4.706	4.708
	HSDPA	4.152	4.172	4.152	4.708	4.699	4.717
	HSUPA	4.172	4.172	4.152	4.706	4.706	4.697

LTE Bands:

Band	Bandwidth (MHz)	Modulation mode	99% Occupied Bandwidth (MHz)			26 dB Occupied Bandwidth (MHz)		
			Low Channel	Middle Channel	High Channel	Low Channel	Middle Channel	High Channel
LTE Band 2	1.4 MHz	QPSK	1.098	1.098	1.104	1.248	1.254	1.254
		16QAM	1.104	1.098	1.104	1.260	1.248	1.254
	3 MHz	QPSK	2.700	2.700	2.700	2.988	3.000	3.000
		16QAM	2.700	2.688	2.700	2.988	2.988	3.000
	5 MHz	QPSK	4.540	4.520	4.520	4.960	5.000	5.000
		16QAM	4.520	4.540	4.520	4.960	5.020	4.980
	10 MHz	QPSK	9.000	8.960	8.960	9.680	9.680	9.760
		16QAM	8.960	8.960	8.960	9.720	9.760	9.680
	15 MHz	QPSK	13.620	13.560	13.500	15.000	14.940	15.060
		16QAM	13.560	13.560	13.500	15.060	15.060	15.000
	20 MHz	QPSK	17.920	18.000	18.000	19.520	19.520	19.680
		16QAM	17.920	18.080	18.000	19.680	19.840	19.680
LTE Band 4	1.4 MHz	QPSK	1.098	1.104	1.098	1.248	1.254	1.254
		16QAM	1.104	1.104	1.098	1.260	1.260	1.248
	3 MHz	QPSK	2.700	2.700	2.688	3.000	3.000	3.000
		16QAM	2.688	2.700	2.688	2.988	3.000	3.024
	5 MHz	QPSK	4.520	4.520	4.520	4.980	5.000	4.980
		16QAM	4.500	4.540	4.540	4.960	5.000	5.020
	10 MHz	QPSK	9.000	9.000	8.960	9.760	9.680	9.800
		16QAM	8.960	9.000	8.960	9.680	9.800	9.760
	15 MHz	QPSK	13.560	13.500	13.500	15.120	15.000	15.060
		16QAM	13.560	13.500	13.500	15.060	15.060	14.940
	20 MHz	QPSK	18.080	18.000	18.000	19.920	19.600	19.680
		16QAM	18.080	18.000	18.000	19.760	19.680	19.680
LTE Band 7	5 MHz	QPSK	4.520	4.520	4.520	4.980	4.980	4.980
		16QAM	4.520	4.540	4.540	5.040	4.980	5.000
	10 MHz	QPSK	9.000	8.960	8.960	9.680	9.800	9.760
		16QAM	8.960	9.000	8.960	9.800	9.760	9.840
	15 MHz	QPSK	13.560	13.500	13.620	15.060	15.060	15.180
		16QAM	13.560	13.560	13.620	15.060	15.000	15.120
	20 MHz	QPSK	18.000	18.080	18.000	19.440	19.600	19.760
		16QAM	17.920	18.000	18.000	19.680	19.840	19.760
LTE Band 12	1.4 MHz	QPSK	1.098	1.104	1.098	1.248	1.248	1.248
		16QAM	1.104	1.092	1.104	1.254	1.248	1.248
	3 MHz	QPSK	2.700	2.688	2.700	2.976	3.012	3.000
		16QAM	2.700	2.700	2.700	3.000	2.988	3.024
	5 MHz	QPSK	4.520	4.520	4.520	4.960	5.000	4.960
		16QAM	4.500	4.520	4.540	4.940	4.980	5.000
	10 MHz	QPSK	9.000	8.960	8.960	9.720	9.680	9.760
		16QAM	8.920	8.960	8.960	9.680	9.720	9.760
LTE Band 17	5 MHz	QPSK	4.520	4.520	4.520	4.980	5.020	4.980
		16QAM	4.520	4.520	4.520	4.940	5.000	4.960
	10 MHz	QPSK	8.960	8.960	8.960	9.720	9.720	9.760
		16QAM	8.960	8.960	8.960	9.720	9.680	9.680

GSM & WCDMA

Cellular 850 Band, GSM, Low Channel

Date: 21.JUN.2021 21:36:31

Cellular 850 Band, GSM, Middle Channel

Date: 21.JUN.2021 21:39:53

Cellular 850 Band, GSM, High Channel

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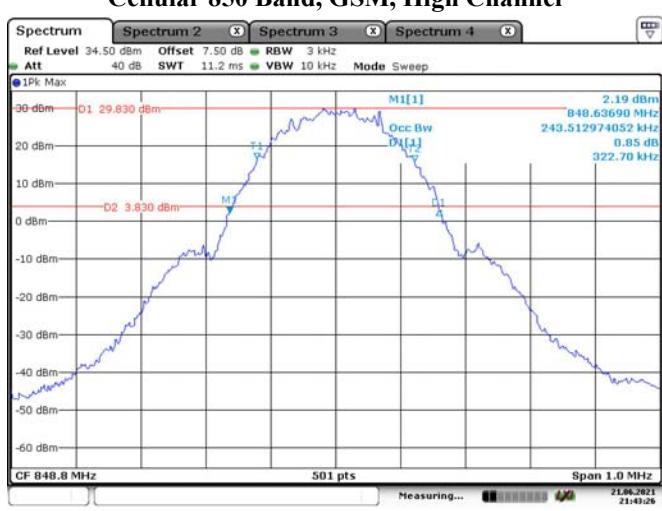
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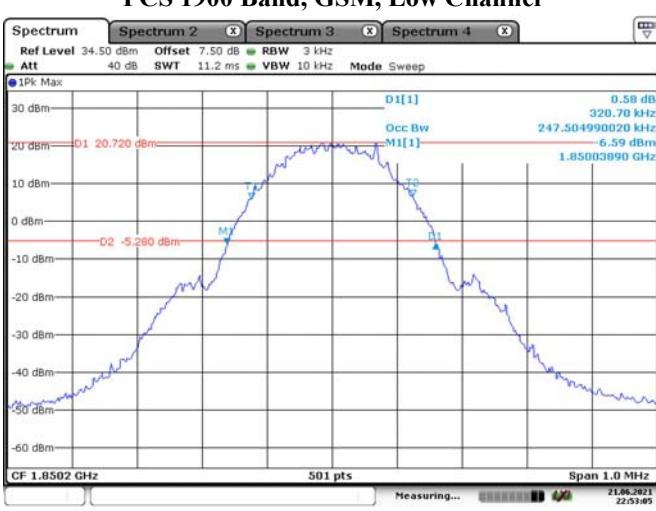
PCS 1900 Band, GSM, Middle Channel

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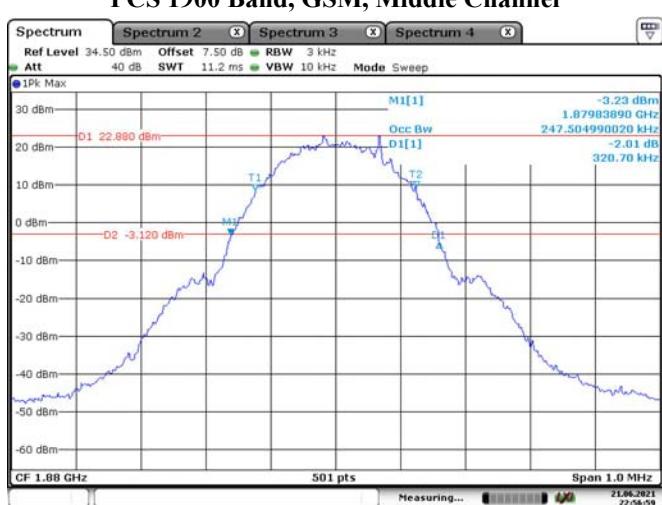
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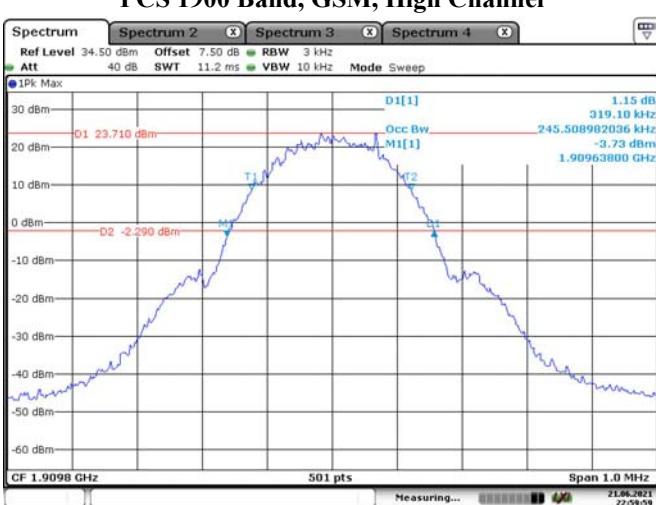
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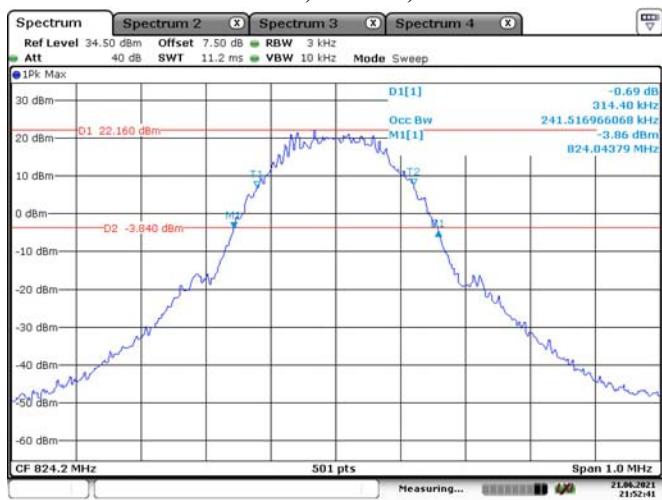
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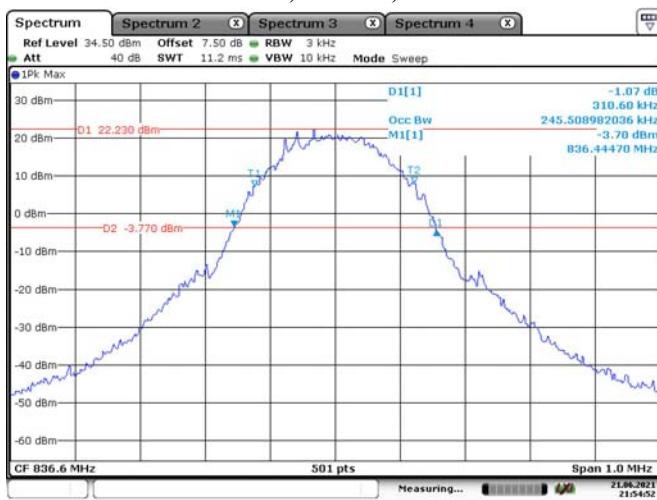
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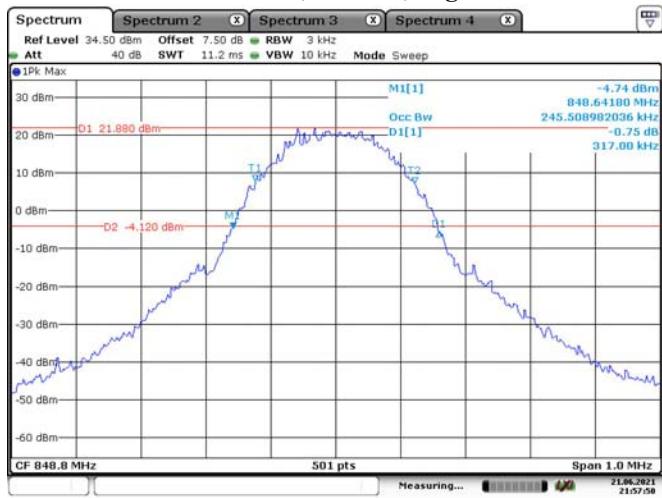
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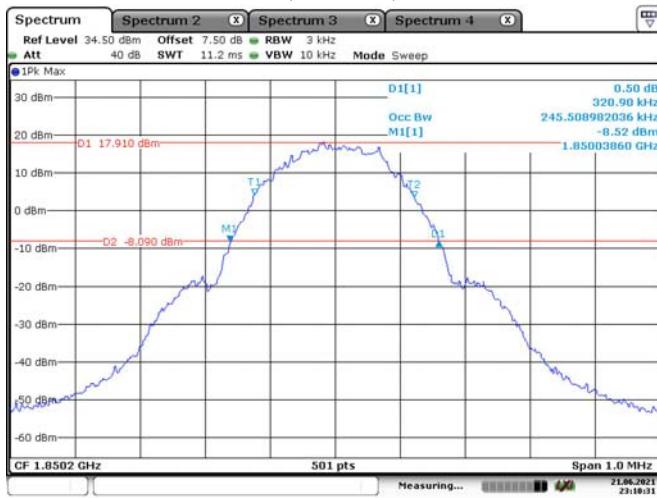
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PCS 1900 Band, EGPRS, Middle Channel
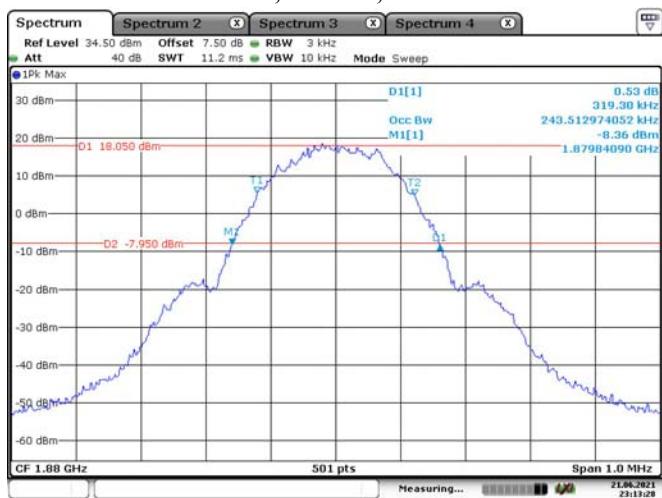
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PCS 1900 Band, EGPRS, High Channel

Date: 21.JUN.2021 23:16:52
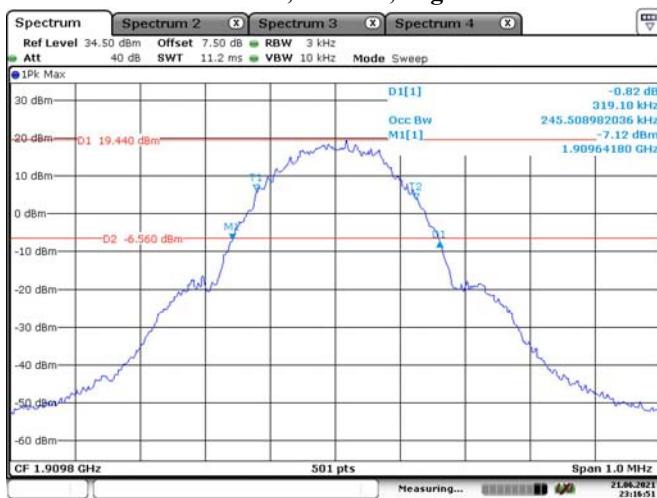
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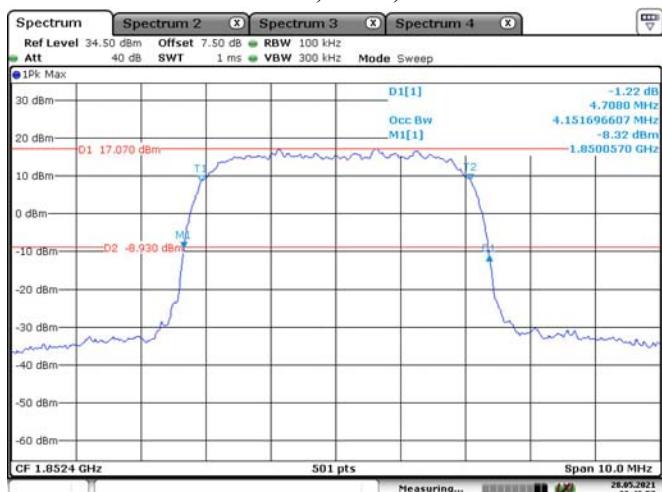
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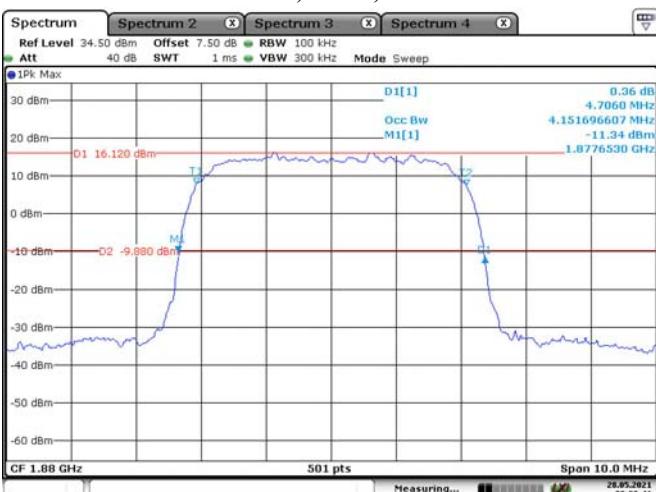
Date: 28.MAY.2021 09:00:41

WCDMA Band II, RMC, High Channel
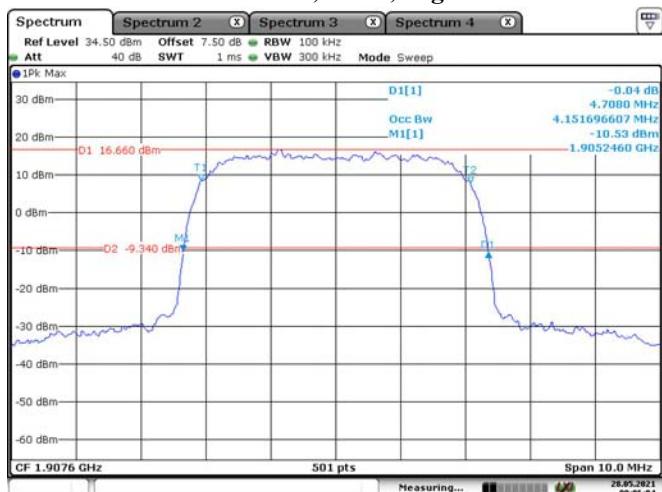
Date: 28.MAY.2021 09:06:04

WCDMA Band II, HSDPA, Low Channel
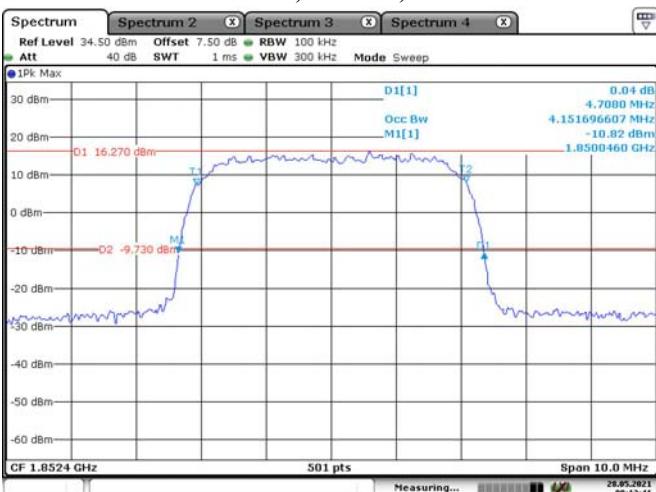
Date: 28.MAY.2021 09:12:41

WCDMA Band II, HSDPA, Middle Channel

Date: 28.MAY.2021 09:18:02

WCDMA Band II, HSDPA, High Channel
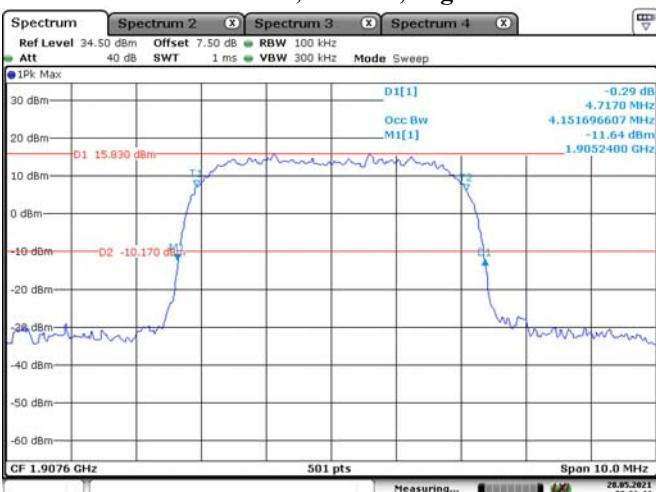
Date: 28.MAY.2021 09:21:44

WCDMA Band II, HSUPA, Low Channel

Date: 28.MAY.2021 09:25:50
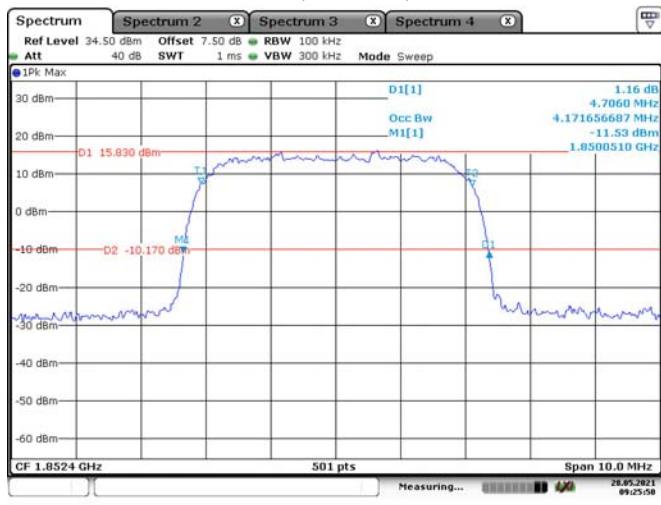
WCDMA Band II, HSUPA, Middle Channel

Date: 28.MAY.2021 09:43:05
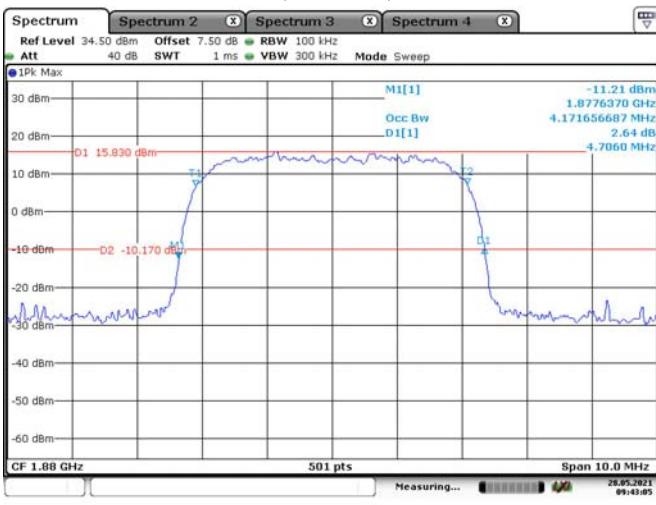
WCDMA Band II, HSUPA, High Channel

Date: 28.MAY.2021 09:52:47
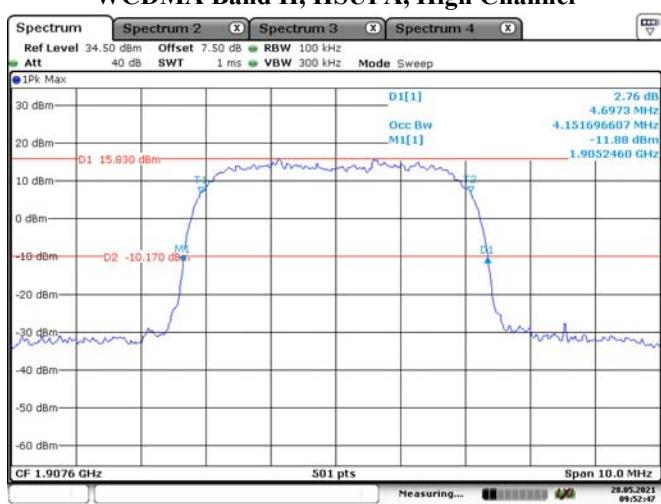
WCDMA Band V, RMC, Low Channel

Date: 28.MAY.2021 10:00:30
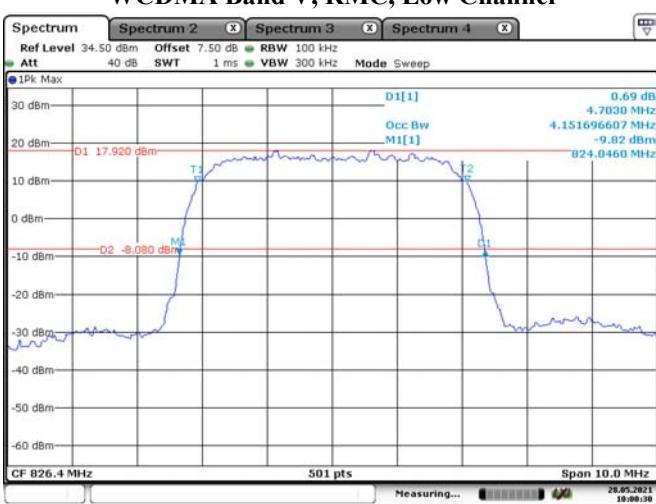
WCDMA Band V, RMC, Middle Channel

Date: 28.MAY.2021 10:05:33
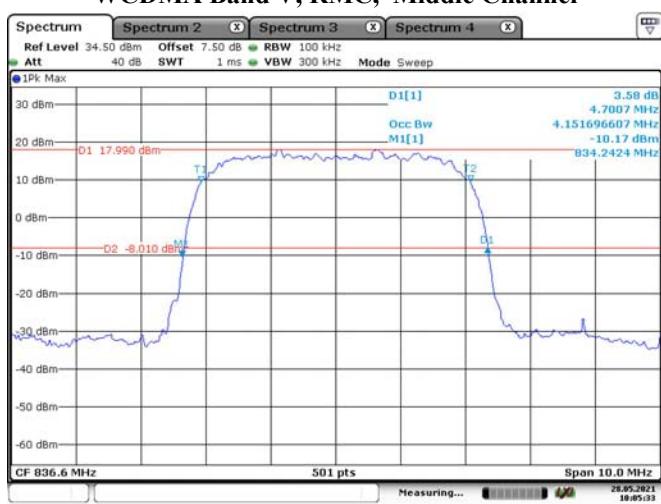
WCDMA Band V, RMC, High Channel

Date: 28.MAY.2021 10:09:58
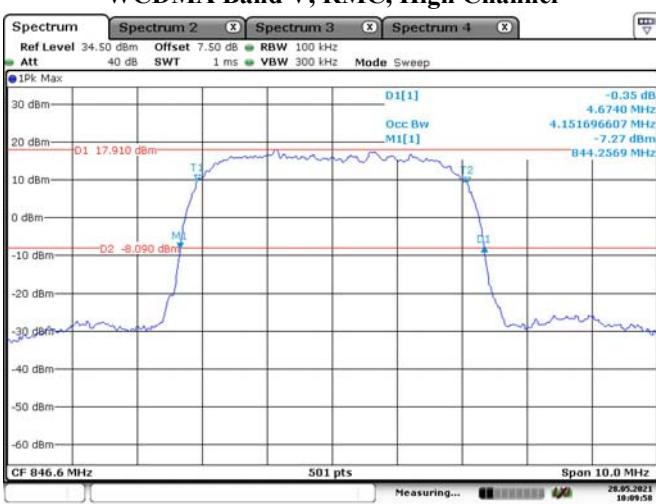
WCDMA Band V, HSDPA, Low Channel
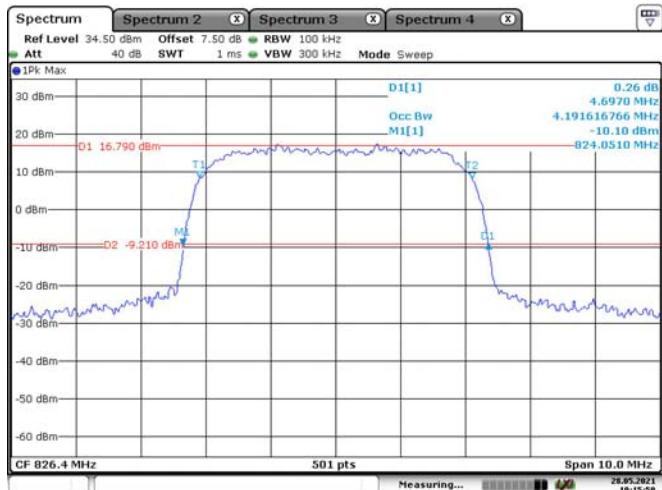
WCDMA Band V, HSDPA, Middle Channel
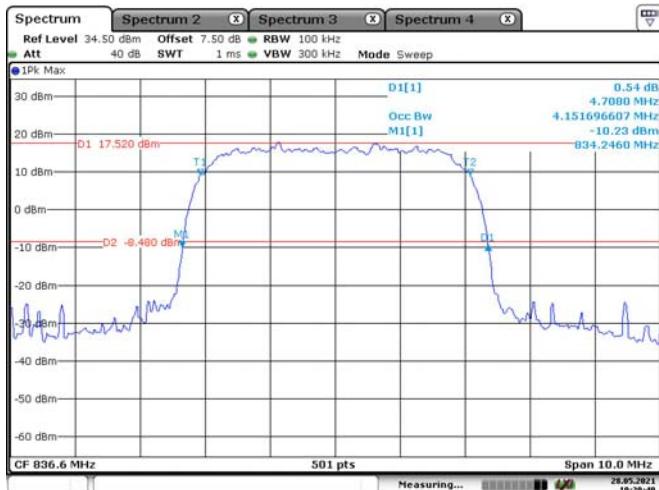
WCDMA Band V, HSDPA, High Channel
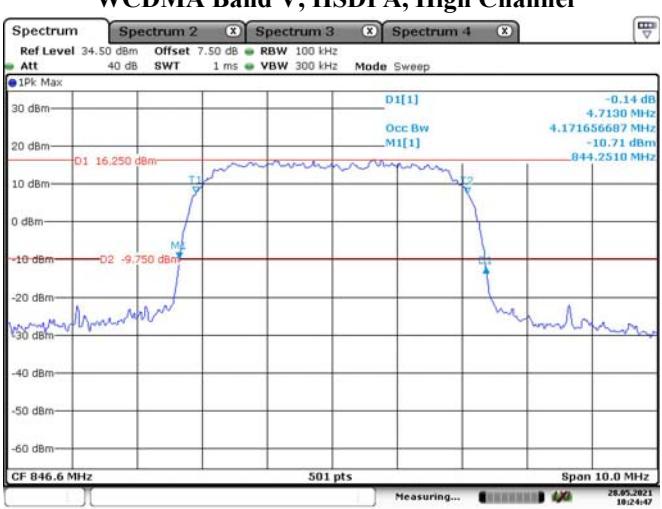
WCDMA Band V, HSUPA, Low Channel
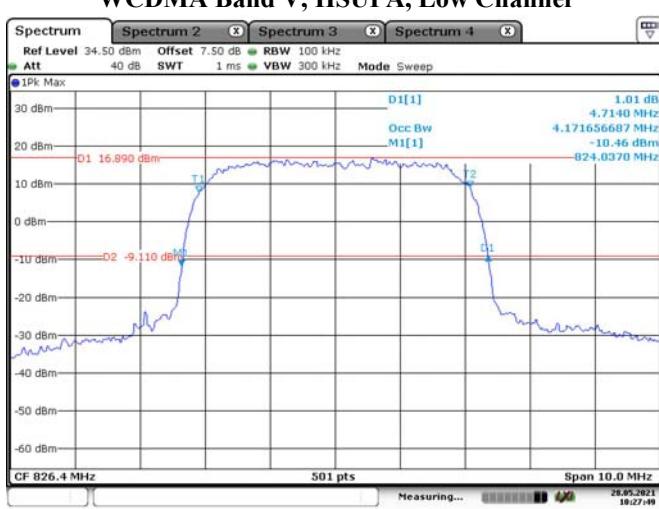
WCDMA Band V, HSUPA, Middle Channel
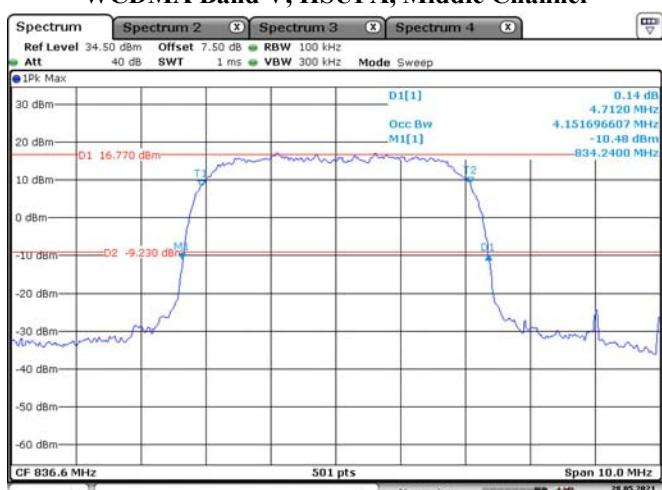
WCDMA Band V, HSUPA, High Channel
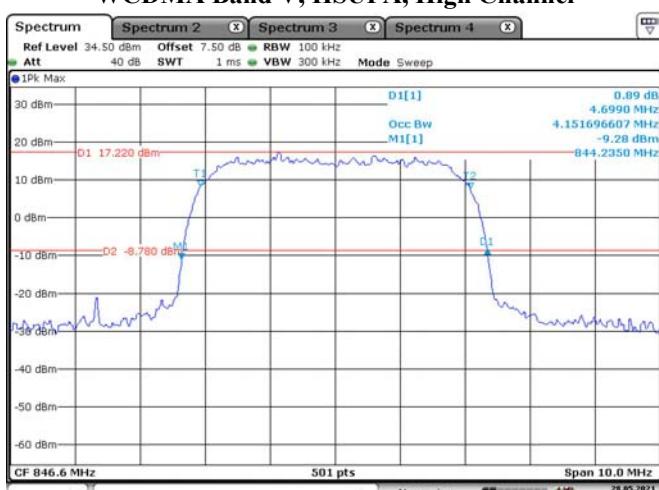
LTE Band 2

1.4M, QPSK, Low Channel
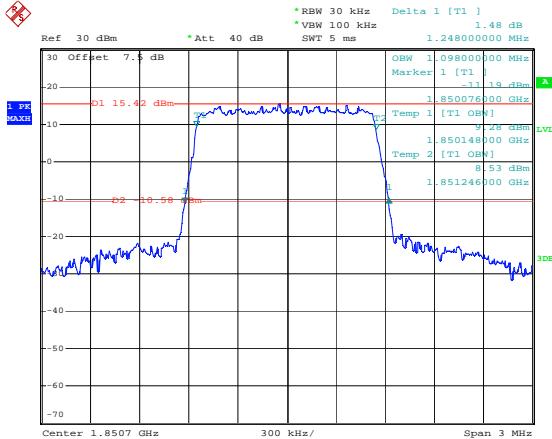
Date: 27.MAY.2021 13:42:40

1.4M, 16QAM, Low Channel

Date: 27.MAY.2021 13:43:00

1.4M, QPSK, Middle Channel

Date: 27.MAY.2021 13:43:21

1.4M, 16QAM, Middle Channel
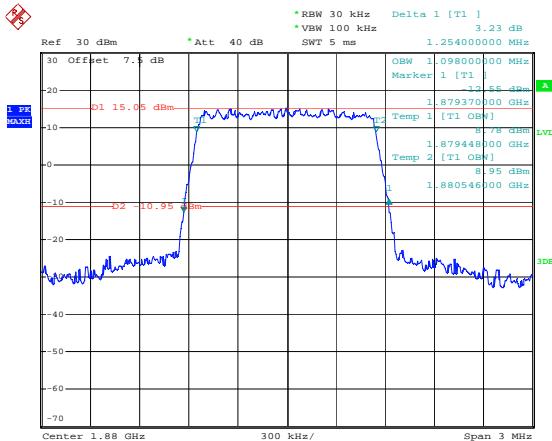
Date: 27.MAY.2021 13:43:41

1.4M, QPSK, High Channel
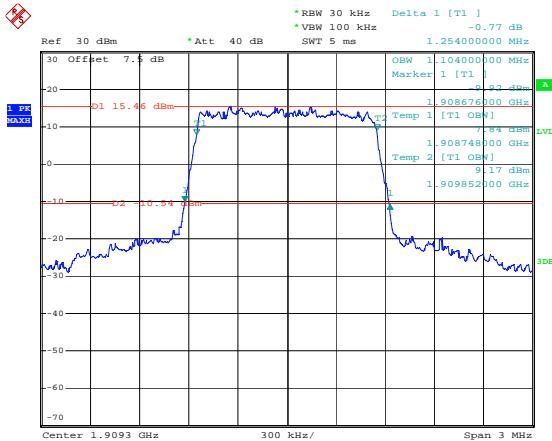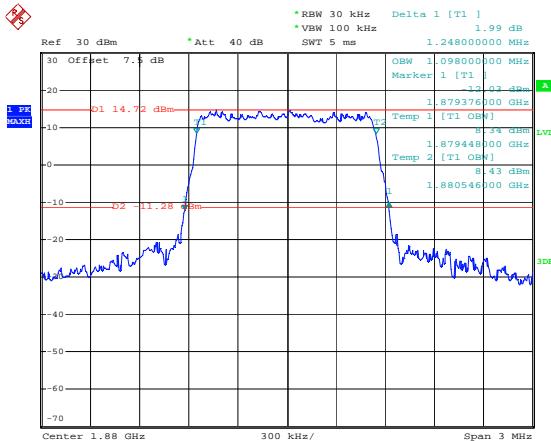
Date: 27.MAY.2021 13:44:01

1.4M, 16QAM, High Channel
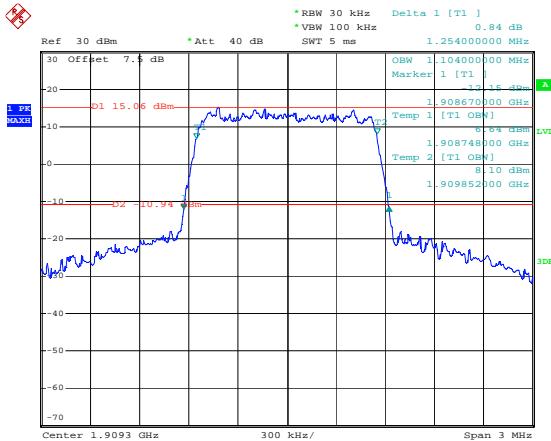
Date: 27.MAY.2021 13:44:20

3M, QPSK, Low Channel
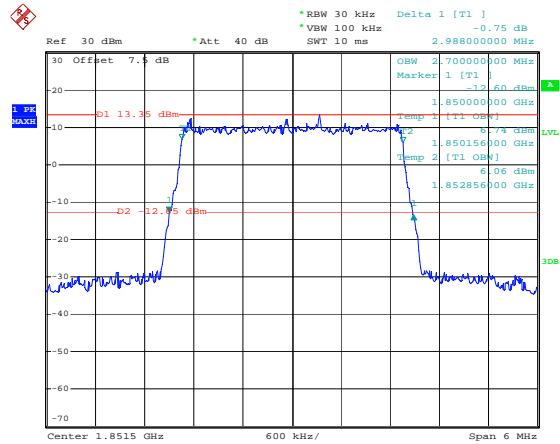
Date: 27.MAY.2021 13:44:40

3M, 16QAM, Low Channel
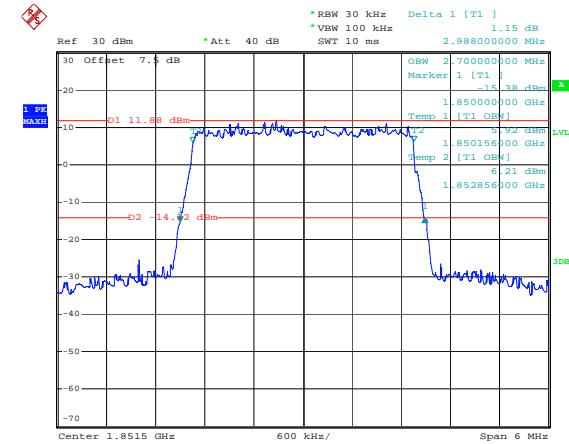
Date: 27.MAY.2021 13:44:59

3M, QPSK, Middle Channel
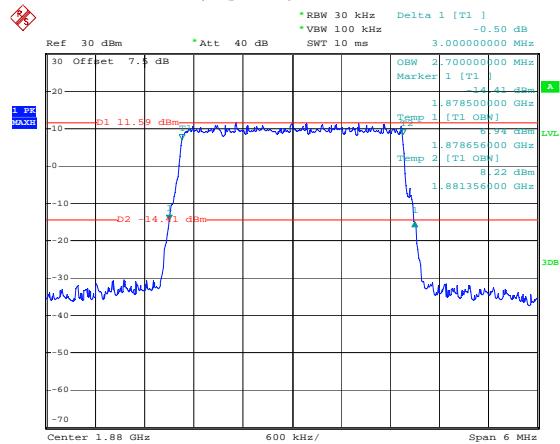
Date: 27.MAY.2021 13:45:20

3M, 16QAM, Middle Channel
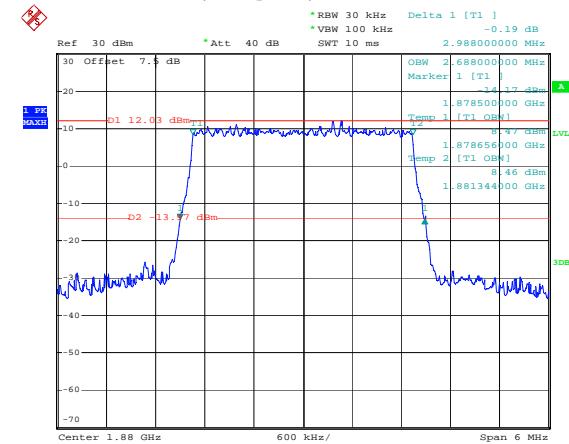
Date: 27.MAY.2021 13:45:39

3M, QPSK, High Channel
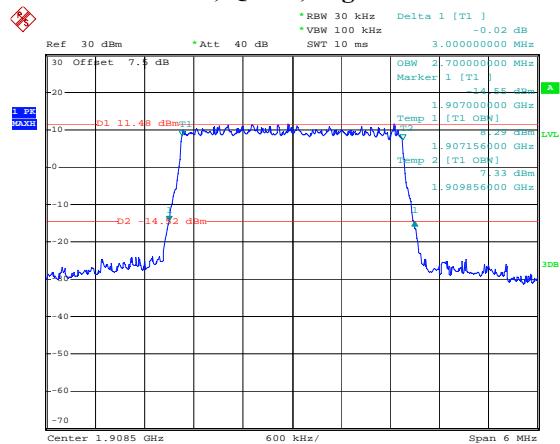
Date: 27.MAY.2021 13:46:00

3M, 16QAM, High Channel
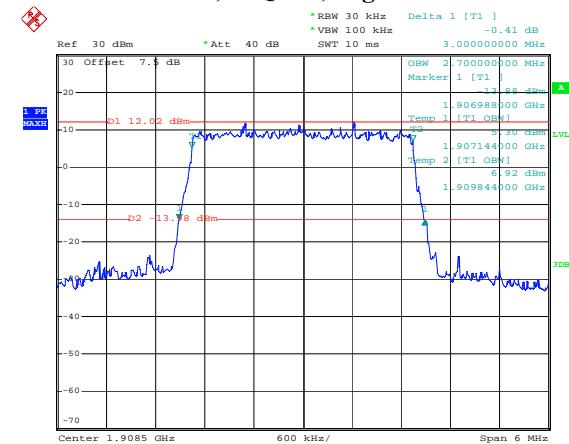
Date: 27.MAY.2021 13:46:19

5M, QPSK, Low Channel
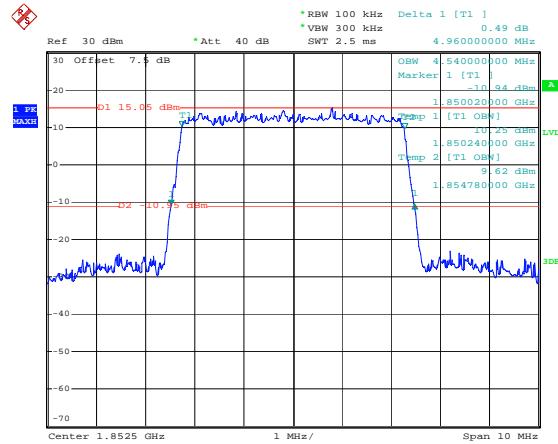
Date: 27.MAY.2021 13:46:42

5M, 16QAM, Low Channel
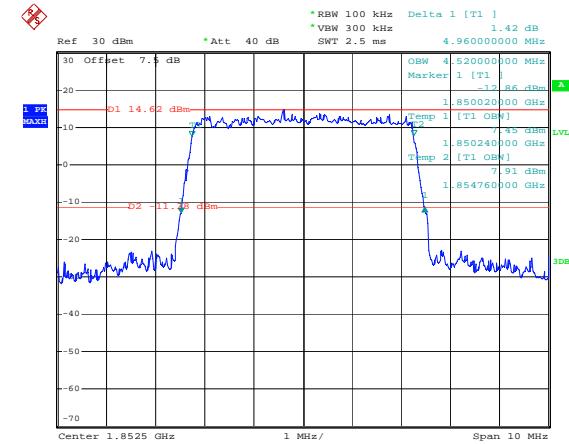
Date: 27.MAY.2021 13:47:05

5M, QPSK, Middle Channel
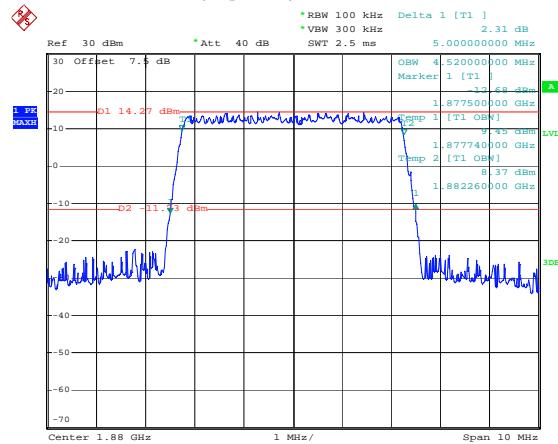
Date: 27.MAY.2021 13:47:29

5M, 16QAM, Middle Channel
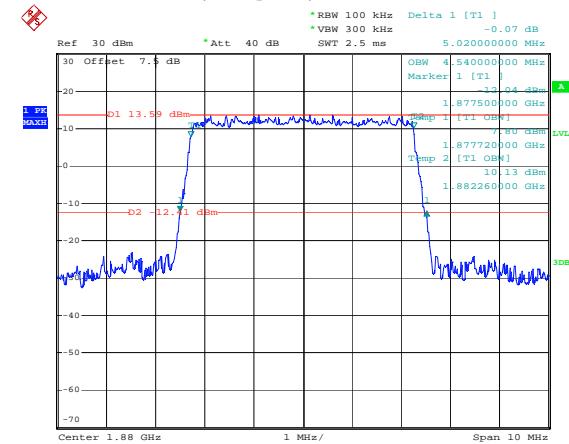
Date: 27.MAY.2021 13:47:51

5M, QPSK, High Channel
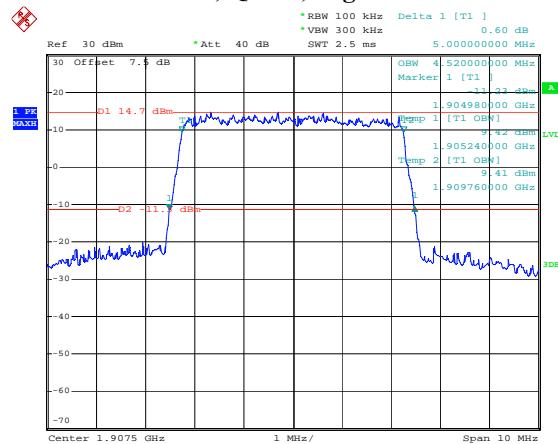
Date: 27.MAY.2021 13:48:15

5M, 16QAM, High Channel
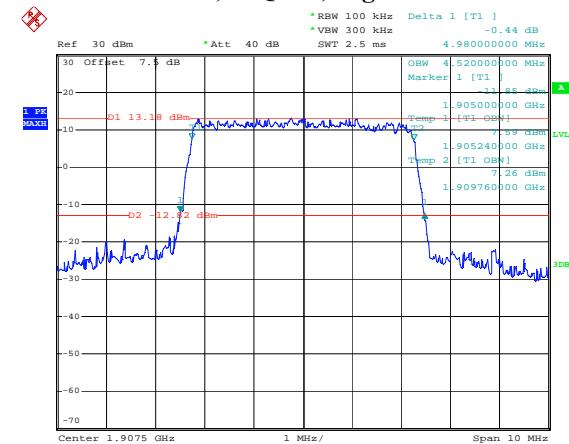
Date: 27.MAY.2021 13:48:34

10M, QPSK, Low Channel
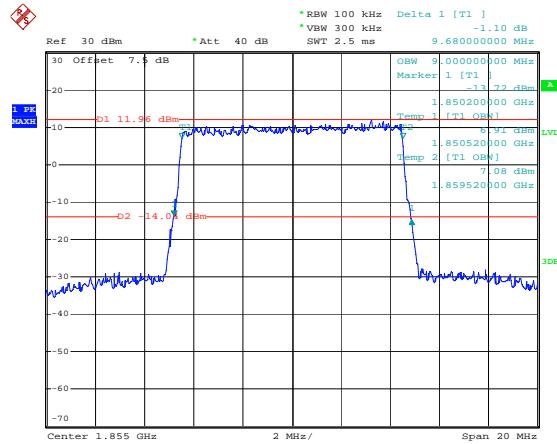
Date: 27.MAY.2021 13:48:58

10M, 16QAM, Low Channel
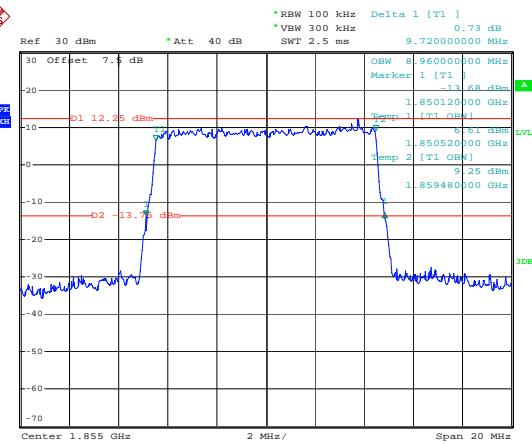
Date: 27.MAY.2021 13:49:19

10M, QPSK, Middle Channel
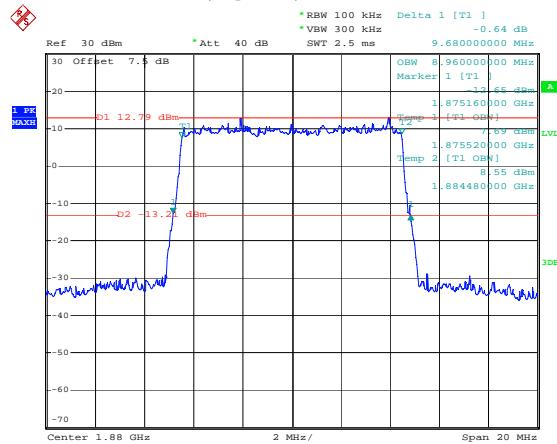
Date: 27.MAY.2021 13:49:40

10M, 16QAM, Middle Channel
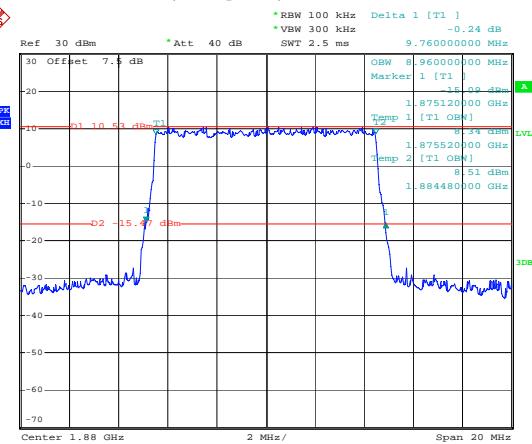
Date: 27.MAY.2021 13:50:01

10M, QPSK, High Channel
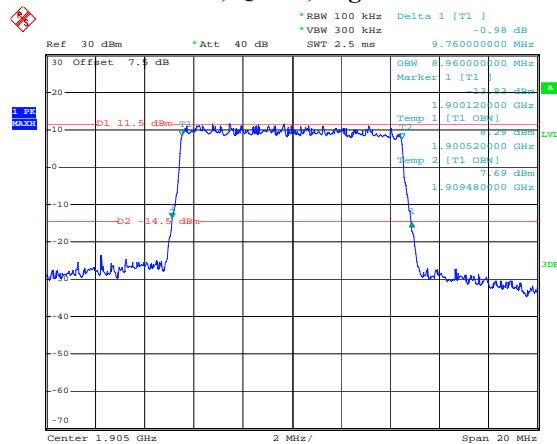
Date: 27.MAY.2021 13:50:23

10M, 16QAM, High Channel
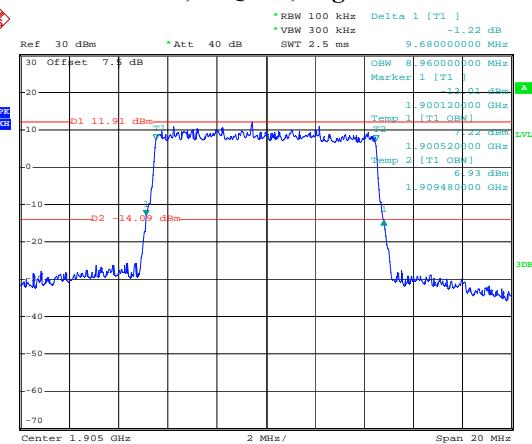
Date: 27.MAY.2021 13:50:40

15M, QPSK, Low Channel
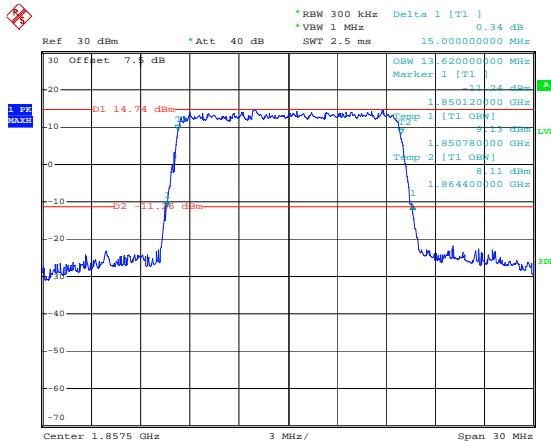
Date: 27.MAY.2021 13:51:07

15M, 16QAM, Low Channel
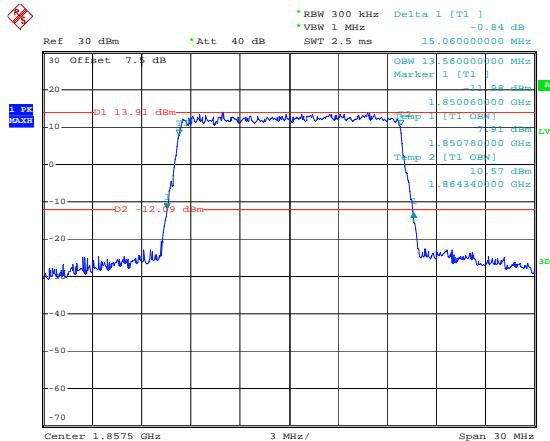
Date: 27.MAY.2021 13:51:30

15M, QPSK, Middle Channel
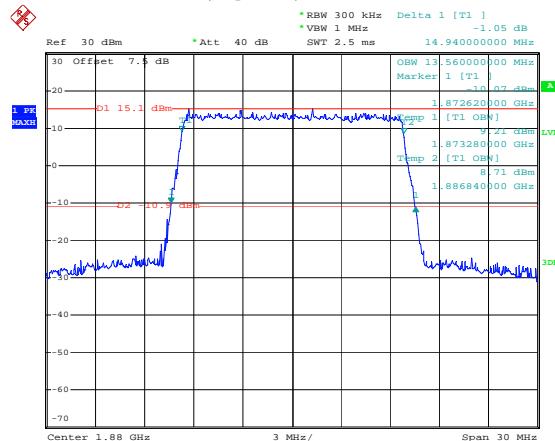
Date: 27.MAY.2021 13:51:53

15M, 16QAM, Middle Channel
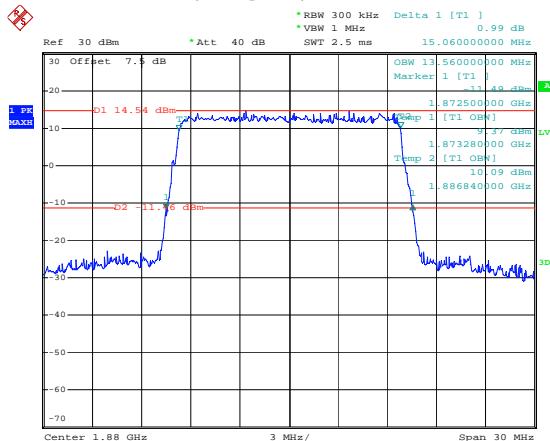
Date: 27.MAY.2021 13:52:16

15M, QPSK, High Channel
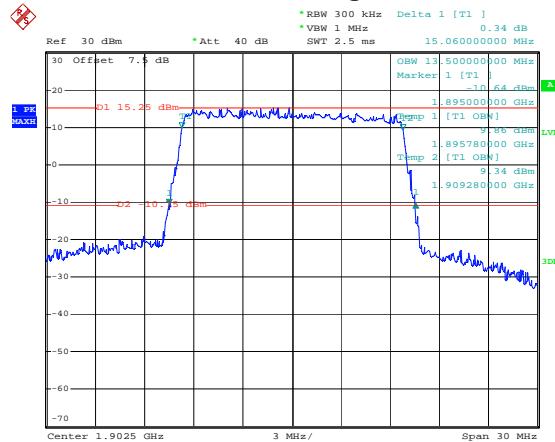
Date: 27.MAY.2021 13:52:40

15M, 16QAM, High Channel
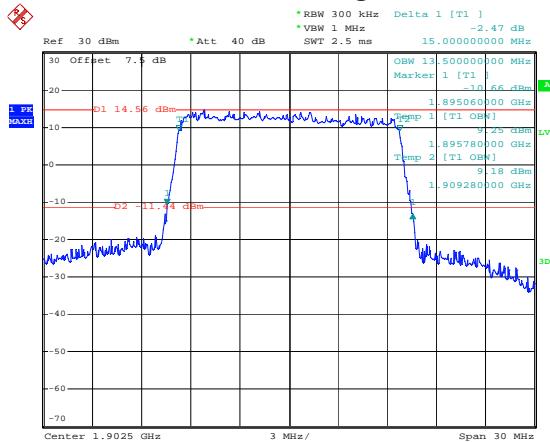
Date: 27.MAY.2021 13:53:03

20M, QPSK, Low Channel
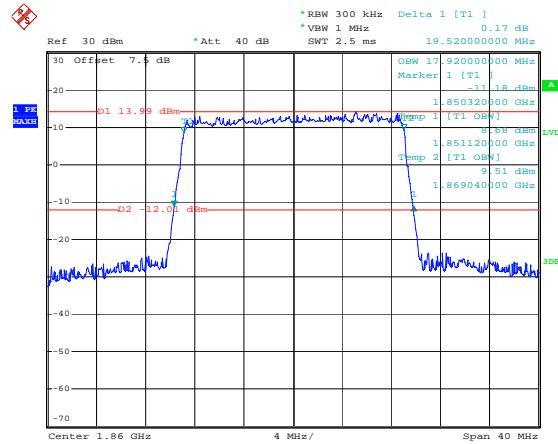
Date: 27.MAY.2021 13:53:33

20M, 16QAM, Low Channel
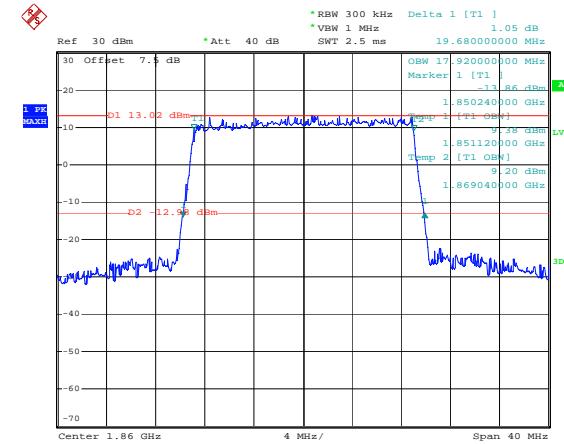
Date: 27.MAY.2021 13:53:56

20M, QPSK, Middle Channel
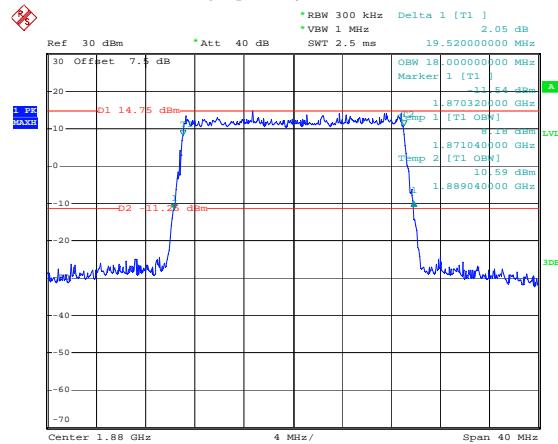
Date: 27.MAY.2021 13:54:16

20M, 16QAM, Middle Channel
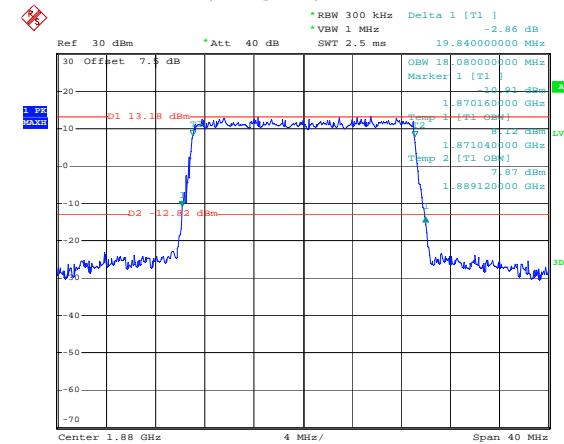
Date: 27.MAY.2021 13:54:39

20M, QPSK, High Channel
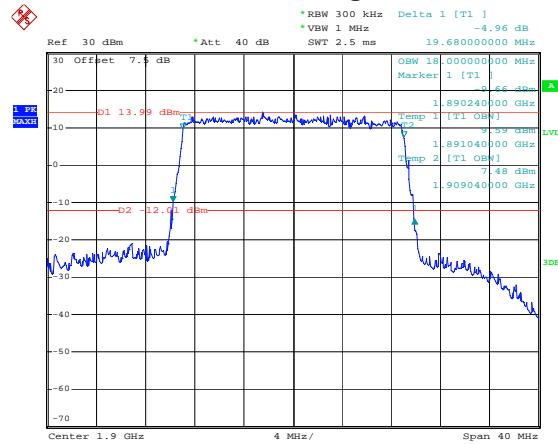
Date: 27.MAY.2021 13:55:03

20M, 16QAM, High Channel
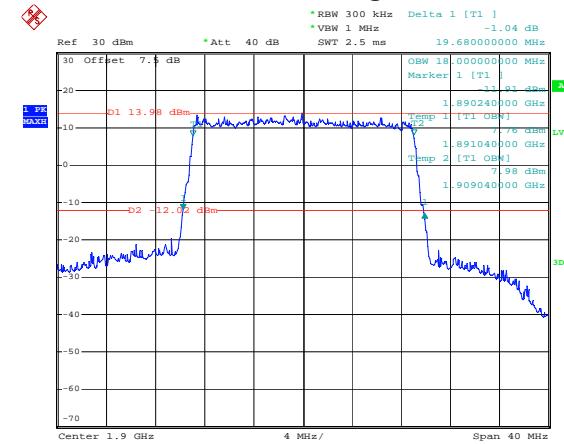
Date: 27.MAY.2021 13:55:29

LTE Band 4

1.4M, QPSK, Low Channel
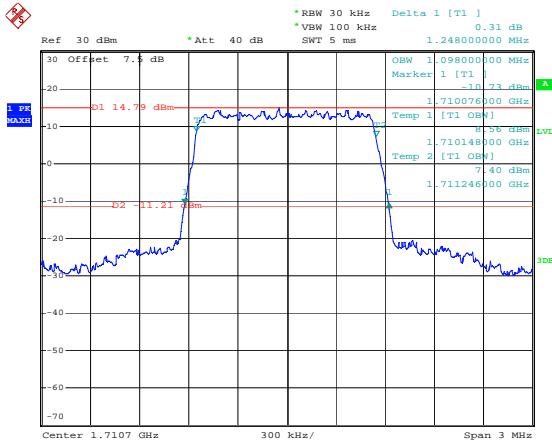
Date: 27.MAY.2021 13:55:57

1.4M, 16QAM, Low Channel
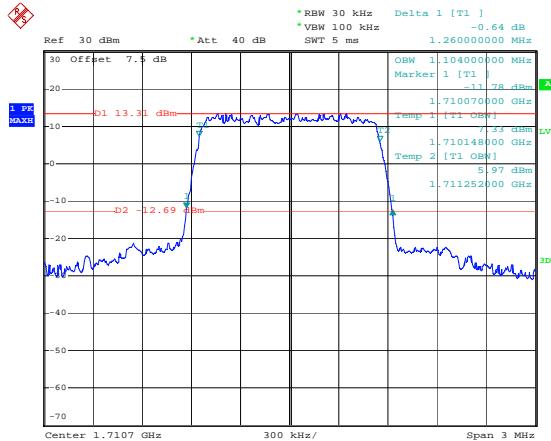
Date: 27.MAY.2021 13:56:16

1.4M, QPSK, Middle Channel
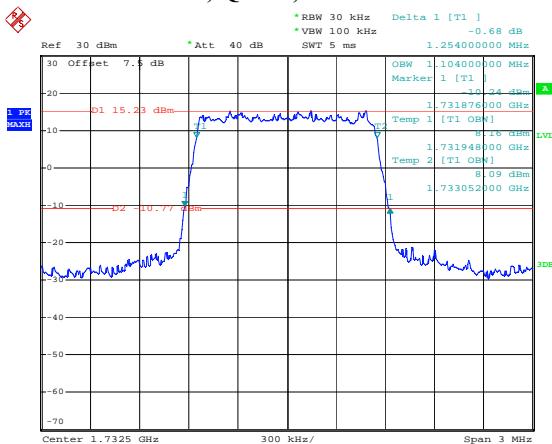
Date: 27.MAY.2021 13:56:40

1.4M, 16QAM, Middle Channel
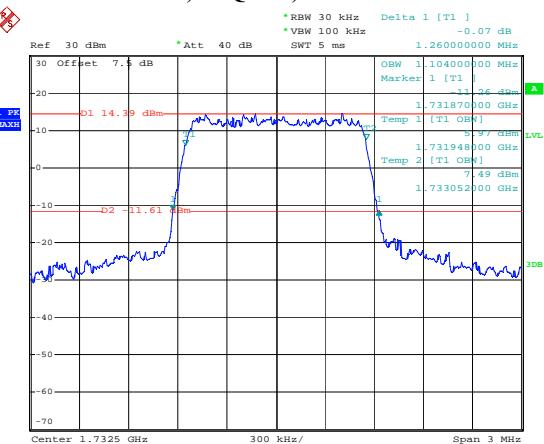
Date: 27.MAY.2021 13:57:00

1.4M, QPSK, High Channel
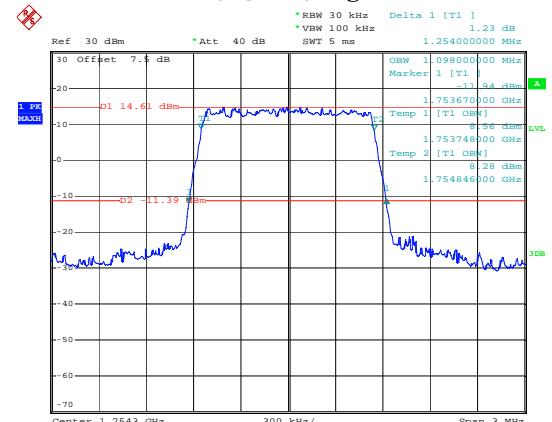
Date: 27.MAY.2021 13:57:23

1.4M, 16QAM, High Channel
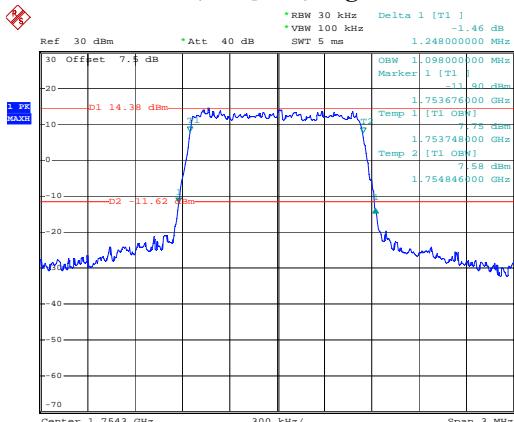
Date: 27.MAY.2021 13:57:40

3M, QPSK, Low Channel
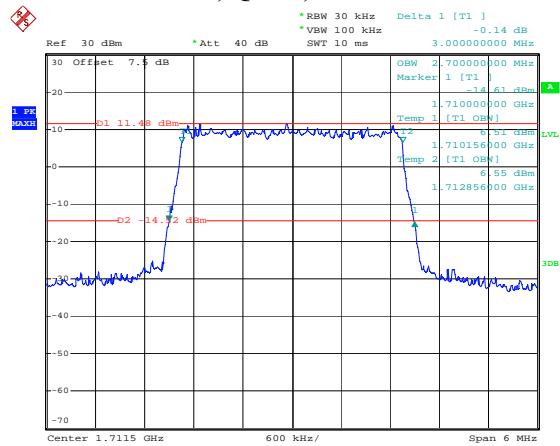
Date: 27.MAY.2021 13:58:04

3M, 16QAM, Low Channel

Date: 27.MAY.2021 13:58:24

3M, QPSK, Middle Channel

Date: 27.MAY.2021 13:58:41

3M, 16QAM, Middle Channel
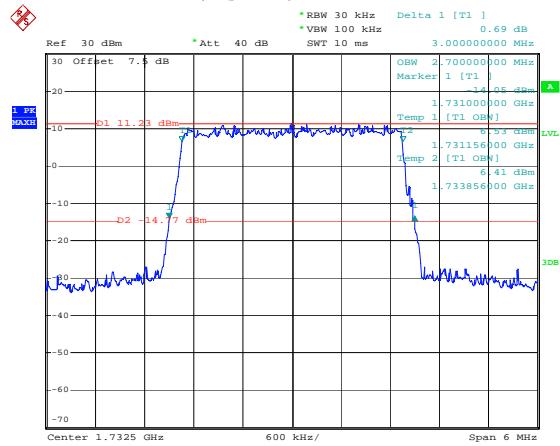
Date: 27.MAY.2021 13:59:00

3M, QPSK, High Channel
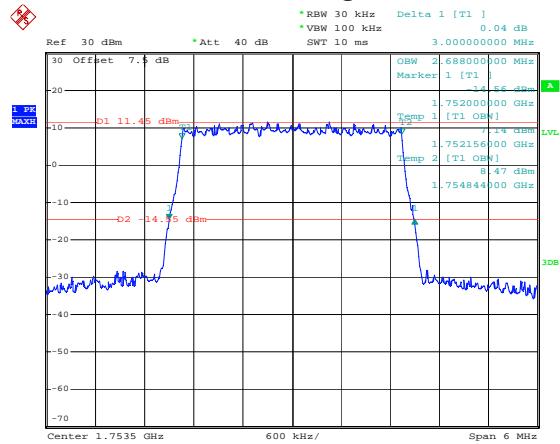
Date: 27.MAY.2021 13:59:17

3M, 16QAM, High Channel
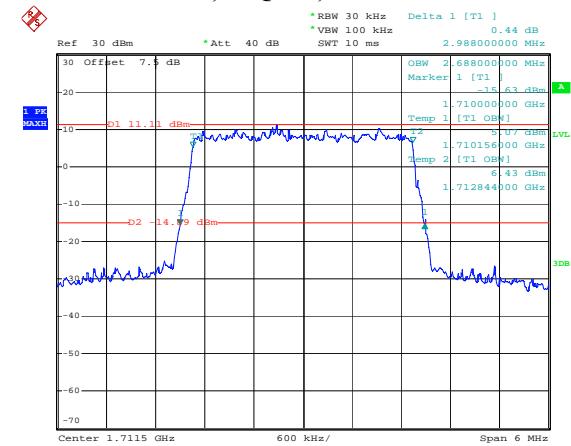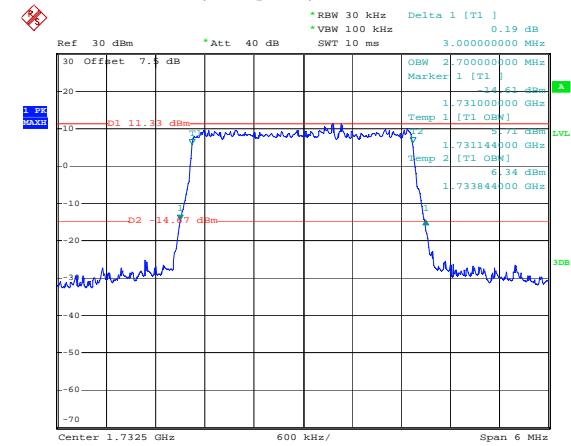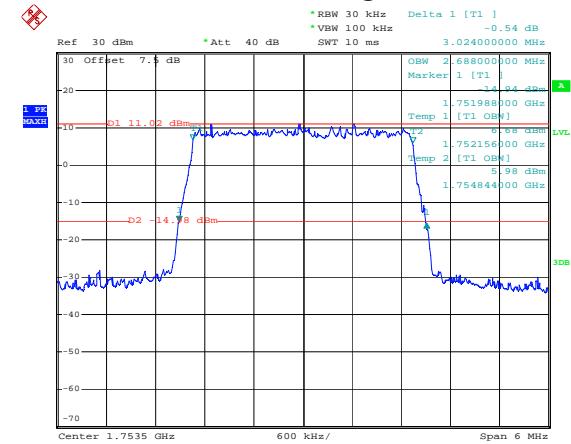
Date: 27.MAY.2021 13:59:37

5M, QPSK, Low Channel
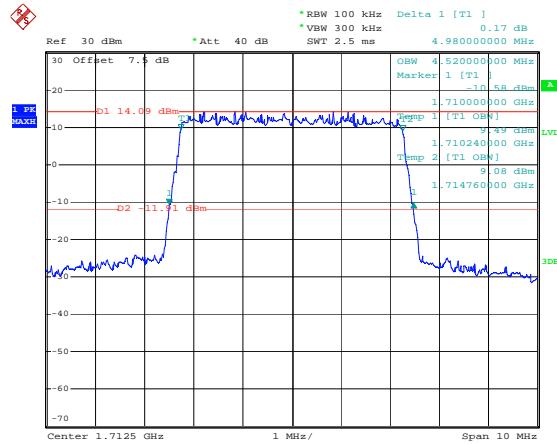
Date: 27.MAY.2021 14:00:04

5M, 16QAM, Low Channel
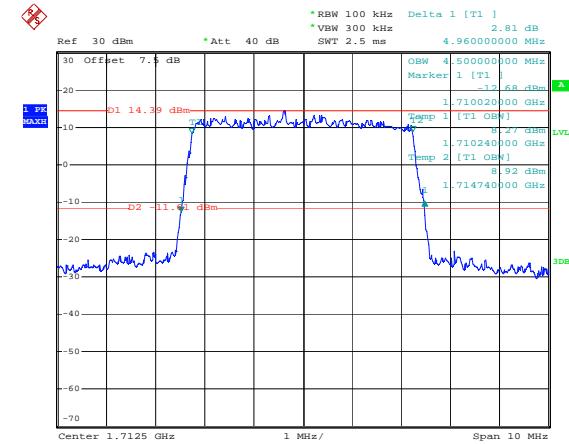
Date: 27.MAY.2021 14:00:23

5M, QPSK, Middle Channel
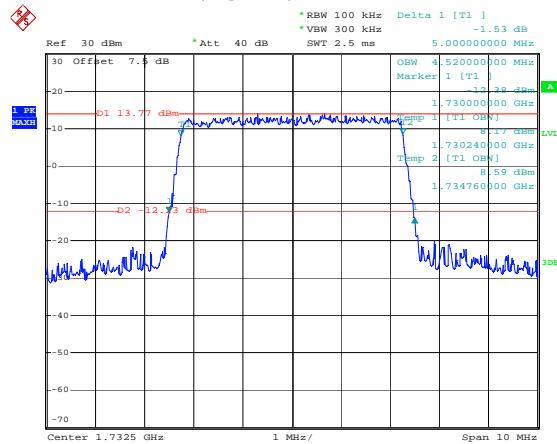
Date: 27.MAY.2021 14:00:43

5M, 16QAM, Middle Channel
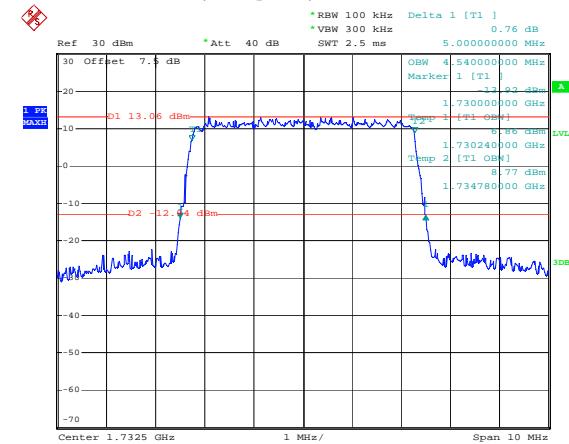
Date: 27.MAY.2021 14:01:03

5M, QPSK, High Channel
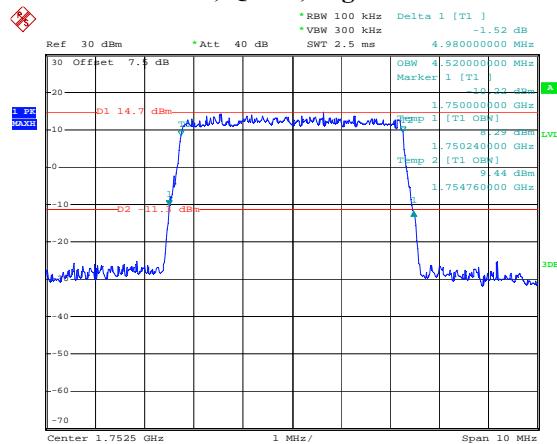
Date: 27.MAY.2021 14:01:20

5M, 16QAM, High Channel
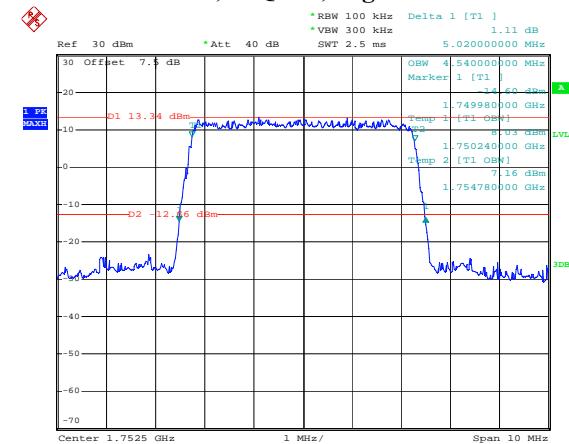
Date: 27.MAY.2021 14:01:40

10M, QPSK, Low Channel
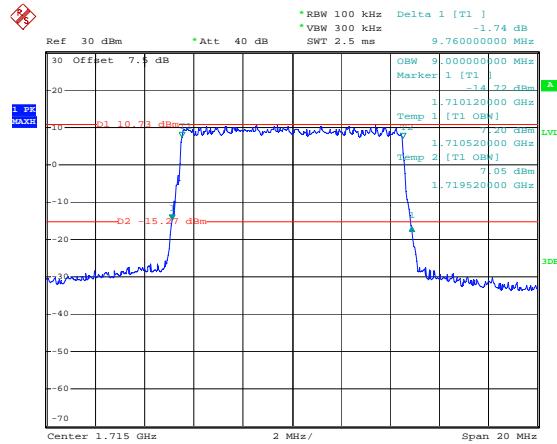
Date: 27.MAY.2021 14:02:04

10M, 16QAM, Low Channel
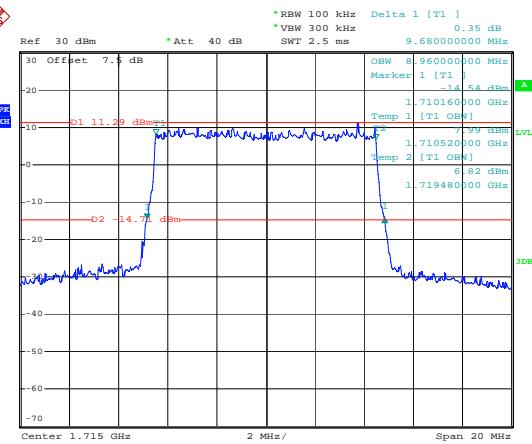
Date: 27.MAY.2021 14:02:22

10M, QPSK, Middle Channel
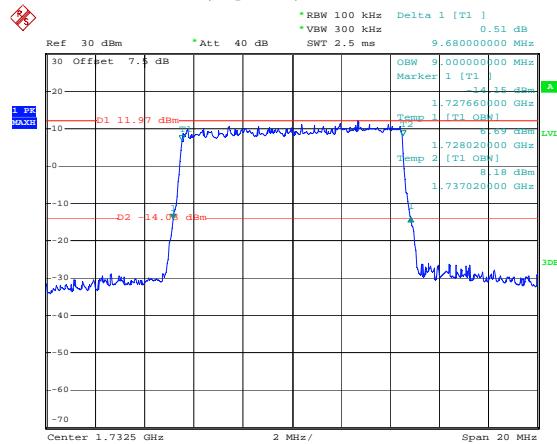
Date: 27.MAY.2021 14:02:43

10M, 16QAM, Middle Channel
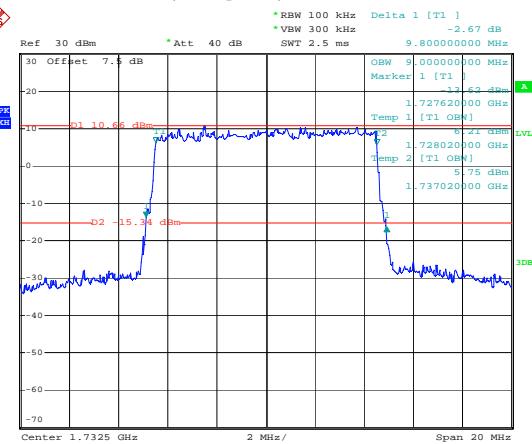
Date: 27.MAY.2021 14:03:04

10M, QPSK, High Channel
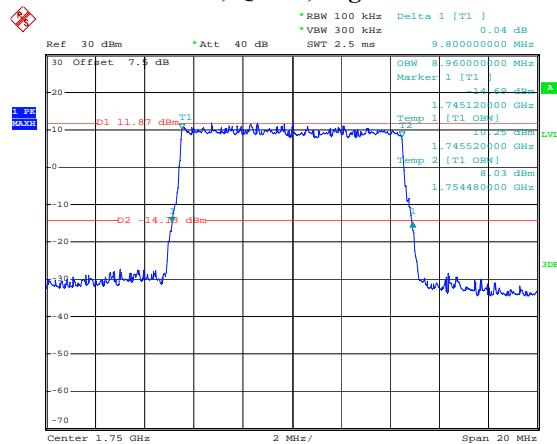
Date: 27.MAY.2021 14:03:26

10M, 16QAM, High Channel
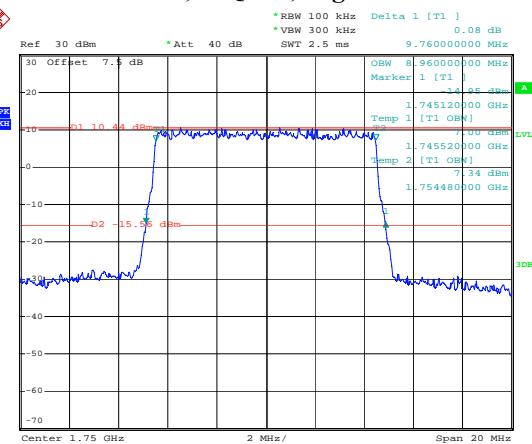
Date: 27.MAY.2021 14:03:49

15M, QPSK, Low Channel
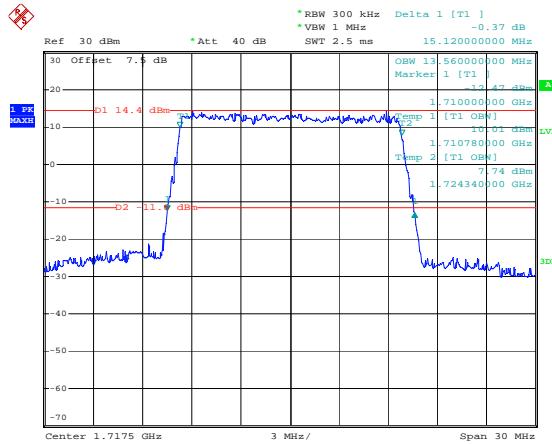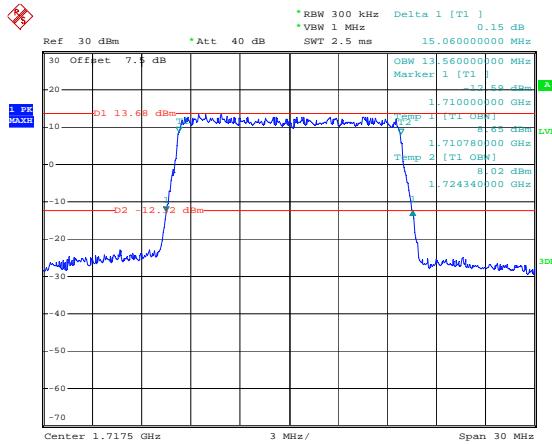
Date: 27.MAY.2021 14:04:13

15M, 16QAM, Low Channel

Date: 27.MAY.2021 14:04:33

15M, QPSK, Middle Channel
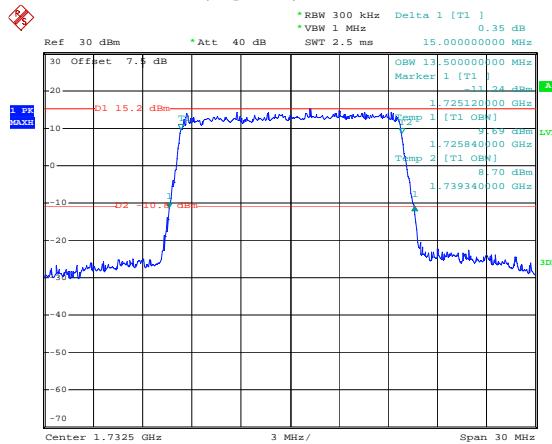
Date: 27.MAY.2021 14:04:57
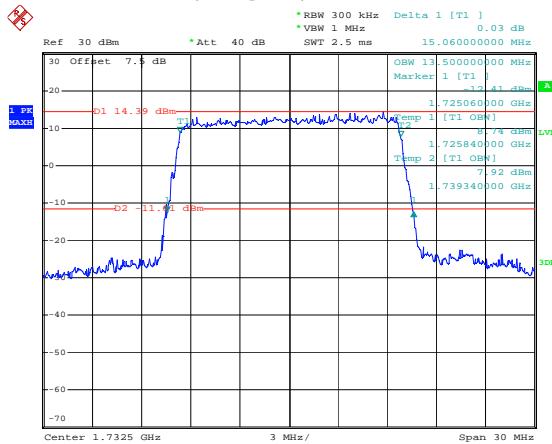
15M, 16QAM, Middle Channel

Date: 27.MAY.2021 14:05:20
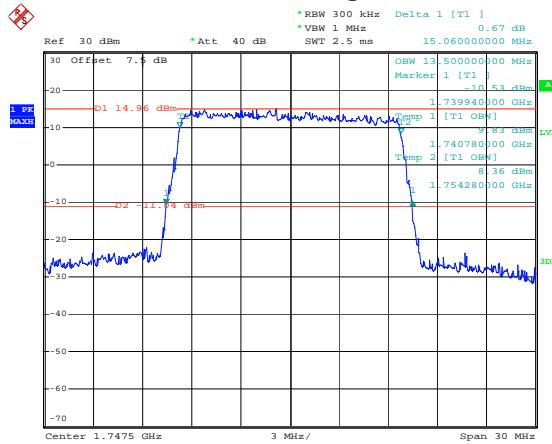
15M, QPSK, High Channel
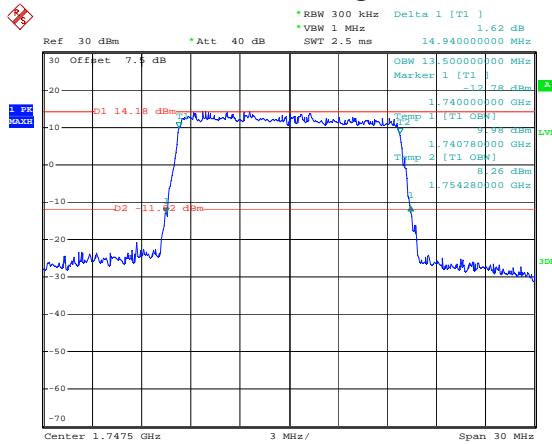
Date: 27.MAY.2021 14:05:40

15M, 16QAM, High Channel

Date: 27.MAY.2021 14:06:03

20M, QPSK, Low Channel
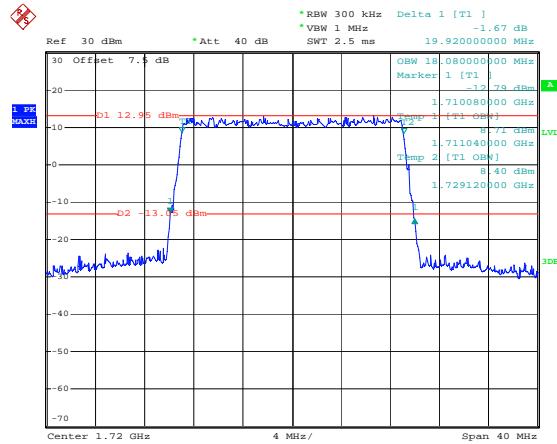
Date: 27.MAY.2021 14:06:57

20M, 16QAM, Low Channel
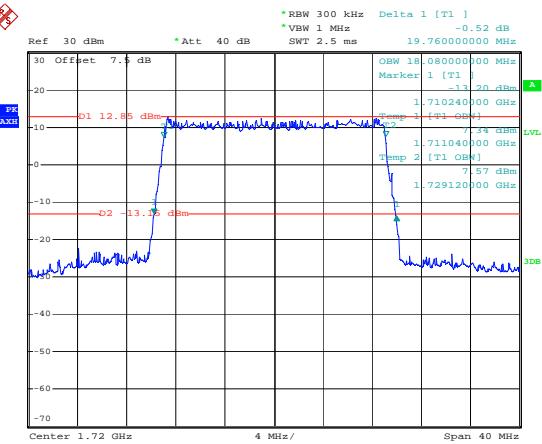
Date: 27.MAY.2021 14:07:20

20M, QPSK, Middle Channel
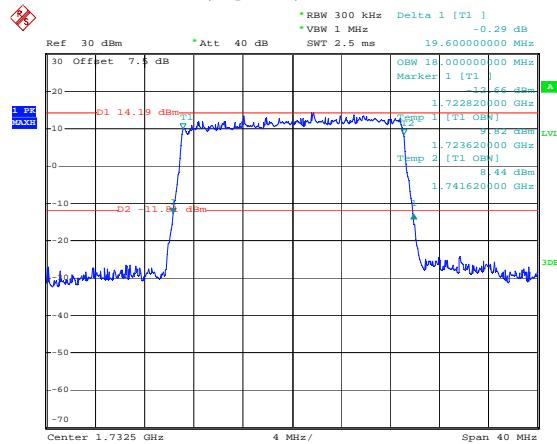
Date: 27.MAY.2021 14:07:44

20M, 16QAM, Middle Channel
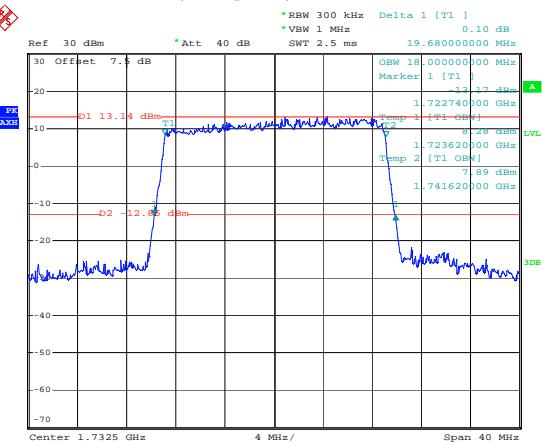
Date: 27.MAY.2021 14:08:07

20M, QPSK, High Channel
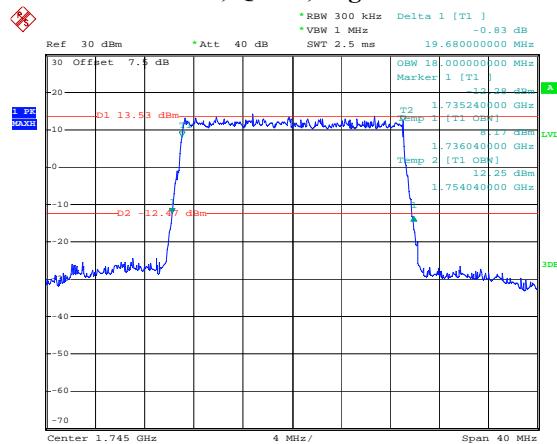
Date: 27.MAY.2021 14:08:31

20M, 16QAM, High Channel
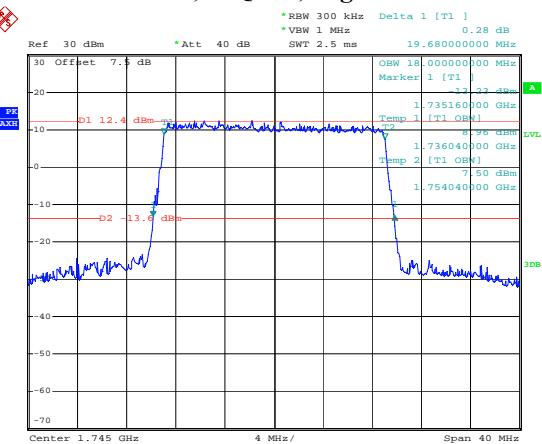
Date: 27.MAY.2021 14:08:53

LTE Band 7

5M, QPSK, Low Channel
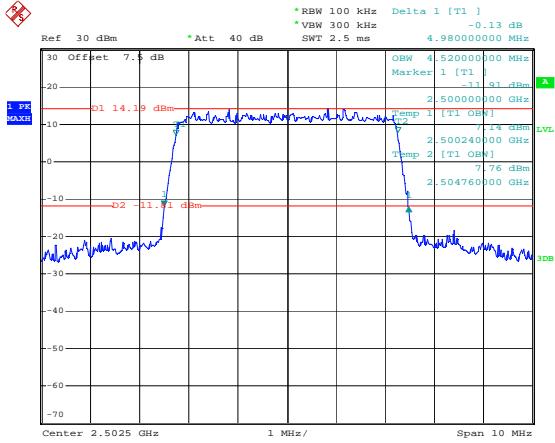
Date: 27.MAY.2021 14:09:18

5M, 16QAM, Low Channel
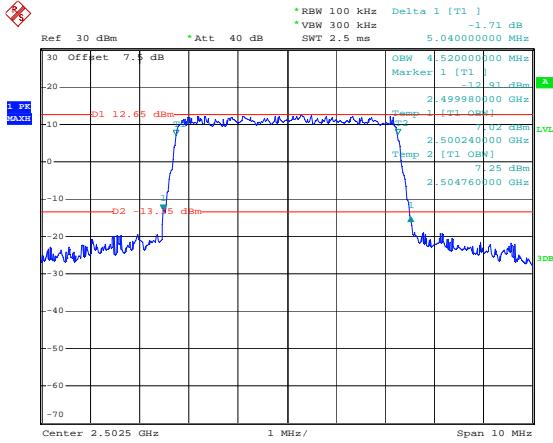
Date: 27.MAY.2021 14:09:38

5M, QPSK, Middle Channel
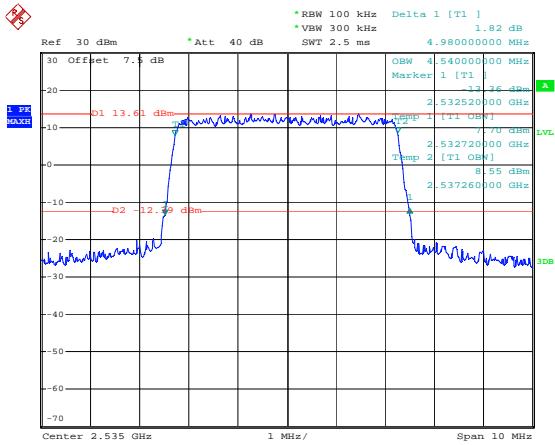
Date: 27.MAY.2021 14:10:02

5M, 16QAM, Middle Channel
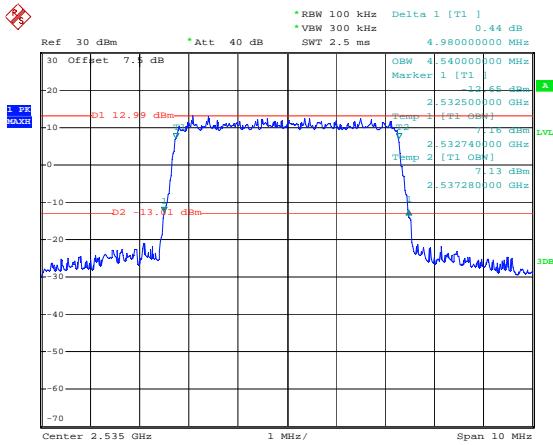
Date: 27.MAY.2021 14:10:21

5M, QPSK, High Channel
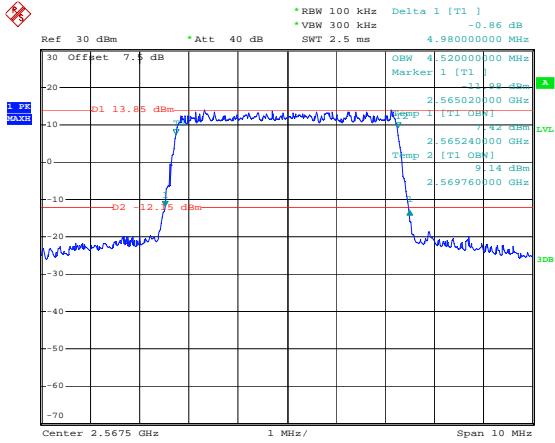
Date: 27.MAY.2021 14:10:41

5M, 16QAM, High Channel
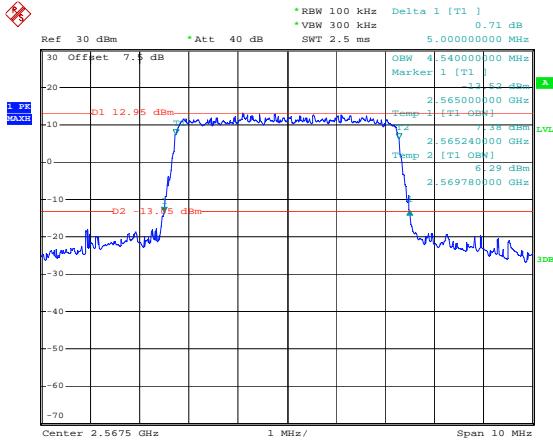
Date: 27.MAY.2021 14:11:01

10M, QPSK, Low Channel
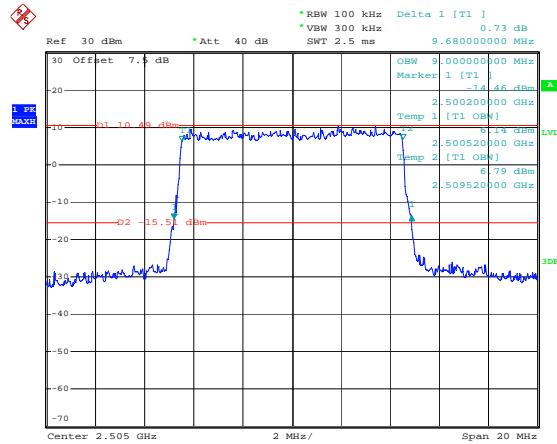
Date: 27.MAY.2021 14:11:23

10M, 16QAM, Low Channel
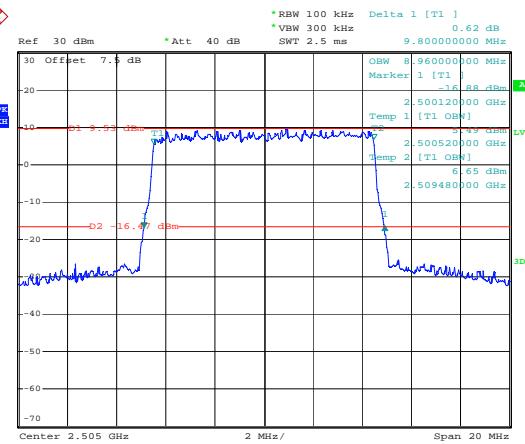
Date: 27.MAY.2021 14:11:47

10M, QPSK, Middle Channel
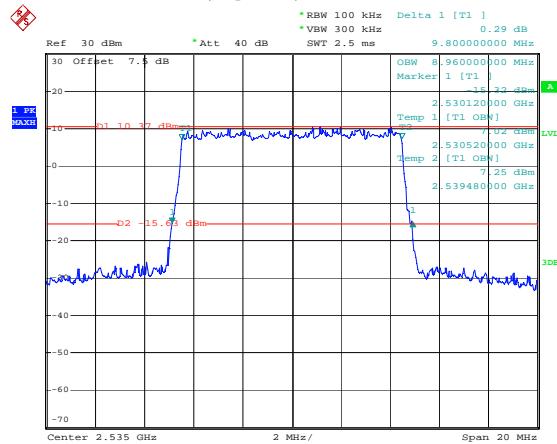
Date: 27.MAY.2021 14:12:09

10M, 16QAM, Middle Channel
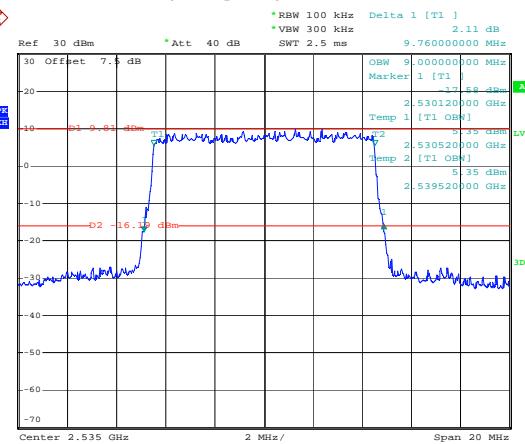
Date: 27.MAY.2021 14:12:30

10M, QPSK, High Channel
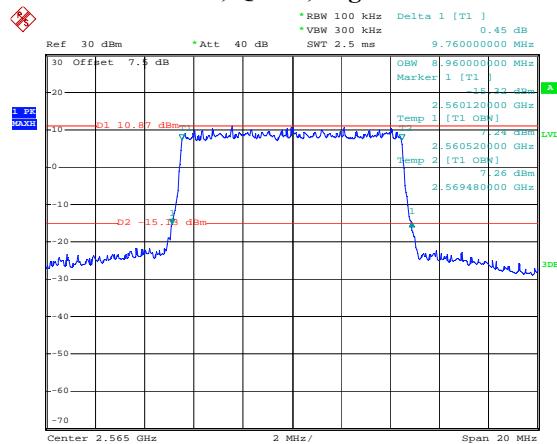
Date: 27.MAY.2021 14:12:52

10M, 16QAM, High Channel
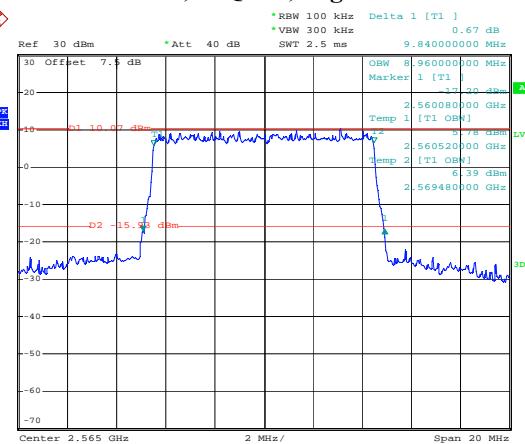
Date: 27.MAY.2021 14:13:12

15M, QPSK, Low Channel
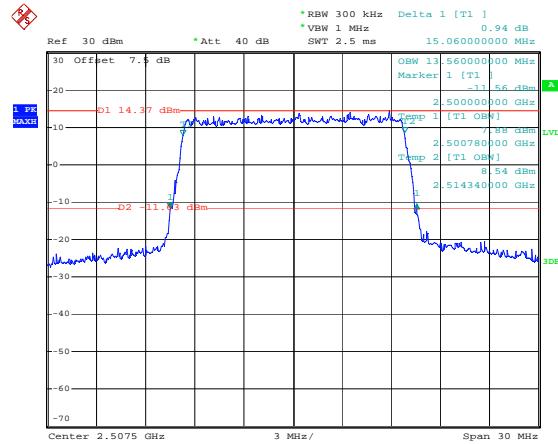
Date: 27.MAY.2021 14:13:40

15M, 16QAM, Low Channel
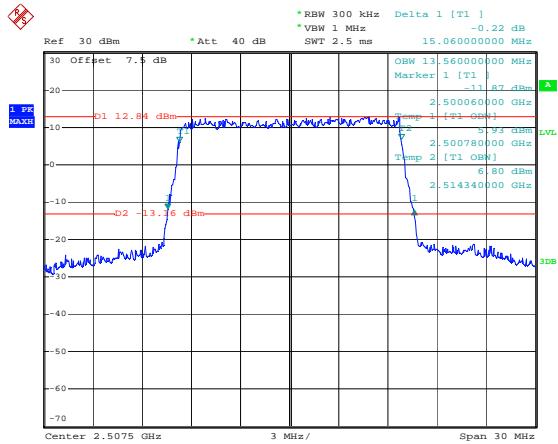
Date: 27.MAY.2021 14:14:02

15M, QPSK, Middle Channel
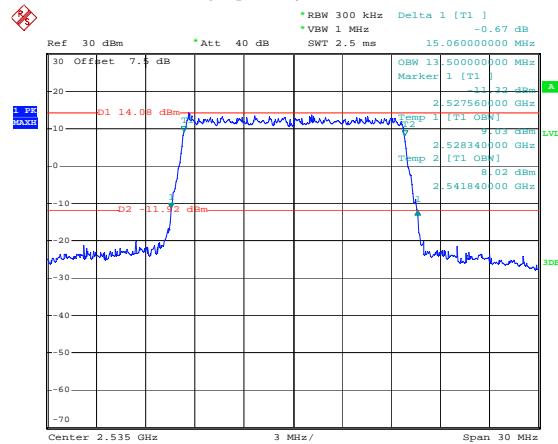
Date: 27.MAY.2021 14:14:26

15M, 16QAM, Middle Channel
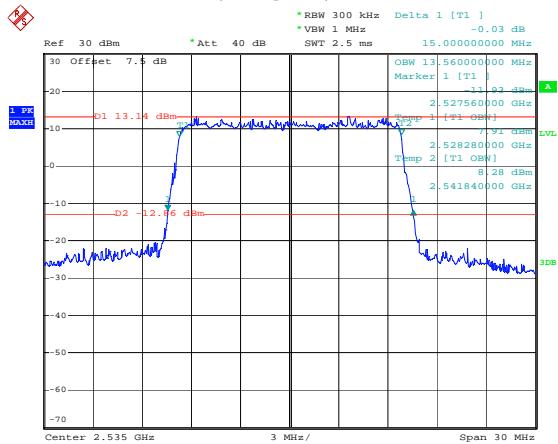
Date: 27.MAY.2021 14:14:49

15M, QPSK, High Channel
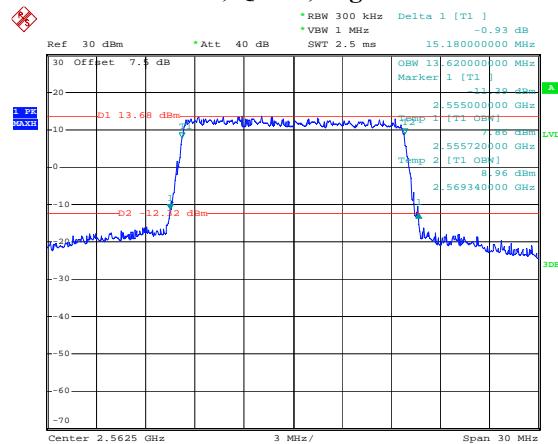
Date: 27.MAY.2021 14:15:10

15M, 16QAM, High Channel
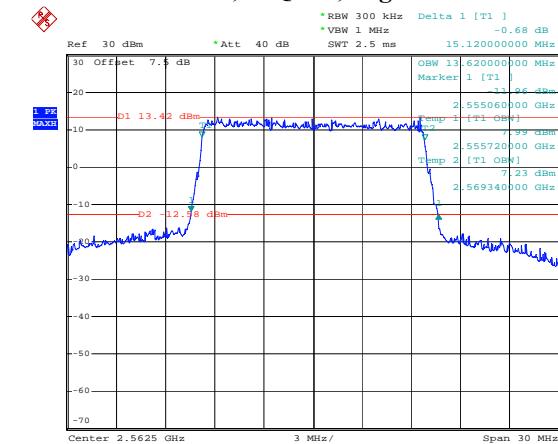
Date: 27.MAY.2021 14:15:33

20M, QPSK, Low Channel
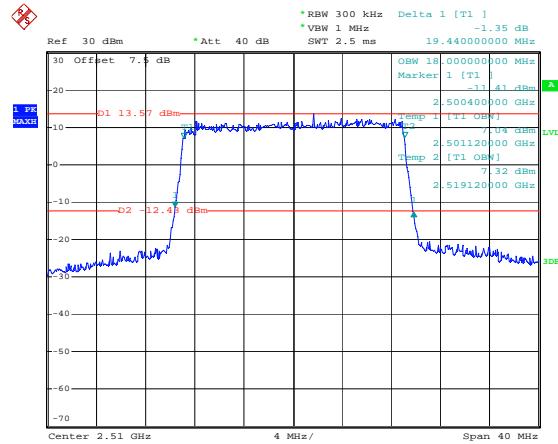
Date: 27.MAY.2021 14:15:57

20M, 16QAM, Low Channel
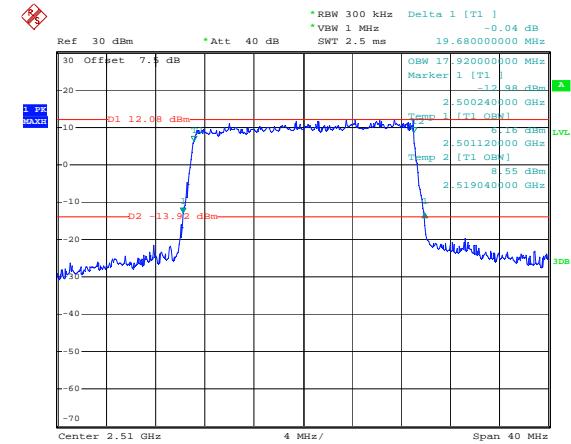
Date: 27.MAY.2021 14:16:20

20M, QPSK, Middle Channel
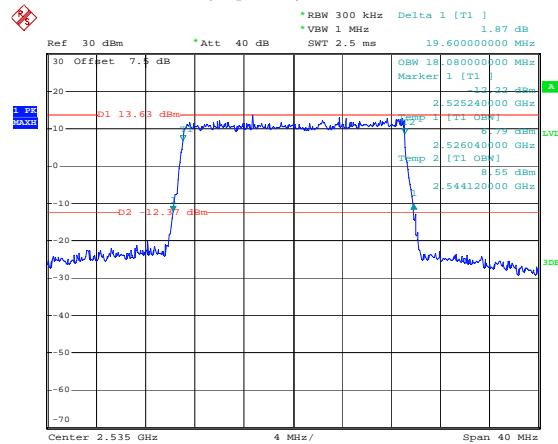
Date: 27.MAY.2021 14:16:44

20M, 16QAM, Middle Channel
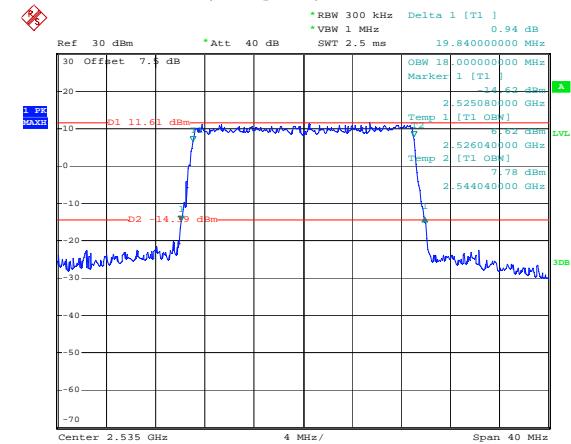
Date: 27.MAY.2021 14:17:07

20M, QPSK, High Channel
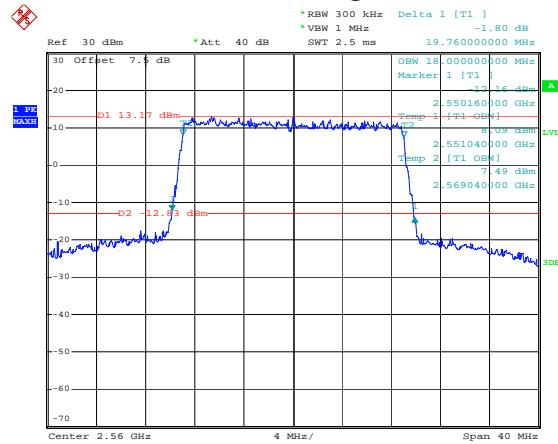
Date: 27.MAY.2021 14:17:31

20M, 16QAM, High Channel
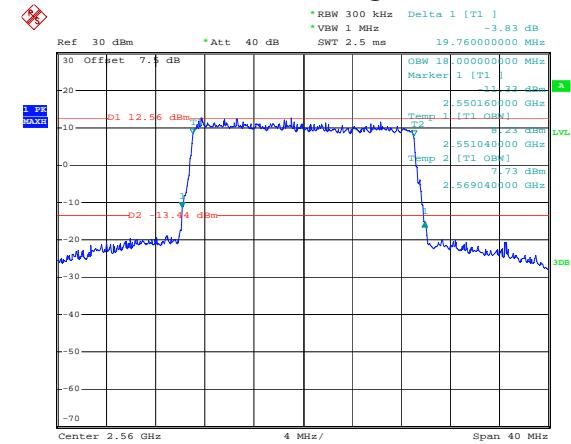
Date: 27.MAY.2021 14:17:54

LTE Band 12

1.4M, QPSK, Low Channel
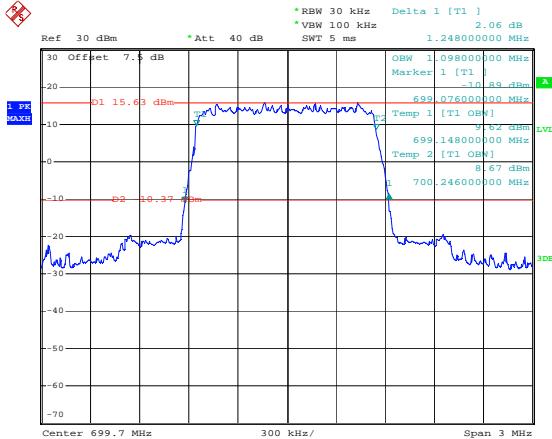
Date: 27.MAY.2021 14:18:17

1.4M, 16QAM, Low Channel
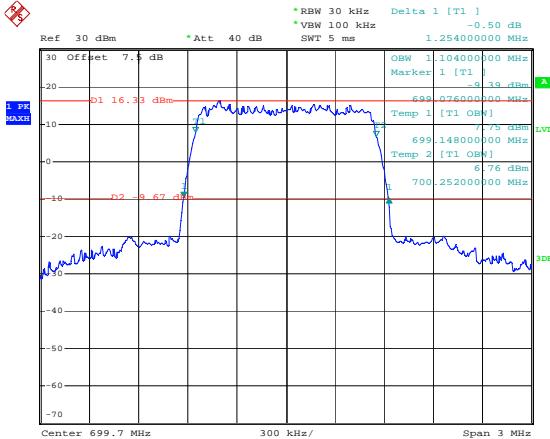
Date: 27.MAY.2021 14:18:37

1.4M, QPSK, Middle Channel
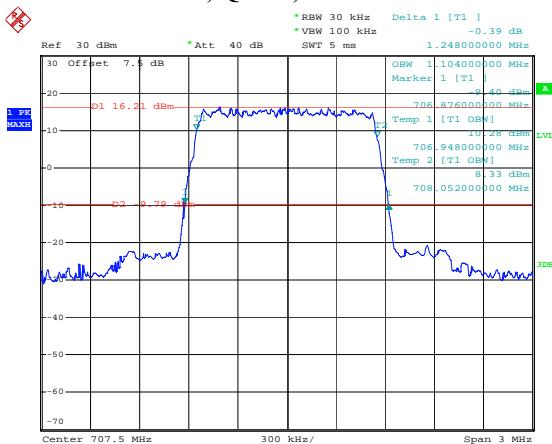
Date: 27.MAY.2021 14:18:58

1.4M, 16QAM, Middle Channel
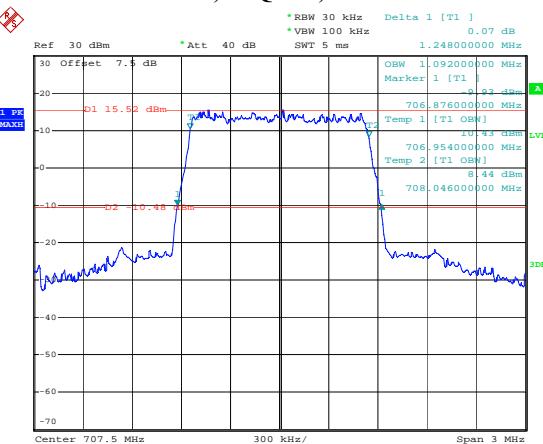
Date: 27.MAY.2021 14:19:15

1.4M, QPSK, High Channel
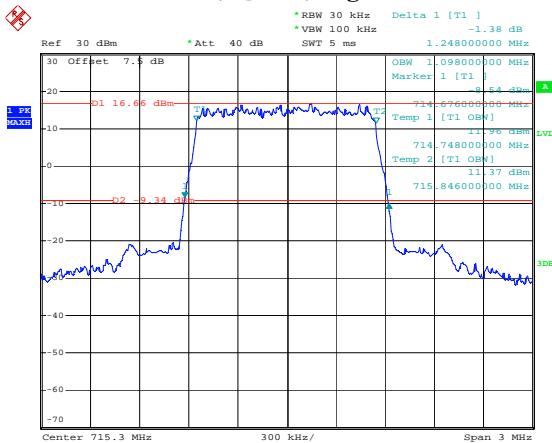
Date: 27.MAY.2021 14:19:33

1.4M, 16QAM, High Channel
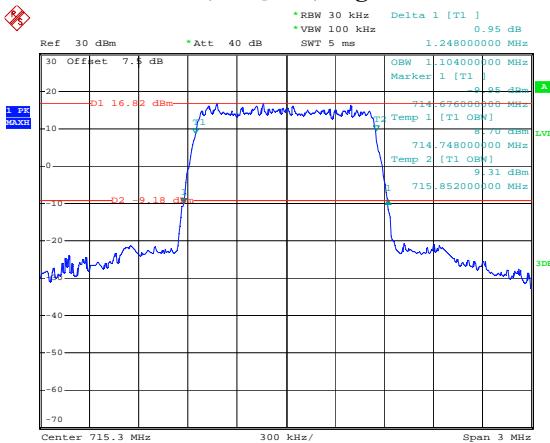
Date: 27.MAY.2021 14:19:52

3M, QPSK, Low Channel
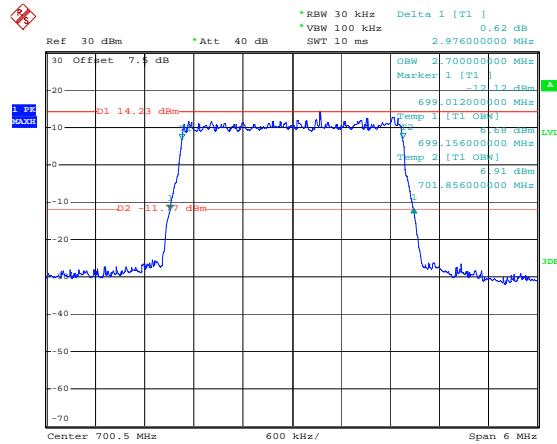
Date: 27.MAY.2021 14:20:16

3M, 16QAM, Low Channel
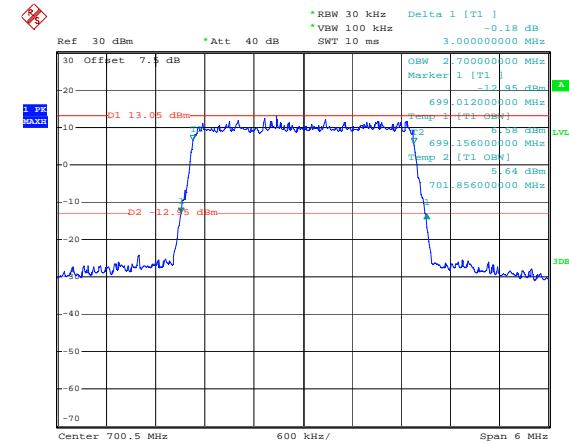
Date: 27.MAY.2021 14:20:35

3M, QPSK, Middle Channel
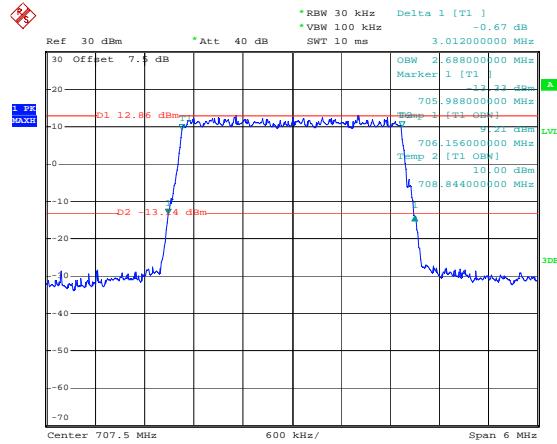
Date: 27.MAY.2021 14:20:59

3M, 16QAM, Middle Channel
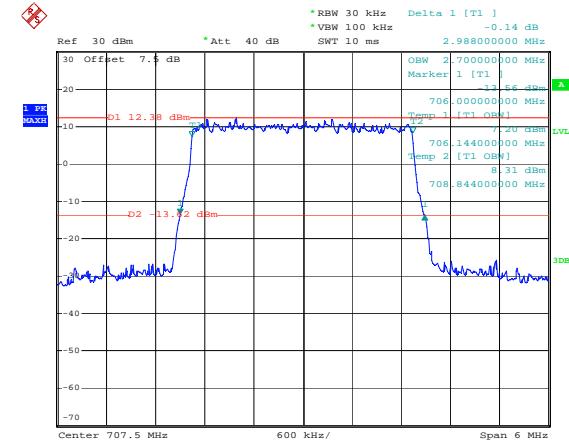
Date: 27.MAY.2021 14:21:19

3M, QPSK, High Channel
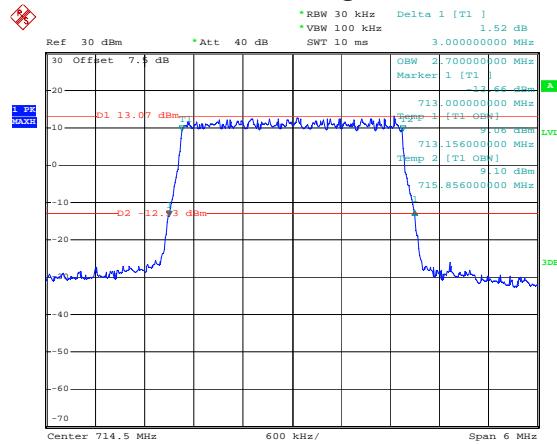
Date: 27.MAY.2021 14:21:40

3M, 16QAM, High Channel
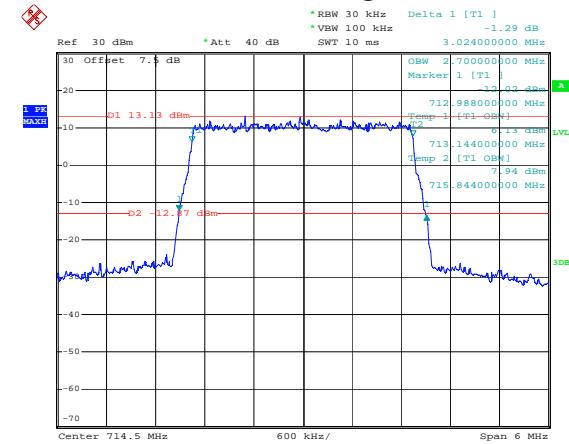
Date: 27.MAY.2021 14:22:00

5M, QPSK, Low Channel
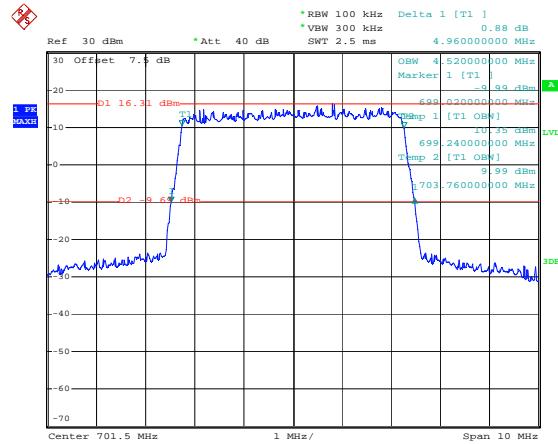
Date: 27.MAY.2021 14:22:24

5M, 16QAM, Low Channel
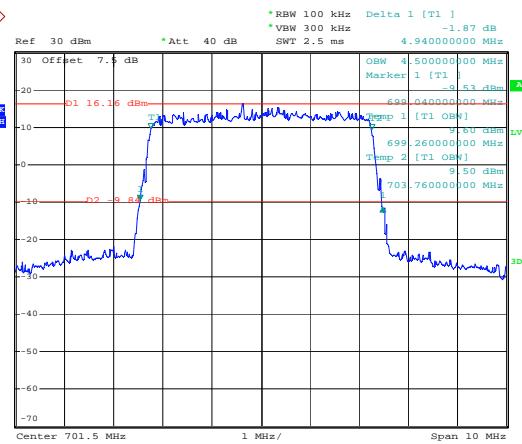
Date: 27.MAY.2021 14:22:44

5M, QPSK, Middle Channel
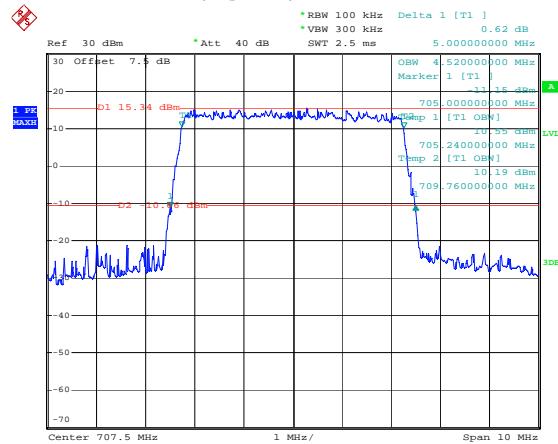
Date: 27.MAY.2021 14:23:05

5M, 16QAM, Middle Channel
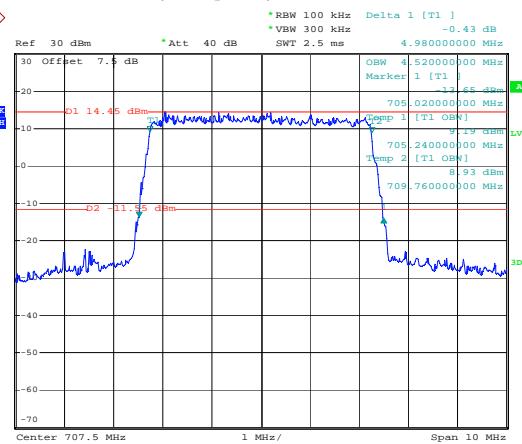
Date: 27.MAY.2021 14:23:22

5M, QPSK, High Channel
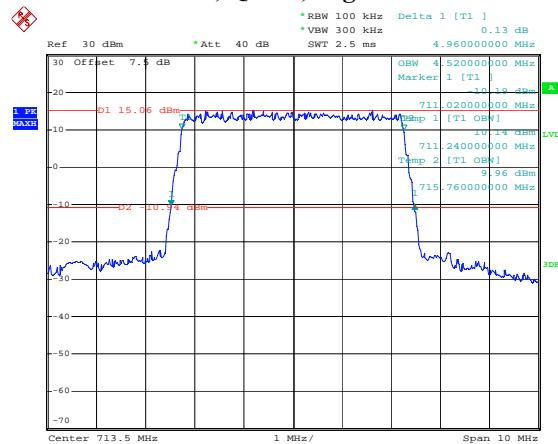
Date: 27.MAY.2021 14:23:43

5M, 16QAM, High Channel
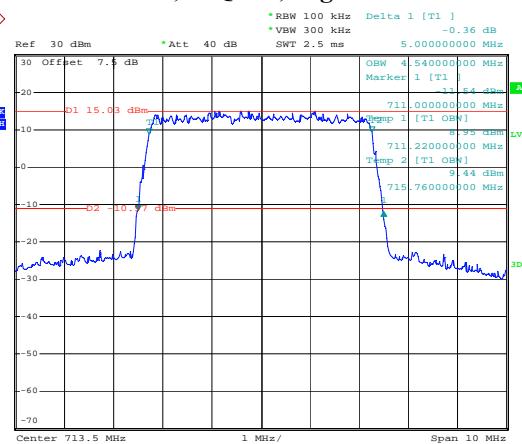
Date: 27.MAY.2021 14:24:03

10M, QPSK, Low Channel
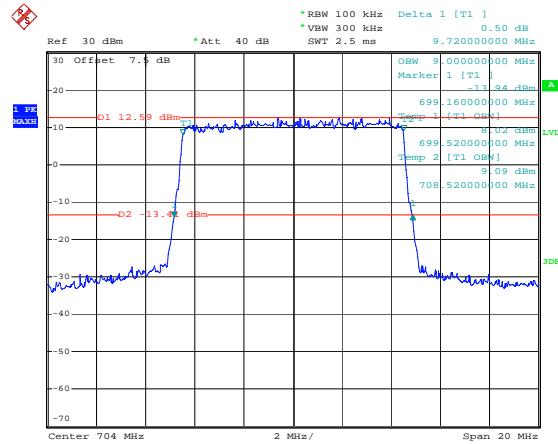
Date: 27.MAY.2021 14:24:28

10M, 16QAM, Low Channel
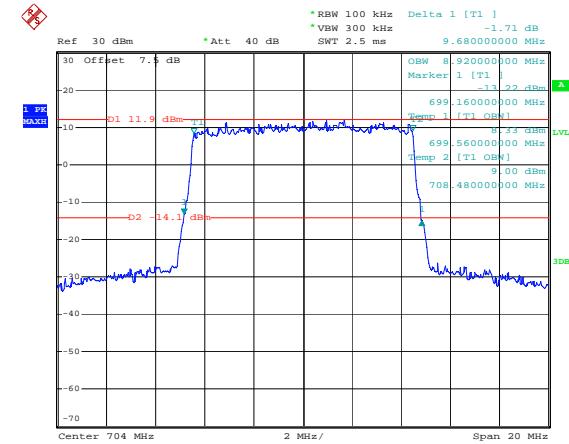
Date: 27.MAY.2021 14:24:49

10M, QPSK, Middle Channel
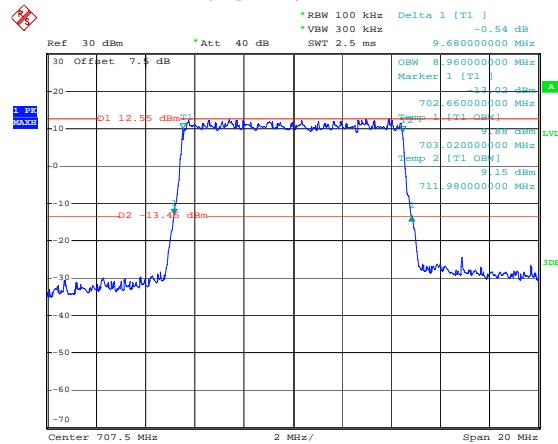
Date: 27.MAY.2021 14:25:11

10M, 16QAM, Middle Channel
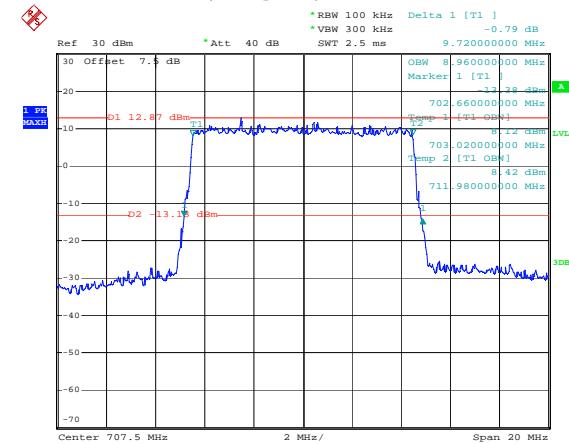
Date: 27.MAY.2021 14:25:28

10M, QPSK, High Channel
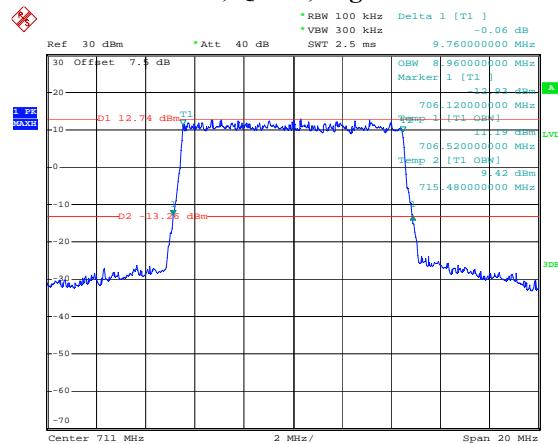
Date: 27.MAY.2021 14:25:50

10M, 16QAM, High Channel
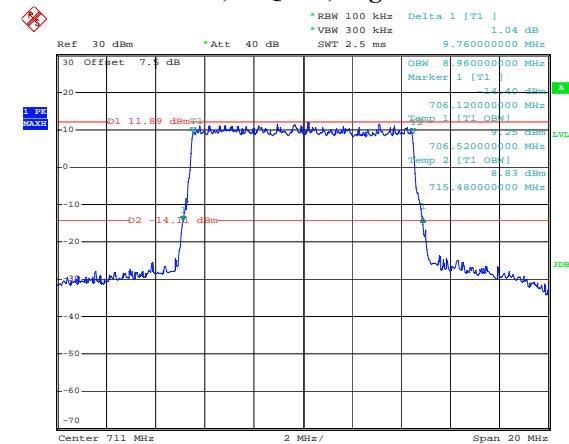
Date: 27.MAY.2021 14:26:11

LTE Band 17

5M, QPSK, Low Channel
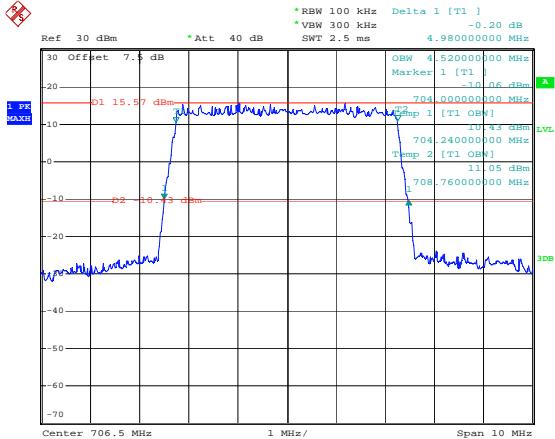
Date: 27.MAY.2021 14:26:36

5M, 16QAM, Low Channel
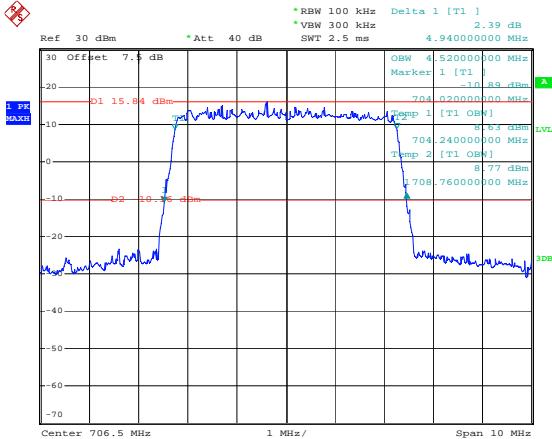
Date: 27.MAY.2021 14:26:56

5M, QPSK, Middle Channel
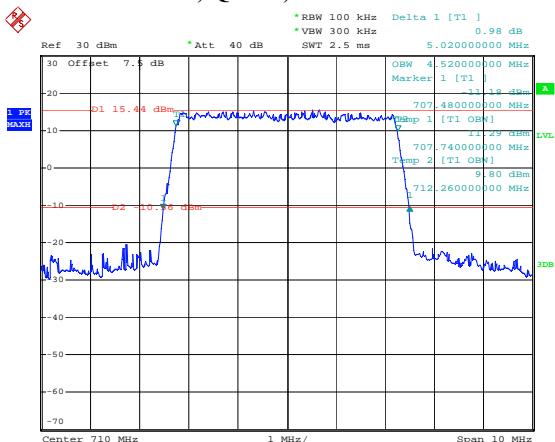
Date: 27.MAY.2021 14:27:19

5M, 16QAM, Middle Channel
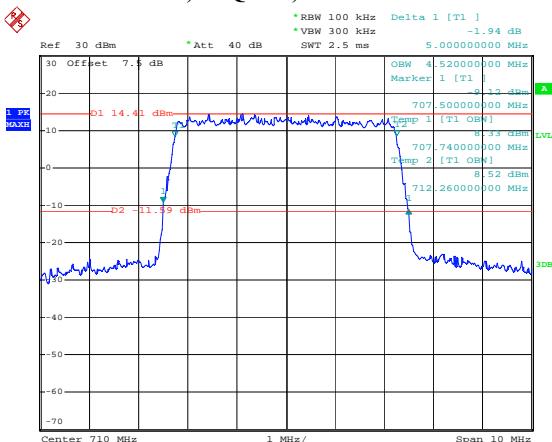
Date: 27.MAY.2021 14:27:42

5M, QPSK, High Channel
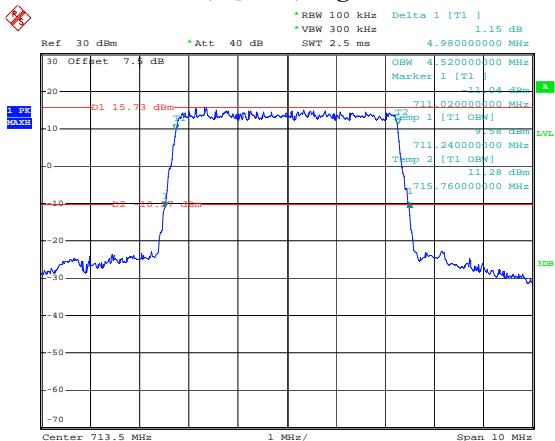
Date: 27.MAY.2021 14:28:03

5M, 16QAM, High Channel
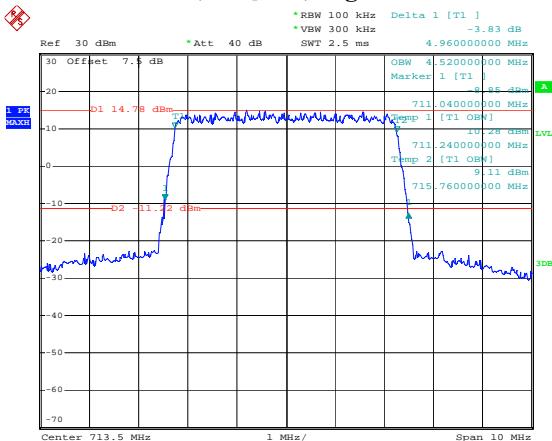
Date: 27.MAY.2021 14:28:20

10M, QPSK, Low Channel
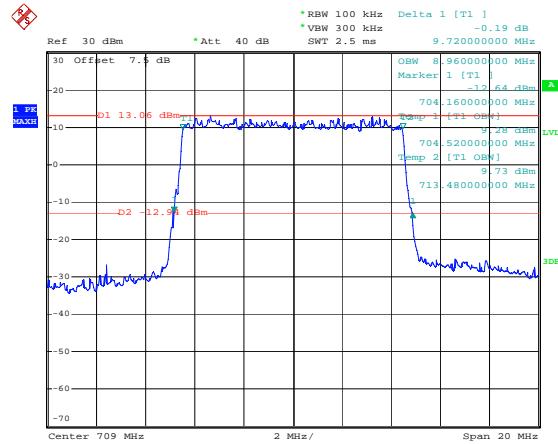
Date: 27.MAY.2021 14:28:45

10M, 16QAM, Low Channel
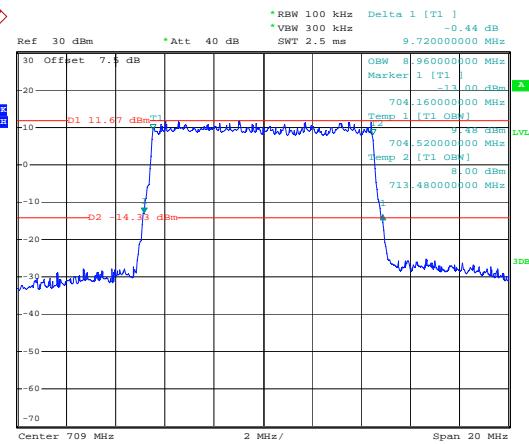
Date: 27.MAY.2021 14:29:03

10M, QPSK, Middle Channel
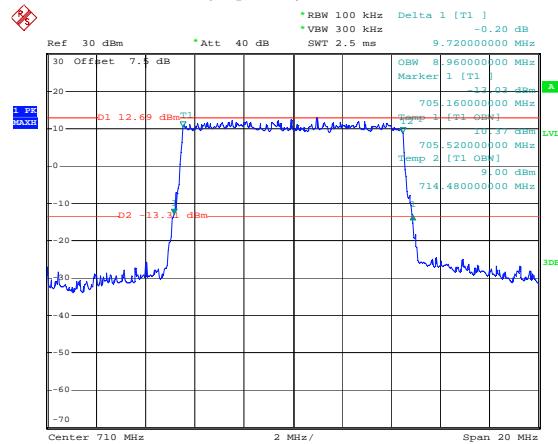
Date: 27.MAY.2021 14:29:25

10M, 16QAM, Middle Channel
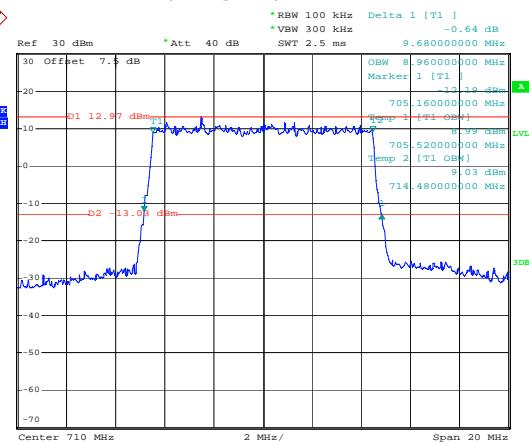
Date: 27.MAY.2021 14:29:46

10M, QPSK, High Channel
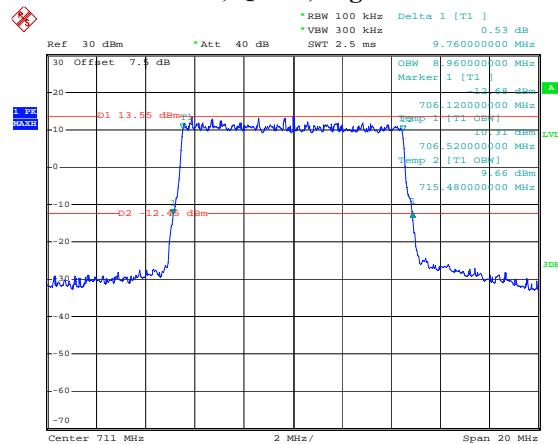
Date: 27.MAY.2021 14:30:04

10M, 16QAM, High Channel
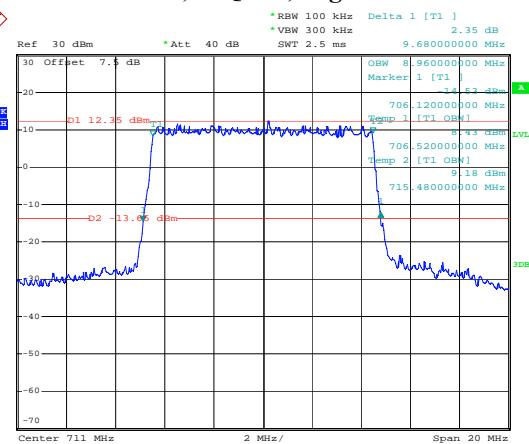
Date: 27.MAY.2021 14:30:25

5 - SPURIOUS EMISSIONS AT ANTENNA TERMINALS

Applicable Standard

FCC §2.1051, §22.917(a) , §24.238(a) and §27.53.

The spectrum was to be investigated to the tenth harmonics of the highest fundamental frequency as specified in § 2.1051.

Test Procedure

The RF output of the transceiver was connected to a spectrum analyzer and simulator through appropriate attenuation. Sufficient scans were taken to show any out of band emissions up to 10th harmonic.
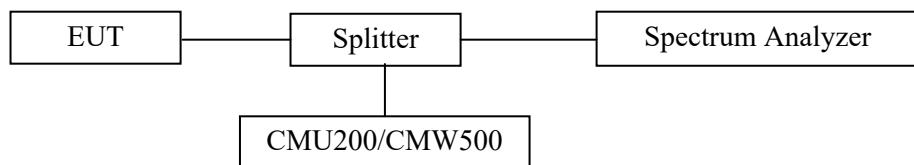
```
+--------+      +----------+      +-------------------+
|  EUT   |------| Splitter |------| Spectrum Analyzer |
+--------+      +----------+      +-------------------+
                     |
              +---------------+
              | CMU200/CMW500 |
              +---------------+
```

Test Data

Test Mode: Transmitting

Test Result: Compliance. Please refer to following tables and plots.

GSM & WCDMA

GSM 850, Low Channel
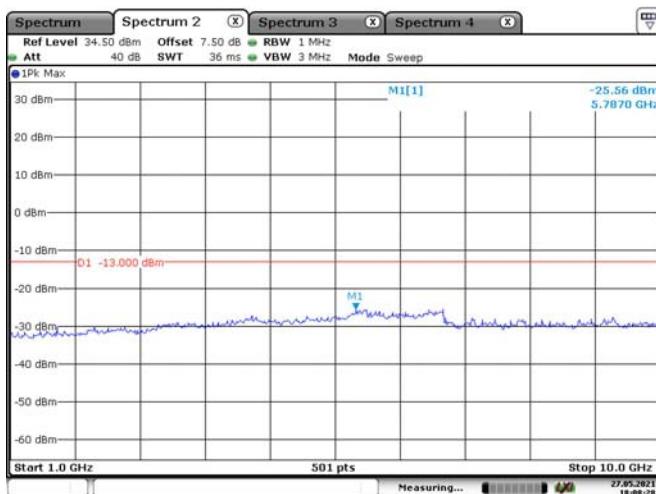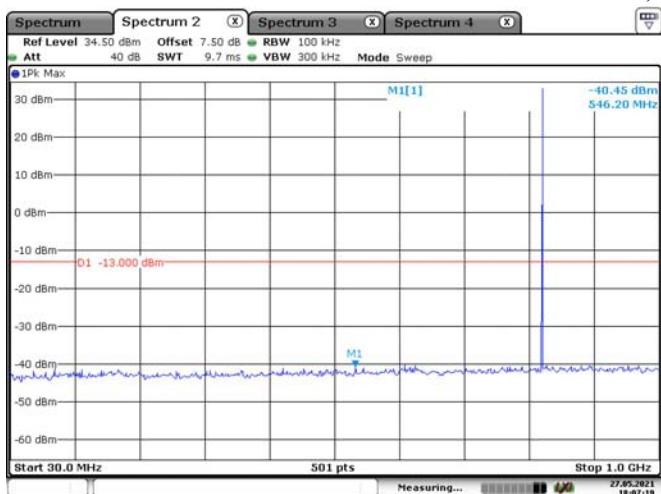
Date: 27.MAY.2021 18:07:20

GSM 850, Middle Channel
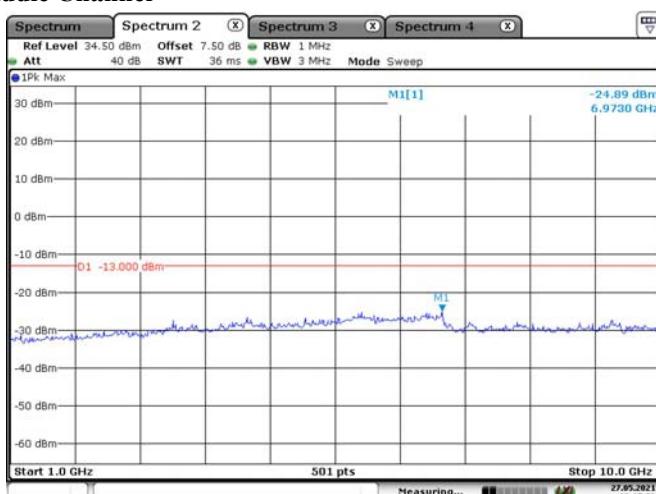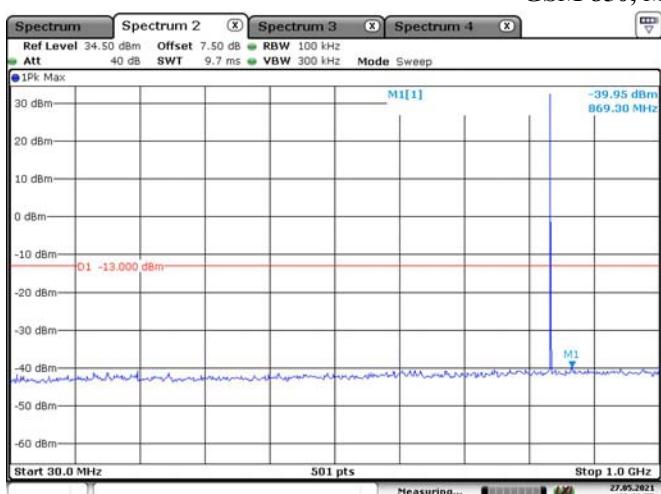
Date: 27.MAY.2021 18:16:55

GSM 850, High Channel
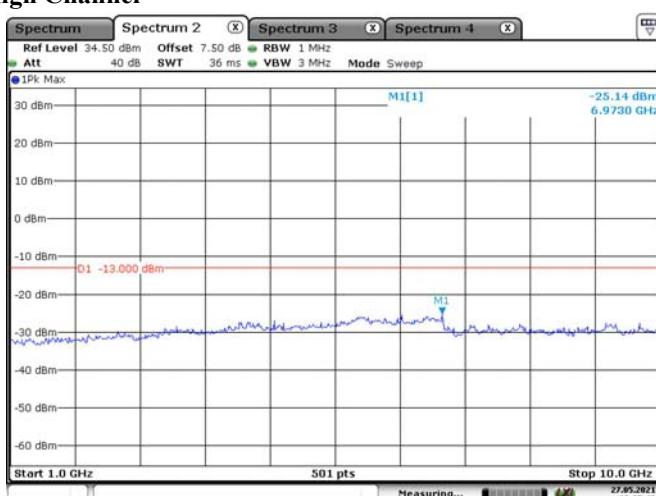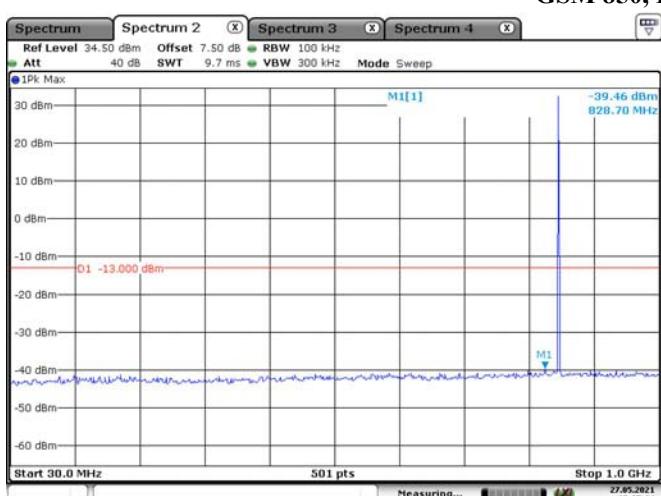
Date: 27.MAY.2021 18:25:14

PCS 1900, Low Channel
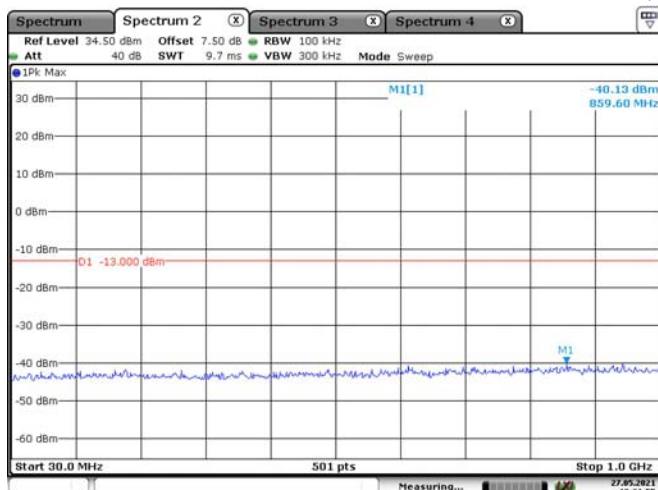
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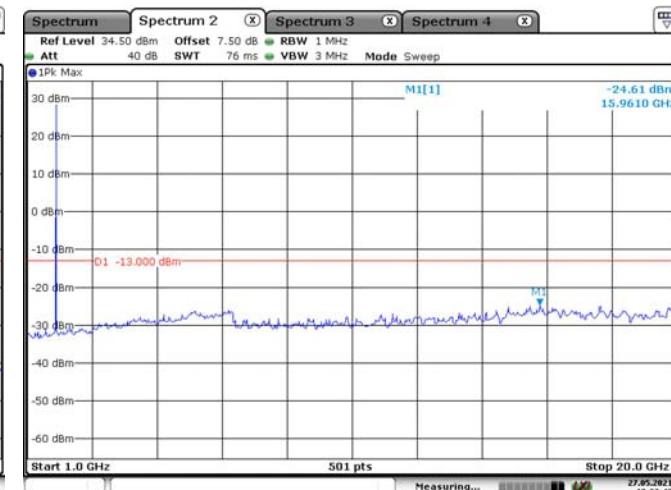
Date: 27.MAY.2021 19:22:42

PCS 1900, Middle Channel
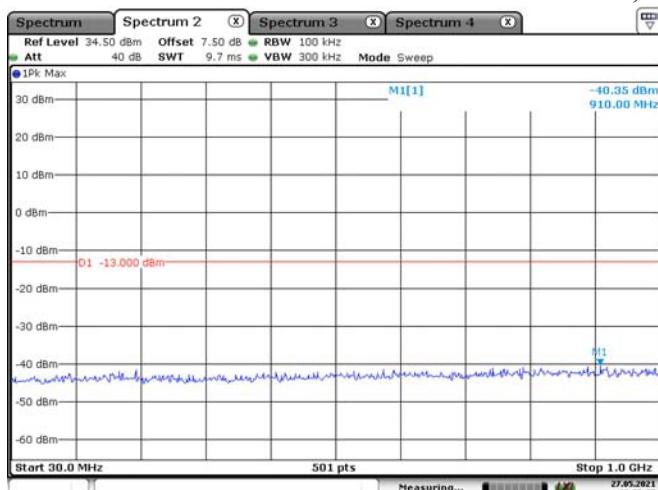
Date: 27.MAY.2021 19:26:23
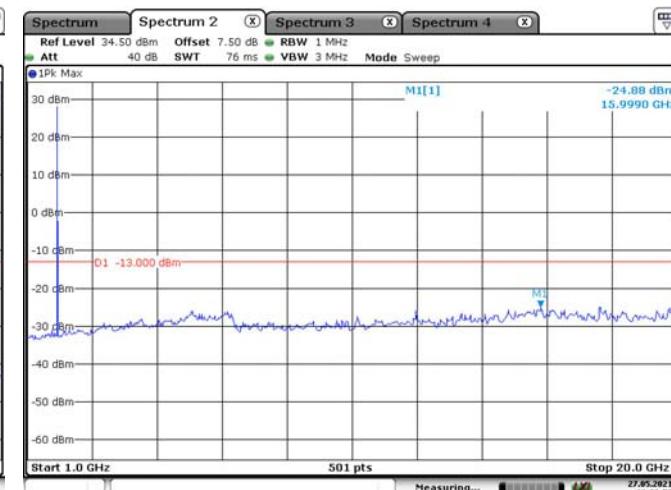
Date: 27.MAY.2021 19:26:53

PCS 1900, High Channel
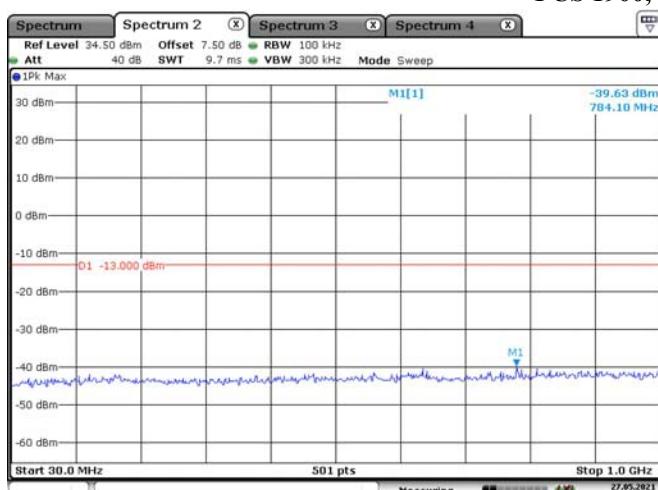
Date: 27.MAY.2021 19:30:10
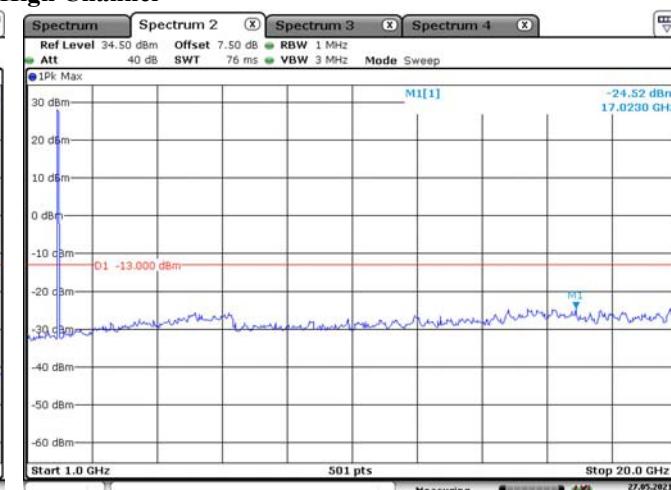
Date: 27.MAY.2021 19:30:50

WCDMA Band II, Low Channel
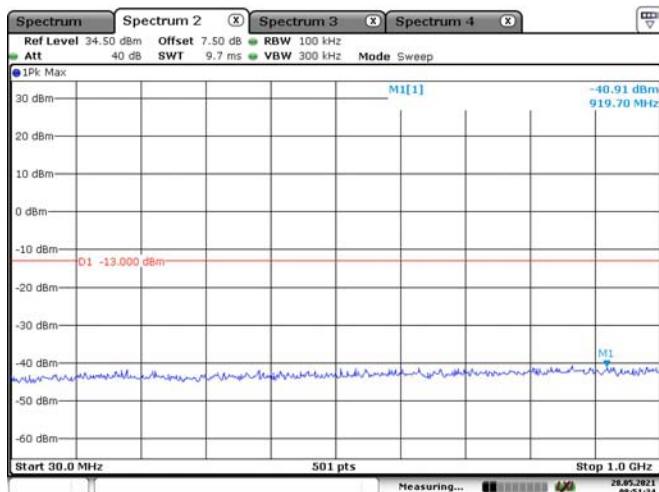
Date: 28.MAY.2021 08:51:34
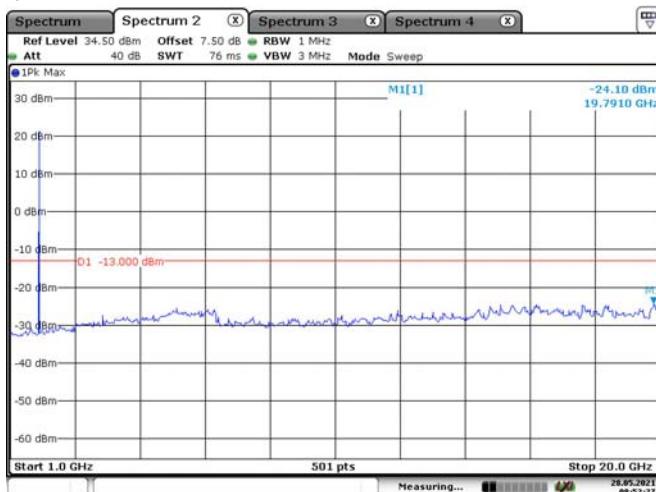
Date: 28.MAY.2021 08:52:27

WCDMA Band II, Middle Channel
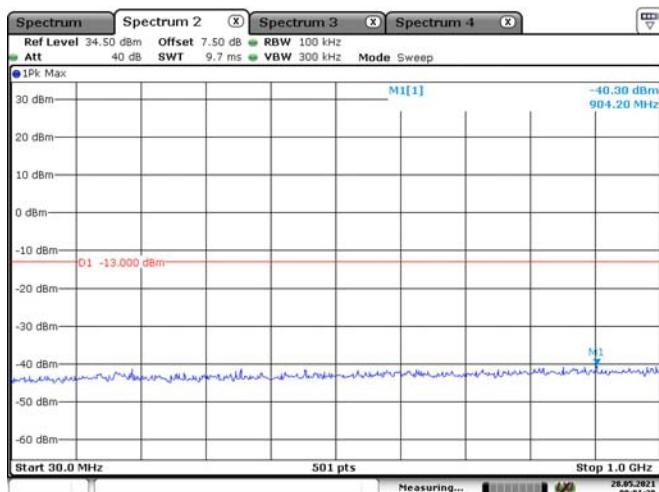
Date: 28.MAY.2021 09:01:39
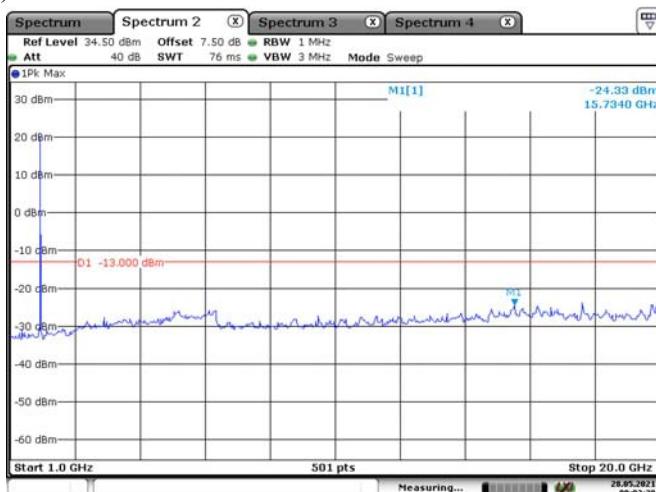
Date: 28.MAY.2021 09:02:38

WCDMA Band II, High Channel

Date: 28.MAY.2021 09:06:46

Date: 28.MAY.2021 09:07:20

WCDMA Band V, Low Channel

Date: 28.MAY.2021 10:01:32

Date: 28.MAY.2021 10:02:30
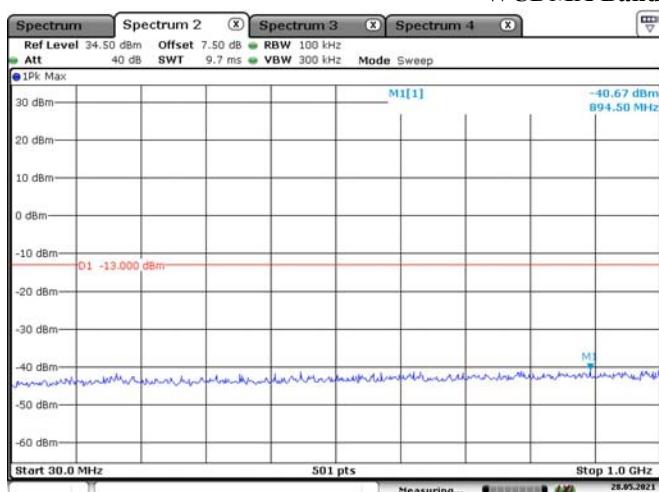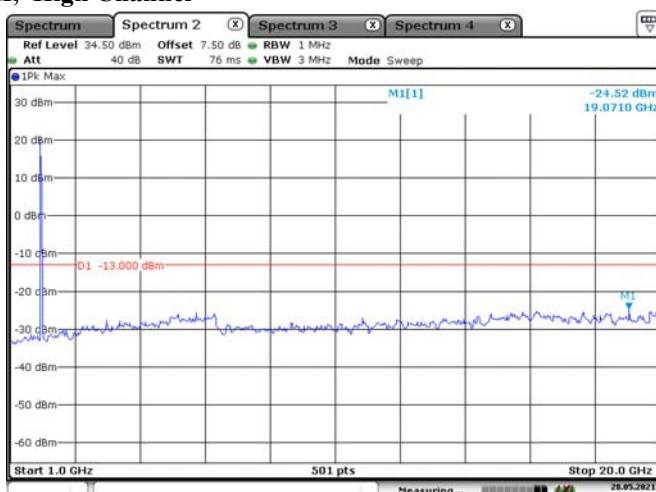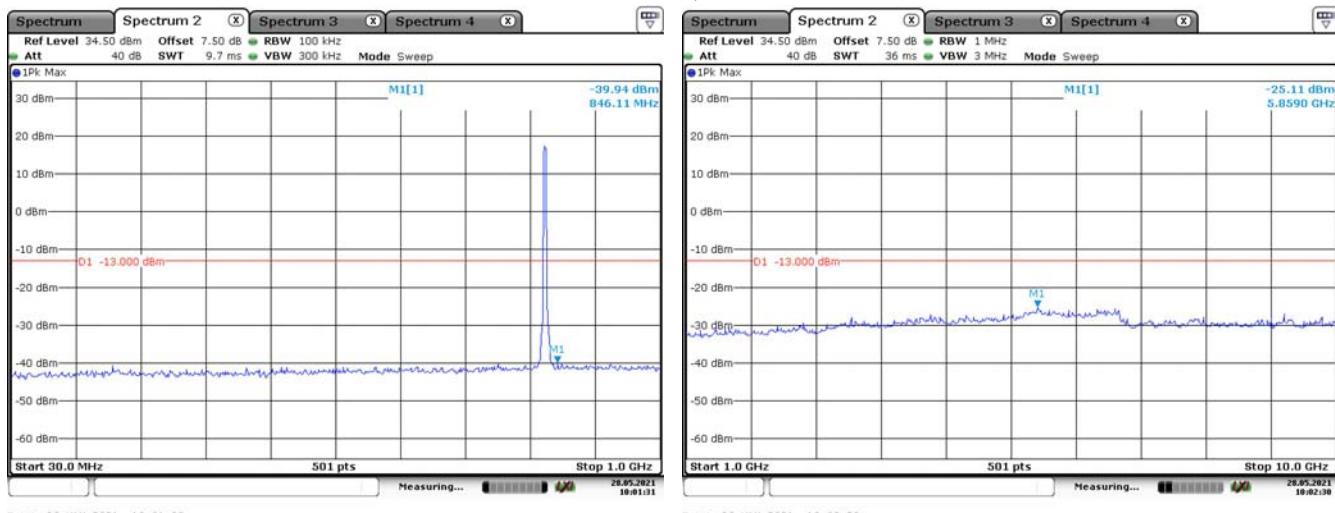
WCDMA Band V, Middle Channel

Date: 28.MAY.2021 10:06:45

Date: 28.MAY.2021 10:07:30
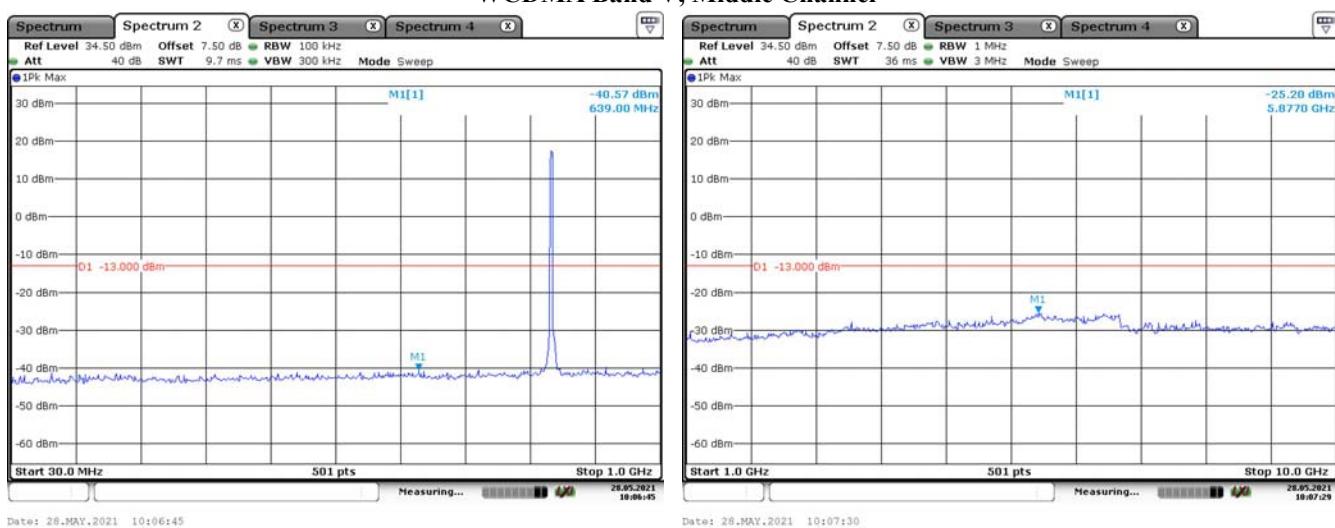
WCDMA Band V, High Channel

Date: 28.MAY.2021 10:10:52

Date: 28.MAY.2021 10:11:17
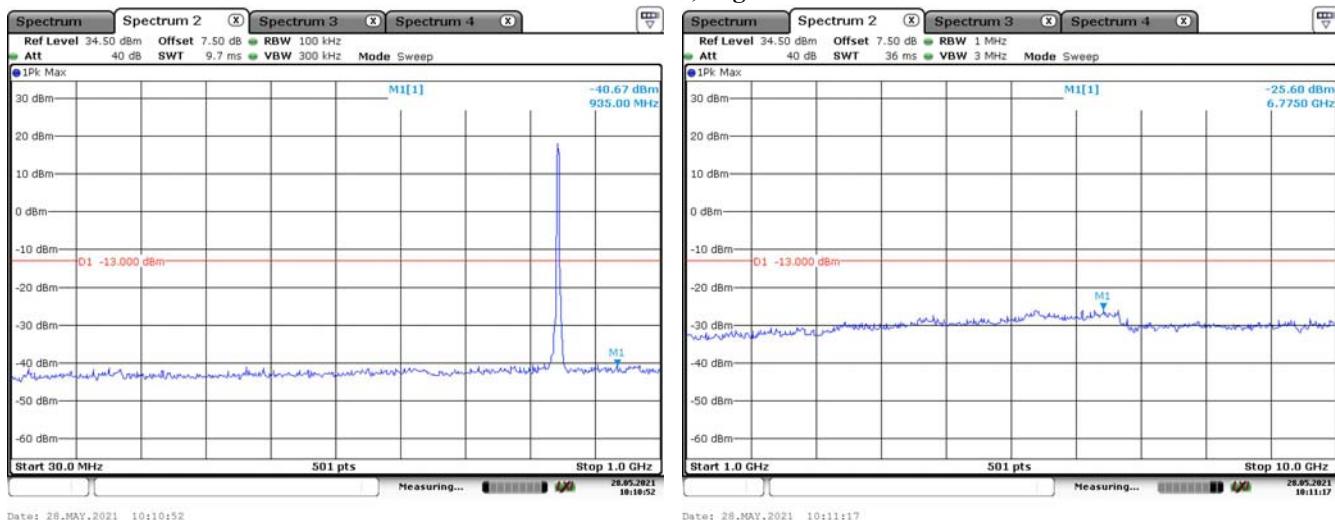
LTE Band 2

1.4M, Low Channel
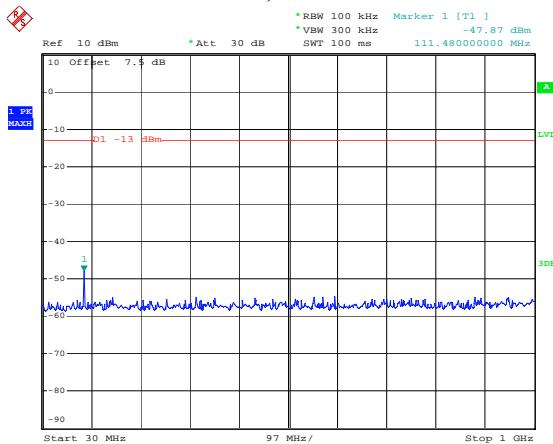
Date: 27.MAY.2021 15:43:14
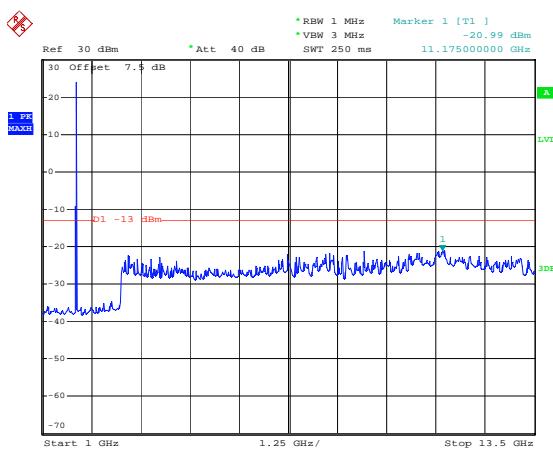
Date: 27.MAY.2021 15:43:27

Date: 23.JUN.2021 00:29:48

1.4M, Middle Channel

Date: 27.MAY.2021 15:43:58

Date: 27.MAY.2021 15:44:11
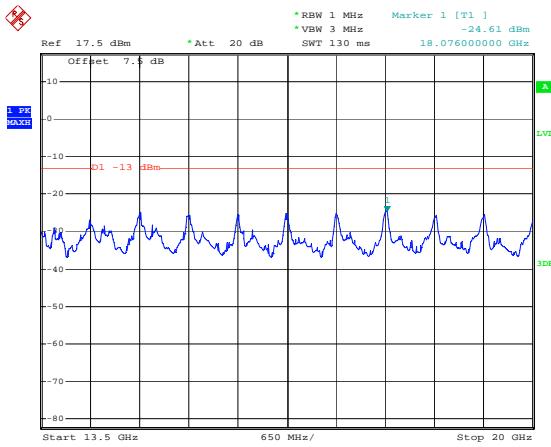
Date: 23.JUN.2021 00:31:09

1.4M, High Channel
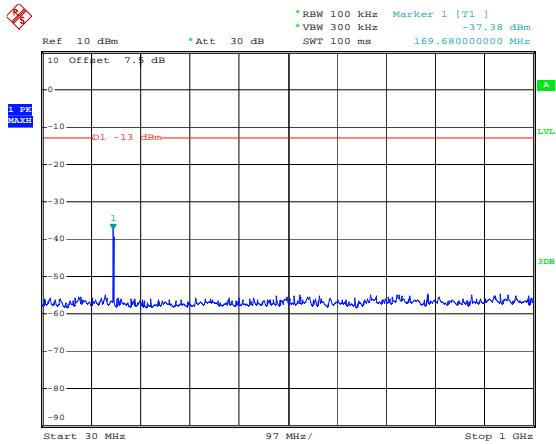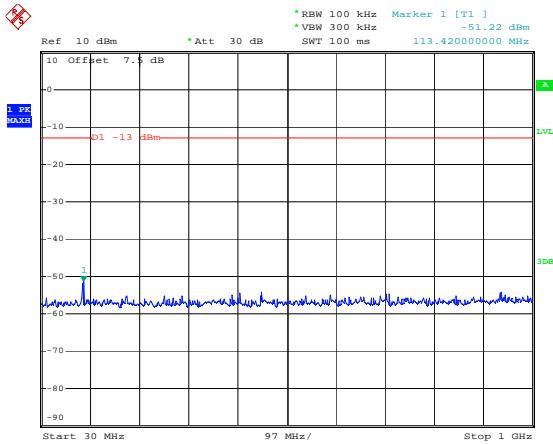
Date: 27.MAY.2021 15:44:43

Date: 27.MAY.2021 15:44:56

Date: 23.JUN.2021 00:33:22

## 3M, Low Channel

Date: 27.MAY.2021 15:45:32

Date: 27.MAY.2021 15:45:45

Date: 23.JUN.2021 00:34:54

3M, Middle Channel
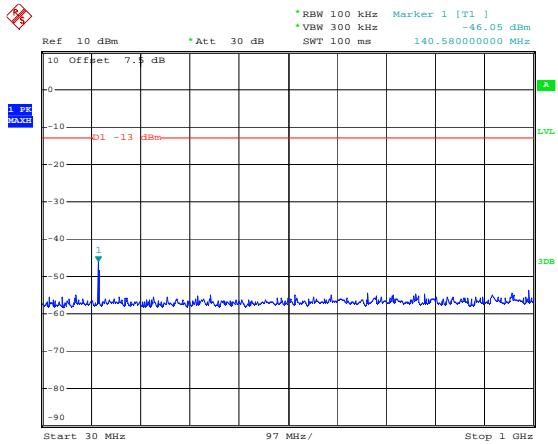
Date: 27.MAY.2021 15:46:17

Date: 27.MAY.2021 15:46:29

Date: 23.JUN.2021 00:36:23

3M, High Channel
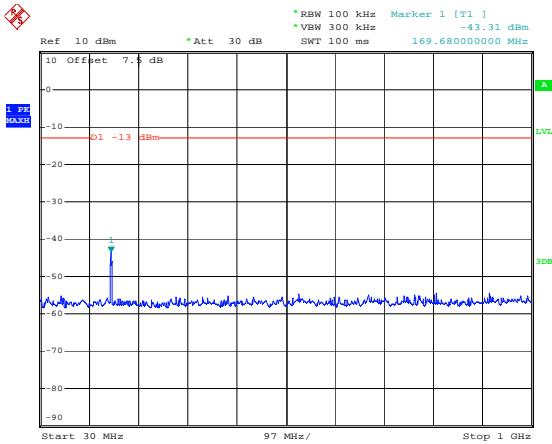
Date: 27.MAY.2021 15:47:01
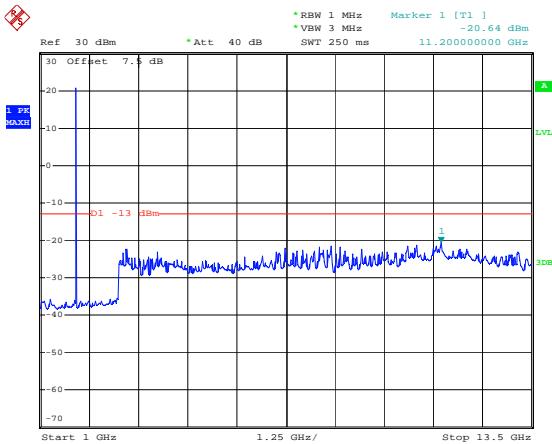
Date: 27.MAY.2021 15:47:14
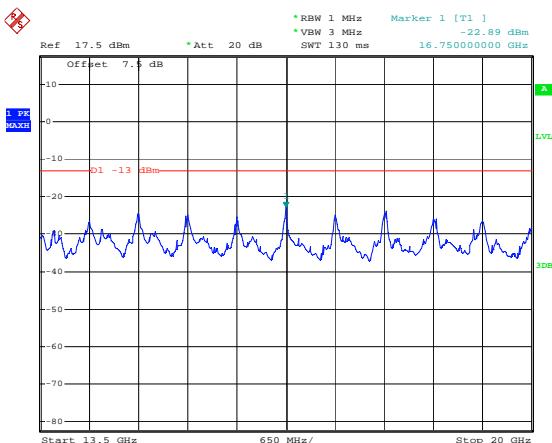
Date: 23.JUN.2021 00:37:40

5M, Low Channel   ## 5M, Middle Channel
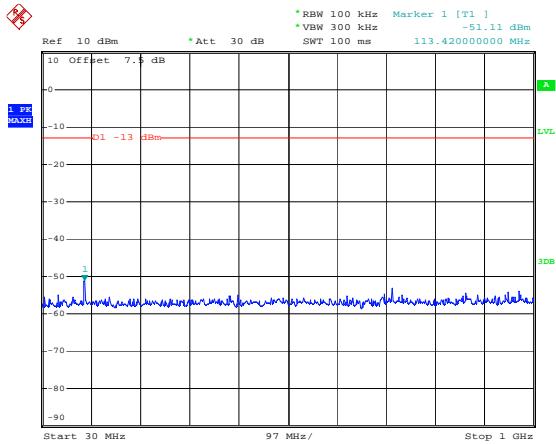

Date: 27.MAY.2021 15:47:49
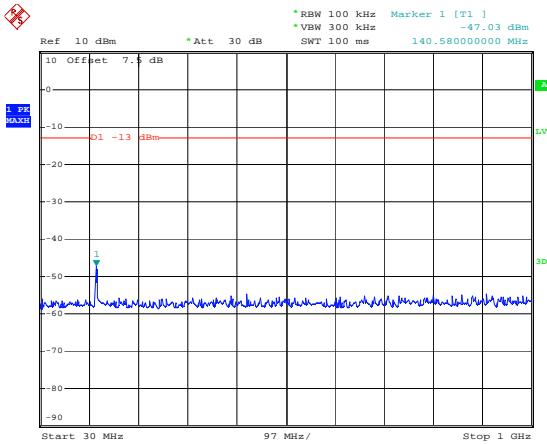
Date: 27.MAY.2021 15:48:31
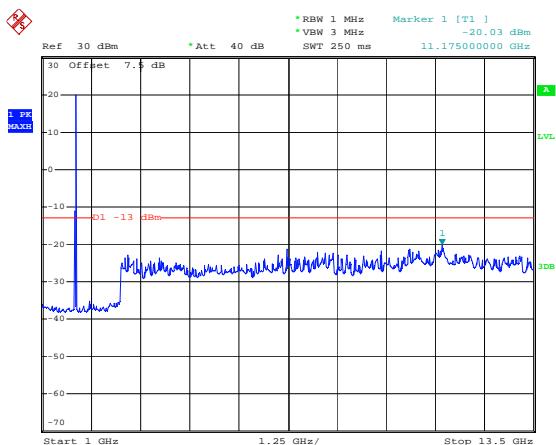
Date: 27.MAY.2021 15:48:02
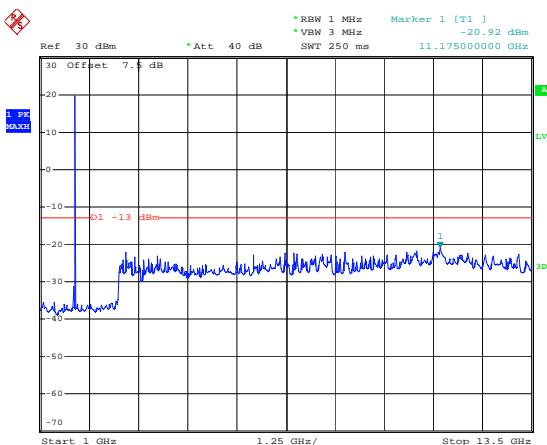
Date: 27.MAY.2021 15:48:44
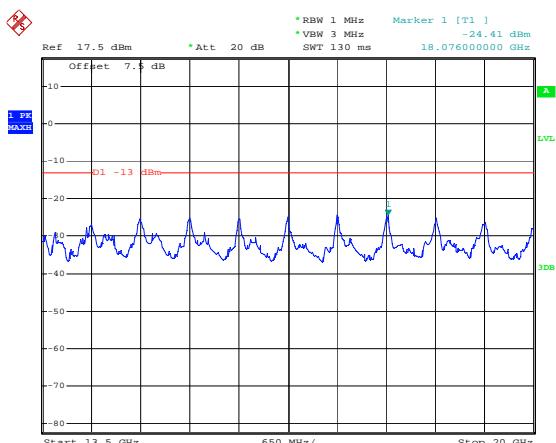
Date: 23.JUN.2021 00:38:54
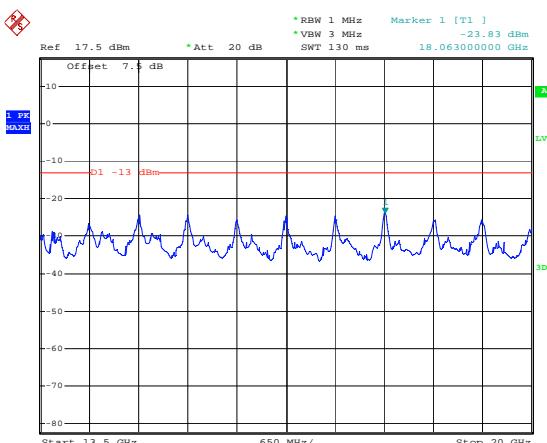
Date: 23.JUN.2021 00:39:48

5M, High Channel
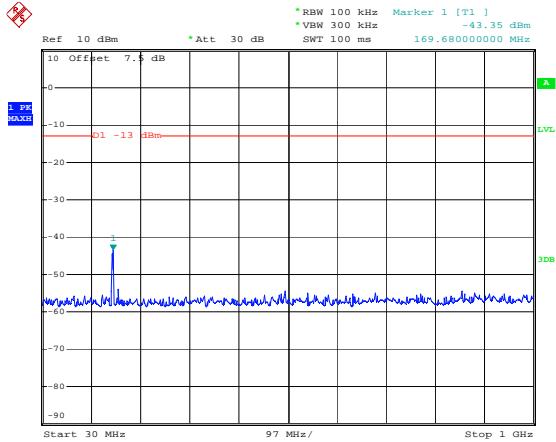
Date: 27.MAY.2021 15:49:13

Date: 27.MAY.2021 15:49:25

Date: 23.JUN.2021 00:42:03

10M, Low Channel
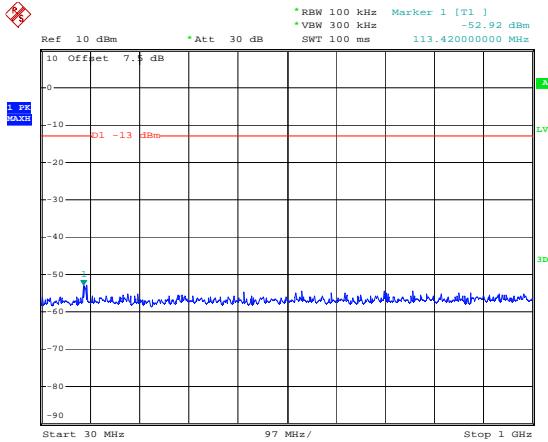
Date: 27.MAY.2021 15:50:02
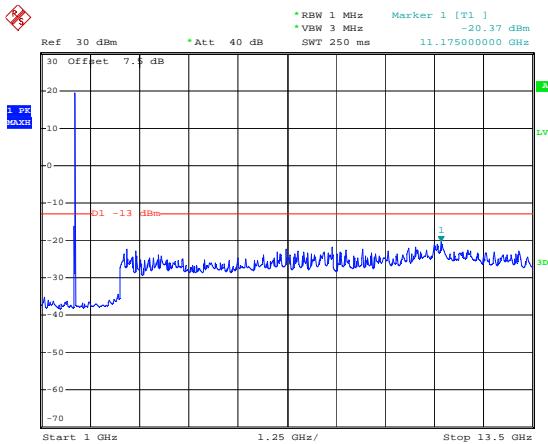
Date: 27.MAY.2021 15:50:15
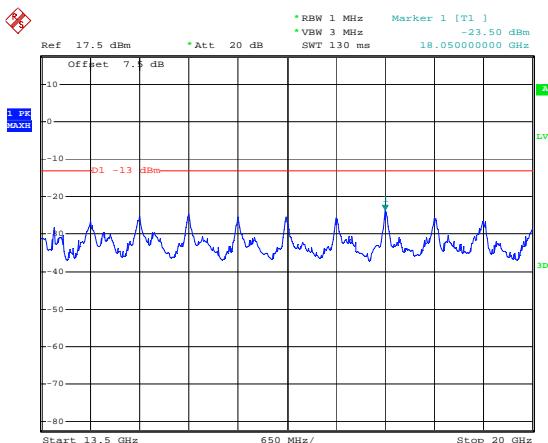
Date: 23.JUN.2021 00:42:37

10M, Middle Channel　　　　## 10M, High Channel
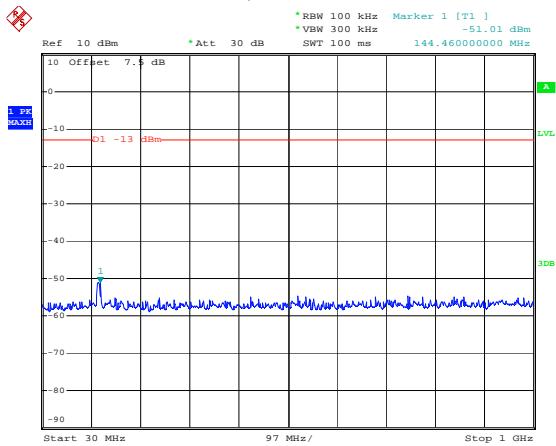

Date: 27.MAY.2021 15:50:45
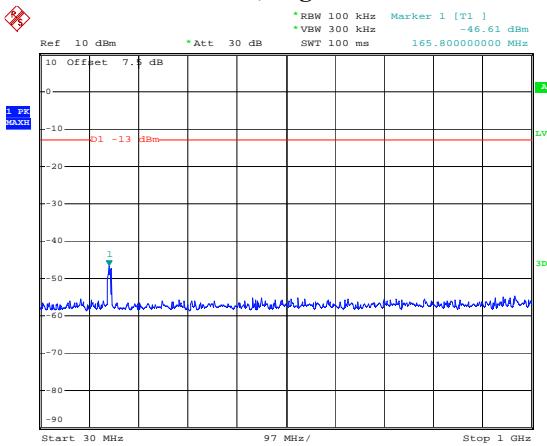
Date: 27.MAY.2021 15:51:28
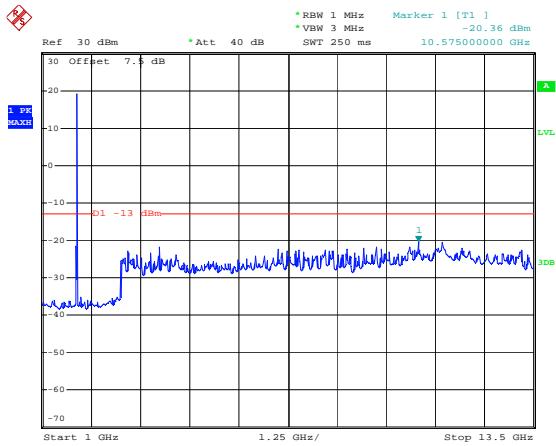
Date: 27.MAY.2021 15:50:58
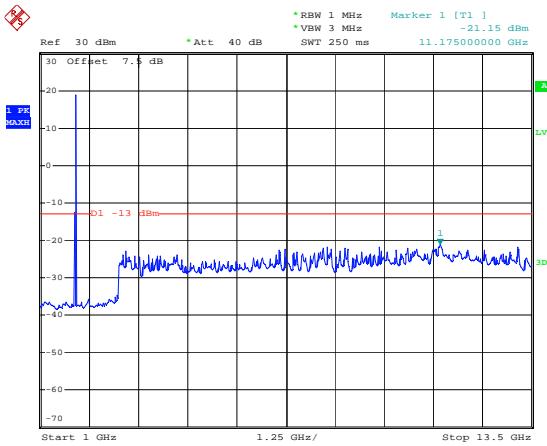
Date: 27.MAY.2021 15:51:41
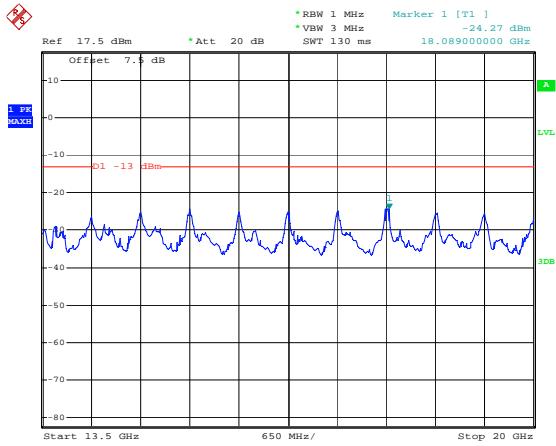
Date: 23.JUN.2021 00:43:25
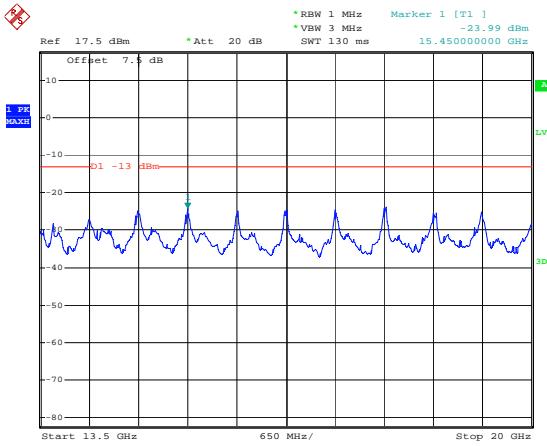
Date: 23.JUN.2021 00:45:19

15M, Low Channel　　　　　　## 15M, Middle Channel
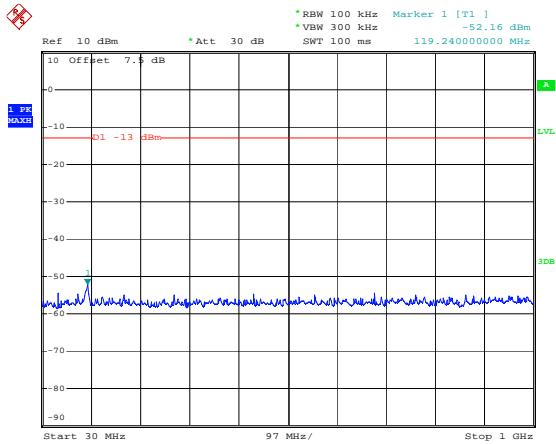
Date: 27.MAY.2021 15:52:20　　　　　　Date: 27.MAY.2021 15:53:08
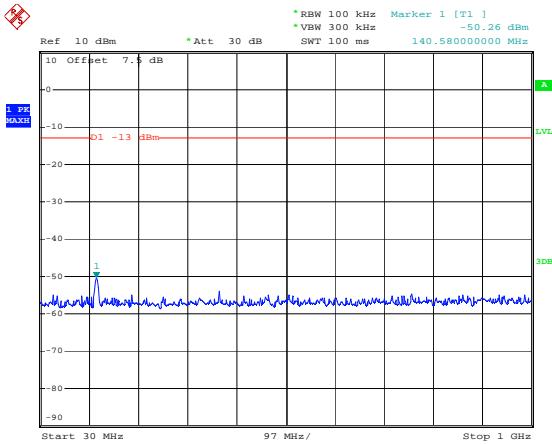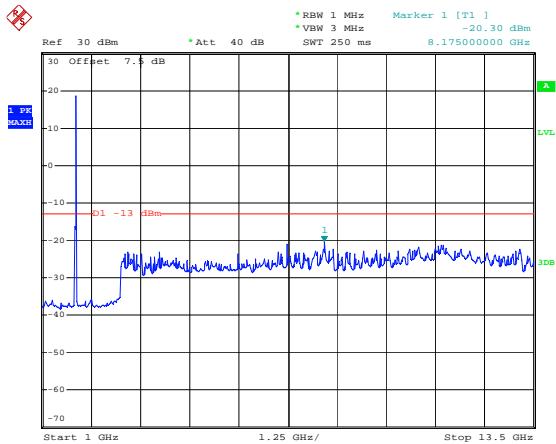
Date: 27.MAY.2021 15:52:32　　　　　　Date: 27.MAY.2021 15:53:21
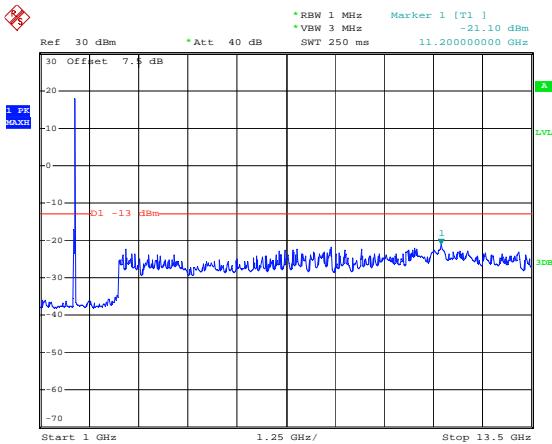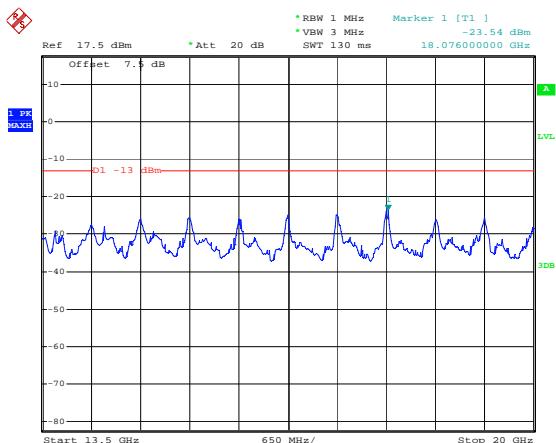
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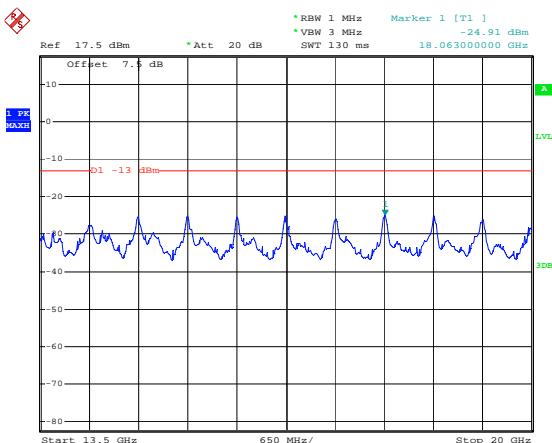
15M, High Channel
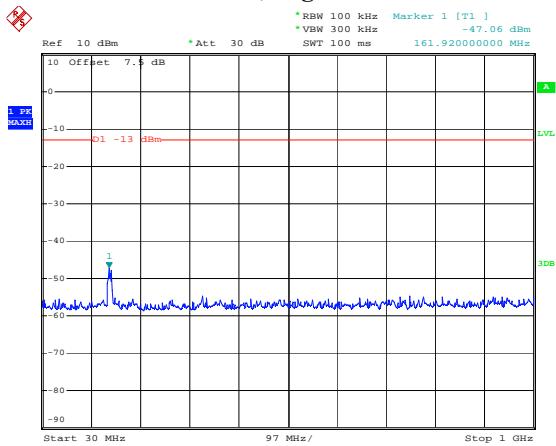
Date: 27.MAY.2021 15:53:53

Date: 27.MAY.2021 15:54:06

Date: 23.JUN.2021 00:47:16

20M, Low Channel
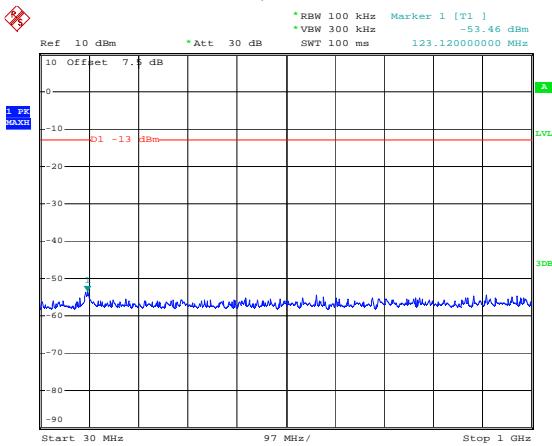
Date: 27.MAY.2021 15:54:45
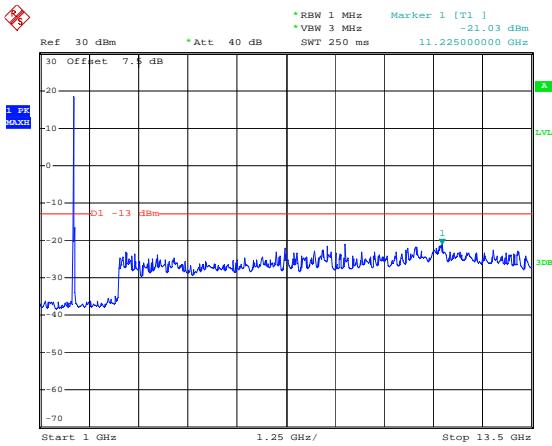
Date: 27.MAY.2021 15:54:58
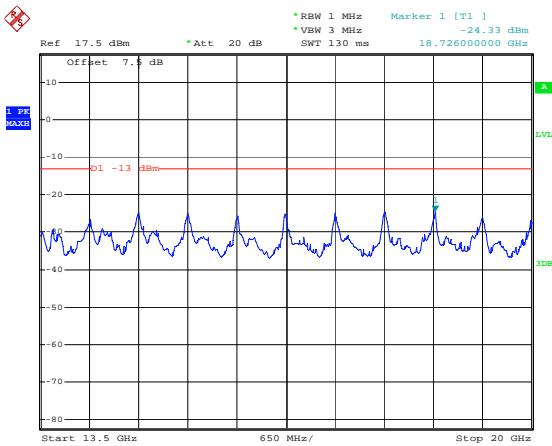
Date: 23.JUN.2021 00:47:56

20M, Middle Channel
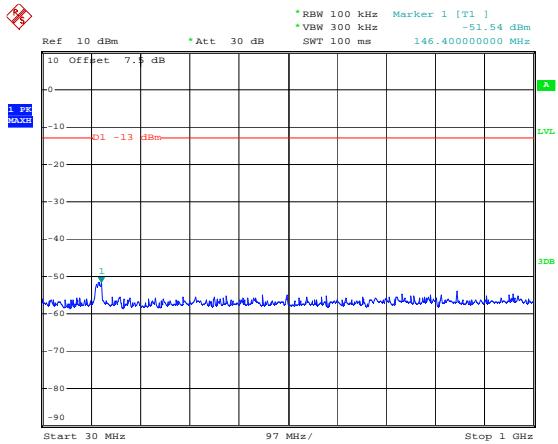
Date: 27.MAY.2021 15:55:34

Date: 27.MAY.2021 15:55:46

Date: 23.JUN.2021 00:48:29

20M, High Channel
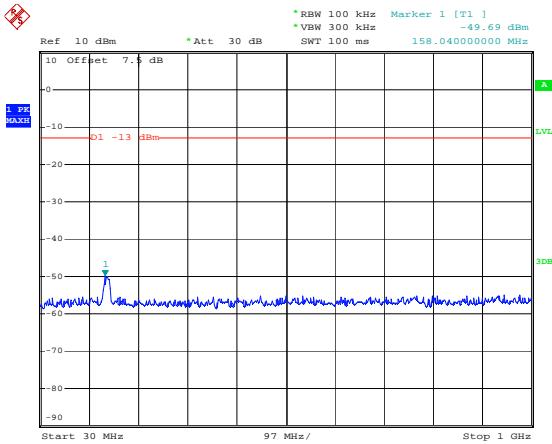
Date: 27.MAY.2021 15:56:22
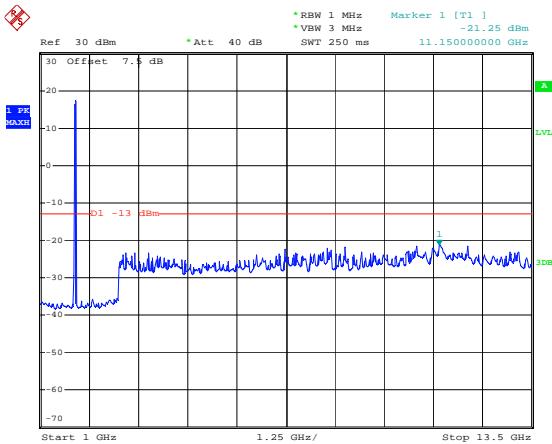
Date: 27.MAY.2021 15:56:35
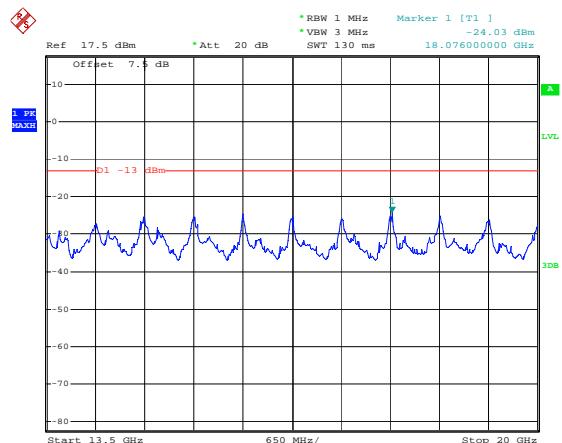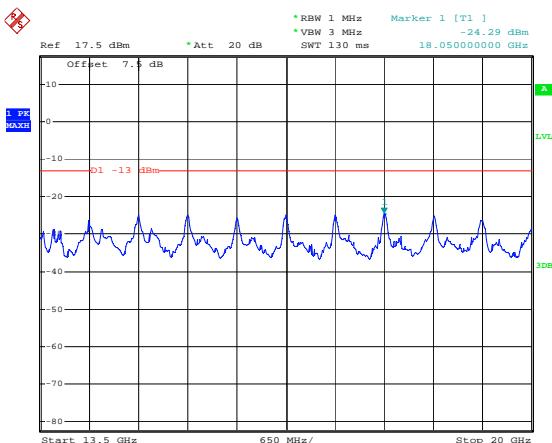
Date: 23.JUN.2021 00:49:10

LTE Band 4

1.4M, Low Channel
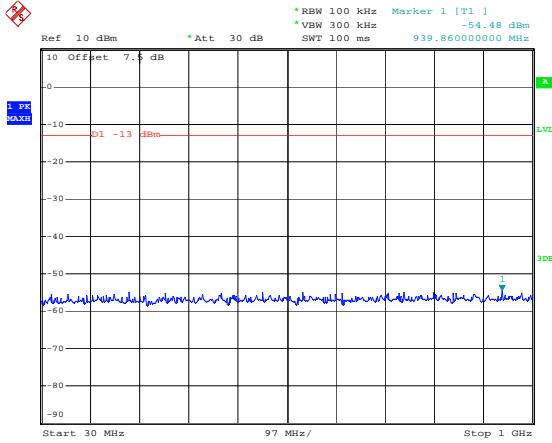

Date: 27.MAY.2021 15:57:11

1.4M, Middle Channel
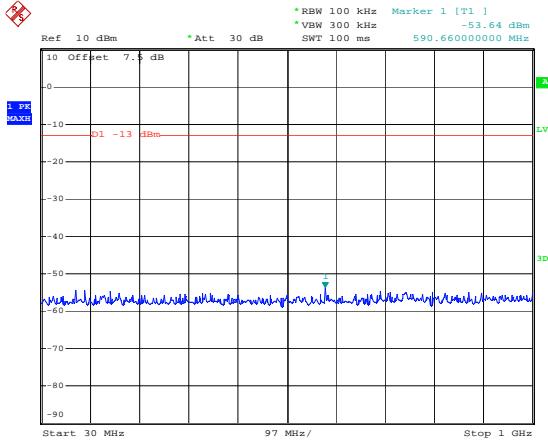
Date: 27.MAY.2021 15:57:57
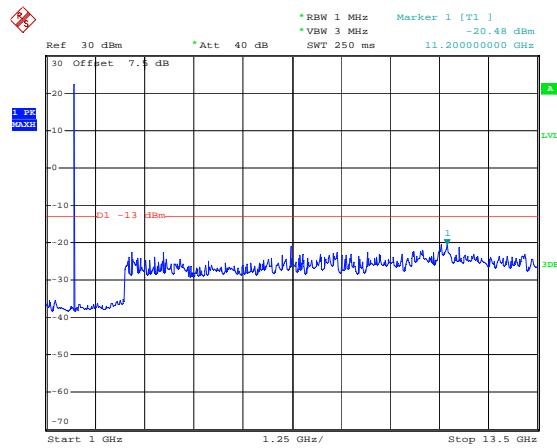
Date: 27.MAY.2021 15:57:24
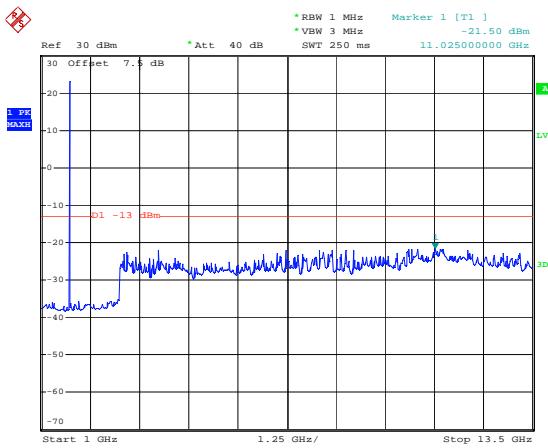
Date: 27.MAY.2021 15:58:09
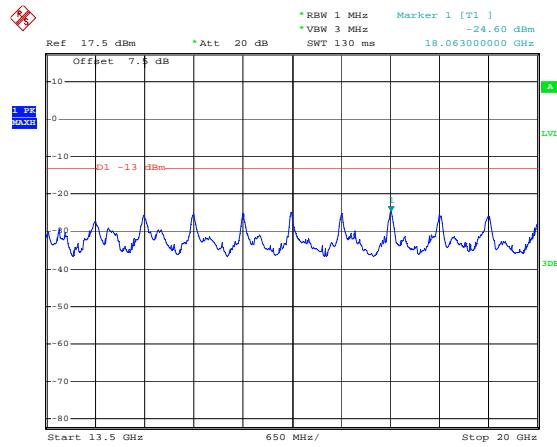
Date: 23.JUN.2021 00:49:41
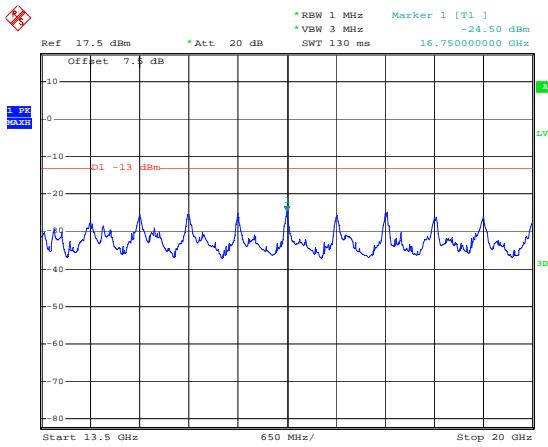
Date: 23.JUN.2021 00:51:21

1.4M, High Channel
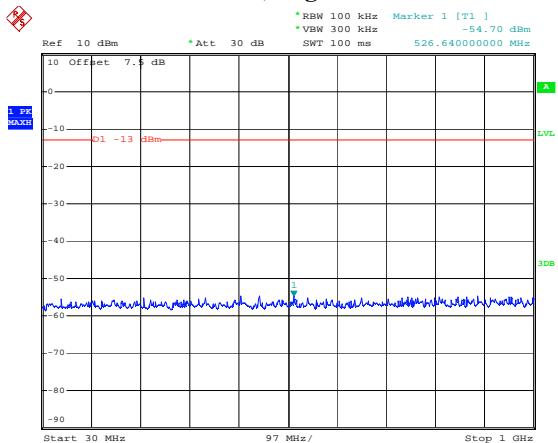
Date: 27.MAY.2021 15:58:41

Date: 27.MAY.2021 15:58:54

Date: 23.JUN.2021 00:52:01

3M, Low Channel
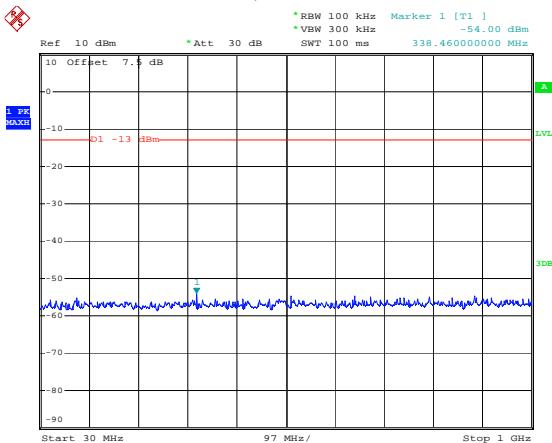
Date: 27.MAY.2021 15:59:28
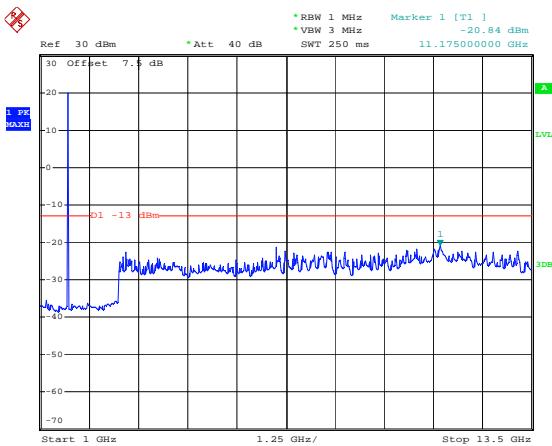
Date: 27.MAY.2021 15:59:41
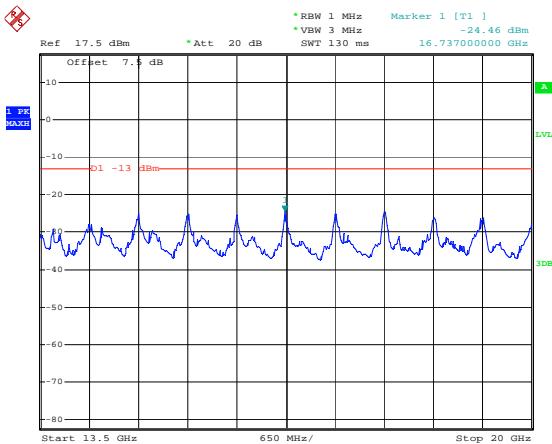
Date: 23.JUN.2021 00:52:30

3M, Middle Channel　　　　　　## 3M, High Channel
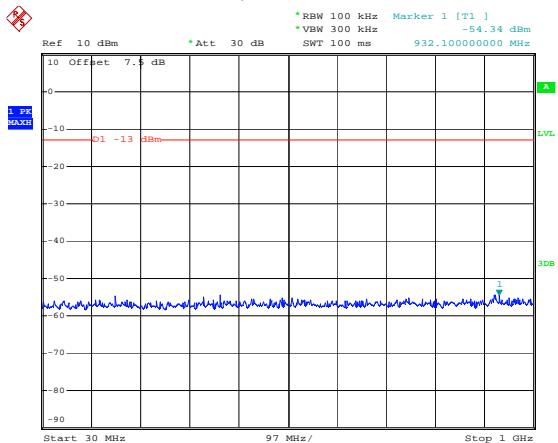
Date: 27.MAY.2021 16:00:13
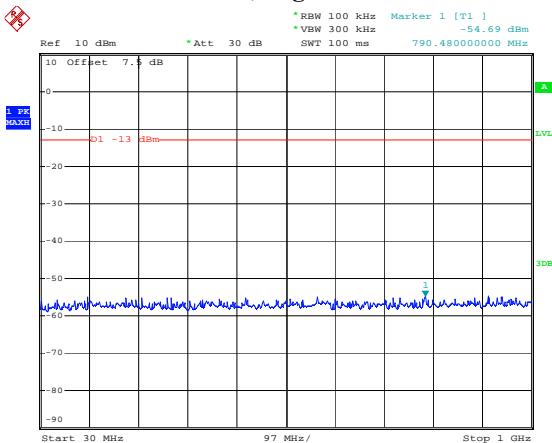
Date: 27.MAY.2021 16:00:58
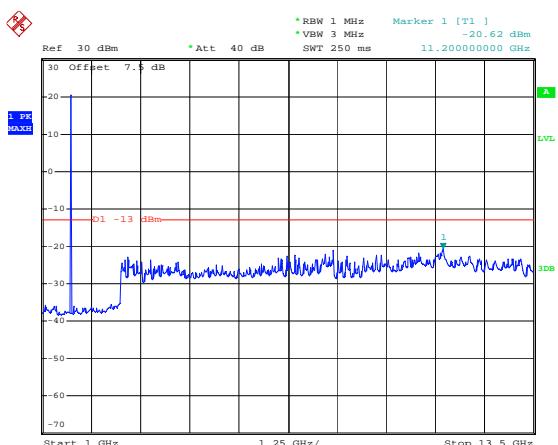
Date: 27.MAY.2021 16:00:26
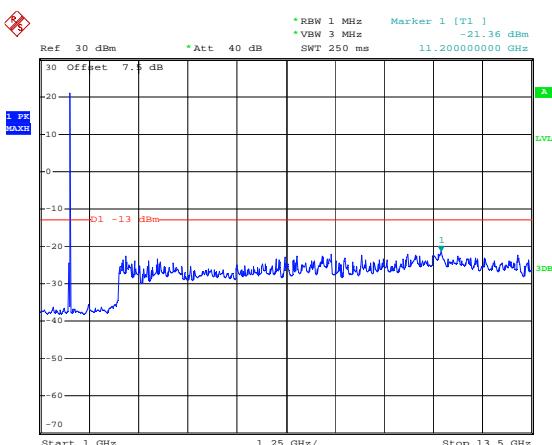
Date: 27.MAY.2021 16:01:10
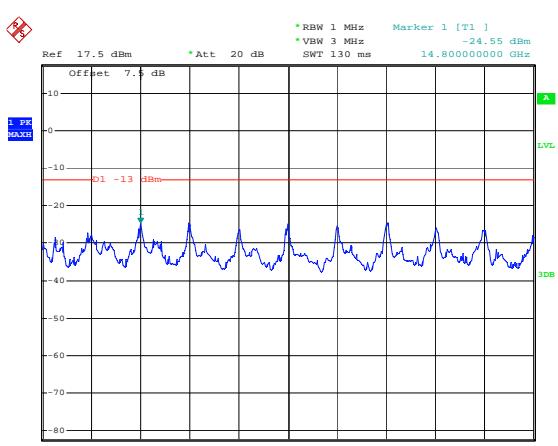
Date: 23.JUN.2021 00:53:10
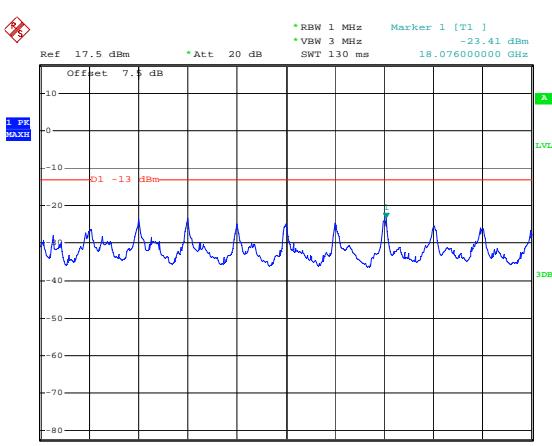
Date: 23.JUN.2021 00:53:42

5M, Low Channel   5M, Middle Channel
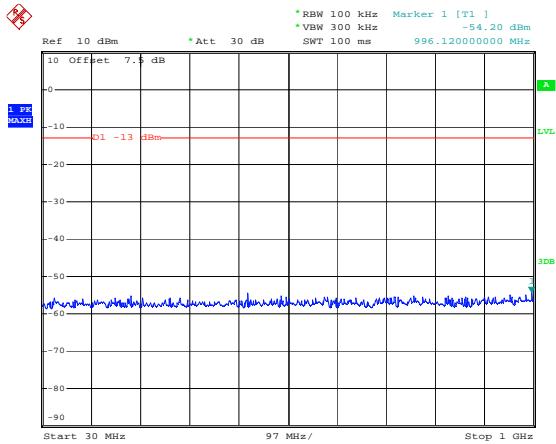
Date: 27.MAY.2021 16:01:45
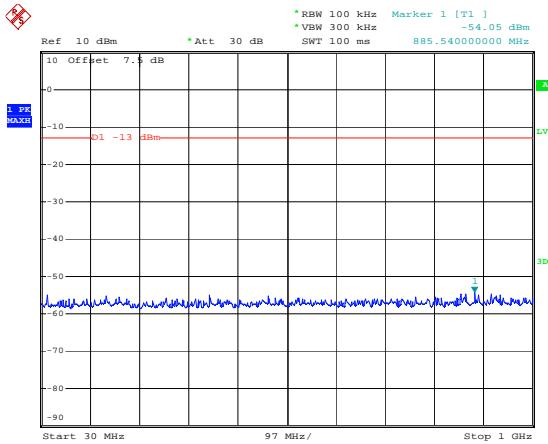
Date: 27.MAY.2021 16:02:27
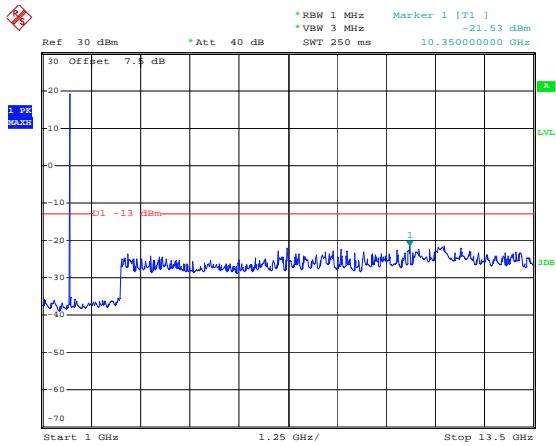
Date: 27.MAY.2021 16:01:58
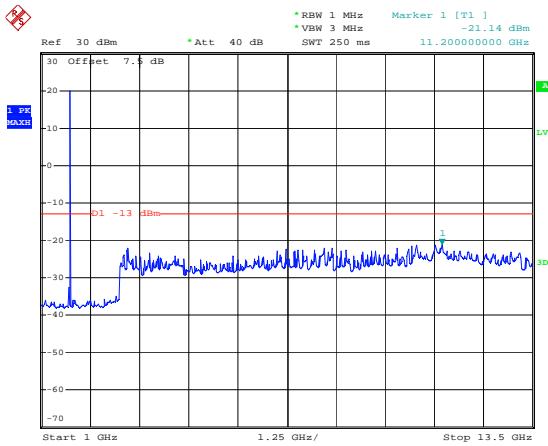

Date: 27.MAY.2021 16:02:40
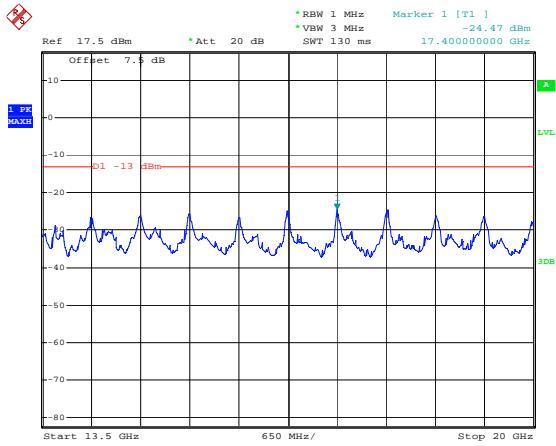
Date: 23.JUN.2021 00:54:19
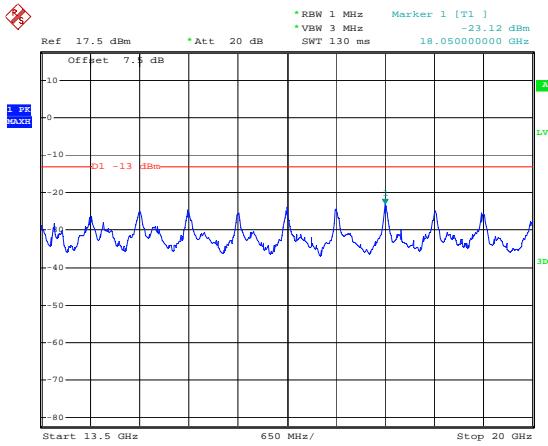
Date: 23.JUN.2021 00:54:47

5M, High Channel
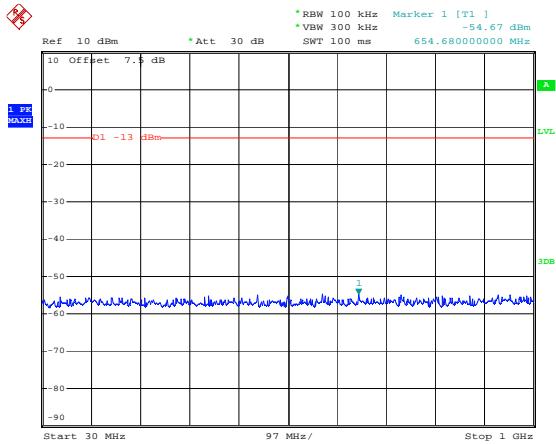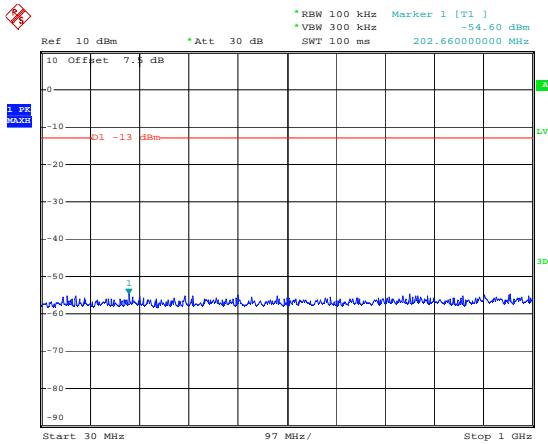
Date: 27.MAY.2021 16:03:12

Date: 27.MAY.2021 16:03:25

Date: 23.JUN.2021 00:55:29

10M, Low Channel

Date: 27.MAY.2021 16:04:01

Date: 27.MAY.2021 16:04:14

Date: 23.JUN.2021 00:55:52

10M, Middle Channel
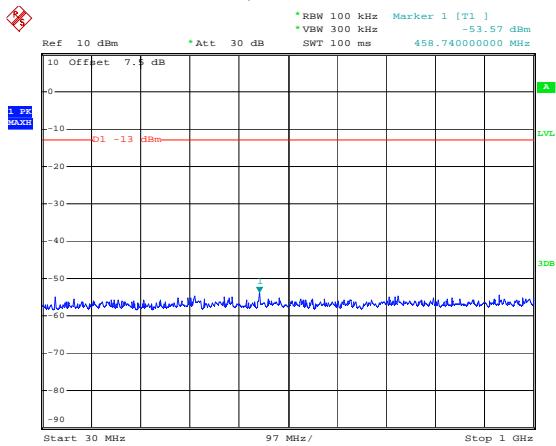
Date: 27.MAY.2021 16:04:47

Date: 27.MAY.2021 16:05:00

Date: 23.JUN.2021 00:56:16

10M, High Channel
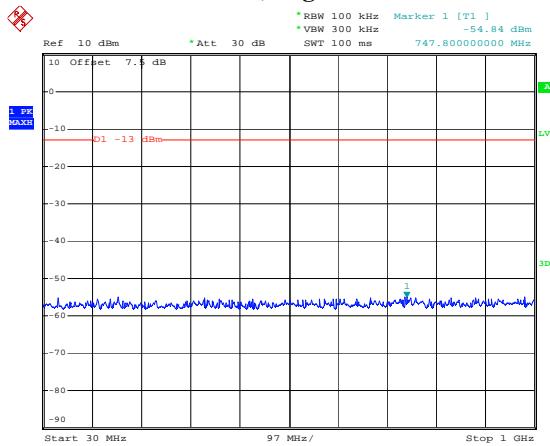
Date: 27.MAY.2021 16:05:33
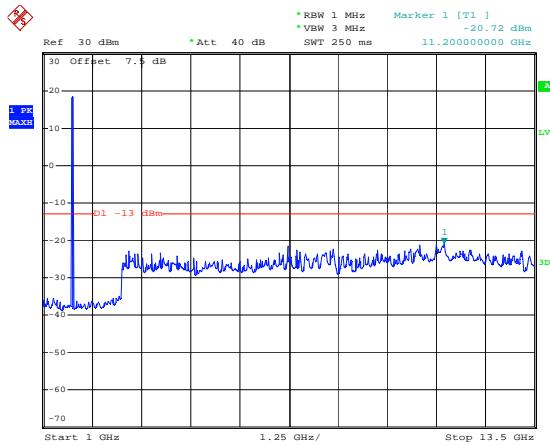
Date: 27.MAY.2021 16:05:45
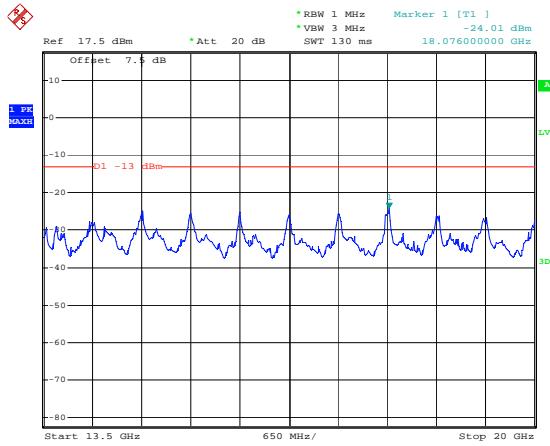
Date: 23.JUN.2021 00:56:51

15M, Low Channel　　　15M, Middle Channel
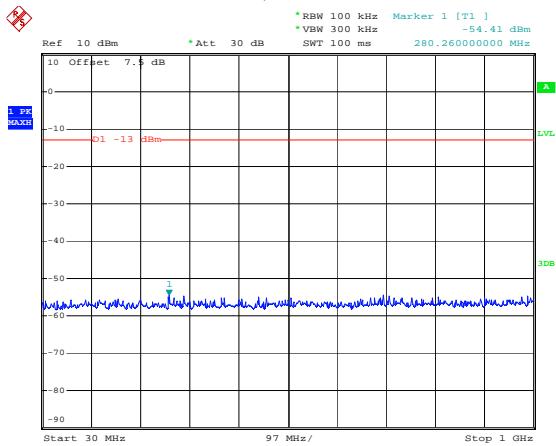
Date: 27.MAY.2021 16:06:23
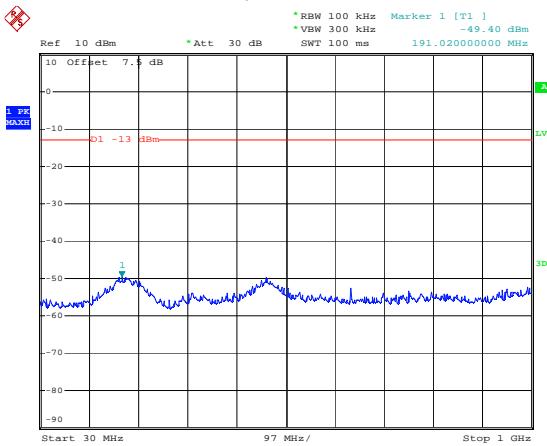
Date: 27.MAY.2021 16:07:08
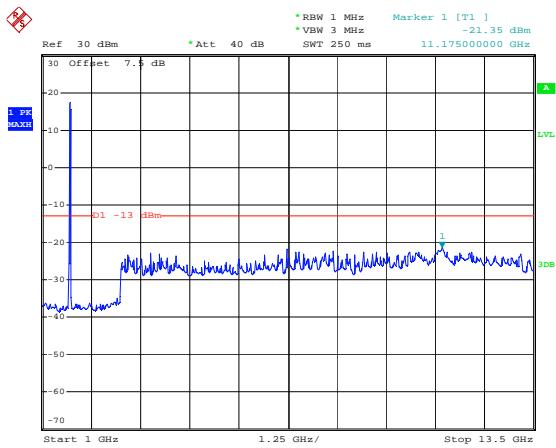
Date: 27.MAY.2021 16:06:36
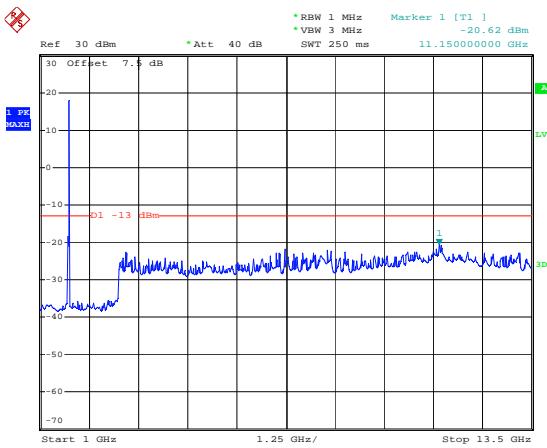
Date: 27.MAY.2021 16:07:21
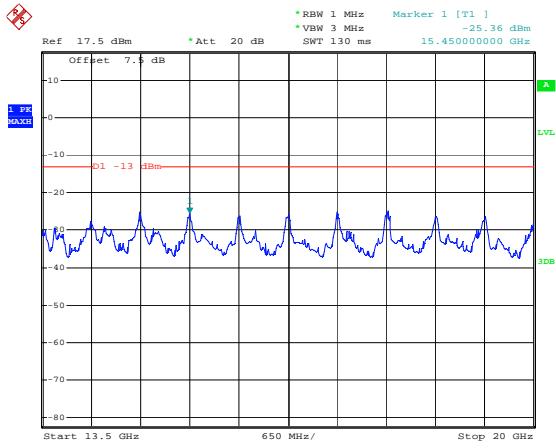
Date: 23.JUN.2021 00:57:30
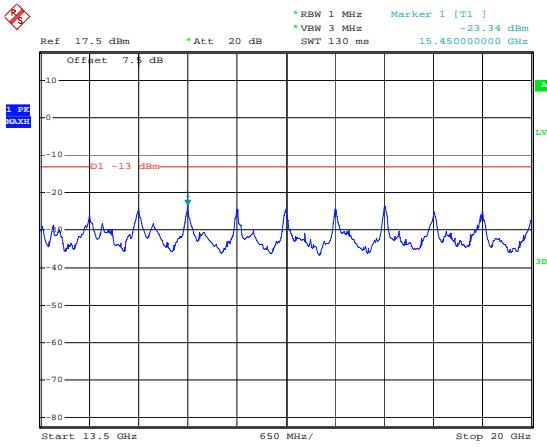
Date: 23.JUN.2021 00:58:05

15M, High Channel
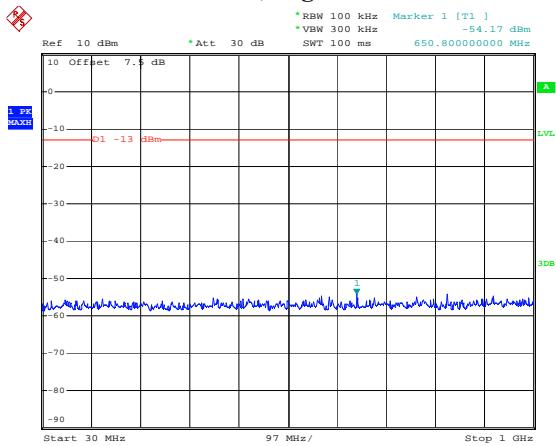
Date: 27.MAY.2021 16:07:53

Date: 27.MAY.2021 16:08:06

Date: 23.JUN.2021 00:58:43

20M, Low Channel
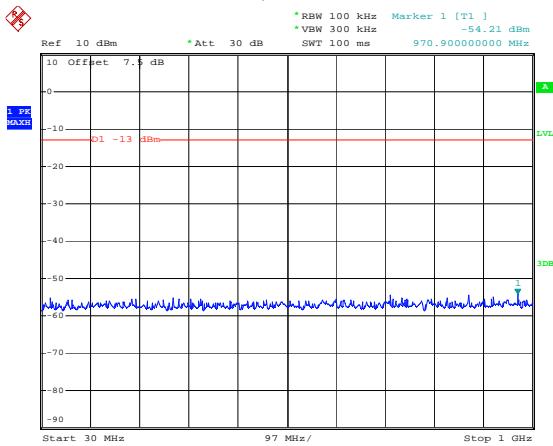
Date: 27.MAY.2021 16:09:41
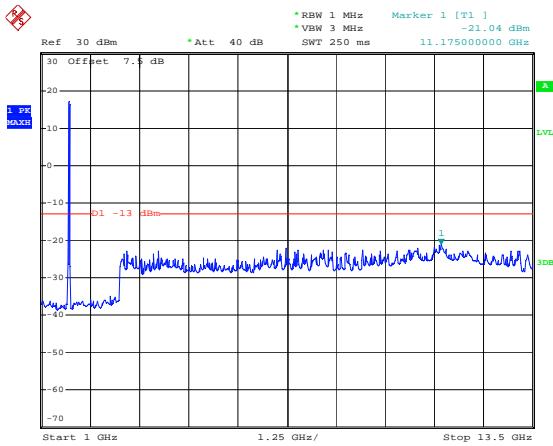
Date: 27.MAY.2021 16:09:54
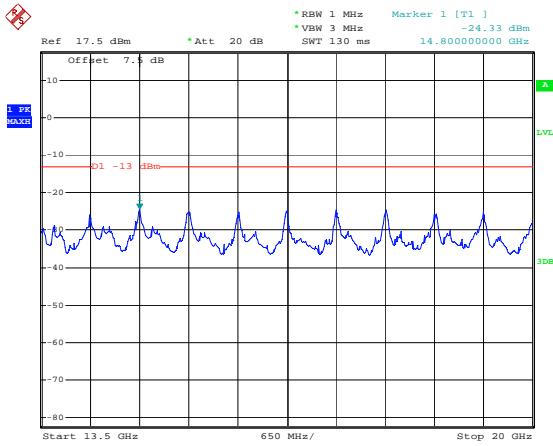
Date: 23.JUN.2021 00:59:18

20M, Middle Channel
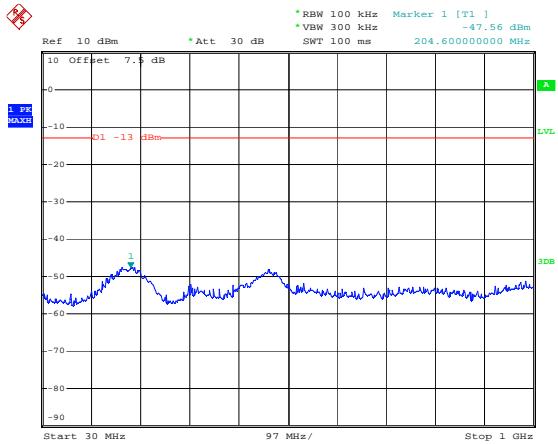
Date: 27.MAY.2021 16:10:26

Date: 27.MAY.2021 16:10:39

Date: 23.JUN.2021 00:59:38

20M, High Channel
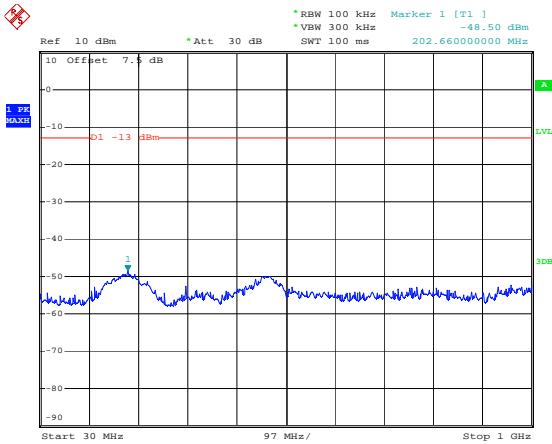
Date: 27.MAY.2021 16:11:11
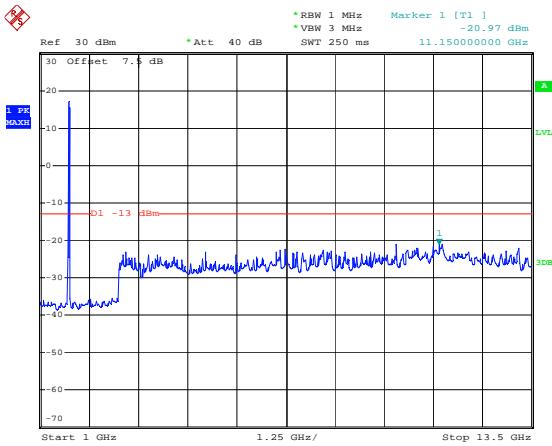
Date: 27.MAY.2021 16:11:24
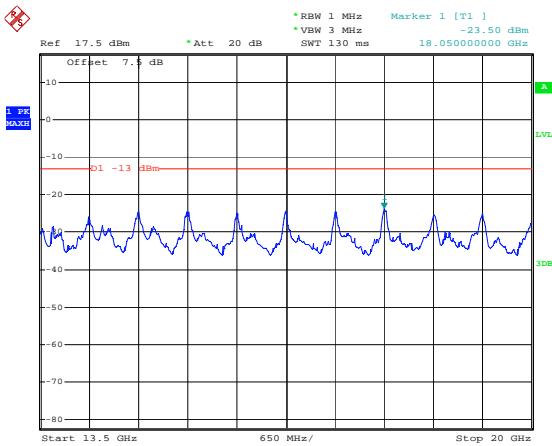
Date: 23.JUN.2021 01:00:03

LTE Band 7

### 5M, Low Channel
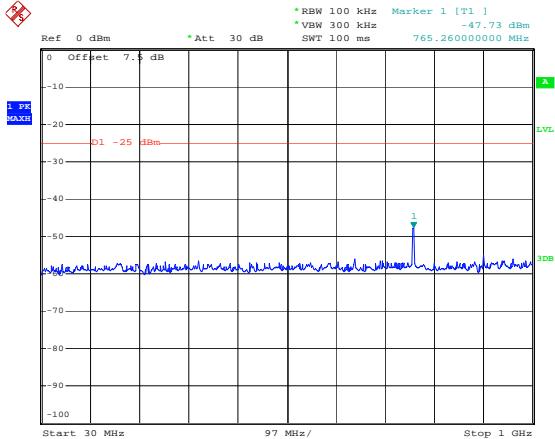
Date: 27.MAY.2021 16:41:51

5M, Middle Channel
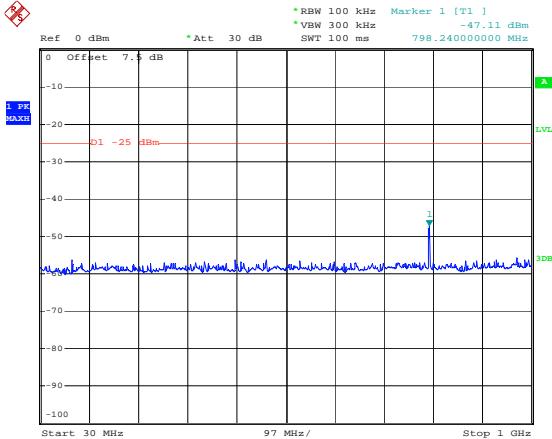
Date: 27.MAY.2021 16:43:40
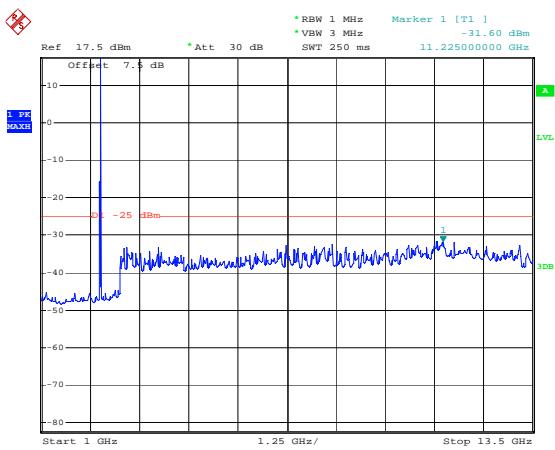
Date: 27.MAY.2021 16:42:34
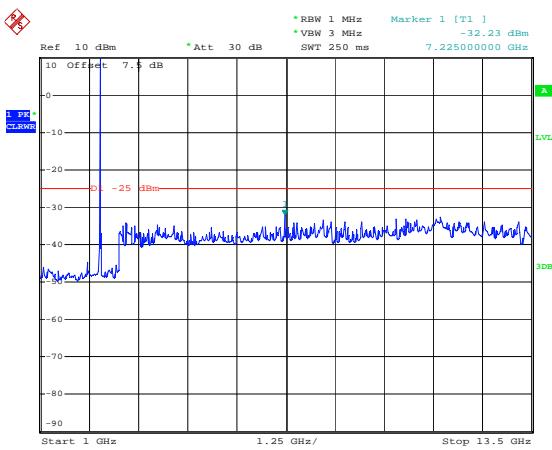
Date: 27.MAY.2021 16:44:43
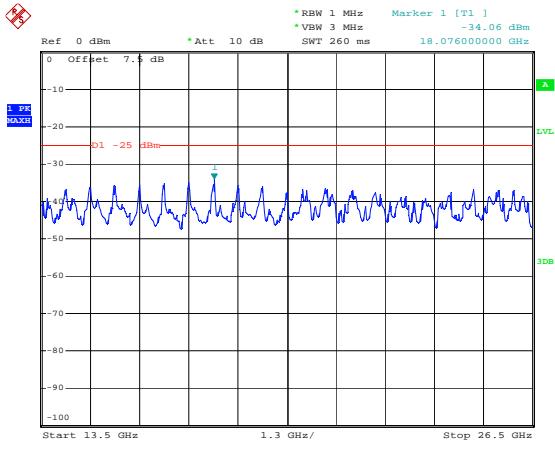
Date: 27.MAY.2021 16:43:21
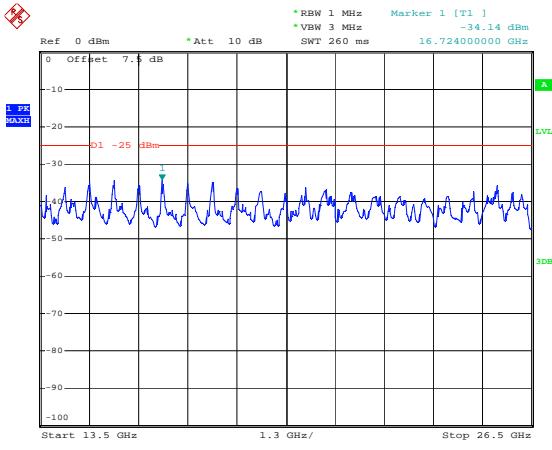
Date: 27.MAY.2021 16:45:19

5M, High Channel
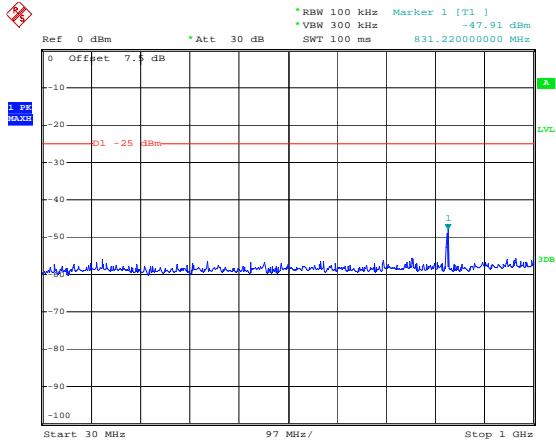
Date: 27.MAY.2021 16:45:38

Date: 27.MAY.2021 16:46:56

Date: 27.MAY.2021 16:51:13

10M, Low Channel
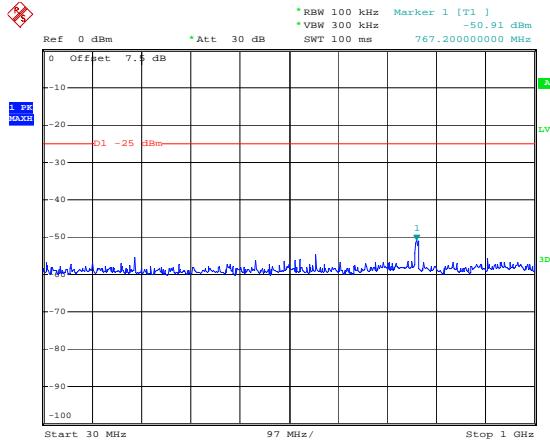
Date: 27.MAY.2021 16:51:33
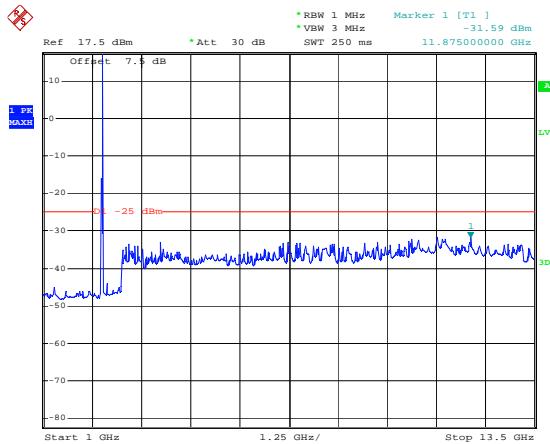
Date: 27.MAY.2021 16:52:04
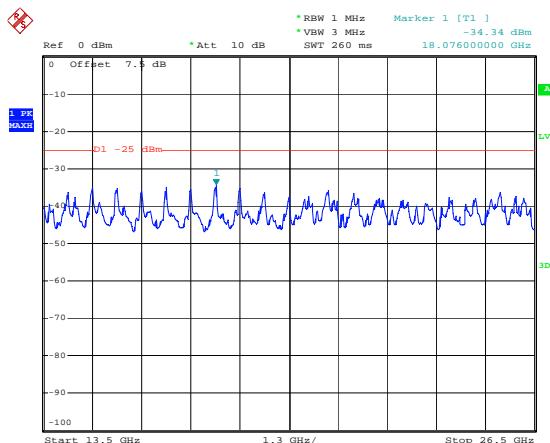
Date: 27.MAY.2021 16:52:50

## 10M, Middle Channel
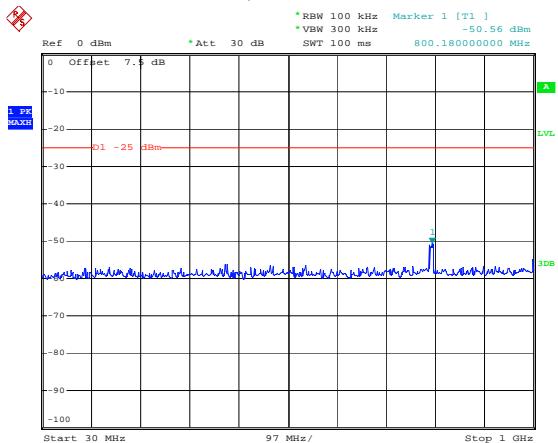
Date: 27.MAY.2021 16:53:07

Date: 27.MAY.2021 16:53:42

Date: 27.MAY.2021 16:54:17

10M, High Channel
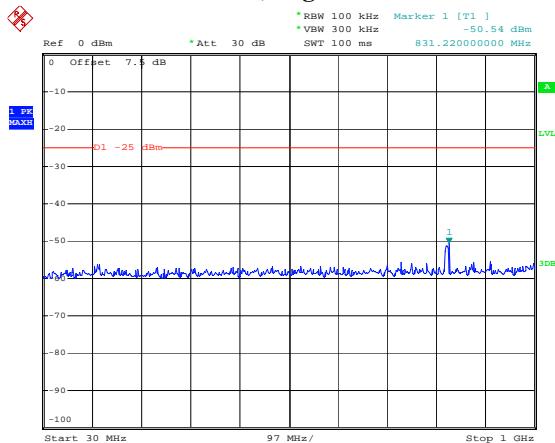
Date: 27.MAY.2021 16:54:37
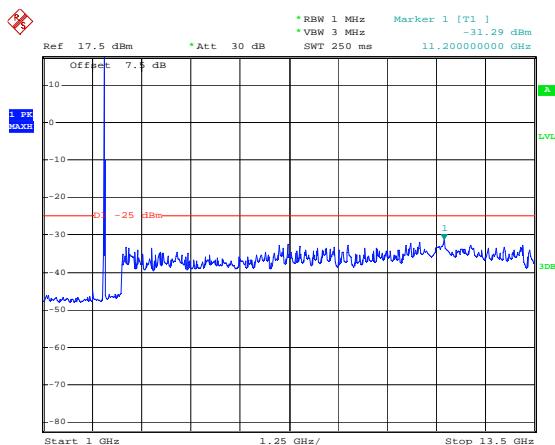
Date: 27.MAY.2021 16:55:09
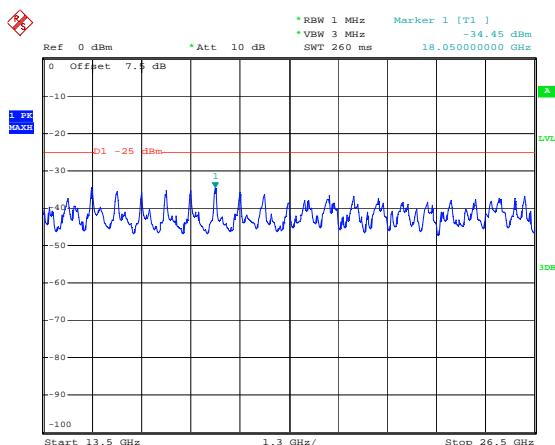
Date: 27.MAY.2021 17:03:06

15M, Low Channel   15M, Middle Channel
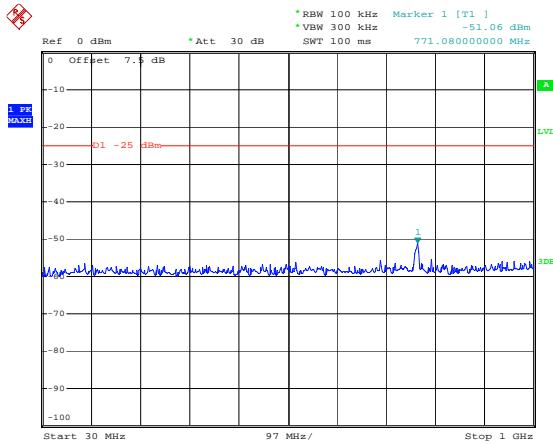
Date: 27.MAY.2021 17:03:34
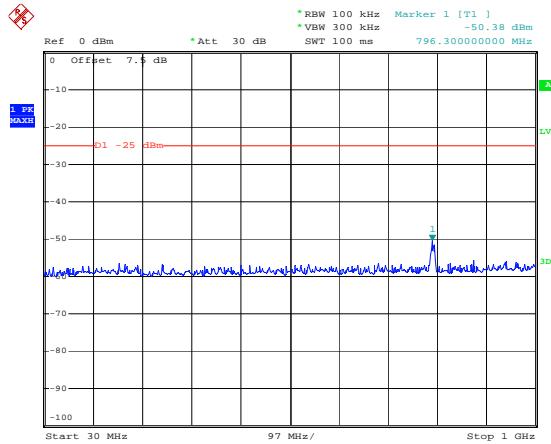
Date: 27.MAY.2021 17:05:08
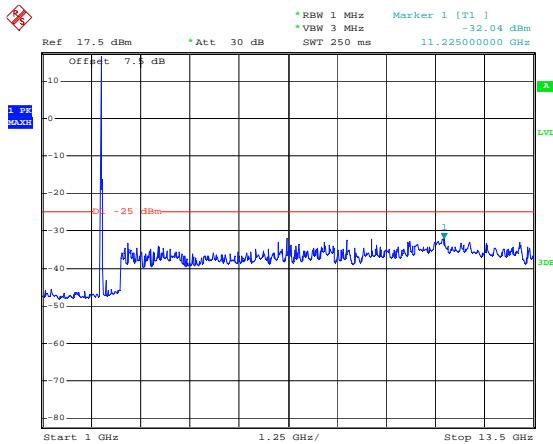
Date: 27.MAY.2021 17:04:06
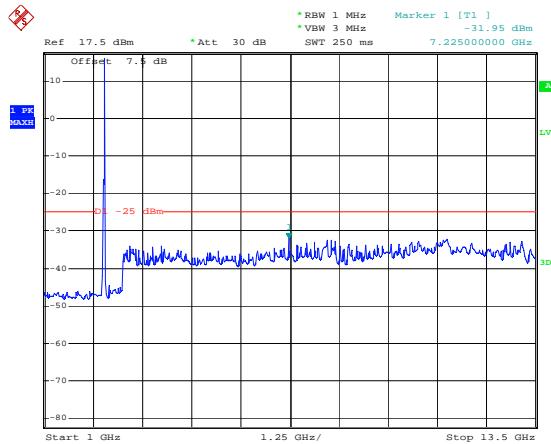
Date: 27.MAY.2021 17:05:33
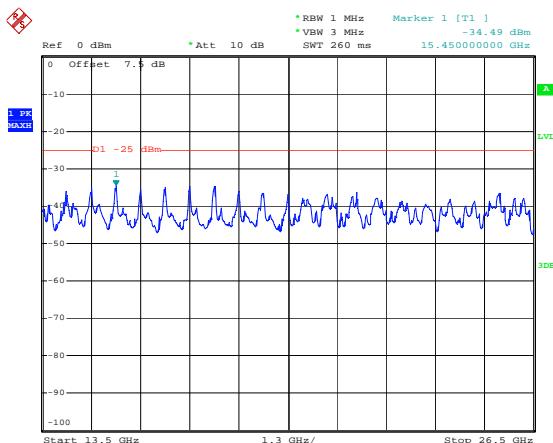
Date: 27.MAY.2021 17:04:45
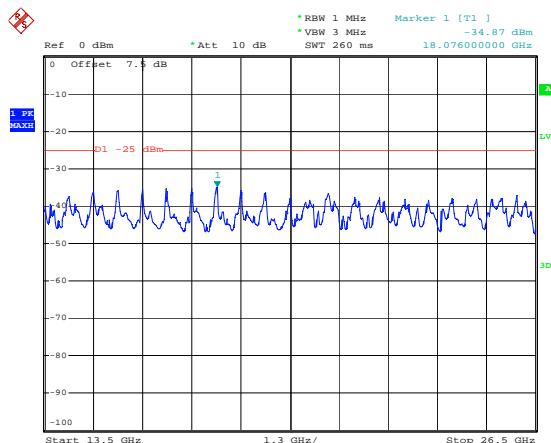
Date: 27.MAY.2021 17:06:05

15M, High Channel
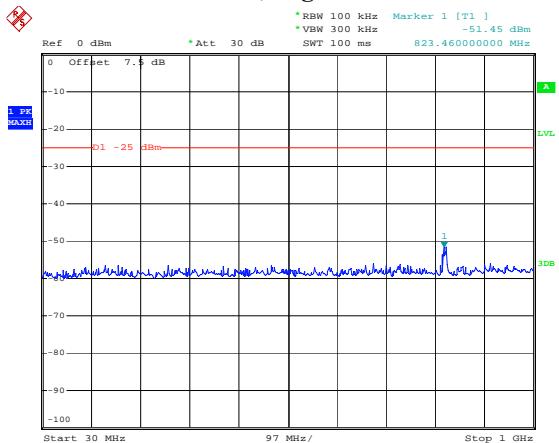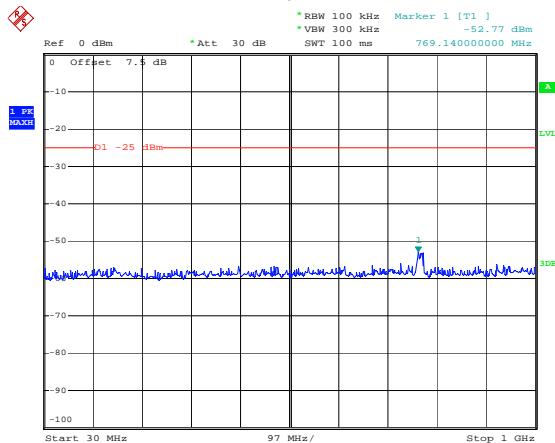
Date: 27.MAY.2021 17:06:27


Date: 27.MAY.2021 17:08:29


Date: 27.MAY.2021 17:09:05

20M, Low Channel

Date: 27.MAY.2021 17:09:29

Date: 27.MAY.2021 17:09:55

Date: 27.MAY.2021 17:10:32

20M, Middle Channel
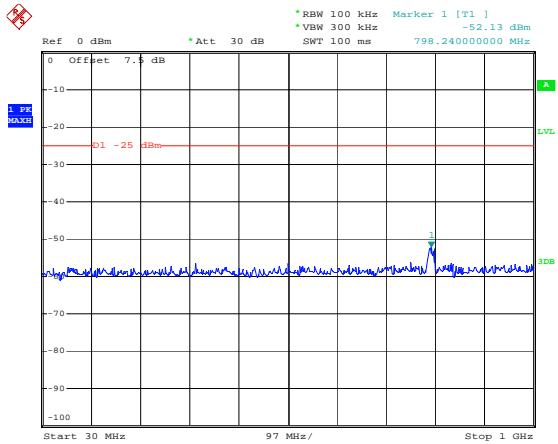
Date: 27.MAY.2021 17:10:52

Date: 27.MAY.2021 17:11:23

Date: 27.MAY.2021 17:11:52

20M, High Channel
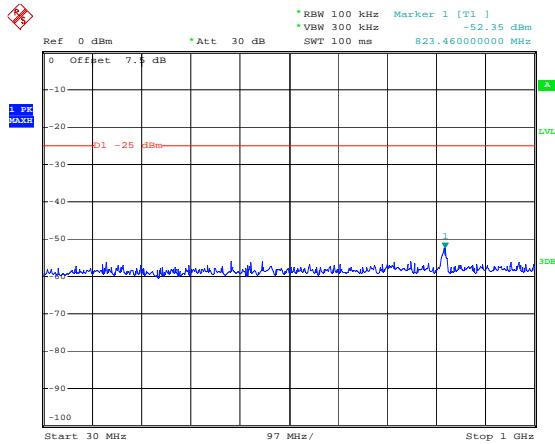
Date: 27.MAY.2021 17:12:15
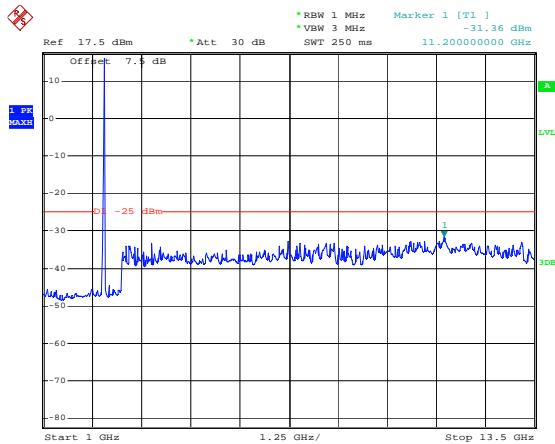
Date: 27.MAY.2021 17:12:43
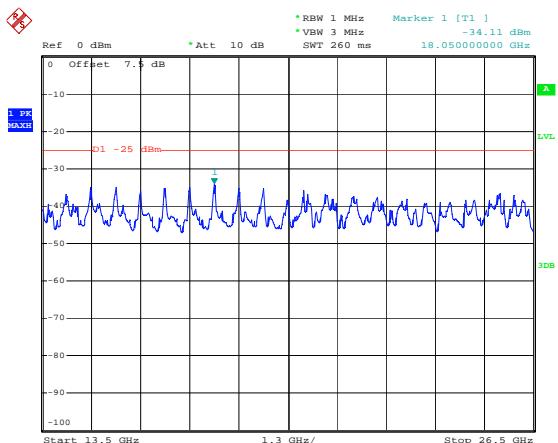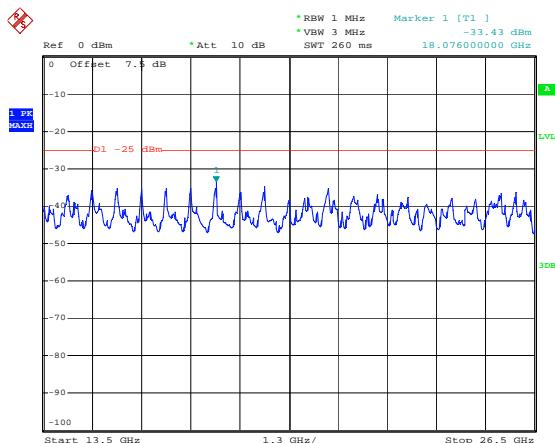
Date: 27.MAY.2021 17:13:09

LTE Band 12

1.4M, Low Channel
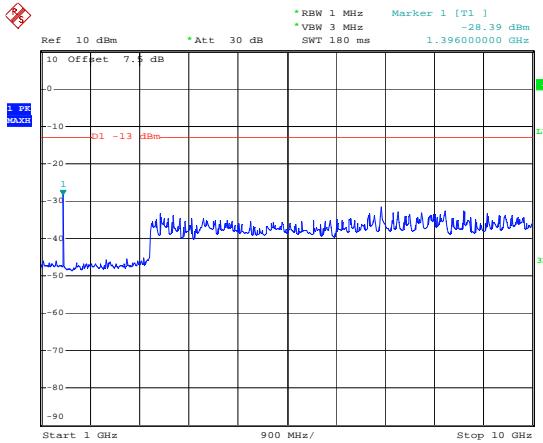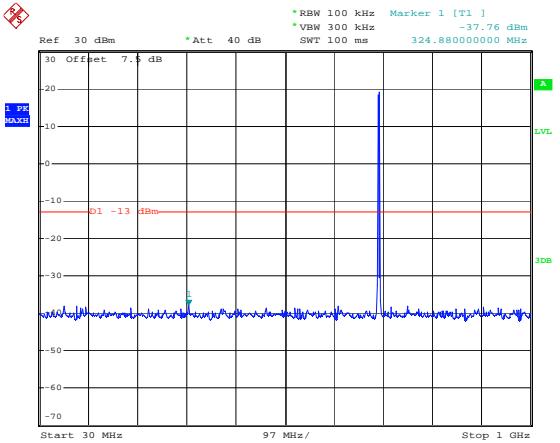
Date: 27.MAY.2021 16:21:20

Date: 27.MAY.2021 16:21:33

1.4M, Middle Channel
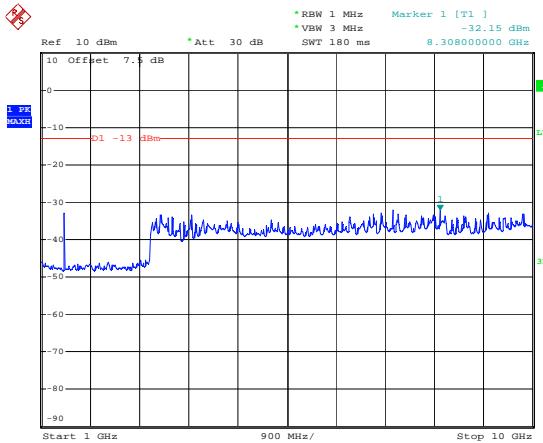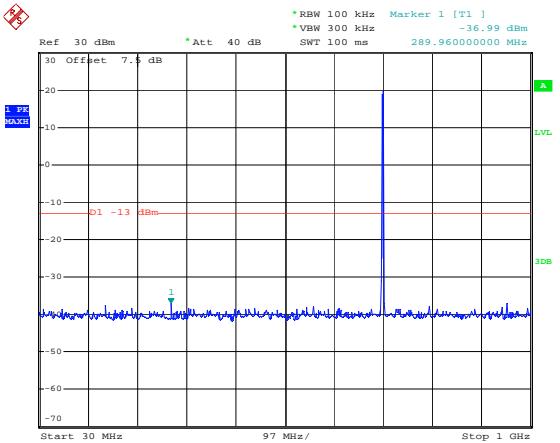
Date: 27.MAY.2021 16:21:53

Date: 27.MAY.2021 16:22:06

1.4M, High Channel
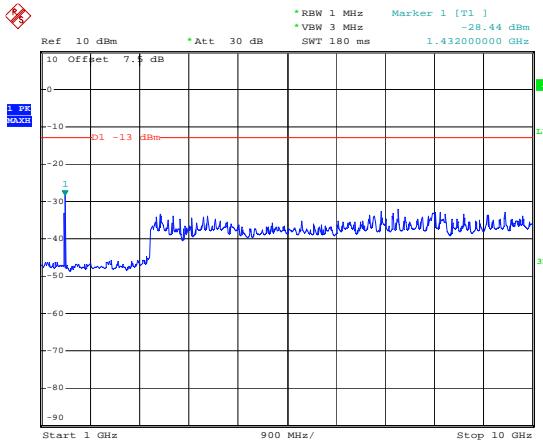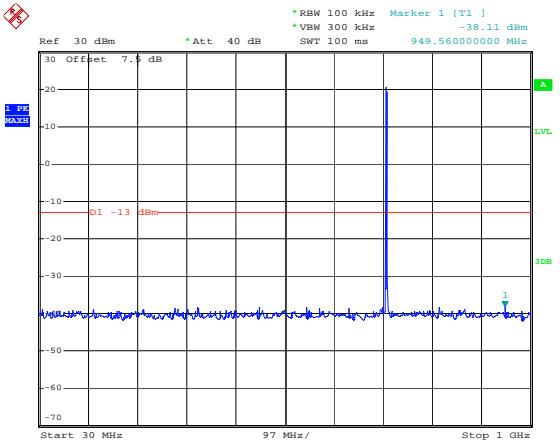
Date: 27.MAY.2021 16:22:22

Date: 27.MAY.2021 16:22:35

3M, Low Channel
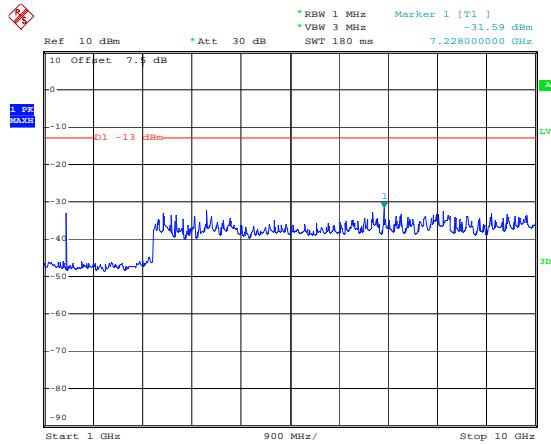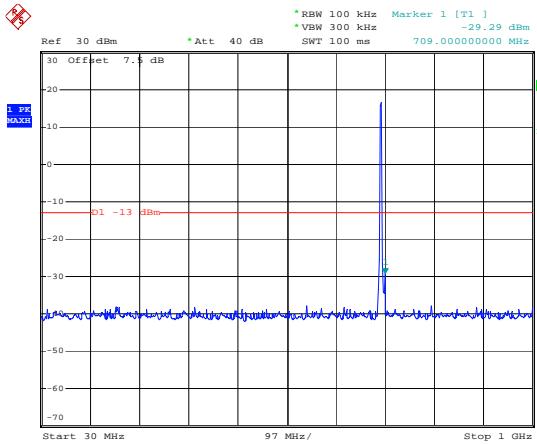
Date: 27.MAY.2021 16:22:56

Date: 27.MAY.2021 16:23:09

3M, Middle Channel
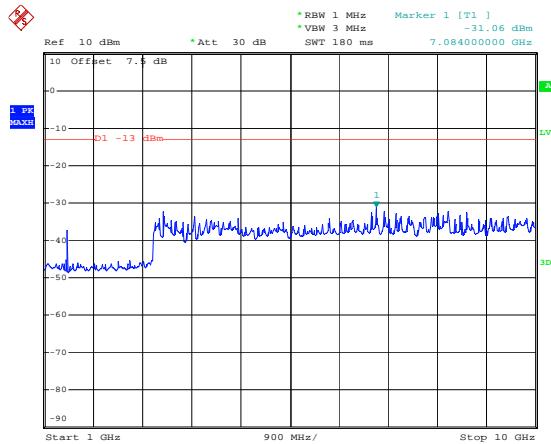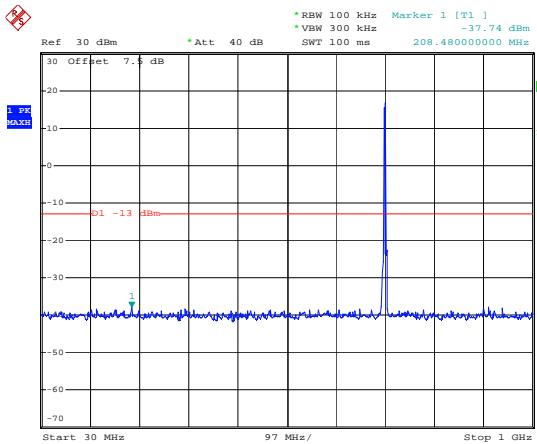
Date: 27.MAY.2021 16:23:28

Date: 27.MAY.2021 16:23:41

3M, High Channel
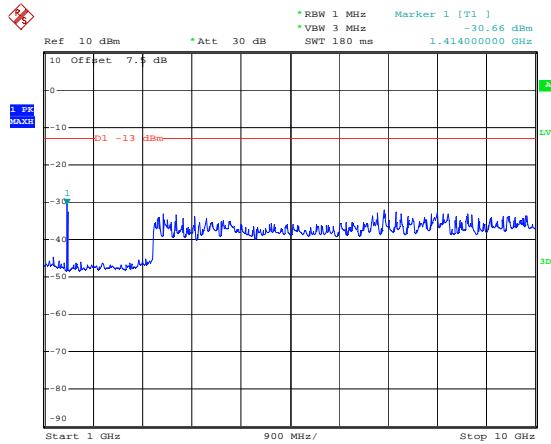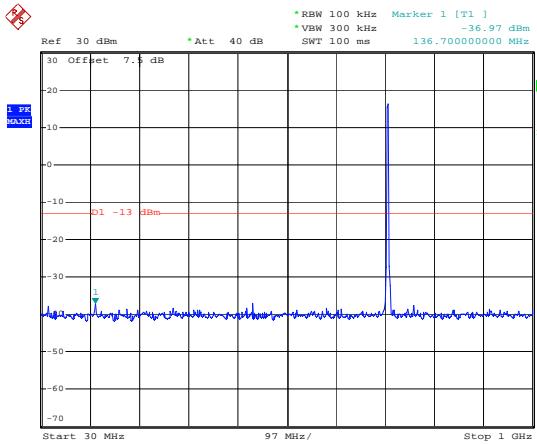
Date: 27.MAY.2021 16:24:00

Date: 27.MAY.2021 16:24:13

5M, Low Channel
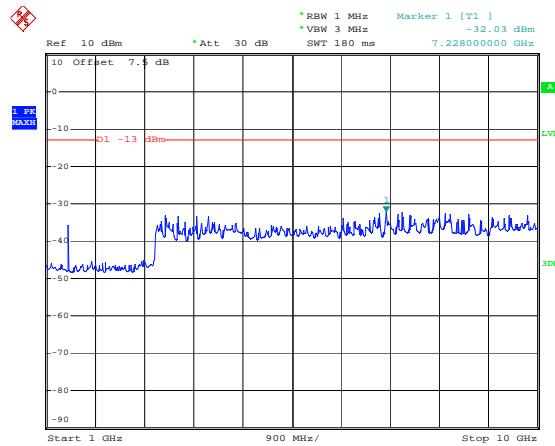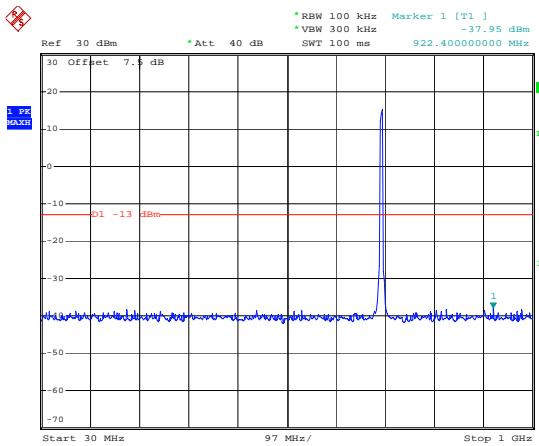
Date: 27.MAY.2021 16:24:32

Date: 27.MAY.2021 16:24:45

5M, Middle Channel
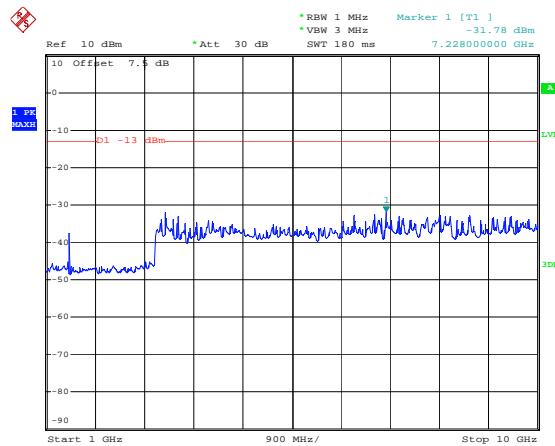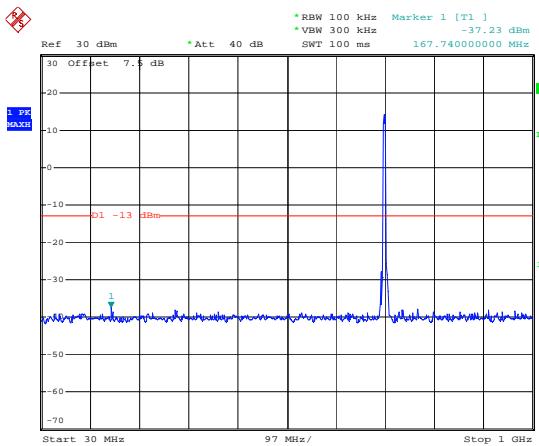
Date: 27.MAY.2021 16:25:04

Date: 27.MAY.2021 16:25:17

5M, High Channel
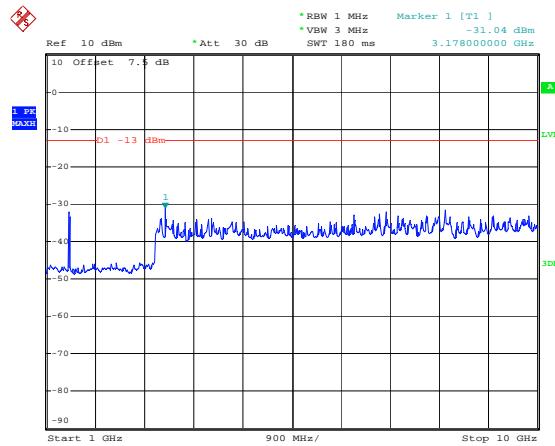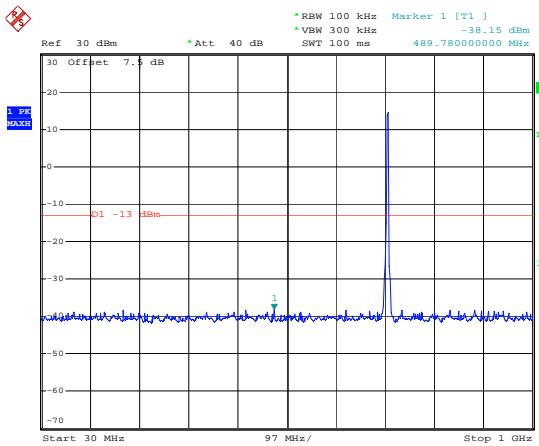
Date: 27.MAY.2021 16:25:33

Date: 27.MAY.2021 16:25:46

10M, Low Channel
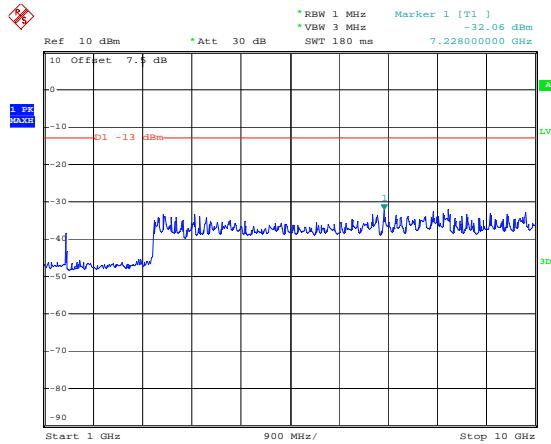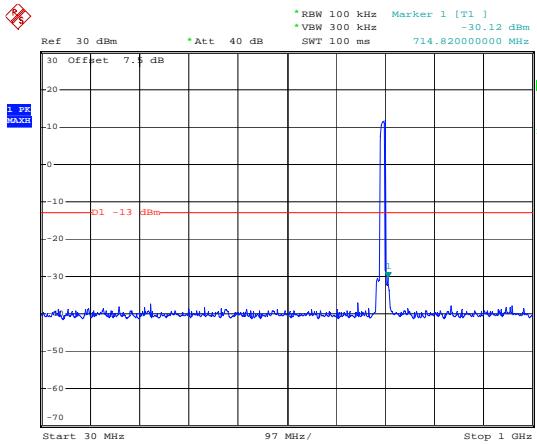
Date: 27.MAY.2021 16:26:09   Date: 27.MAY.2021 16:26:25

10M, Middle Channel
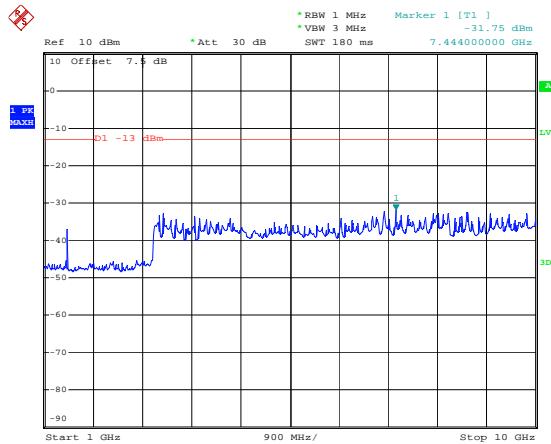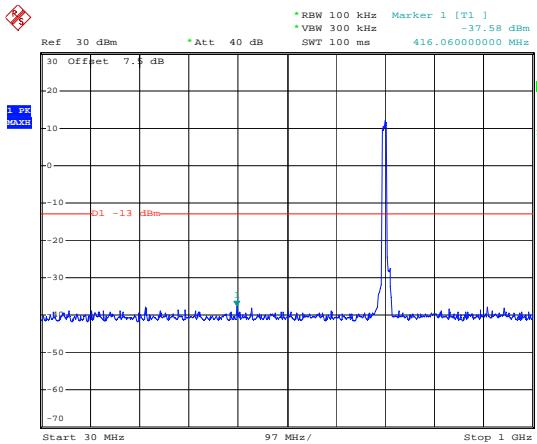
Date: 27.MAY.2021 16:26:42   Date: 27.MAY.2021 16:26:55

10M, High Channel
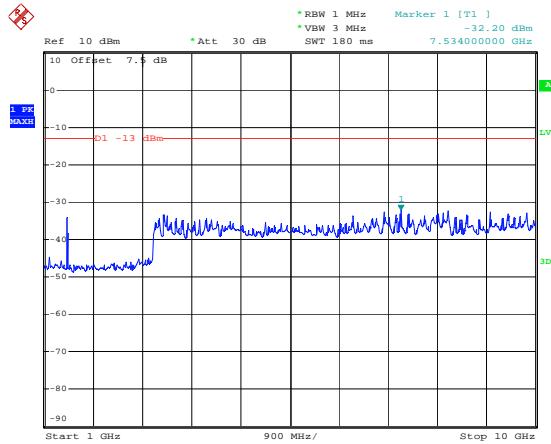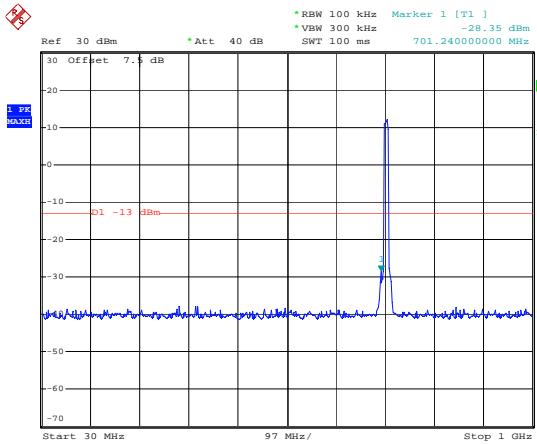
Date: 27.MAY.2021 16:27:15   Date: 27.MAY.2021 16:27:28

LTE Band 17

5M, Low Channel
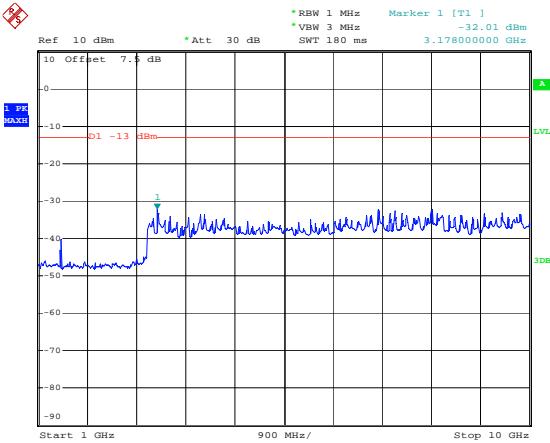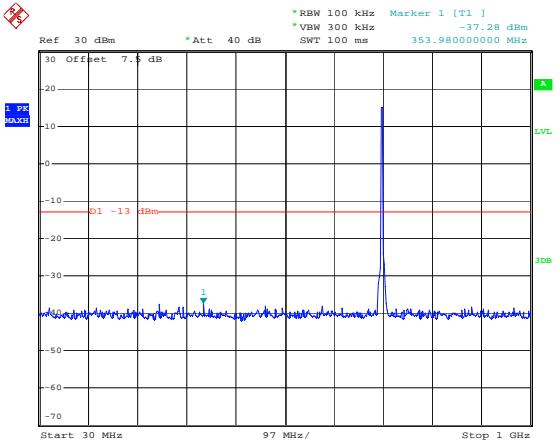
Date: 27.MAY.2021 16:27:47

Date: 27.MAY.2021 16:28:00

5M, Middle Channel
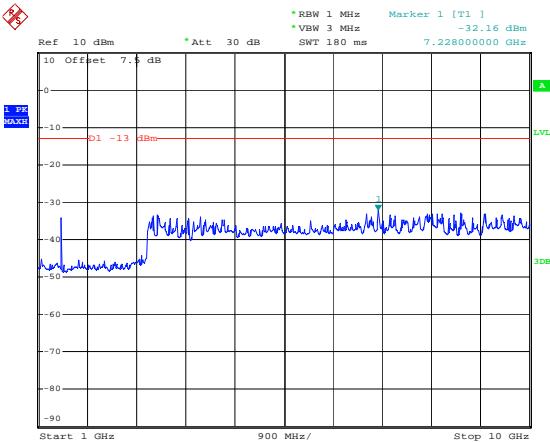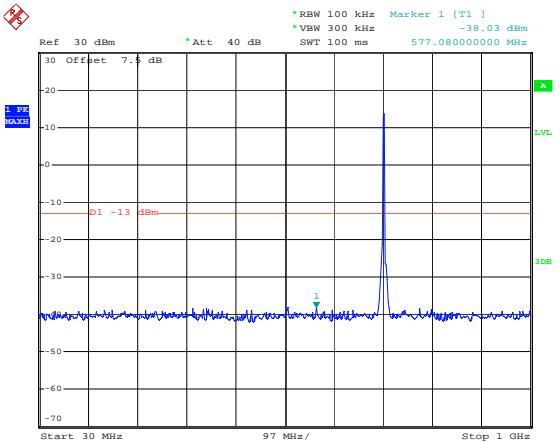
Date: 27.MAY.2021 16:28:16

Date: 27.MAY.2021 16:28:29

5M, High Channel
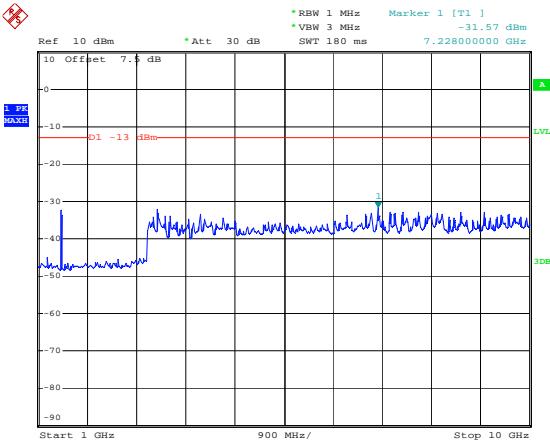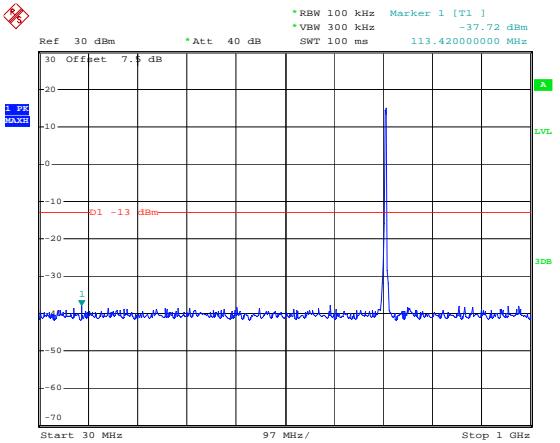
Date: 27.MAY.2021 16:28:45

Date: 27.MAY.2021 16:29:02

10M, Low Channel
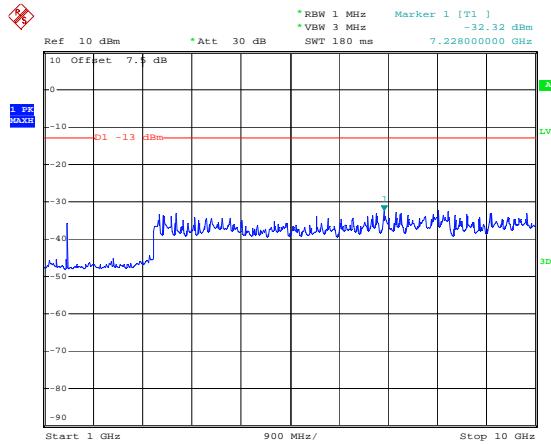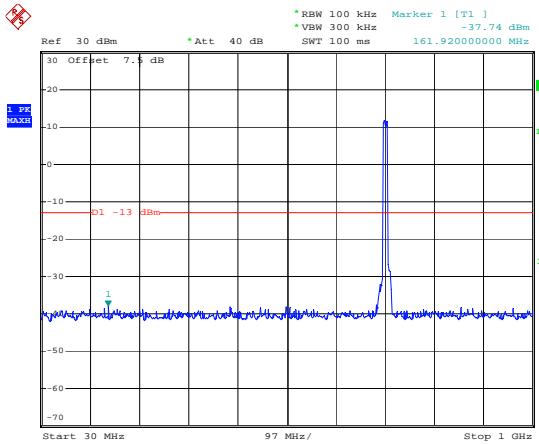
Date: 27.MAY.2021 16:29:22

Date: 27.MAY.2021 16:29:38

## 10M, Middle Channel
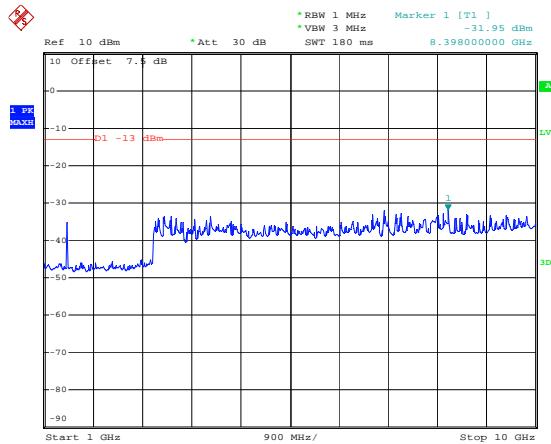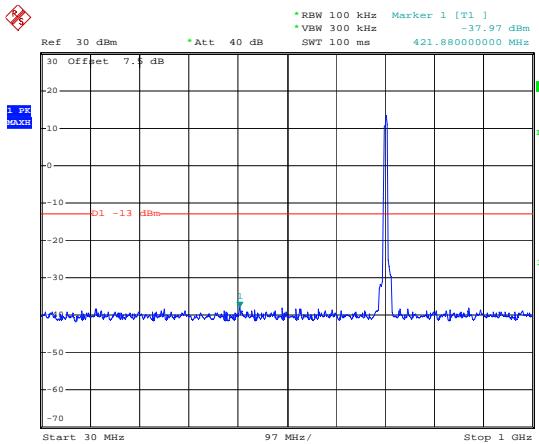
Date: 27.MAY.2021 16:29:59

Date: 27.MAY.2021 16:30:11

10M, High Channel
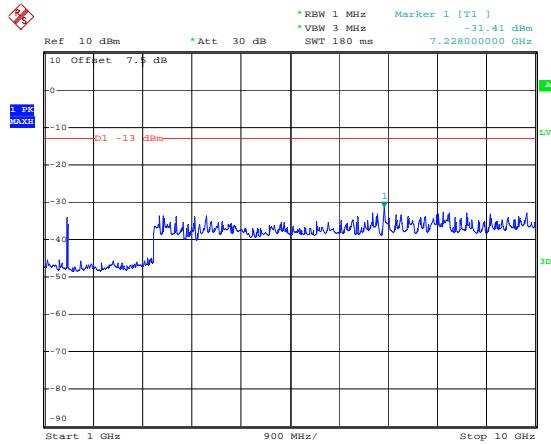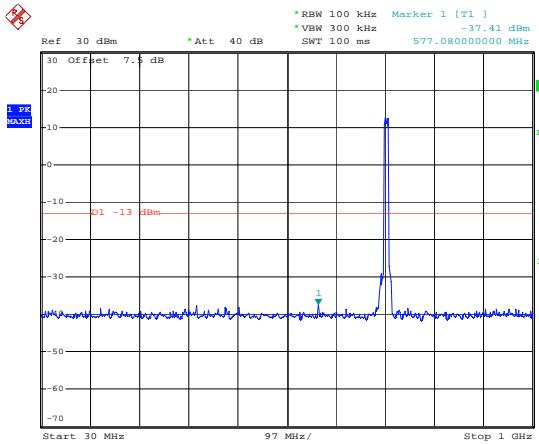
Date: 27.MAY.2021 16:30:32


Date: 27.MAY.2021 16:30:45

6 - SPURIOUS RADIATED EMISSIONS

Applicable Standard

FCC § 2.1053, §22.917, § 24.238 and § 27.53;

Test Procedure

The transmitter was placed on a wooden turntable, and it was transmitting into a non-radiating load which was also placed on the turntable.

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.

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

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 emissions in dB = 10 lg (TXpwr in Watts/0.001) – the absolute level

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

Test Data

Test Mode: Transmitting

Test Result: Compliance. Please refer to following tables and plots.

PART 22H_Cellular Band (30M-10GHz)

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBµV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level(dBm)	Antenna Gain(dBd/dBi)	Cable Loss (dB)			
GSM850 Frequency:824.2MHz								
1648.40	H	33.33	-42.97	10.45	1.28	-33.80	-13.00	20.80
1648.40	V	31.13	-45.52	10.45	1.28	-36.35	-13.00	23.35
2472.60	H	47.34	-27.30	12.16	1.23	-16.37	-13.00	3.37
2472.60	V	43.72	-31.19	12.16	1.23	-20.26	-13.00	7.26
3296.80	H	32.06	-40.90	12.28	1.57	-30.19	-13.00	17.19
3296.80	V	33.25	-39.93	12.28	1.57	-29.22	-13.00	16.22
4121.00	H	41.25	-30.20	12.57	1.47	-19.10	-13.00	6.10
4121.00	V	43.56	-28.22	12.57	1.47	-17.12	-13.00	4.12
5769.40	H	41.22	-27.32	13.18	1.32	-15.46	-13.00	2.46
5769.40	V	42.18	-26.79	13.18	1.32	-14.93	-13.00	1.93
291.90	H	60.25	-48.50	0.00	0.30	-48.80	-13.00	35.80
185.02	V	59.03	-48.98	0.00	0.22	-49.20	-13.00	36.20
GSM850 Frequency:836.6MHz								
1673.20	H	34.48	-41.77	10.52	1.27	-32.52	-13.00	19.52
1673.20	V	31.01	-45.58	10.52	1.27	-36.33	-13.00	23.33
2509.80	H	50.07	-24.49	12.20	1.25	-13.54	-13.00	0.54
2509.80	V	49.02	-25.82	12.20	1.25	-14.87	-13.00	1.87
3346.40	H	32.41	-40.50	12.26	1.58	-29.82	-13.00	16.82
3346.40	V	32.00	-41.10	12.26	1.58	-30.42	-13.00	17.42
4183.00	H	42.66	-28.64	12.70	1.48	-17.42	-13.00	4.42
4183.00	V	41.18	-30.52	12.70	1.48	-19.30	-13.00	6.30
5856.20	H	38.43	-29.84	13.30	1.35	-17.89	-13.00	4.89
5856.20	V	39.57	-29.16	13.30	1.35	-17.21	-13.00	4.21
203.92	H	59.02	-51.13	0.00	0.19	-51.32	-13.00	38.32
117.62	V	58.53	-46.11	0.00	0.20	-46.31	-13.00	33.31
GSM850 Frequency:848.8MHz								
1697.60	H	32.59	-43.61	10.59	1.26	-34.28	-13.00	21.28
1697.60	V	30.59	-45.93	10.59	1.26	-36.60	-13.00	23.60
2546.40	H	50.18	-24.28	12.22	1.26	-13.32	-13.00	0.32
2546.40	V	49.42	-25.33	12.22	1.26	-14.37	-13.00	1.37
3395.20	H	31.36	-41.51	12.24	1.59	-30.86	-13.00	17.86
3395.20	V	31.60	-41.42	12.24	1.59	-30.77	-13.00	17.77
4244.00	H	36.16	-35.00	12.84	1.49	-23.65	-13.00	10.65
4244.00	V	38.82	-32.79	12.84	1.49	-21.44	-13.00	8.44
5941.60	H	36.70	-31.30	13.42	1.37	-19.25	-13.00	6.25
5941.60	V	40.74	-27.76	13.42	1.37	-15.71	-13.00	2.71
385.03	H	61.11	-45.96	0.00	0.37	-46.33	-13.00	33.33
474.26	V	55.10	-47.98	0.00	0.36	-48.34	-13.00	35.34

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBµV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level(dBm)	Antenna Gain(dBd/dBi)	Cable Loss (dB)			
WCDMA Band 5 Frequency:826.4 MHz								
1652.80	H	44.75	-60.28	10.46	1.28	-51.10	-13.00	38.10
1652.80	V	40.22	-64.75	10.46	1.28	-55.57	-13.00	42.57
2479.20	H	41.13	-62.57	12.17	1.24	-51.64	-13.00	38.64
2479.20	V	41.37	-63.68	12.17	1.24	-52.75	-13.00	39.75
3305.60	H	42.05	-60.20	12.28	1.57	-49.49	-13.00	36.49
3305.60	V	41.25	-60.04	12.28	1.57	-49.33	-13.00	36.33
301.50	H	60.77	-47.85	0.00	0.31	-48.16	-13.00	35.16
402.12	V	58.36	-45.74	0.00	0.38	-46.12	-13.00	33.12
WCDMA Band 5 Frequency:836.6MHz								
1673.20	H	42.45	-62.57	10.52	1.27	-53.32	-13.00	40.32
1673.20	V	41.93	-63.02	10.52	1.27	-53.77	-13.00	40.77
2509.80	H	41.37	-62.26	12.20	1.25	-51.31	-13.00	38.31
2509.80	V	41.42	-63.60	12.20	1.25	-52.65	-13.00	39.65
3346.40	H	40.40	-61.78	12.26	1.58	-51.10	-13.00	38.10
3346.40	V	41.01	-60.09	12.26	1.58	-49.41	-13.00	36.41
301.75	H	60.05	-48.57	0.00	0.31	-48.88	-13.00	35.88
402.27	V	58.12	-45.98	0.00	0.38	-46.36	-13.00	33.36
WCDMA Band 5 Frequency:846.6MHz								
1693.20	H	42.78	-62.22	10.58	1.26	-52.90	-13.00	39.90
1693.20	V	42.51	-62.43	10.58	1.26	-53.11	-13.00	40.11
2539.80	H	41.84	-61.74	12.22	1.26	-50.78	-13.00	37.78
2539.80	V	44.75	-60.13	12.22	1.26	-49.17	-13.00	36.17
3386.40	H	40.93	-61.18	12.25	1.59	-50.52	-13.00	37.52
3386.40	V	41.22	-59.70	12.25	1.59	-49.04	-13.00	36.04
227.89	H	61.17	-48.53	0.00	0.23	-48.76	-13.00	35.76
305.82	V	57.05	-49.77	0.00	0.31	-50.08	-13.00	37.08

PART 24E_PCS Band (30 MHz-20 GHz)

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
GSM1900 Frequency:1850.2MHz								
3700.40	H	37.34	-63.95	12.24	1.55	-53.26	-13.00	40.26
3700.40	V	40.00	-60.71	12.24	1.55	-50.02	-13.00	37.02
5550.60	H	40.01	-56.52	12.87	1.26	-44.91	-13.00	31.91
5550.60	V	42.27	-54.65	12.87	1.26	-43.04	-13.00	30.04
277.05	H	59.44	-49.50	0.00	0.29	-49.79	-13.00	36.79
93.57	V	57.05	-50.29	0.00	0.16	-50.45	-13.00	37.45
GSM 1900 Frequency:1880MHz								
3760.00	H	38.78	-62.32	12.25	1.53	-51.60	-13.00	38.60
3760.00	V	38.65	-62.16	12.25	1.53	-51.44	-13.00	38.44
5640.00	H	44.27	-52.02	13.00	1.28	-40.30	-13.00	27.30
5640.00	V	43.97	-52.62	13.00	1.28	-40.90	-13.00	27.90
332.45	H	61.71	-46.34	0.00	0.33	-46.67	-13.00	33.67
301.58	V	58.07	-48.87	0.00	0.31	-49.18	-13.00	36.18
GSM 1900 Frequency:1909.8MHz								
3819.60	H	37.65	-63.27	12.26	1.51	-52.52	-13.00	39.52
3819.60	V	36.67	-64.23	12.26	1.51	-53.48	-13.00	40.48
5729.40	H	46.74	-49.31	13.12	1.31	-37.50	-13.00	24.50
5729.40	V	47.33	-48.94	13.12	1.31	-37.13	-13.00	24.13
117.03	H	62.07	-47.83	0.00	0.19	-48.02	-13.00	35.02
387.12	V	59.01	-45.49	0.00	0.37	-45.86	-13.00	32.86
WCDMA Band II, Frequency:1852.4 MHz								
3704.80	H	51.47	-49.81	12.24	1.54	-39.11	-13.00	26.11
3704.80	V	49.40	-51.32	12.24	1.54	-40.62	-13.00	27.62
5557.20	H	37.06	-59.45	12.88	1.26	-47.83	-13.00	34.83
5557.20	V	37.18	-59.72	12.88	1.26	-48.10	-13.00	35.10
336.89	H	62.39	-45.57	0.00	0.34	-45.91	-13.00	32.91
301.27	V	60.01	-46.94	0.00	0.31	-47.25	-13.00	34.25
WCDMA Band II, Frequency:1880 MHz								
3760.00	H	48.68	-52.42	12.25	1.53	-41.70	-13.00	28.70
3760.00	V	49.55	-51.26	12.25	1.53	-40.54	-13.00	27.54
5640.00	H	37.56	-58.73	13.00	1.28	-47.01	-13.00	34.01
5640.00	V	37.44	-59.15	13.00	1.28	-47.43	-13.00	34.43
372.07	H	60.78	-46.53	0.00	0.36	-46.89	-13.00	33.89
205.37	V	59.92	-46.72	0.00	0.19	-46.91	-13.00	33.91
WCDMA Band II, Frequency:1907.6MHz								
3815.20	H	49.95	-50.98	12.26	1.51	-40.23	-13.00	27.23
3815.20	V	51.53	-49.36	12.26	1.51	-38.61	-13.00	25.61
5722.80	H	38.05	-58.02	13.11	1.31	-46.22	-13.00	33.22
5722.80	V	37.86	-58.43	13.11	1.31	-46.63	-13.00	33.63
341.67	H	61.24	-46.63	0.00	0.34	-46.97	-13.00	33.97
303.04	V	60.17	-46.73	0.00	0.31	-47.04	-13.00	34.04

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBµV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
LTE Band 2, QPSK,Frequency:1850.7 MHz								
3701.40	H	54.13	-47.16	12.24	1.55	-36.47	-13.00	23.47
3701.40	V	51.53	-49.19	12.24	1.55	-38.50	-13.00	25.50
5552.10	H	37.22	-59.30	12.87	1.26	-47.69	-13.00	34.69
5552.10	V	38.98	-57.94	12.87	1.26	-46.33	-13.00	33.33
305.87	H	63.02	-45.52	0.00	0.31	-45.83	-13.00	32.83
317.11	V	60.37	-46.13	0.00	0.32	-46.45	-13.00	33.45
LTE Band 2, QPSK,Frequency:1880 MHz								
3760.00	H	49.55	-51.55	12.25	1.53	-40.83	-13.00	27.83
3760.00	V	49.16	-51.65	12.25	1.53	-40.93	-13.00	27.93
5640.00	H	37.88	-58.41	13.00	1.28	-46.69	-13.00	33.69
5640.00	V	37.52	-59.07	13.00	1.28	-47.35	-13.00	34.35
302.58	H	61.05	-47.55	0.00	0.31	-47.86	-13.00	34.86
287.06	V	60.17	-47.07	0.00	0.30	-47.37	-13.00	34.37
LTE Band 2, QPSK,Frequency:1909.3 MHz								
3818.60	H	52.93	-47.99	12.26	1.51	-37.24	-13.00	24.24
3818.60	V	53.13	-47.76	12.26	1.51	-37.01	-13.00	24.01
5727.90	H	39.28	-56.77	13.12	1.31	-44.96	-13.00	31.96
5727.90	V	38.37	-57.90	13.12	1.31	-46.09	-13.00	33.09
224.26	H	62.17	-47.59	0.00	0.22	-47.81	-13.00	34.81
205.37	V	60.78	-45.86	0.00	0.19	-46.05	-13.00	33.05

Part 27_LTE Band 4 (30MHz-20GHz)

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBµV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
QPSK,Frequency:1710.7 MHz								
3421.40	H	39.22	-62.83	12.23	1.59	-52.19	-13.00	39.19
3421.40	V	38.82	-61.95	12.23	1.59	-51.31	-13.00	38.31
5132.10	H	38.45	-58.77	12.95	1.39	-47.21	-13.00	34.21
5132.10	V	38.57	-58.52	12.95	1.39	-46.96	-13.00	33.96
214.77	H	62.95	-46.99	0.00	0.21	-47.20	-13.00	34.20
201.11	V	59.33	-47.18	0.00	0.18	-47.36	-13.00	34.36
QPSK,Frequency:1732.5 MHz								
3465.00	H	38.66	-63.31	12.21	1.60	-52.70	-13.00	39.70
3465.00	V	39.17	-61.40	12.21	1.60	-50.79	-13.00	37.79
5197.50	H	38.69	-58.43	12.92	1.36	-46.87	-13.00	33.87
5197.50	V	38.46	-58.63	12.92	1.36	-47.07	-13.00	34.07
118.36	H	62.11	-47.66	0.00	0.20	-47.86	-13.00	34.86
208.09	V	60.14	-46.58	0.00	0.19	-46.77	-13.00	33.77
QPSK,Frequency:1754.3 MHz								
3508.60	H	39.91	-61.97	12.20	1.61	-51.38	-13.00	38.38
3508.60	V	39.25	-61.17	12.20	1.61	-50.58	-13.00	37.58
5262.90	H	38.27	-58.75	12.89	1.33	-47.19	-13.00	34.19
5262.90	V	38.97	-58.13	12.89	1.33	-46.57	-13.00	33.57
305.79	H	60.58	-47.96	0.00	0.31	-48.27	-13.00	35.27
428.31	V	58.07	-45.66	0.00	0.37	-46.03	-13.00	33.03

Part 27_LTE Band 7(30MHz-27GHz)

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
QPSK, Frequency: 2502.5 MHz								
5005.00	H	38.73	-58.68	13.00	1.44	-47.12	-25.00	22.12
5005.00	V	37.90	-59.18	13.00	1.44	-47.62	-25.00	22.62
7507.50	H	38.30	-54.48	12.80	1.33	-43.01	-25.00	18.01
7507.50	V	38.01	-55.47	12.80	1.33	-44.00	-25.00	19.00
317.60	H	61.71	-46.61	0.00	0.32	-46.93	-25.00	21.93
189.36	V	57.69	-49.88	0.00	0.21	-50.09	-25.00	25.09
QPSK, Frequency: 2535 MHz								
5070.00	H	38.15	-59.16	12.97	1.41	-47.60	-25.00	22.60
5070.00	V	37.90	-59.18	12.97	1.41	-47.62	-25.00	22.62
7605.00	H	38.00	-54.59	12.84	1.40	-43.15	-25.00	18.15
7605.00	V	37.95	-55.31	12.84	1.40	-43.87	-25.00	18.87
355.02	H	62.76	-44.87	0.00	0.35	-45.22	-25.00	20.22
213.69	V	59.18	-47.71	0.00	0.20	-47.91	-25.00	22.91
QPSK, Frequency: 2567.5 MHz								
5135.00	H	39.24	-57.97	12.95	1.39	-46.41	-25.00	21.41
5135.00	V	42.43	-54.66	12.95	1.39	-43.10	-25.00	18.10
7702.50	H	38.27	-54.12	12.88	1.47	-42.71	-25.00	17.71
7702.50	V	38.02	-55.01	12.88	1.47	-43.60	-25.00	18.60
394.04	H	61.79	-45.11	0.00	0.38	-45.49	-25.00	20.49
228.64	V	59.93	-47.40	0.00	0.23	-47.63	-25.00	22.63

Part 27_LTE Band 12 (30MHz-10GHz)

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
QPSK, Frequency: 699.7 MHz								
1399.40	H	44.92	-59.54	9.58	1.23	-51.19	-13.00	38.19
1399.40	V	55.61	-48.94	9.58	1.23	-40.59	-13.00	27.59
2099.10	H	39.22	-65.31	11.64	1.15	-54.82	-13.00	41.82
2099.10	V	39.62	-65.15	11.64	1.15	-54.66	-13.00	41.66
2798.80	H	39.16	-63.97	12.32	1.40	-53.05	-13.00	40.05
2798.80	V	39.51	-64.13	12.32	1.40	-53.21	-13.00	40.21
208.91	H	63.47	-46.58	0.00	0.20	-46.78	-13.00	33.78
177.48	V	60.32	-47.95	0.00	0.24	-48.19	-13.00	35.19
QPSK, Frequency:707.5 MHz								
1415.00	H	44.38	-60.19	9.64	1.25	-51.80	-13.00	38.80
1415.00	V	50.53	-54.10	9.64	1.25	-45.71	-13.00	32.71
2122.50	H	39.83	-64.65	11.67	1.16	-54.14	-13.00	41.14
2122.50	V	39.66	-65.12	11.67	1.16	-54.61	-13.00	41.61
2830.00	H	39.50	-63.58	12.33	1.41	-52.66	-13.00	39.66
2830.00	V	39.23	-64.26	12.33	1.41	-53.34	-13.00	40.34
338.05	H	61.69	-46.25	0.00	0.34	-46.59	-13.00	33.59
209.48	V	58.93	-47.83	0.00	0.20	-48.03	-13.00	35.03
QPSK, Frequency: 715.3 MHz								
1430.60	H	47.37	-57.31	9.71	1.27	-48.87	-13.00	35.87
1430.60	V	51.33	-53.39	9.71	1.27	-44.95	-13.00	31.95
2145.90	H	39.80	-64.63	11.70	1.16	-54.09	-13.00	41.09
2145.90	V	40.34	-64.46	11.70	1.16	-53.92	-13.00	40.92
2861.20	H	39.62	-63.40	12.34	1.43	-52.49	-13.00	39.49
2861.20	V	39.90	-63.44	12.34	1.43	-52.53	-13.00	39.53
228.34	H	63.47	-46.22	0.00	0.23	-46.45	-13.00	33.45
298.45	V	60.05	-46.97	0.00	0.31	-47.28	-13.00	34.28

LTE Band 17(30MHz-10GHz):

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBµV)	Substituted Method Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
QPSK, Frequency: 706.5 MHz							
1413.00	H	42.21	-62.34	9.63	1.24	-53.95	-13.00	40.95
1413.00	V	48.78	-55.84	9.63	1.24	-47.45	-13.00	34.45
2119.50	H	39.46	-65.03	11.67	1.16	-54.52	-13.00	41.52
2119.50	V	40.64	-64.14	11.67	1.16	-53.63	-13.00	40.63
2826.00	H	39.78	-63.30	12.33	1.41	-52.38	-13.00	39.38
2826.00	V	39.42	-64.09	12.33	1.41	-53.17	-13.00	40.17
279.06	H	62.82	-46.09	0.00	0.29	-46.38	-13.00	33.38
307.45	V	60.37	-46.41	0.00	0.32	-46.73	-13.00	33.73
QPSK, Frequency:710 MHz								
1420.00	H	42.03	-62.57	9.66	1.25	-54.16	-13.00	41.16
1420.00	V	44.78	-59.88	9.66	1.25	-51.47	-13.00	38.47
2130.00	H	39.61	-64.85	11.68	1.16	-54.33	-13.00	41.33
2130.00	V	39.42	-65.37	11.68	1.16	-54.85	-13.00	41.85
2840.00	H	39.02	-64.04	12.34	1.42	-53.12	-13.00	40.12
2840.00	V	39.93	-63.51	12.34	1.42	-52.59	-13.00	39.59
189.76	H	61.77	-48.96	0.00	0.21	-49.17	-13.00	36.17
224.08	V	60.22	-46.98	0.00	0.22	-47.20	-13.00	34.20
QPSK, Frequency: 713.5 MHz								
1427.00	H	43.34	-61.31	9.69	1.26	-52.88	-13.00	39.88
1427.00	V	46.54	-58.16	9.69	1.26	-49.73	-13.00	36.73
2140.50	H	39.66	-64.78	11.70	1.16	-54.24	-13.00	41.24
2140.50	V	39.71	-65.09	11.70	1.16	-54.55	-13.00	41.55
2854.00	H	39.82	-63.21	12.34	1.42	-52.29	-13.00	39.29
2854.00	V	39.73	-63.64	12.34	1.42	-52.72	-13.00	39.72
179.60	H	60.07	-51.14	0.00	0.24	-51.38	-13.00	38.38
443.05	V	58.37	-45.15	0.00	0.37	-45.52	-13.00	32.52

Note:
1) The unit of Antenna Gain is dBd for frequency below 1GHz, and the unit of Antenna Gain is dBi for frequency above 1GHz.
2) Absolute Level = Substituted Level - Cable loss + Antenna Gain
3) Margin = Limit-Absolute Level

7 - BAND EDGES

Applicable Standard

FCC § 2.1053, §22.917, § 24.238 and § 27.53

Test Procedure

The RF output of the transmitter was connected to the input of the spectrum analyzer through sufficient attenuation.

The center of the spectrum analyzer was set to block edge frequency.
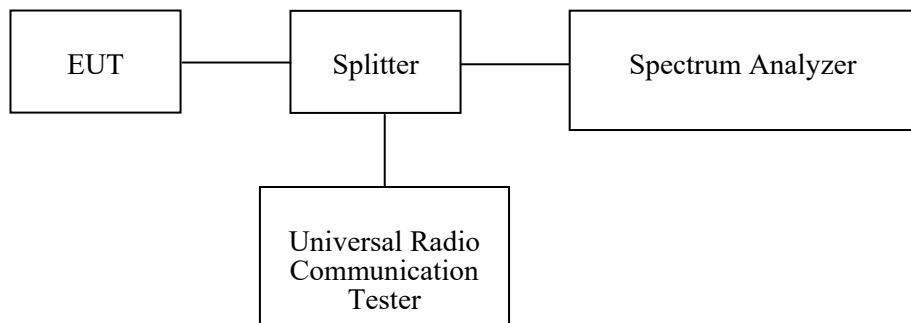
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┌─────────┐        ┌──────────┐        ┌────────────────────┐
│   EUT   │────────│ Splitter │────────│ Spectrum Analyzer  │
└─────────┘        └──────────┘        └────────────────────┘
                        │
                   ┌──────────┐
                   │ Universal Radio │
                   │ Communication   │
                   │ Tester          │
                   └──────────┘
```

Test Data

Test Mode: Transmitting

Test Result: Compliance. Please refer to following tables and plots.

GSM

GSM 850, Left Band Edge	GSM 850, Right Band Edge



Date: 27.MAY.2021 18:12:00

Date: 27.MAY.2021 18:27:08
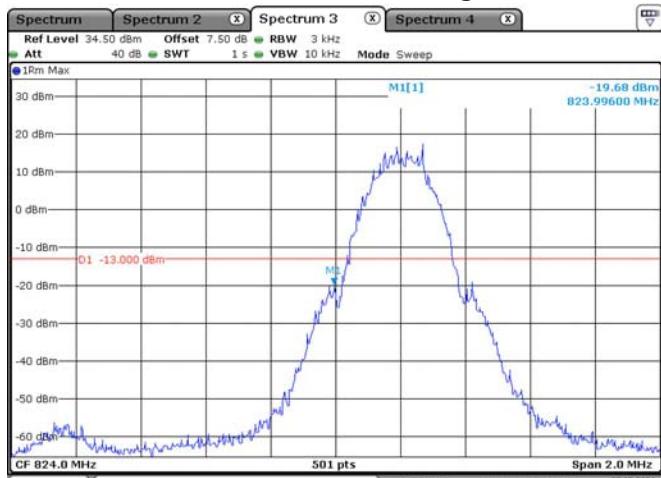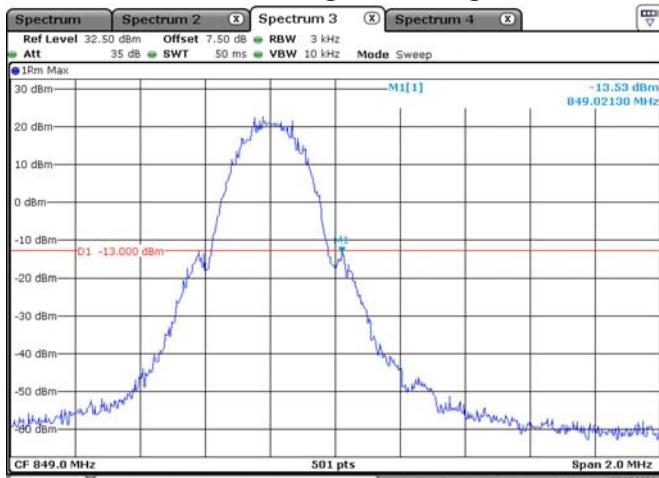
PCS 1900, Left Band Edge
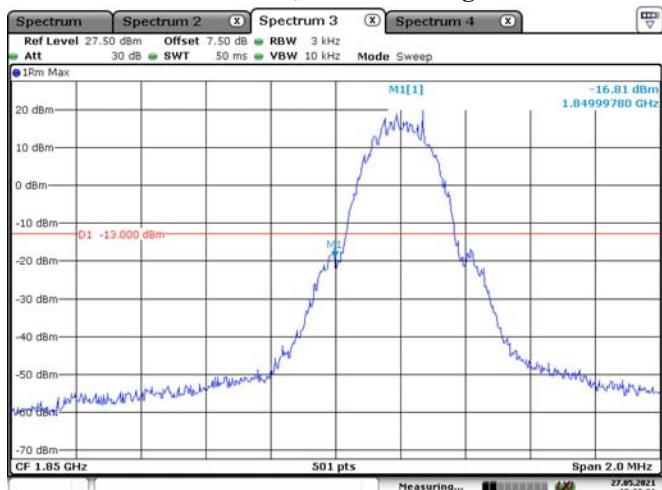
PCS 1900, Right Band Edge
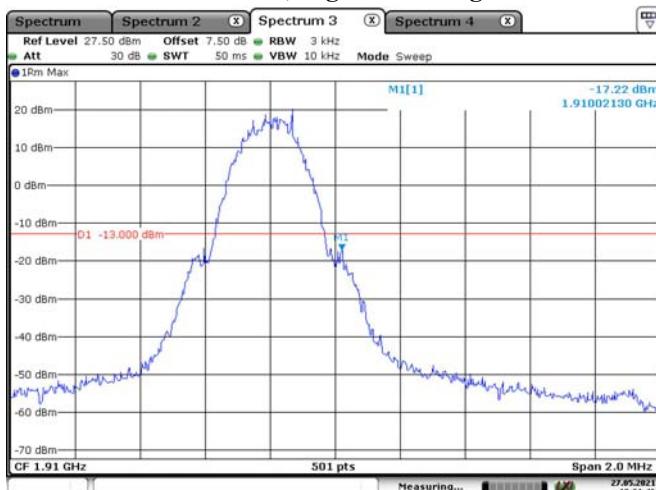
EGPRS 850, Left Band Edge
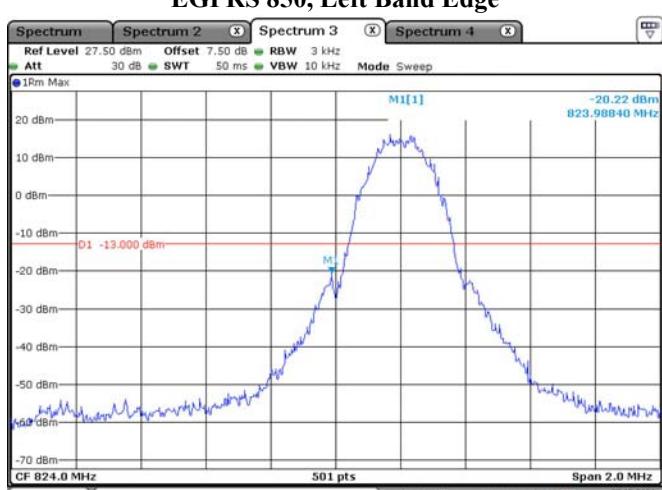
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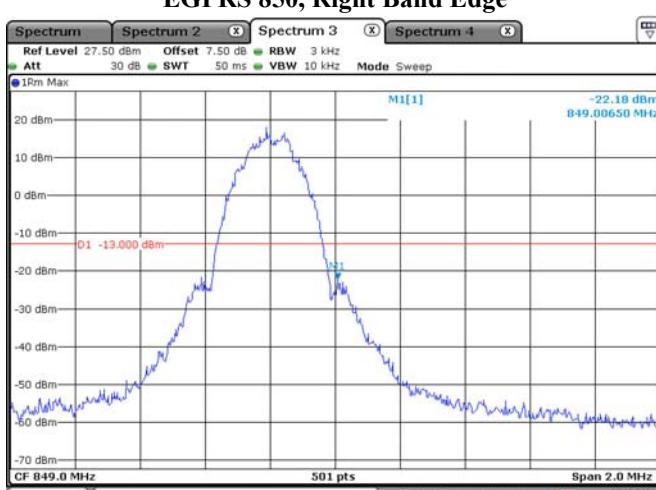
EGPRS 1900, Left Band Edge

EGPRS 1900, Right Band Edge