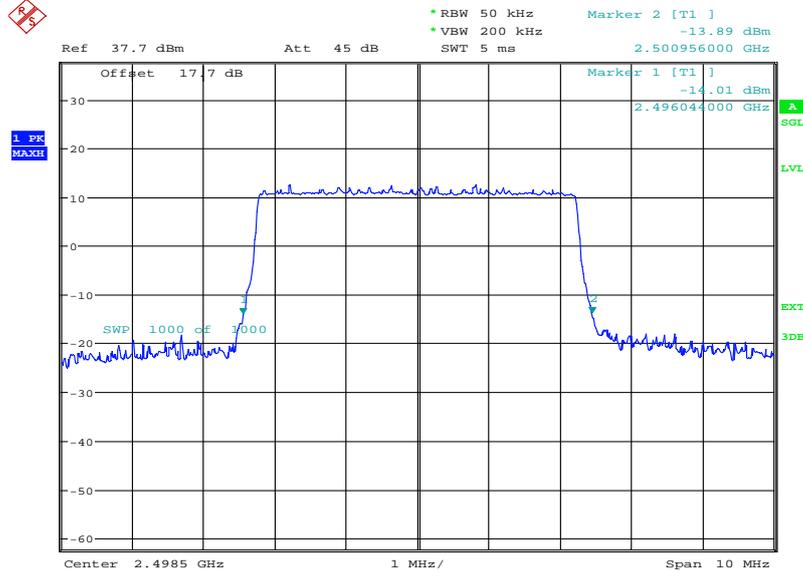


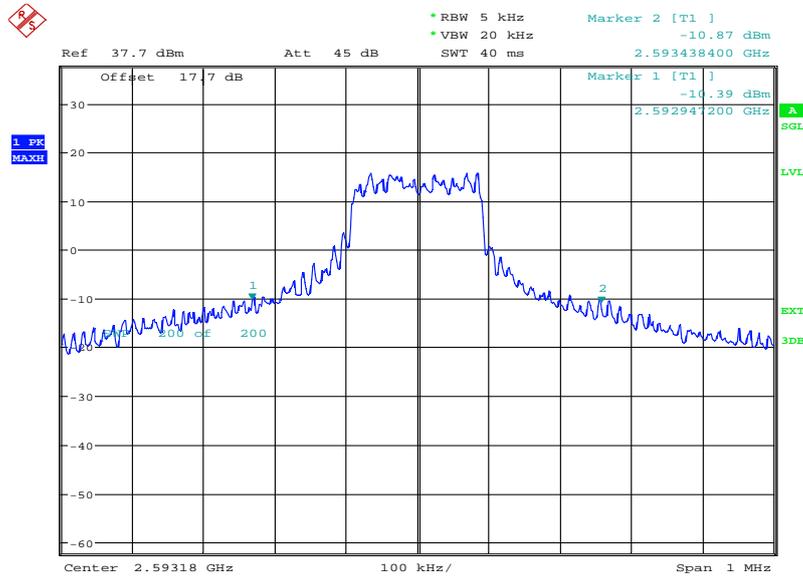


LTE TDD 41, 2498.5 MHz, All Resource Blocks, 5.0 MHz Bandwidth, 16-QAM, 26 dB Bandwidth Results



Date: 5.MAY.2015 13:58:18

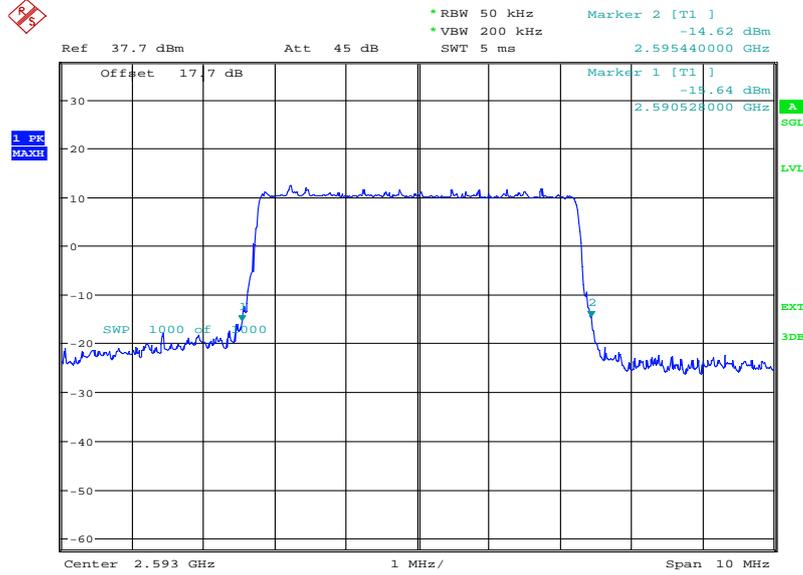
LTE TDD 41, 2593 MHz, 1 Resource Block - Middle, 5.0 MHz Bandwidth, 16-QAM, 26 dB Bandwidth Results



Date: 5.MAY.2015 13:49:11

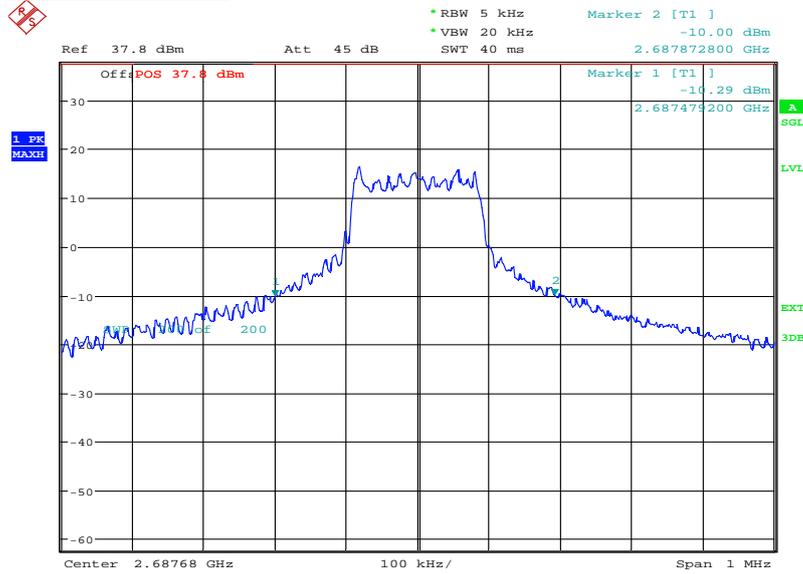


LTE TDD 41, 2593 MHz, All Resource Blocks, 5.0 MHz Bandwidth, 16-QAM, 26 dB Bandwidth Results



Date: 5.MAY.2015 13:51:21

LTE TDD 41, 2687.5 MHz, 1 Resource Block - Middle, 5.0 MHz Bandwidth, 16-QAM, 26 dB Bandwidth Results

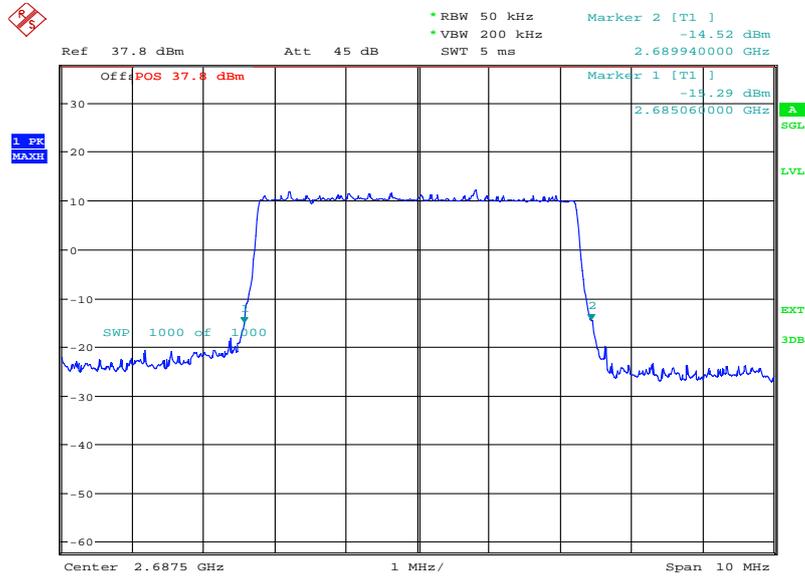


Date: 5.MAY.2015 13:36:27



Product Service

LTE TDD 41, 2687.5 MHz, All Resource Blocks, 5.0 MHz Bandwidth, 16-QAM, 26 dB Bandwidth Results



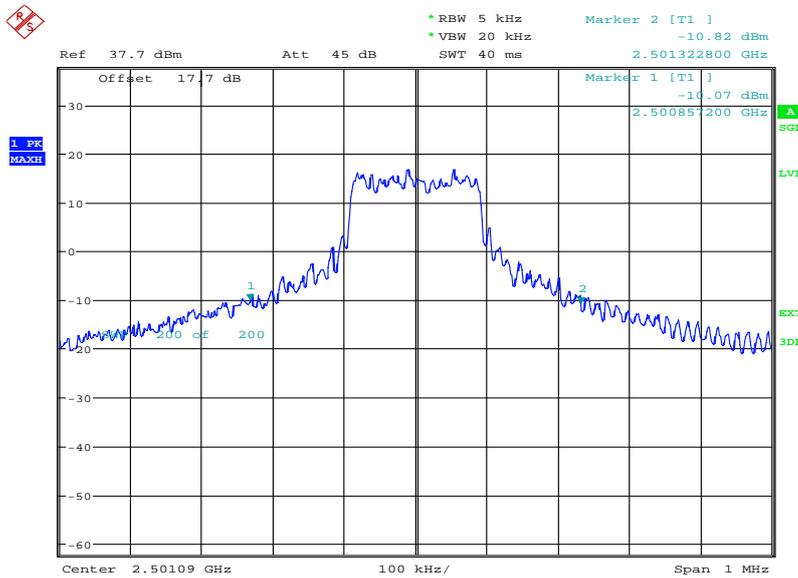
Date: 5.MAY.2015 13:34:14



LTE TDD 41, 10.0 MHz Bandwidth, QPSK, 26 dB Bandwidth Results

26dB Bandwidth											
2501.0 MHz			2593.0 MHz				2685.0 MHz				
1 Resource Block			All Resource Blocks	1 Resource Block			All Resource Blocks	1 Resource Block			All Resource Blocks
Low	Mid	High		Low	Mid	High		Low	Mid	High	
N/T	465.6	N/T	9824.0	N/T	385.6	N/T	9856.0	N/T	428.8	N/T	9696.0

LTE TDD 41, 2501 MHz, 1 Resource Block - Middle, 10.0 MHz Bandwidth, QPSK, 26 dB Bandwidth Results

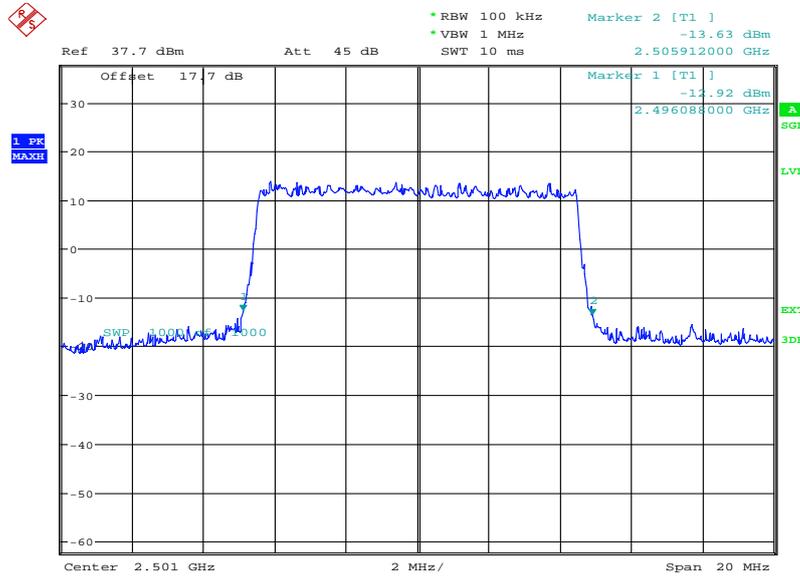


Date: 5.MAY.2015 11:36:05



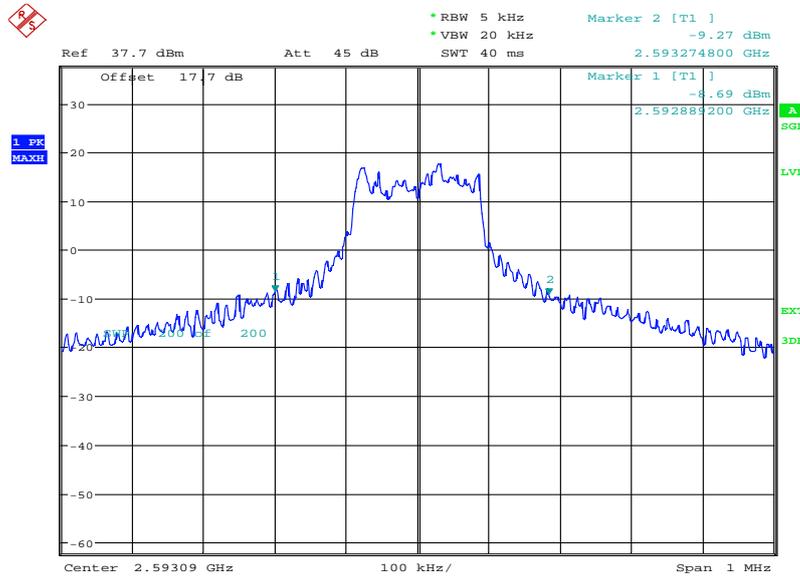
Product Service

LTE TDD 41, 2501 MHz, All Resource Blocks, 10.0 MHz Bandwidth, QPSK, 26 dB Bandwidth Results



Date: 5.MAY.2015 11:38:43

LTE TDD 41, 2593 MHz, 1 Resource Block - Middle, 10.0 MHz Bandwidth, QPSK, 26 dB Bandwidth Results

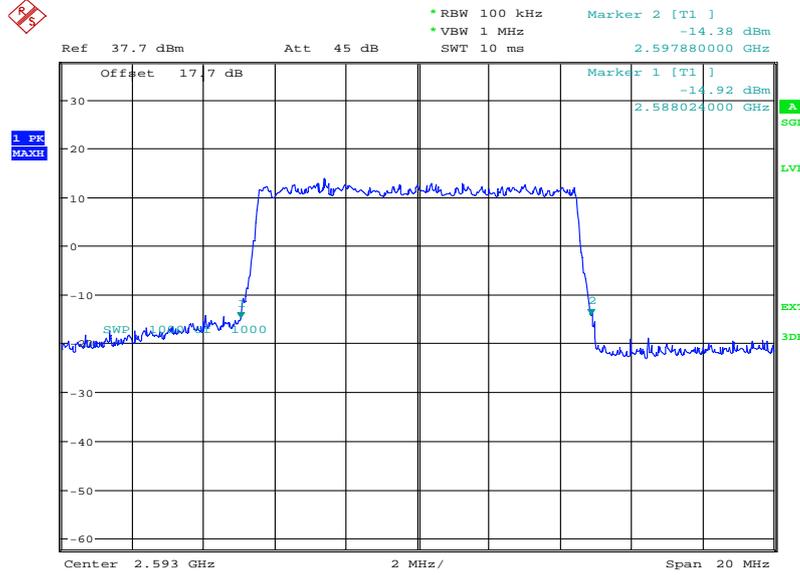


Date: 5.MAY.2015 11:50:59



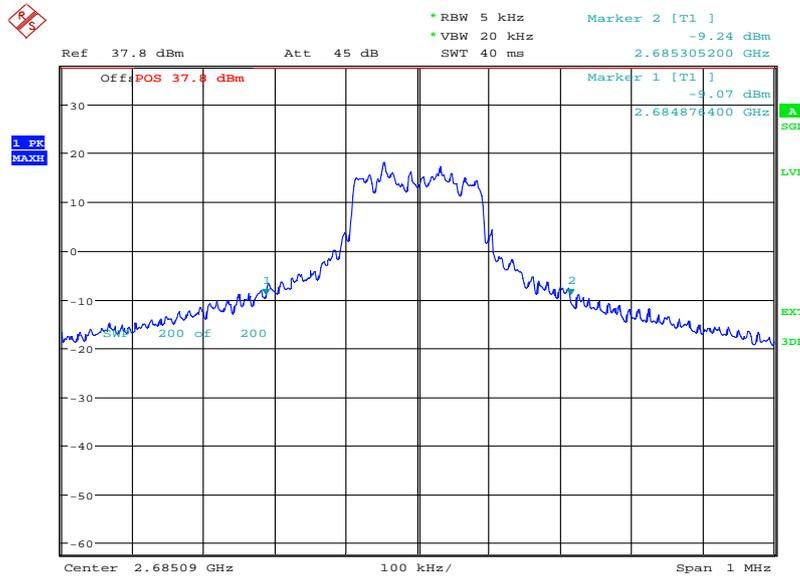
Product Service

LTE TDD 41, 2593 MHz, All Resource Blocks, 10.0 MHz Bandwidth, QPSK, 26 dB Bandwidth Results



Date: 5.MAY.2015 11:46:24

LTE TDD 41, 2685 MHz, 1 Resource Block - Middle, 10.0 MHz Bandwidth, QPSK, 26 dB Bandwidth Results

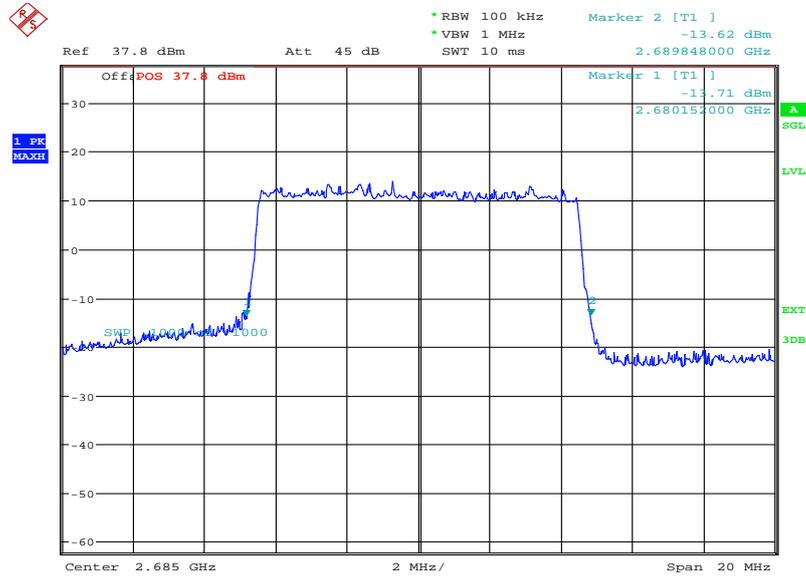


Date: 5.MAY.2015 12:09:15



Product Service

LTE TDD 41, 2685 MHz, All Resource Blocks, 10.0 MHz Bandwidth, QPSK, 26 dB Bandwidth Results



Date: 5.MAY.2015 12:11:22

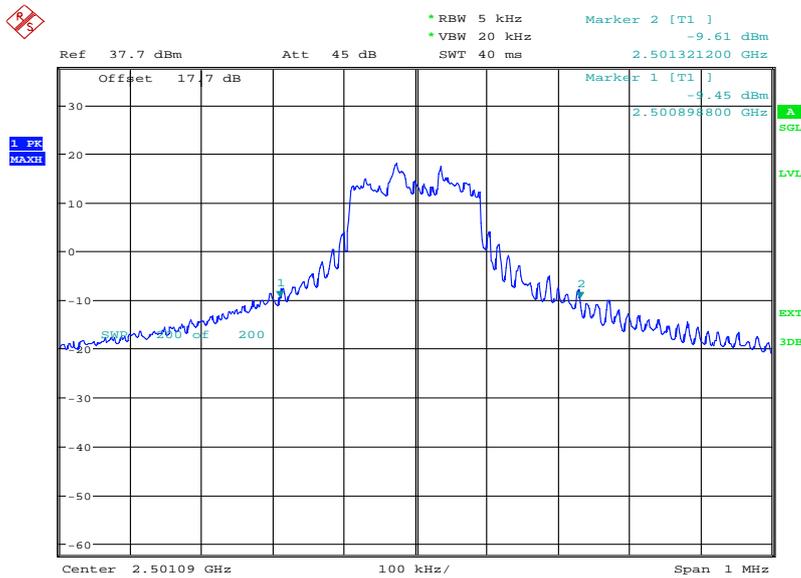


Product Service

LTE TDD 41, 10.0 MHz Bandwidth, 16-QAM, 26 dB Bandwidth Results

26dB Bandwidth											
2501.0 MHz				2593.0 MHz				2685.0 MHz			
1 Resource Block			All Resource Blocks	1 Resource Block			All Resource Blocks	1 Resource Block			All Resource Blocks
Low	Mid	High		Low	Mid	High		Low	Mid	High	
N/T	422.4	N/T	9728.0	N/T	430.4	N/T	9664.0	N/T	454.4	N/T	9792.0

LTE TDD 41, 2501 MHz, 1 Resource Block - Middle, 10.0 MHz Bandwidth, 16-QAM, 26 dB Bandwidth Results

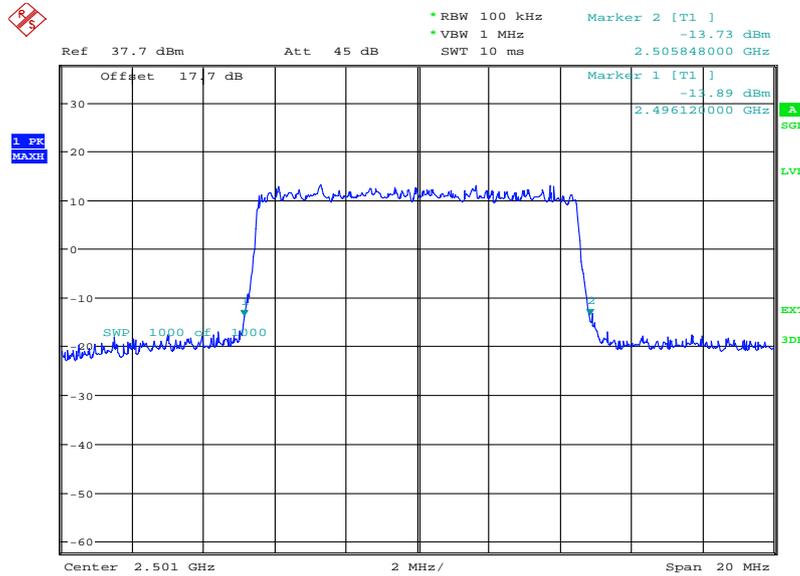


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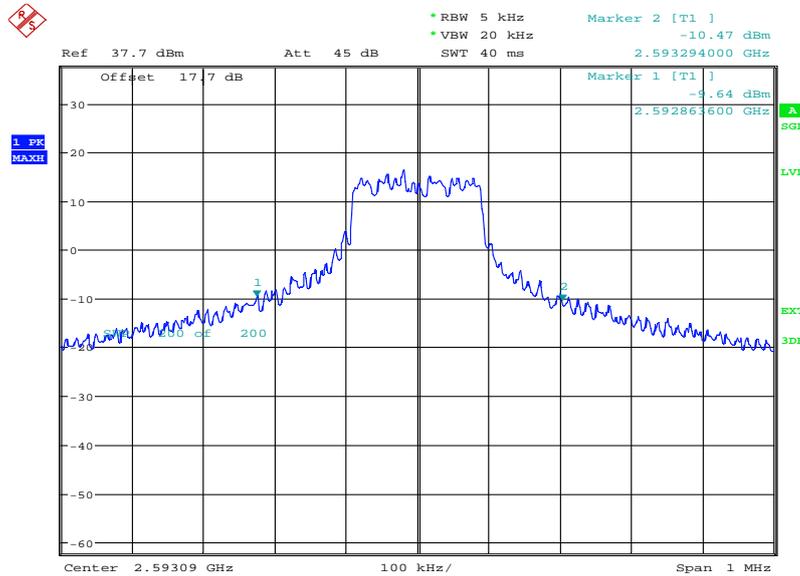
Product Service

LTE TDD 41, 2501 MHz, All Resource Blocks, 10.0 MHz Bandwidth, 16-QAM, 26 dB Bandwidth Results



Date: 5.MAY.2015 11:40:52

LTE TDD 41, 2593 MHz, 1 Resource Block - Middle, 10.0 MHz Bandwidth, 16-QAM, 26 dB Bandwidth Results

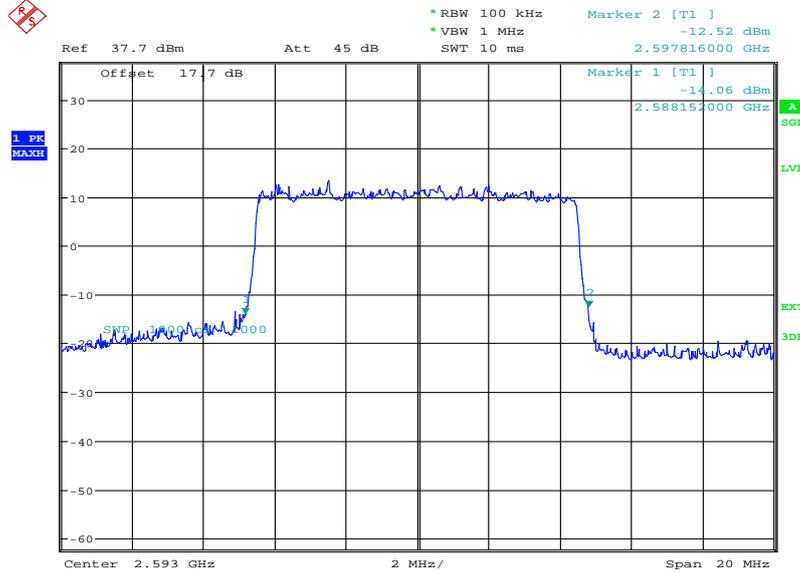


Date: 5.MAY.2015 11:56:42



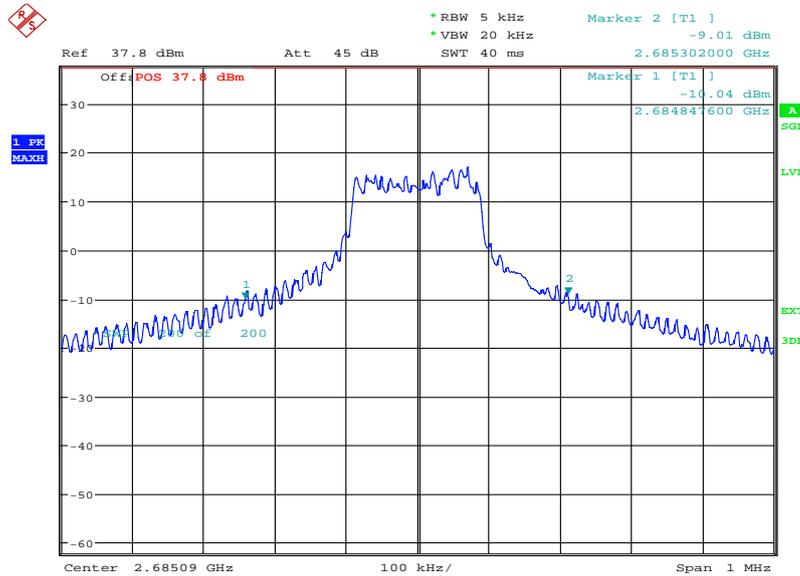
Product Service

LTE TDD 41, 2593 MHz, All Resource Blocks, 10.0 MHz Bandwidth, 16-QAM, 26 dB Bandwidth Results



Date: 5.MAY.2015 11:43:56

LTE TDD 41, 2685 MHz, 1 Resource Block - Middle, 10.0 MHz Bandwidth, 16-QAM, 26 dB Bandwidth Results

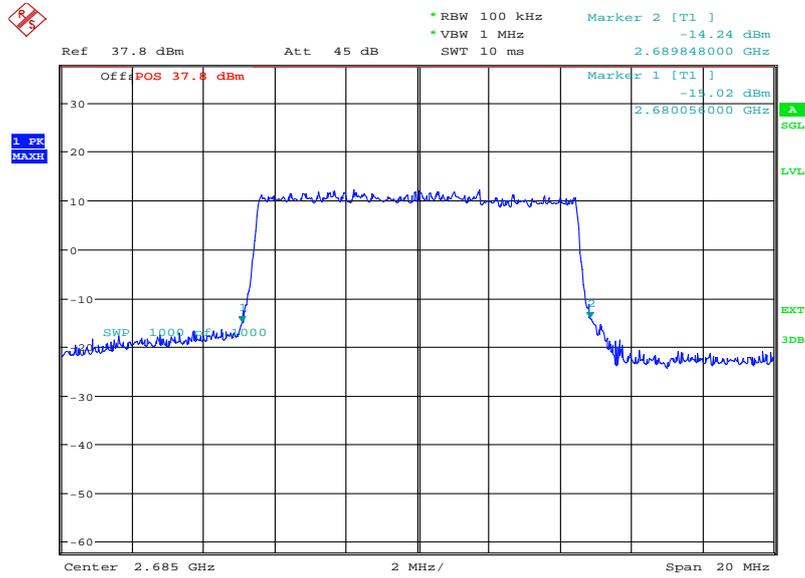


Date: 5.MAY.2015 12:07:06



Product Service

LTE TDD 41, 2685 MHz, All Resource Blocks, 10.0 MHz Bandwidth, 16-QAM, 26 dB Bandwidth Results



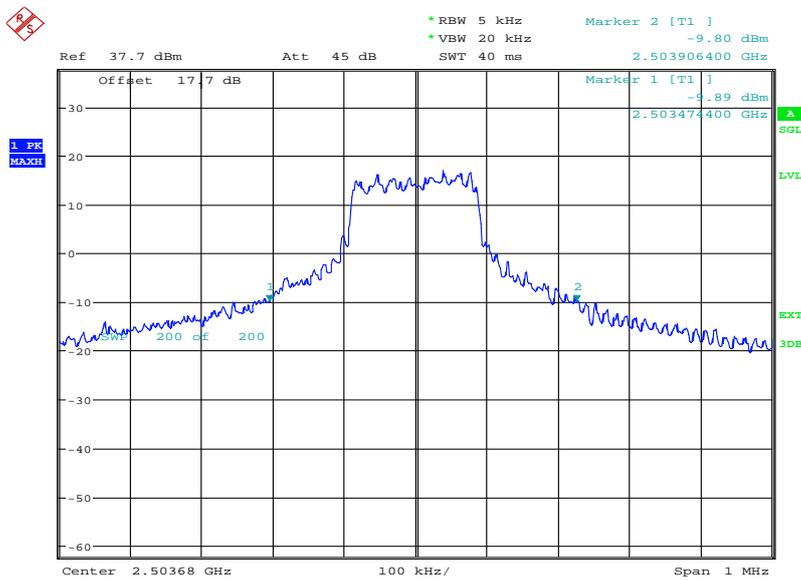
Date: 5.MAY.2015 12:13:17



LTE TDD 41, 15.0 MHz Bandwidth, QPSK, 26 dB Bandwidth Results

26dB Bandwidth											
2503.5 MHz				2593.0 MHz				2682.5 MHz			
1 Resource Block			All Resource Blocks	1 Resource Block			All Resource Blocks	1 Resource Block			All Resource Blocks
Low	Mid	High		Low	Mid	High		Low	Mid	High	
N/T	432.0	N/T	15600.0	N/T	403.2	N/T	14832.0	N/T	395.2	N/T	15024.0

LTE TDD 41, 2503.5 MHz, 1 Resource Block - Middle, 15.0 MHz Bandwidth, QPSK, 26 dB Bandwidth Results

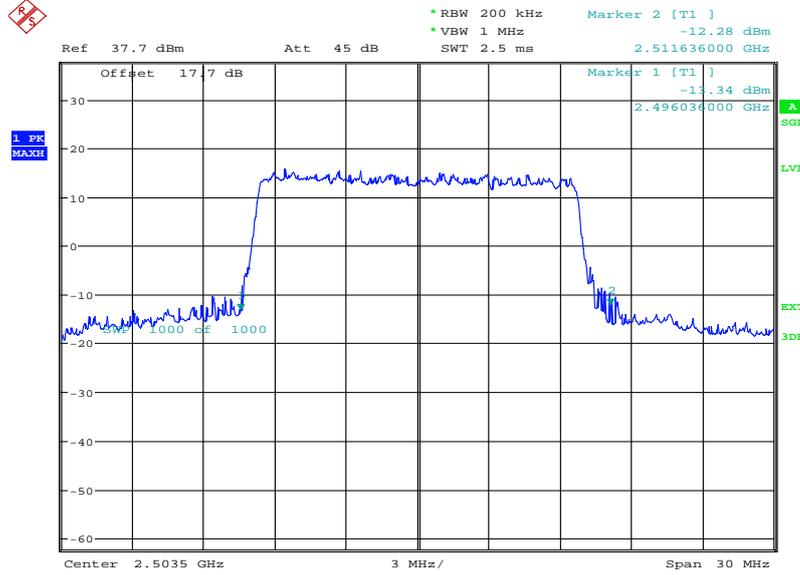


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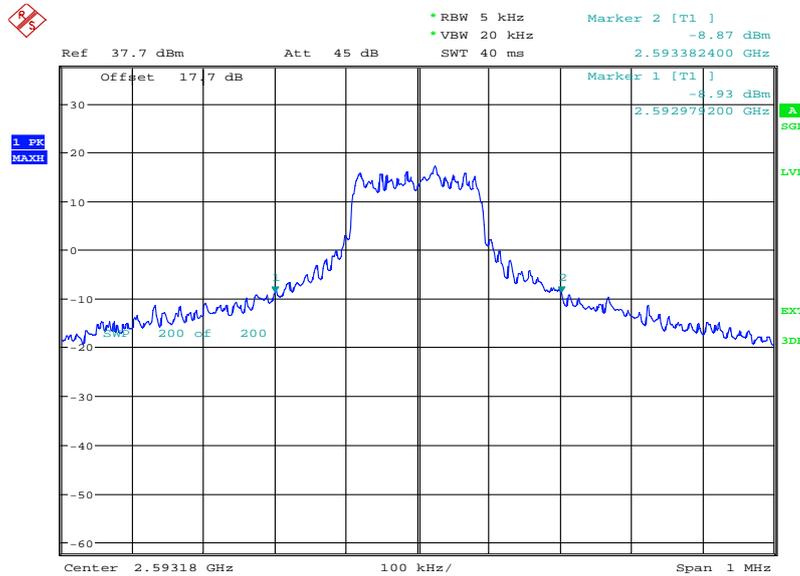
Product Service

LTE TDD 41, 2503.5 MHz, All Resource Blocks, 15.0 MHz Bandwidth, QPSK, 26 dB Bandwidth Results



Date: 5.MAY.2015 11:17:45

LTE TDD 41, 2593 MHz, 1 Resource Block - Middle, 15.0 MHz Bandwidth, QPSK, 26 dB Bandwidth Results

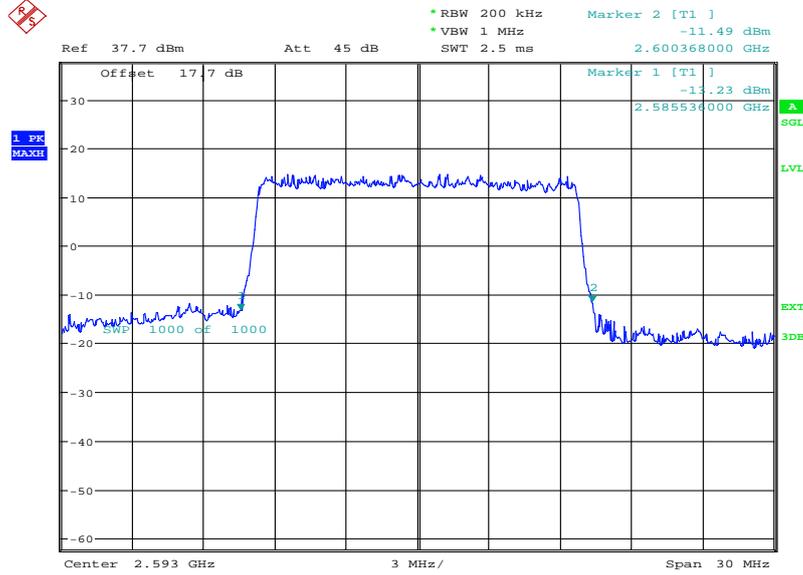


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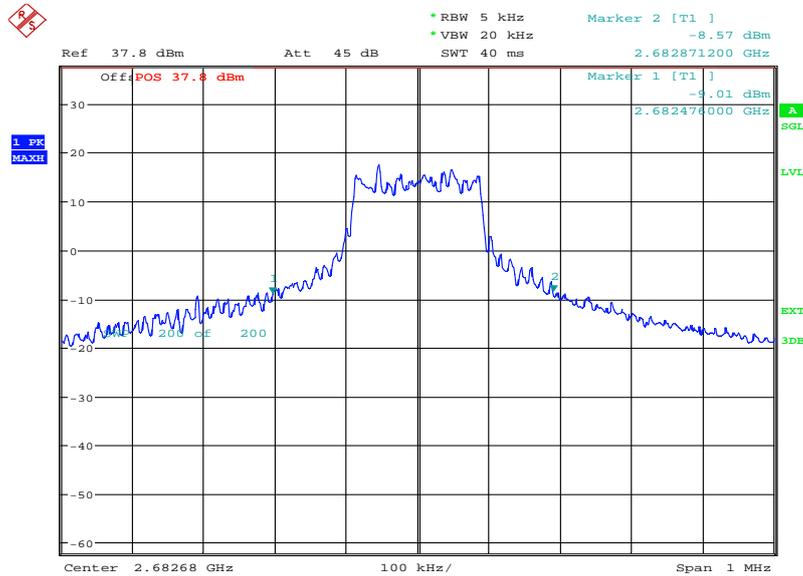
Product Service

LTE TDD 41, 2593 MHz, All Resource Blocks, 15.0 MHz Bandwidth, QPSK, 26 dB Bandwidth Results



Date: 5.MAY.2015 11:10:14

LTE TDD 41, 2682.5 MHz, 1 Resource Block - Middle, 15.0 MHz Bandwidth, QPSK, 26 dB Bandwidth Results

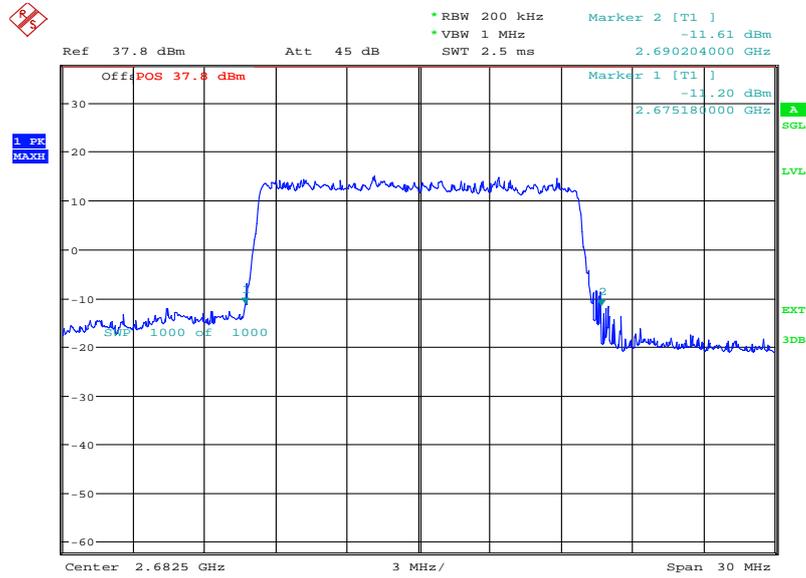


Date: 5.MAY.2015 10:39:15



Product Service

LTE TDD 41, 2682.5 MHz, All Resource Blocks, 15.0 MHz Bandwidth, QPSK, 26 dB Bandwidth Results



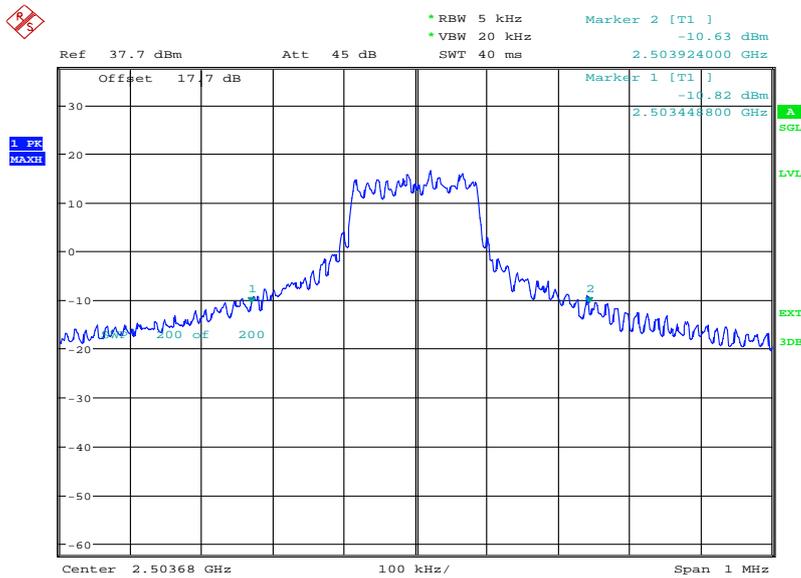
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LTE TDD 41, 15.0 MHz Bandwidth, 16-QAM, 26 dB Bandwidth Results

26dB Bandwidth											
2503.5 MHz				2593.0 MHz				2682.5 MHz			
1 Resource Block			All Resource Blocks	1 Resource Block			All Resource Blocks	1 Resource Block			All Resource Blocks
Low	Mid	High		Low	Mid	High		Low	Mid	High	
N/T	475.2	N/T	14640.0	N/T	411.2	N/T	15360.0	N/T	497.6	N/T	15072.0

LTE TDD 41, 2503.5 MHz, 1 Resource Block - Middle, 15.0 MHz Bandwidth, 16-QAM, 26 dB Bandwidth Results

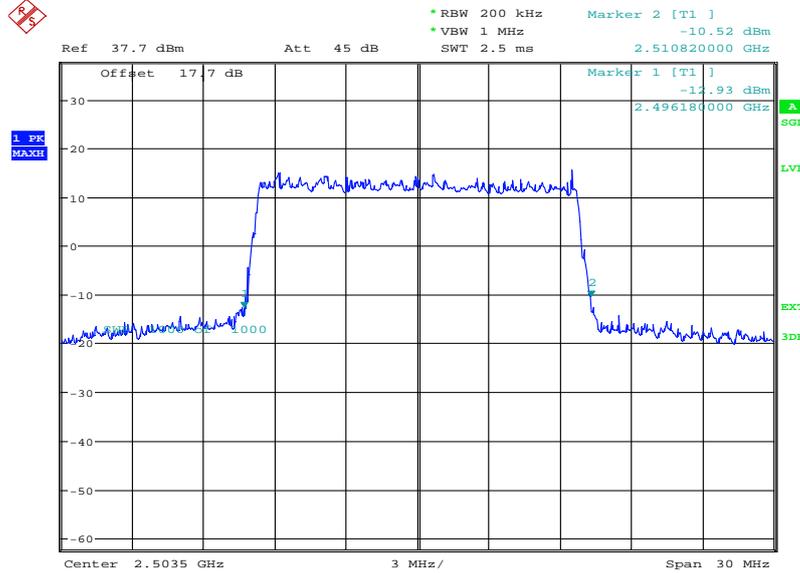


Date: 5.MAY.2015 11:21:36



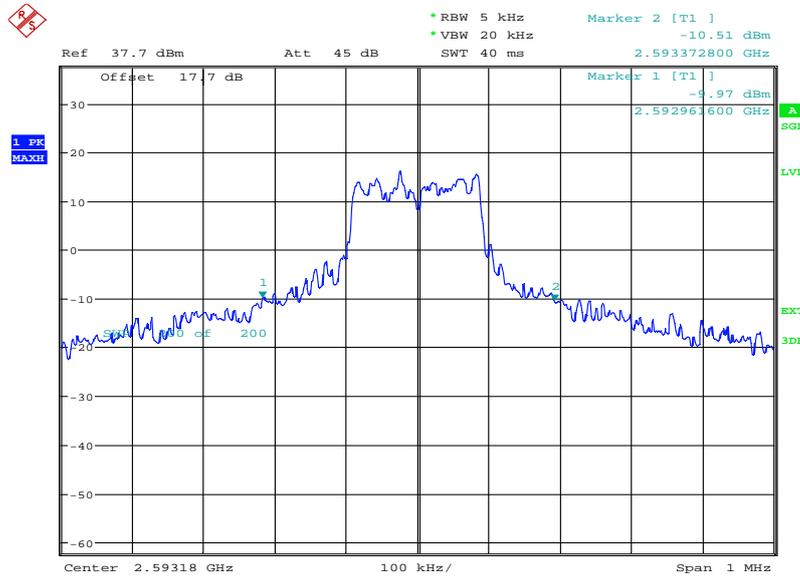
Product Service

LTE TDD 41, 2503.5 MHz, All Resource Blocks, 15.0 MHz Bandwidth, 16-QAM, 26 dB Bandwidth Results



Date: 5.MAY.2015 11:15:12

LTE TDD 41, 2593 MHz, 1 Resource Block - Middle, 15.0 MHz Bandwidth, 16-QAM, 26 dB Bandwidth Results

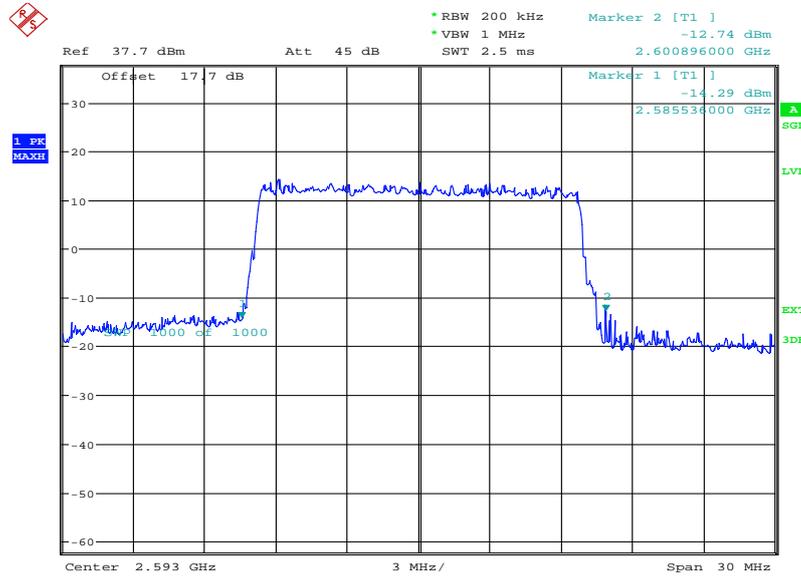


Date: 5.MAY.2015 11:05:30



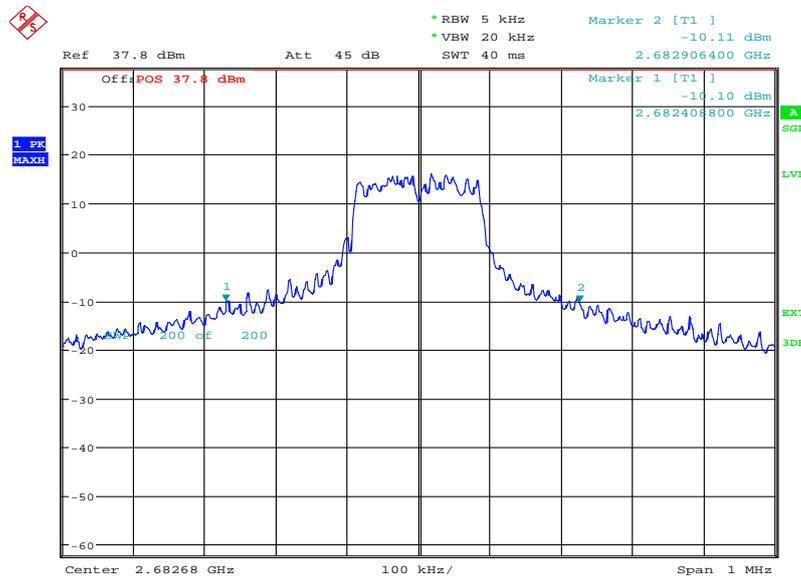
Product Service

LTE TDD 41, 2593 MHz, All Resource Blocks, 15.0 MHz Bandwidth, 16-QAM, 26 dB Bandwidth Results



Date: 5.MAY.2015 11:12:05

LTE TDD 41, 2682.5 MHz, 1 Resource Block - Middle, 15.0 MHz Bandwidth, 16-QAM, 26 dB Bandwidth Results



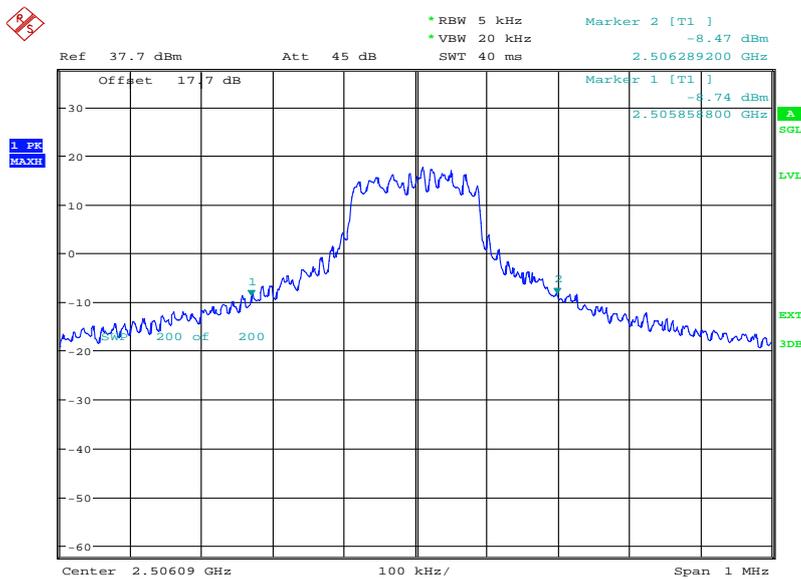
Date: 5.MAY.2015 10:36:15



LTE TDD 41, 20.0 MHz Bandwidth, QPSK, 26 dB Bandwidth Results

26dB Bandwidth											
2506.0 MHz				2593.0 MHz				2680.0 MHz			
1 Resource Block			All Resource Blocks	1 Resource Block			All Resource Blocks	1 Resource Block			All Resource Blocks
Low	Mid	High		Low	Mid	High		Low	Mid	High	
N/T	430.4	N/T	19264.0	N/T	412.8	N/T	19392.0	N/T	390.4	N/T	19328.0

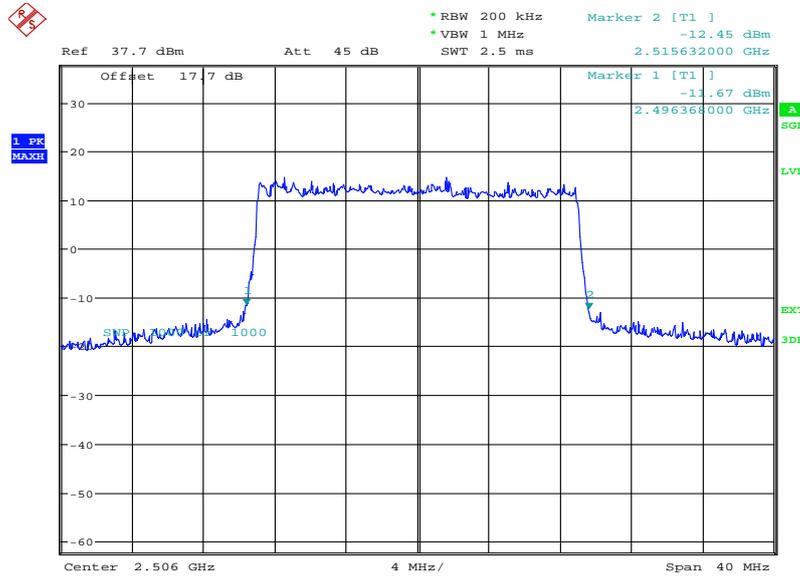
LTE TDD 41, 2506 MHz, 1 Resource Block - Middle, 20.0 MHz Bandwidth, QPSK, 26 dB Bandwidth Results



Date: 5.MAY.2015 09:01:10

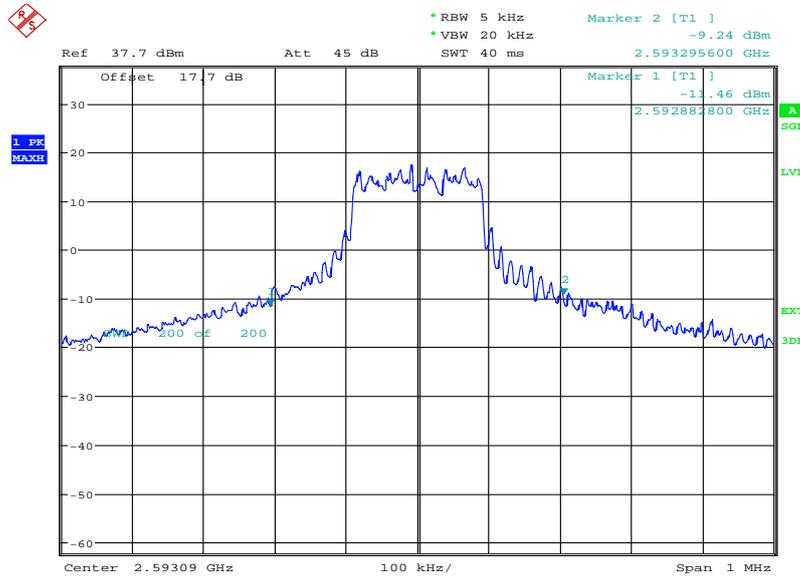


LTE TDD 41, 2506 MHz, All Resource Blocks, 20.0 MHz Bandwidth, QPSK, 26 dB Bandwidth Results



Date: 5.MAY.2015 08:49:12

LTE TDD 41, 2593 MHz, 1 Resource Block - Middle, 20.0 MHz Bandwidth, QPSK, 26 dB Bandwidth Results

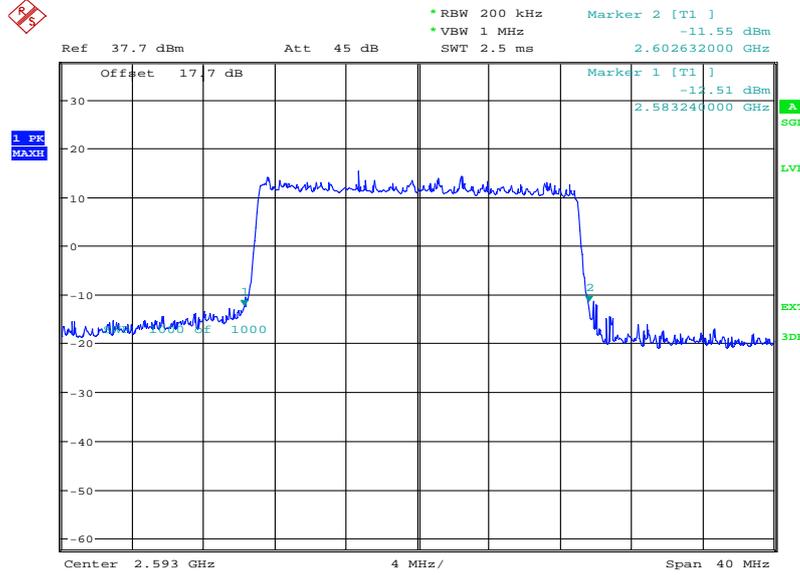


Date: 5.MAY.2015 09:22:30



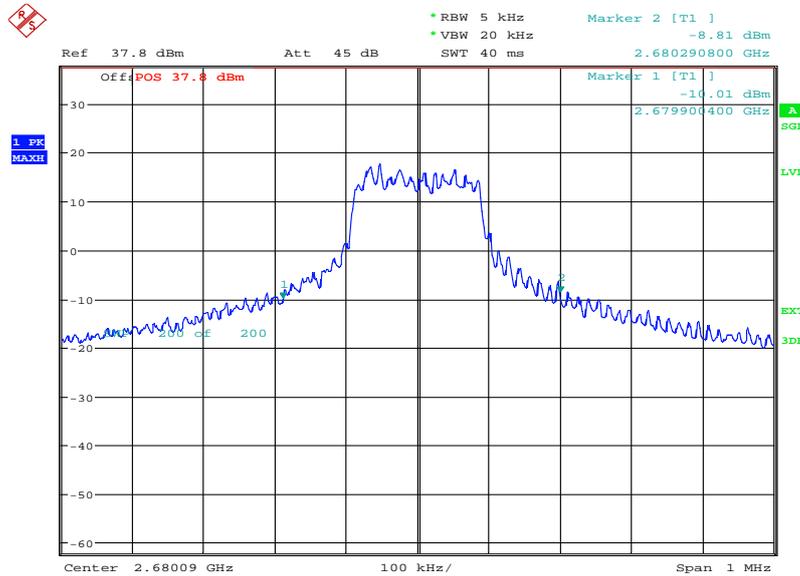
Product Service

LTE TDD 41, 2593 MHz, All Resource Blocks, 20.0 MHz Bandwidth, QPSK, 26 dB Bandwidth Results



Date: 5.MAY.2015 09:24:34

LTE TDD 41, 2680 MHz, 1 Resource Block - Middle, 20.0 MHz Bandwidth, QPSK, 26 dB Bandwidth Results

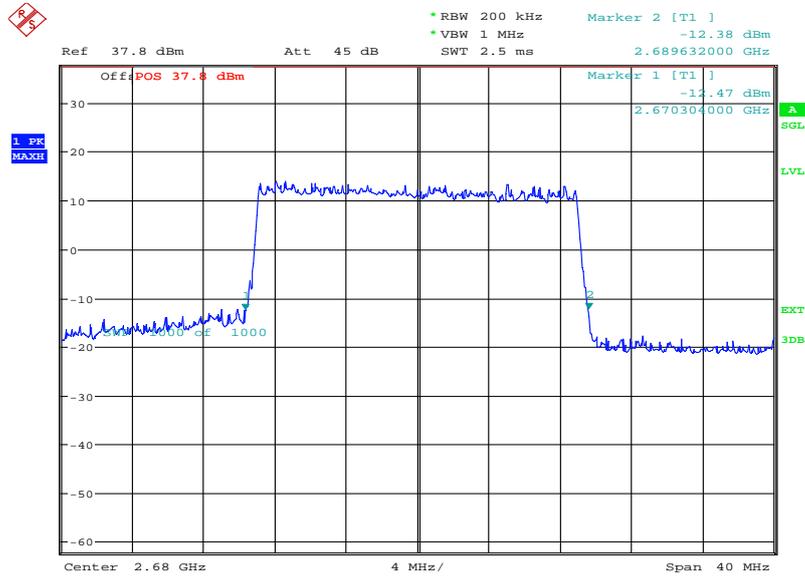


Date: 5.MAY.2015 10:21:13



Product Service

LTE TDD 41, 2680 MHz, All Resource Blocks, 20.0 MHz Bandwidth, QPSK, 26 dB Bandwidth Results



Date: 6.MAY.2015 09:56:45

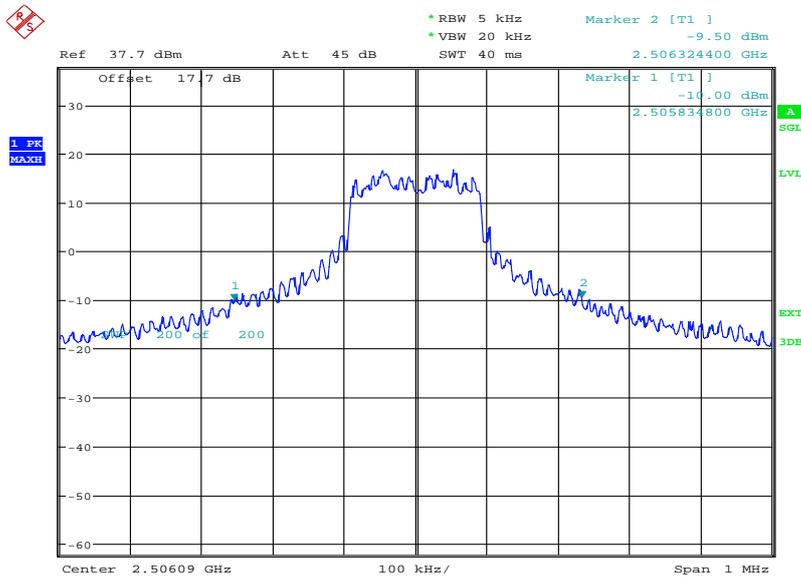


Product Service

LTE TDD 41, 20.0 MHz Bandwidth, 16-QAM, 26 dB Bandwidth Results

26dB Bandwidth											
2506.0 MHz				2593.0 MHz				2680.0 MHz			
1 Resource Block			All Resource Blocks	1 Resource Block			All Resource Blocks	1 Resource Block			All Resource Blocks
Low	Mid	High		Low	Mid	High		Low	Mid	High	
N/T	489.6	N/T	19648.0	N/T	499.2	N/T	19712.0	N/T	468.8	N/T	19392.0

LTE TDD 41, 2506 MHz, 1 Resource Block - Middle, 20.0 MHz Bandwidth, 16-QAM, 26 dB Bandwidth Results

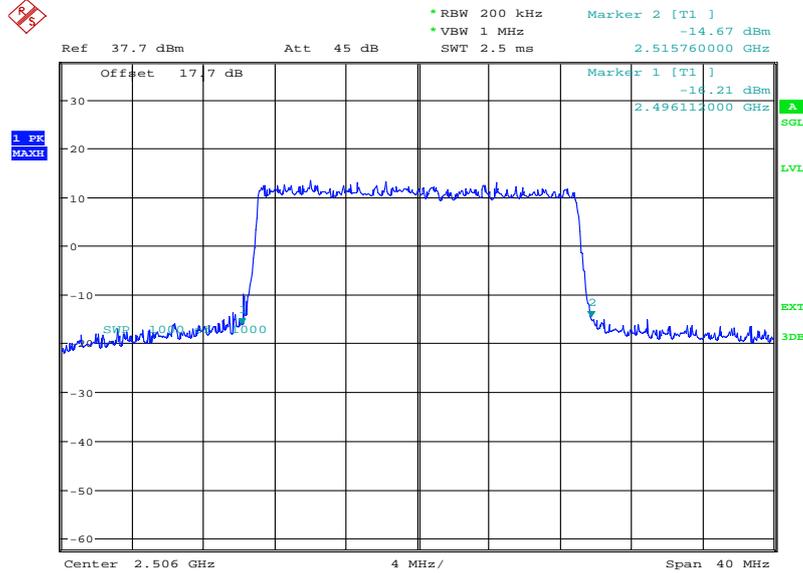


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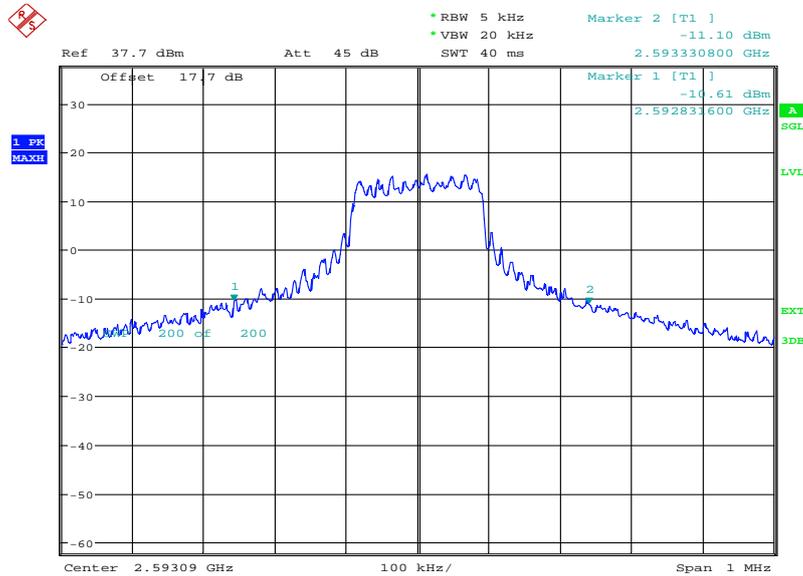
Product Service

LTE TDD 41, 2506 MHz, All Resource Blocks, 20.0 MHz Bandwidth, 16-QAM, 26 dB Bandwidth Results



Date: 5.MAY.2015 08:51:34

LTE TDD 41, 2593 MHz, 1 Resource Block - Middle, 20.0 MHz Bandwidth, 16-QAM, 26 dB Bandwidth Results

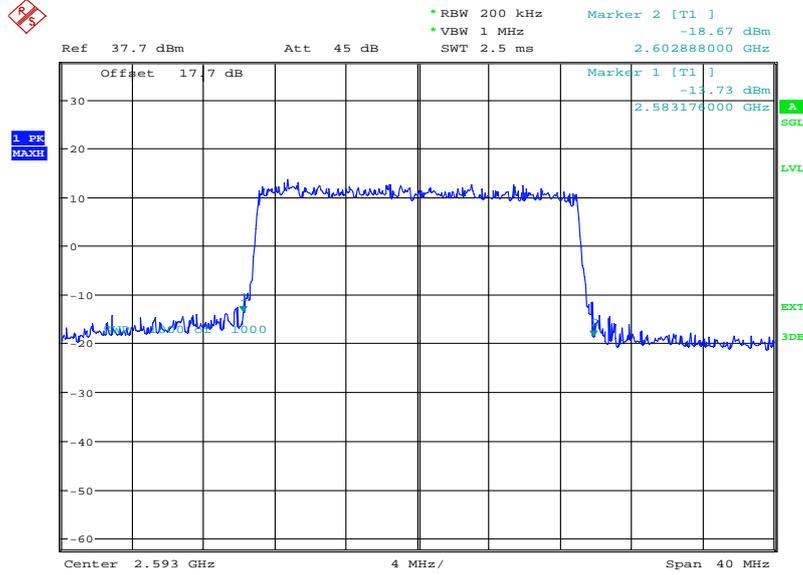


Date: 6.MAY.2015 10:00:00



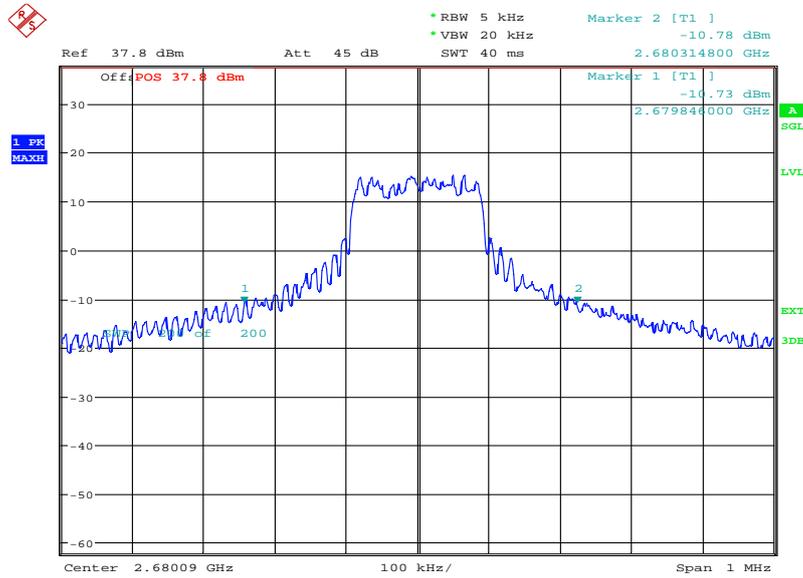
Product Service

LTE TDD 41, 2593 MHz, All Resource Blocks, 20.0 MHz Bandwidth, 16-QAM, 26 dB Bandwidth Results



Date: 5.MAY.2015 09:33:08

LTE TDD 41, 2680 MHz, 1 Resource Block - Middle, 20.0 MHz Bandwidth, 16-QAM, 26 dB Bandwidth Results

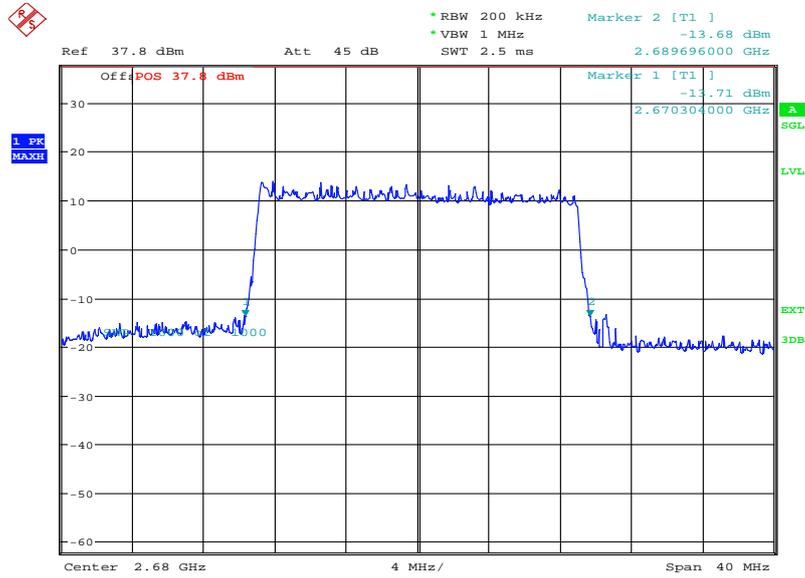


Date: 5.MAY.2015 10:23:08



Product Service

LTE TDD 41, 2680 MHz, All Resource Blocks, 20.0 MHz Bandwidth, 16-QAM, 26 dB Bandwidth Results



Date: 5.MAY.2015 10:12:27

FCC 47 CFR Part 27, Limit Clause

None specified



Product Service

2.6 FREQUENCY STABILITY

2.6.1 Specification Reference

FCC 47 CFR Part 27, Clause 27.54
FCC 47 CFR Part 2, Clause 2.1055

2.6.2 Equipment Under Test and Modification State

SHV32 S/N: IMEI 004401115406494 - Modification State 0

2.6.3 Date of Test

7 May 2015

2.6.4 Test Equipment Used

The major items of test equipment used for the above tests are identified in Section 3.1.

2.6.5 Test Procedure

The EUT was configured to transmit on all resource blocks with a 10 MHz channel bandwidth on the middle channel. In accordance with 2.1055, the temperature was varied from -30°C to +50°C in 10° steps.

Note: For hand carried battery equipment, only the end point voltage as declared by the manufacturer was tested.

The test results were reviewed and compared with the Band Edge measurement results to ensure that the fundamental remained within the authorised frequency band of operation. It was confirmed that the EUT complied with this requirement.

2.6.6 Environmental Conditions

Ambient Temperature	22.5°C
Relative Humidity	39.1%



2.6.7 Test Results

4.0 V DC Supply

LTE FDD 17, 710.0 MHz, 10 MHz Bandwidth, QPSK, Frequency Stability Under Temperature Variations Results

Temperature	Voltage	Fundamental Frequency Error
		All Resource Blocks (Hz)
+20 °C	3.7 V DC	25.41
-30 °C	4.0 V DC	-23.89
-20 °C	4.0 V DC	27.35
-10 °C	4.0 V DC	23.26
0 °C	4.0 V DC	25.23
+10 °C	4.0 V DC	27.31
+20 °C	4.0 V DC	25.62
+30 °C	4.0 V DC	27.37
+40 °C	4.0 V DC	23.82
+50 °C	4.0 V DC	-26.71

LTE FDD 17, 710.0 MHz, 10 MHz Bandwidth, 16-QAM, Frequency Stability Under Temperature Variations Results

Temperature	Voltage	Fundamental Frequency Error
		All Resource Blocks (Hz)
+20 °C	3.7 V DC	24.53
-30 °C	4.0 V DC	-27.75
-20 °C	4.0 V DC	-23.95
-10 °C	4.0 V DC	-24.63
0 °C	4.0 V DC	-21.72
+10 °C	4.0 V DC	26.49
+20 °C	4.0 V DC	27.05
+30 °C	4.0 V DC	22.75
+40 °C	4.0 V DC	22.40
+50 °C	4.0 V DC	-24.33

FCC 47 CFR Part 27, Limit Clause 27.54

The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorised bands of operation.



4.0 V DC Supply

LTE TDD 41, 2593.0 MHz, 20 MHz Bandwidth, QPSK, Frequency Stability Under Temperature Variations Results

Temperature	Voltage	Fundamental Frequency Error
		All Resource Blocks (Hz)
+20 °C	3.7 V DC	71.94
-30 °C	4.0 V DC	90.01
-20 °C	4.0 V DC	94.21
-10 °C	4.0 V DC	96.96
0 °C	4.0 V DC	110.58
+10 °C	4.0 V DC	98.00
+20 °C	4.0 V DC	96.09
+30 °C	4.0 V DC	61.63
+40 °C	4.0 V DC	75.70
+50 °C	4.0 V DC	69.05

LTE TDD 41, 2593.0 MHz, 20 MHz Bandwidth, 16-QAM, Frequency Stability Under Temperature Variations Results

Temperature	Voltage	Fundamental Frequency Error
		All Resource Blocks (Hz)
+20 °C	3.7 V DC	-59.95
-30 °C	4.0 V DC	108.92
-20 °C	4.0 V DC	108.78
-10 °C	4.0 V DC	123.50
0 °C	4.0 V DC	118.95
+10 °C	4.0 V DC	88.63
+20 °C	4.0 V DC	108.19
+30 °C	4.0 V DC	78.03
+40 °C	4.0 V DC	74.01
+50 °C	4.0 V DC	109.06

FCC 47 CFR Part 27, Limit Clause 27.54

The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorised bands of operation.



Product Service

2.7 MODULATION CHARACTERISTICS

2.7.1 Specification Reference

FCC 47 CFR Part 2, Clause 2.1047 (d)

2.7.2 Equipment Under Test and Modification State

SHV32 S/N: IMEI 004401115406494 - Modification State 0

2.7.3 Date of Test

8 May 2015

2.7.4 Test Equipment Used

The major items of test equipment used for the above tests are identified in Section 3.1.

2.7.5 Test Procedure

The test was performed in accordance with KDB 971168 D01 v02r02, clause 3.

Remarks

The following plots show a representation of the Modulation Characteristics of an LTE signal as measured from the EUT. Both supported modulation schemes of QPSK and 16-QAM are recorded as plots below.

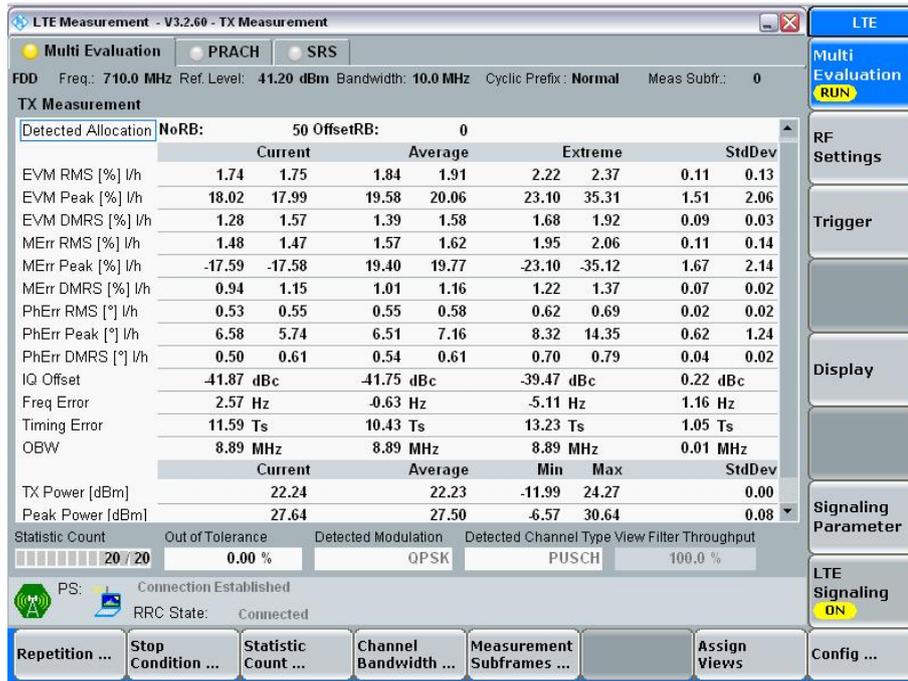
2.7.6 Environmental Conditions

Ambient Temperature	.0°C
Relative Humidity	.0%

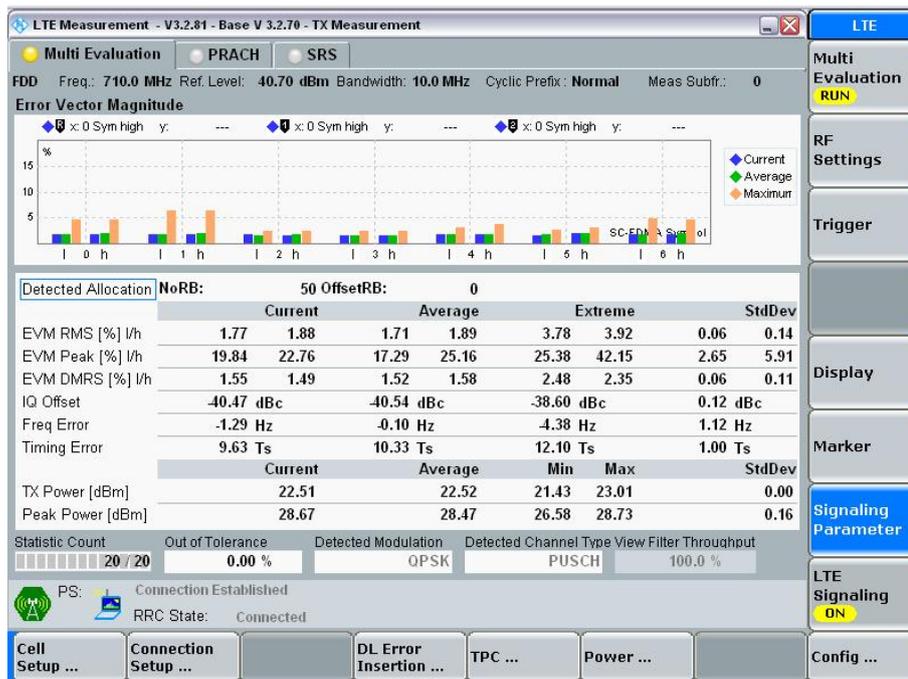


2.7.7 Test Results

LTE FDD 17, 10.0 MHz Bandwidth, QPSK, Transmitter Summary, Modulation Characteristic Plot

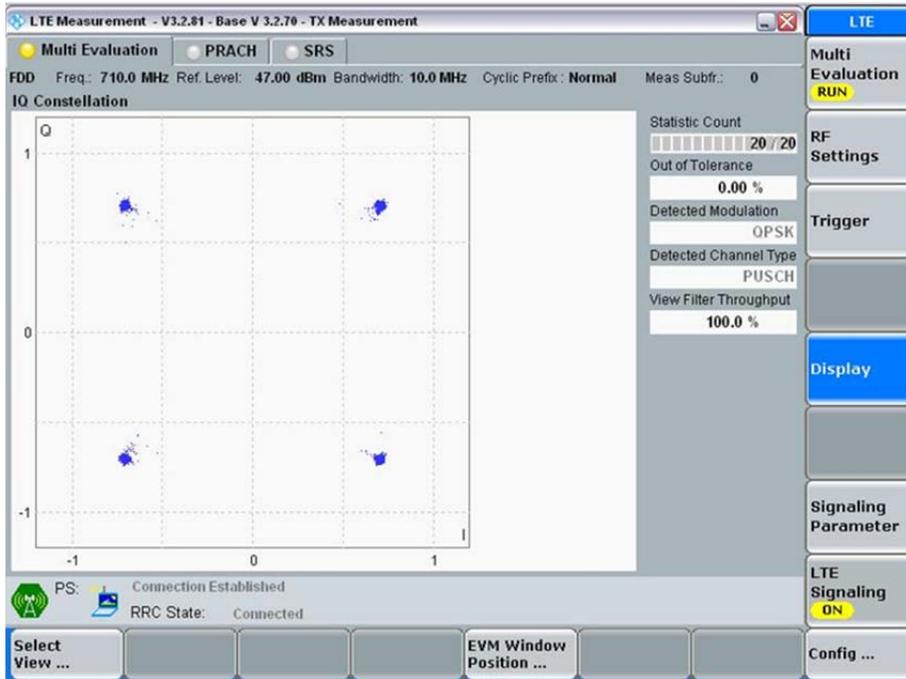


LTE FDD 17, 10.0 MHz Bandwidth, QPSK, EVM, Modulation Characteristic Plot

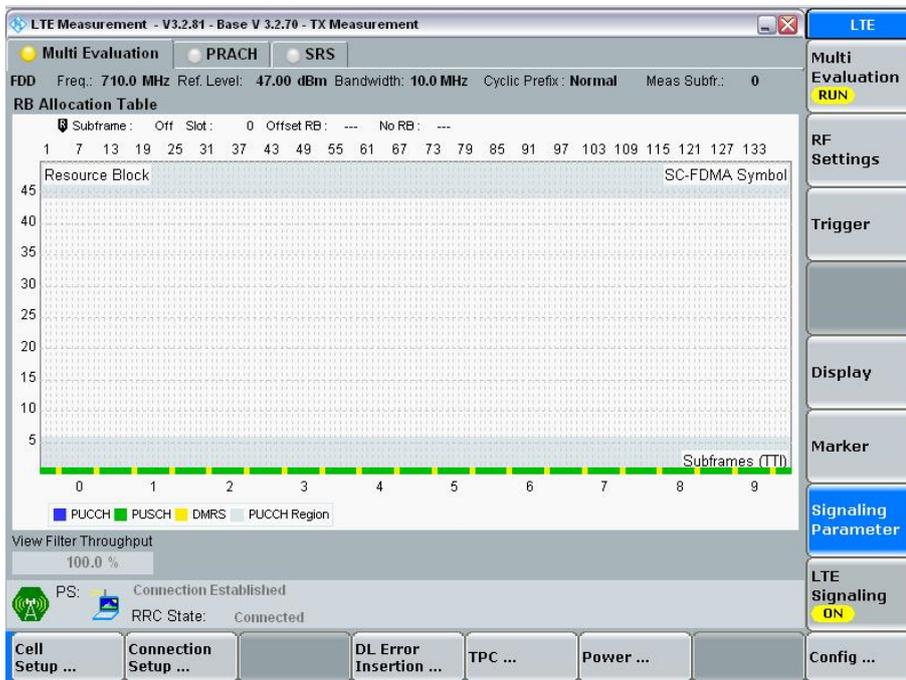




LTE FDD 17, 10.0 MHz Bandwidth, QPSK, IQ Constellation, Modulation Characteristic Plot

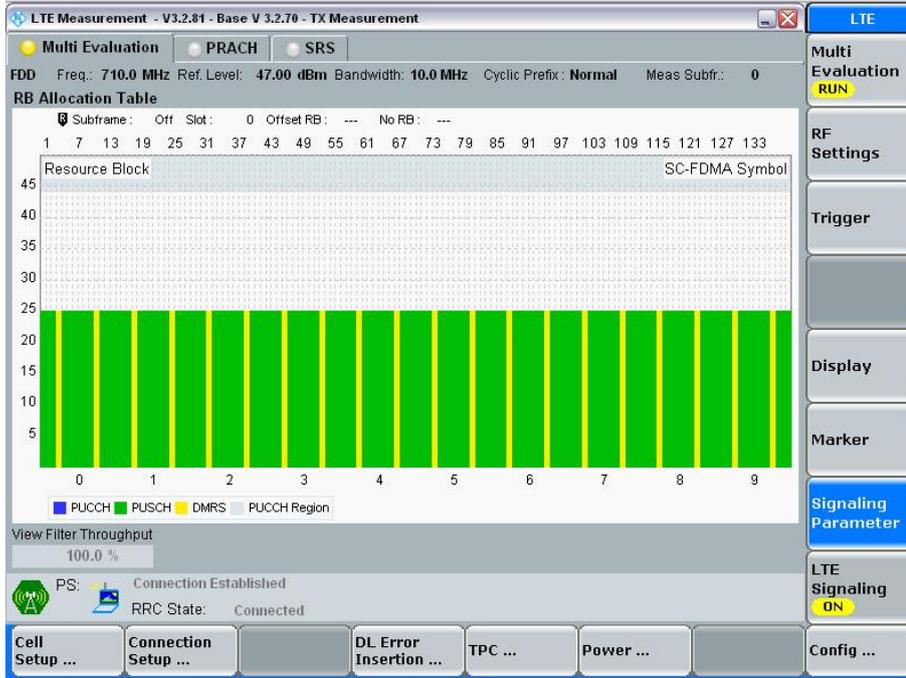


LTE FDD 17, 10.0 MHz Bandwidth, QPSK, 1 Resource Block Allocation, Modulation Characteristic Plot

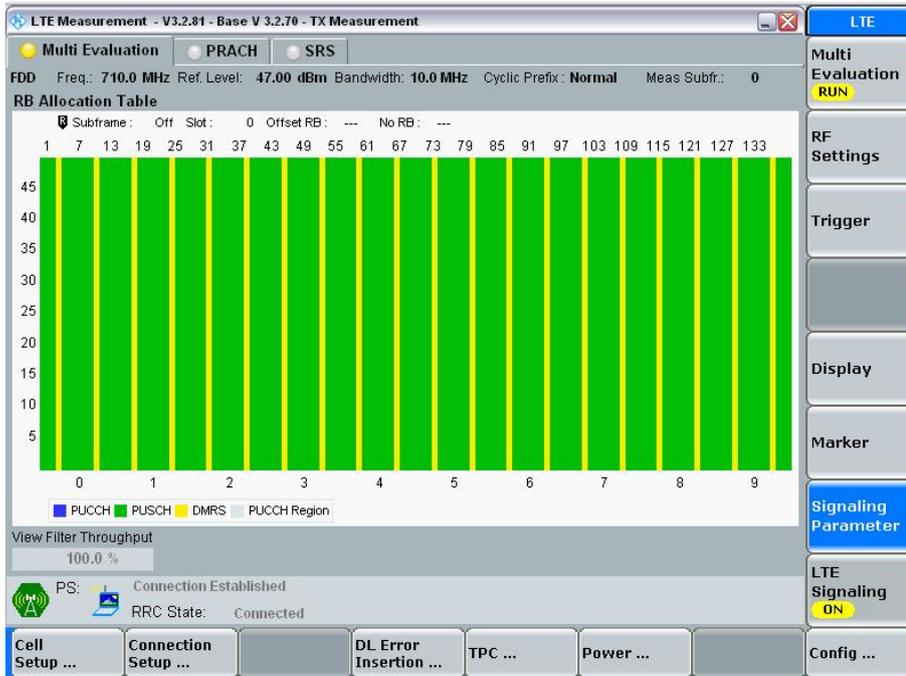




LTE FDD 17, 10.0 MHz Bandwidth, QPSK, 25 Resource Block Allocation, Modulation Characteristic Plot



LTE FDD 17, 10.0 MHz Bandwidth, QPSK, 50 Resource Block Allocation, Modulation Characteristic Plot

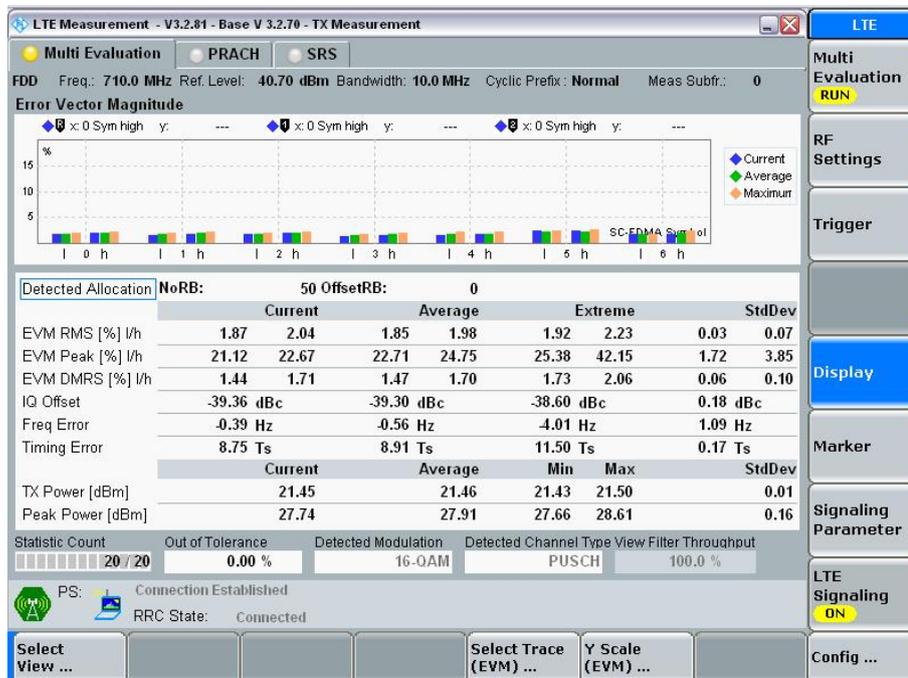




LTE FDD 17, 10.0 MHz Bandwidth, 16-QAM, Transmitter Summary, Modulation Characteristic Plot

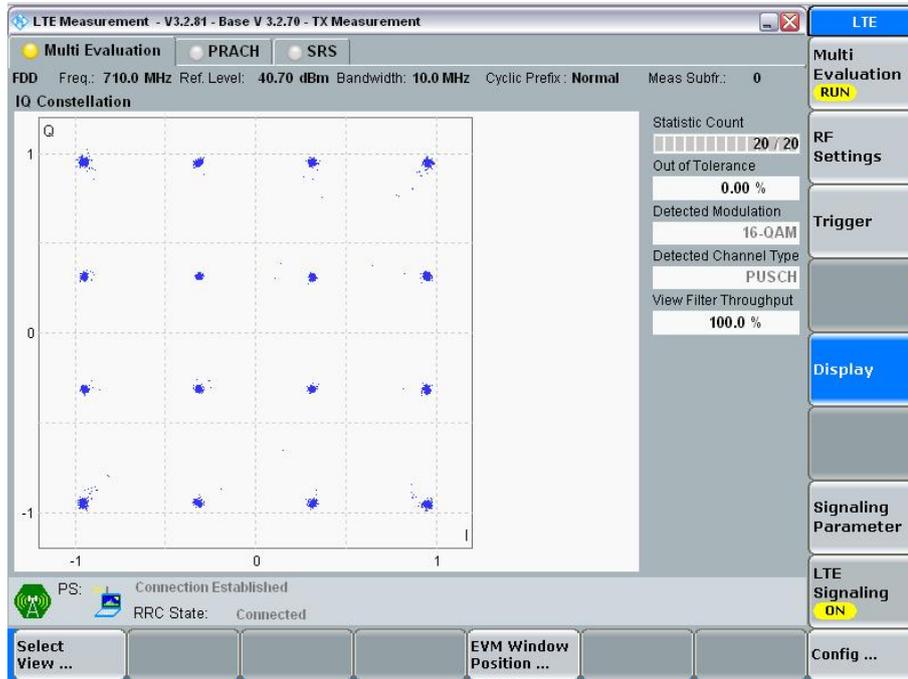


LTE FDD 17, 10.0 MHz Bandwidth, 16-QAM, EVM, Modulation Characteristic Plot

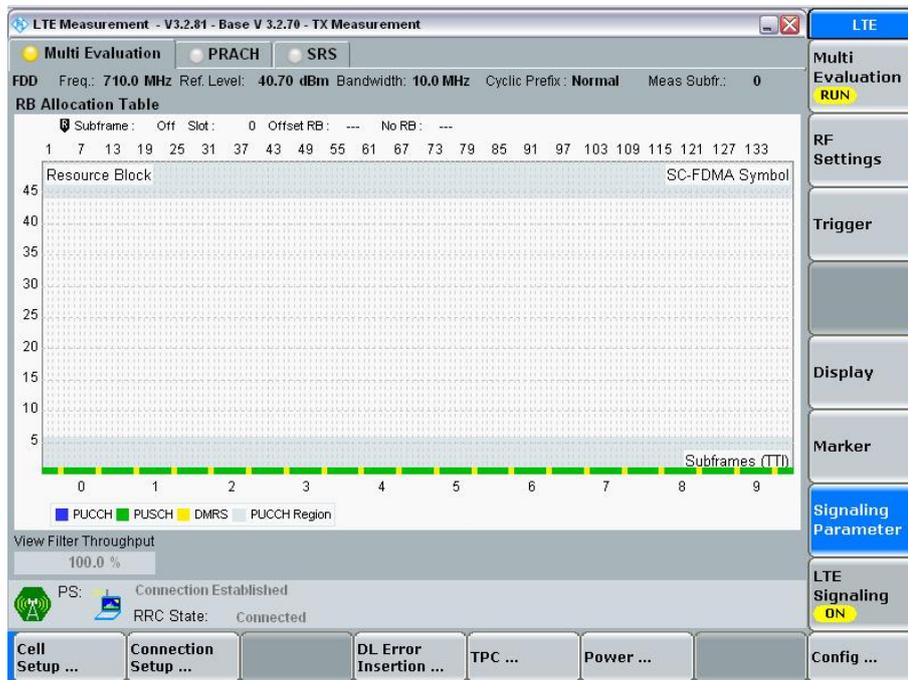




LTE FDD 17, 10.0 MHz Bandwidth, 16-QAM, IQ Constellation, Modulation Characteristic Plot

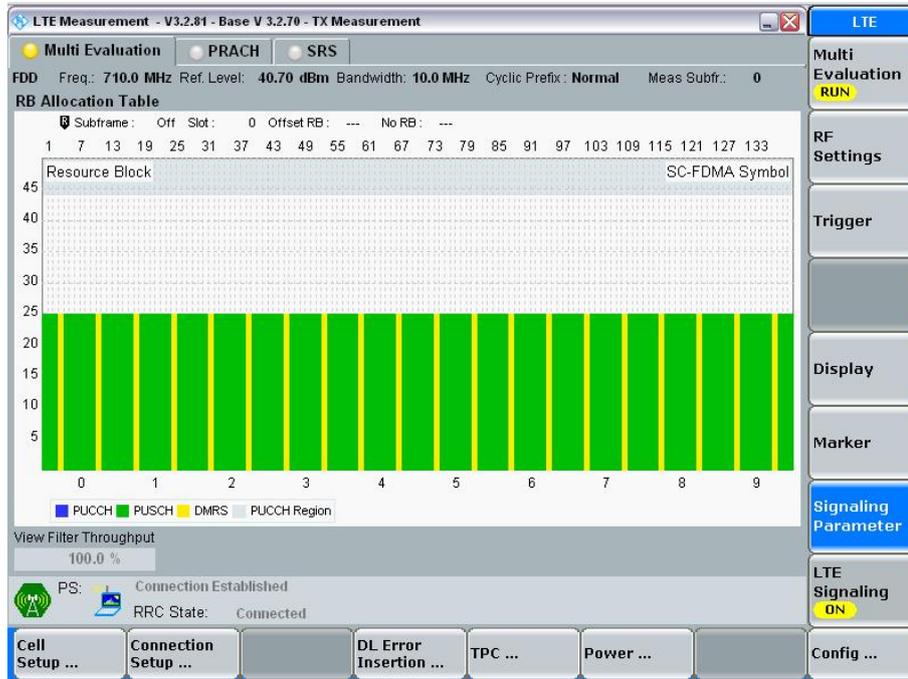


LTE FDD 17, 10.0 MHz Bandwidth, 16-QAM, 1 Resource Block Allocation, Modulation Characteristic Plot

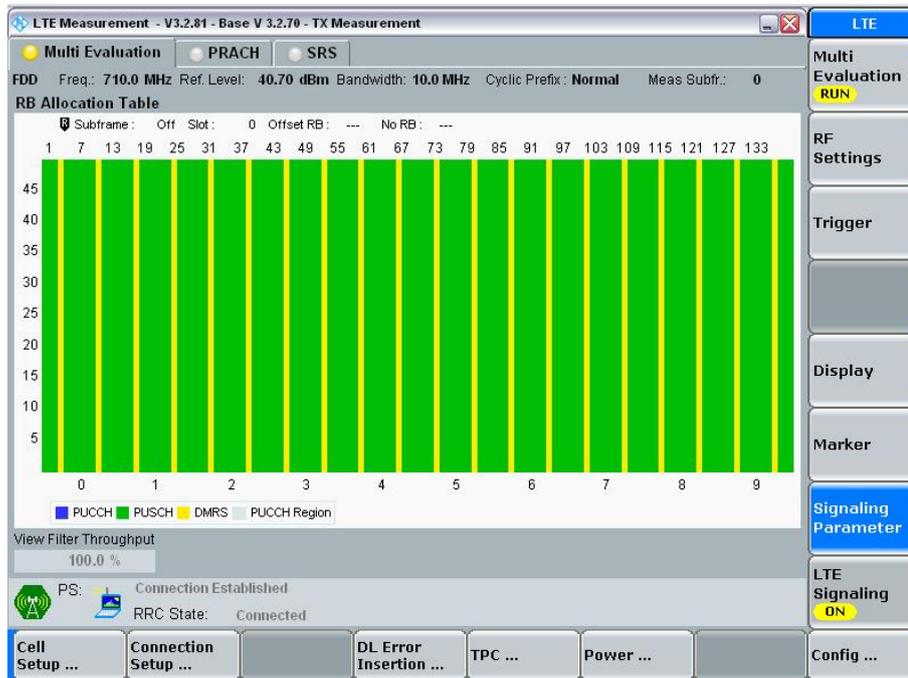




LTE FDD 17, 10.0 MHz Bandwidth, 16-QAM, 25 Resource Block Allocation, Modulation Characteristic Plot



LTE FDD 17, 10.0 MHz Bandwidth, 16-QAM, 50 Resource Block Allocation, Modulation Characteristic Plot



FCC 47 CFR Part 27, Limit Clause 2.1047 (d)

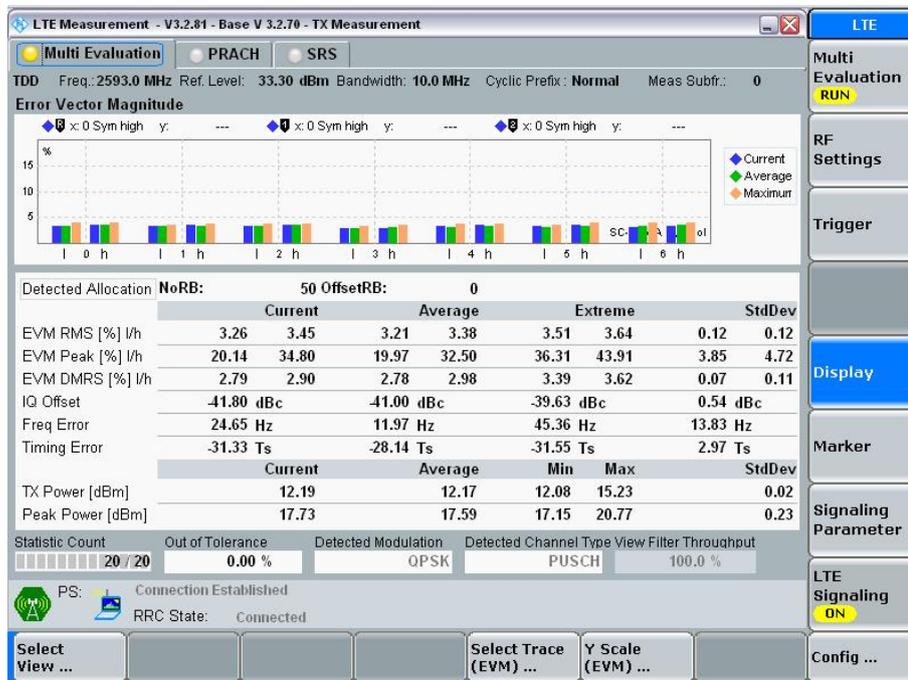
A curve or equivalent data which shows that the equipment will meet the modulation requirements of the rules under which the equipment is to be licensed.



LTE TDD 41, 10.0 MHz Bandwidth, QPSK, Transmitter Summary, Modulation Characteristic Plot

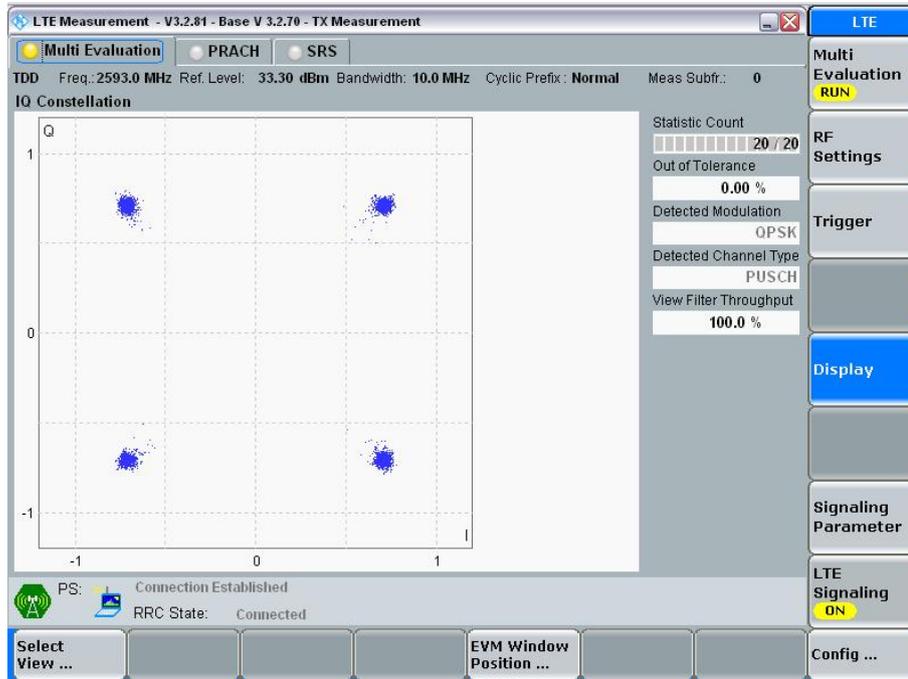


LTE TDD 41, 10.0 MHz Bandwidth, QPSK, EVM, Modulation Characteristic Plot

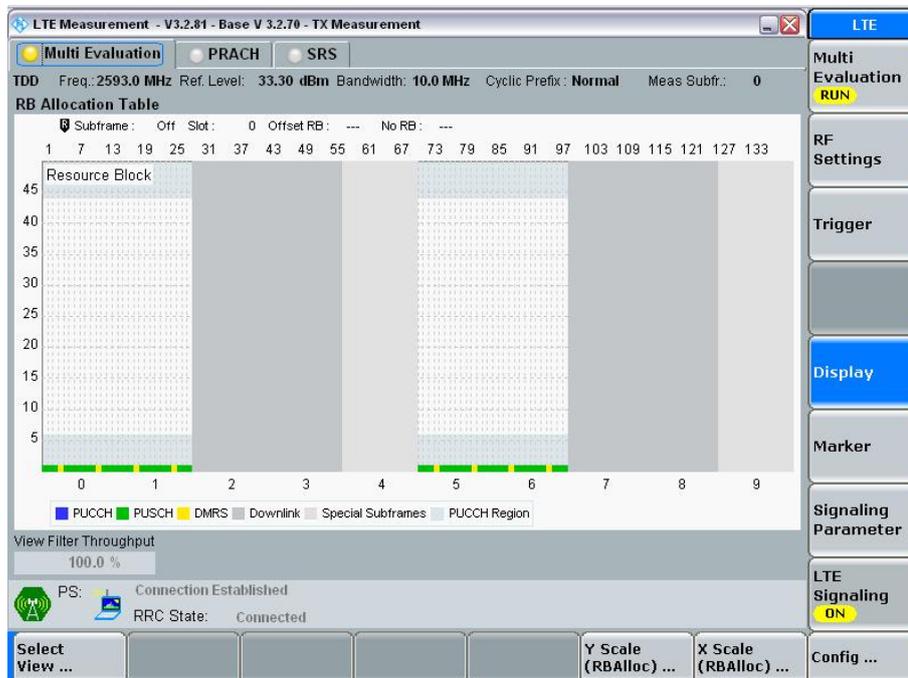




LTE TDD 41, 10.0 MHz Bandwidth, QPSK, IQ Constellation, Modulation Characteristic Plot

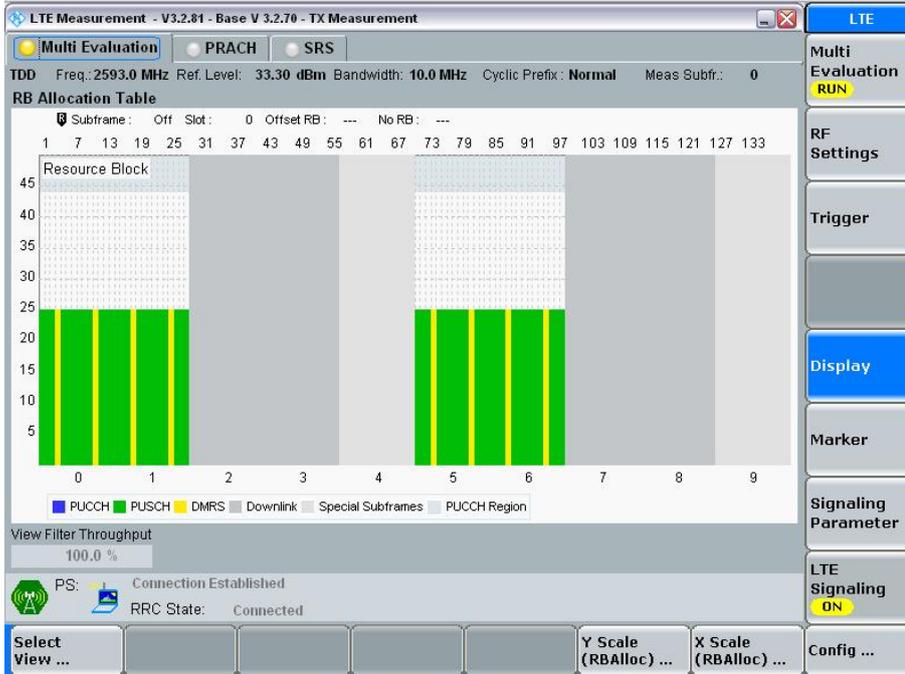


LTE TDD 41, 10.0 MHz Bandwidth, QPSK, 1 Resource Block Allocation, Modulation Characteristic Plot





LTE TDD 41, 10.0 MHz Bandwidth, QPSK, 25 Resource Block Allocation, Modulation Characteristic Plot



LTE TDD 41, 10.0 MHz Bandwidth, QPSK, 50 Resource Block Allocation, Modulation Characteristic Plot

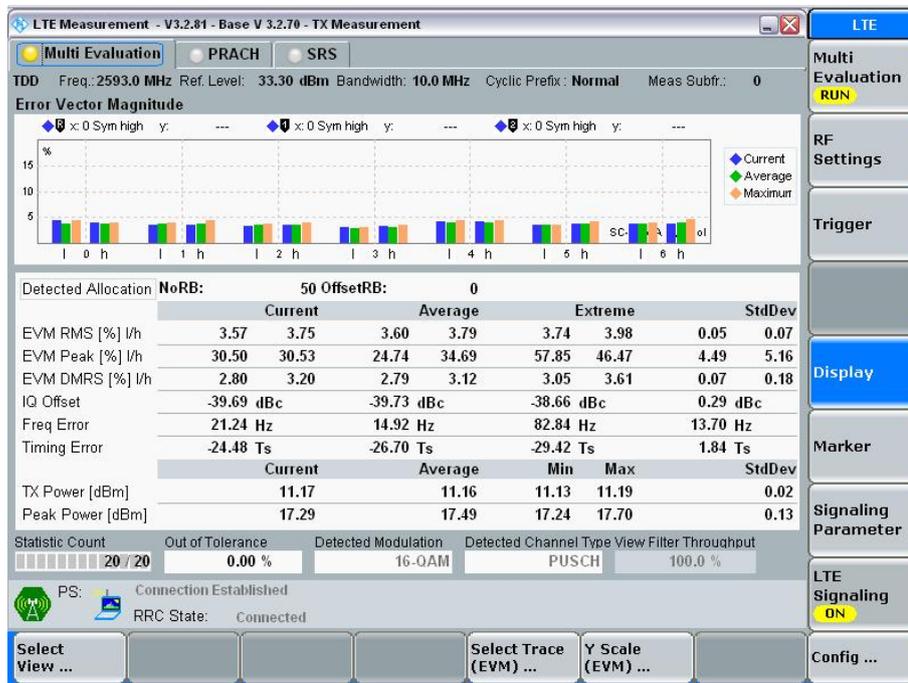




LTE TDD 41, 10.0 MHz Bandwidth, 16-QAM, Transmitter Summary, Modulation Characteristic Plot

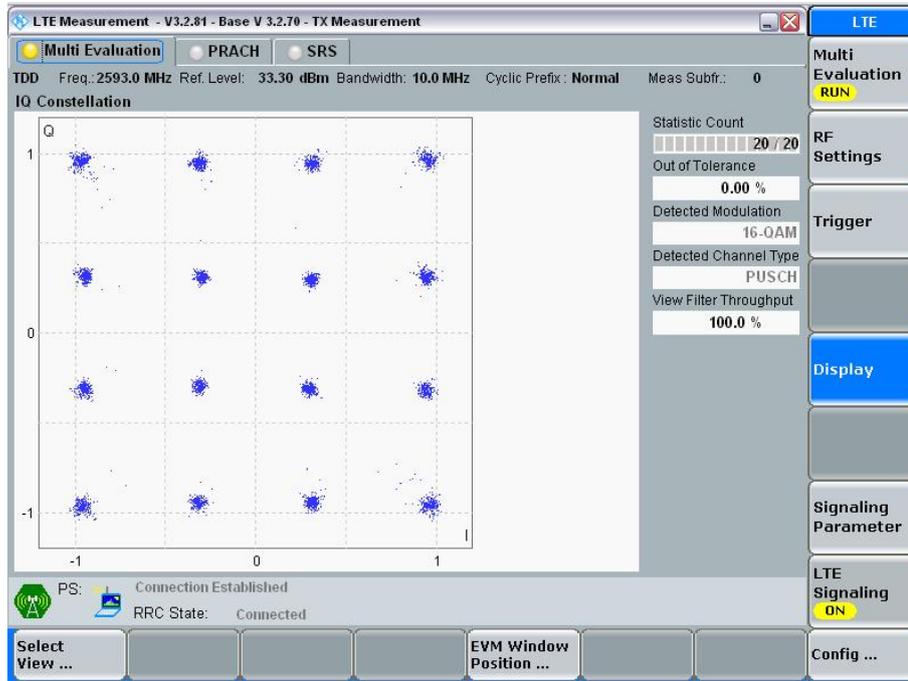


LTE TDD 41, 10.0 MHz Bandwidth, 16-QAM, EVM, Modulation Characteristic Plot

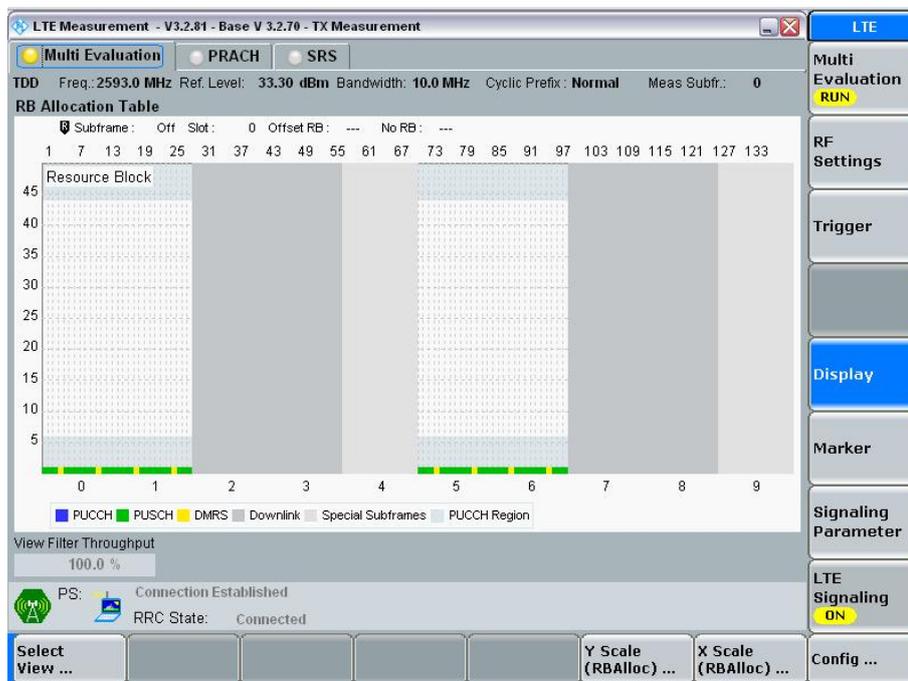




LTE TDD 41, 10.0 MHz Bandwidth, 16-QAM, IQ Constellation, Modulation Characteristic Plot

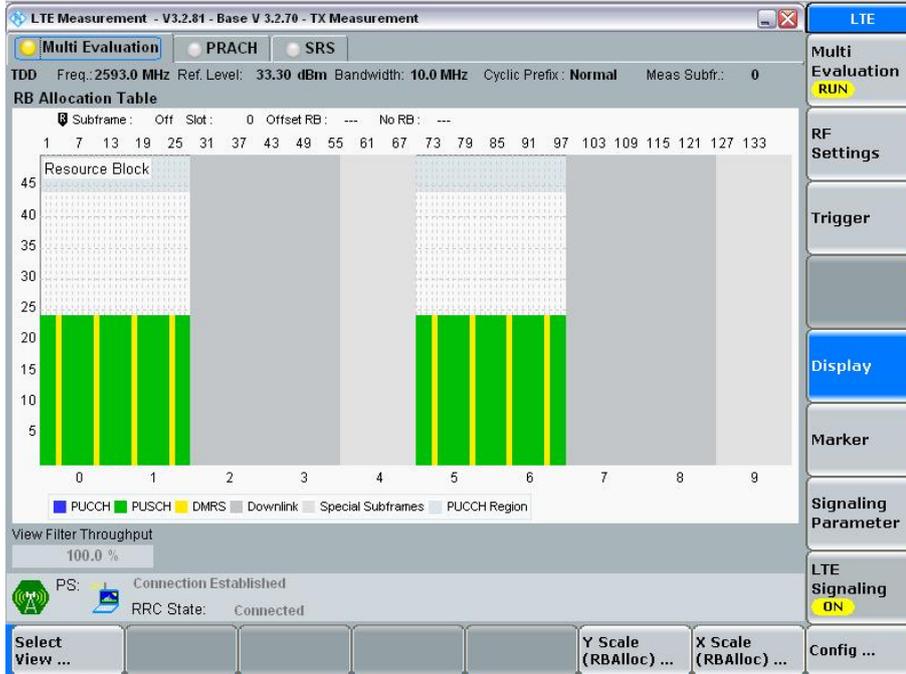


LTE TDD 41, 10.0 MHz Bandwidth, 16-QAM, 1 Resource Block Allocation, Modulation Characteristic Plot

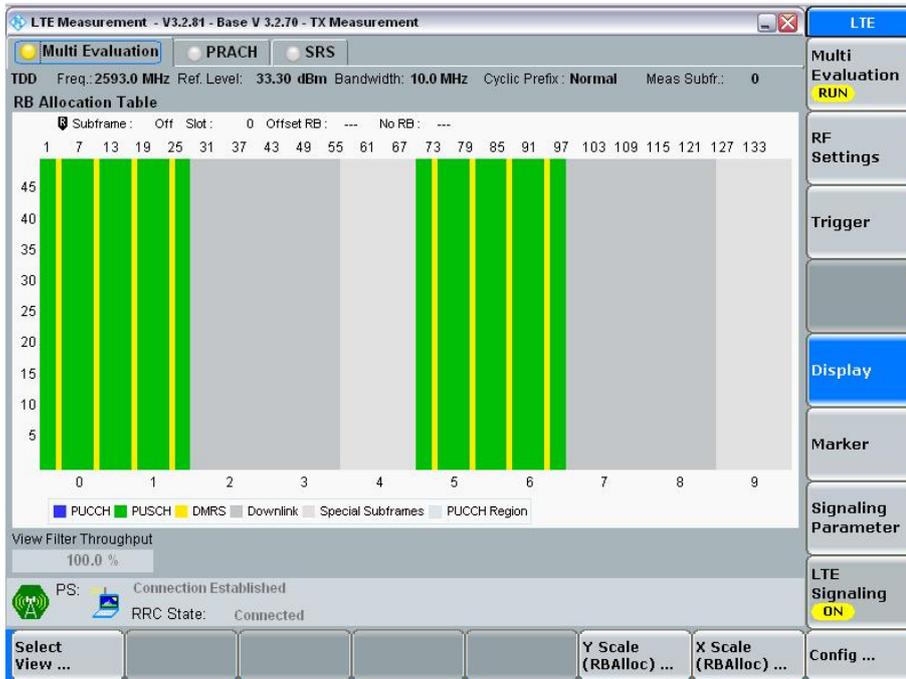




LTE TDD 41, 10.0 MHz Bandwidth, 16-QAM, 24 Resource Block Allocation, Modulation Characteristic Plot



LTE TDD 41, 10.0 MHz Bandwidth, 16-QAM, 50 Resource Block Allocation, Modulation Characteristic Plot



FCC 47 CFR Part 27, Limit Clause 2.1047 (d)

A curve or equivalent data which shows that the equipment will meet the modulation requirements of the rules under which the equipment is to be licensed.



Product Service

SECTION 3

TEST EQUIPMENT USED



3.1 TEST EQUIPMENT USED

List of absolute measuring and other principal items of test equipment.

Instrument	Manufacturer	Type No.	TE No.	Calibration Period (months)	Calibration Due
Section 2.1– Maximum Conducted Output Power					
Power Supply Unit	Hewlett Packard	6253A	441	-	O/P Mon
Hygrometer	Rotronic	I-1000	3220	12	24-Jul-2015
Attenuator (10dB, 20W)	Lucas Weinschel	1	3225	12	12-Dec-2015
Signal Analyser	Rohde & Schwarz	FSQ 26	3545	12	6-Aug-2015
Network Analyser	Rohde & Schwarz	ZVA 40	3548	12	3-Sep-2015
Combiner/Splitter	Weinschel	1506A	3877	12	24-Mar-2016
DC - 12.4 GHz 10 dB Attenuator	Suhner	6810.17.A	3965	12	22-Oct-2015
P-Series Power Meter	Agilent Technologies	N1911A	3980	12	22-Sep-2015
50 MHz-18 GHz Wideband Power Sensor	Agilent Technologies	N1921A	3982	12	22-Sep-2015
True RMS Multimeter	Fluke	179	4007	12	31-Jul-2015
Calibration Unit	Rohde & Schwarz	ZV-Z54	4368	12	24-Sep-2015
1 metre N-Type Cable	IW Microwave	NPS-1806LC-394-NPS	4504	12	26-Feb-2016
1 metre SMA Cable	IW Microwave	3PS-1806LC-394-3PS	4522	12	29-Jan-2016
Wideband Radio Test Set	Rohde & Schwarz	CMW500	4546	12	23-Jan-2016
Section 2.2– Peak to Average Ratio					
Power Supply Unit	Hewlett Packard	6253A	441	-	O/P Mon
Hygrometer	Rotronic	I-1000	3220	12	24-Jul-2015
Attenuator (10dB, 20W)	Lucas Weinschel	1	3225	12	12-Dec-2015
Signal Analyser	Rohde & Schwarz	FSQ 26	3545	12	6-Aug-2015
Network Analyser	Rohde & Schwarz	ZVA 40	3548	12	3-Sep-2015
Combiner/Splitter	Weinschel	1506A	3877	12	24-Mar-2016
DC - 12.4 GHz 10 dB Attenuator	Suhner	6810.17.A	3965	12	22-Oct-2015
P-Series Power Meter	Agilent Technologies	N1911A	3980	12	22-Sep-2015
50 MHz-18 GHz Wideband Power Sensor	Agilent Technologies	N1921A	3982	12	22-Sep-2015
True RMS Multimeter	Fluke	179	4007	12	31-Jul-2015
Calibration Unit	Rohde & Schwarz	ZV-Z54	4368	12	24-Sep-2015
1 metre N-Type Cable	IW Microwave	NPS-1806LC-394-NPS	4504	12	26-Feb-2016
1 metre SMA Cable	IW Microwave	3PS-1806LC-394-3PS	4522	12	29-Jan-2016
Wideband Radio Test Set	Rohde & Schwarz	CMW500	4546	12	23-Jan-2016



Instrument	Manufacturer	Type No.	TE No.	Calibration Period (months)	Calibration Due
Section 2.3 - Emission Limitations					
Antenna (Double Ridge Guide)	Link Microtek Ltd	AM180HA-K-TU2	230	24	26-Nov-2015
Antenna (Double Ridge Guide, 1GHz-18GHz)	EMCO	3115	234	12	29-Apr-2016
Antenna (Double Ridge Guide, 1GHz-18GHz)	EMCO	3115	235	22	28-Nov-2015
Dual Power Supply Unit	Thurlby	PL320	288	-	TU
Filter (High Pass)	Lorch	SHP7-7000-SR	566	12	22-May-2015
Attenuator (10dB, 10W)	Trilithic	HFP-50N	1377	12	22-Oct-2015
Pre-Amplifier	Phase One	PS04-0086	1533	12	23-Dec-2015
Pre-Amplifier	Phase One	PSO4-0087	1534	12	23-Dec-2015
Screened Room (5)	Rainford	Rainford	1545	24	26-Jun-2015
Turntable Controller	Inn-Co GmbH	CO 1000	1606	-	TU
Filter (Hi Pass)	Lorch	9HP7-7000-SR	2833	12	5-Feb-2016
Antenna (Bilog)	Chase	CBL6143	2904	24	10-Jun-2015
Signal Generator: 10MHz to 20GHz	Rohde & Schwarz	SMR20	3475	12	18-Feb-2016
EMI Test Receiver	Rohde & Schwarz	ESU40	3506	12	27-Oct-2015
Tilt Antenna Mast	matur GmbH	TAM 4.0-P	3916	-	TU
Mast Controller	matur GmbH	NCD	3917	-	TU
1 Metre K Type Cable	Rhophase	KPS-1501A-1000-KPS	4105	12	7-Nov-2015
1 Metre K Type Cable	Rhophase	KPS-1501A-1000-KPS	4106	12	7-Nov-2015
Wideband Radio Communication Tester	Rohde & Schwarz	CMW 500	4144	12	7-Nov-2015
Suspended Substrate Highpass Filter	Advance Power Components	11SH10-3000/X18000-O/O	4411	12	24-Mar-2016
Suspended Substrate Highpass Filter	Advance Power Components	11SH10-3000/X18000-O/O	4412	12	24-Mar-2016
Wideband Radio Test Set	Rohde & Schwarz	CMW500	4546	12	23-Jan-2016
Section 2.4 - Band Edge					
Power Supply Unit	Hewlett Packard	6253A	441	-	O/P Mon
Hygrometer	Rotronic	I-1000	3220	12	24-Jul-2015
Attenuator (10dB, 20W)	Lucas Weinschel	1	3225	12	12-Dec-2015
Signal Analyser	Rohde & Schwarz	FSQ 26	3545	12	6-Aug-2015
Network Analyser	Rohde & Schwarz	ZVA 40	3548	12	3-Sep-2015
Combiner/Splitter	Weinschel	1506A	3877	12	24-Mar-2016
DC - 12.4 GHz 10 dB Attenuator	Suhner	6810.17.A	3965	12	22-Oct-2015
True RMS Multimeter	Fluke	179	4007	12	31-Jul-2015
Calibration Unit	Rohde & Schwarz	ZV-Z54	4368	12	24-Sep-2015
PXA Signal Analyser	Agilent Technologies	N9030A PXA	4409	12	16-Feb-2016
1 metre N-Type Cable	IW Microwave	NPS-1806LC-394-NPS	4504	12	26-Feb-2016
1 metre SMA Cable	IW Microwave	3PS-1806LC-394-3PS	4522	12	29-Jan-2016
Wideband Radio Test Set	Rohde & Schwarz	CMW500	4546	12	23-Jan-2016



Product Service

Instrument	Manufacturer	Type No.	TE No.	Calibration Period (months)	Calibration Due
Section 2.5 - 26 dB Bandwidth					
Power Supply Unit	Hewlett Packard	6253A	441	-	O/P Mon
Rubidium Standard	Rohde & Schwarz	XSRM	1316	6	28-Jul-2015
Hygrometer	Rotronic	I-1000	3220	12	24-Jul-2015
Attenuator (10dB, 20W)	Lucas Weinschel	1	3225	12	12-Dec-2015
Network Analyser	Rohde & Schwarz	ZVA 40	3548	12	3-Sep-2015
Combiner/Splitter	Weinschel	1506A	3877	12	24-Mar-2016
DC - 12.4 GHz 10 dB Attenuator	Suhner	6810.17.A	3965	12	22-Oct-2015
True RMS Multimeter	Fluke	179	4007	12	31-Jul-2015
Calibration Unit	Rohde & Schwarz	ZV-Z54	4368	12	24-Sep-2015
Frequency Standard	Spectracom	Secure Sync 1200-0408-0601	4393	6	28-Jul-2015
PXA Signal Analyser	Agilent Technologies	N9030A PXA	4409	12	16-Feb-2016
1 metre N-Type Cable	IW Microwave	NPS-1806LC-394-NPS	4504	12	26-Feb-2016
1 metre SMA Cable	IW Microwave	3PS-1806LC-394-3PS	4522	12	29-Jan-2016
Wideband Radio Test Set	Rohde & Schwarz	CMW500	4546	12	23-Jan-2016



Product Service

Instrument	Manufacturer	Type No.	TE No.	Calibration Period (months)	Calibration Due
Section 2.7 - Frequency Stability					
Climatic Chamber	Votsch	VT4002	161	-	O/P Mon
Power Supply Unit	Hewlett Packard	6253A	441	-	O/P Mon
Rubidium Standard	Rohde & Schwarz	XSRM	1316	6	28-Jul-2015
Digital Thermometer	Digitron	T208	2831	12	31-Jul-2015
Hygrometer	Rotronic	I-1000	3220	12	24-Jul-2015
Attenuator (10dB, 20W)	Lucas Weinschel	1	3225	12	12-Dec-2015
Combiner/Splitter	Weinschel	1506A	3877	12	24-Mar-2016
DC - 12.4 GHz 10 dB Attenuator	Suhner	6810.17.A	3965	12	22-Oct-2015
True RMS Multimeter	Fluke	179	4007	12	31-Jul-2015
Wideband Radio Communication Tester	Rohde & Schwarz	CMW 500	4144	12	7-Nov-2015
Frequency Standard	Spectracom	Secure Sync 1200-0408-0601	4393	6	28-Jul-2015
PXA Signal Analyser	Agilent Technologies	N9030A PXA	4409	12	16-Feb-2016
1 metre SMA Cable	IW Microwave	3PS-1806LC-394-3PS	4522	12	29-Jan-2016

TU – Traceability Unscheduled

O/P MON – Output Monitored with Calibrated Equipment



3.2 MEASUREMENT UNCERTAINTY

For a 95% confidence level, the measurement uncertainties for defined systems are:-

Test Discipline	MU
Modulation Characteristics	-
Frequency Stability	± 18 Hz, (Band 17) to 70 Hz, (Band 41)
Maximum Conducted Output Power	± 0.7 dB
Emission Limitations	Radiated Emissions ; 30 MHz to 1 GHz ; ± 5.1 dB Radiated Emissions ; 1 GHz to 40 GHz ; 6.2 dB ERP / EIRP ; ± 3.0 dB
26 dB Bandwidth	9.356 kHz, (1RB) to 374.21 kHz, (All RB's – 20 MHz BW)
Band Edge	± 3.454 dB



Product Service

SECTION 4

ACCREDITATION, DISCLAIMERS AND COPYRIGHT



Product Service

4.1 ACCREDITATION, DISCLAIMERS AND COPYRIGHT



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Results of tests not covered by our UKAS Accreditation Schedule are marked NUA (Not UKAS Accredited).

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