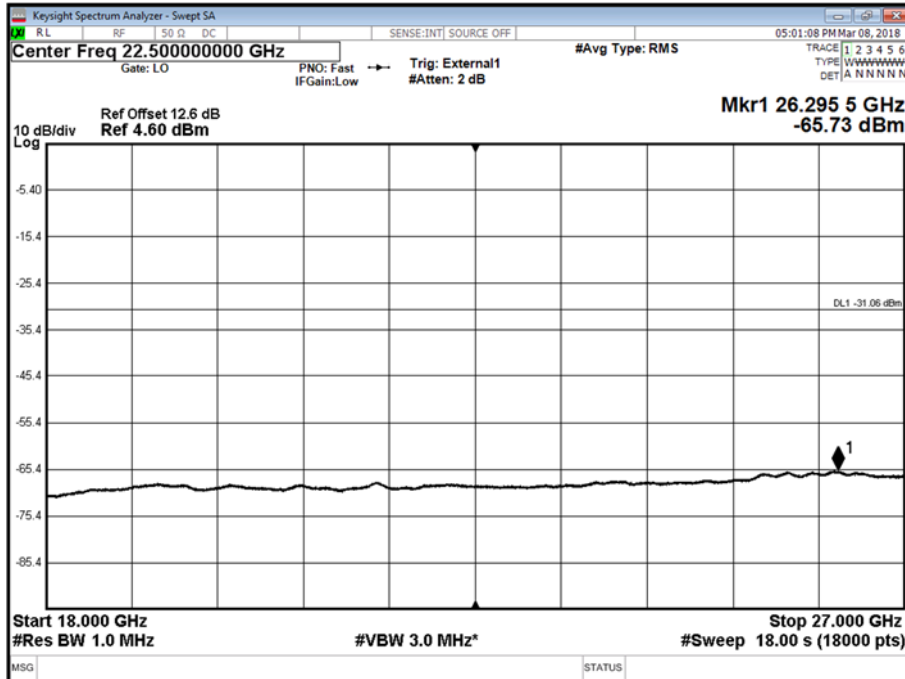


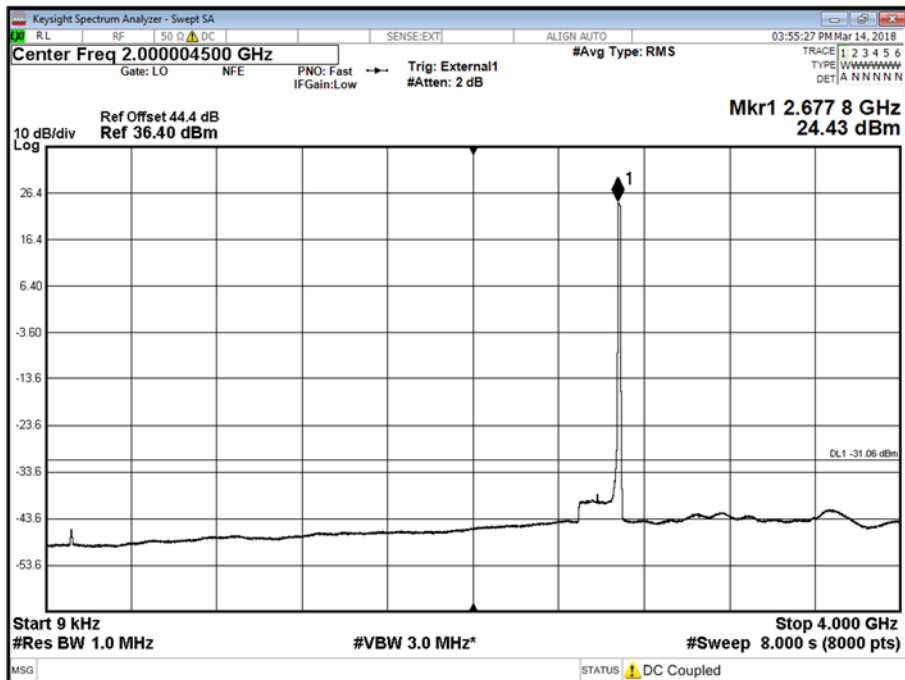


Product Service

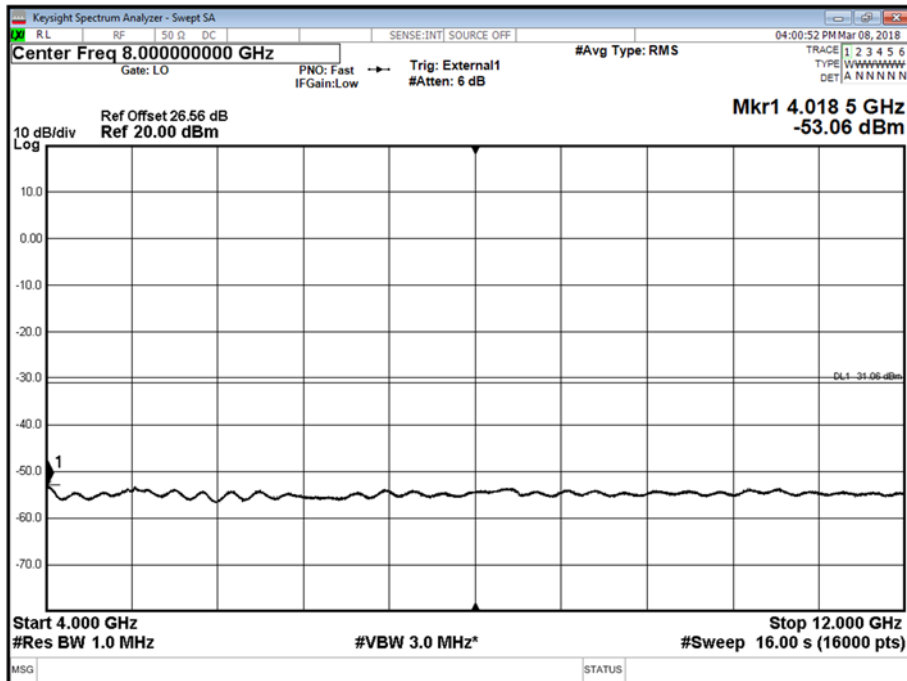
Antenna 43 - LTE Modulation 64QAM - LTE Carrier Bandwidth 15.0 MHz - Channel Position M - Band 4 - Range 18000 to 27000 MHz



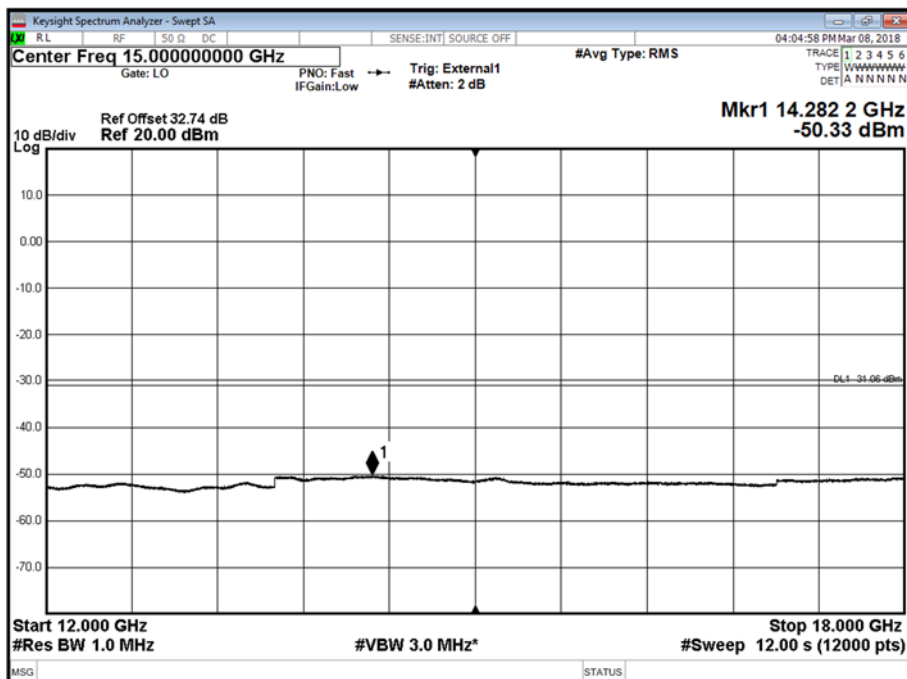
Antenna 43 - LTE Modulation 64QAM - LTE Carrier Bandwidth 15.0 MHz - Channel Position T - Band 1 - Range 0.009 to 4000 MHz



Antenna 43 - LTE Modulation 64QAM - LTE Carrier Bandwidth 15.0 MHz - Channel Position T - Band 2 - Range 4000 to 12000 MHz



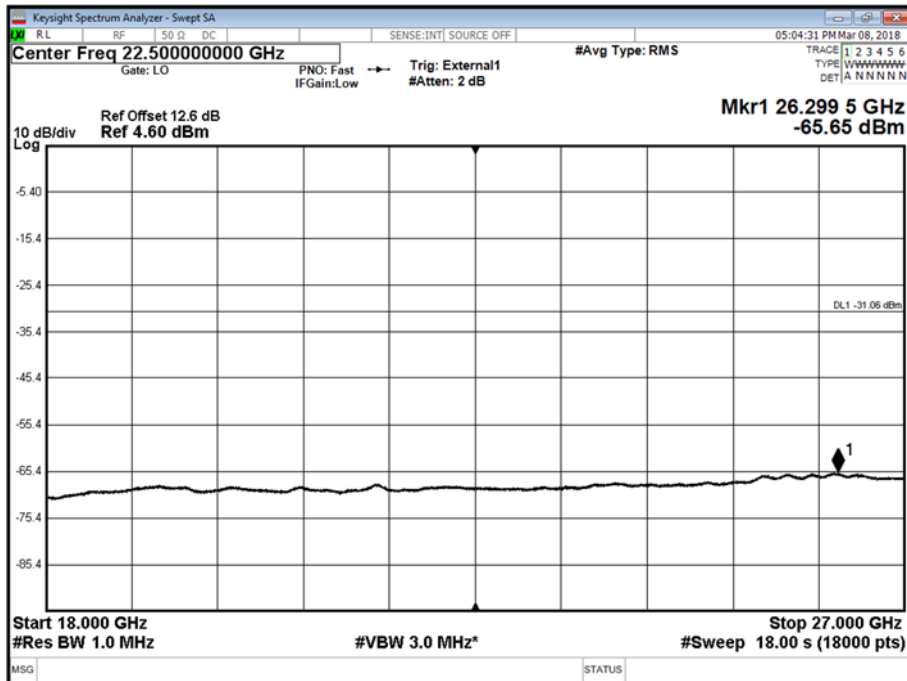
Antenna 43 - LTE Modulation 64QAM - LTE Carrier Bandwidth 15.0 MHz - Channel Position T - Band 3 - Range 12000 to 18000 MHz



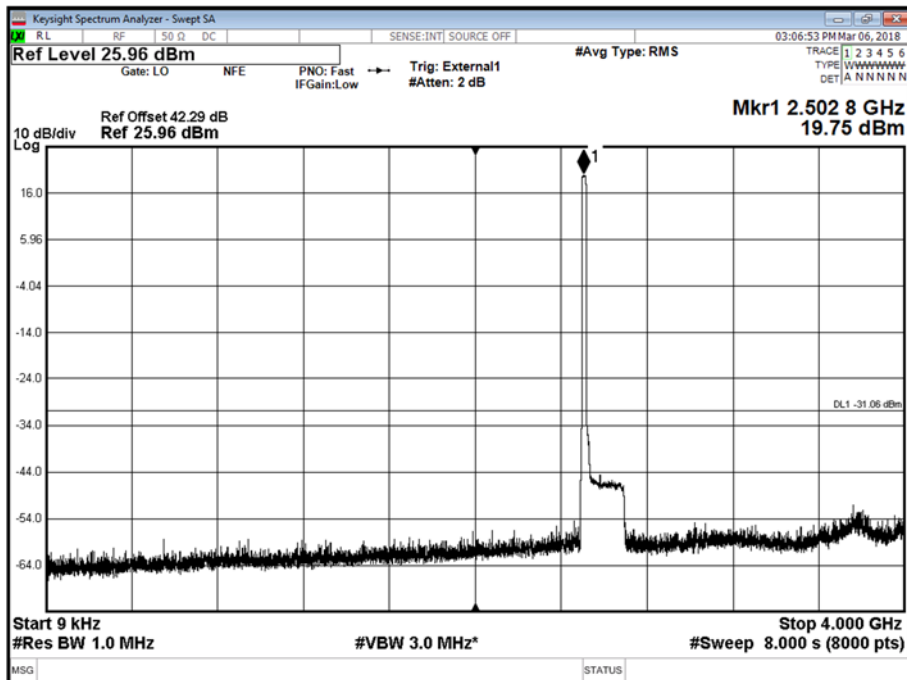


Product Service

Antenna 43 - LTE Modulation 64QAM - LTE Carrier Bandwidth 15.0 MHz - Channel Position T - Band 4 - Range 18000 to 27000 MHz



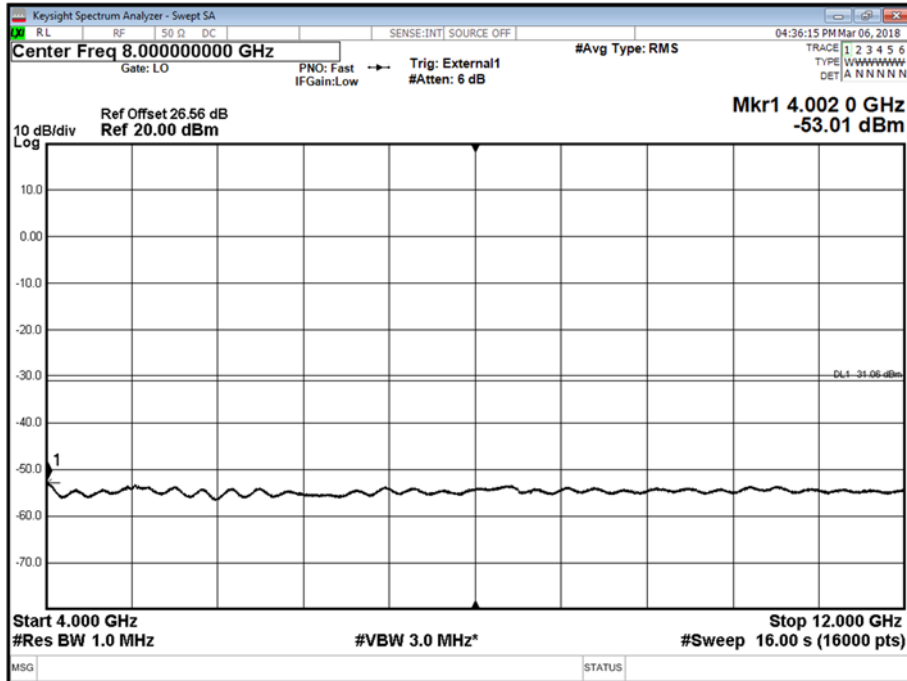
Antenna 43 - LTE Modulation 64QAM - LTE Carrier Bandwidth 20.0 MHz - Channel Position B - Band 1 - Range 0.009 to 4000 MHz



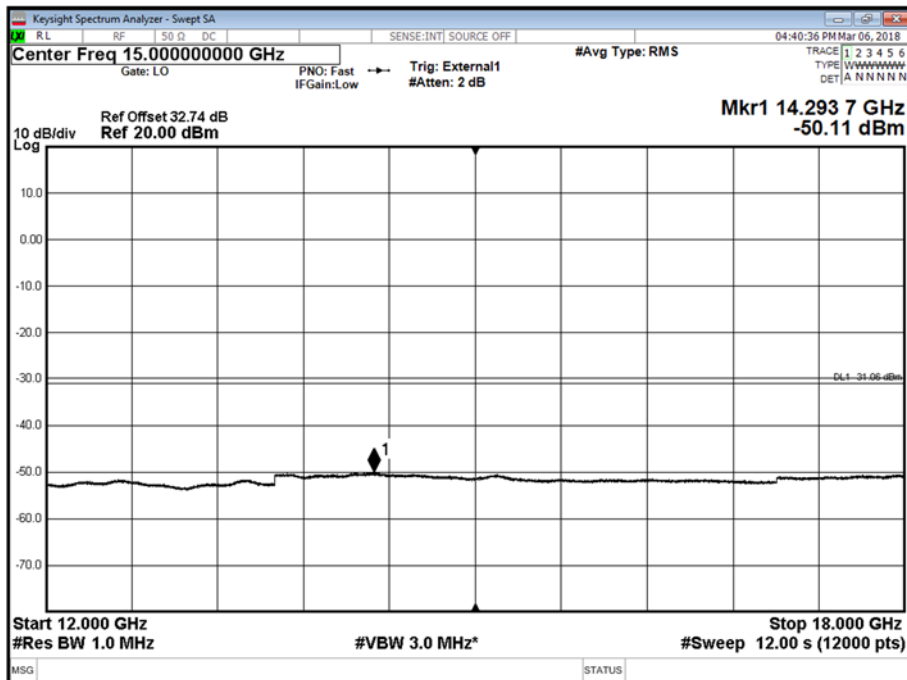


Product Service

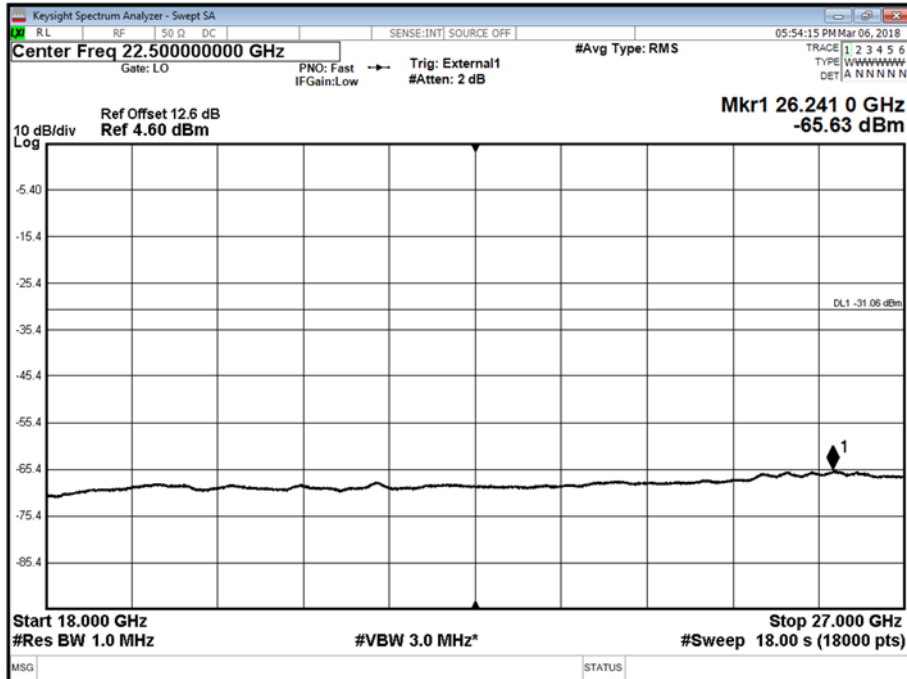
Antenna 43 - LTE Modulation 64QAM - LTE Carrier Bandwidth 20.0 MHz - Channel Position B - Band 2 - Range 4000 to 12000 MHz



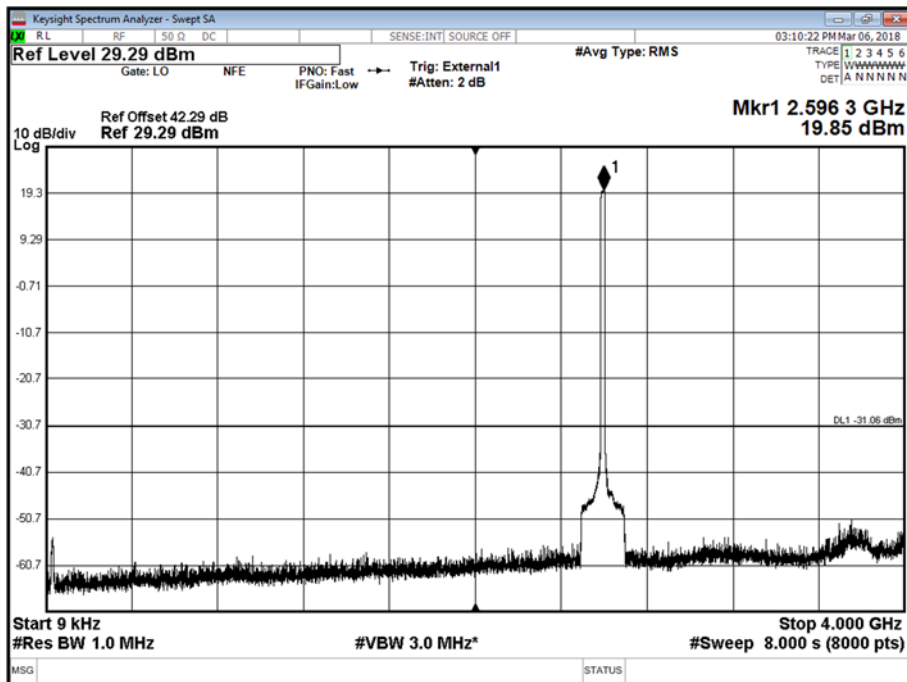
Antenna 43 - LTE Modulation 64QAM - LTE Carrier Bandwidth 20.0 MHz - Channel Position B - Band 3 - Range 12000 to 18000 MHz



Antenna 43 - LTE Modulation 64QAM - LTE Carrier Bandwidth 20.0 MHz - Channel Position B - Band 4 - Range 18000 to 27000 MHz



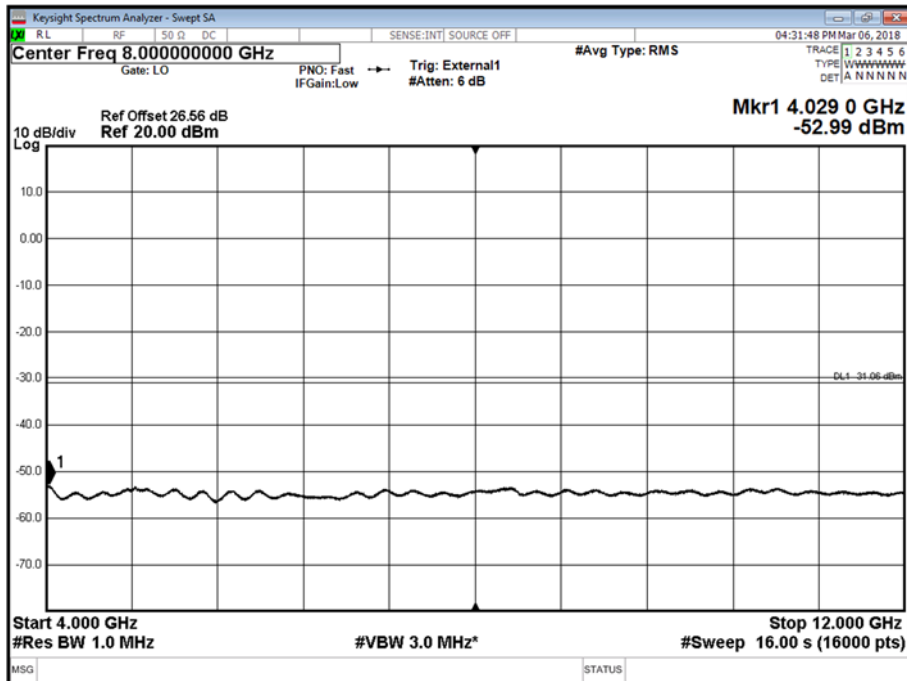
Antenna 43 - LTE Modulation 64QAM - LTE Carrier Bandwidth 20.0 MHz - Channel Position M - Band 1 - Range 0.009 to 4000 MHz



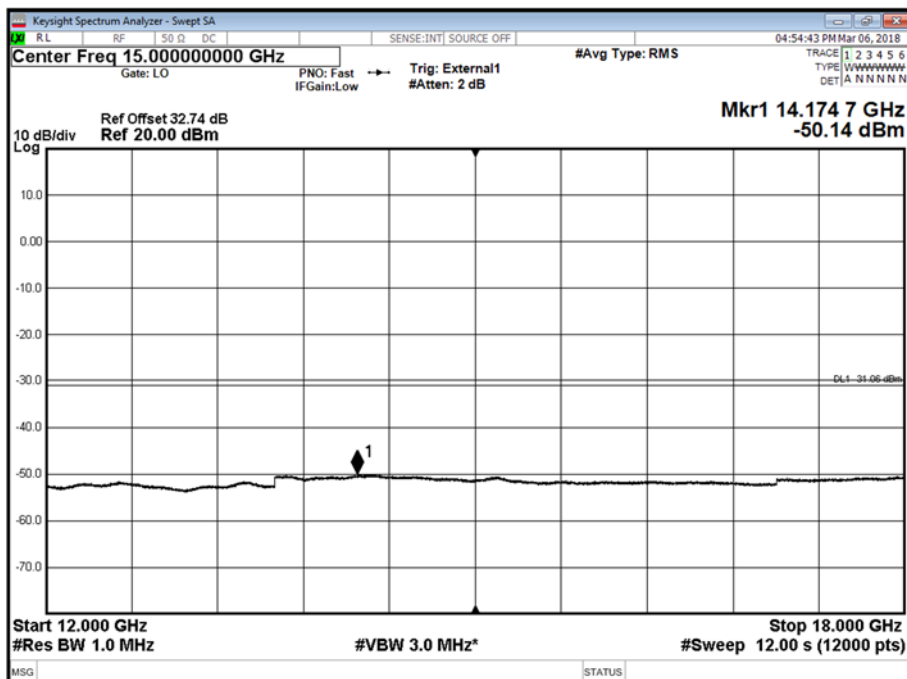


Product Service

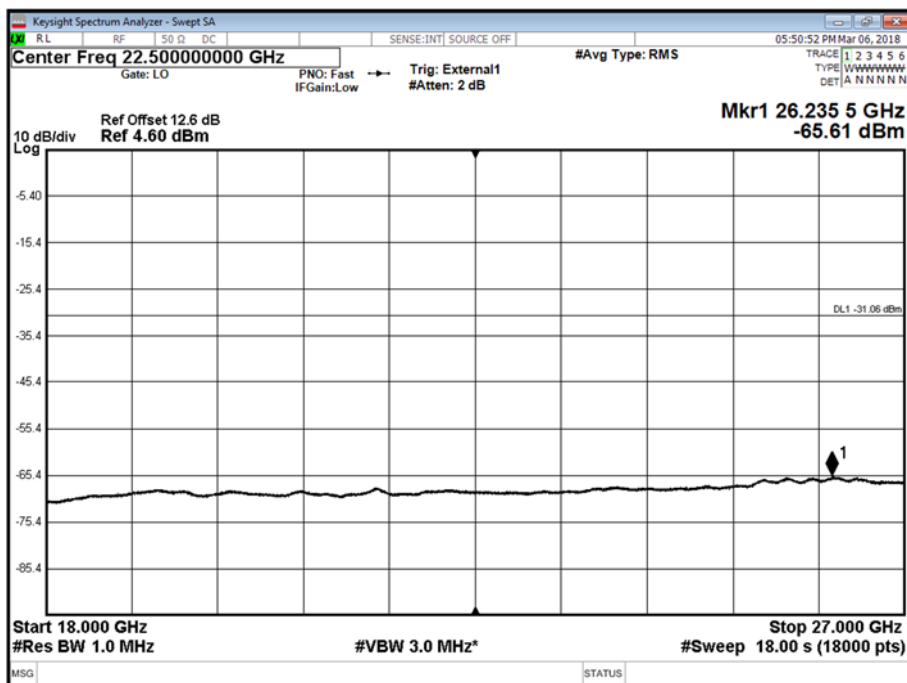
Antenna 43 - LTE Modulation 64QAM - LTE Carrier Bandwidth 20.0 MHz - Channel Position M - Band 2 - Range 4000 to 12000 MHz



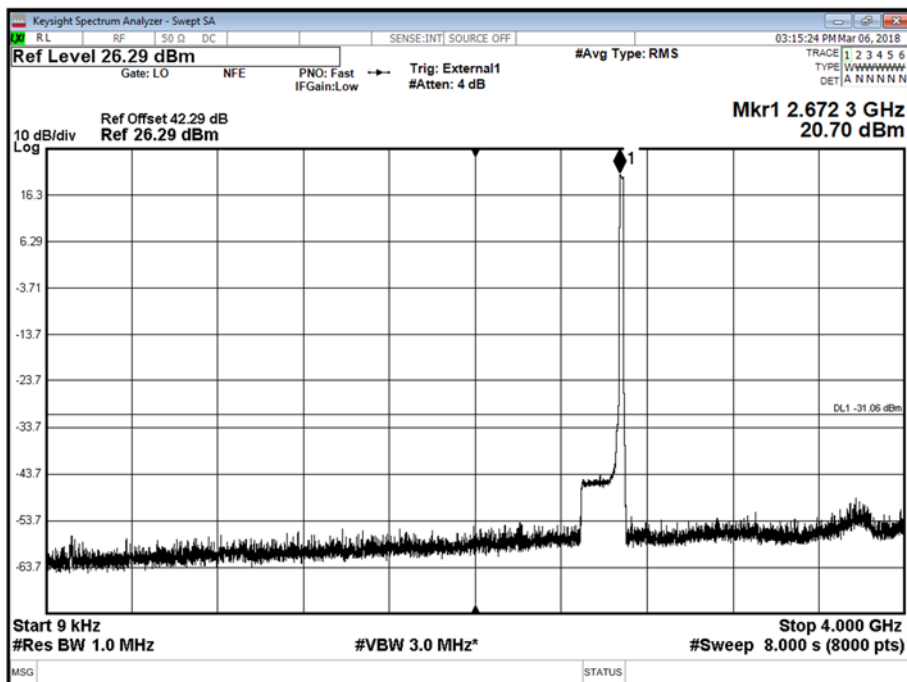
Antenna 43 - LTE Modulation 64QAM - LTE Carrier Bandwidth 20.0 MHz - Channel Position M - Band 3 - Range 12000 to 18000 MHz



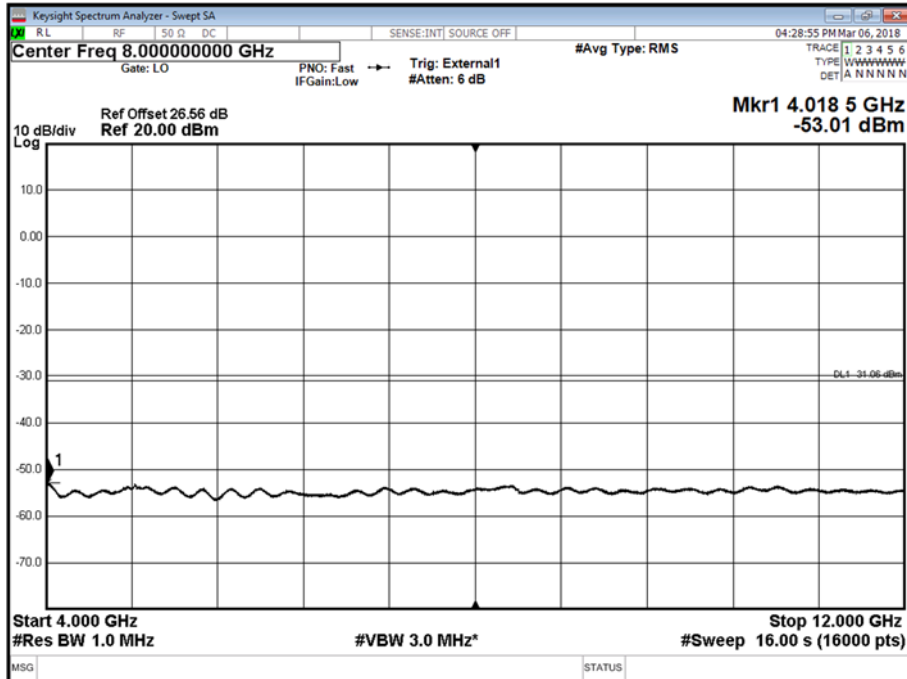
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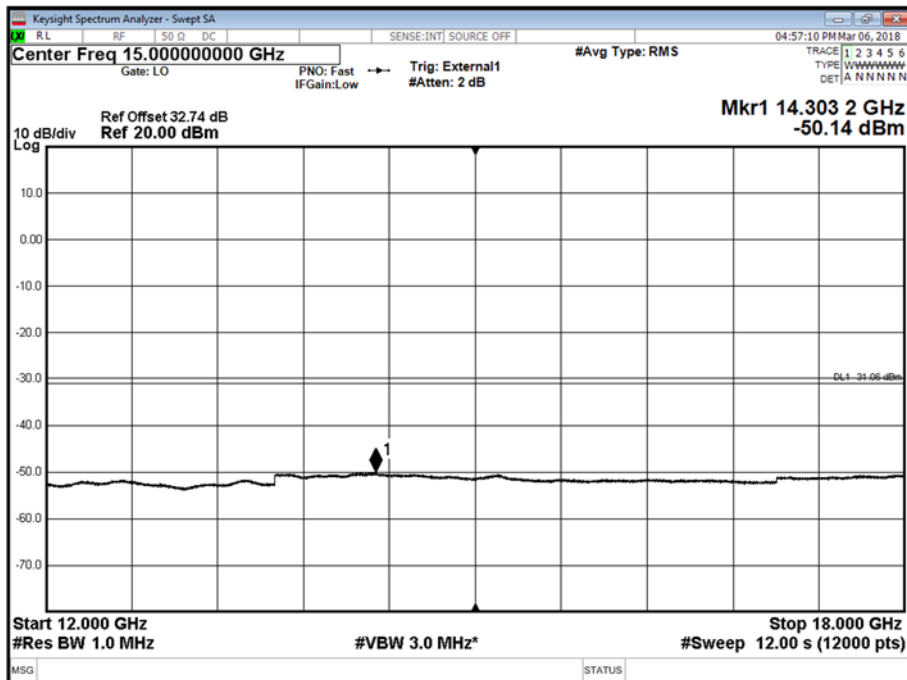
Antenna 43 - LTE Modulation 64QAM - LTE Carrier Bandwidth 20.0 MHz - Channel Position T - Band 1 - Range 0.009 to 4000 MHz



Antenna 43 - LTE Modulation 64QAM - LTE Carrier Bandwidth 20.0 MHz - Channel Position T - Band 2 - Range 4000 to 12000 MHz



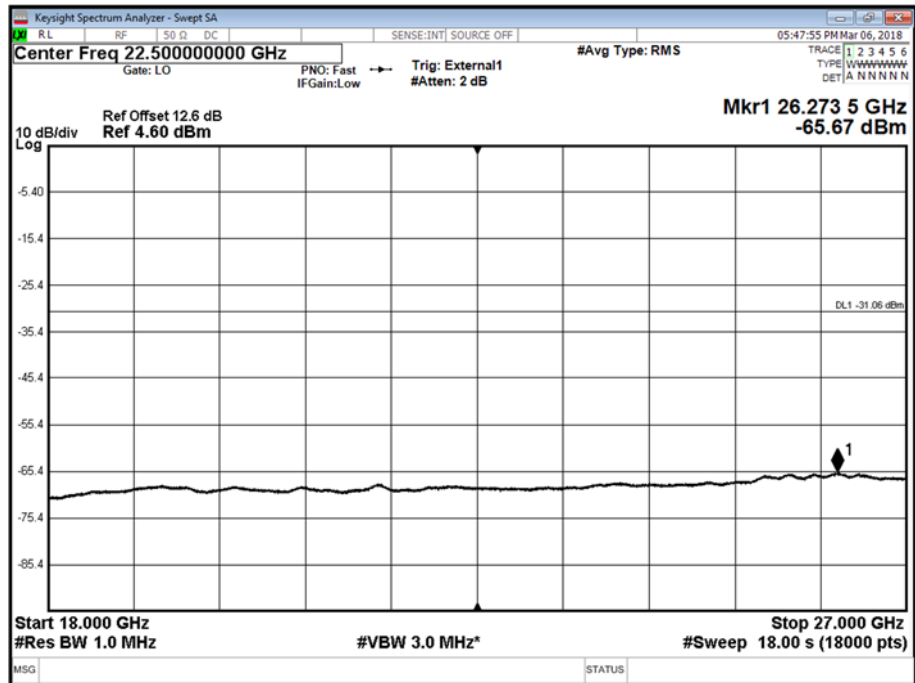
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Product Service

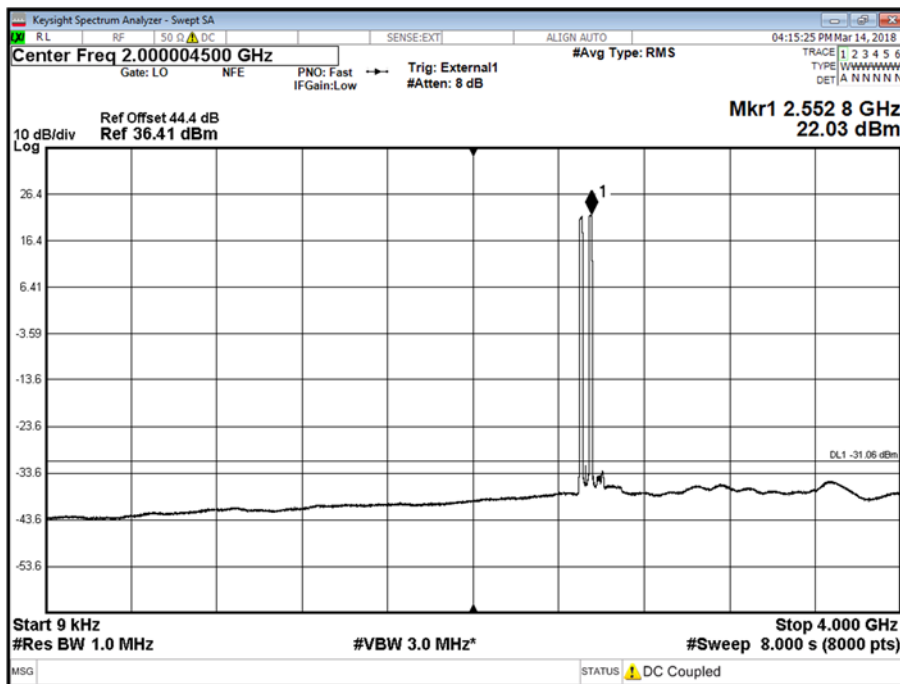
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Band 4 - Range 18000 to 27000 MHz



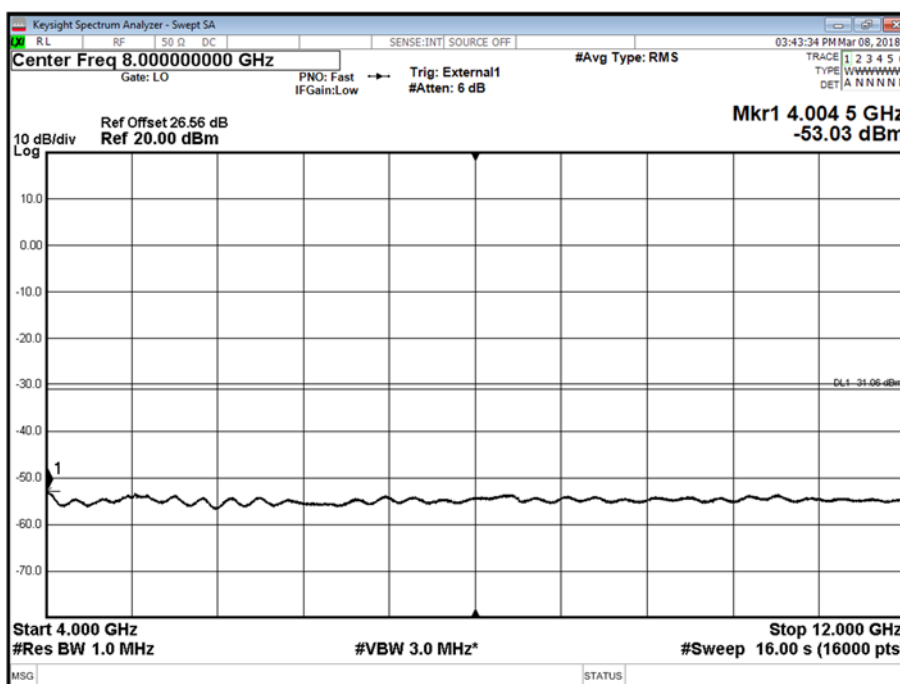
Configuration B

Maximum Output Power 32.7 dBm

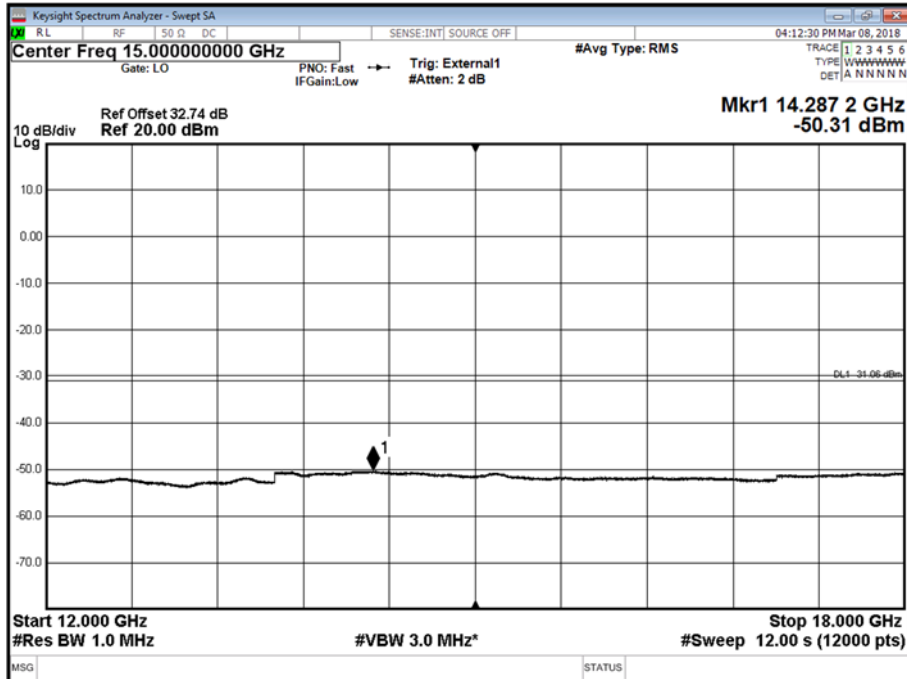
Antenna 43 - LTE Modulation 64QAM - LTE Carrier Bandwidth 15.0 MHz - Channel Position B - Band 1 - Range 0.009 to 4000 MHz



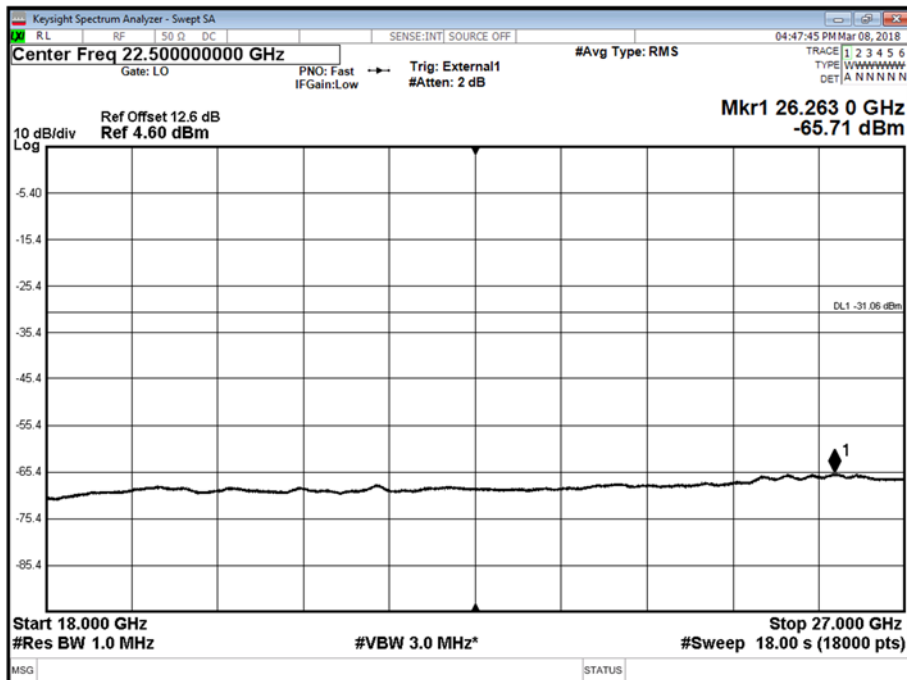
Antenna 43 - LTE Modulation 64QAM - LTE Carrier Bandwidth 15.0 MHz - Channel Position B - Band 2 - Range 4000 to 12000 MHz



Antenna 43 - LTE Modulation 64QAM - LTE Carrier Bandwidth 15.0 MHz - Channel Position B - Band 3 - Range 12000 to 18000 MHz



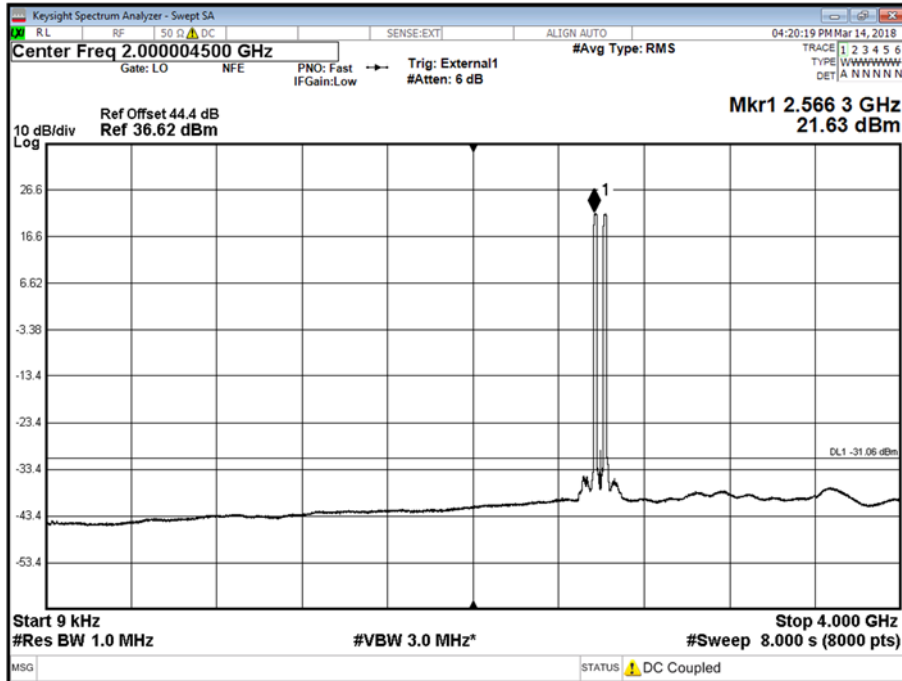
Antenna 43 - LTE Modulation 64QAM - LTE Carrier Bandwidth 15.0 MHz - Channel Position B - Band 4 - Range 18000 to 27000 MHz



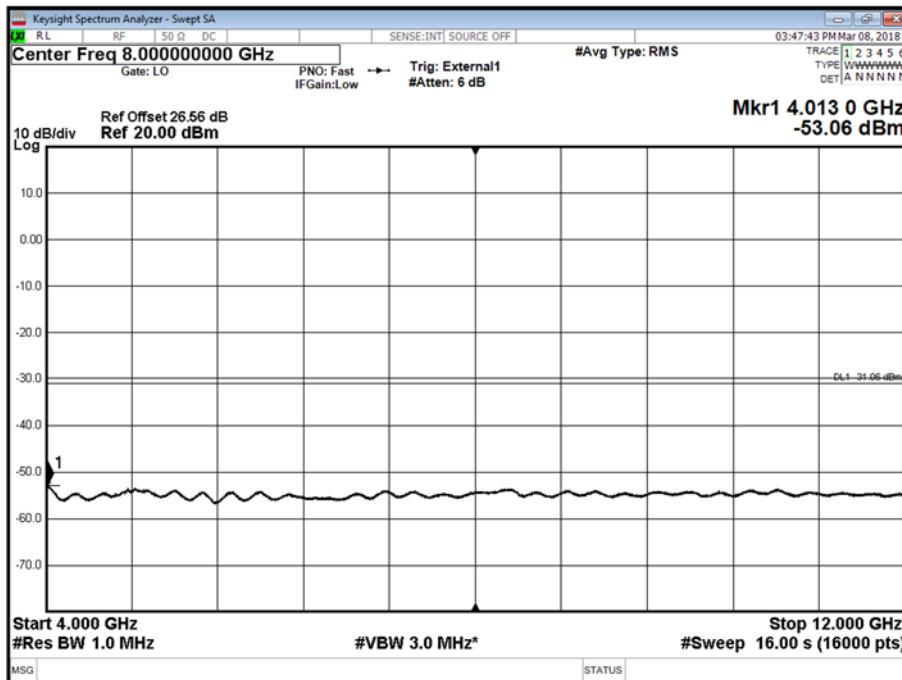


Product Service

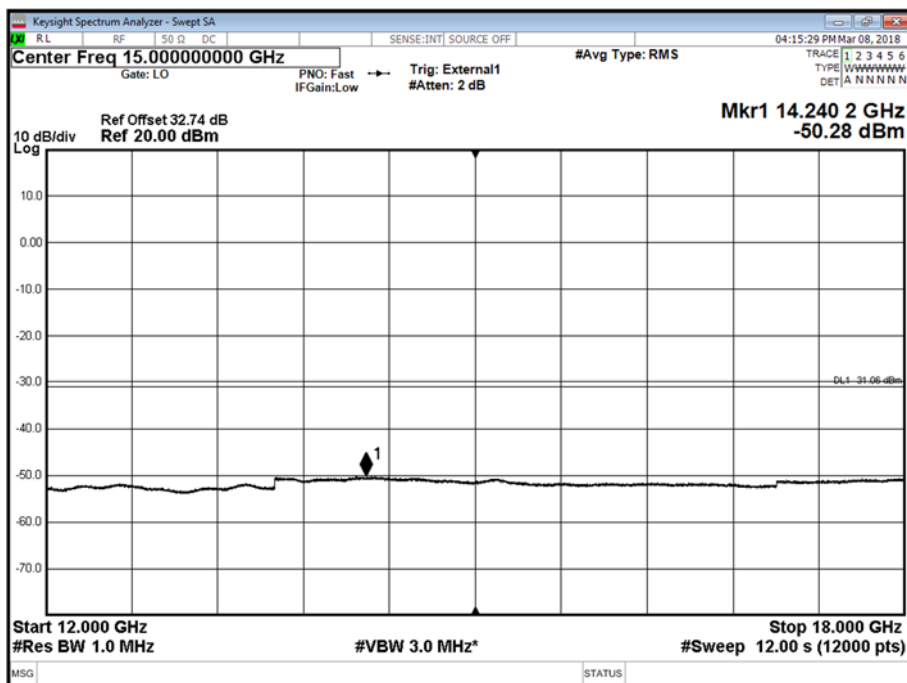
Antenna 43 - LTE Modulation 64QAM - LTE Carrier Bandwidth 15.0 MHz - Channel Position M - Band 1 - Range 0.900 to 4000 MHz



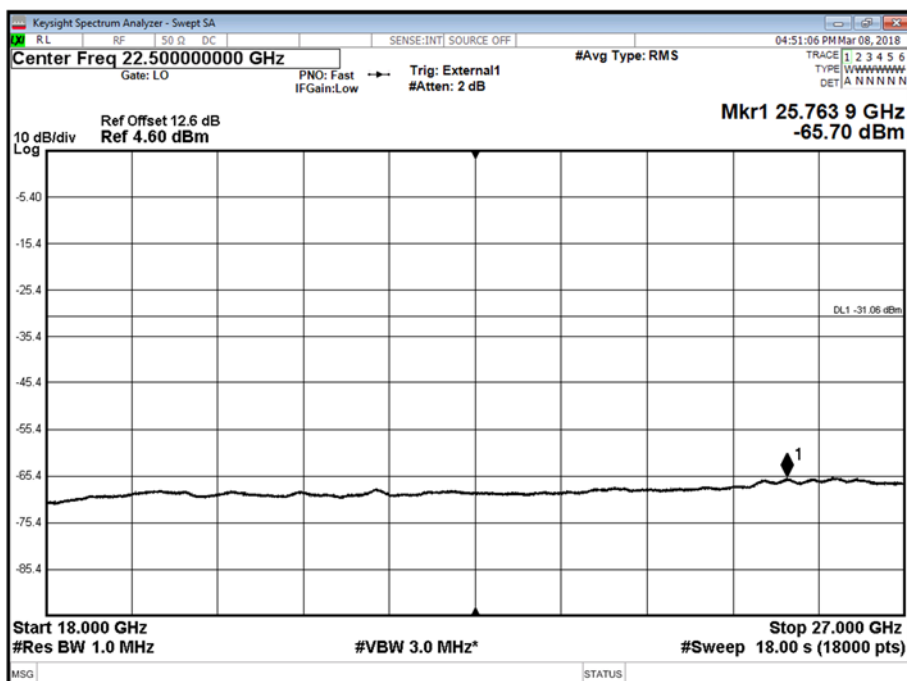
Antenna 43 - LTE Modulation 64QAM - LTE Carrier Bandwidth 15.0 MHz - Channel Position M - Band 2 - Range 4000 to 12000 MHz



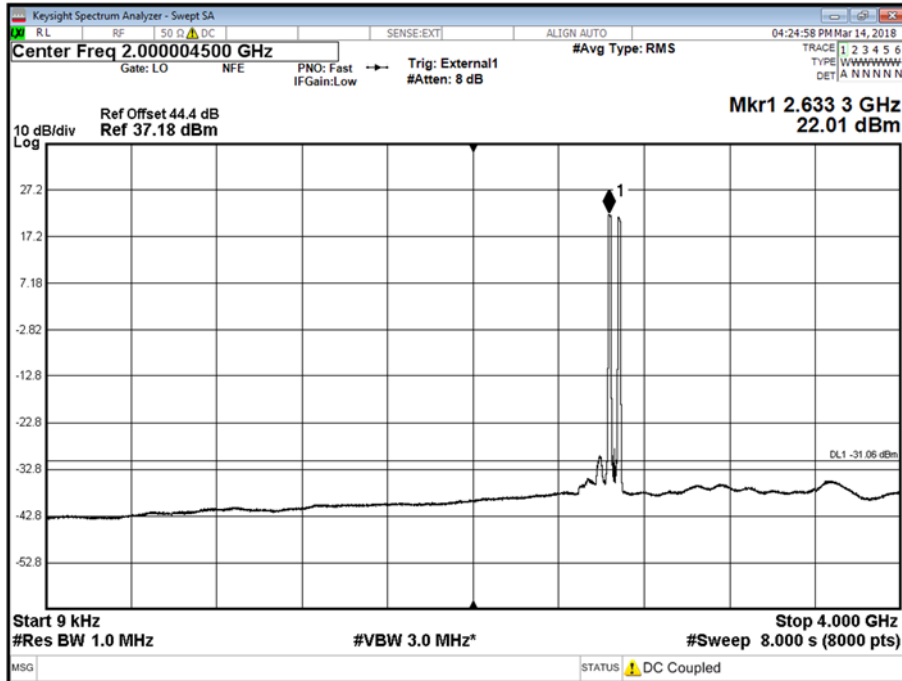
Antenna 43 - LTE Modulation 64QAM - LTE Carrier Bandwidth 15.0 MHz - Channel Position M - Band 3 - Range 12000 to 18000 MHz



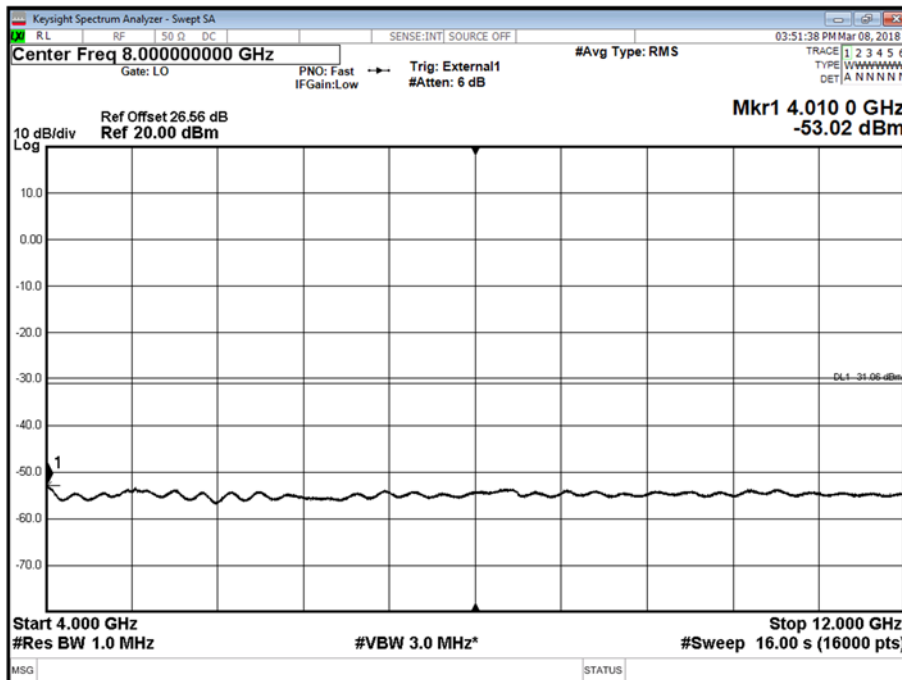
Antenna 43 - LTE Modulation 64QAM - LTE Carrier Bandwidth 15.0 MHz - Channel Position M - Band 4 - Range 18000 to 27000 MHz



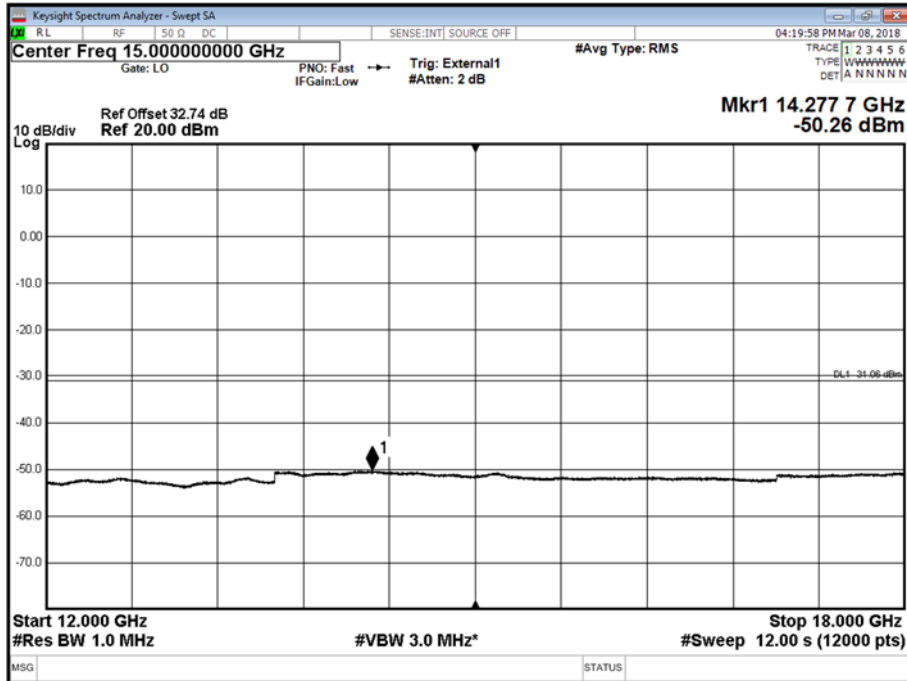
Antenna 43 - LTE Modulation 64QAM - LTE Carrier Bandwidth 15.0 MHz - Channel Position T - Band 1 - Range 0.009 to 4000 MHz



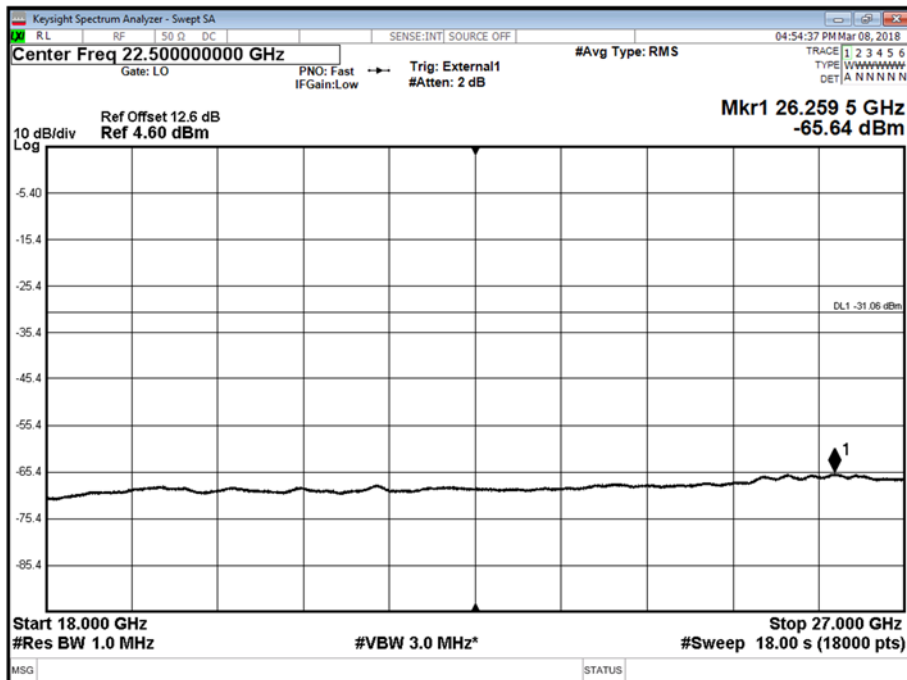
Antenna 43 - LTE Modulation 64QAM - LTE Carrier Bandwidth 15.0 MHz - Channel Position T - Band 2 - Range 4000 to 12000 MHz



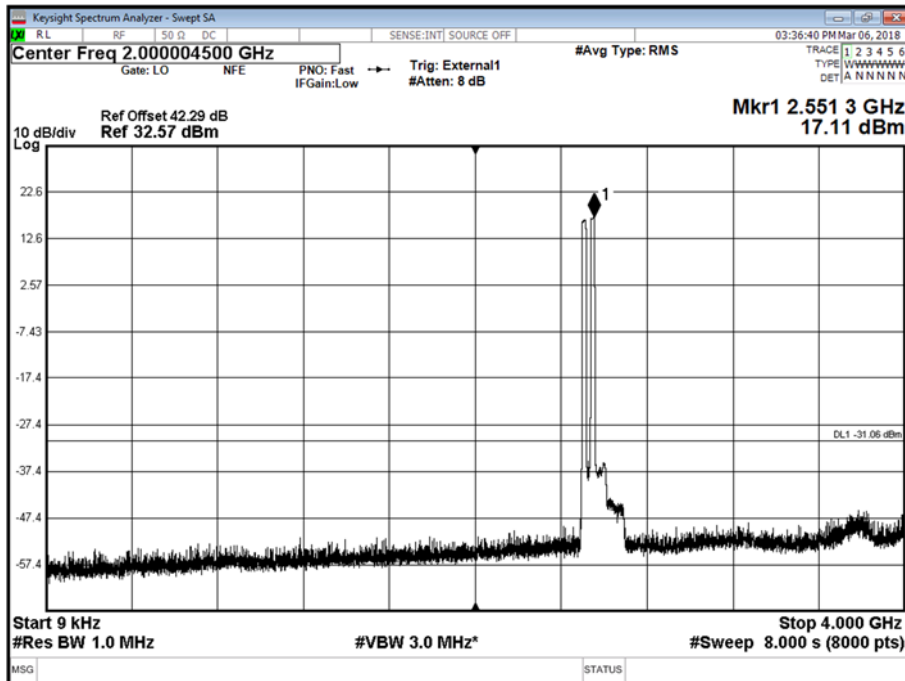
Antenna 43 - LTE Modulation 64QAM - LTE Carrier Bandwidth 15.0 MHz - Channel Position T - Band 3 - Range 12000 to 18000 MHz



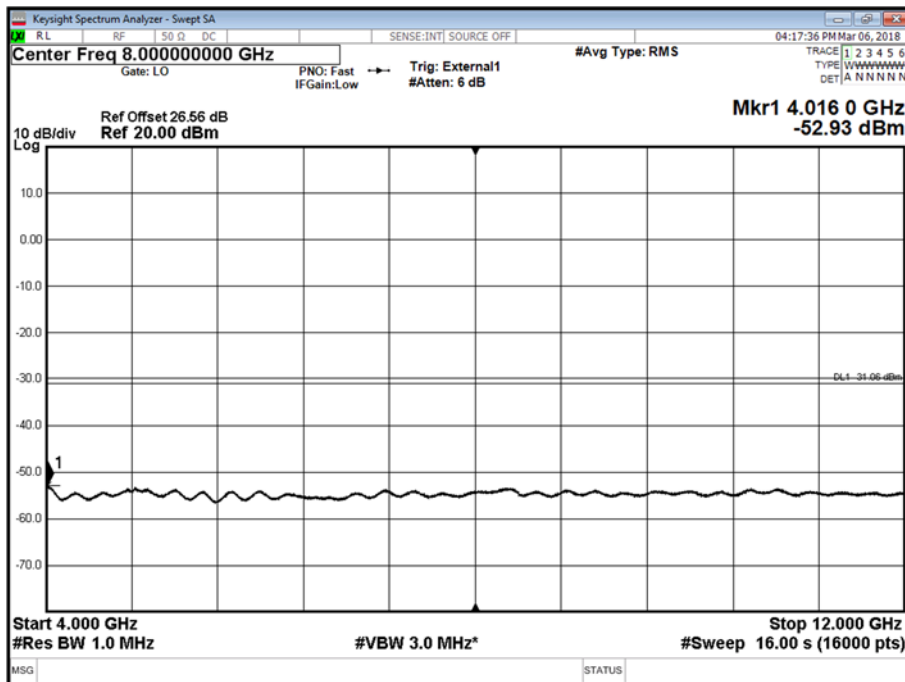
Antenna 43 - LTE Modulation 64QAM - LTE Carrier Bandwidth 15.0 MHz - Channel Position T - Band 4 - Range 18000 to 27000 MHz



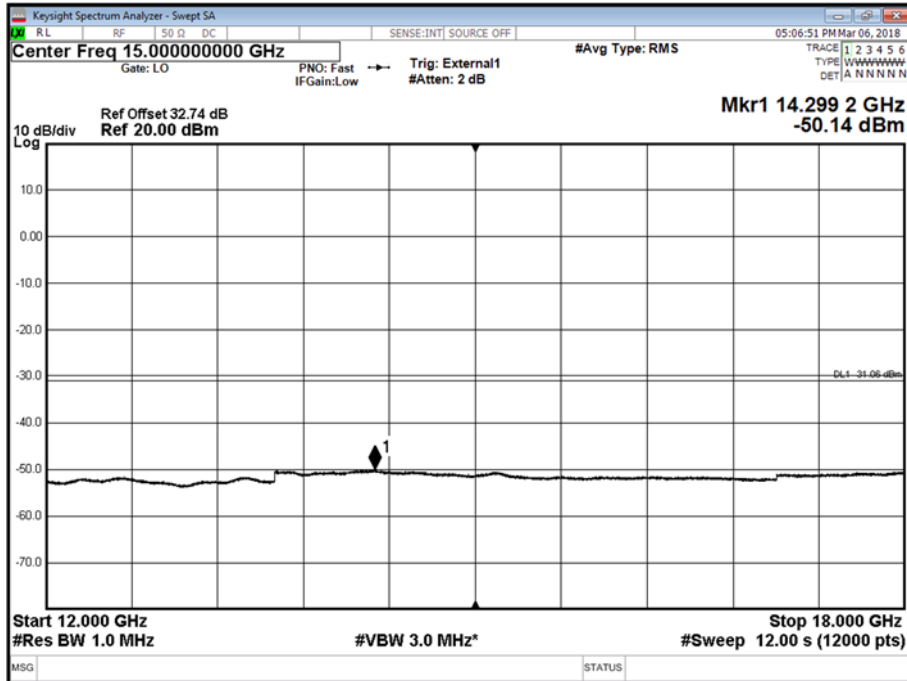
Antenna 43 - LTE Modulation 64QAM - LTE Carrier Bandwidth 20.0 MHz - Channel Position B - Band 1 - Range 0.009 to 4000 MHz



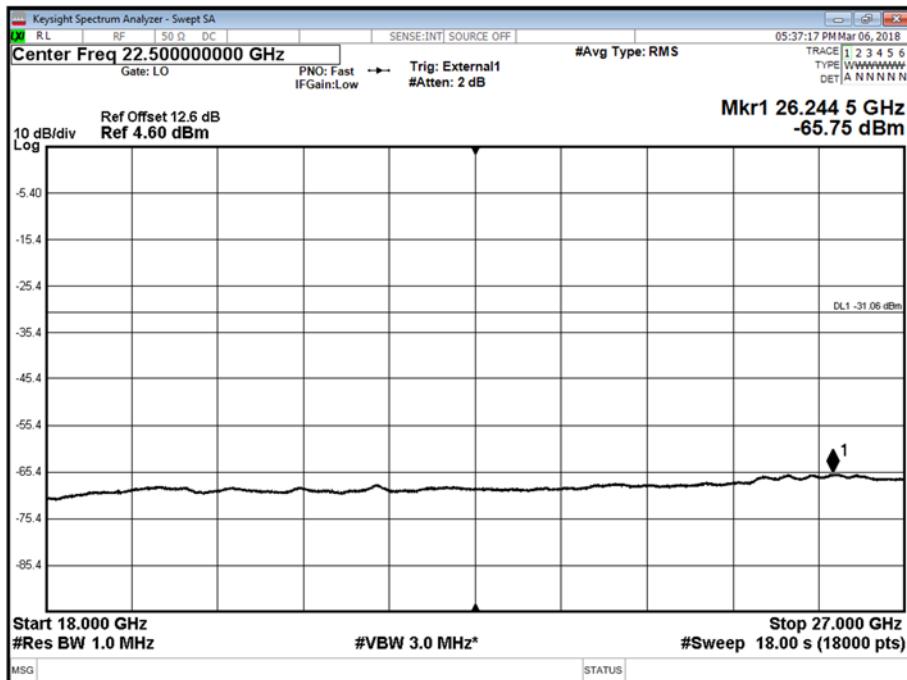
Antenna 43 - LTE Modulation 64QAM - LTE Carrier Bandwidth 20.0 MHz - Channel Position B - Band 2 - Range 4000 to 12000 MHz



Antenna 43 - LTE Modulation 64QAM - LTE Carrier Bandwidth 20.0 MHz - Channel Position B - Band 3 - Range 12000 to 18000 MHz



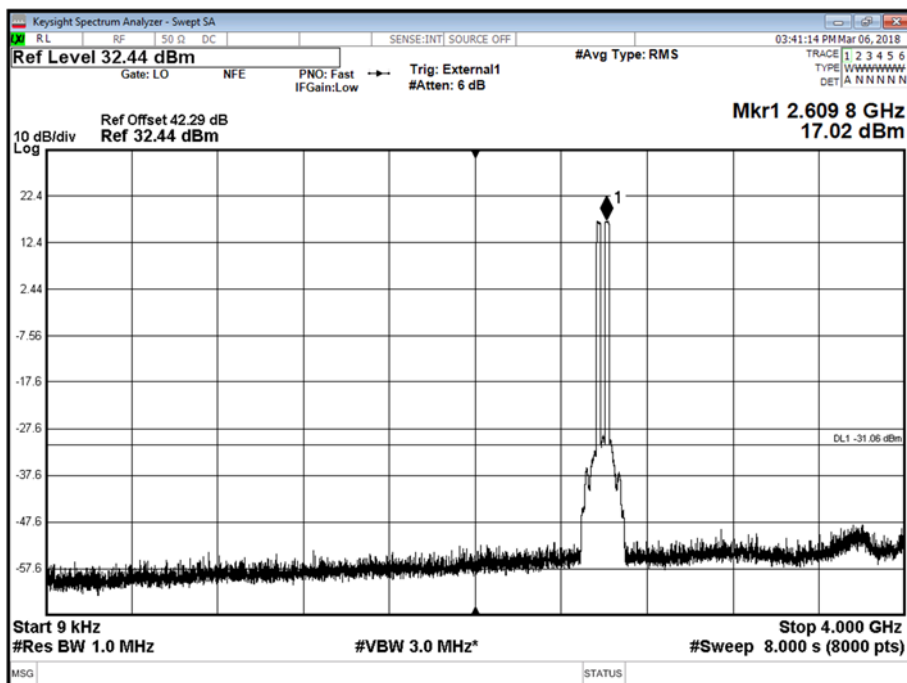
Antenna 43 - LTE Modulation 64QAM - LTE Carrier Bandwidth 20.0 MHz - Channel Position B - Band 4 - Range 18000 to 27000 MHz



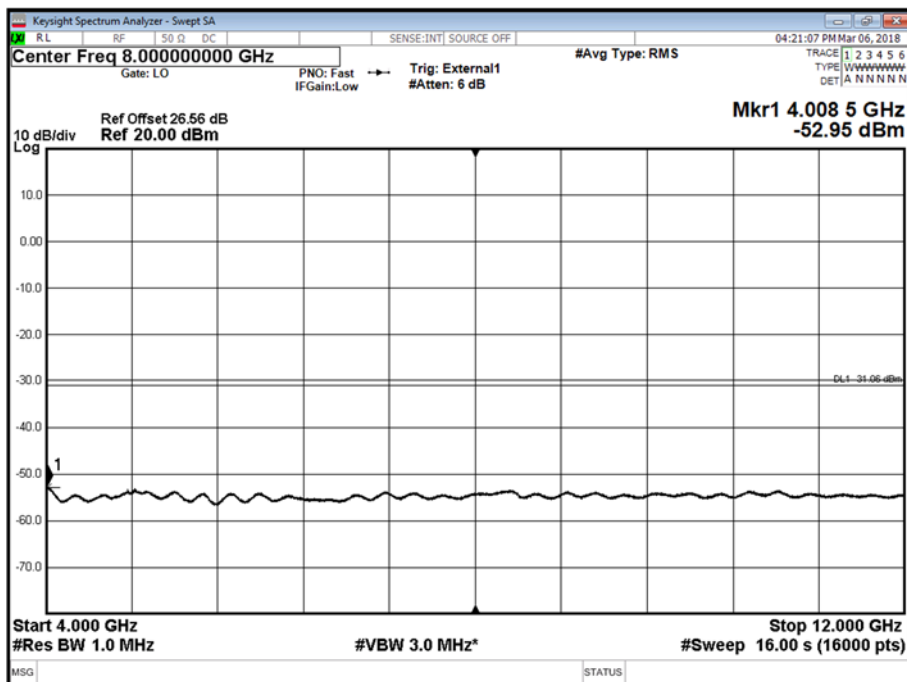


Product Service

Antenna 43 - LTE Modulation 64QAM - LTE Carrier Bandwidth 20.0 MHz - Channel Position M - Band 1 - Range 0.009 to 4000 MHz



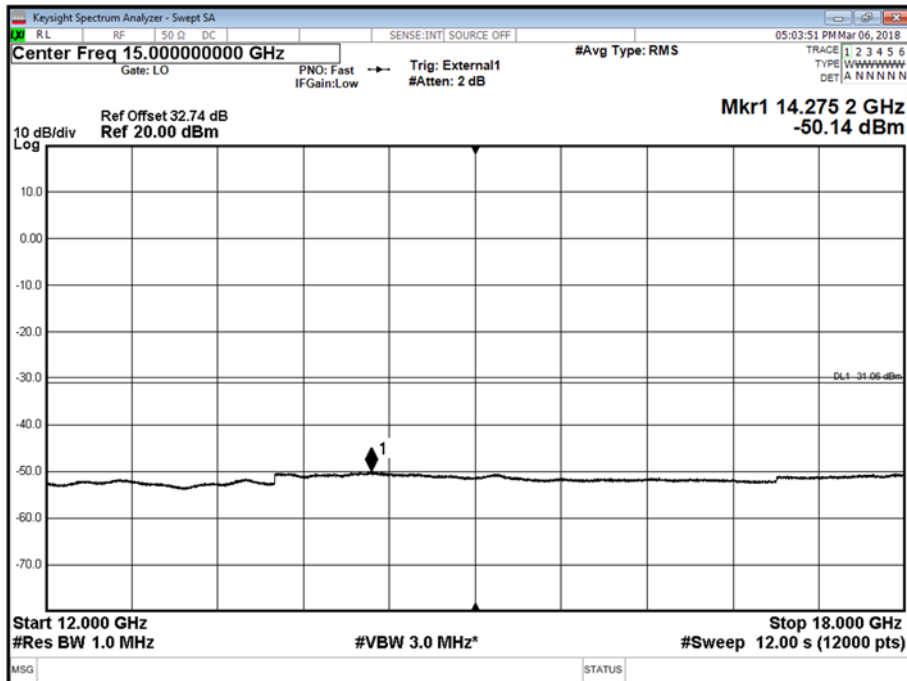
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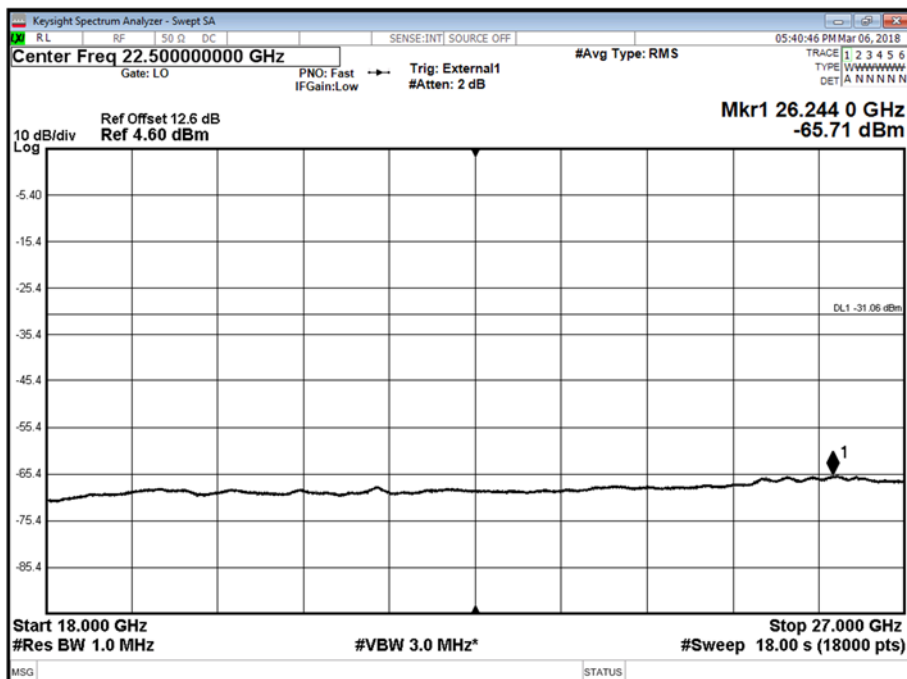


Product Service

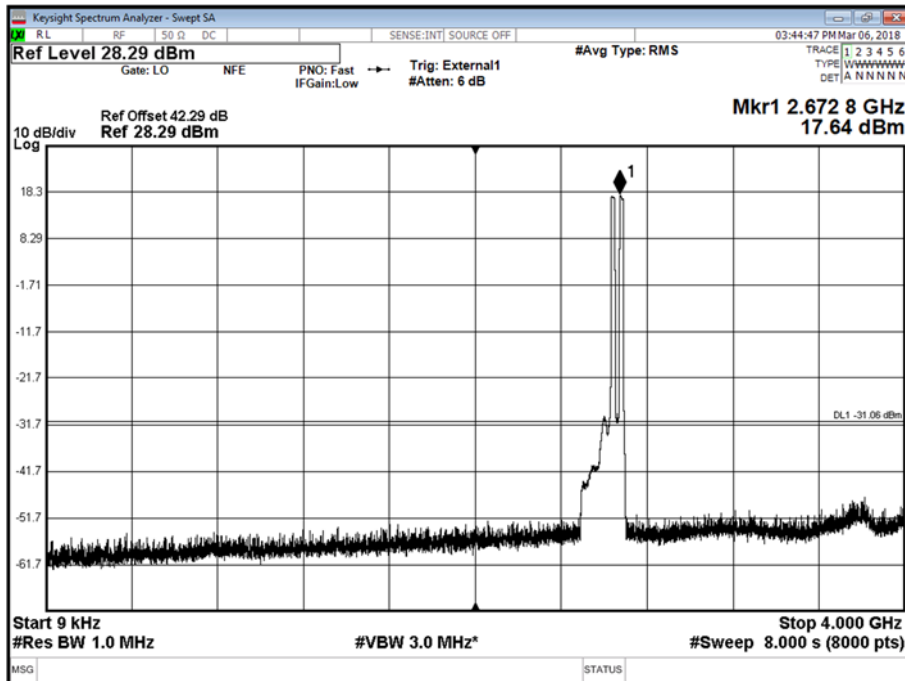
Antenna 43 - LTE Modulation 64QAM - LTE Carrier Bandwidth 20.0 MHz - Channel Position M - Band 3 - Range 12000 to 18000 MHz



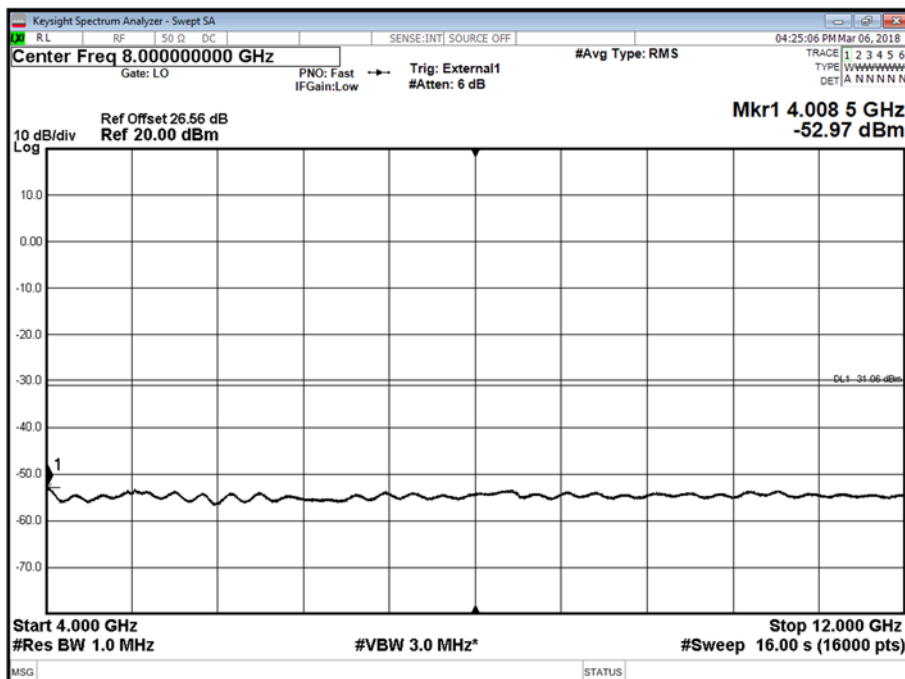
Antenna 43 - LTE Modulation 64QAM - LTE Carrier Bandwidth 20.0 MHz - Channel Position M - Band 4 - Range 18000 to 27000 MHz



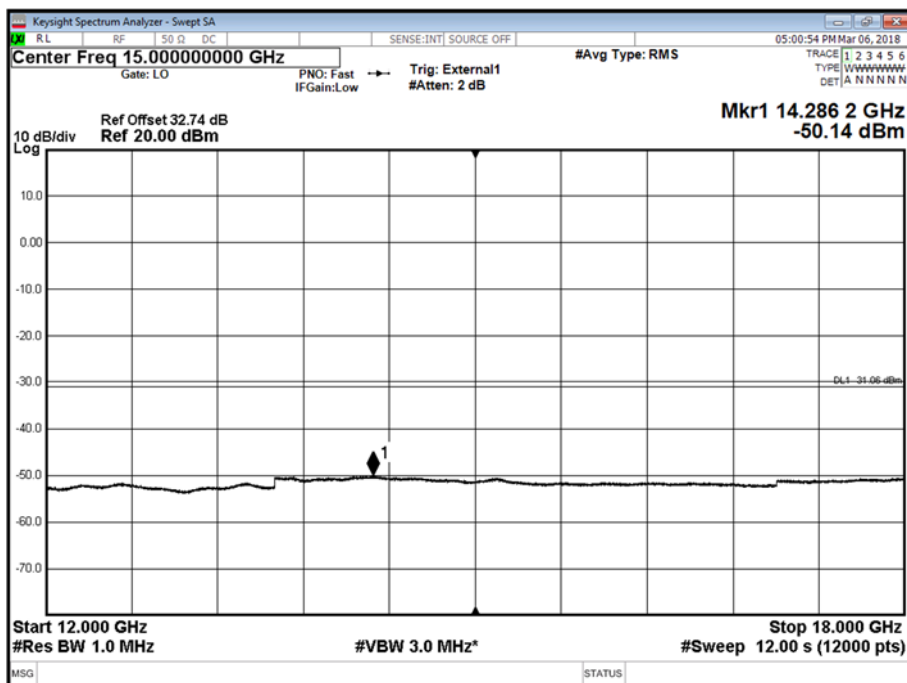
Antenna 43 - LTE Modulation 64QAM - LTE Carrier Bandwidth 20.0 MHz - Channel Position T - Band 1 - Range 0.009 to 4000 MHz



Antenna 43 - LTE Modulation 64QAM - LTE Carrier Bandwidth 20.0 MHz - Channel Position T - Band 2 - Range 4000 to 12000 MHz



Antenna 43 - LTE Modulation 64QAM - LTE Carrier Bandwidth 20.0 MHz - Channel Position T - Band 3 - Range 12000 to 18000 MHz



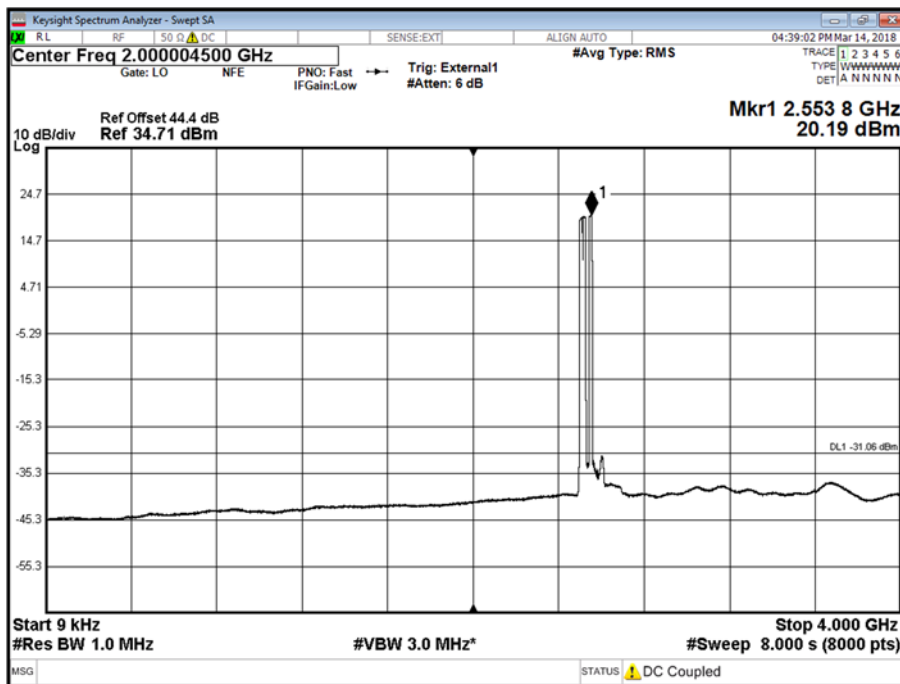
Antenna 43 - LTE Modulation 64QAM - LTE Carrier Bandwidth 20.0 MHz - Channel Position T - Band 4 - Range 18000 to 27000 MHz



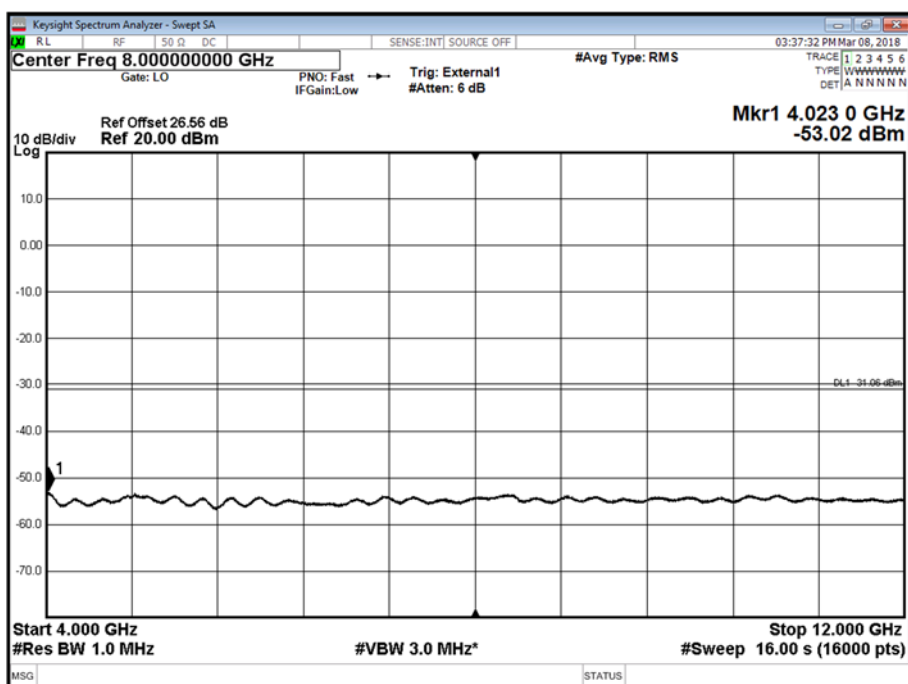
Configuration C

Maximum Output Power 32.7 dBm / Port

Antenna 43 - LTE Modulation 64QAM - LTE Carrier Bandwidth 15.0 MHz - Channel Position B - Band 1 - Range 0.009 to 4000 MHz



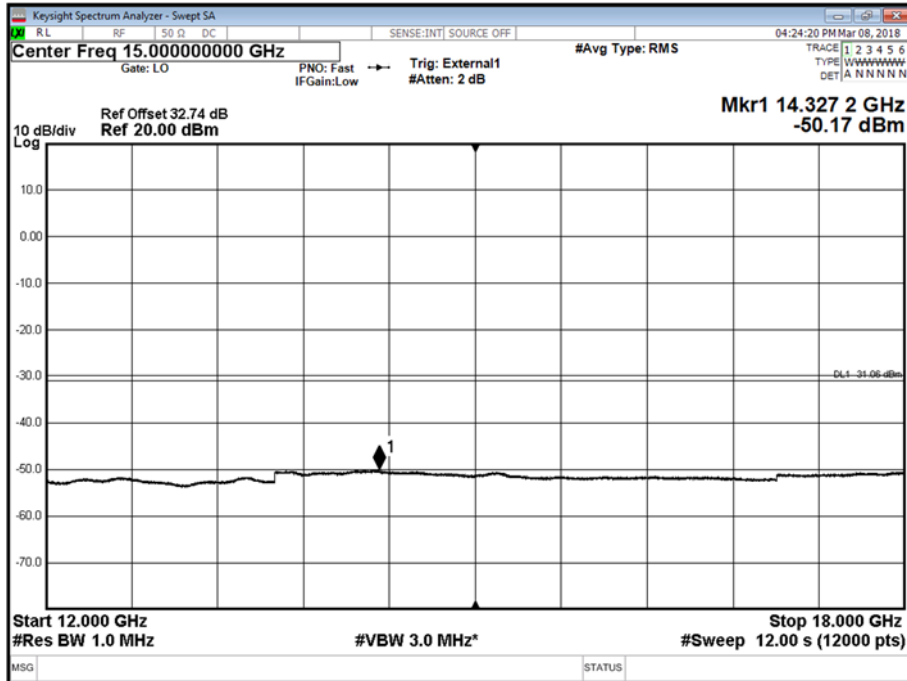
Antenna 43 - LTE Modulation 64QAM - LTE Carrier Bandwidth 15.0 MHz - Channel Position B - Band 2 - Range 4000 to 12000 MHz



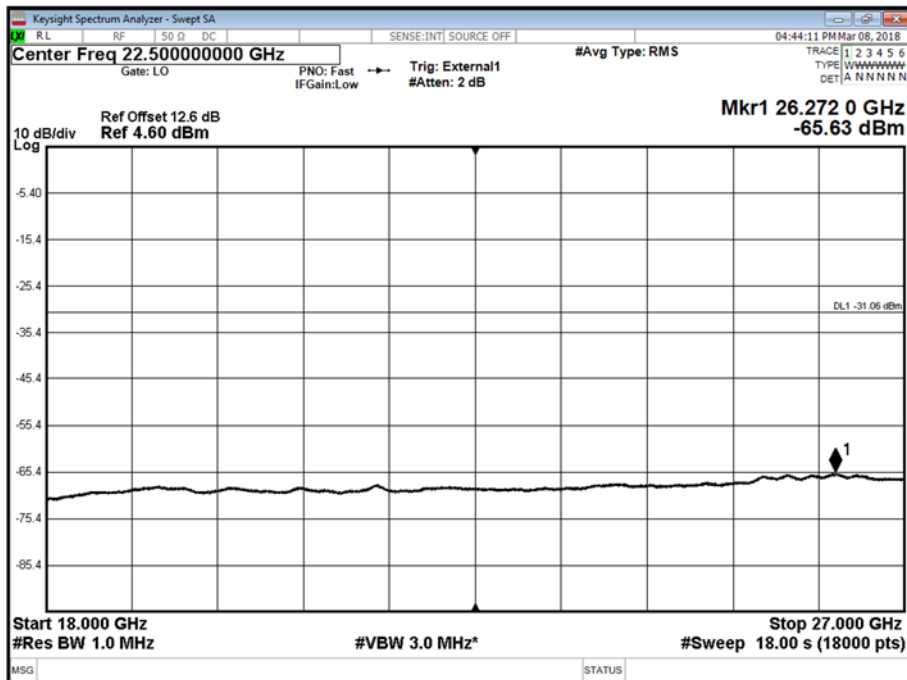


Product Service

Antenna 43 - LTE Modulation 64QAM - LTE Carrier Bandwidth 15.0 MHz - Channel Position B - Band 3 - Range 12000 to 18000 MHz



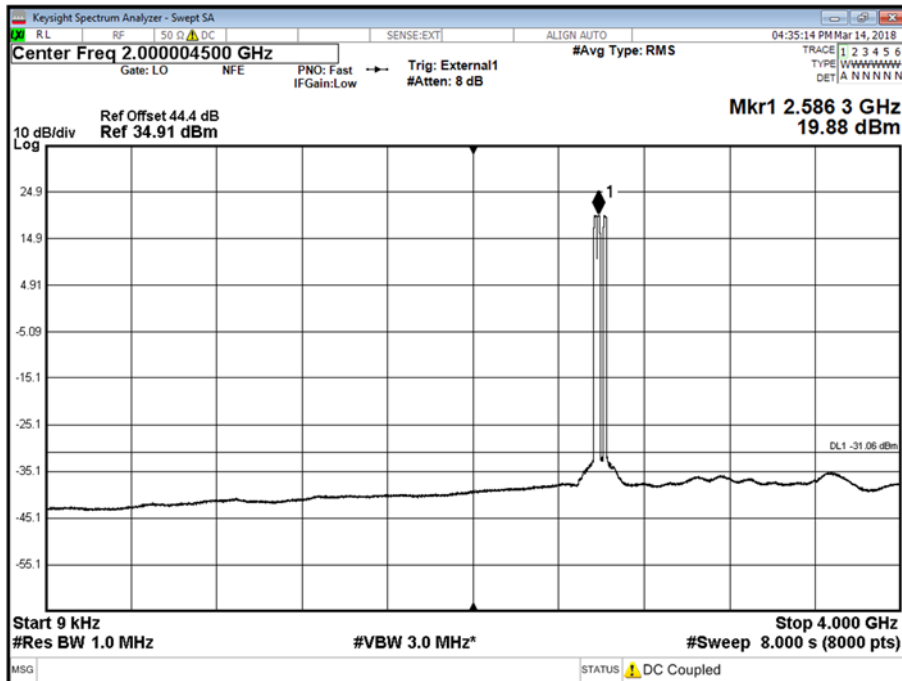
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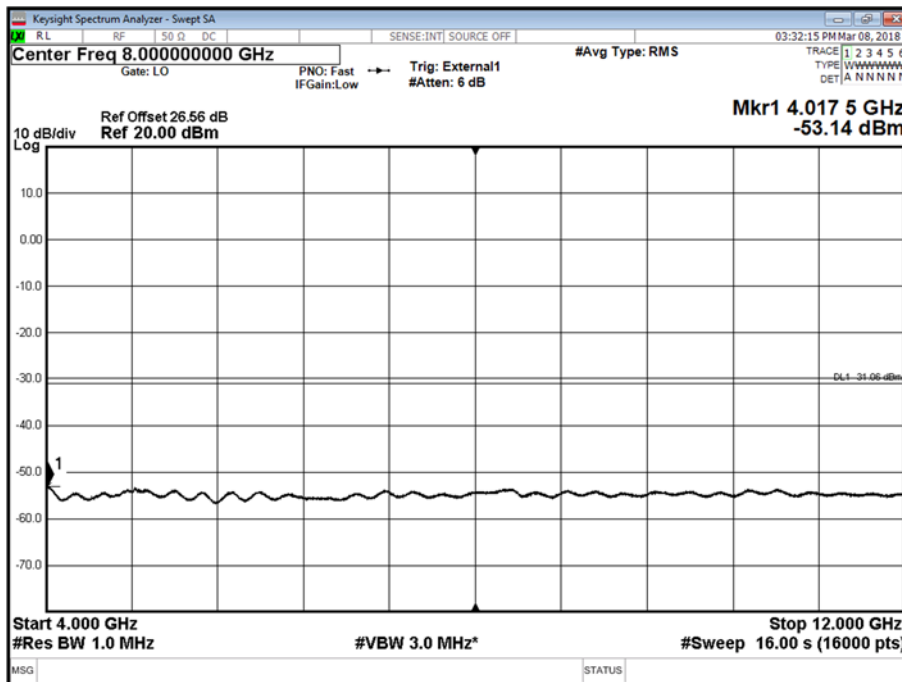


Product Service

Antenna 43 - LTE Modulation 64QAM - LTE Carrier Bandwidth 15.0 MHz - Channel Position M - Band 1 - Range 0.009 to 4000 MHz



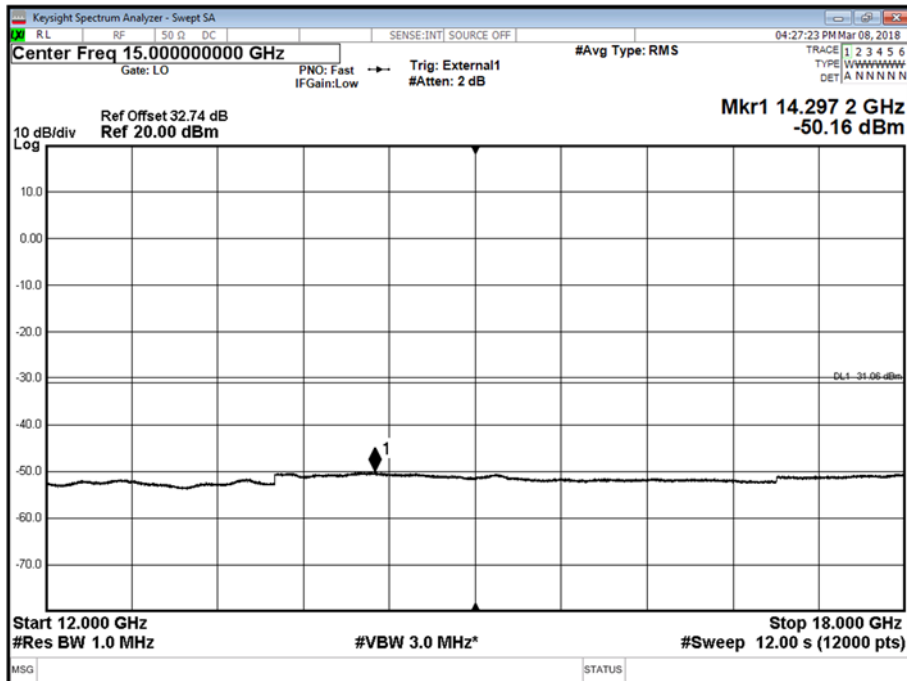
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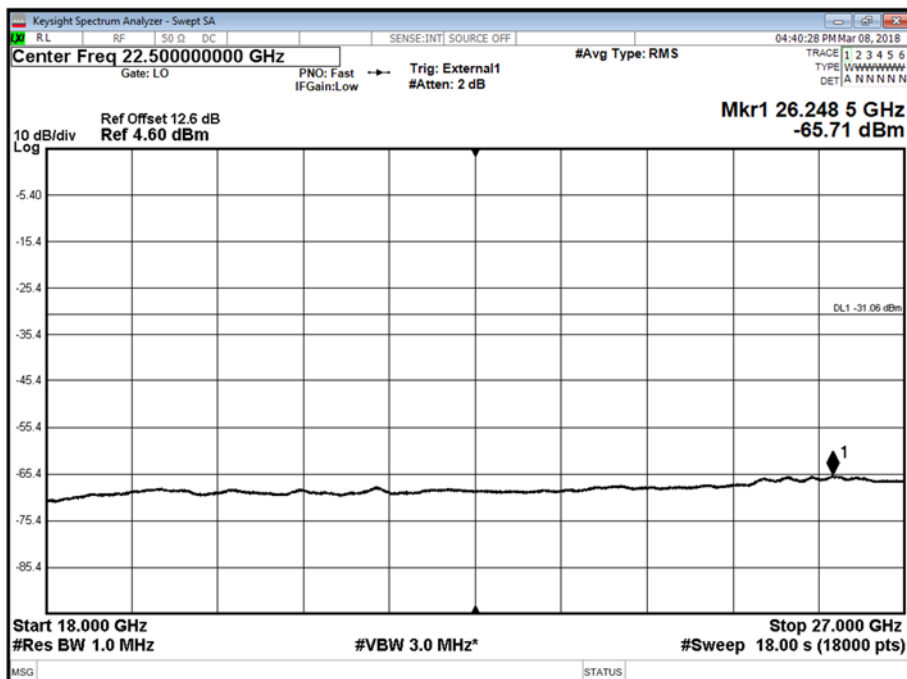


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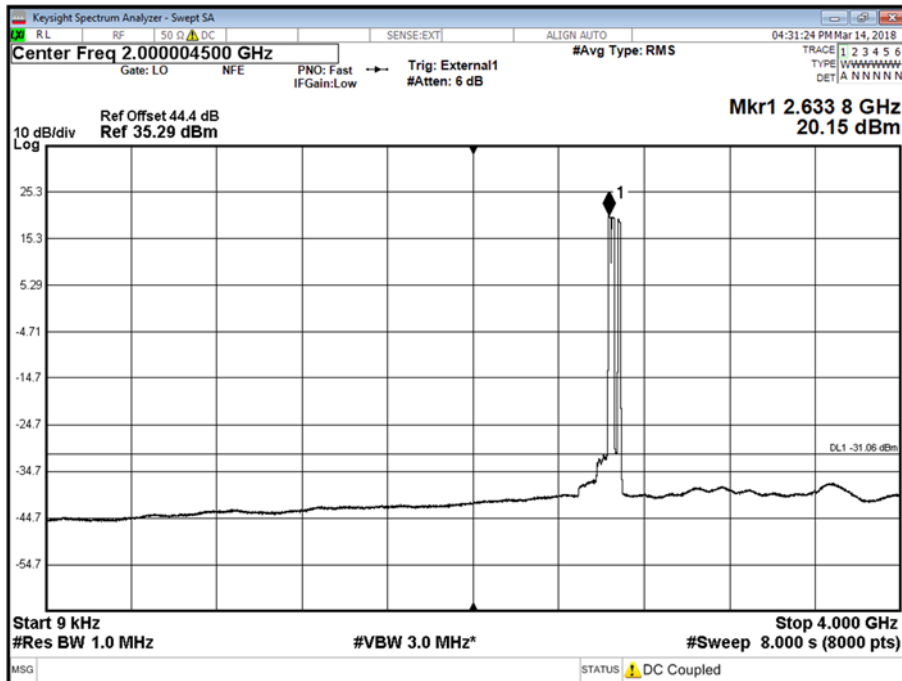
Antenna 43 - LTE Modulation 64QAM - LTE Carrier Bandwidth 15.0 MHz - Channel Position M - Band 3 - Range 12000 to 18000 MHz



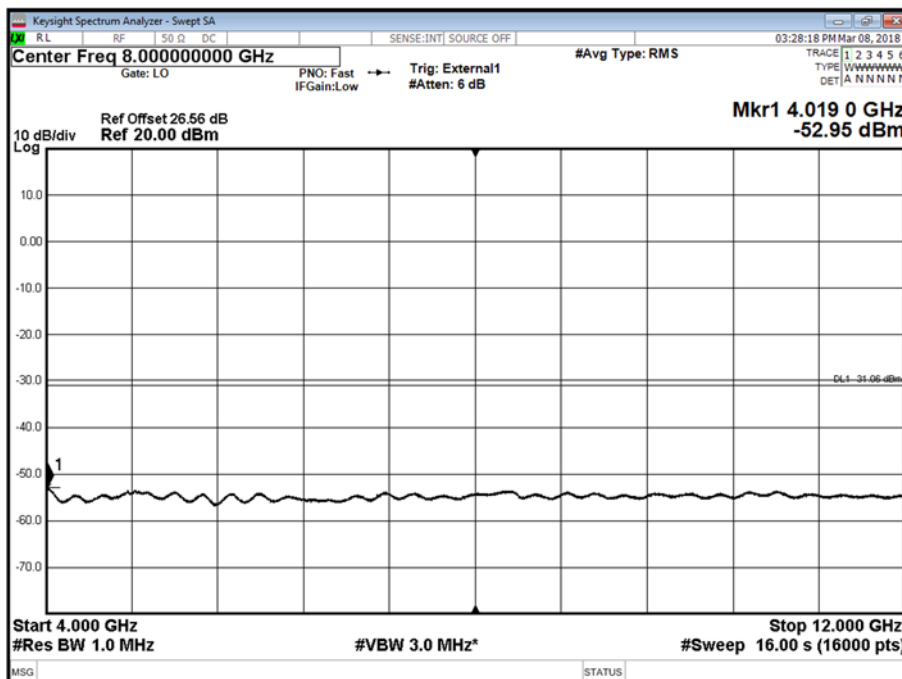
Antenna 43 - LTE Modulation 64QAM - LTE Carrier Bandwidth 15.0 MHz - Channel Position M - Band 4 - Range 18000 to 27000 MHz



Antenna 43 - LTE Modulation 64QAM - LTE Carrier Bandwidth 15.0 MHz - Channel Position T - Band 1 - Range 0.009 to 4000 MHz



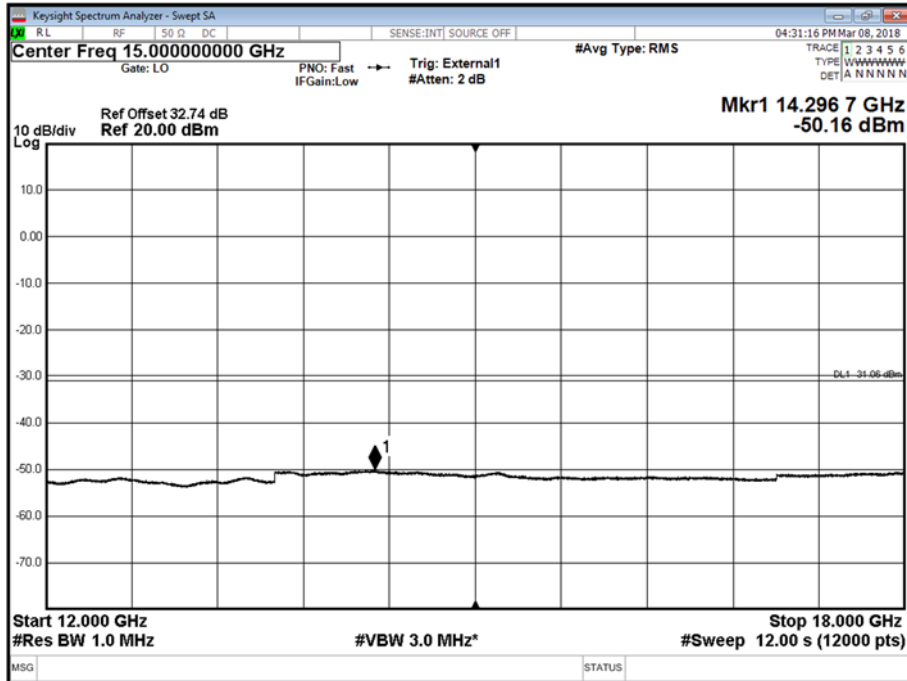
Antenna 43 - LTE Modulation 64QAM - LTE Carrier Bandwidth 15.0 MHz - Channel Position T - Band 2 - Range 4000 to 12000 MHz



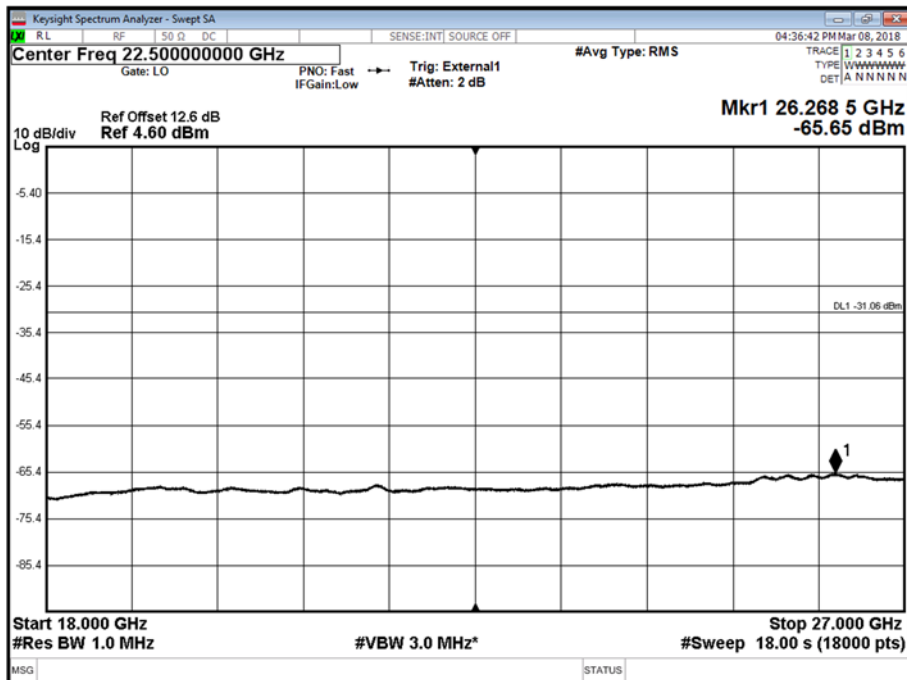


Product Service

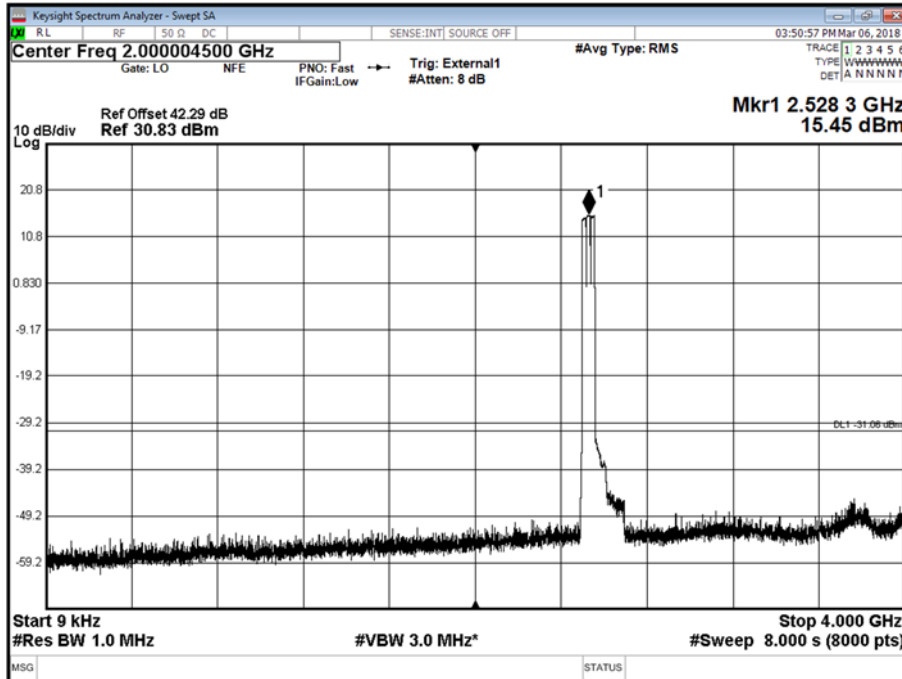
Antenna 43 - LTE Modulation 64QAM - LTE Carrier Bandwidth 15.0 MHz - Channel Position T - Band 3 - Range 12000 to 18000 MHz



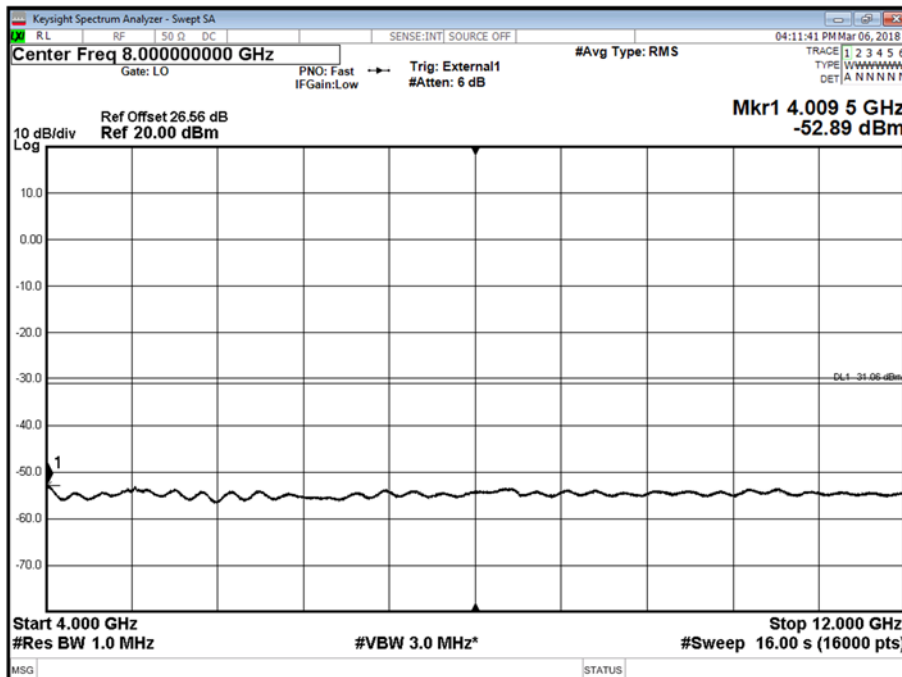
Antenna 43 - LTE Modulation 64QAM - LTE Carrier Bandwidth 15.0 MHz - Channel Position T - Band 4 - Range 18000 to 27000 MHz



Antenna 43 - LTE Modulation 64QAM - LTE Carrier Bandwidth 20.0 MHz - Channel Position B - Band 1 - Range 0.009 to 4000 MHz



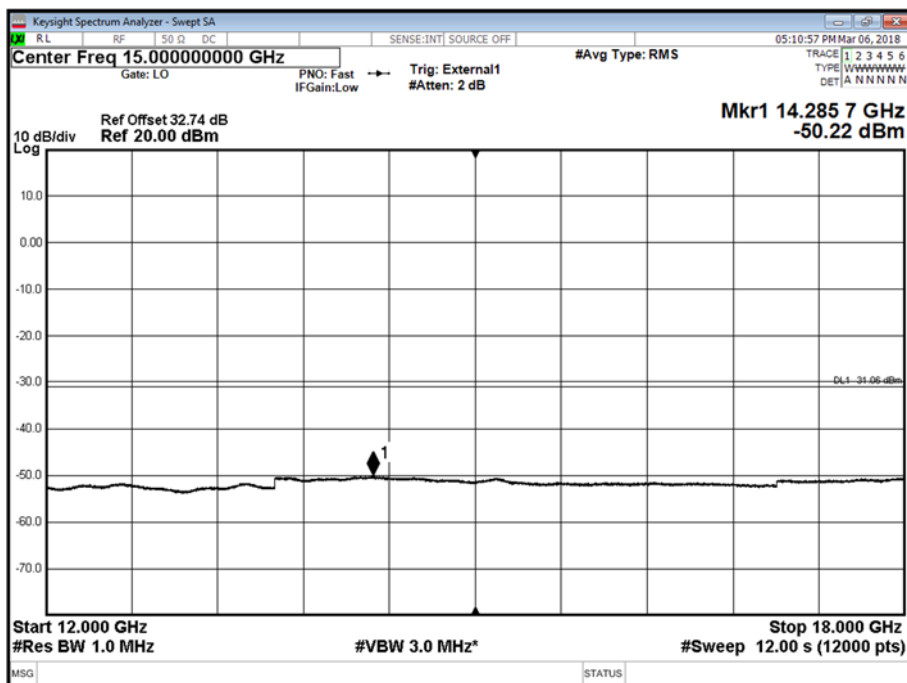
Antenna 43 - LTE Modulation 64QAM - LTE Carrier Bandwidth 20.0 MHz - Channel Position B - Band 2 - Range 4000 to 12000 MHz



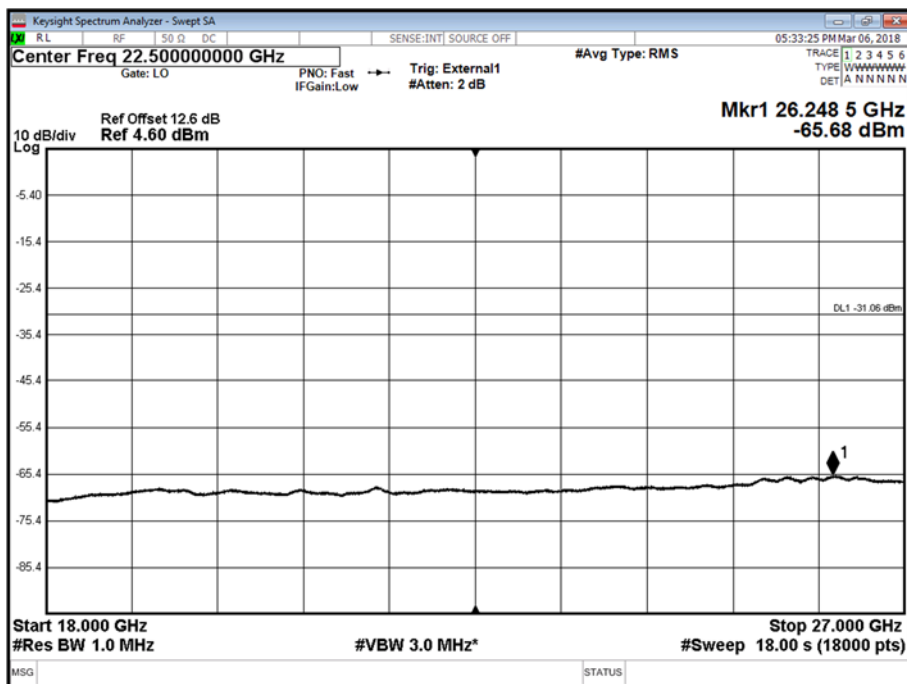


Product Service

Antenna 43 - LTE Modulation 64QAM - LTE Carrier Bandwidth 20.0 MHz - Channel Position B - Band 3 - Range 12000 to 18000 MHz



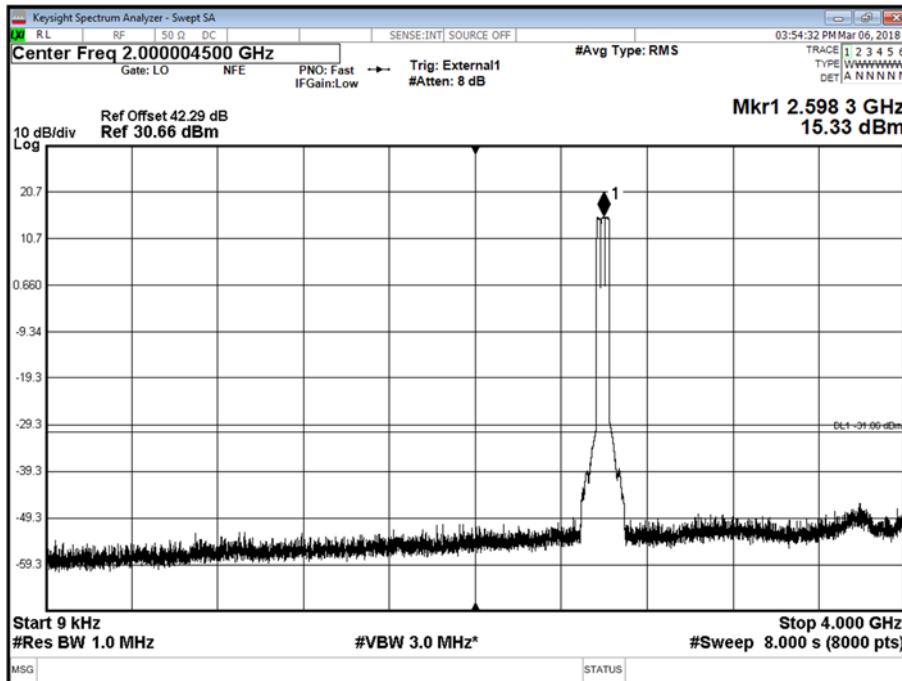
Antenna 43 - LTE Modulation 64QAM - LTE Carrier Bandwidth 20.0 MHz - Channel Position B - Band 4 - Range 18000 to 27000 MHz



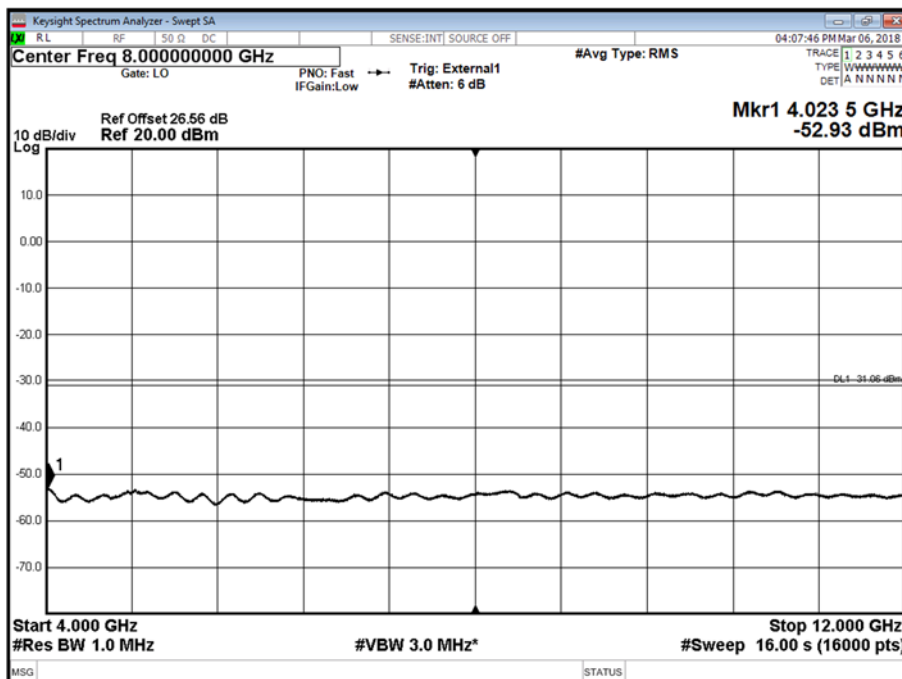


Product Service

Antenna 43 - LTE Modulation 64QAM - LTE Carrier Bandwidth 20.0 MHz - Channel Position M - Band 1 - Range 0.009 to 4000 MHz



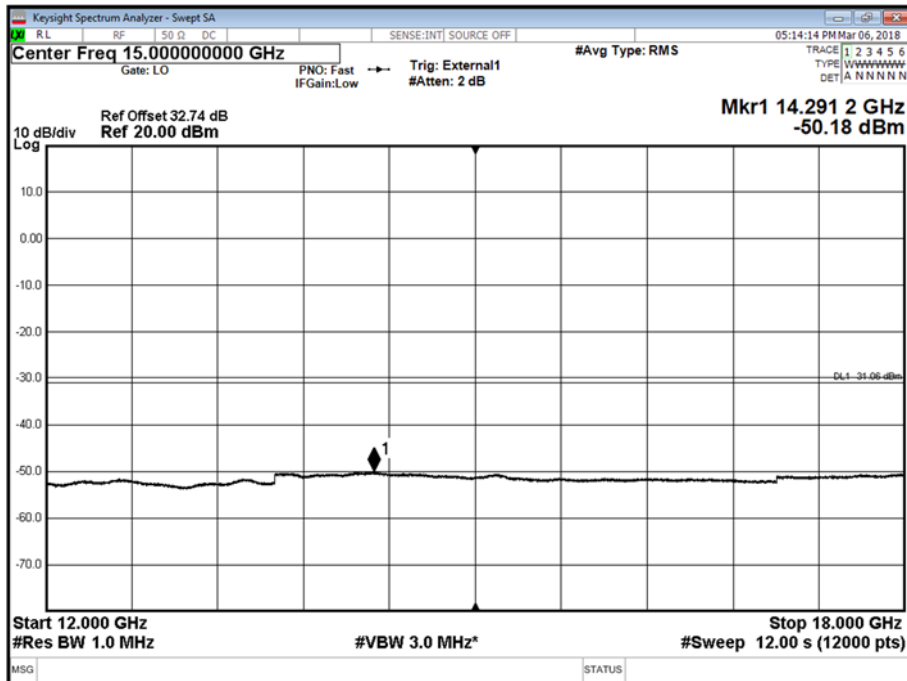
Antenna 43 - LTE Modulation 64QAM - LTE Carrier Bandwidth 20.0 MHz - Channel Position M - Band 2 - Range 4000 to 12000 MHz



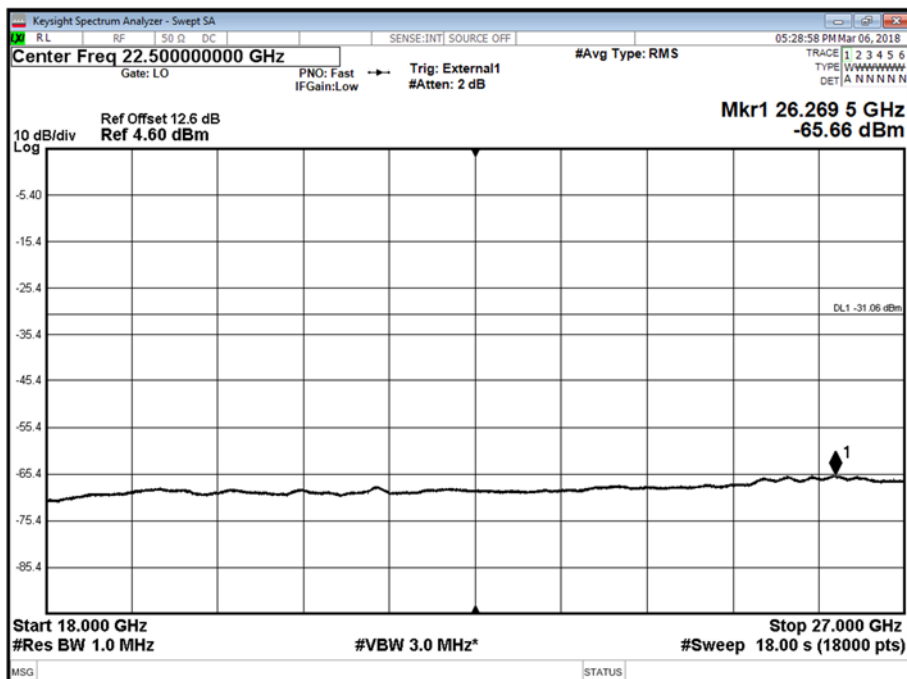


Product Service

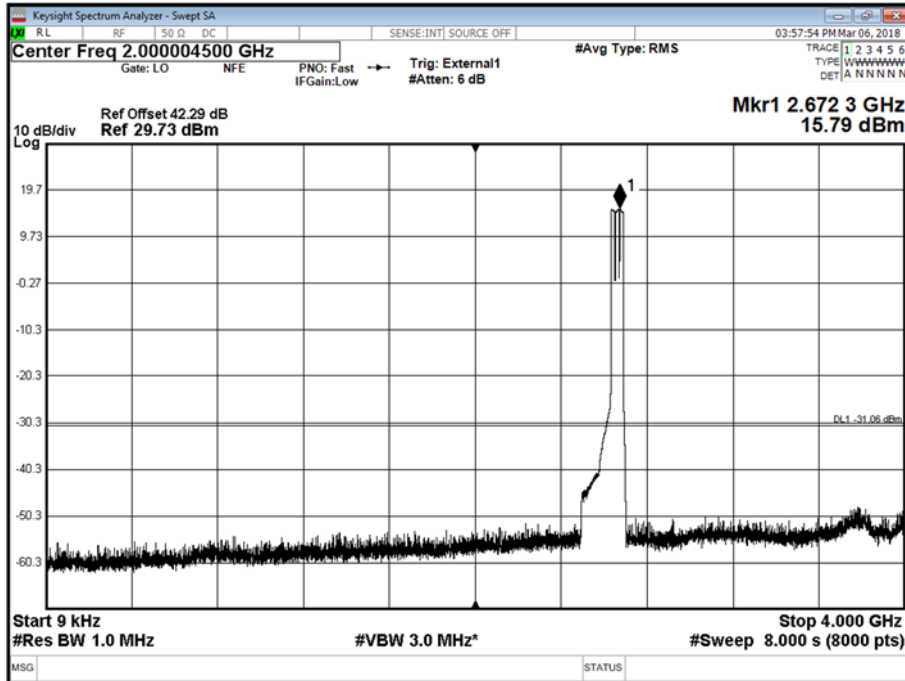
Antenna 43 - LTE Modulation 64QAM - LTE Carrier Bandwidth 20.0 MHz - Channel Position M - Band 3 - Range 12000 to 18000 MHz



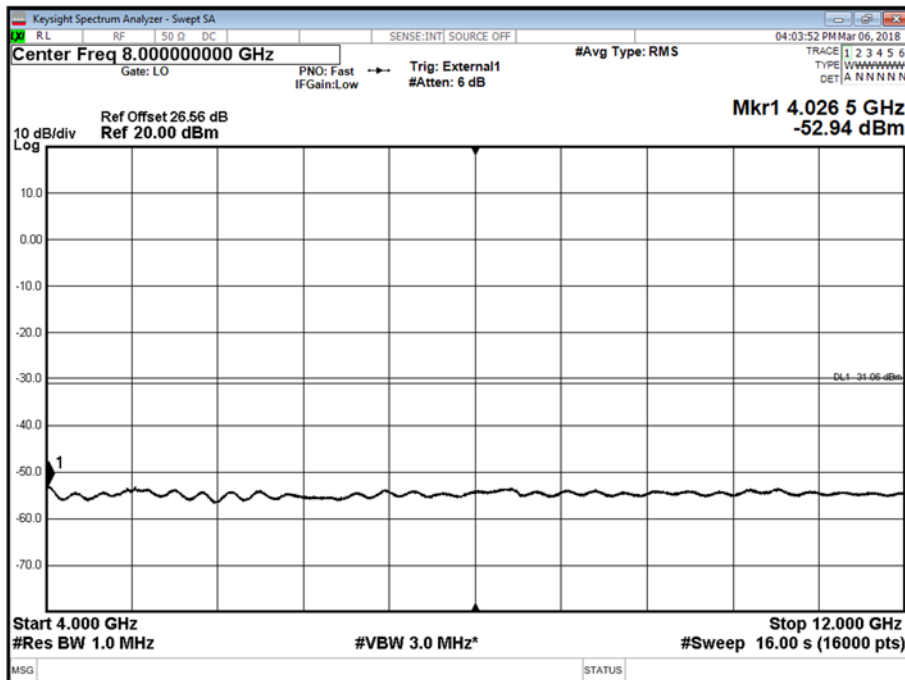
Antenna 43 - LTE Modulation 64QAM - LTE Carrier Bandwidth 20.0 MHz - Channel Position M - Band 4 - Range 18000 to 27000 MHz



Antenna 43 - LTE Modulation 64QAM - LTE Carrier Bandwidth 20.0 MHz - Channel Position T - Band 1 - Range 0.009 to 4000 MHz



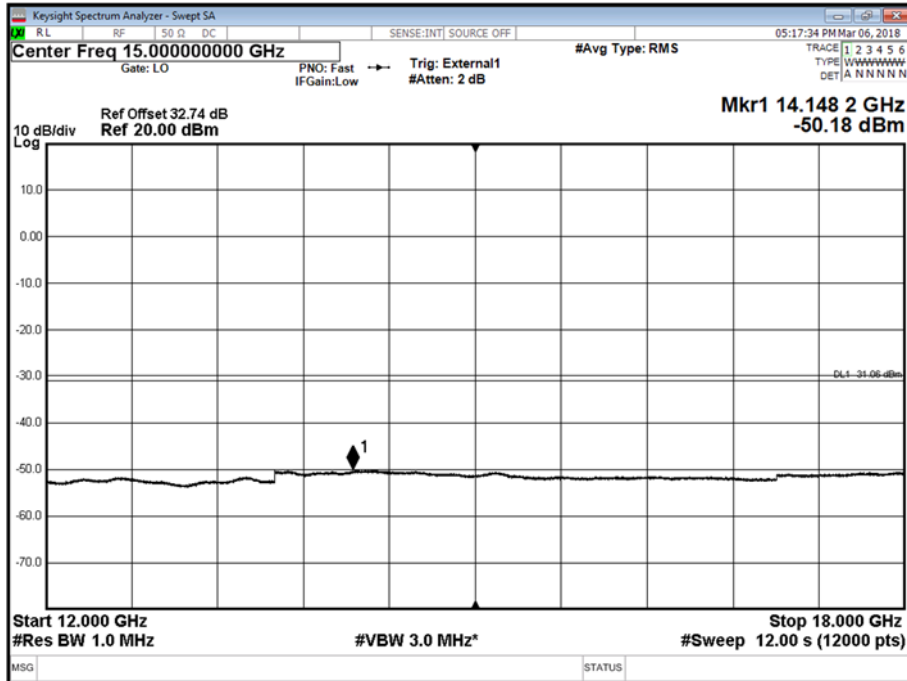
Antenna 43 - LTE Modulation 64QAM - LTE Carrier Bandwidth 20.0 MHz - Channel Position T - Band 2 - Range 4000 to 12000 MHz



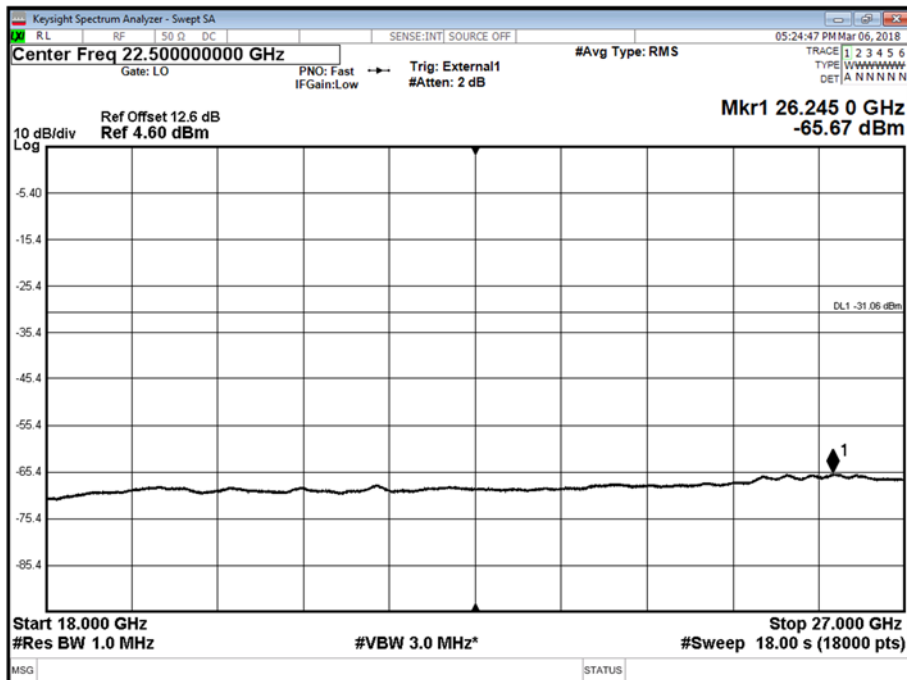


Product Service

Antenna 43 - LTE Modulation 64QAM - LTE Carrier Bandwidth 20.0 MHz - Channel Position T - Band 3 - Range 12000 to 18000 MHz



Antenna 43 - LTE Modulation 64QAM - LTE Carrier Bandwidth 20.0 MHz - Channel Position T - Band 4 - Range 18000 to 27000 MHz



Limit	-13dBm - 10log(64) = -31.06 dBm
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Product Service

2.5 FREQUENCY STABILITY

2.5.1 Specification Reference

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

2.5.2 Date of Test and Modification State

28 February 2018 - Modification State 0

2.5.3 Test Equipment Used

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

2.5.4 Environmental Conditions

Ambient Temperature	20.8°C
Relative Humidity	16%

2.5.5 Test Method

All measurements were made in accordance with FCC KDB 971168 D01.

The EUT was setup in a Climatic Chamber and connected to a Vector Signal Analyser via attenuators. The temperature was varied over the range -30°C to +50°C in 10°C steps. At each temperature interval, the EUT was left to stabilise. After this period of time, the maximum Frequency Error was measured and recorded on the Middle channel.

For LTE, testing was performed using a 15 MHz channel bandwidth with 64QAM modulation and all Resource Blocks active.

At 20°C, the voltage was varied between 85 % and 115 % of the nominal declared voltage. At each extreme voltage, the maximum Frequency Error was measured and recorded.



Product Service

2.5.6 Test Results

Configuration A

Maximum Output Power 32.7 dBm / Port

Temperature	Voltage	Frequency Error (Hz)
		Channel Position M
-30°C	-48.0 V DC	-49.67
-20°C	-48.0 V DC	-56.39
-10°C	-48.0 V DC	-47.25
0°C	-48.0 V DC	-52.72
+10°C	-48.0 V DC	-43.89
+20°C	-40.8 V DC	-56.28
+20°C	-48.0 V DC	-59.47
+20°C	-55.2 V DC	-51.57
+30°C	-48.0 V DC	-53.77
+40°C	-48.0 V DC	-57.59
+50°C	-48.0 V DC	-59.53

Limit	The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.
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Product Service

2.6 RADIATED SPURIOUS EMISSIONS

2.6.1 Specification Reference

FCC CFR 47 Part 2, Clause 2.1053
FCC CFR 47 Part 27, Clause 27.53(m)

2.6.2 Date of Test and Modification State

12 to 13 February 2018 - Modification State 0

2.6.3 Test Equipment Used

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

2.6.4 Environmental Conditions

Ambient Temperature	22.1°C
Relative Humidity	24.0 %

2.6.5 Test Method

The test was applied in accordance with test method requirements of ANSI C63.26:2015.

A preliminary profile of the Spurious Radiated Emissions was obtained by operating the EUT on a remotely controlled turntable within the chamber. Measurements of emissions from the EUT were obtained with the measurement antenna in both horizontal and vertical polarisations.

The applicant declared that the highest internally generated frequency would be up to 2700 MHz and so the upper limit for measurement was calculated at 10 times this, which is 27 GHz.

Emissions identified within the range 30 MHz – 27 GHz were then formally measured using a peak detector as the worst case.

In the frequency range 30 MHz – 1 GHz, the measurement was performed with a resolution bandwidth of 100kHz and in the frequency range 1 GHz – 27 GHz, the measurement was performed with a resolution bandwidth of 1MHz.

The measurements were performed at a 3m distance unless otherwise stated.

The limits for Spurious Emissions have been calculated, as shown below using the following formula:

Field Strength of Carrier - $(43 + 10\log(P))$ dB

Where:

Field Strength is measured in dBμV/m

P is measured Transmitter Power in Watts



Product Service

Determination of Spurious Emission Limit

The field strength of the carrier has been calculated assuming that the power is to be fed to a half-wave tuned dipole as per 2.1053 (a).

$$E_{(v/m)} = (30 \times G_i \times P_o)^{0.5} / d$$

Where G_i is the antenna gain of an ideal half-wave dipole,
 P_o is the power out of the transceiver in Watts,
 d is the measurement distance in meters.

Therefore at 3m measurement distance the field strength using the lowest transceiver output power would be:

$$E_{(v/m)} = (30 \times 1.64 \times 1.875)^{0.5} / 3 = 3.2 \text{ V/m} = 130.11 \text{ dB}\mu\text{V/m}$$

As per 27.53 (c)(1)) the spurious emission must be attenuated by $43 + 10\log(P_o)$ dB this gives:

$$43 + 10\log(1.875) = 45.73 \text{ dB}$$

Therefore the limit at 3m measurement distance is:

$$134.88 - 45.73 - 2.15 = 82.2 \text{ dB}\mu\text{V/m (EIRP)}$$

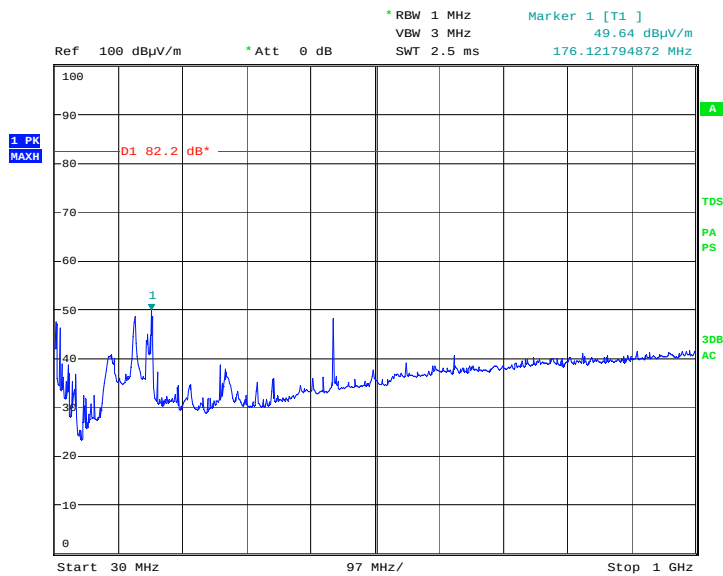
This limit has been used to determine Pass or Fail for the harmonics measured and detailed in the following results.

2.6.6 Test Results

Configuration A

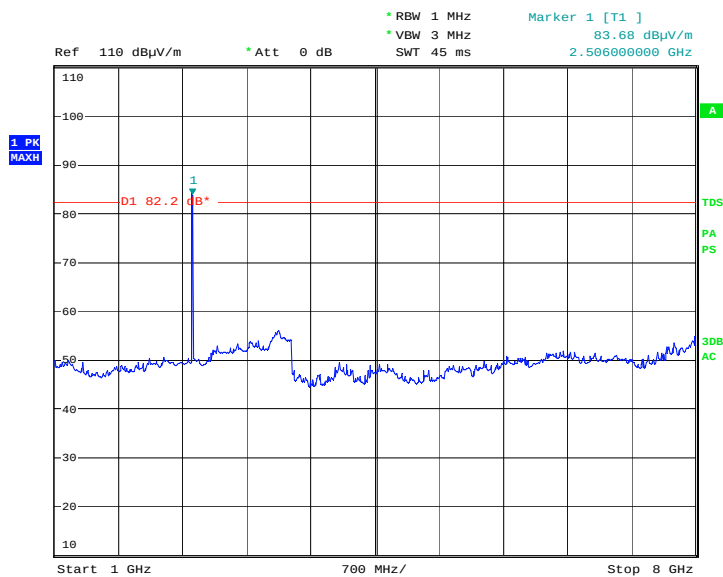
Maximum Output Power 32.7dBm / Port, LTE Bandwidth 20.0MHz

Channel Position B – 64QAM / Bandwidth 20.0MHz – 30MHz – 1GHz



Date: 12.FEB.2018 21:29:37

Channel Position B – 64QAM / Bandwidth 20.0MHz – 1GHz – 8GHz

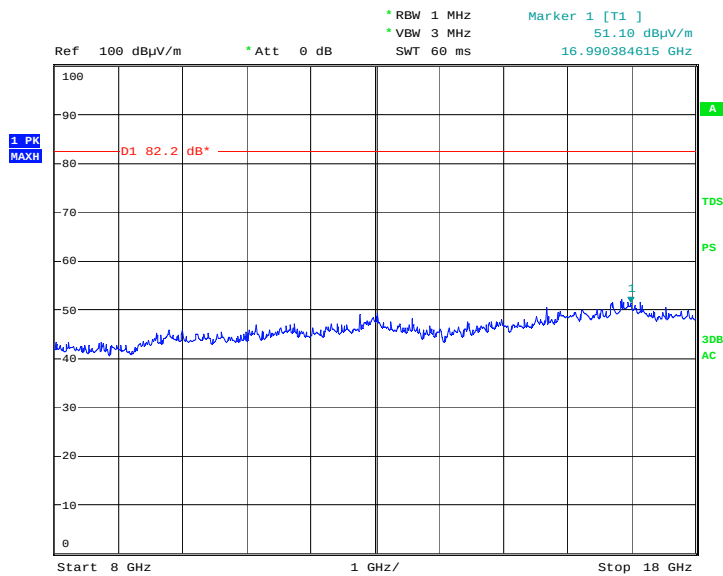


Date: 12.FEB.2018 17:47:03



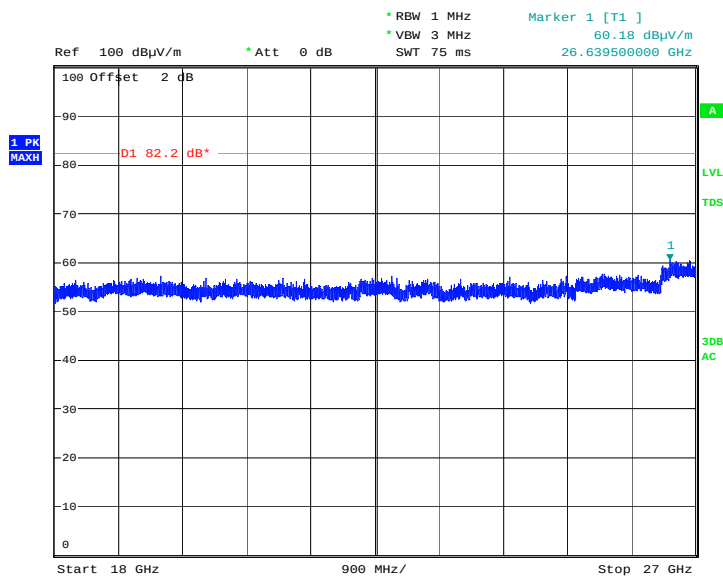
Product Service

Channel Position B – 64QAM / Bandwidth 20.0MHz – 8GHz – 18GHz



Date: 12.FEB.2018 21:16:10

Channel Position B – 64QAM / Bandwidth 20.0MHz – 18GHz – 27GHz

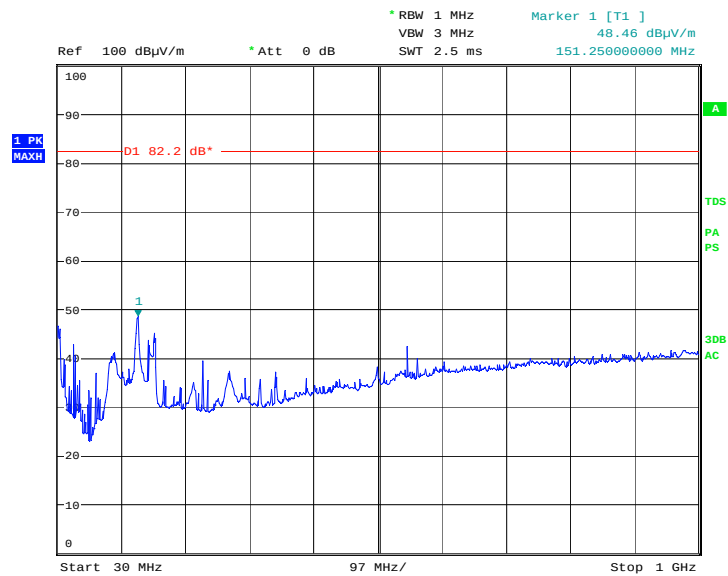


Date: 13.FEB.2018 09:38:35



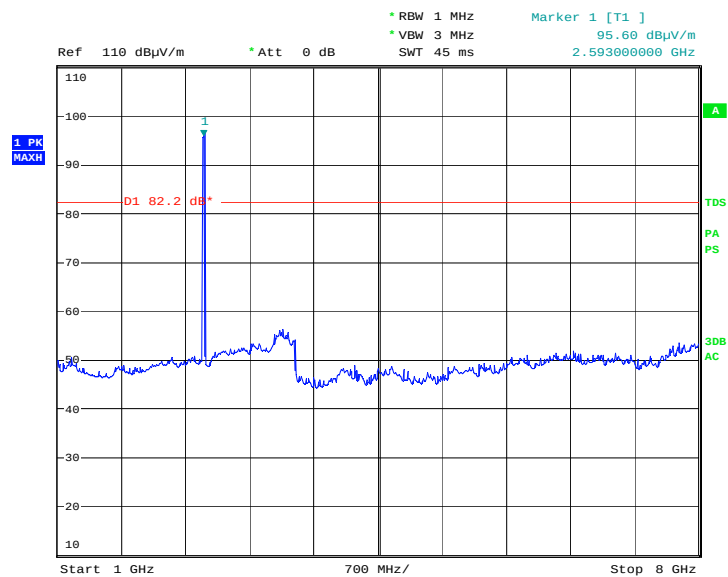
Product Service

Channel Position M – 64QAM / Bandwidth 20.0MHz – 30MHz – 1GHz



Date: 12.FEB.2018 21:33:59

Channel Position M – 64QAM / Bandwidth 20.0MHz – 1GHz – 8GHz

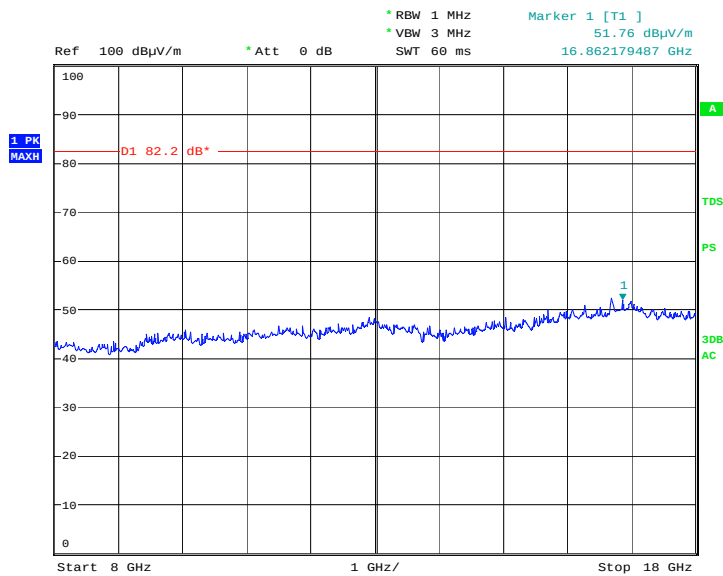


Date: 12.FEB.2018 17:38:35



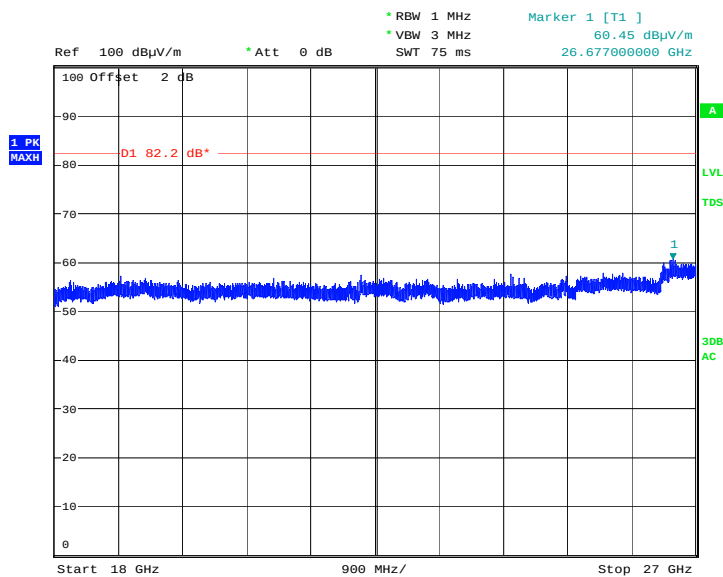
Product Service

Channel Position M – 64QAM / Bandwidth 20.0MHz – 8GHz – 18GHz



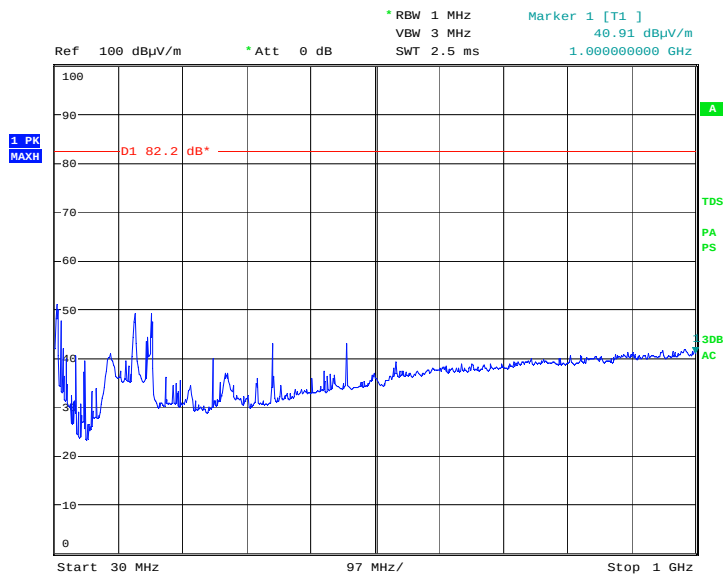
Date: 12.FEB.2018 21:09:43

Channel Position M – 64QAM / Bandwidth 20.0MHz – 18GHz – 27GHz



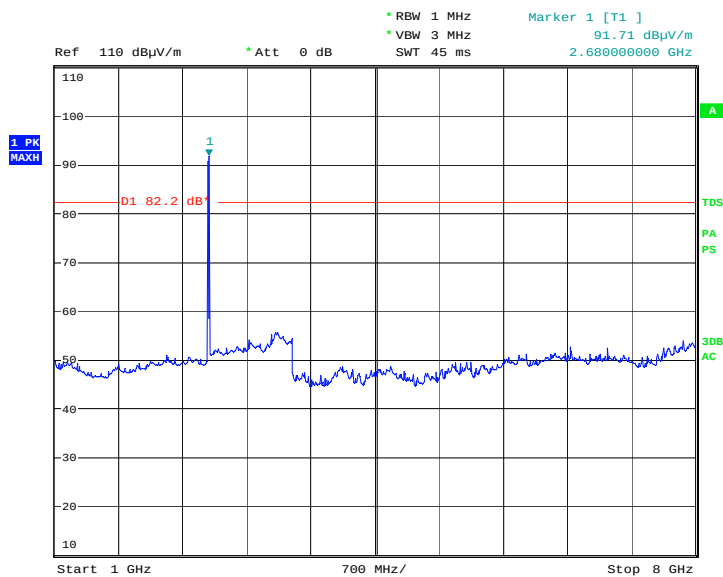
Date: 13.FEB.2018 09:32:09

Channel Position T – 64QAM / Bandwidth 20.0MHz – 30MHz – 1GHz



Date: 12.FEB.2018 21:37:37

Channel Position T – 64QAM / Bandwidth 20.0MHz – 1GHz – 8GHz

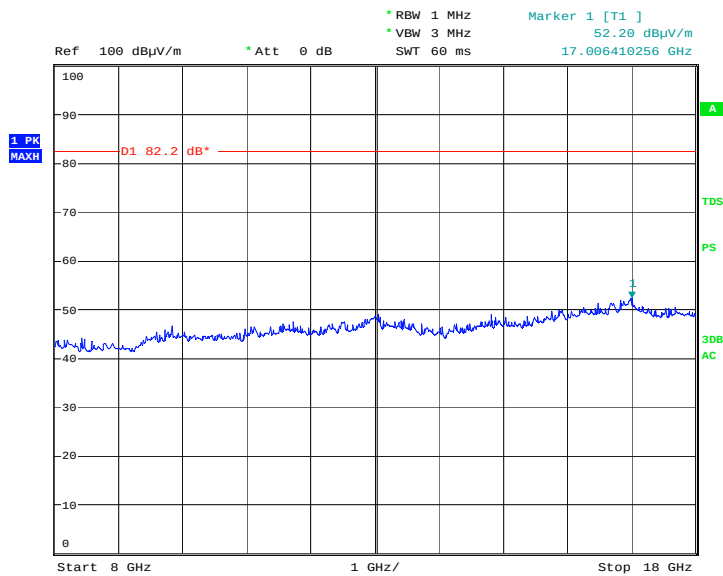


Date: 12.FEB.2018 18:01:34



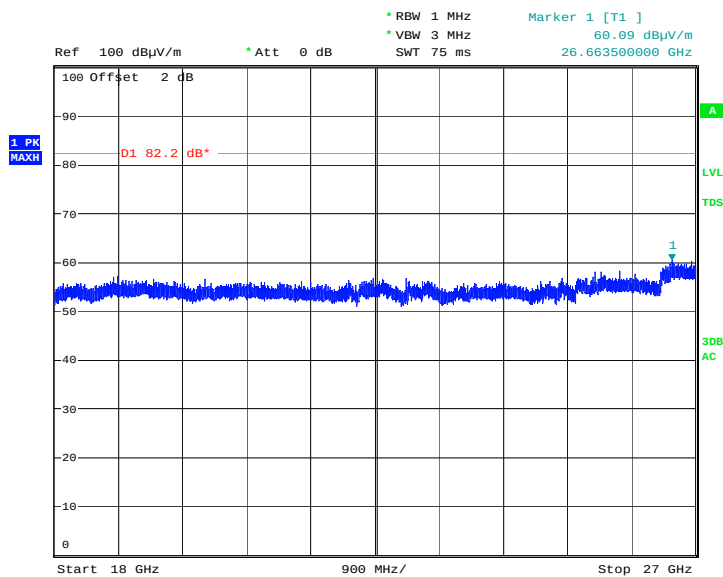
Product Service

Channel Position T – 64QAM / Bandwidth 20.0MHz – 8GHz – 18GHz



Date: 12.FEB.2018 21:03:48

Channel Position T – 64QAM / Bandwidth 20.0MHz – 18GHz – 27GHz

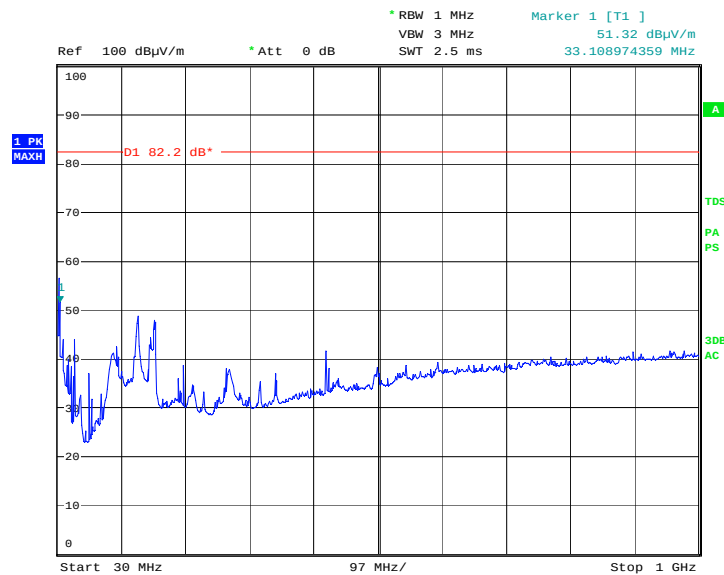


Date: 13.FEB.2018 09:44:33

Configuration B

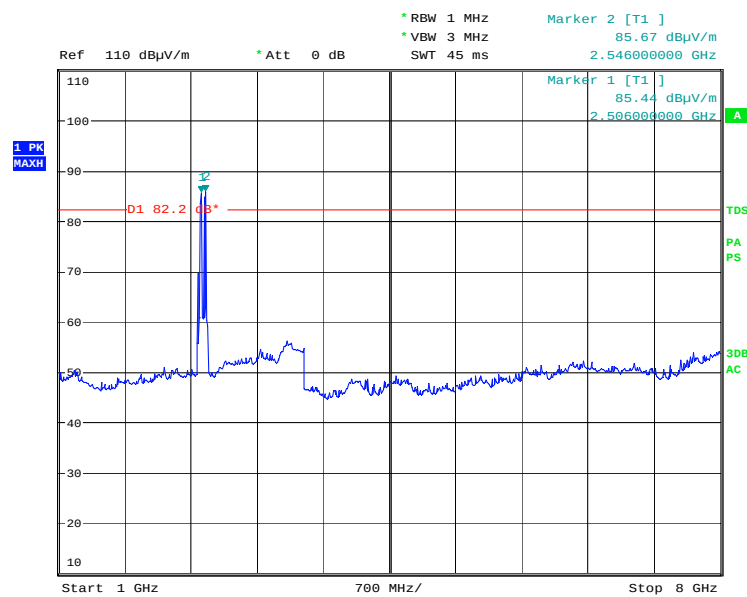
Maximum Output Power 32.7dBm / Port, LTE Bandwidth 20.0MHz

Channel Position B – 64QAM / Bandwidth 20.0MHz – 30MHz – 1GHz



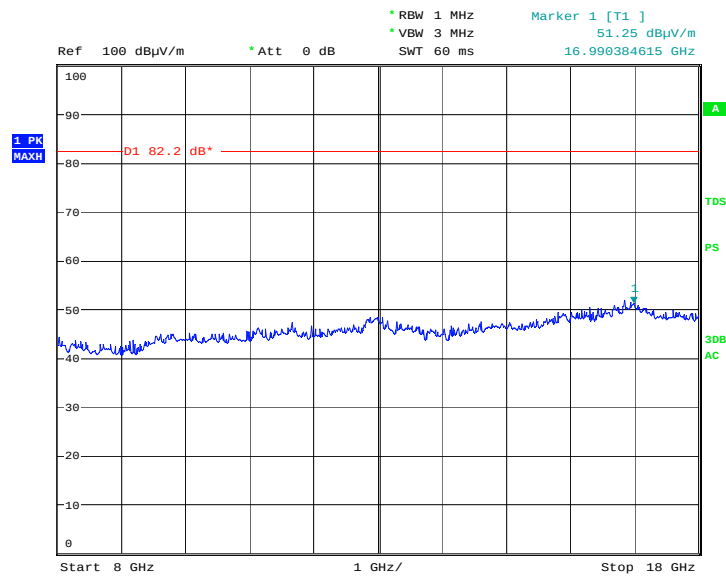
Date: 12.FEB.2018 21:40:31

Channel Position B – 64QAM / Bandwidth 20.0MHz – 1GHz – 8GHz



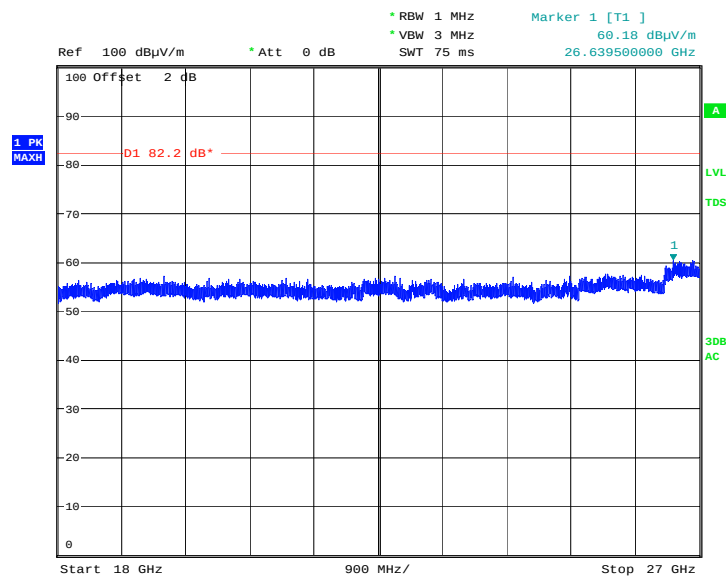
Date: 12.FEB.2018 18:30:24

Channel Position B – 64QAM / Bandwidth 20.0MHz – 8GHz – 18GHz



Date: 12.FEB.2018 20:56:04

Channel Position B – 64QAM / Bandwidth 20.0MHz – 18GHz – 27GHz

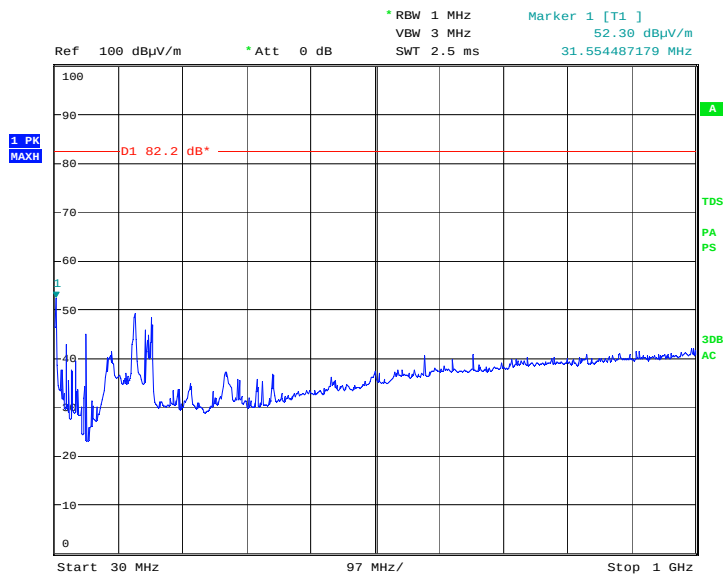


Date: 13.FEB.2018 09:38:35



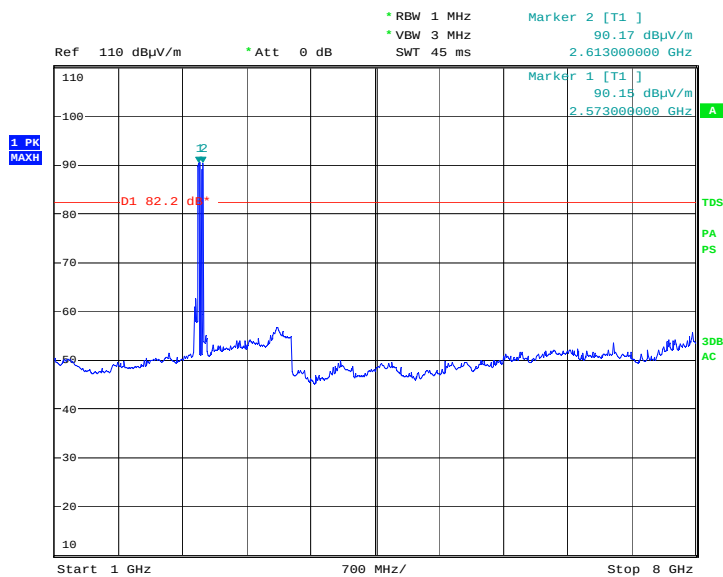
Product Service

Channel Position M – 64QAM / Bandwidth 20.0MHz – 30MHz – 1GHz



Date: 12.FEB.2018 21:43:19

Channel Position M – 64QAM / Bandwidth 20.0MHz – 1GHz – 8GHz

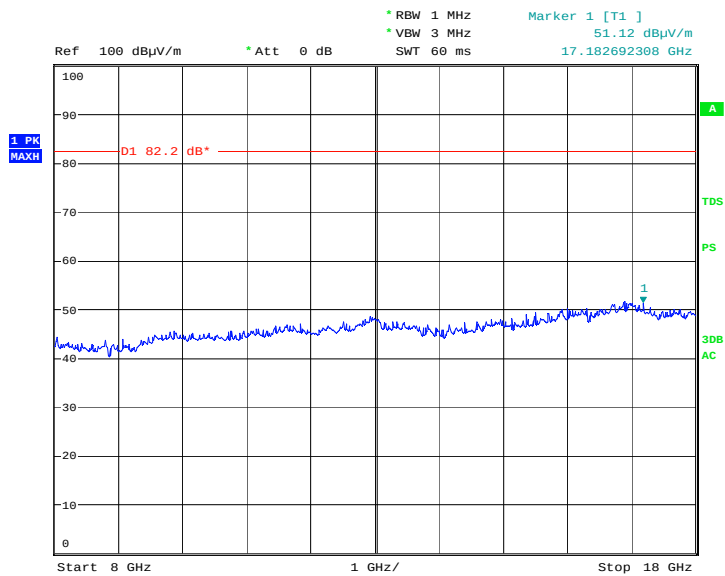


Date: 12.FEB.2018 19:06:08



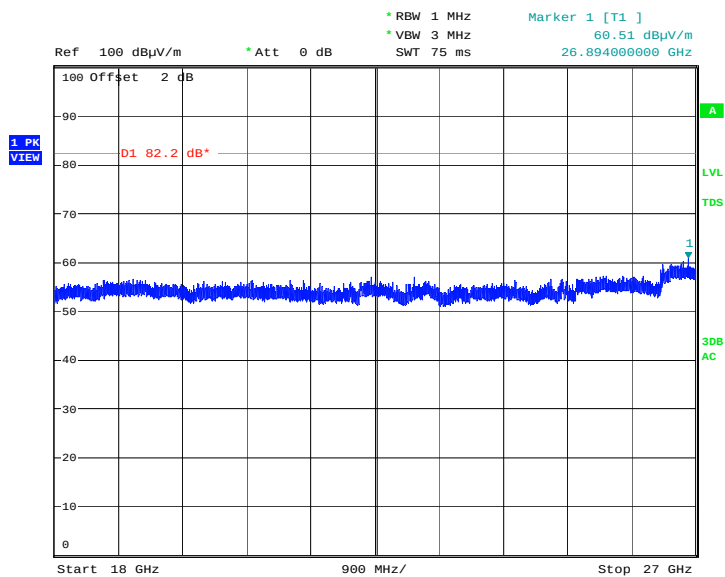
Product Service

Channel Position M – 64QAM / Bandwidth 20.0MHz – 8GHz – 18GHz



Date: 12.FEB.2018 20:47:19

Channel Position M – 64QAM / Bandwidth 20.0MHz – 18GHz – 27GHz

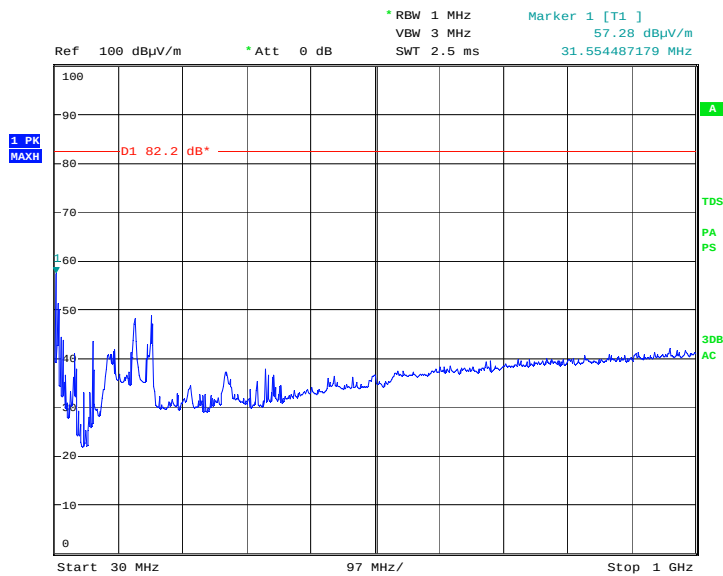


Date: 13.FEB.2018 10:04:17



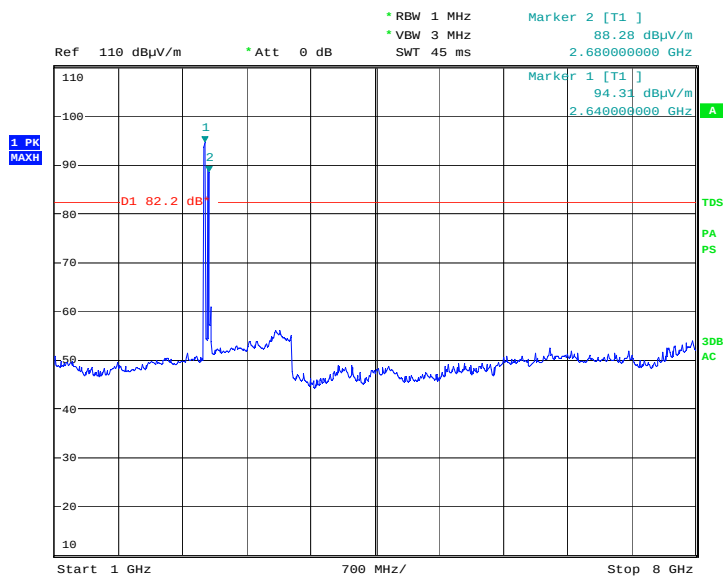
Product Service

Channel Position T – 64QAM / Bandwidth 20.0MHz – 30MHz – 1GHz



Date: 12.FEB.2018 21:47:11

Channel Position T – 64QAM / Bandwidth 20.0MHz – 1GHz – 8GHz

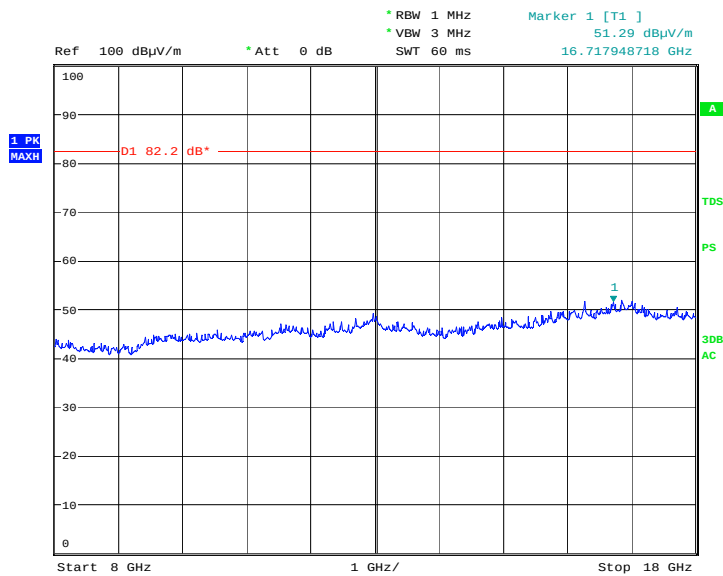


Date: 12.FEB.2018 19:15:35



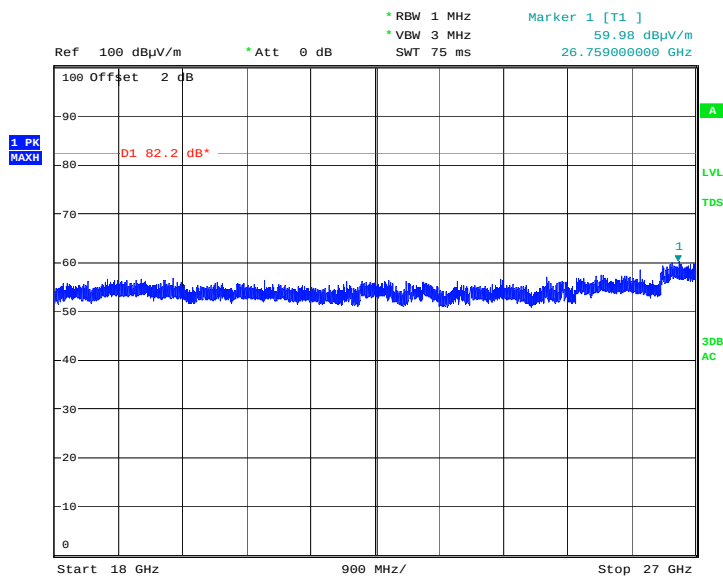
Product Service

Channel Position T – 64QAM / Bandwidth 20.0MHz – 8GHz – 18GHz



Date: 12.FEB.2018 20:41:13

Channel Position T – 64QAM / Bandwidth 20.0MHz – 18GHz – 27GHz

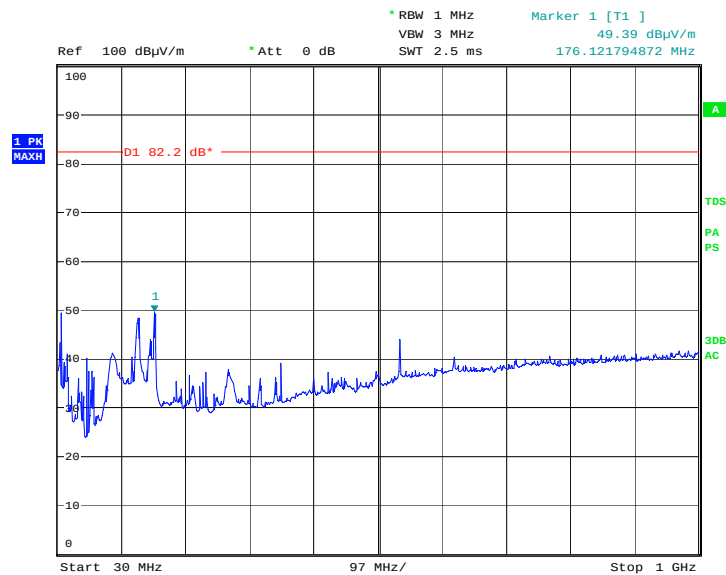


Date: 13.FEB.2018 10:09:06

Configuration C

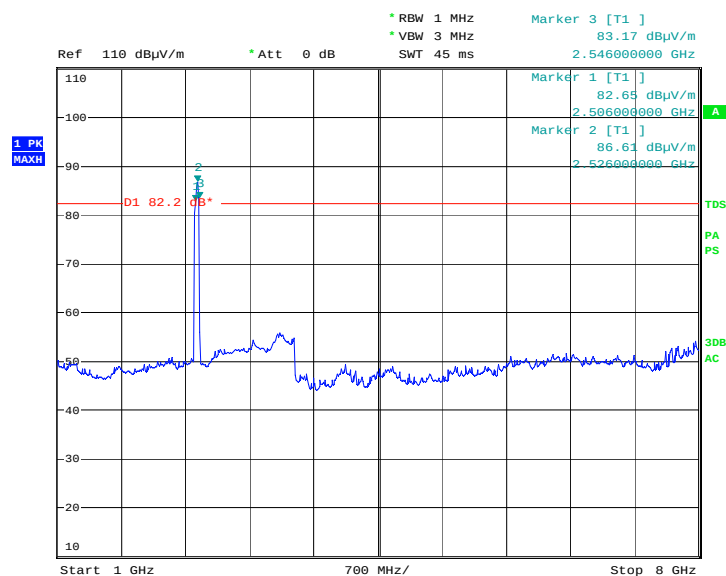
Maximum Output Power 32.7dBm / Port, LTE Bandwidth 20.0MHz

Channel Position B – 64QAM / Bandwidth 20.0MHz – 30MHz – 1GHz



Date: 12.FEB.2018 21:51:13

Channel Position B – 64QAM / Bandwidth 20.0MHz – 1GHz – 8GHz

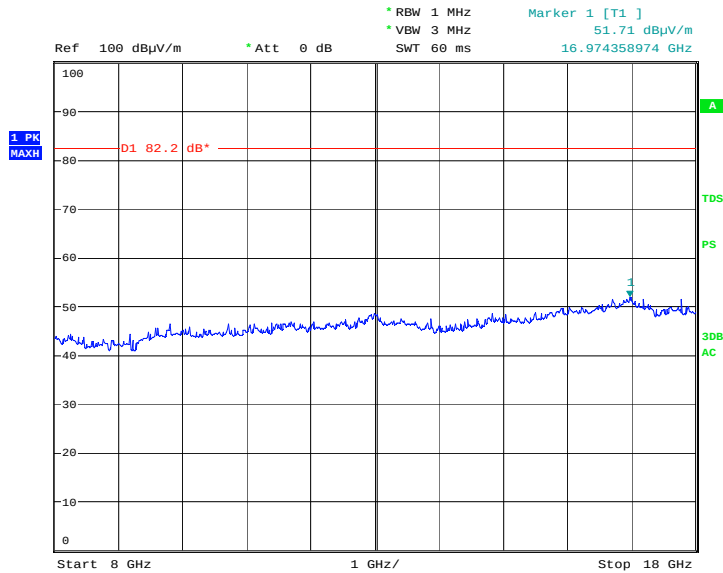


Date: 12.FEB.2018 19:32:32



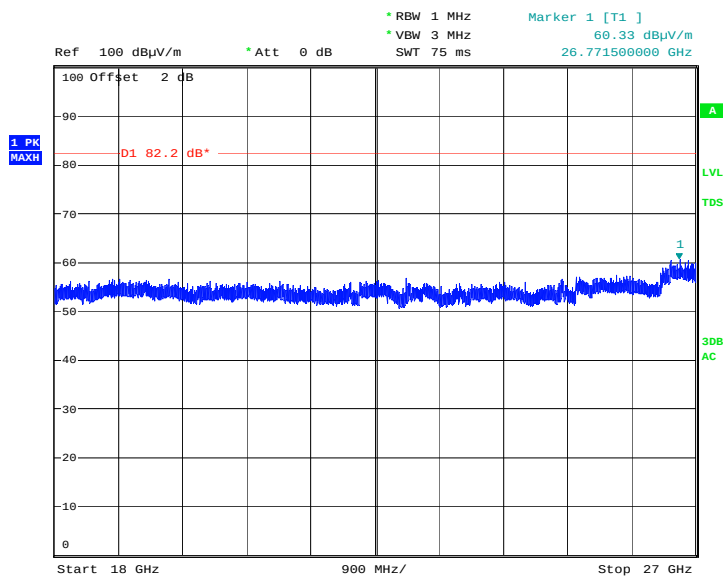
Product Service

Channel Position B – 64QAM / Bandwidth 20.0MHz – 8GHz – 18GHz



Date: 12.FEB.2018 20:34:08

Channel Position B – 64QAM / Bandwidth 20.0MHz – 18GHz – 27GHz

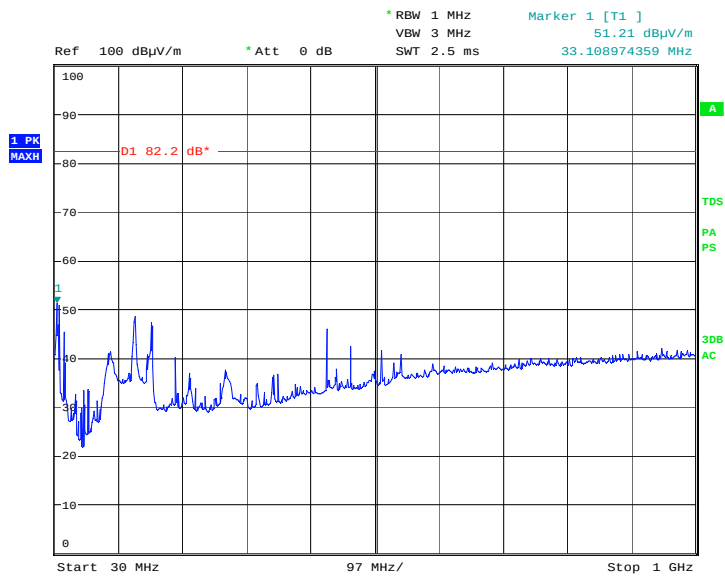


Date: 13.FEB.2018 10:14:53



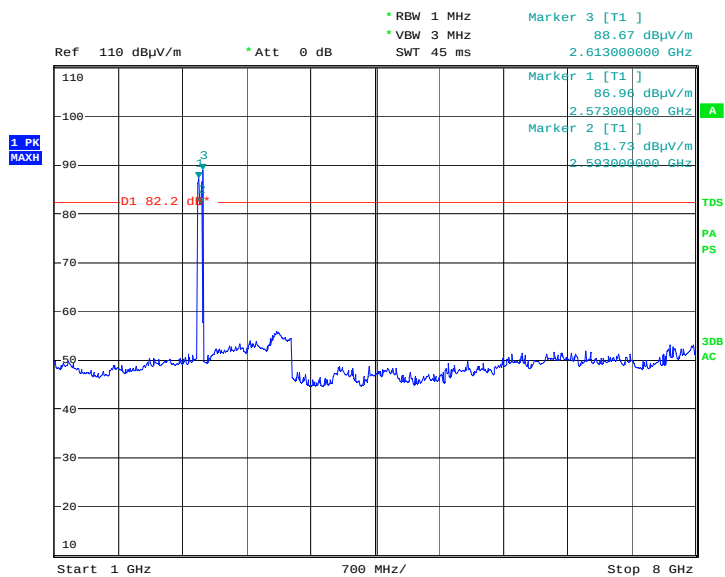
Product Service

Channel Position M – 64QAM / Bandwidth 20.0MHz – 30MHz – 1GHz



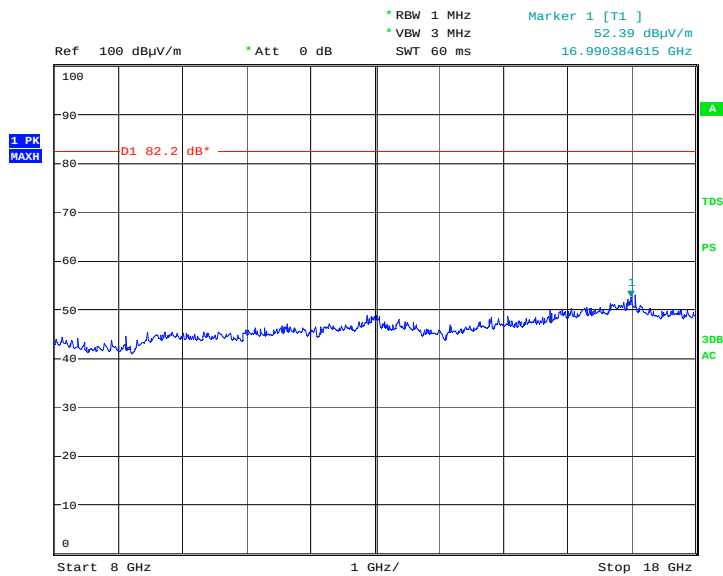
Date: 12.FEB.2018 21:54:25

Channel Position M – 64QAM / Bandwidth 20.0MHz – 1GHz – 8GHz



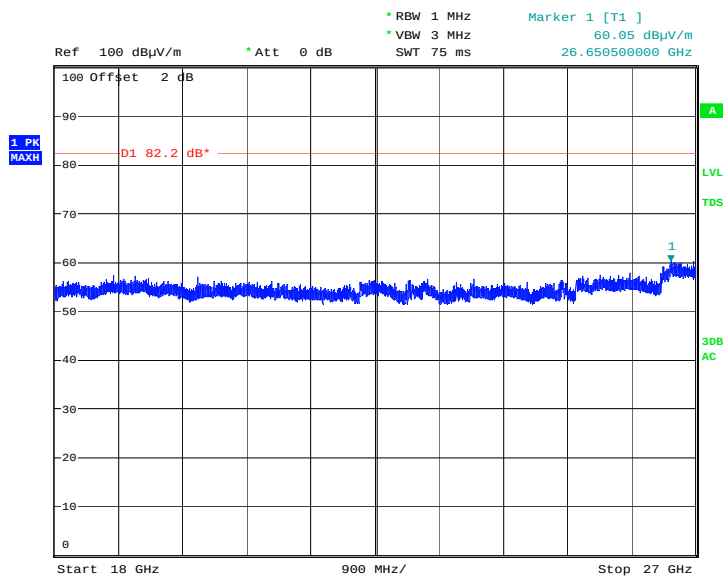
Date: 12.FEB.2018 19:41:11

Channel Position M – 64QAM / Bandwidth 20.0MHz – 8GHz – 18GHz



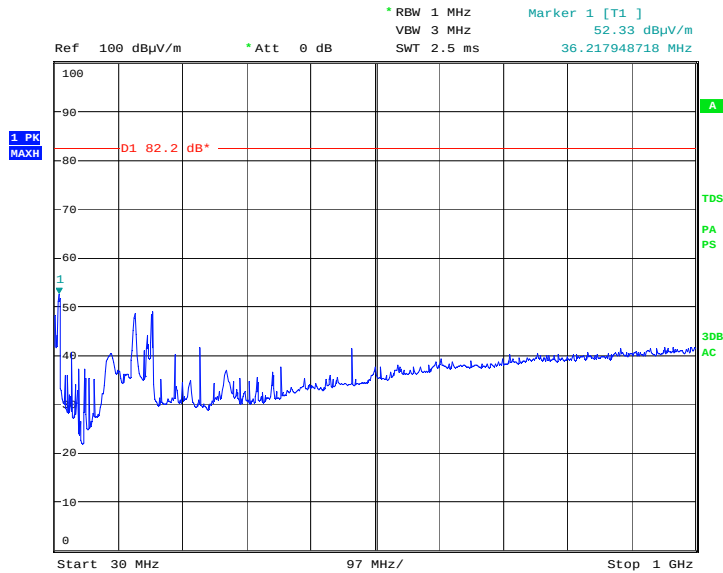
Date: 12.FEB.2018 20:26:41

Channel Position M – 64QAM / Bandwidth 20.0MHz – 18GHz – 27GHz



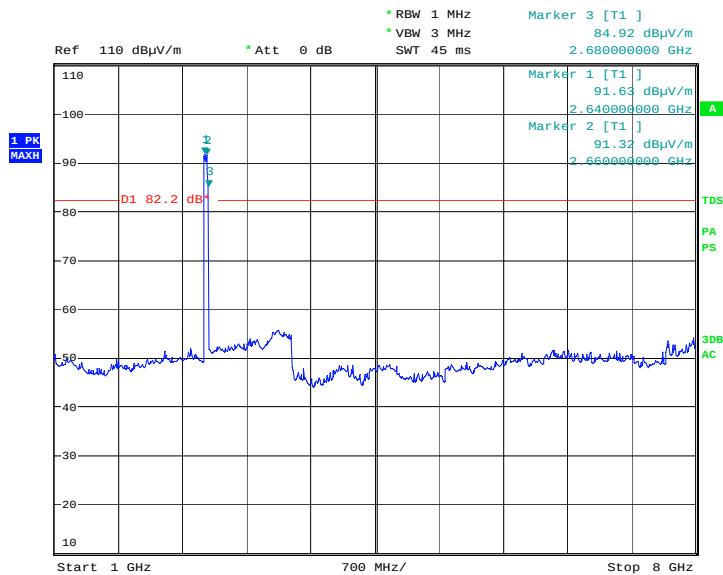
Date: 13.FEB.2018 10:24:43

Channel Position T – 64QAM / Bandwidth 20.0MHz – 30MHz – 1GHz



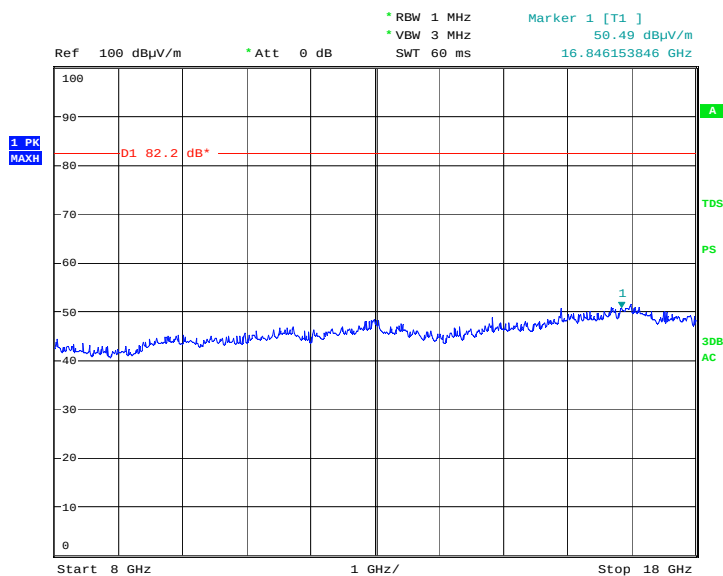
Date: 12.FEB.2018 21:59:06

Channel Position T – 64QAM / Bandwidth 20.0MHz – 1GHz – 8GHz



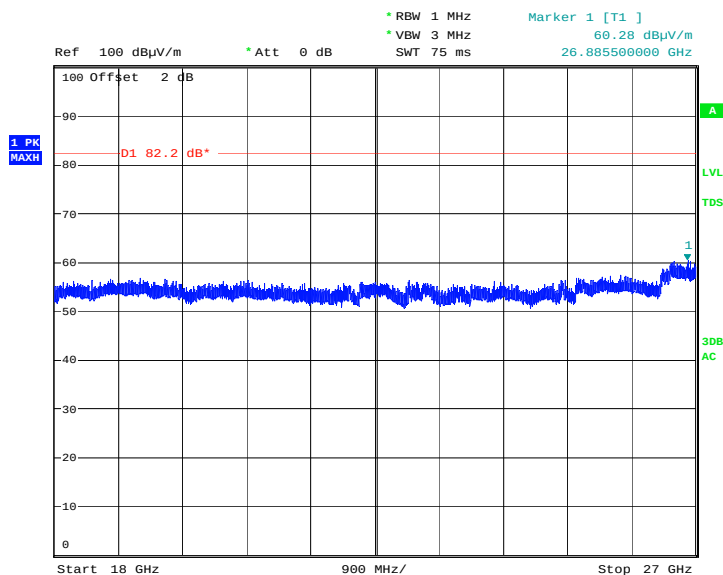
Date: 12.FEB.2018 19:48:41

Channel Position T – 64QAM / Bandwidth 20.0MHz – 8GHz – 18GHz



Date: 12.FEB.2018 20:41:46

Channel Position T – 64QAM / Bandwidth 20.0MHz – 18GHz – 27GHz



Date: 13.FEB.2018 10:30:49

Limit	-13 dBm / 82.2 dBμV/m
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The EUT does not exceed the limits specified in the table above at the measured frequencies.



Product Service

SECTION 3

TEST EQUIPMENT USED



Product Service

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
Maximum Peak Output Power and Peak to Average Ratio - Conducted					
Spectrum Analyser	Keysight	PXA	MY49430624	12	30-Jun-2018
Spectrum Analyser	Keysight	PXA	TE4653	12	05-Feb-2019
Network Analyser	Rohde&Schwarz	ZVA40	TE3548	12	02-Oct-2018
Calibration unit	Rohde&Schwarz	ZV-Z54	TE4368	12	19-Sep-2018
Attenuator	Narda	769-30	TE3369	N/A	31-May-2018
Power Supply	Agilent	N8737A	-	N/A	O/P Mon
Hygrometer	RS	TE2891	0427451	12	30-Aug-2018
Digital Volt Meter	White gold	79 III	TE00190	12	24-Nov-2018
Band Edge					
Spectrum Analyser	Keysight	PXA	MY49430624	12	30-Jun-2018
Spectrum Analyser	Keysight	PXA	TE4653	12	05-Feb-2019
Network Analyser	Rohde&Schwarz	ZVA40	TE3548	12	02-Oct-2018
Calibration unit	Rohde&Schwarz	ZV-Z54	TE4368	12	19-Sep-2018
Attenuator	Narda	769-30	TE3369	N/A	31-May-2018
Power Supply	Agilent	N8737A	-	N/A	O/P Mon
Hygrometer	RS	TE2891	0427451	12	30-Aug-2018
Digital Volt Meter	White gold	79 III	TE00190	12	24-Nov-2018
Transmitter Spurious Emissions					
Spectrum Analyser	Keysight	PXA	MY49430624	12	30-Jun-2018
Network Analyser	Rohde&Schwarz	ZVA40	TE3548	12	02-Oct-2018
Spectrum Analyser	Keysight	PXA	TE4653	12	05-Feb-2019
Attenuator	Narda	769-30	TE3369	N/A	31-May-2018
Power Supply	Agilent	N8737A	-	N/A	O/P Mon
Hygrometer	RS	TE2891	0427451	12	30-Aug-2018
Digital Volt Meter	White gold	79 III	TE00190	12	24-Nov-2018
High Pass Filter	Wainwright	WHNX3.8/26.5G-6ss	8	N/A	O/P Mon
Frequency Stability					
Climatic Chamber	Climatec	Chamber	TE2848	12	30-March-2018
Spectrum Analyser	Keysight	PXA	MY49430624	12	30-Jun-2018
Spectrum Analyser	Keysight	PXA	TE4653	12	05-Feb-2019
Network Analyser	Rohde&Schwarz	ZVA40	TE3548	12	02-Oct-2018
Calibration unit	Rohde&Schwarz	ZV-Z54	TE4368	12	19-Sep-2018
Attenuator	Narda	769-30	TE3369	N/A	31-May-2018
Power Supply	Agilent	N8737A	-	N/A	O/P Mon
Hygrometer	RS	TE2891	0427451	12	30-Aug-2018
Digital Volt Meter	White gold	79 III	TE00190	12	24-Nov-2018



Product Service

Instrument	Manufacturer	Type No.	TE No.	Calibration Period (months)	Calibration Due
Radiated Spurious Emissions					
Antenna (Bilog)	Schaffner	CBL6143	287	24	18-Apr-2018
Signal Generator (10MHz to 40GHz)	Rohde & Schwarz	SMR40	1002	12	20-Oct-2018
Power Supply (60V-50A)	Farnell	H 60/50	1056	N/A	O/P Mon
Power Supply Unit	Farnell	H 60/50	1095	N/A	O/P Mon
Antenna 18-40GHz (Double Ridge Guide)	Q-Par Angus Ltd	QSH 180K	1511	24	07-Dec-2018
Pre-Amplifier	Phase One	PS04-0086	1533	12	12-Jan-2019
18GHz - 40GHz Pre-Amplifier	Phase One	PS04-0087	1534	12	27-Feb-2018
Screened Room (5)	Rainford	Rainford	1545	36	09-Jun-2018
Turntable Controller	Inn-Co GmbH	CO 1000	1606	N/A	O/P Mon
Digital Multimeter	Iso-tech	IDM-101	2895	12	20-Jul-2018
Cable (N-N, 8m)	Rhophase	NPS-2302-8000-NPS	3248	12	02-May-2018
EMI Test Receiver	Rohde & Schwarz	ESU40	3506	12	22-Nov-2018
Tilt Antenna Mast	maturo GmbH	TAM 4.0-P	3916	N/A	O/P Mon
Mast Controller	maturo GmbH	NCD	3917	N/A	O/P Mon
1 Metre SMA Cable	Rhophase	3PS-1801A-1000-3PS	4099	12	19-Sep-2018
Cable 1503 2M 2.92(P)m 2.92(P)m	Rhophase	KPS-1503A-2000-KPS	4293	12	27-Feb-2018
Digital thermo Hygrometer	Radio Spares	1260	4300	12	30-Aug-2018
Cable (Rx, Km-Km 2m)	Scott Cables	KPS-1501-2000-KPS	4526	6	22-May-2018
Double Ridged Waveguide Horn Antenna	ETS-Lindgren	3117	4722	12	17-Feb-2018
Double Ridge Broadband Horn Antenna	Schwarzbeck	BBHA 9120 B	4848	12	12-Feb-2019

N/A – Not Applicable

O/P Mon – Output Monitored with Calibrated Equipment



Product Service

3.2 MEASUREMENT UNCERTAINTY

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

Test Discipline	Frequency / Parameter	MU
Conducted Maximum Peak Output Power	30 MHz to 20 GHz Amplitude	± 0.96 dB
Conducted Emissions	30 MHz to 20 GHz Amplitude	± 2.3 dB
Frequency Stability	30 MHz to 3 GHz	± 5.0 Hz
Occupied Bandwidth	Up to 20 MHz Bandwidth	± 374.2 kHz
Band Edge	30 MHz to 20 GHz Amplitude	± 2.3 dB
Radiated Emissions, Bilog Antenna, AOATS	30MHz to 1GHz Amplitude	5.1 dB*
Radiated Emissions, Horn Antenna, AOATS	1GHz to 40GHz Amplitude	6.3 dB*



Product Service

SECTION 5

ACCREDITATION, DISCLAIMERS AND COPYRIGHT



Product Service

4.1 ACCREDITATION, DISCLAIMERS AND COPYRIGHT



This report relates only to the actual item/items tested.

Our UKAS Accreditation does not cover opinions and interpretations and any expressed are outside the scope of our UKAS Accreditation.

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

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Product Service

ANNEX A

MODULE LIST



Product Service

Configurations A-C			
Product	Product No	R-State	Serial No
AIR 6468 B41	KRD 901 075/1	R1A	D826900142
SUP 6601	1/BFL 901 009/4	R2A	BR83586773
Baseband 5216	KDU 137 925/3	R9A	D16V990987
PIS Software Version:	CXP2030020/1	Revision:	R8A29
UP Software Version:	CXP9024418/12	Revision:	R9A49