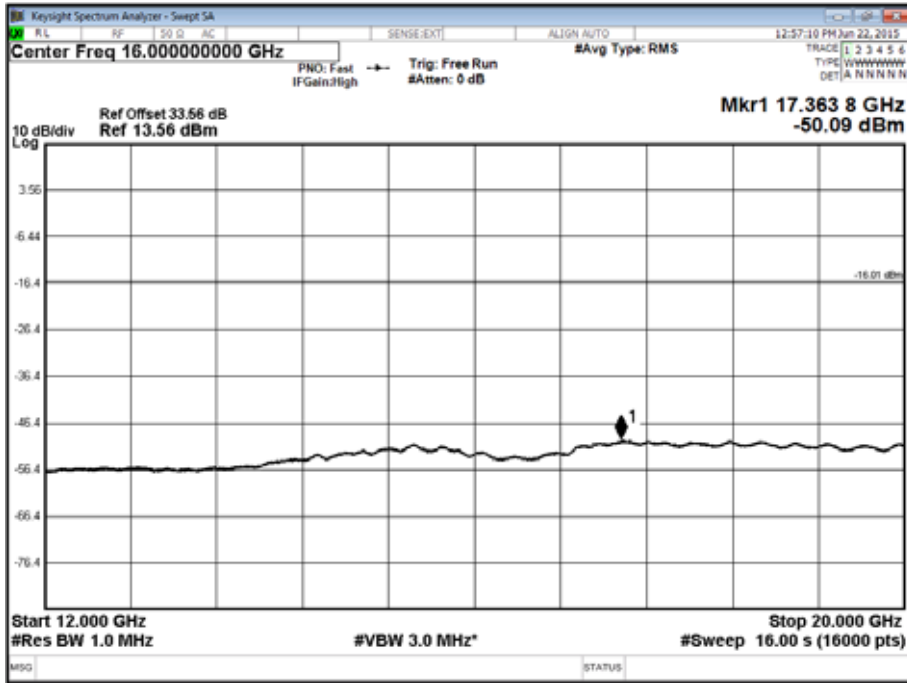


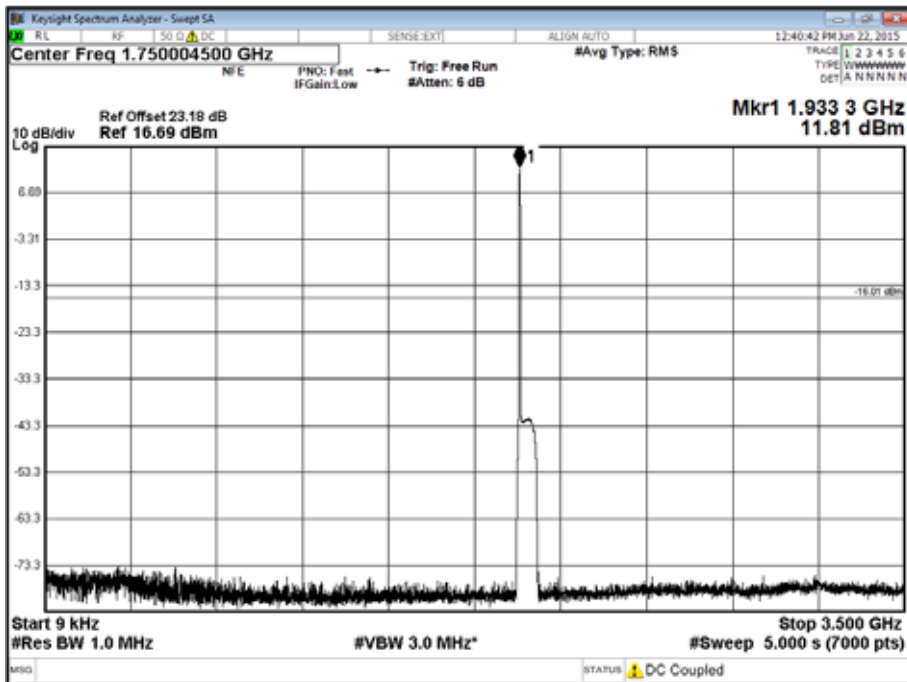
Channel Position T - Bandwidth 5.0 MHz - Antenna A



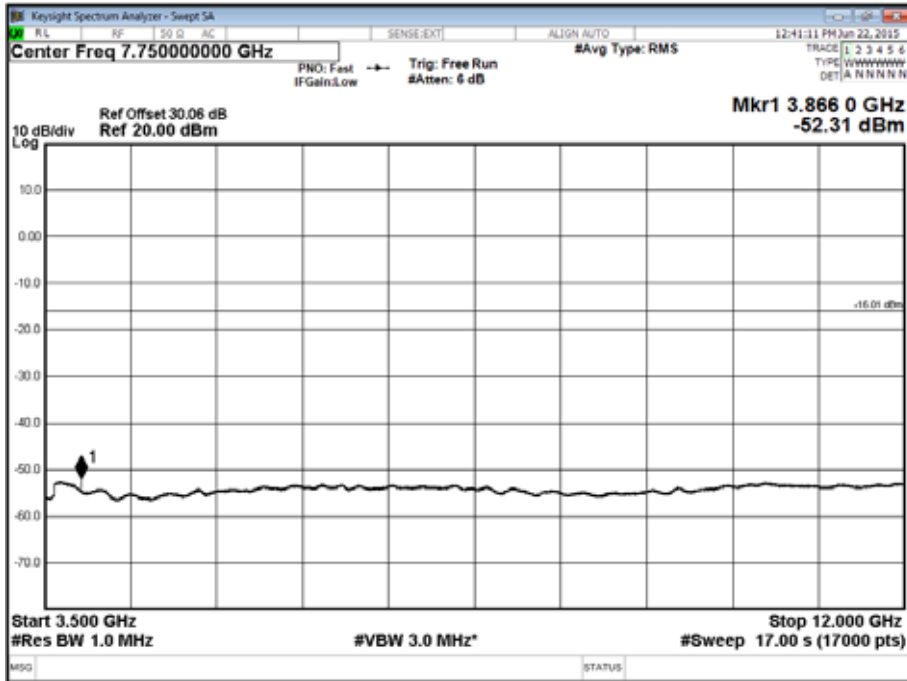
Configuration 1 WCDMA SC, Antenna B (See table 1)

Maximum Output Power 17 dBm

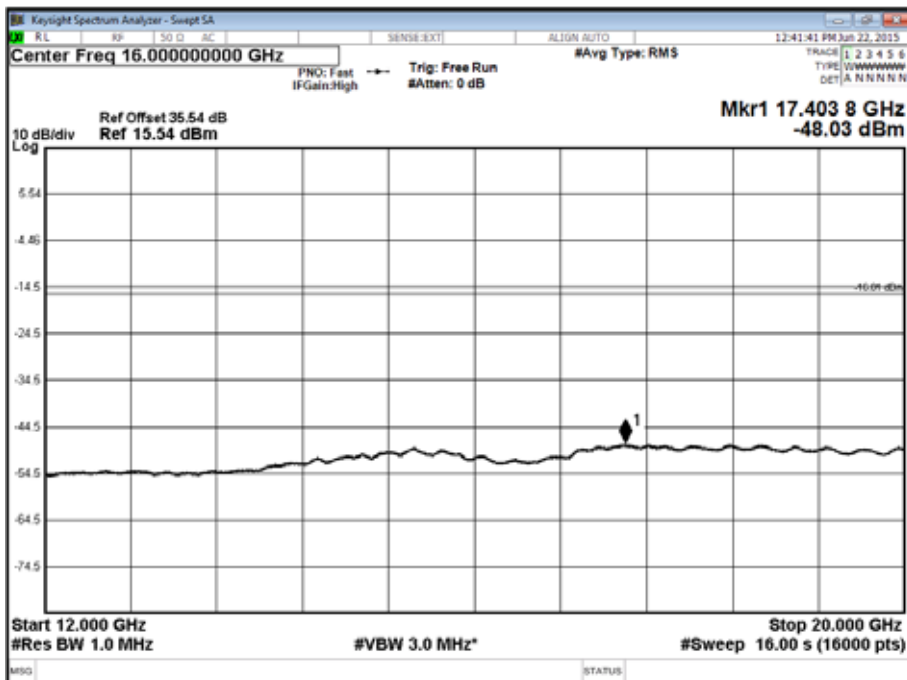
Channel Position B - Bandwidth 5.0 MHz - Antenna B



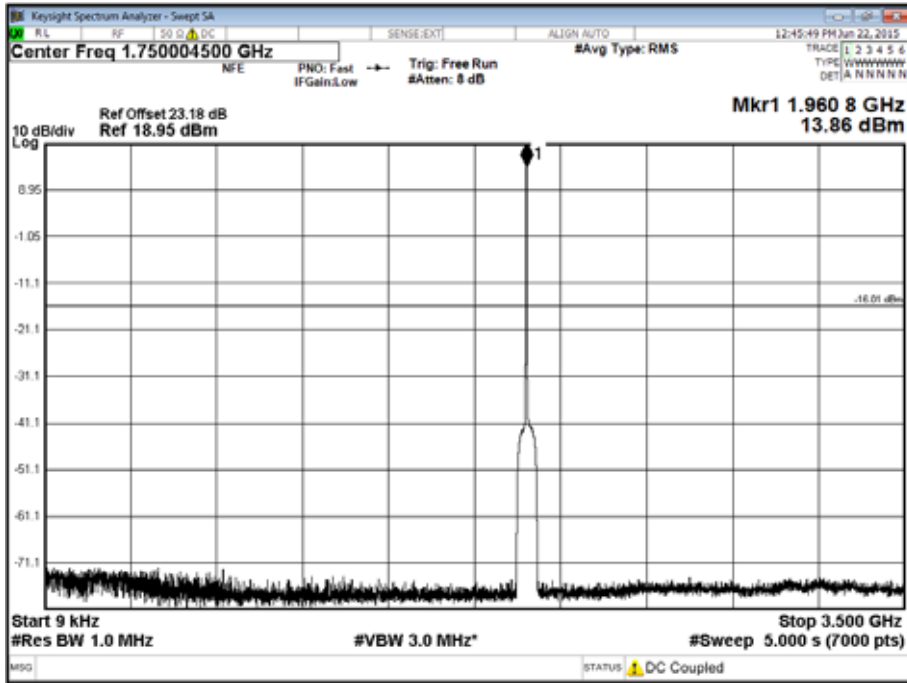
Channel Position B - Bandwidth 5.0 MHz - Antenna B



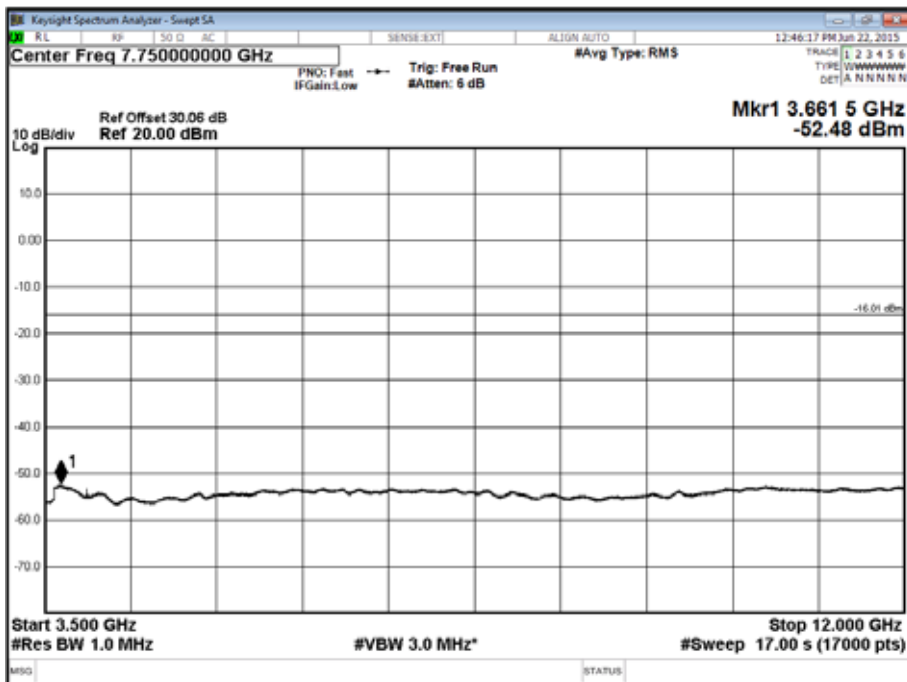
Channel Position B - Bandwidth 5.0 MHz - Antenna B



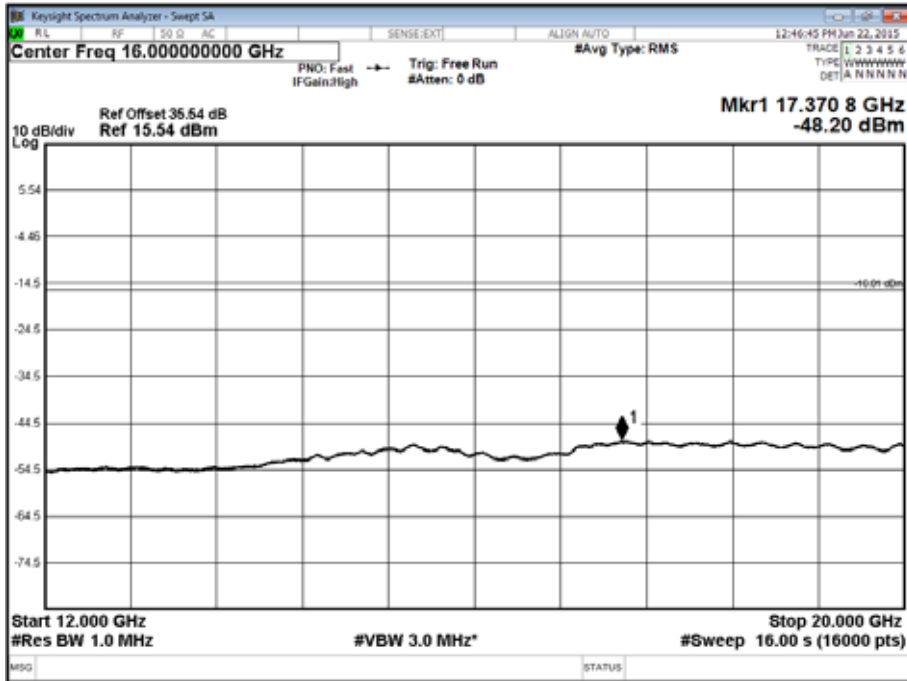
Channel Position M - Bandwidth 5.0 MHz - Antenna B



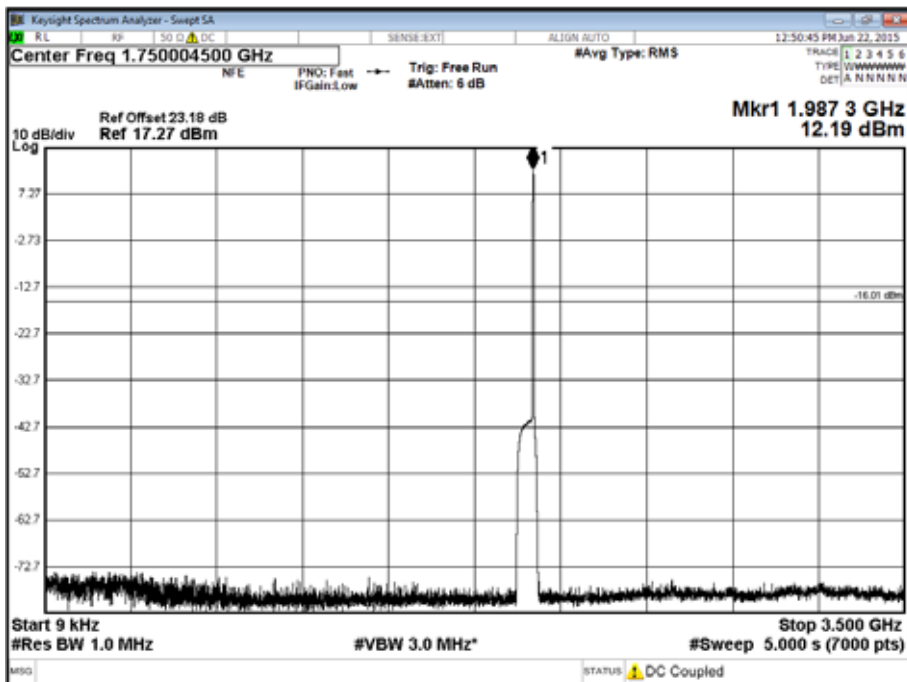
Channel Position M - Bandwidth 5.0 MHz - Antenna B



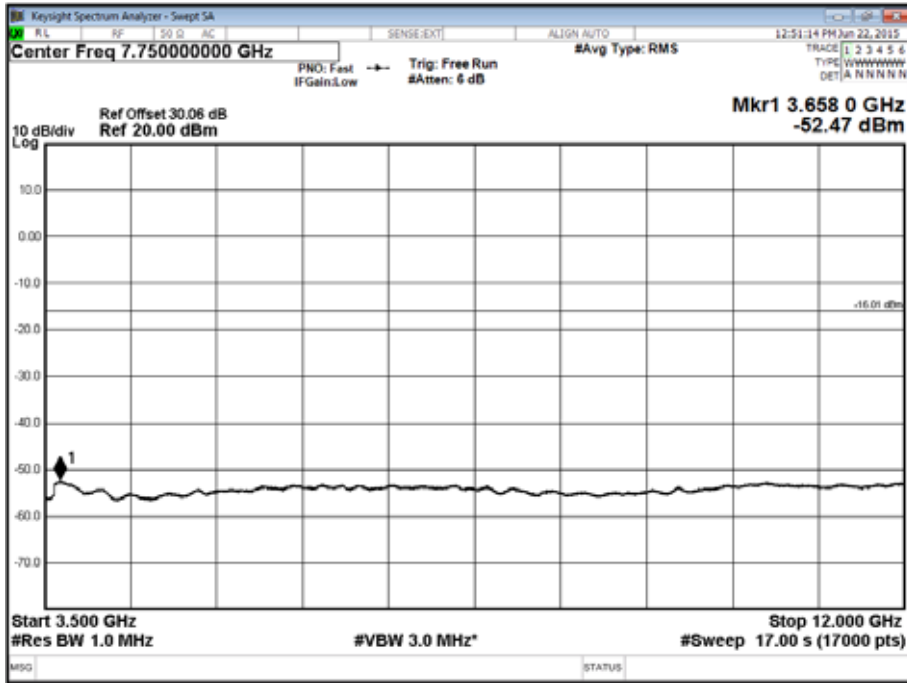
Channel Position M - Bandwidth 5.0 MHz - Antenna B



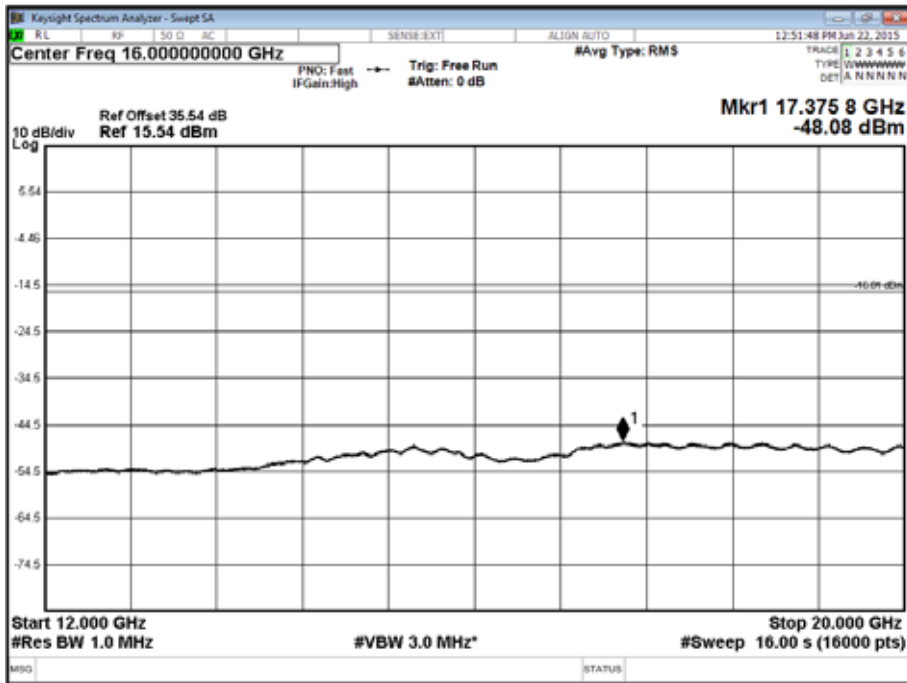
Channel Position T - Bandwidth 5.0 MHz - Antenna B



Channel Position T - Bandwidth 5.0 MHz - Antenna B



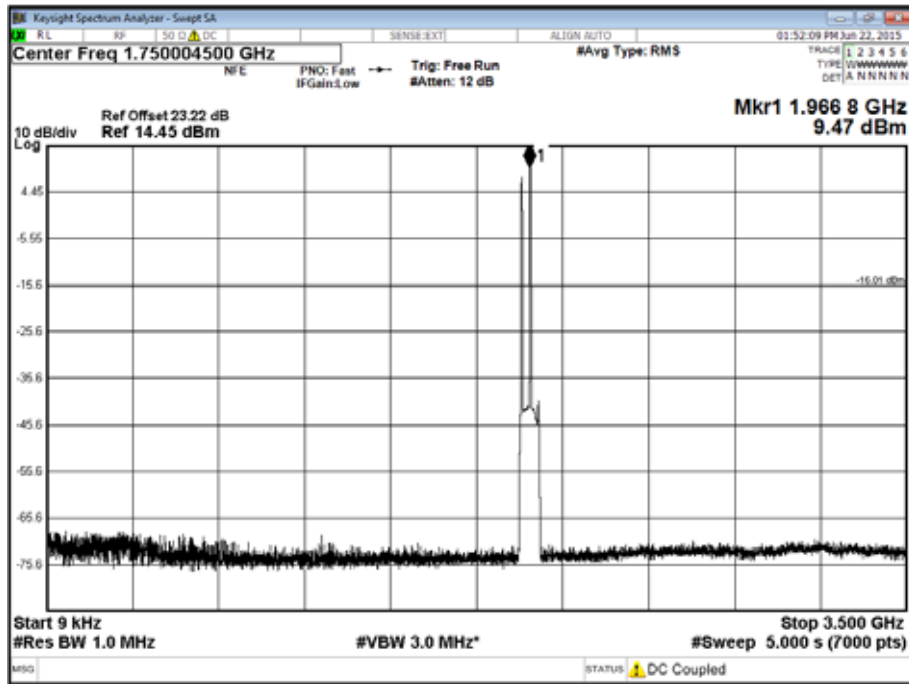
Channel Position T - Bandwidth 5.0 MHz - Antenna B



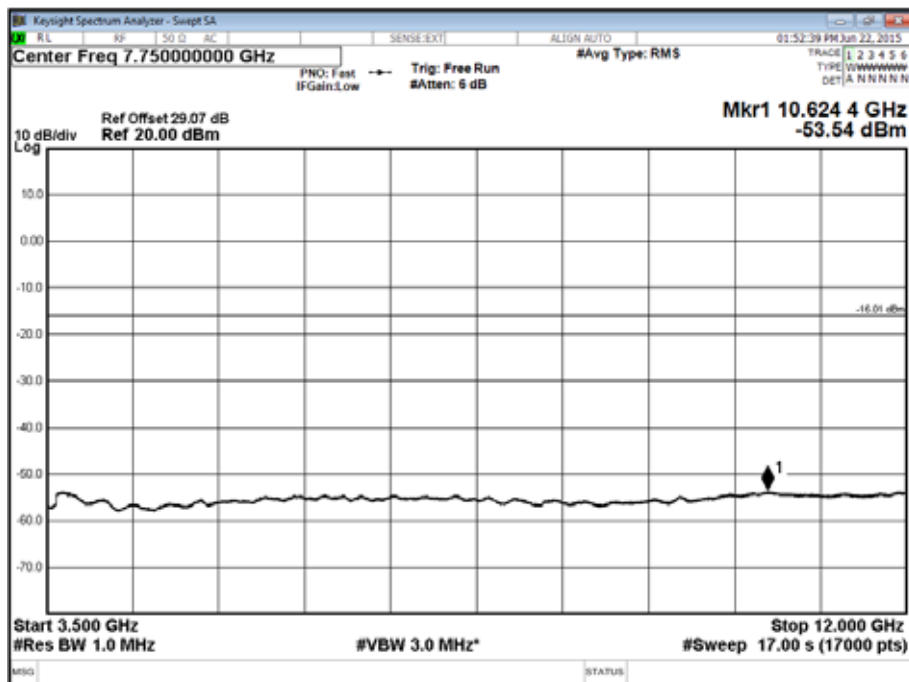
Configuration 2 WCDMA MC, Antenna A (See table 1)

Maximum Output Power 17 dBm

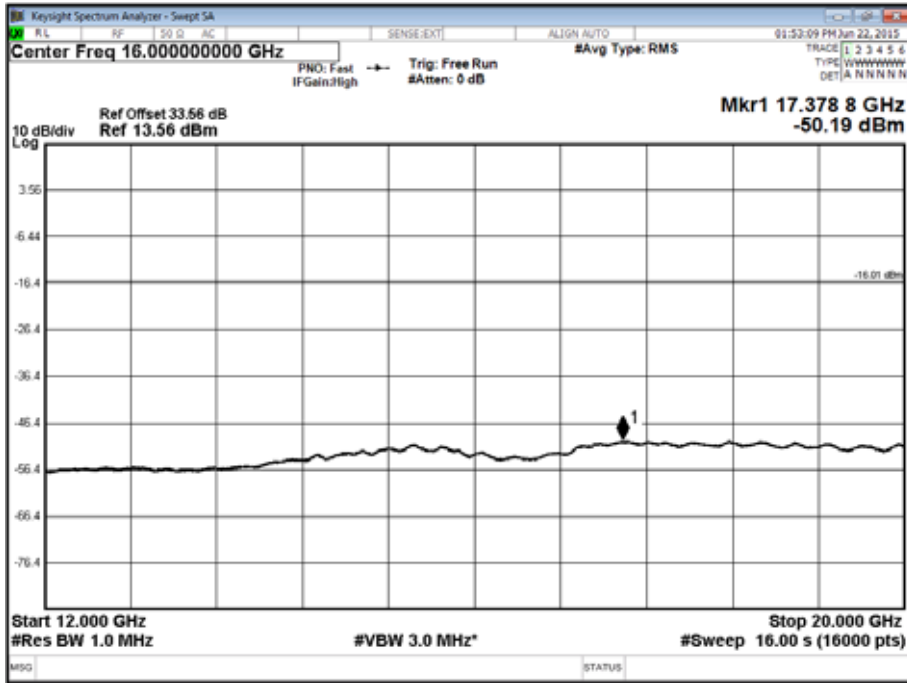
Channel Position B - Bandwidth 5.0 MHz - Antenna A



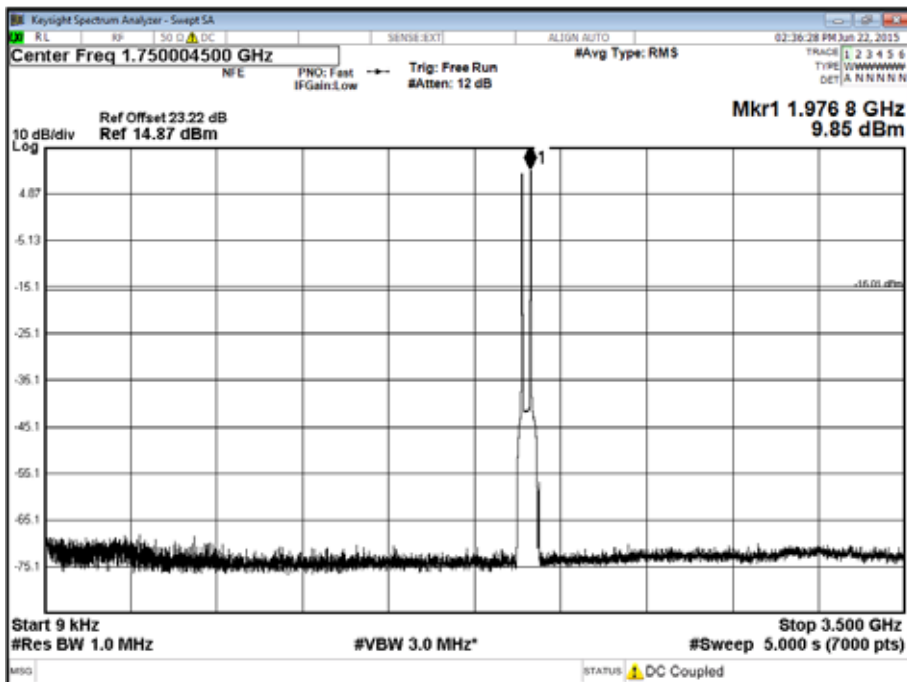
Channel Position B - Bandwidth 5.0 MHz - Antenna A



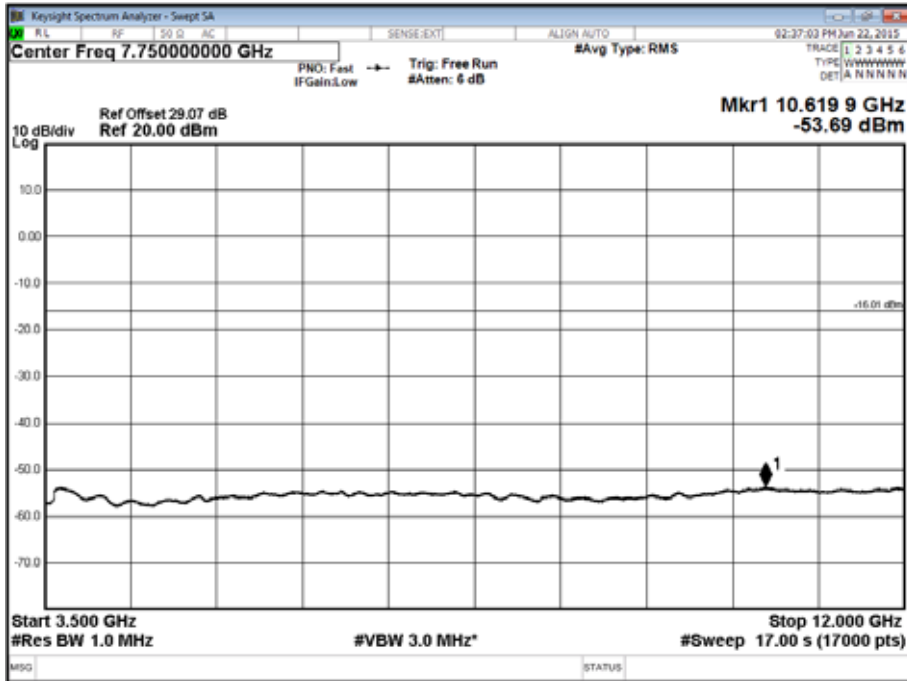
Channel Position B - Bandwidth 5.0 MHz - Antenna A



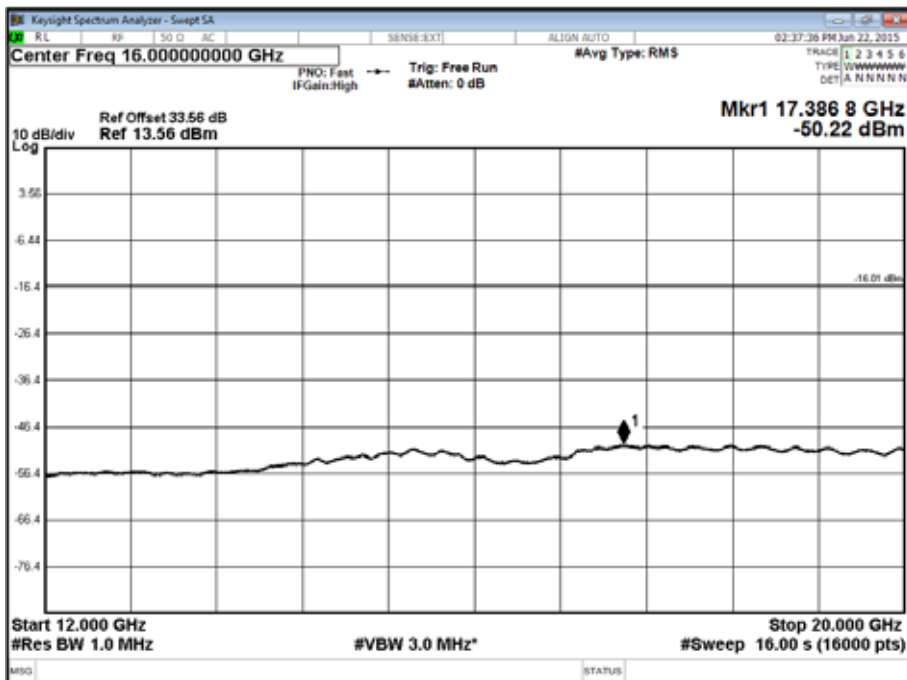
Channel Position M - Bandwidth 5.0 MHz - Antenna A



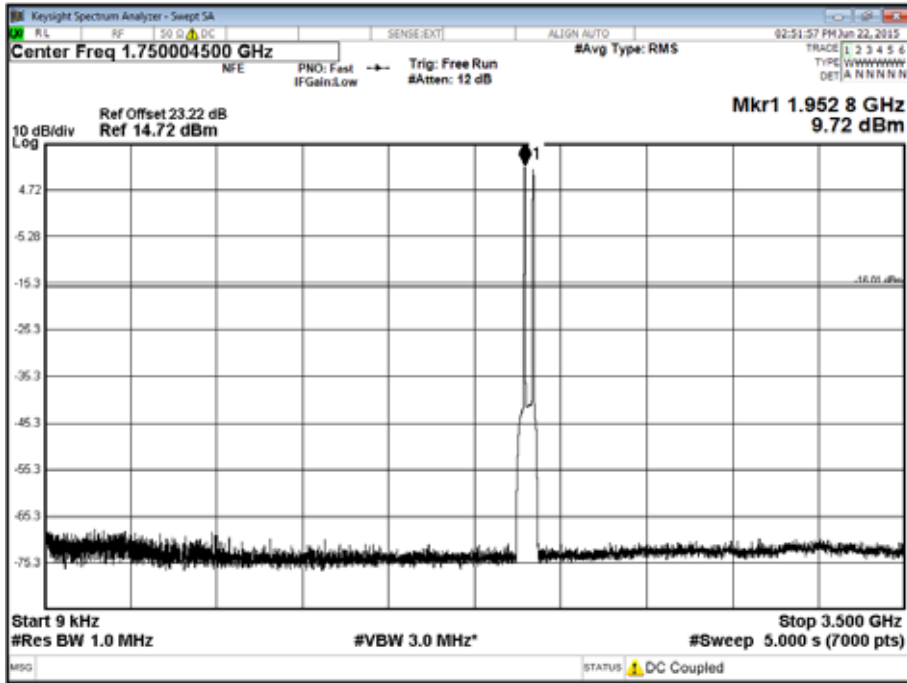
Channel Position M - Bandwidth 5.0 MHz - Antenna A



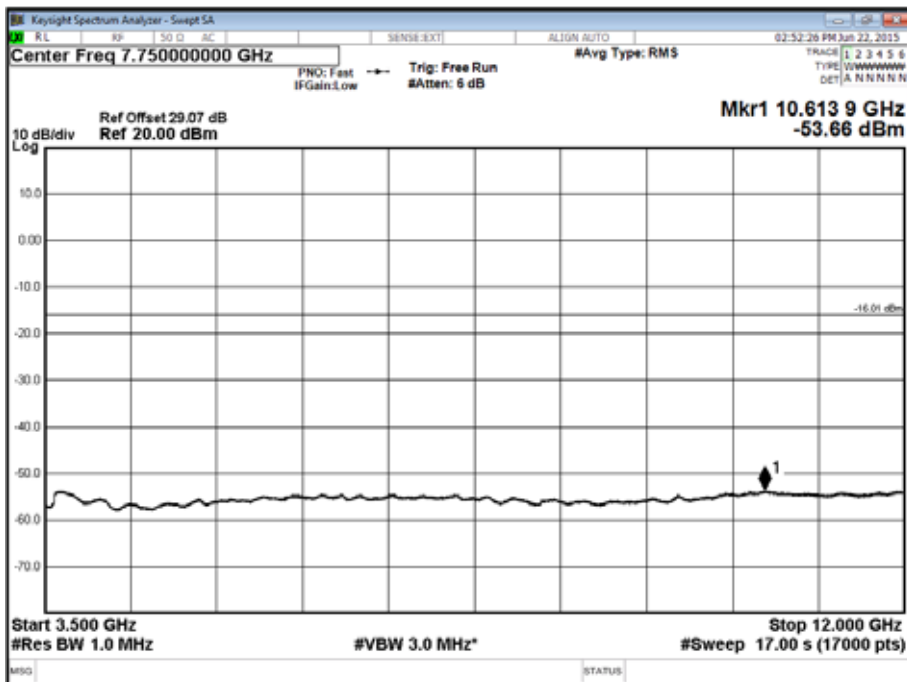
Channel Position M - Bandwidth 5.0 MHz - Antenna A



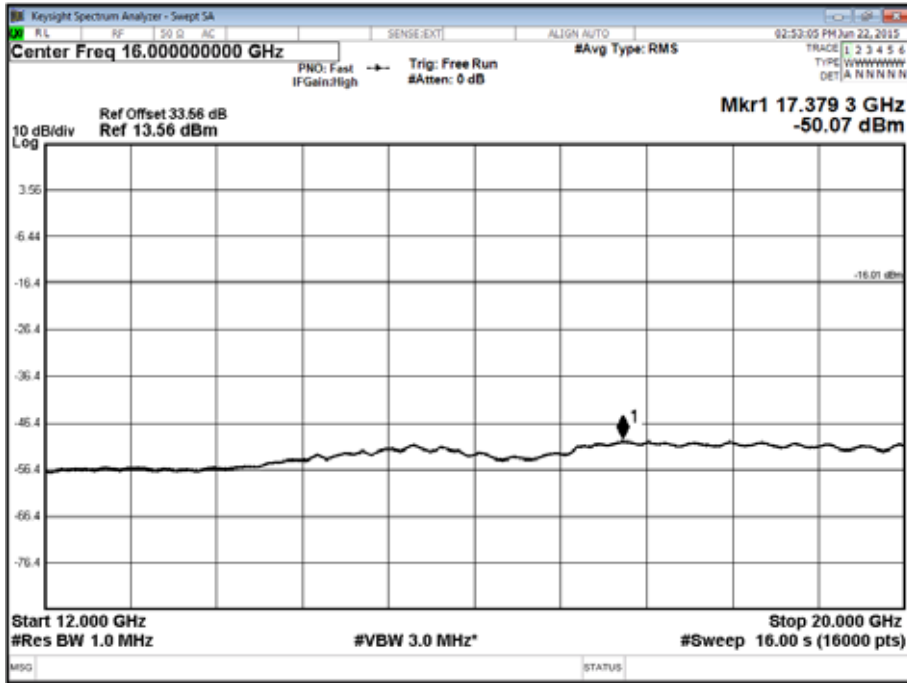
Channel Position T - Bandwidth 5.0 MHz - Antenna A



Channel Position T - Bandwidth 5.0 MHz - Antenna A



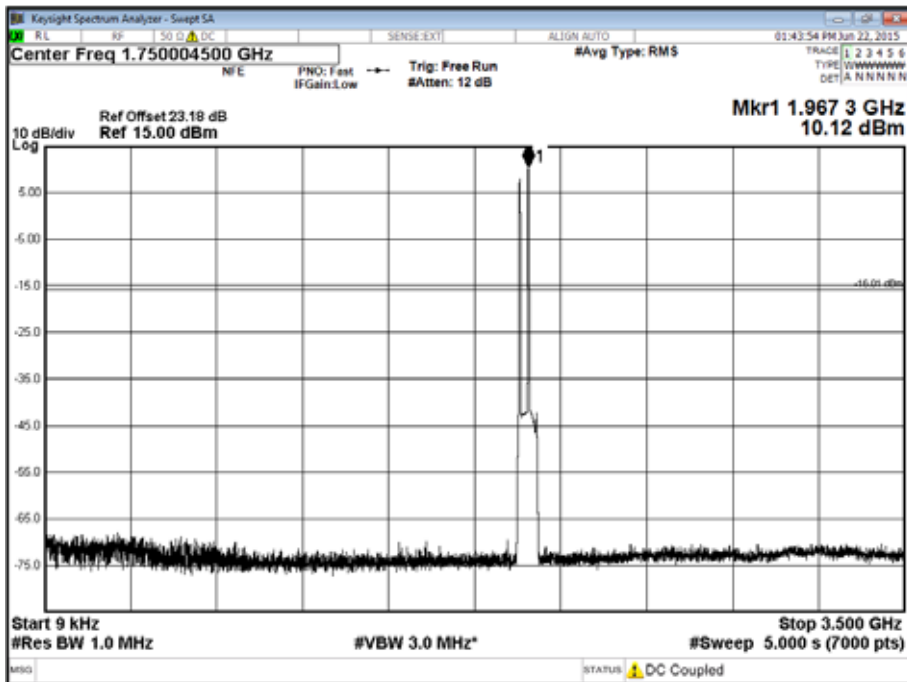
Channel Position T - Bandwidth 5.0 MHz - Antenna A



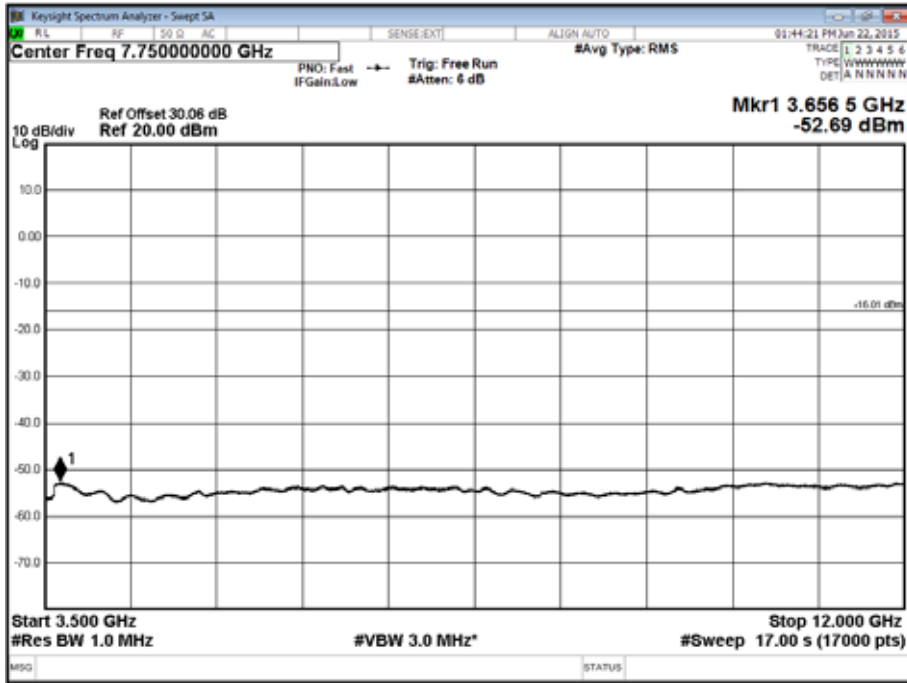
Configuration 2 WCDMA MC, Antenna B (See table 1)

Maximum Output Power 17 dBm

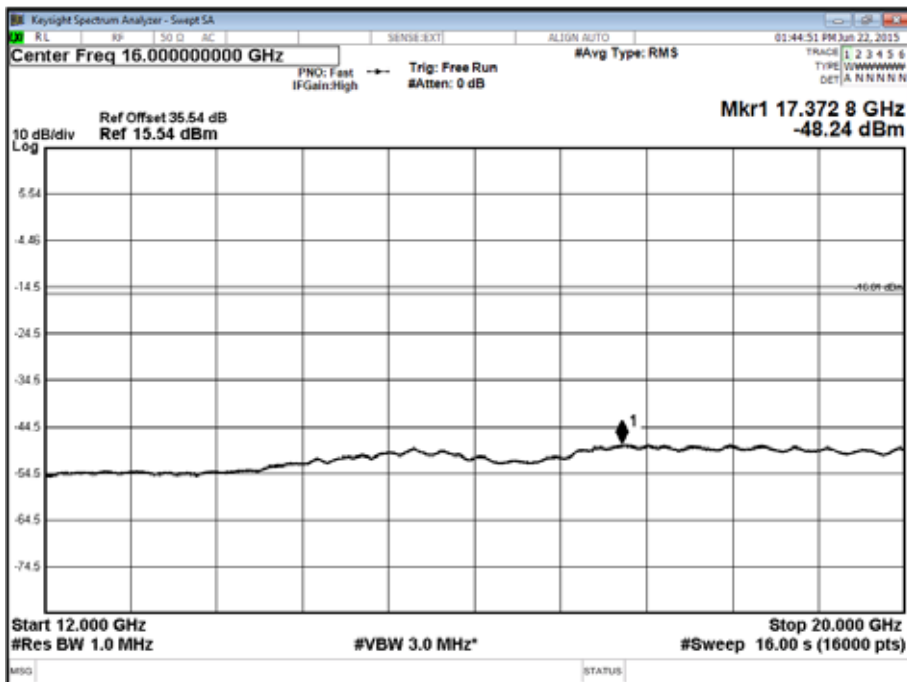
Channel Position B - Bandwidth 5.0 MHz - Antenna B



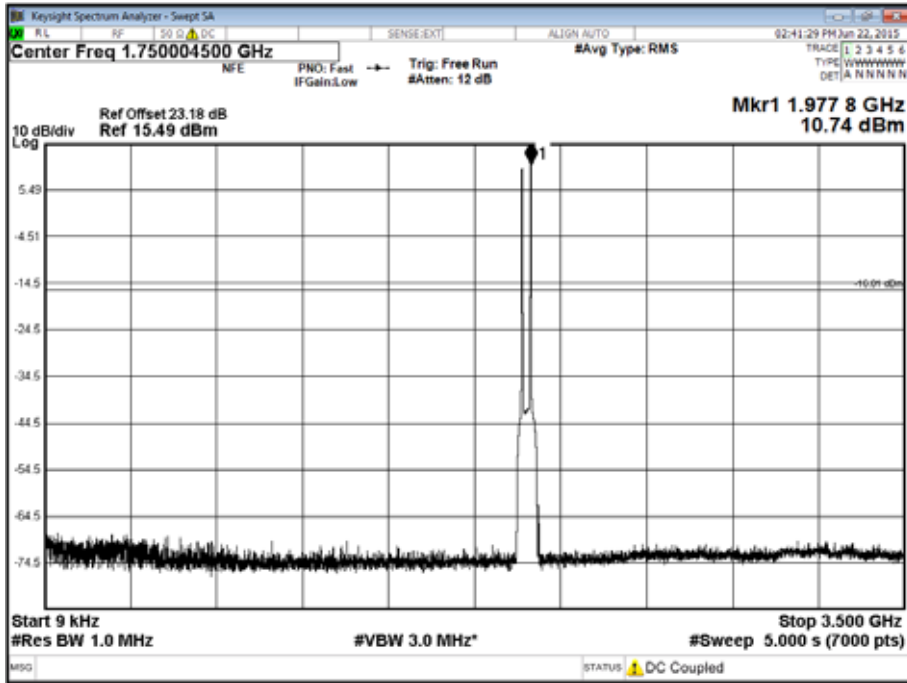
Channel Position B - Bandwidth 5.0 MHz - Antenna B



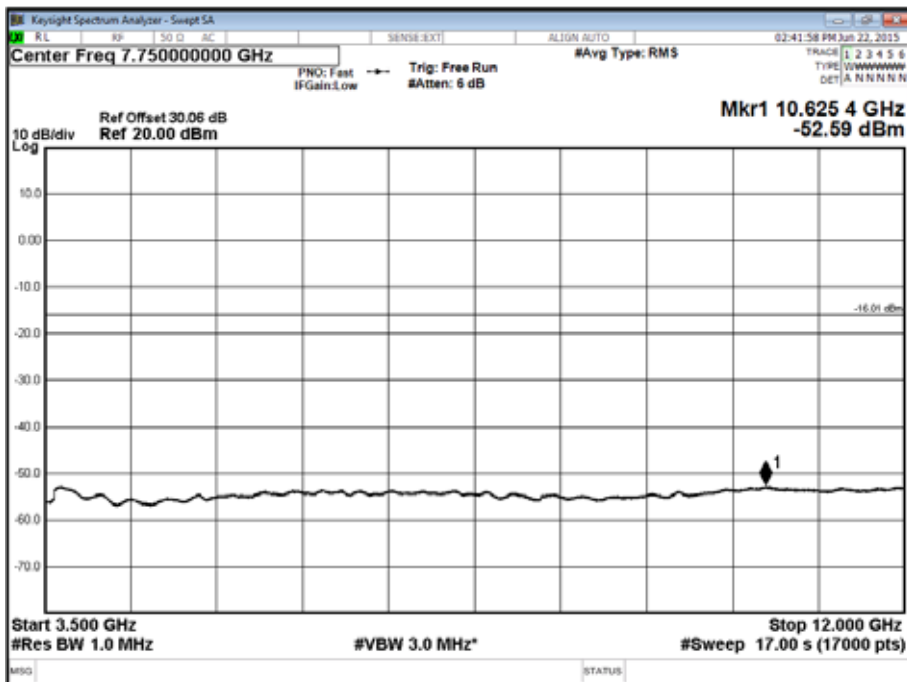
Channel Position B - Bandwidth 5.0 MHz - Antenna B



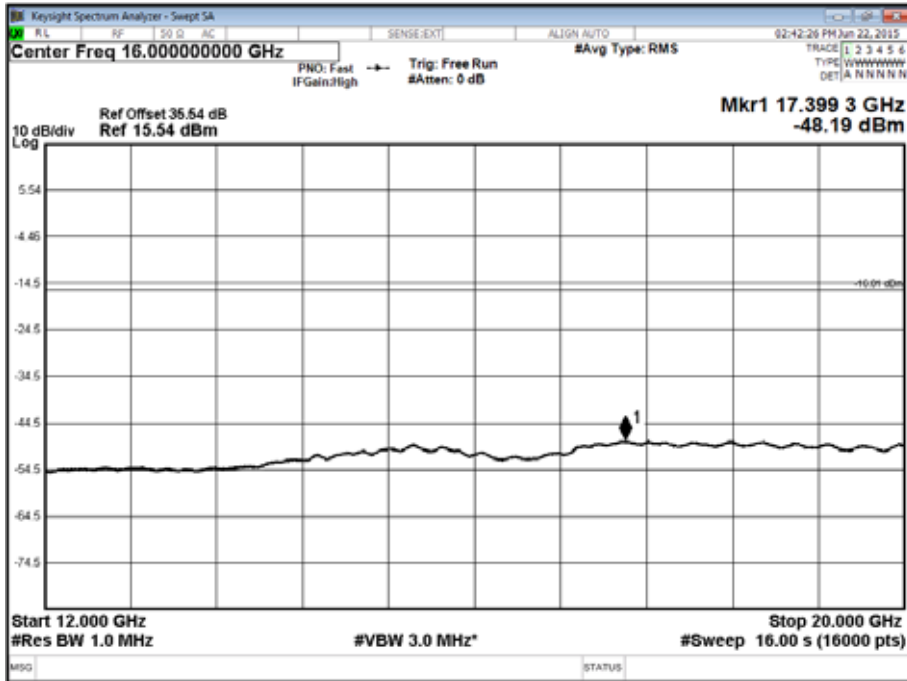
Channel Position M - Bandwidth 5.0 MHz - Antenna B



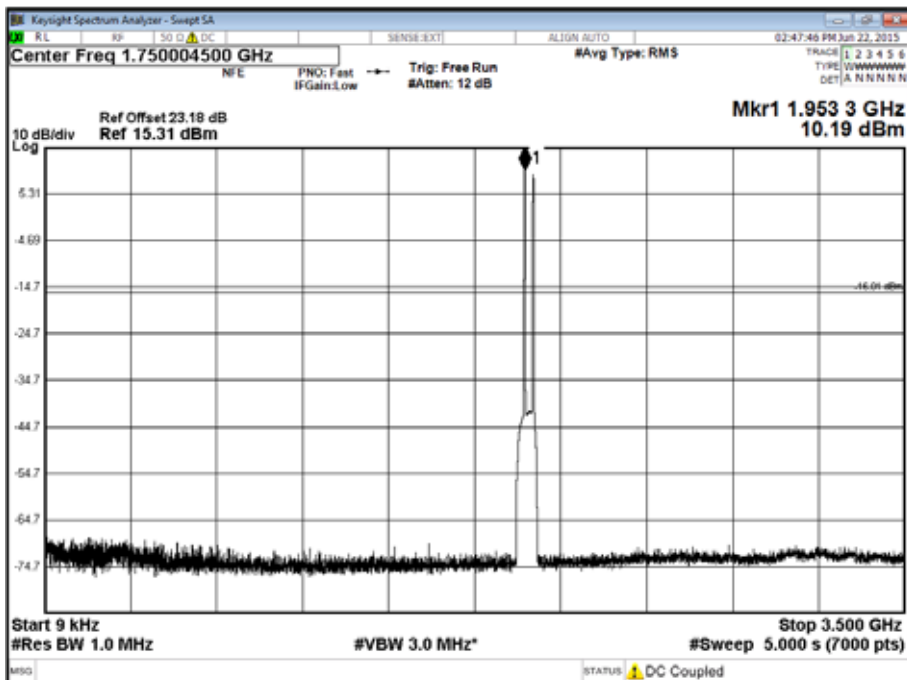
Channel Position M - Bandwidth 5.0 MHz - Antenna B



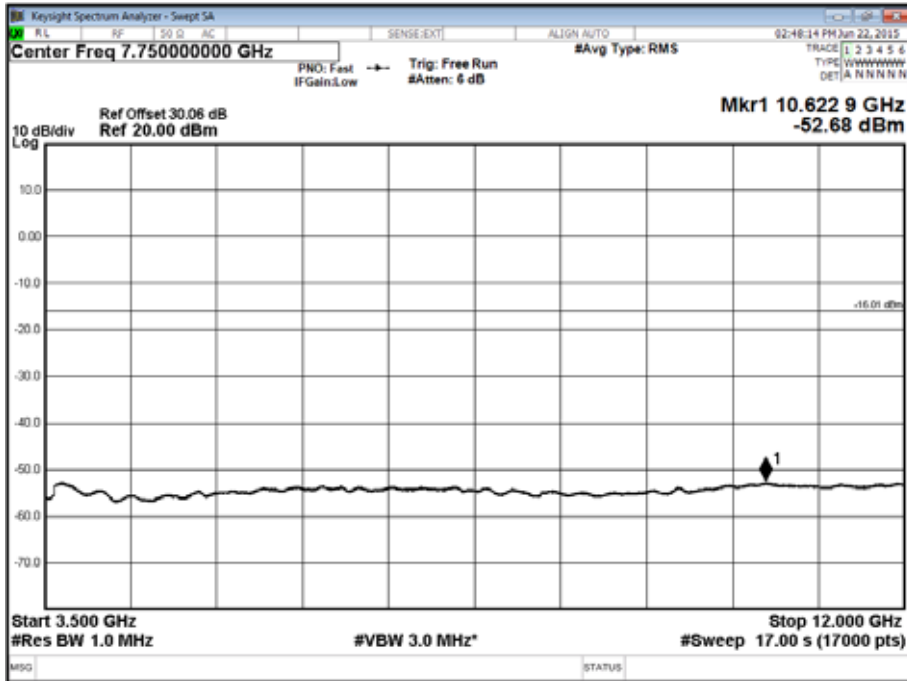
Channel Position M - Bandwidth 5.0 MHz - Antenna B



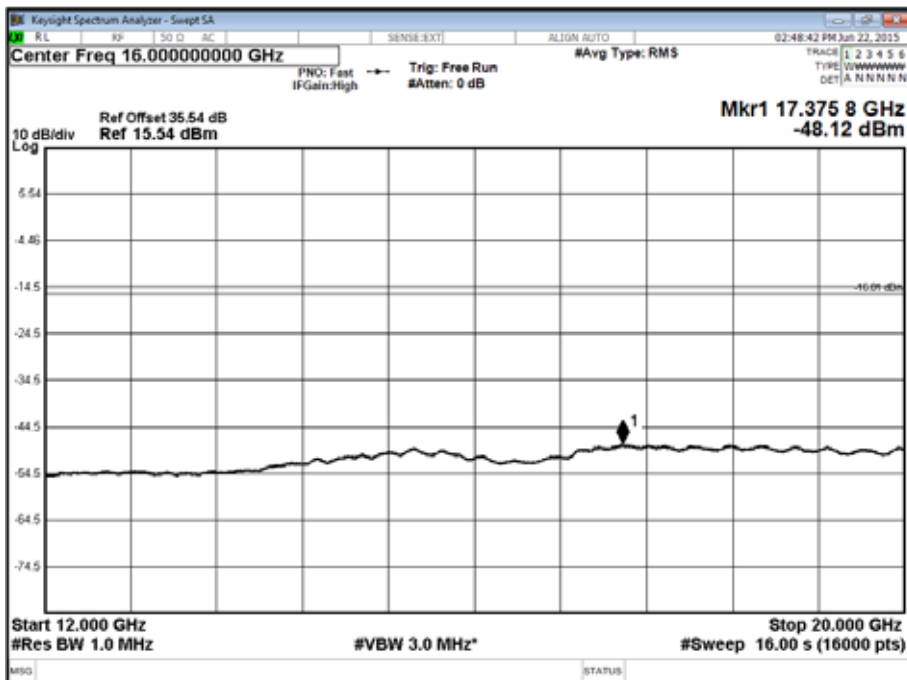
Channel Position T - Bandwidth 5.0 MHz - Antenna B



Channel Position T - Bandwidth 5.0 MHz - Antenna B



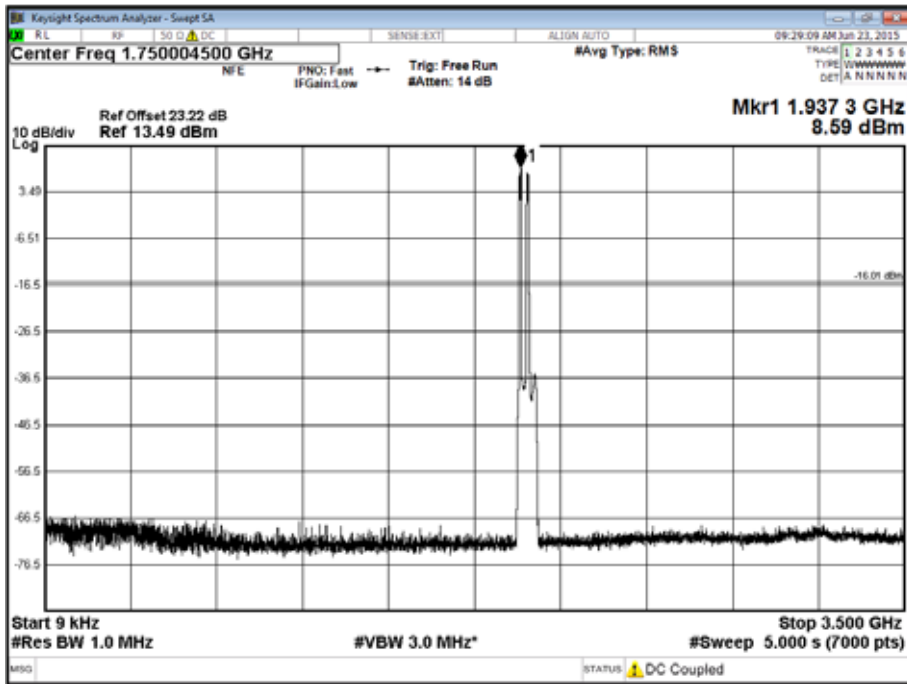
Channel Position T - Bandwidth 5.0 MHz - Antenna B



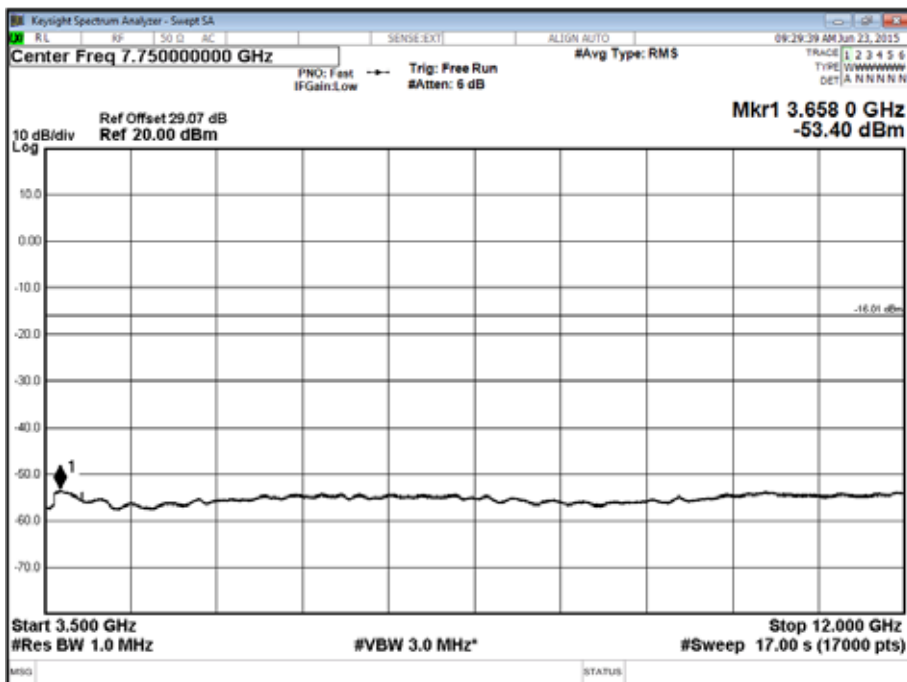
Configuration 3 WCDMA MC, Antenna A (See table 1)

Maximum Output Power 17 dBm

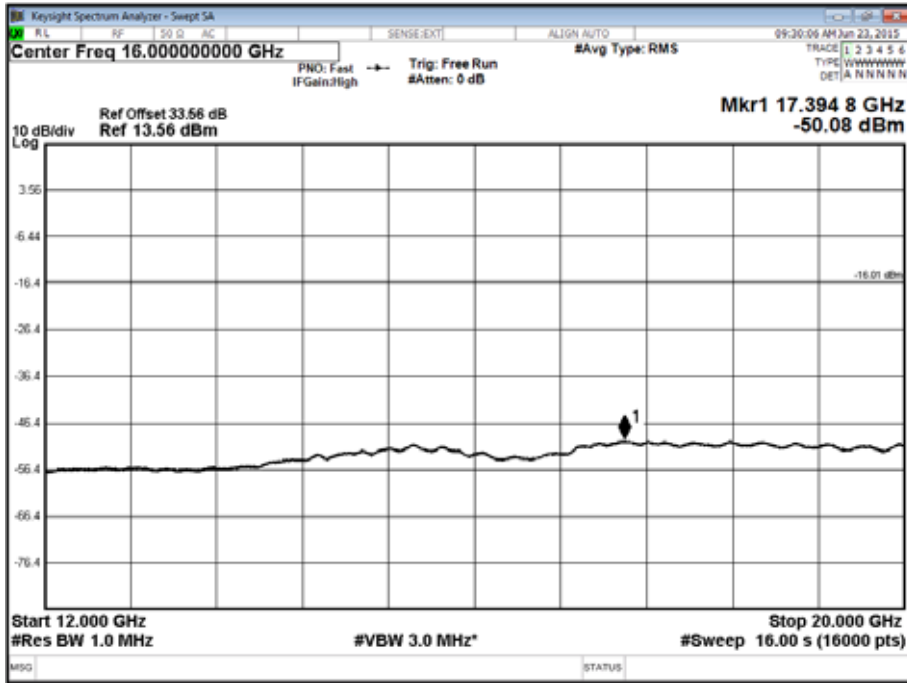
Channel Position B - Bandwidth 5.0 MHz - Antenna A



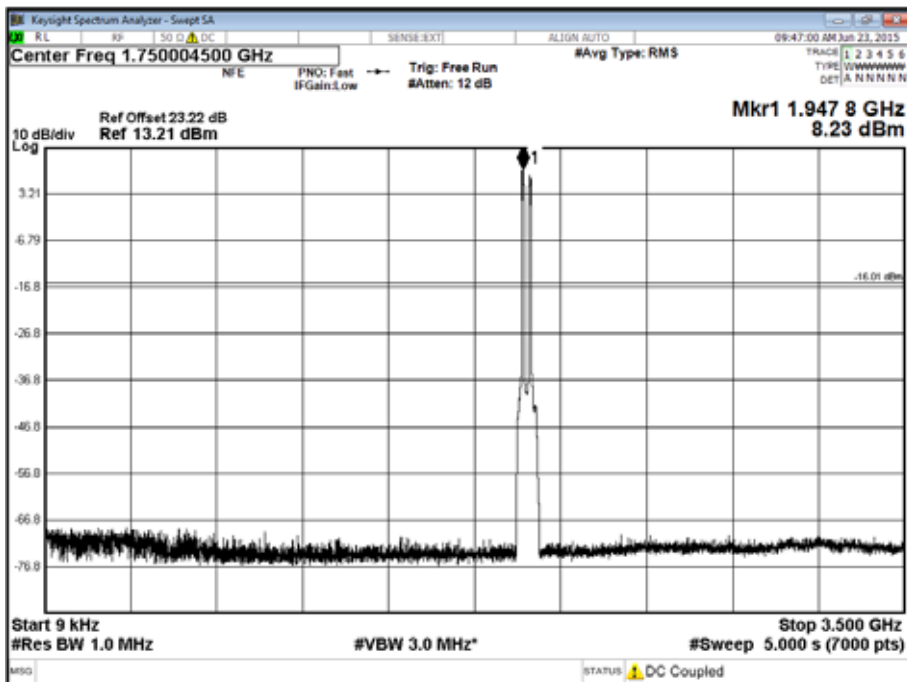
Channel Position B - Bandwidth 5.0 MHz - Antenna A



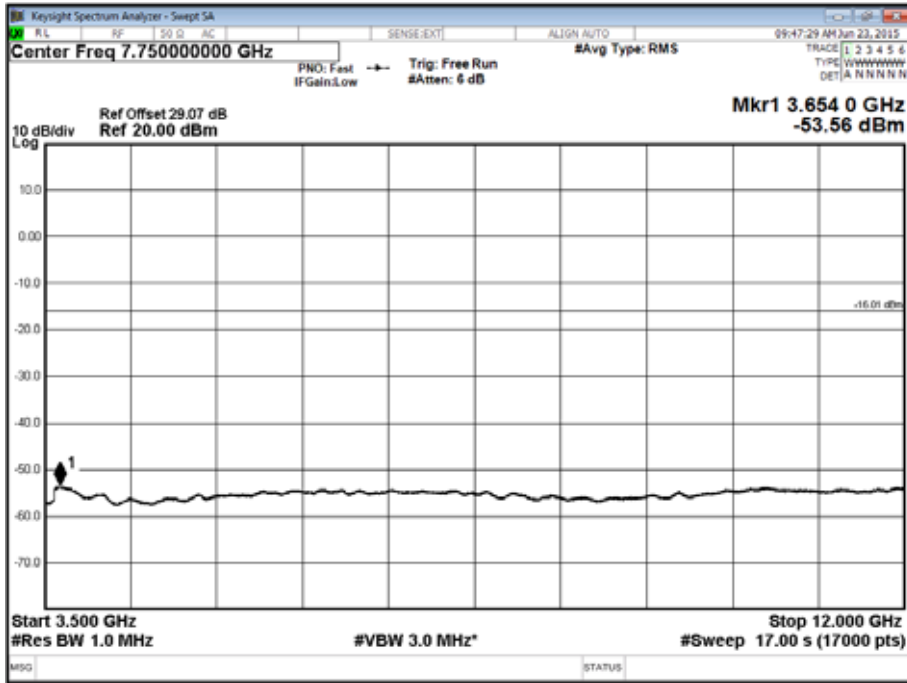
Channel Position B - Bandwidth 5.0 MHz - Antenna A



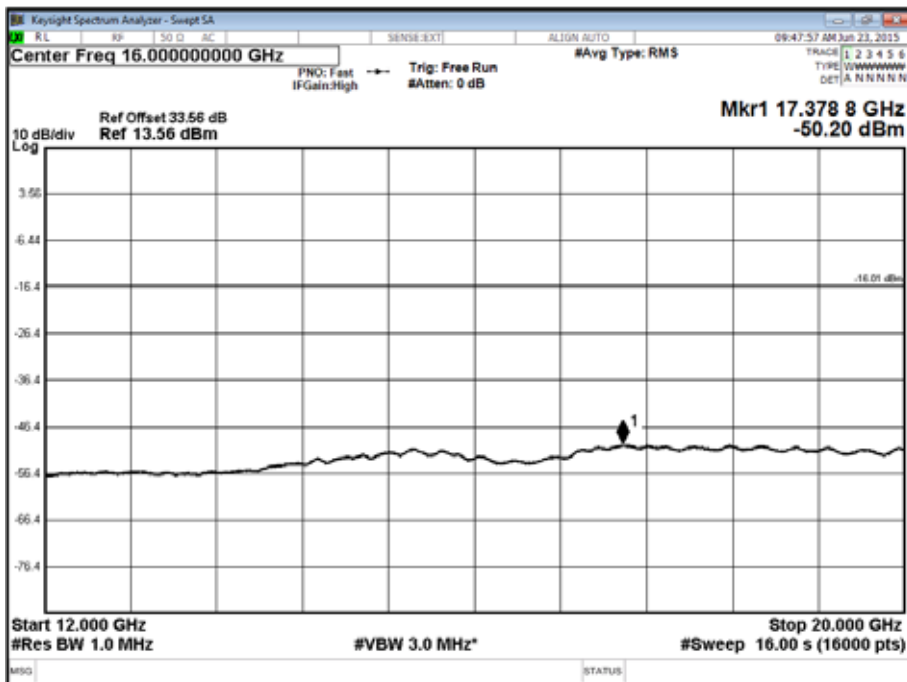
Channel Position M - Bandwidth 5.0 MHz - Antenna A



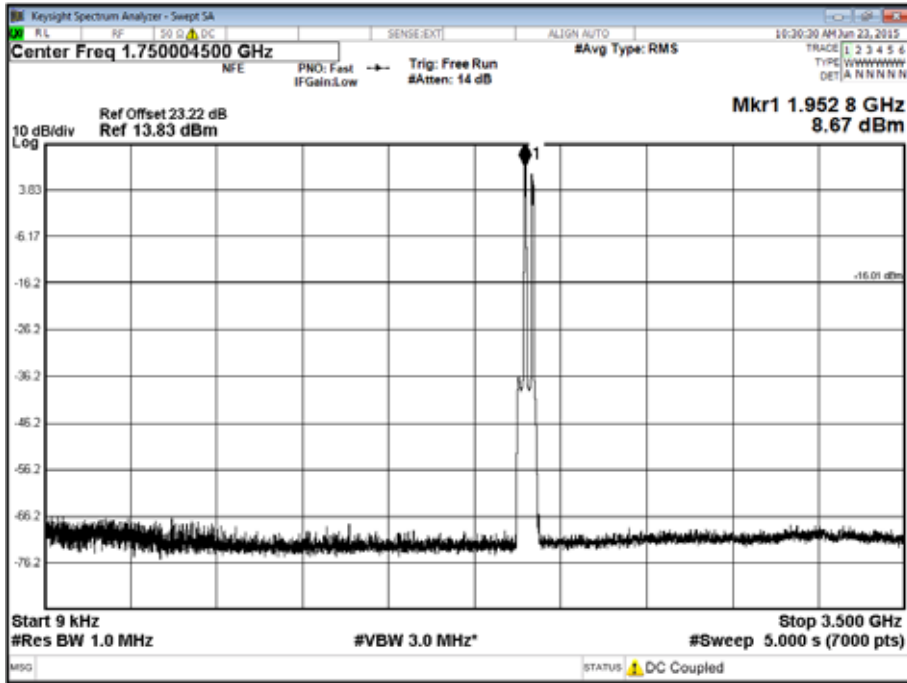
Channel Position M - Bandwidth 5.0 MHz - Antenna A



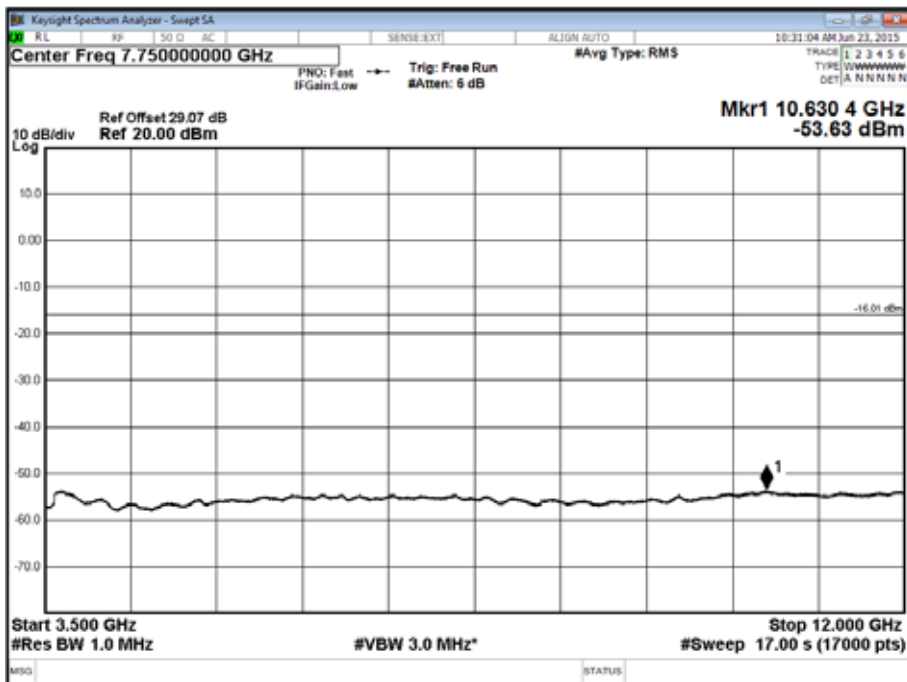
Channel Position M - Bandwidth 5.0 MHz - Antenna A



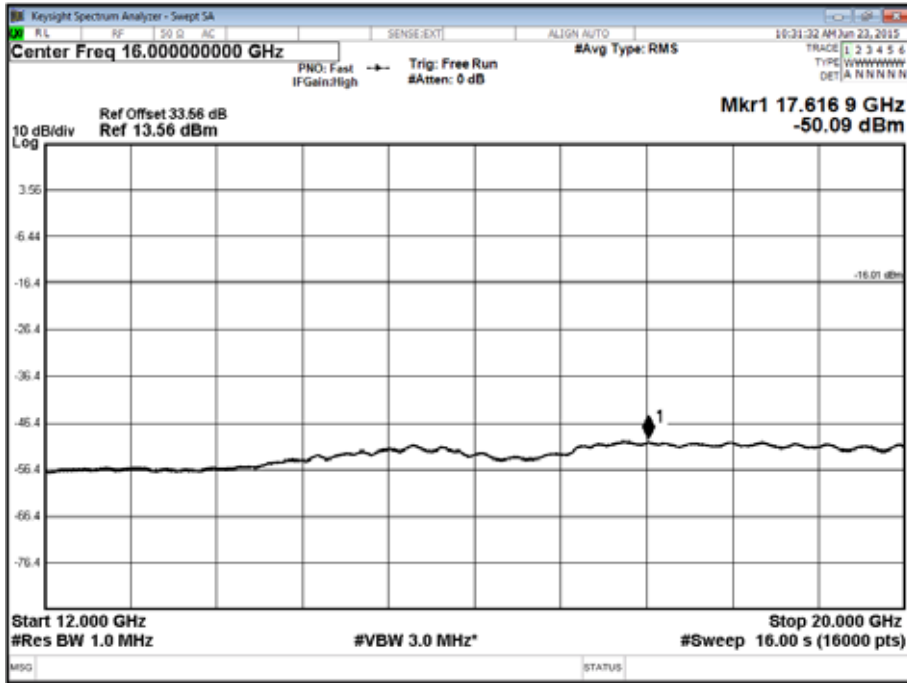
Channel Position T - Bandwidth 5.0 MHz - Antenna A



Channel Position T - Bandwidth 5.0 MHz - Antenna A



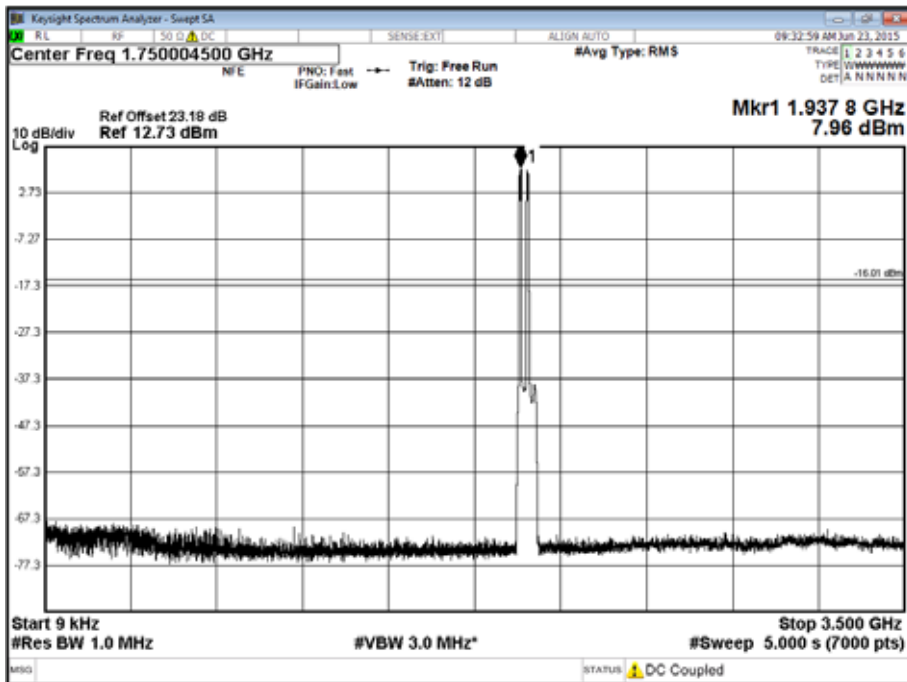
Channel Position T - Bandwidth 5.0 MHz - Antenna A



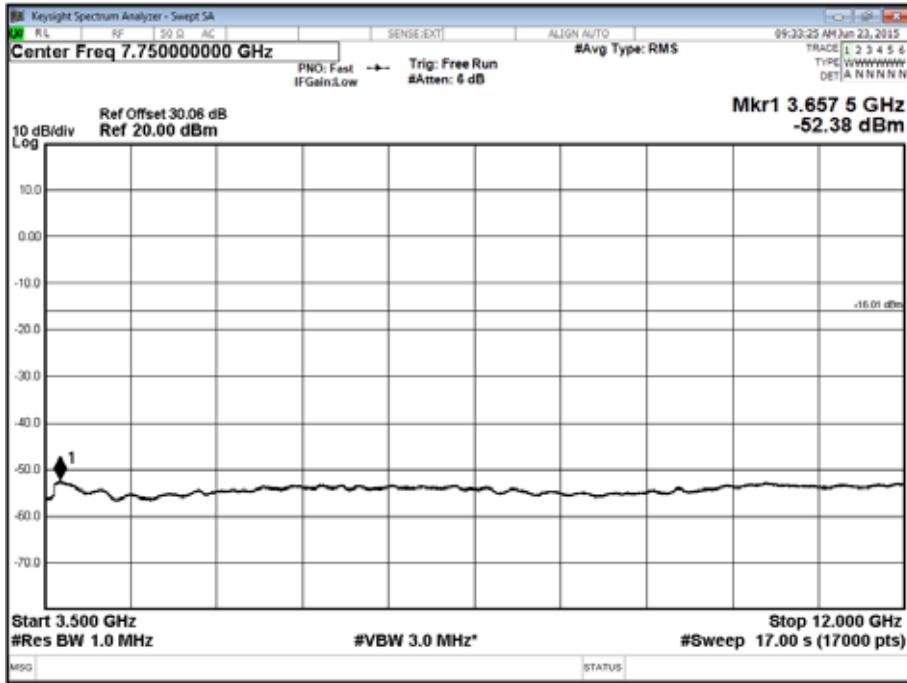
Configuration 3 WCDMA MC, Antenna B (See table 1)

Maximum Output Power 17 dBm

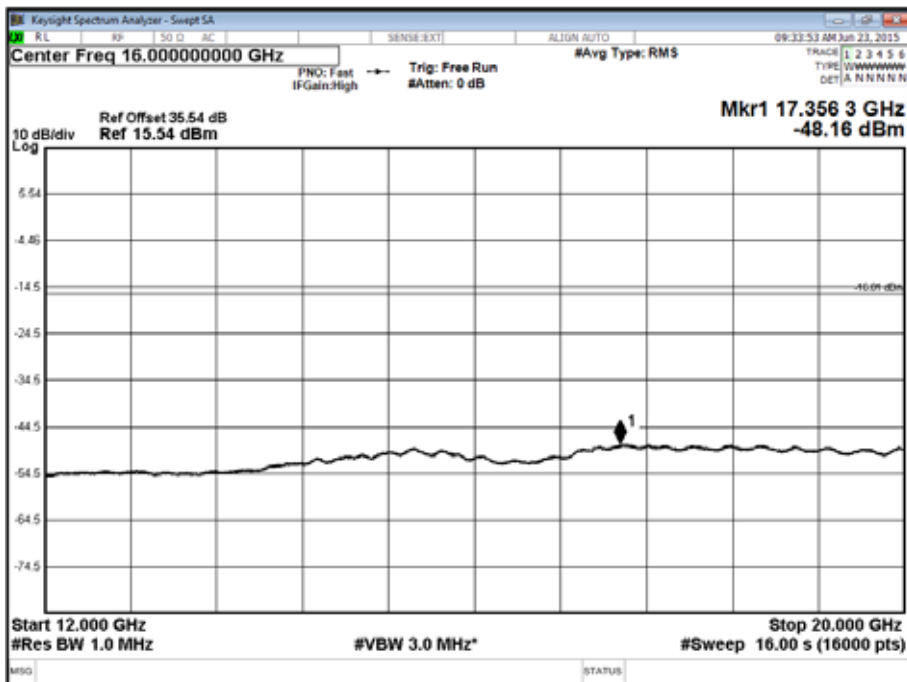
Channel Position B - Bandwidth 5.0 MHz - Antenna B



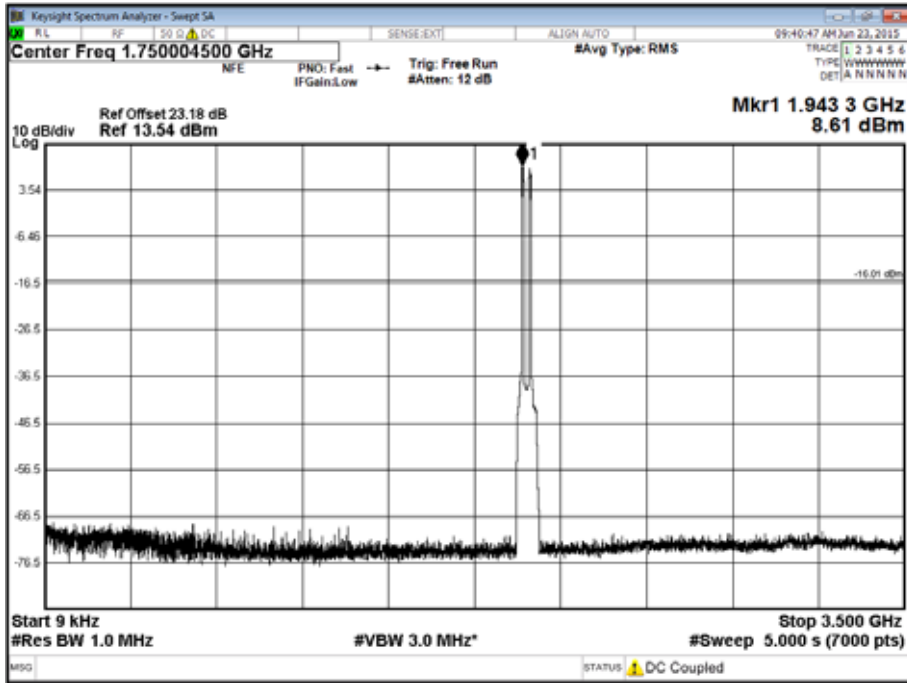
Channel Position B - Bandwidth 5.0 MHz - Antenna B



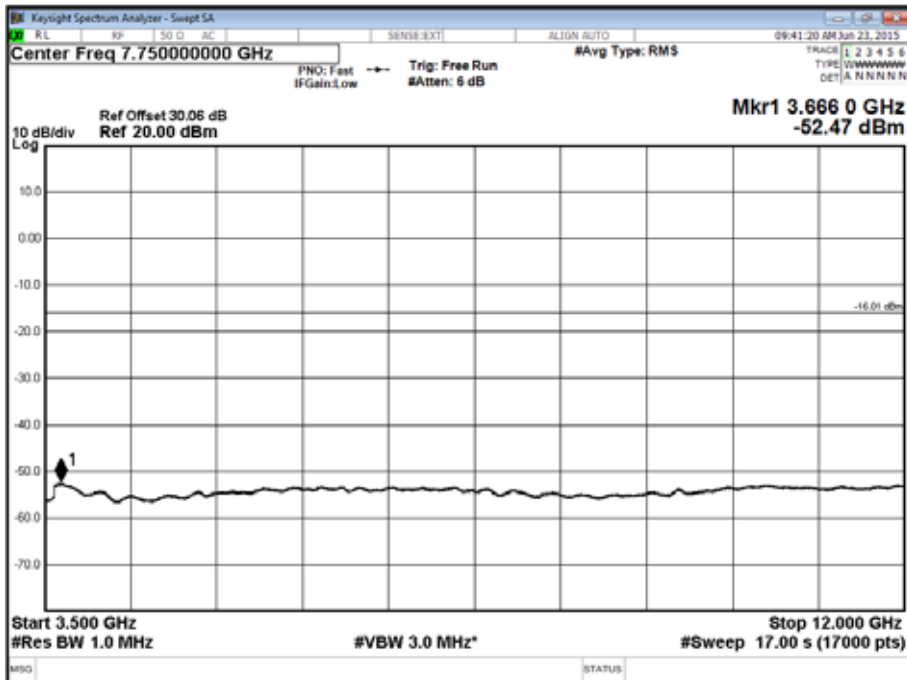
Channel Position B - Bandwidth 5.0 MHz - Antenna B



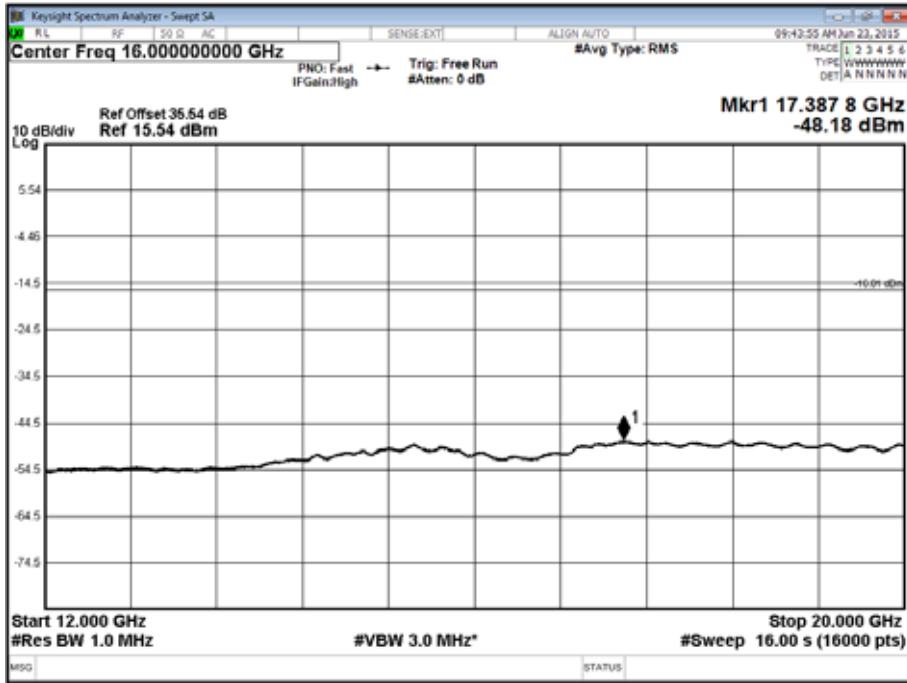
Channel Position M - Bandwidth 5.0 MHz - Antenna B



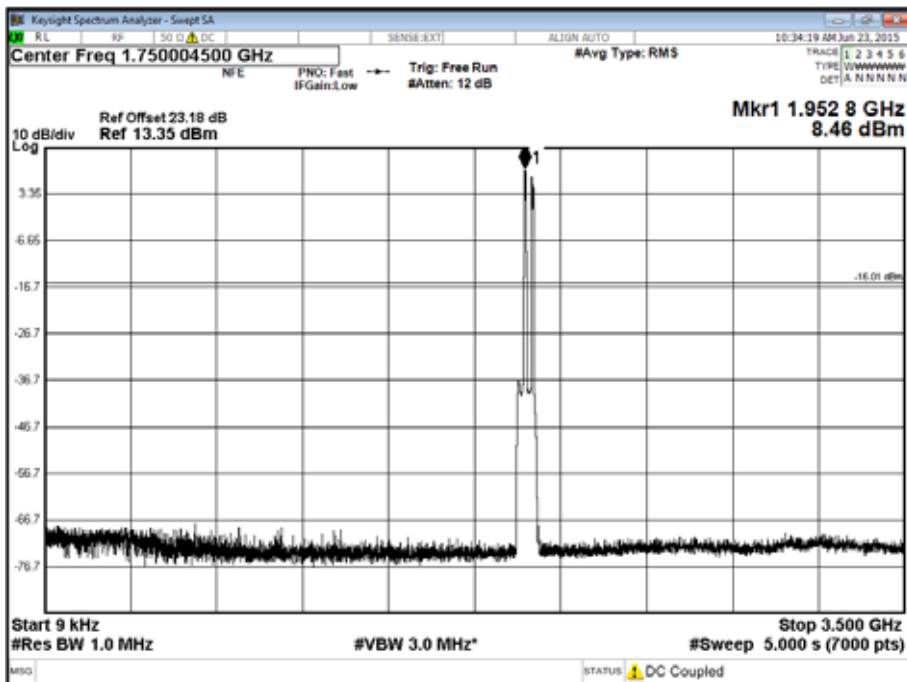
Channel Position M - Bandwidth 5.0 MHz - Antenna B



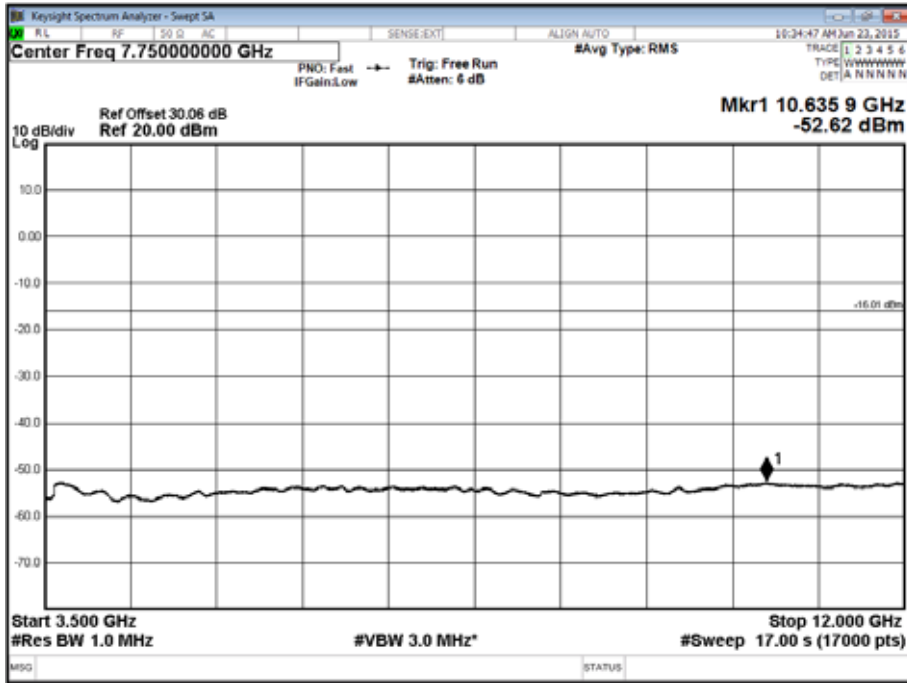
Channel Position M - Bandwidth 5.0 MHz - Antenna B



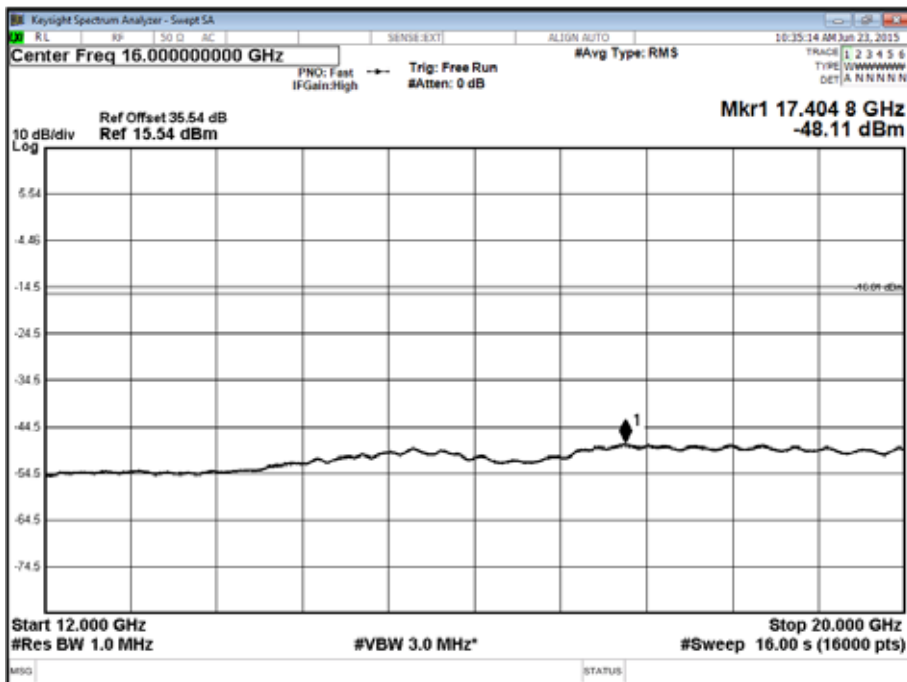
Channel Position T - Bandwidth 5.0 MHz - Antenna B



Channel Position T - Bandwidth 5.0 MHz - Antenna B



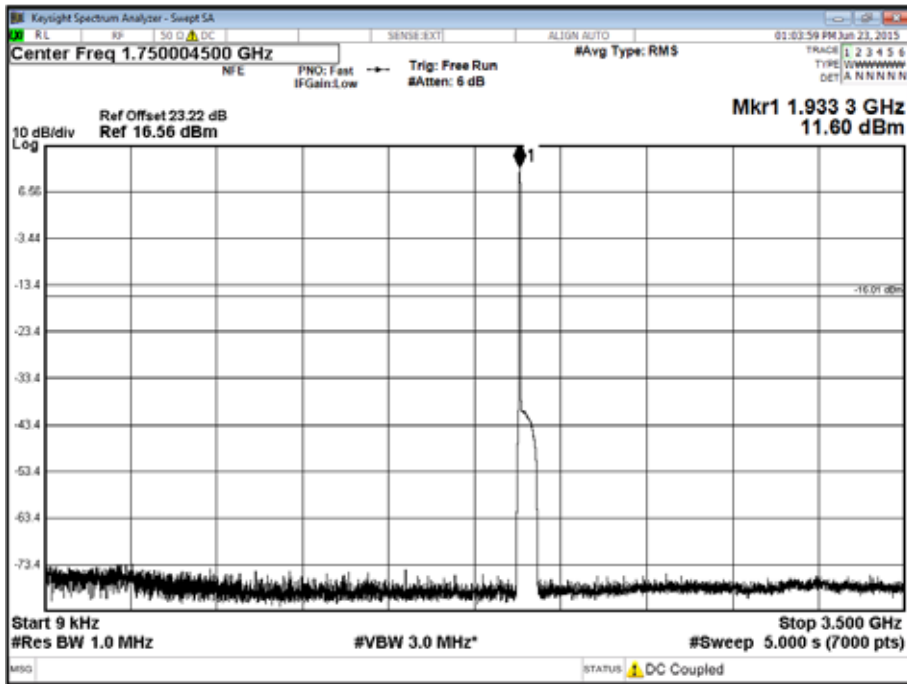
Channel Position T - Bandwidth 5.0 MHz - Antenna B



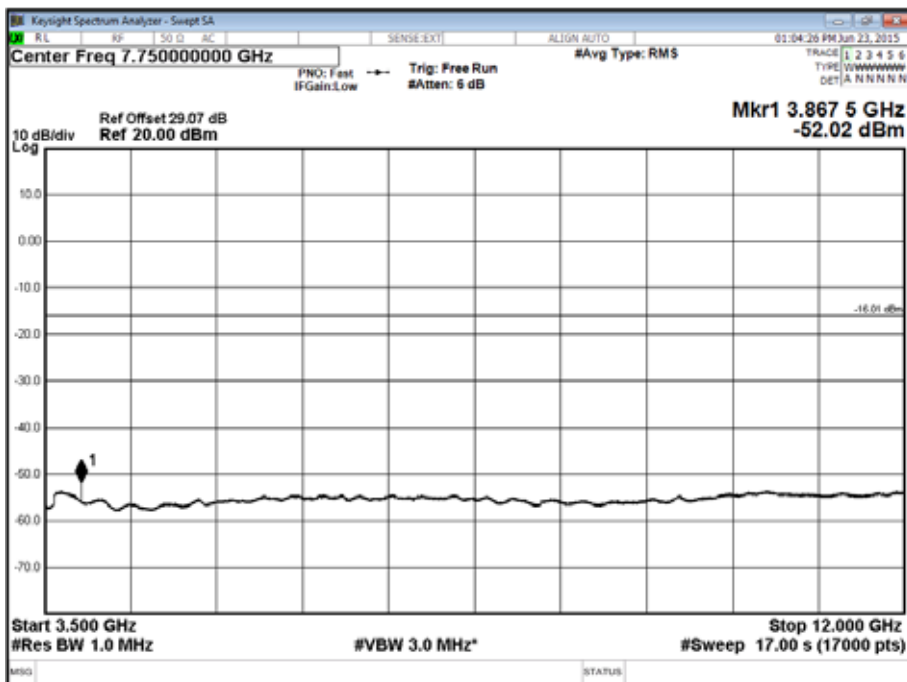
Configuration 4 LTE SC, Antenna A (See table 3)

Maximum Output Power 17 dBm

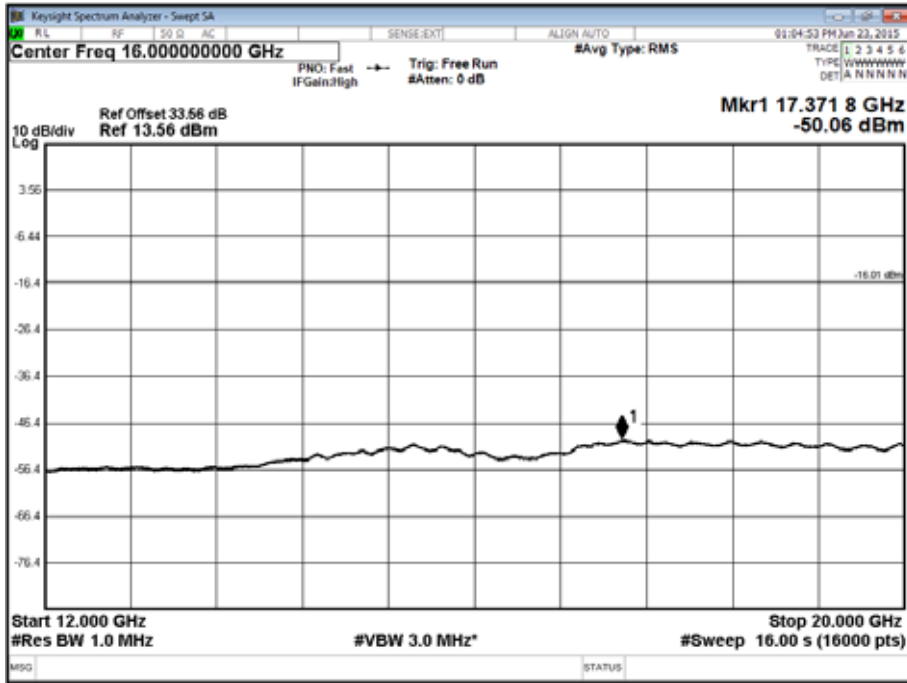
Channel Position B - Bandwidth 5.0 MHz - Antenna A



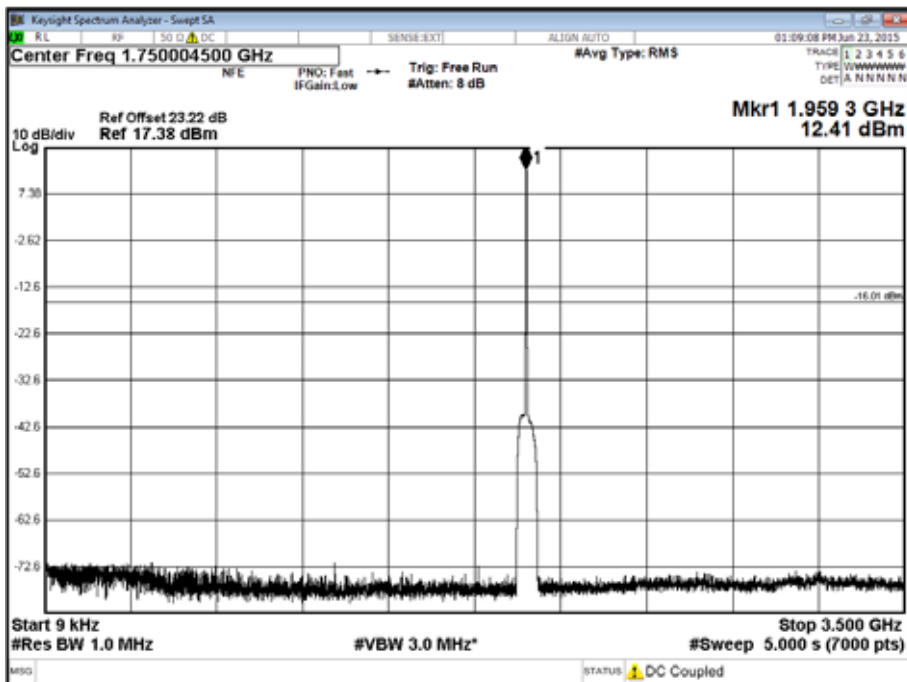
Channel Position B - Bandwidth 5.0 MHz - Antenna A



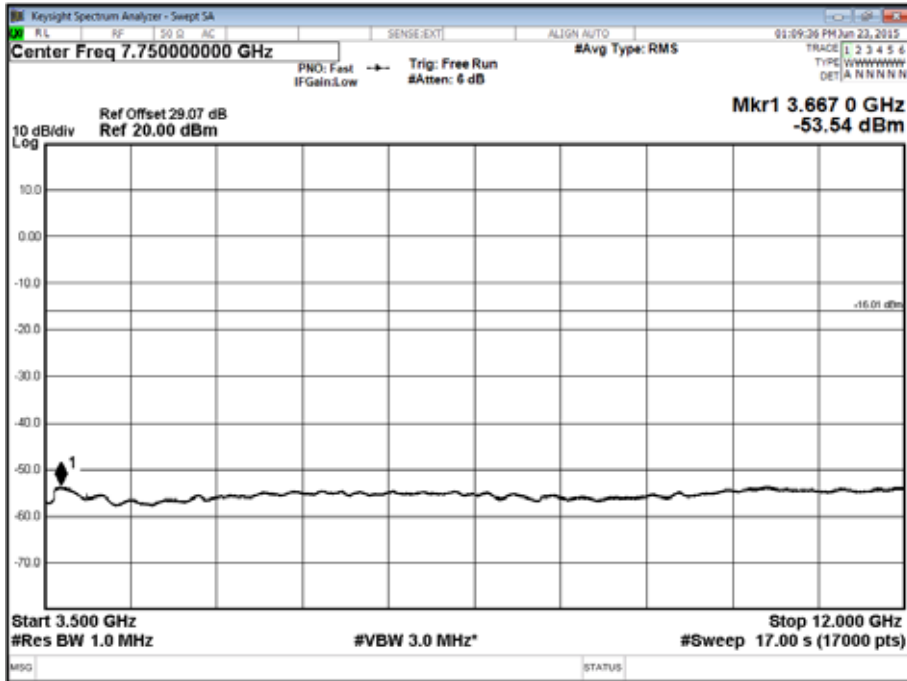
Channel Position B - Bandwidth 5.0 MHz - Antenna A



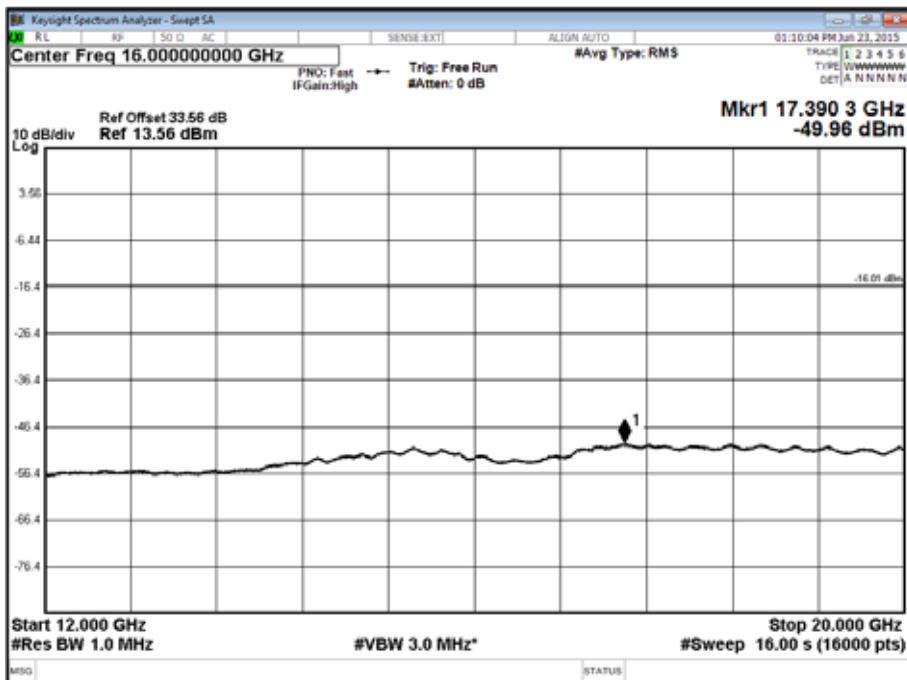
Channel Position M - Bandwidth 5.0 MHz - Antenna A



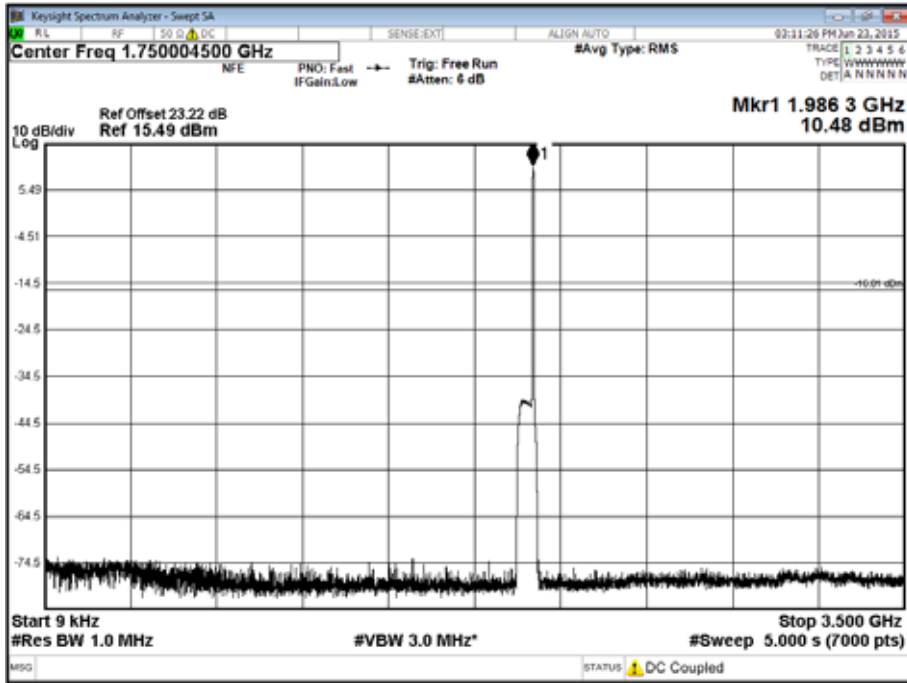
Channel Position M - Bandwidth 5.0 MHz - Antenna A



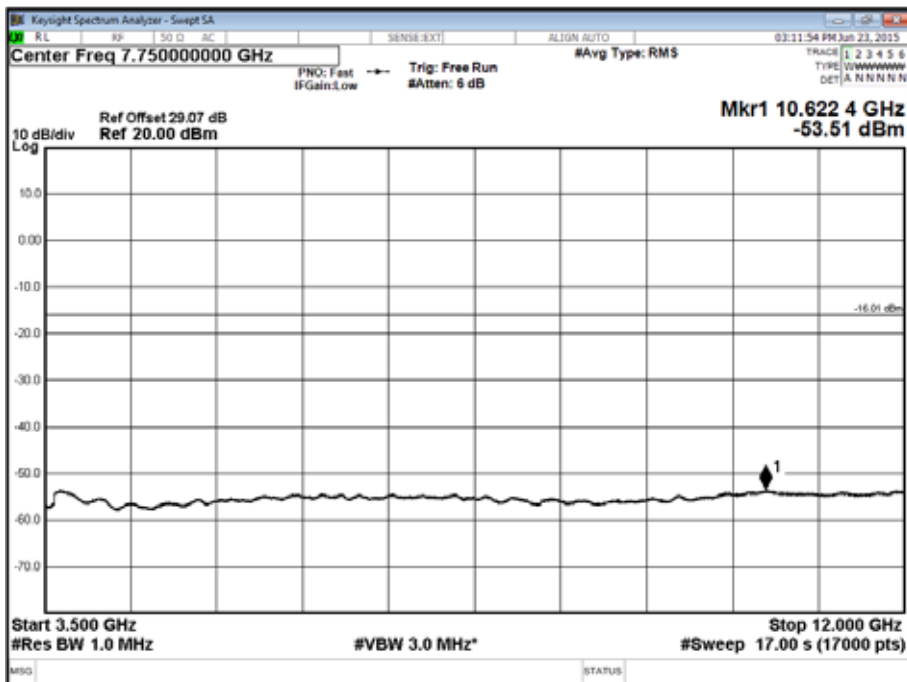
Channel Position M - Bandwidth 5.0 MHz - Antenna A



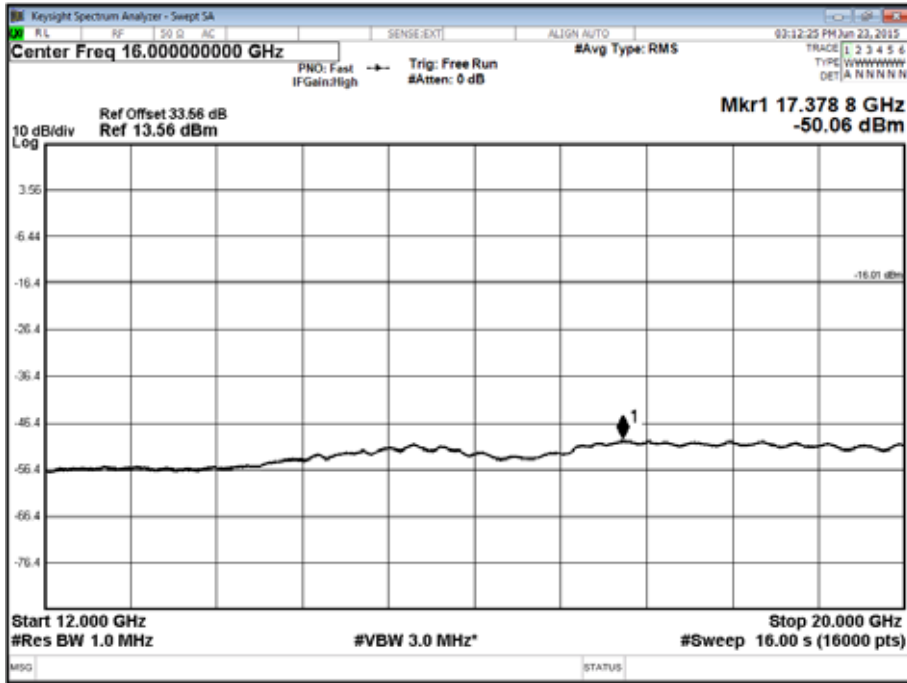
Channel Position T - Bandwidth 5.0 MHz - Antenna A



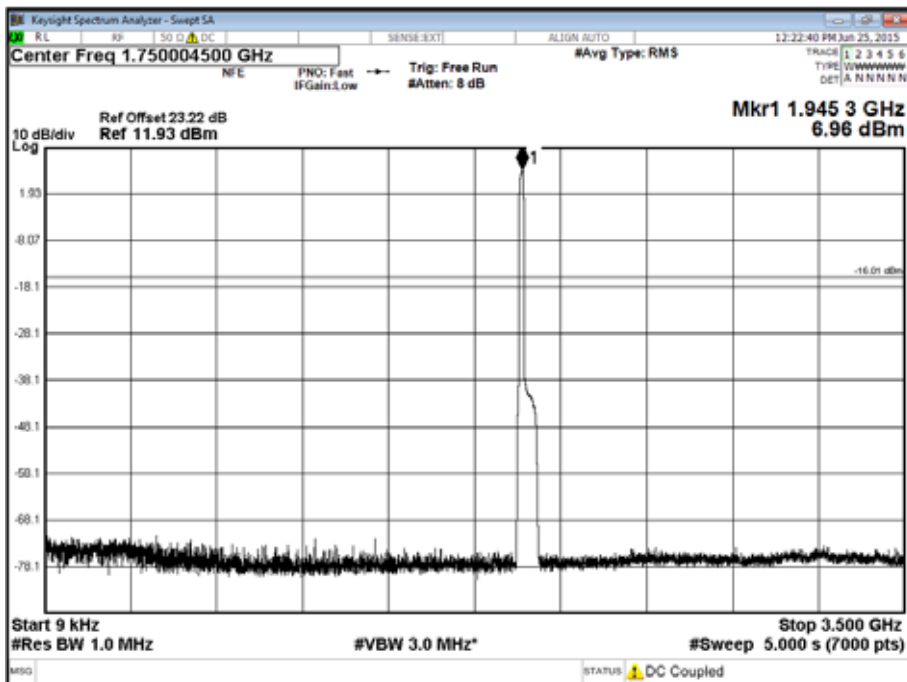
Channel Position T - Bandwidth 5.0 MHz - Antenna A



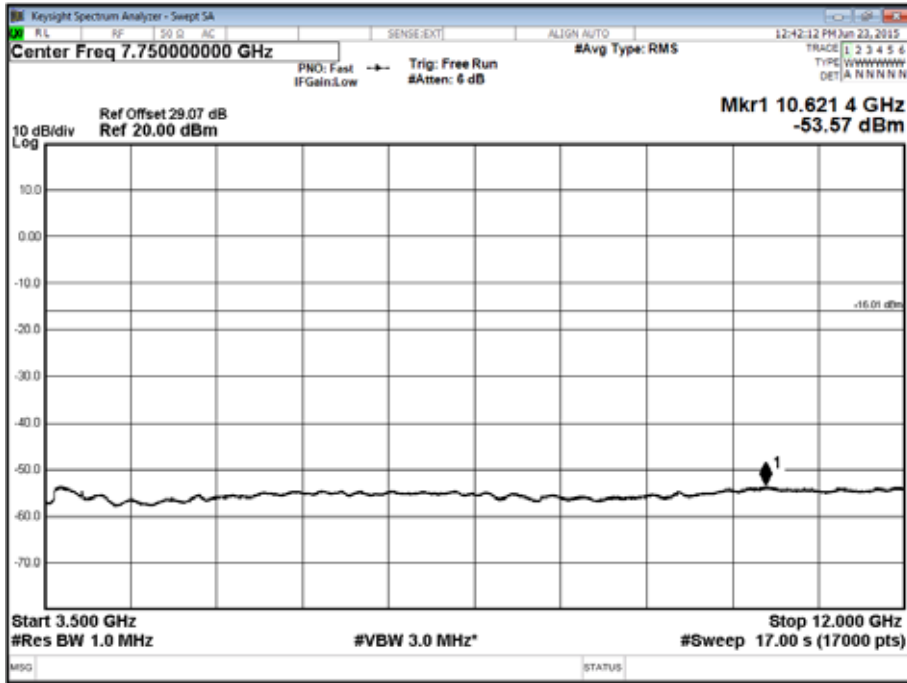
Channel Position T - Bandwidth 5.0 MHz - Antenna A



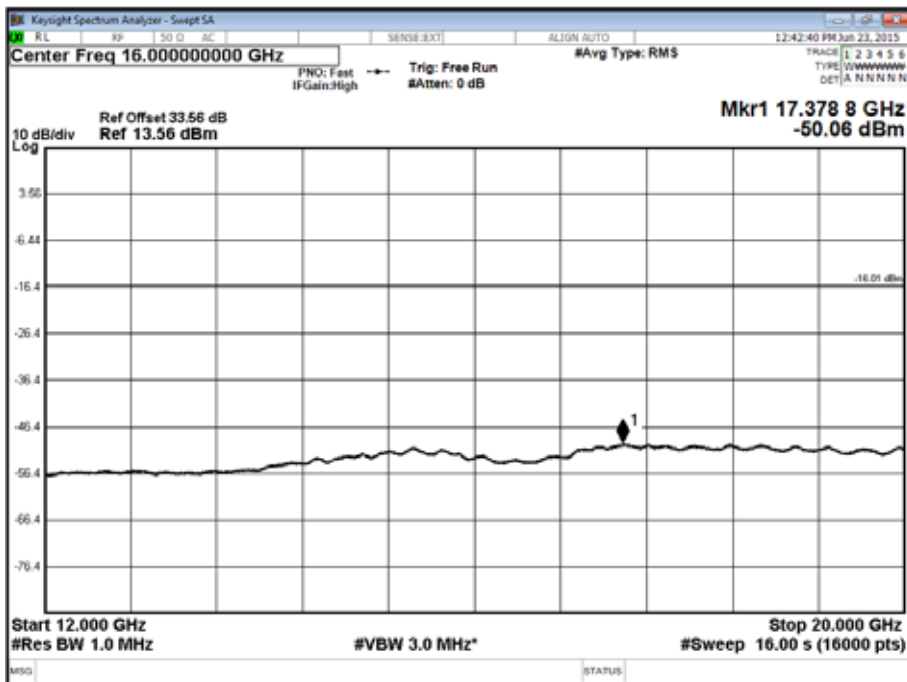
Channel Position B - Bandwidth 20.0 MHz - Antenna A



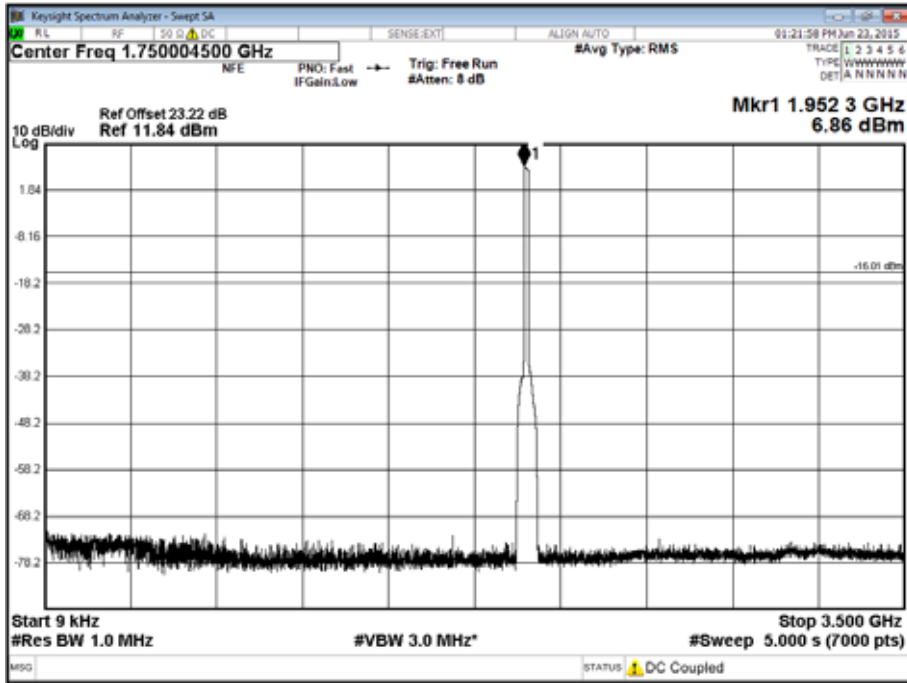
Channel Position B - Bandwidth 20.0 MHz - Antenna A



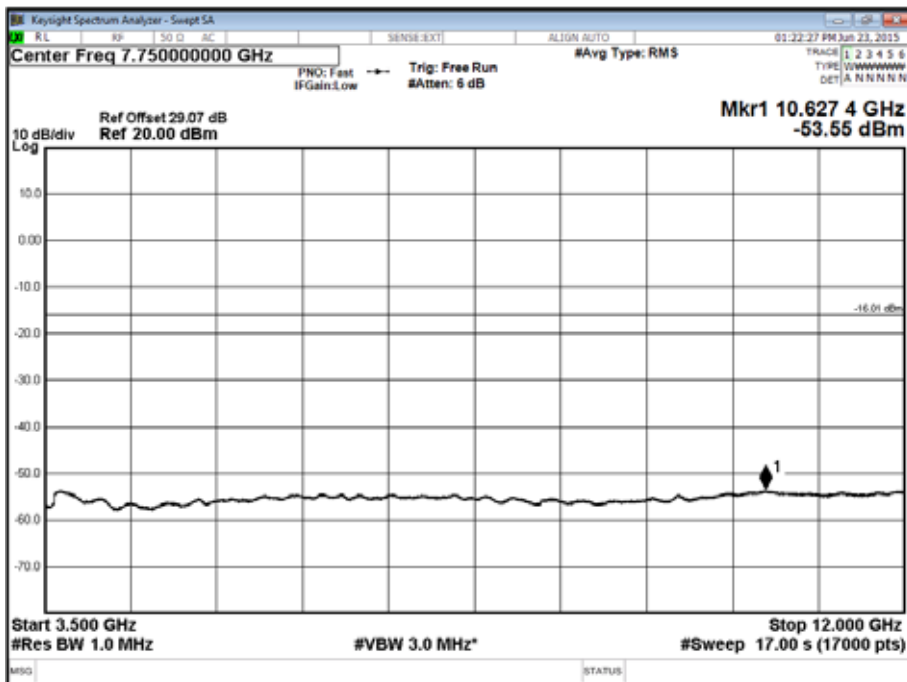
Channel Position B - Bandwidth 20.0 MHz - Antenna A



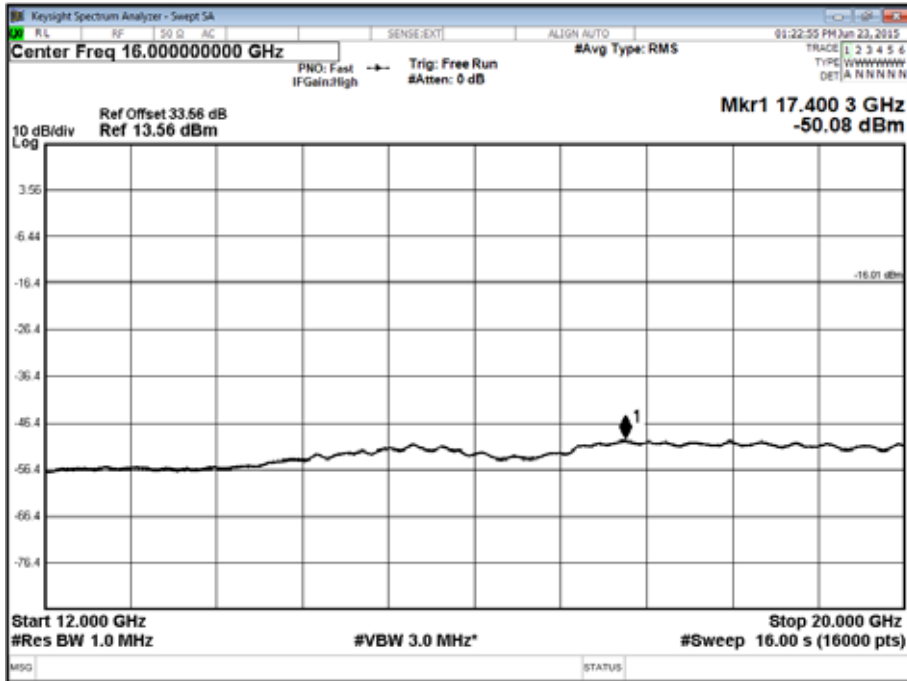
Channel Position M - Bandwidth 20.0 MHz - Antenna A



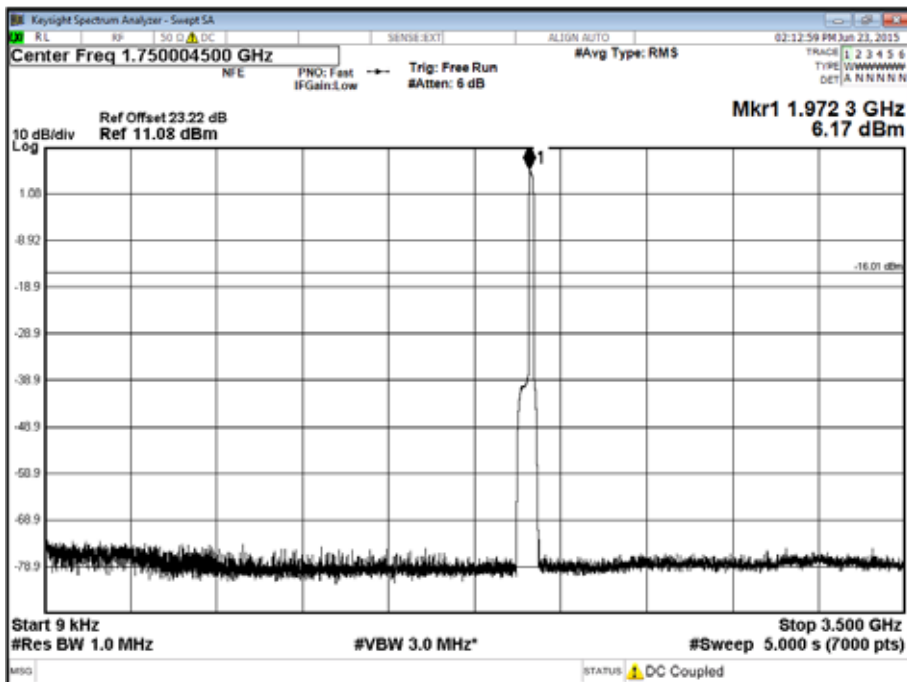
Channel Position M - Bandwidth 20.0 MHz - Antenna A



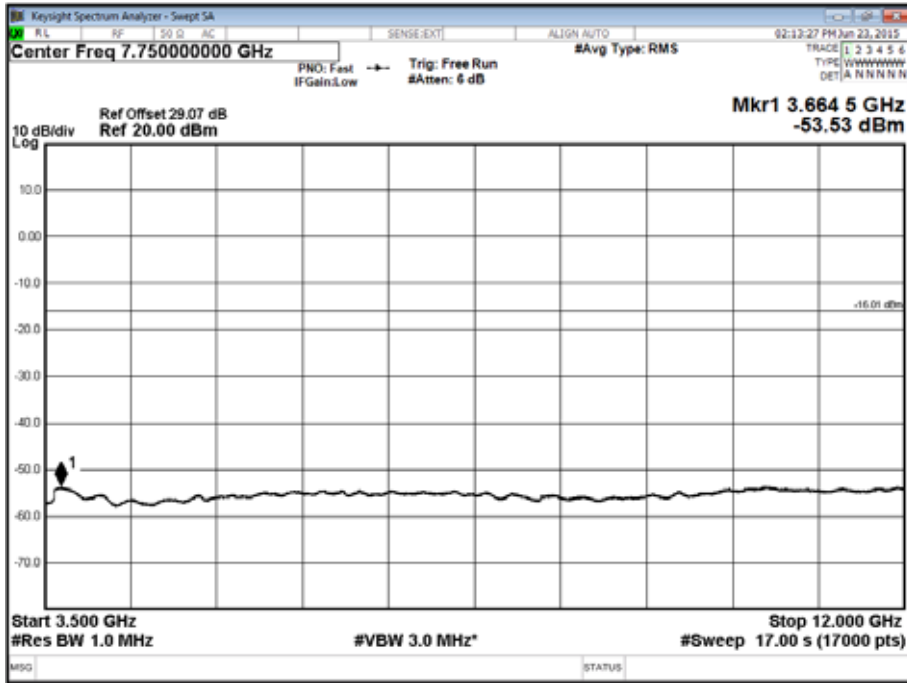
Channel Position M - Bandwidth 20.0 MHz - Antenna A



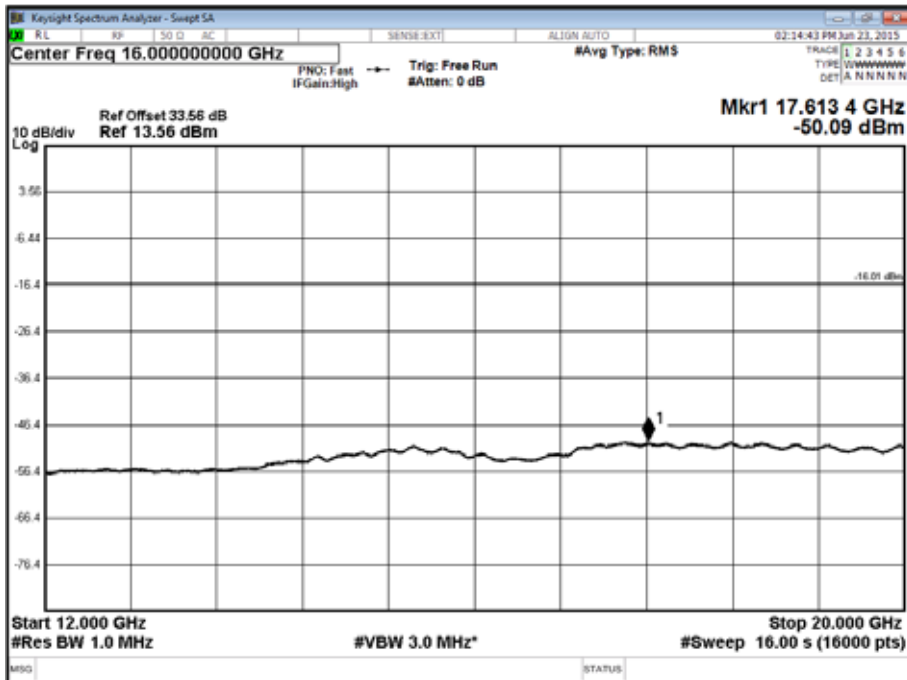
Channel Position T - Bandwidth 20.0 MHz - Antenna A



Channel Position T - Bandwidth 20.0 MHz - Antenna A



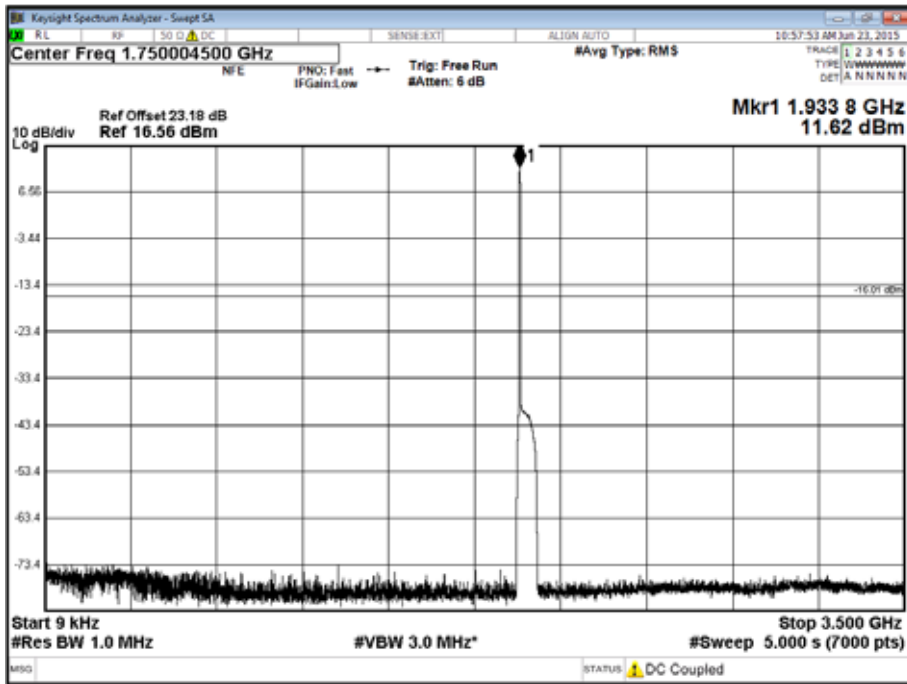
Channel Position T - Bandwidth 20.0 MHz - Antenna A



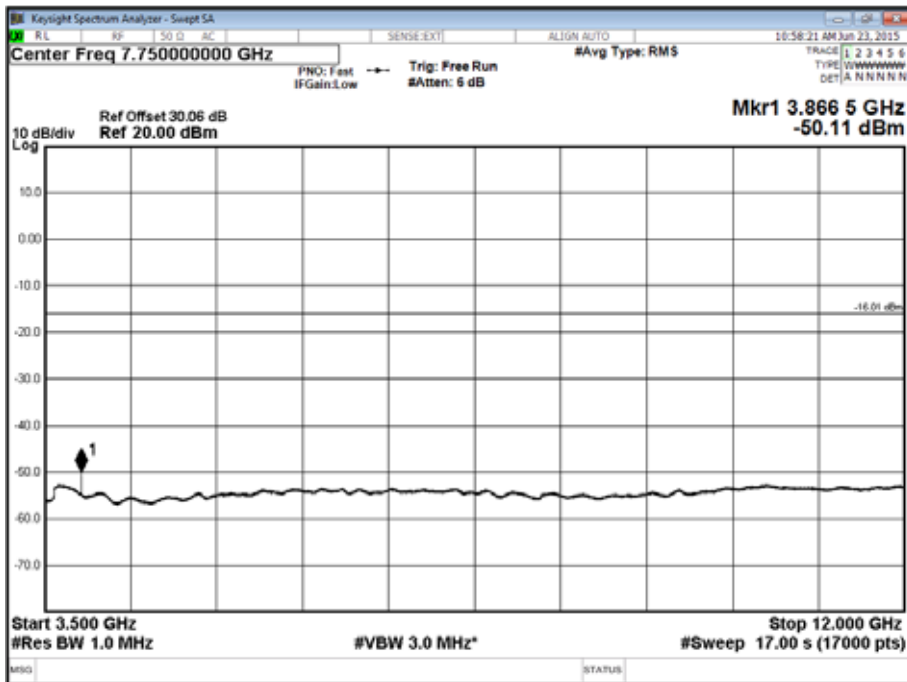
Configuration 4 LTE SC, Antenna B (See table 3)

Maximum Output Power 17 dBm

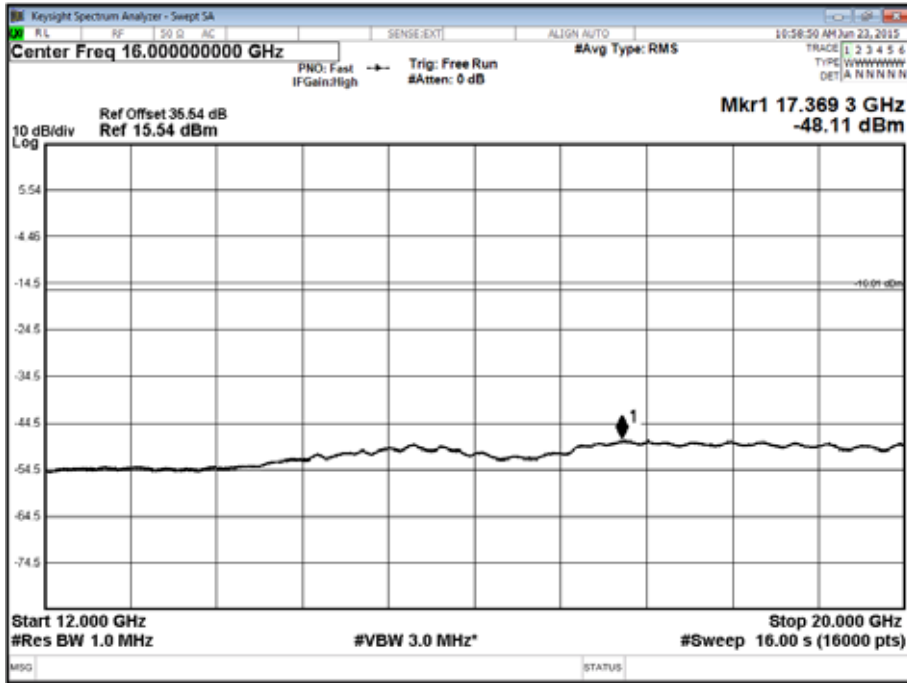
Channel Position B - Bandwidth 5.0 MHz - Antenna B



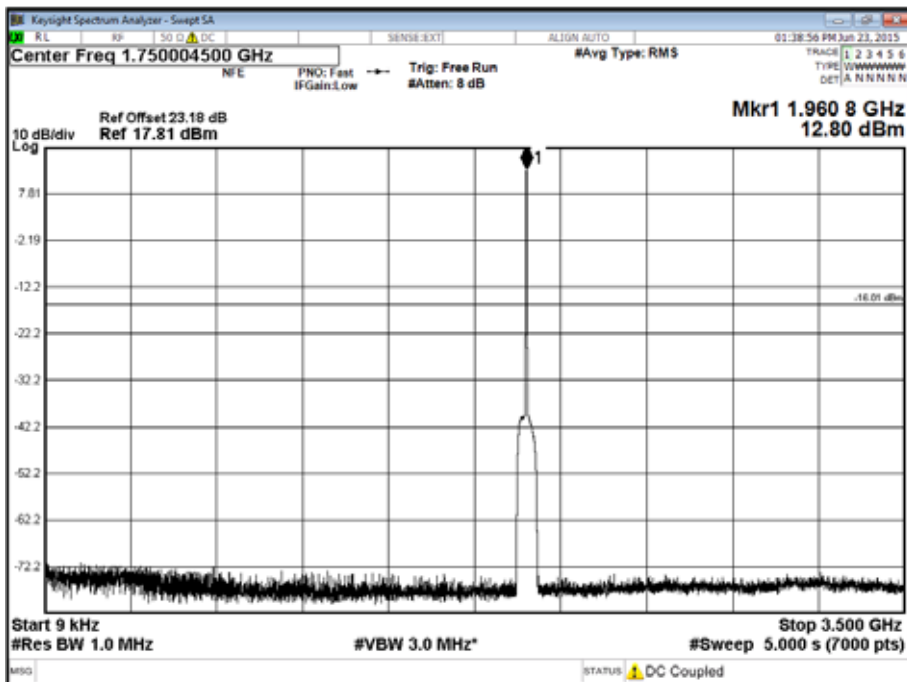
Channel Position B - Bandwidth 5.0 MHz - Antenna B



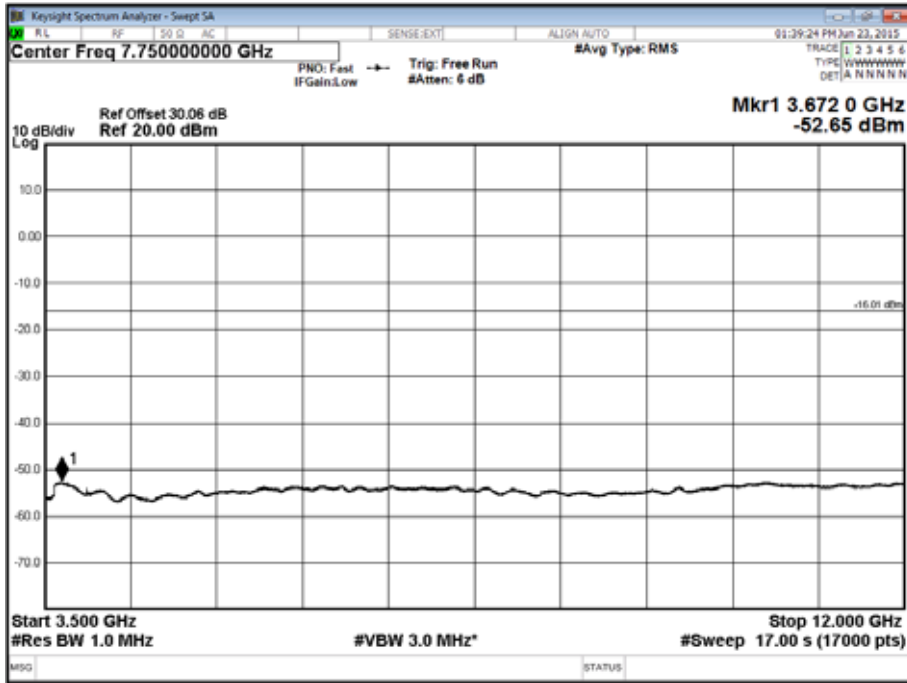
Channel Position B - Bandwidth 5.0 MHz - Antenna B



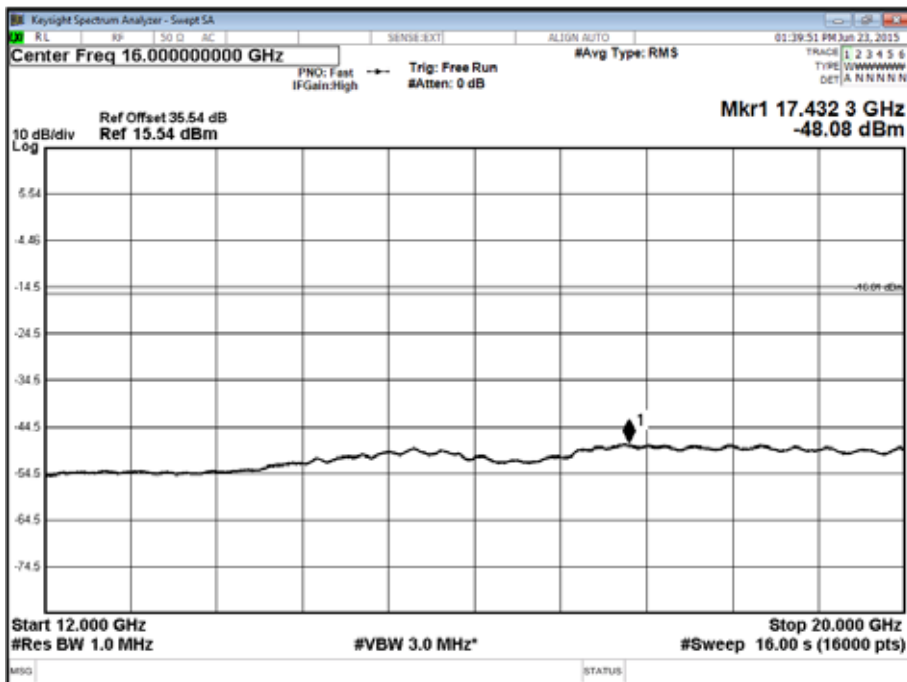
Channel Position M - Bandwidth 5.0 MHz - Antenna B



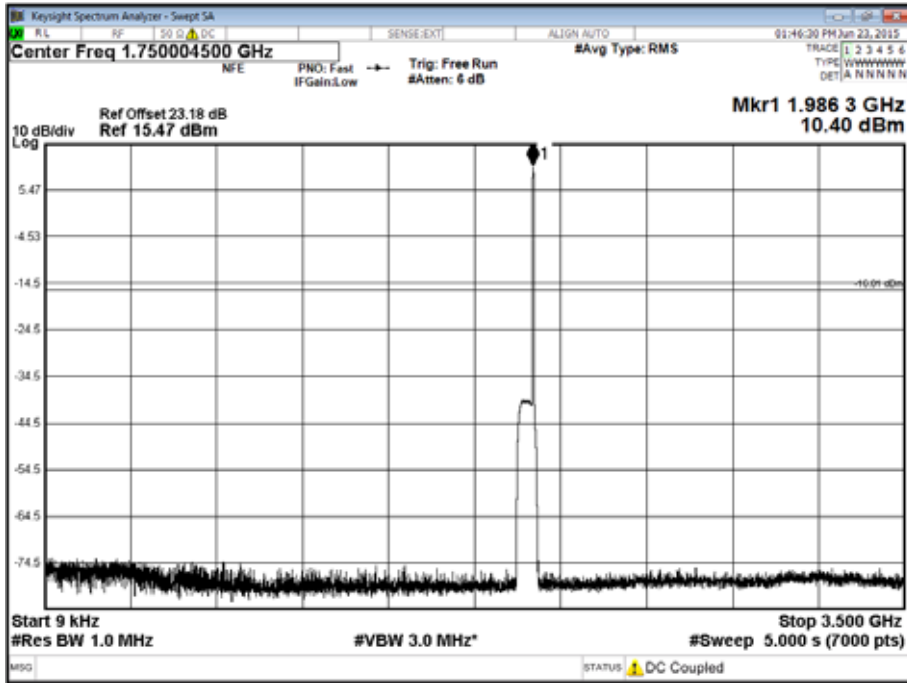
Channel Position M - Bandwidth 5.0 MHz - Antenna B



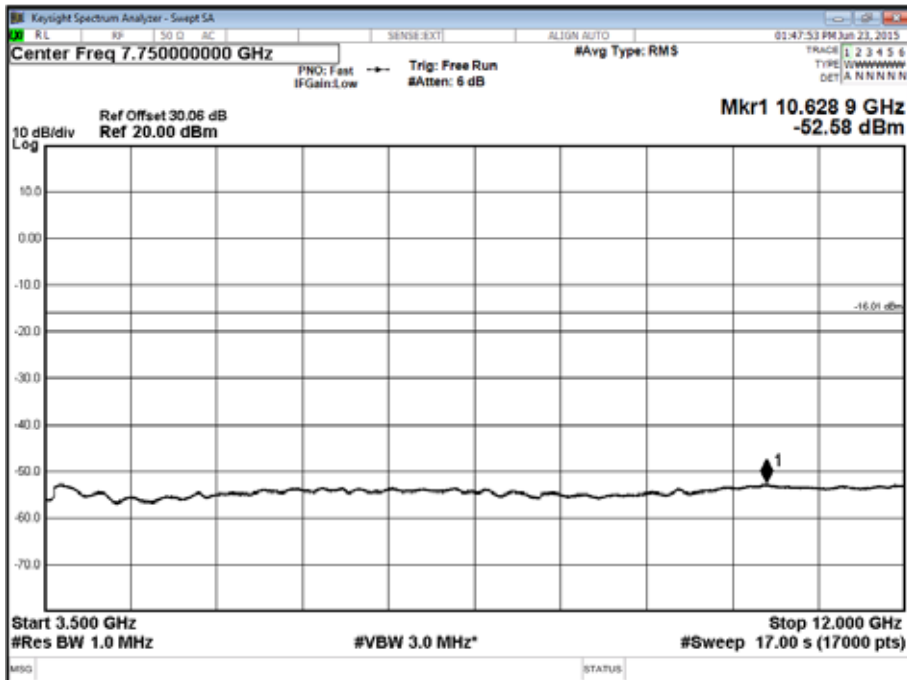
Channel Position M - Bandwidth 5.0 MHz - Antenna B



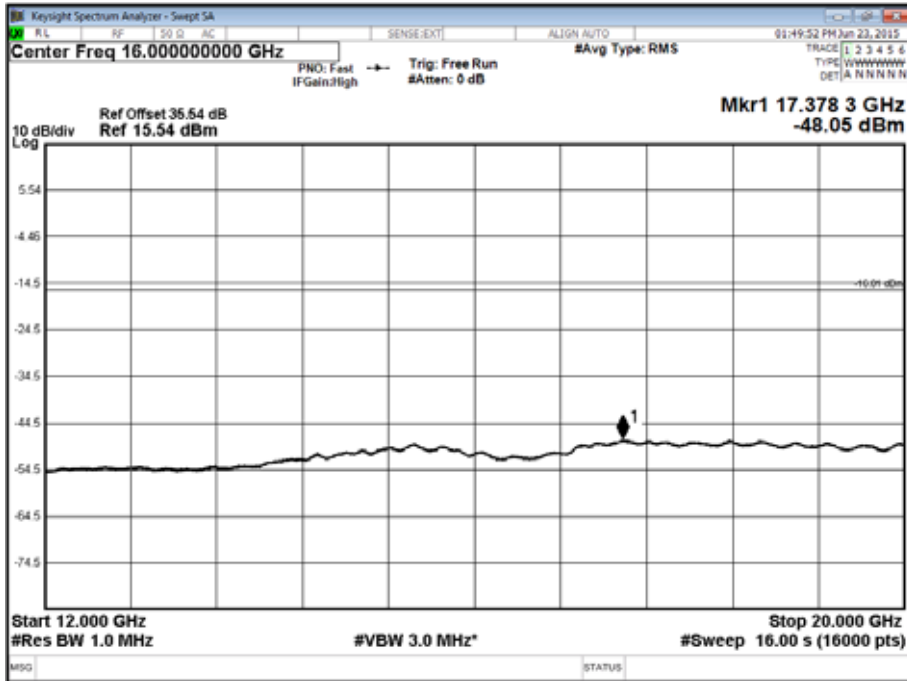
Channel Position T - Bandwidth 5.0 MHz - Antenna B



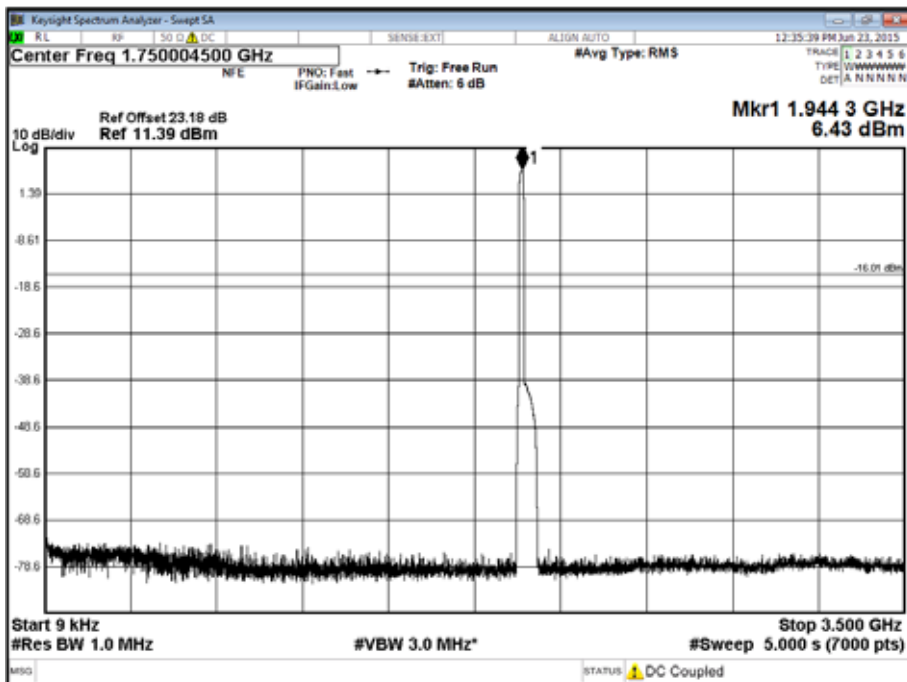
Channel Position T - Bandwidth 5.0 MHz - Antenna B



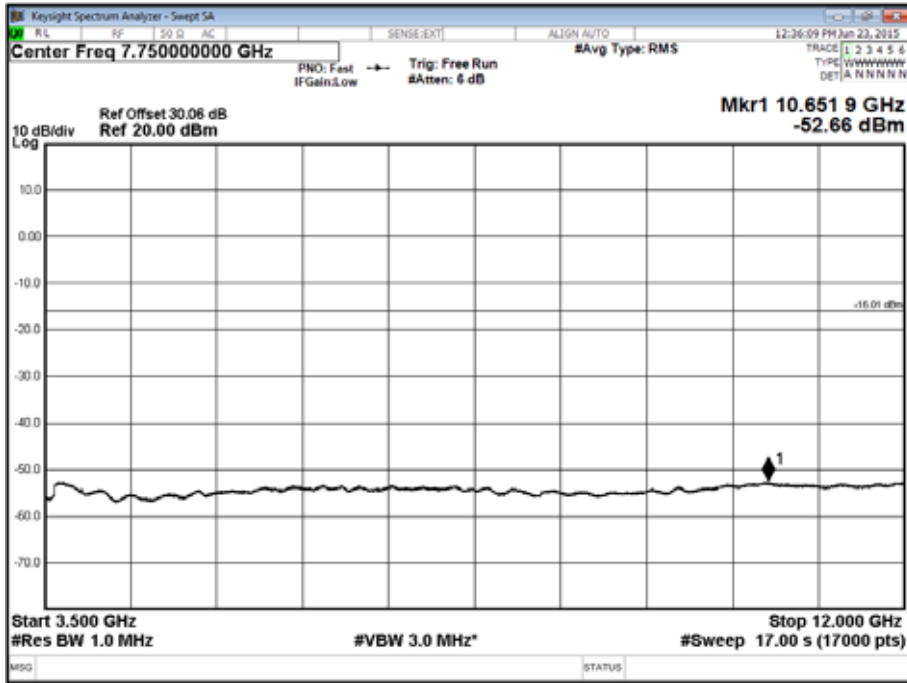
Channel Position T - Bandwidth 5.0 MHz - Antenna B



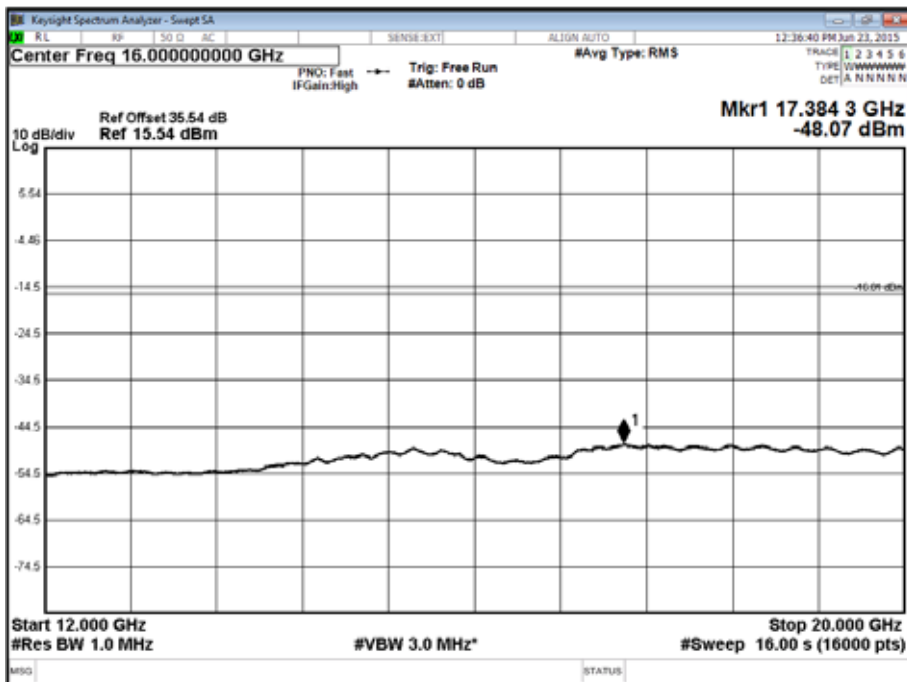
Channel Position B - Bandwidth 20.0 MHz - Antenna B



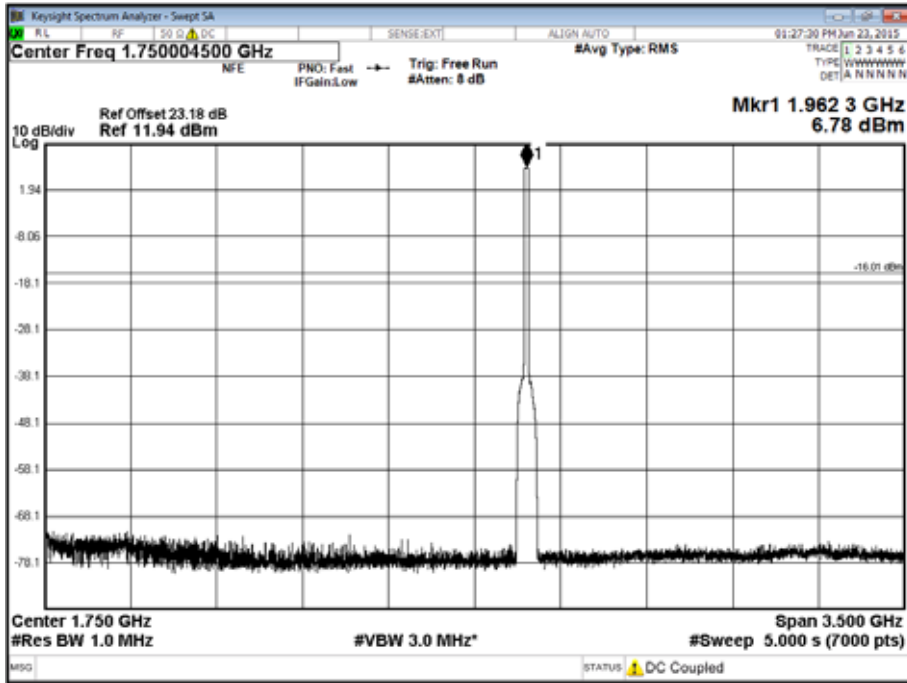
Channel Position B - Bandwidth 20.0 MHz - Antenna B



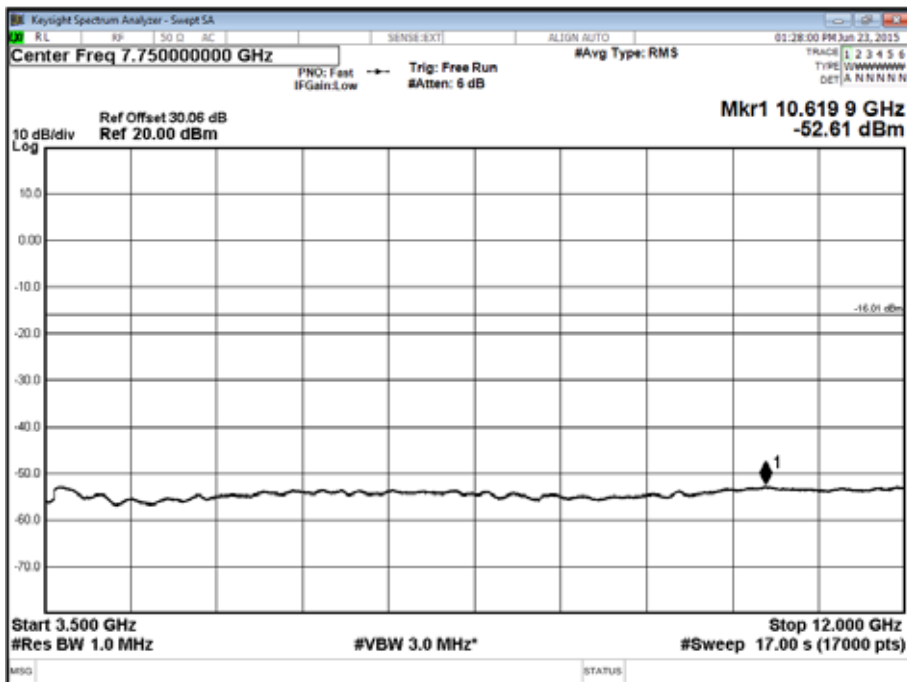
Channel Position B - Bandwidth 20.0 MHz - Antenna B



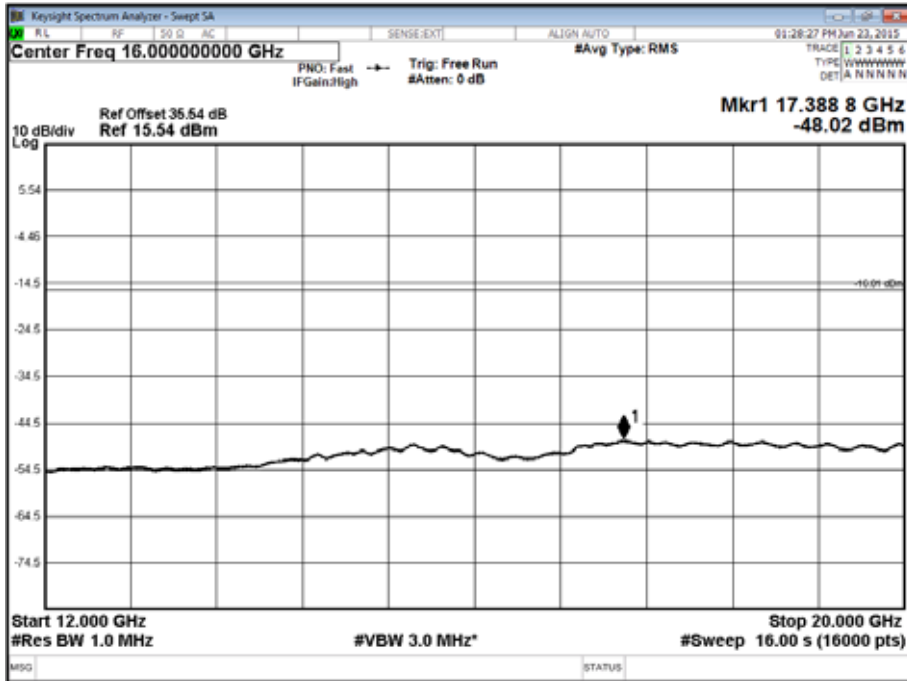
Channel Position M - Bandwidth 20.0 MHz - Antenna B



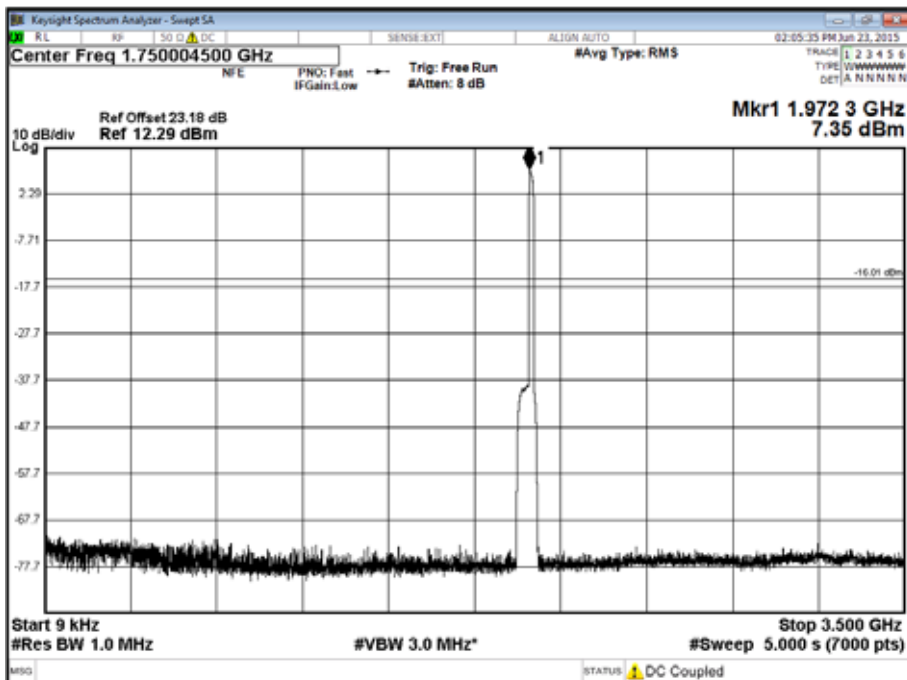
Channel Position M - Bandwidth 20.0 MHz - Antenna B



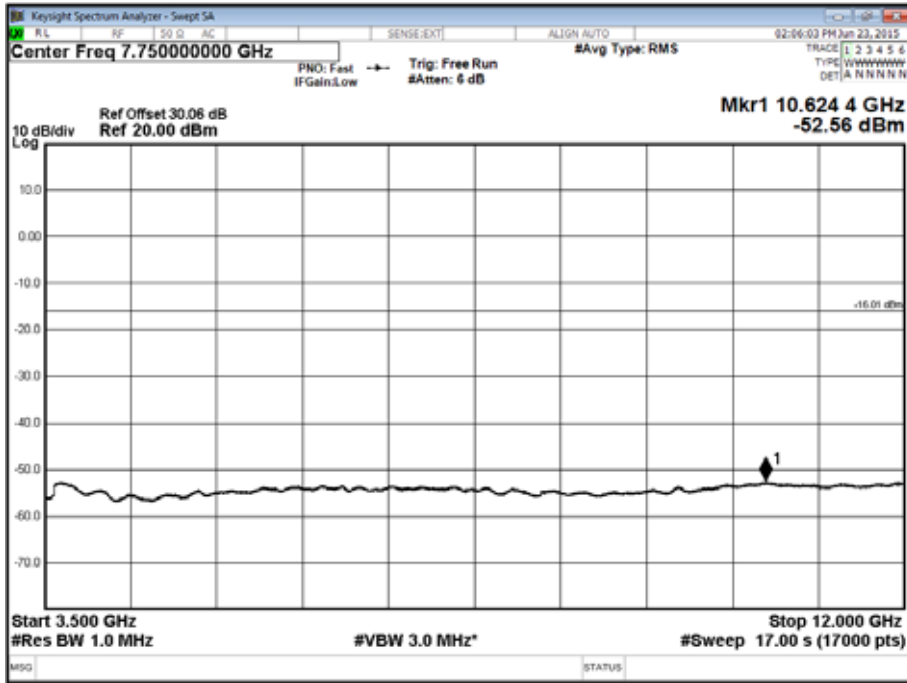
Channel Position M - Bandwidth 20.0 MHz - Antenna B



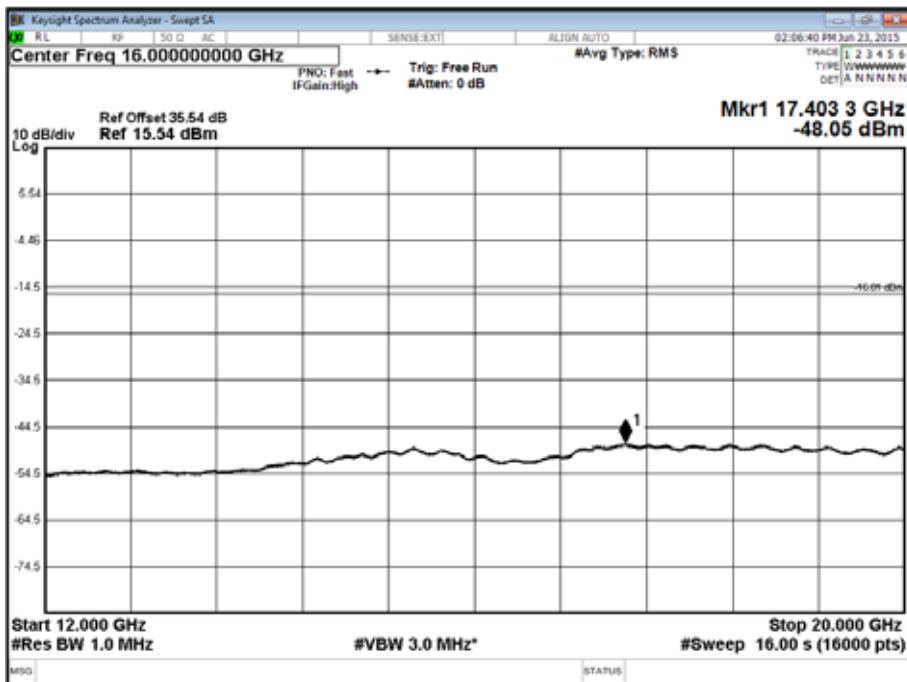
Channel Position T - Bandwidth 20.0 MHz - Antenna B



Channel Position T - Bandwidth 20.0 MHz - Antenna B



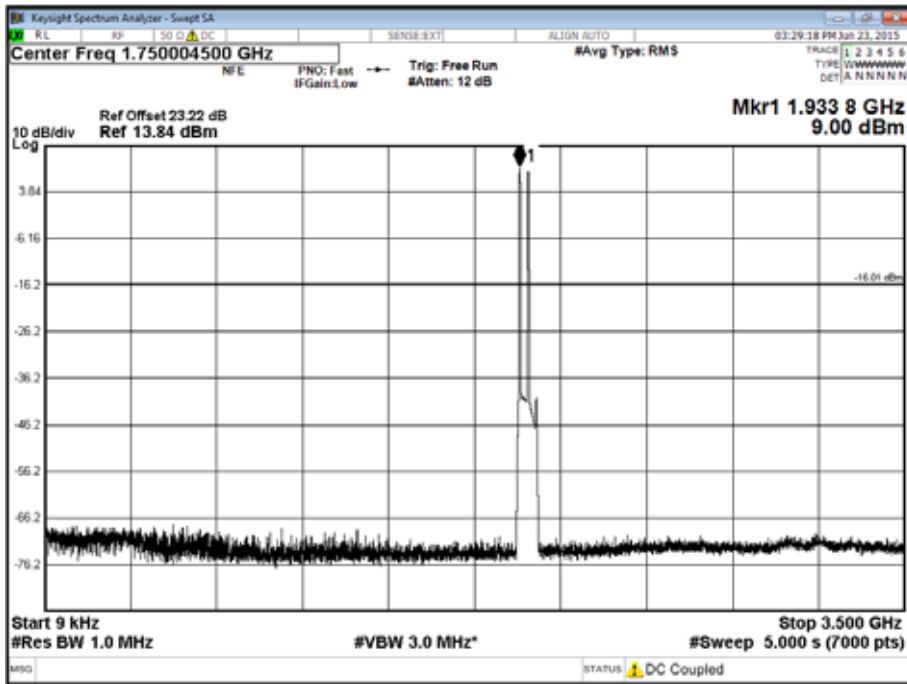
Channel Position T - Bandwidth 20.0 MHz - Antenna B



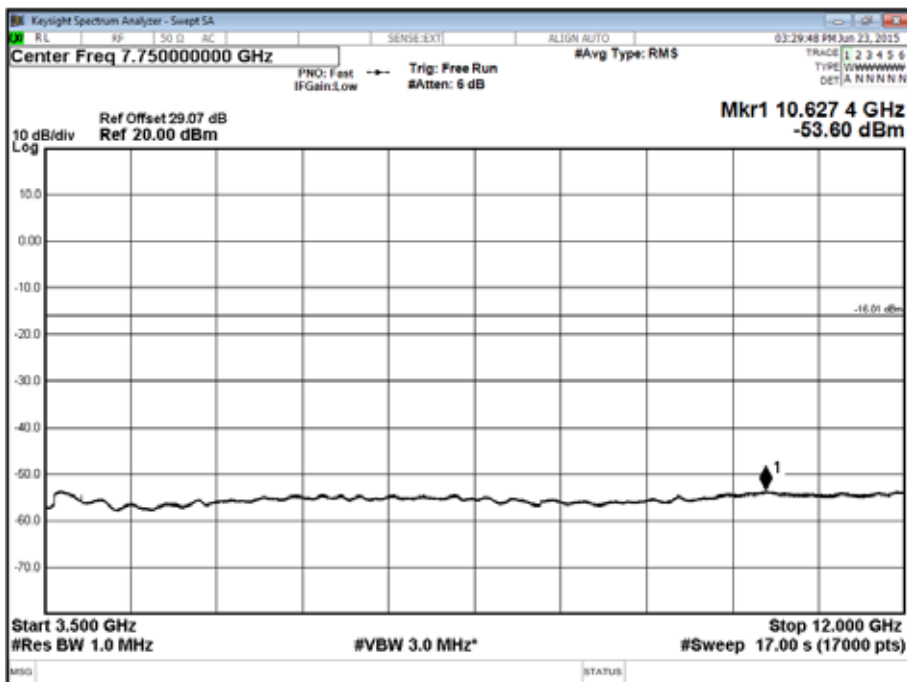
Configuration 5 LTE MC, Antenna A (See table 3)

Maximum Output Power 17 dBm

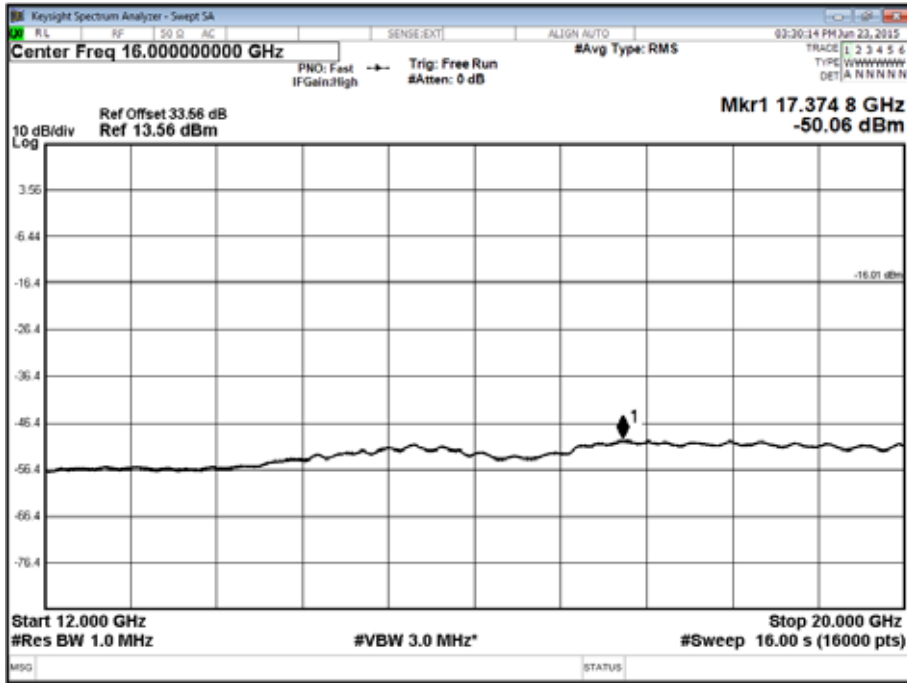
Channel Position B - Bandwidth 5.0 MHz - Antenna A



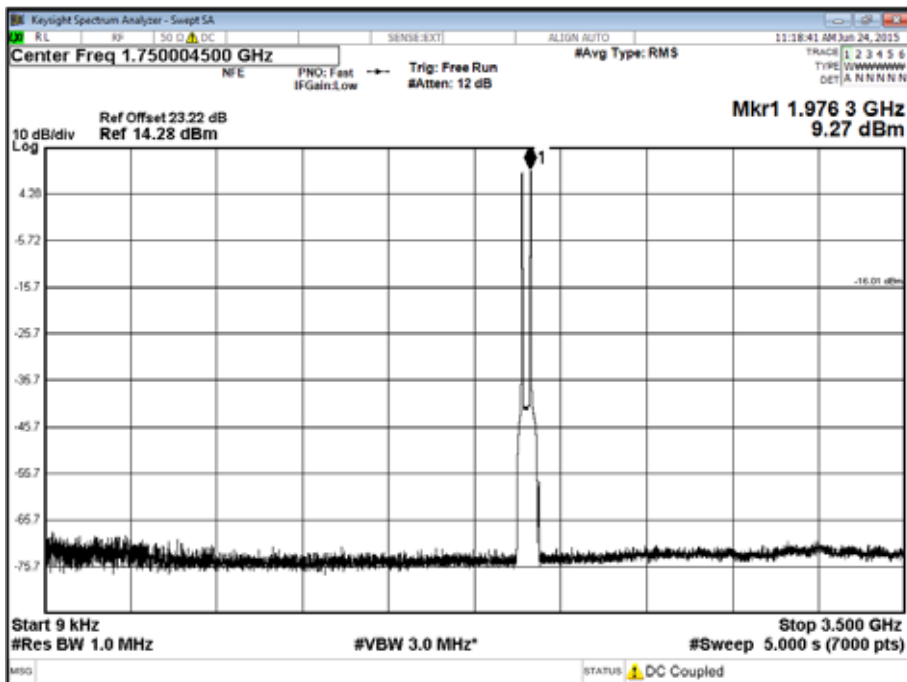
Channel Position B - Bandwidth 5.0 MHz - Antenna A



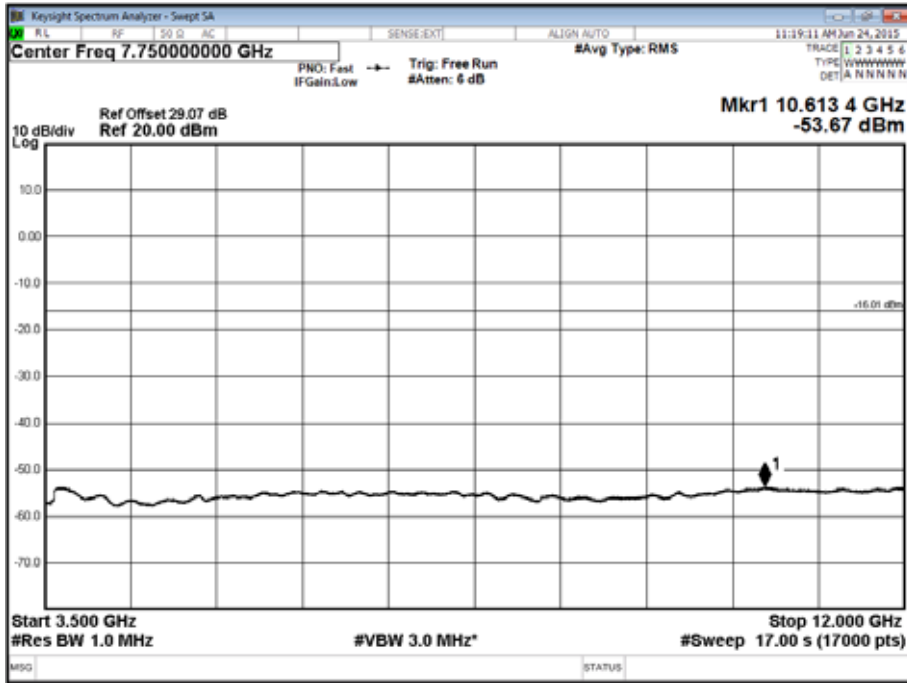
Channel Position B - Bandwidth 5.0 MHz - Antenna A



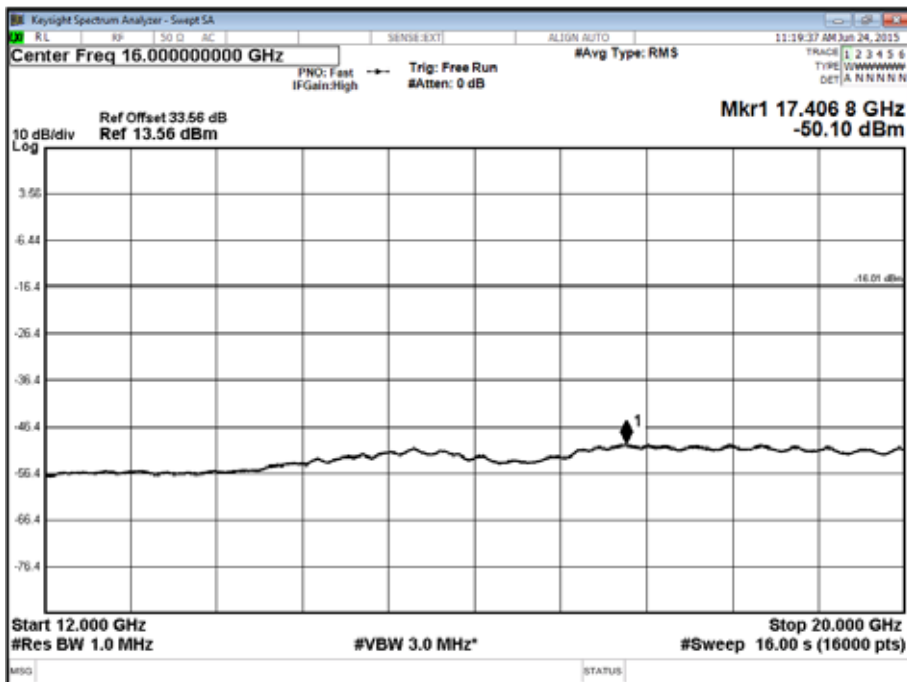
Channel Position M - Bandwidth 5.0 MHz - Antenna A



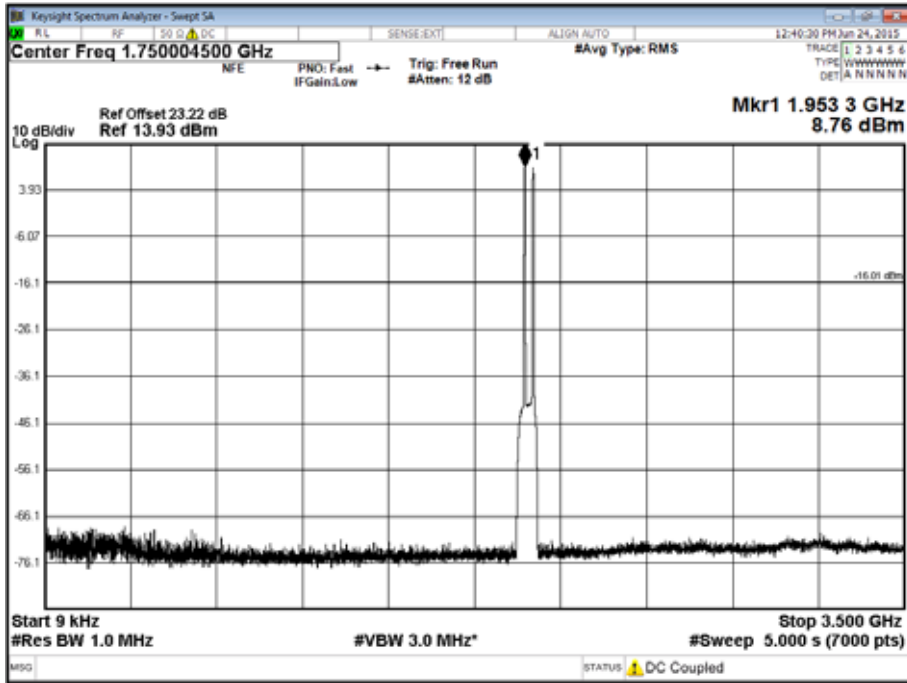
Channel Position M - Bandwidth 5.0 MHz - Antenna A



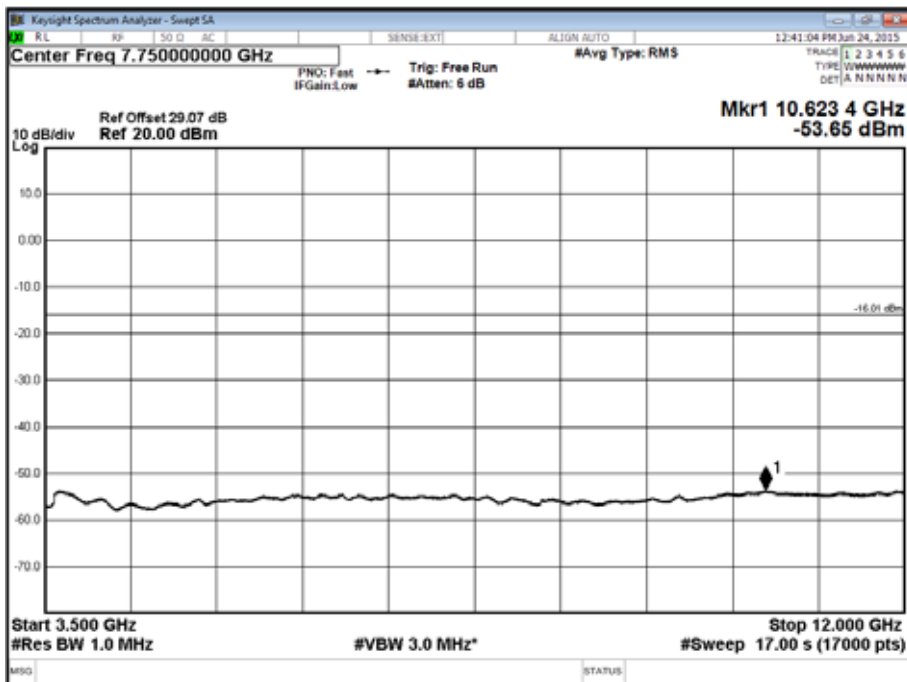
Channel Position M - Bandwidth 5.0 MHz - Antenna A



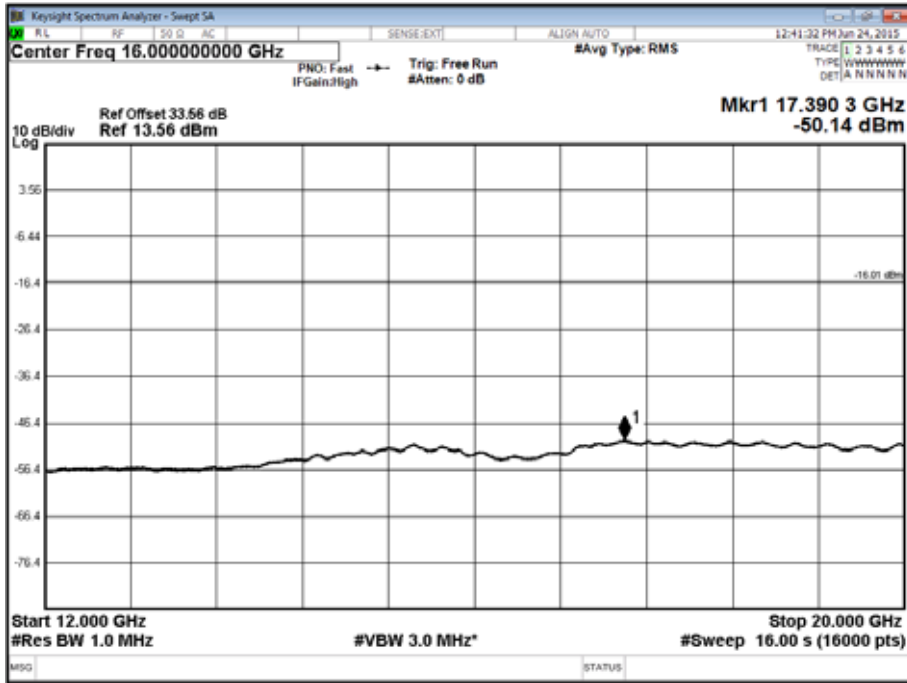
Channel Position T - Bandwidth 5.0 MHz - Antenna A



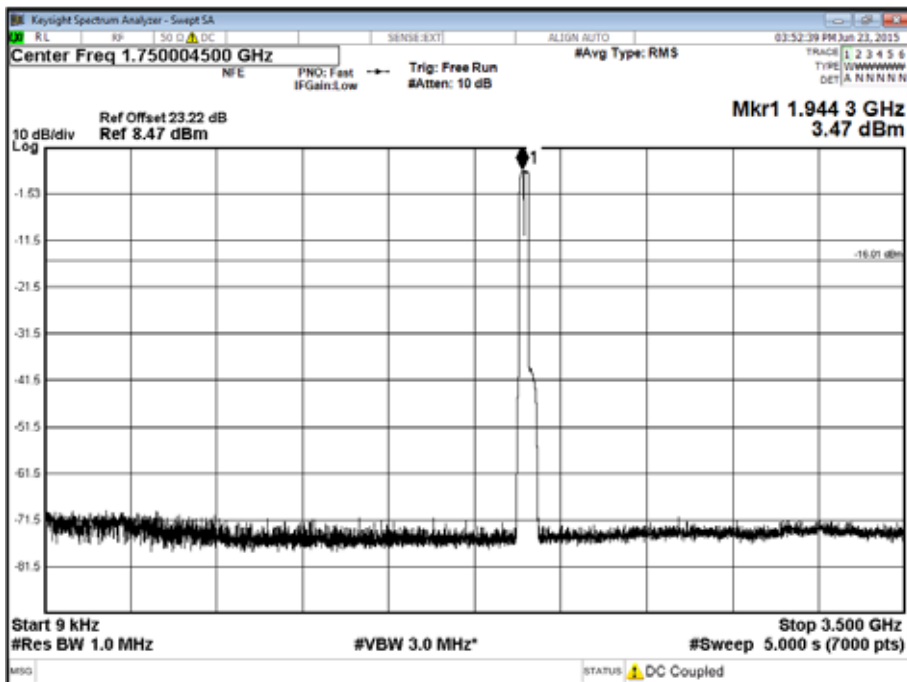
Channel Position T - Bandwidth 5.0 MHz - Antenna A



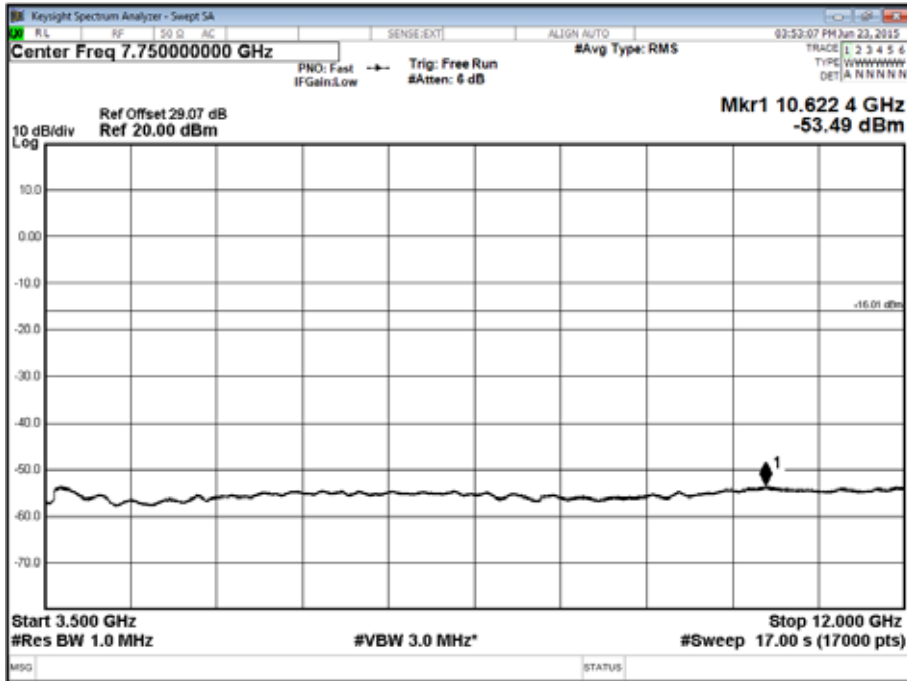
Channel Position T - Bandwidth 5.0 MHz - Antenna A



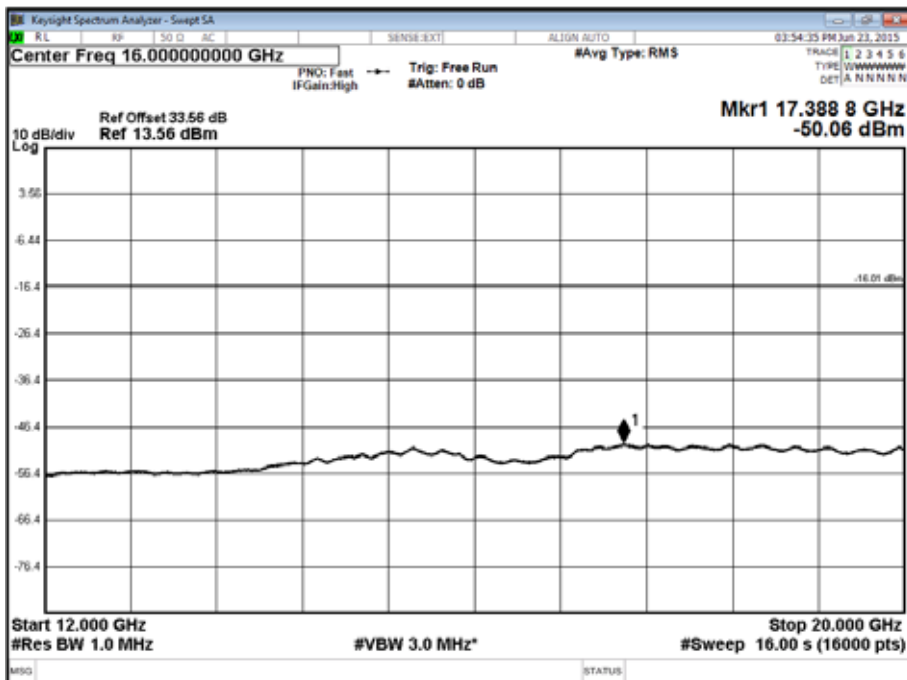
Channel Position B - Bandwidth 20.0 MHz - Antenna A



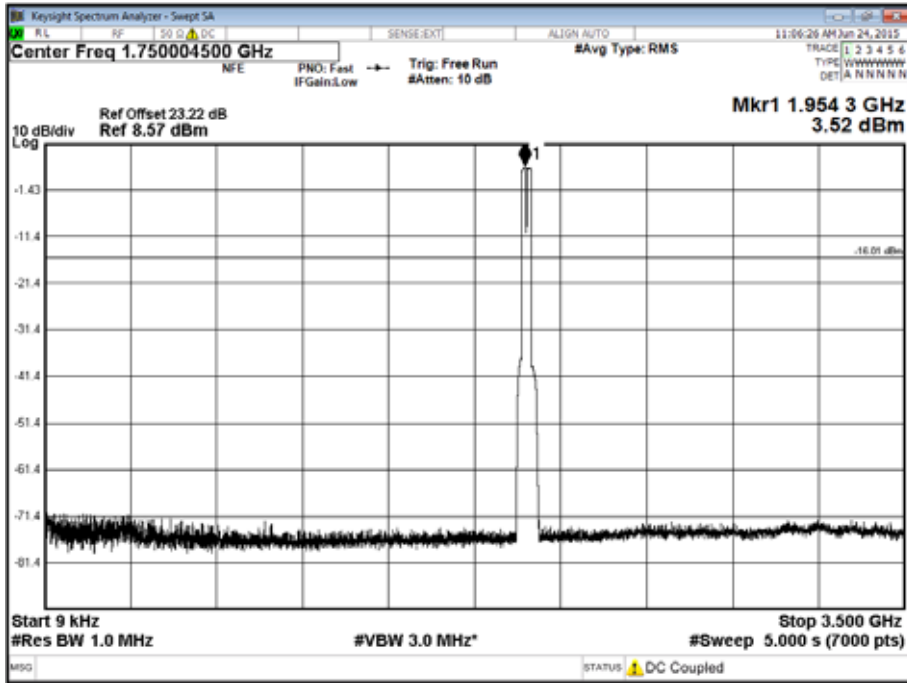
Channel Position B - Bandwidth 20.0 MHz - Antenna A



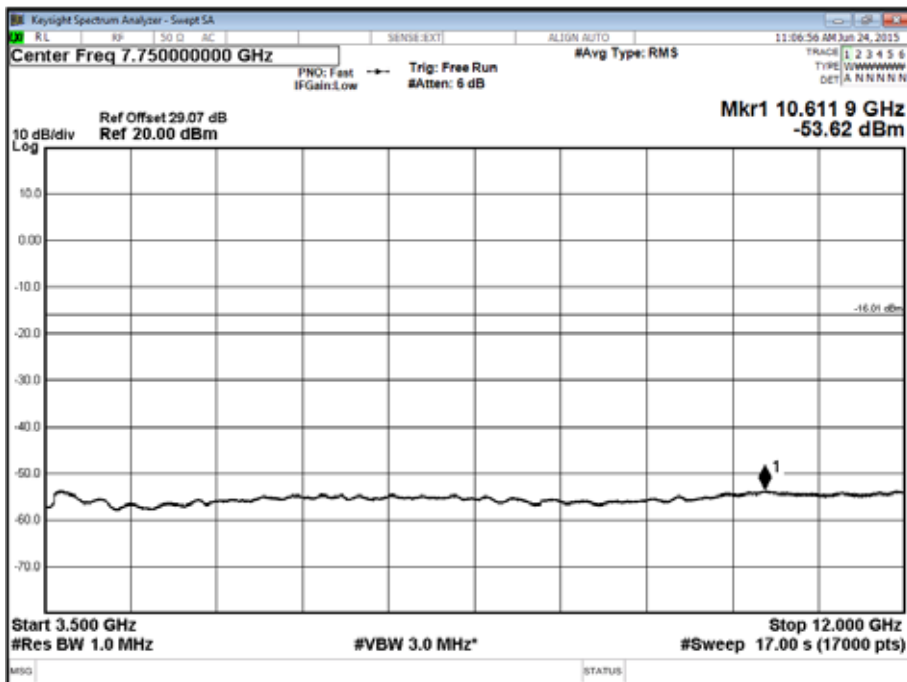
Channel Position B - Bandwidth 20.0 MHz - Antenna A



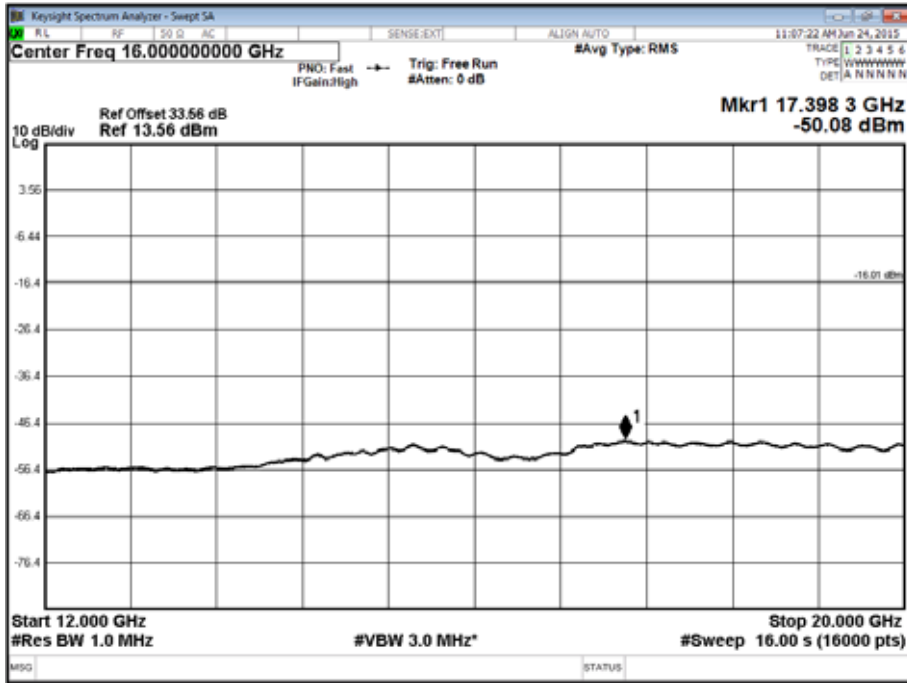
Channel Position M - Bandwidth 20.0 MHz - Antenna A



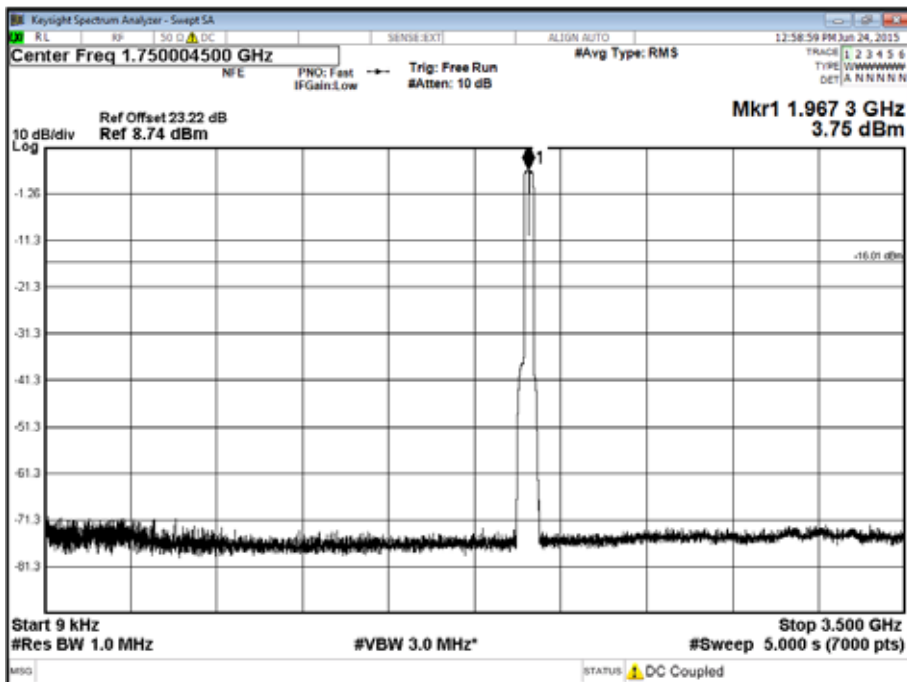
Channel Position M - Bandwidth 20.0 MHz - Antenna A



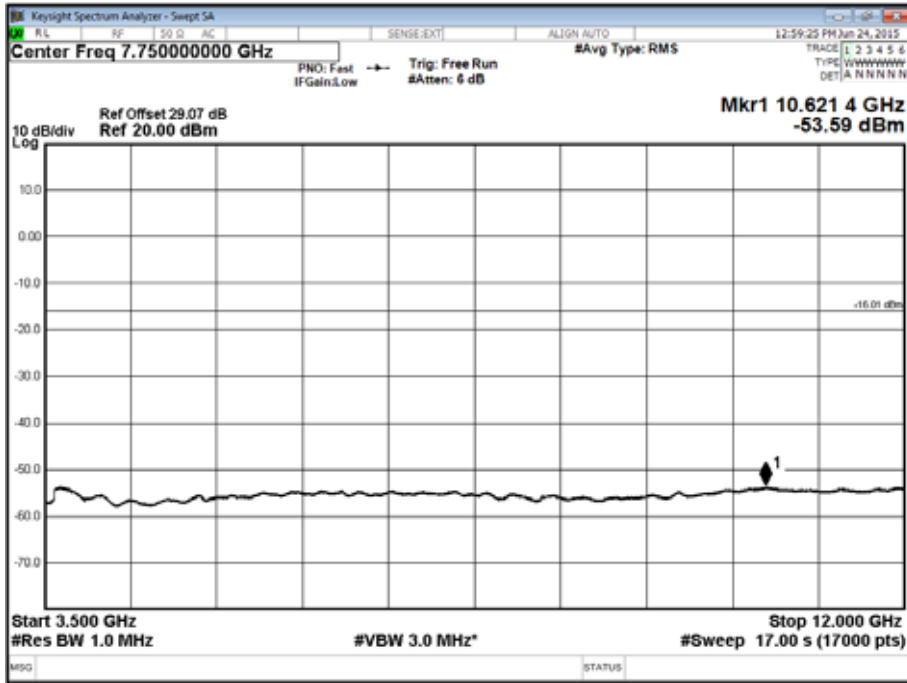
Channel Position M - Bandwidth 20.0 MHz - Antenna A



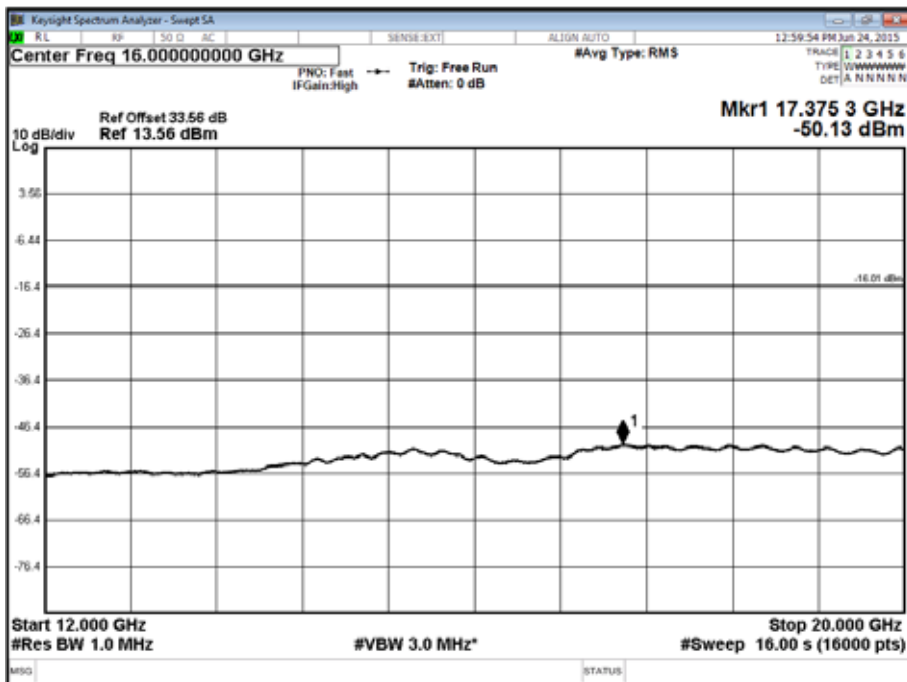
Channel Position T - Bandwidth 20.0 MHz - Antenna A



Channel Position T - Bandwidth 20.0 MHz - Antenna A



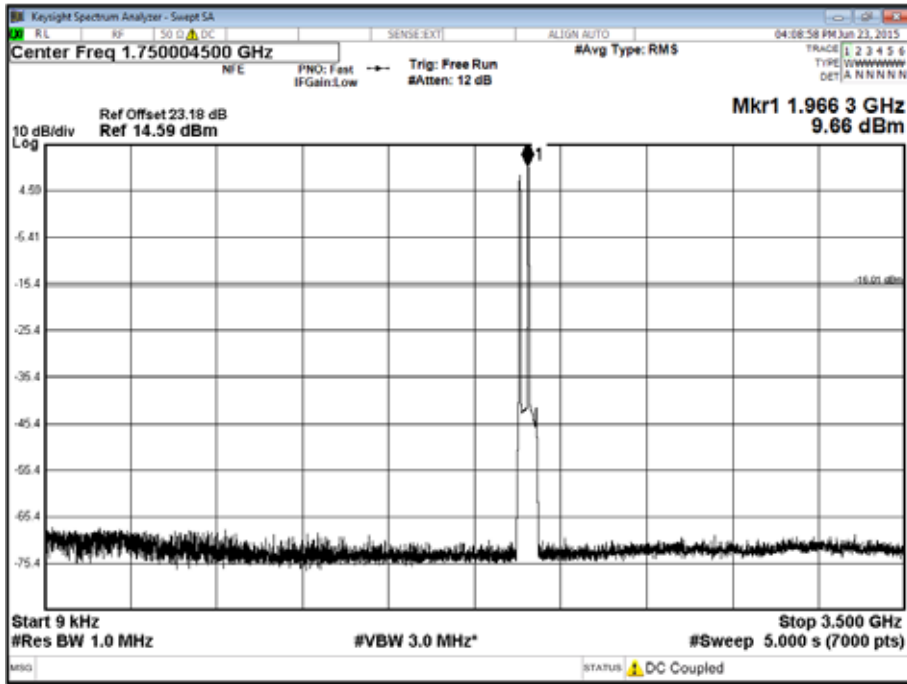
Channel Position T - Bandwidth 20.0 MHz - Antenna A



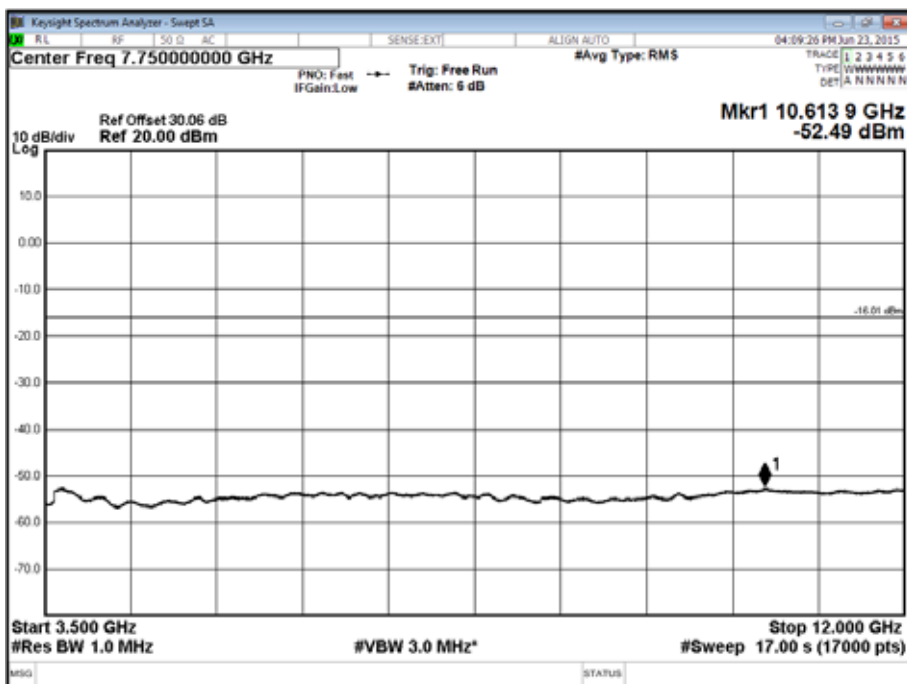
Configuration 5 LTE MC, Antenna B (See table 3)

Maximum Output Power 17 dBm

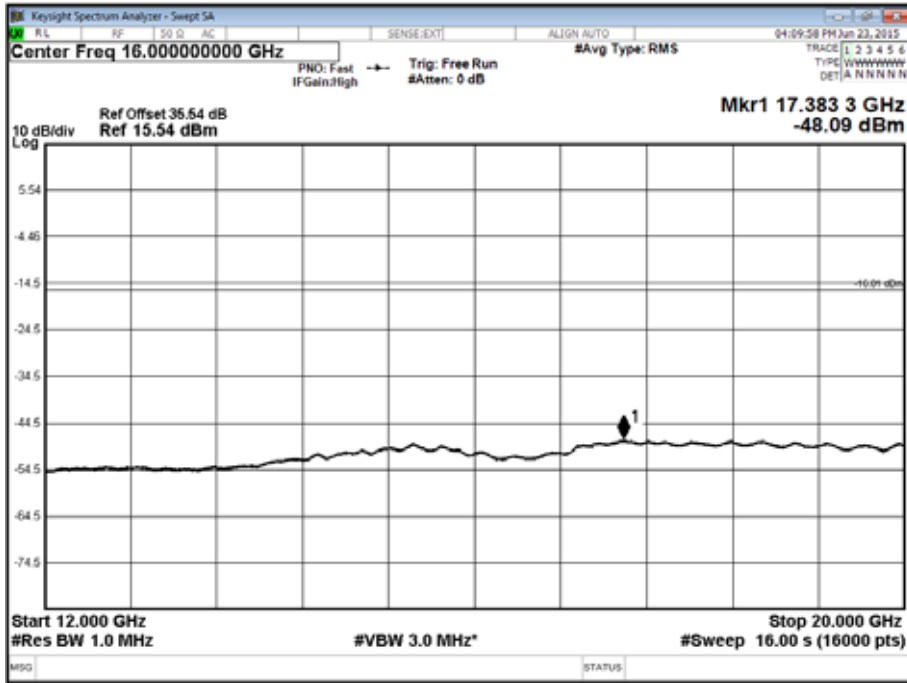
Channel Position B - Bandwidth 5.0 MHz - Antenna B



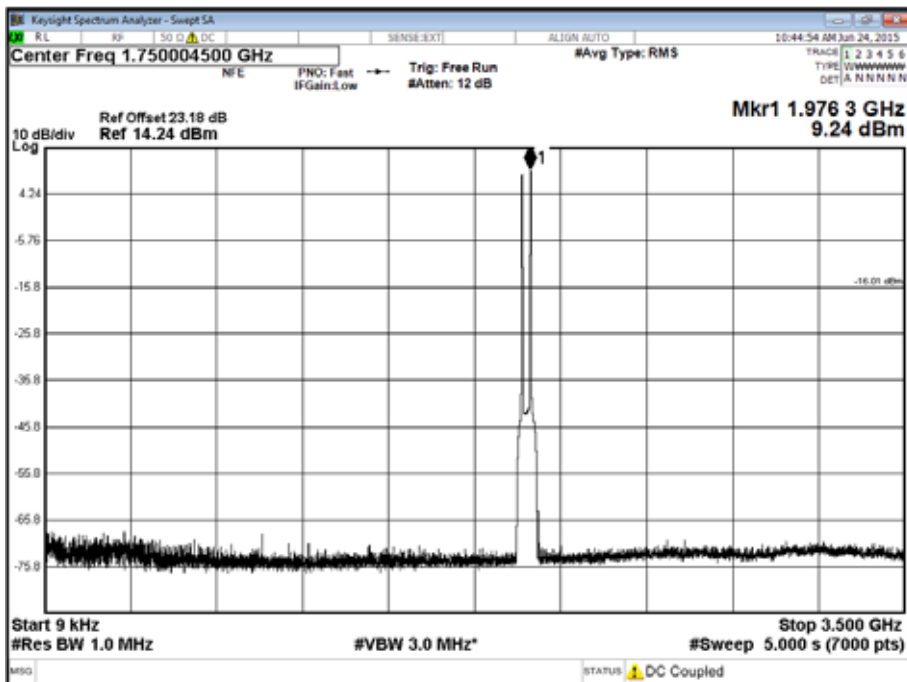
Channel Position B - Bandwidth 5.0 MHz - Antenna B



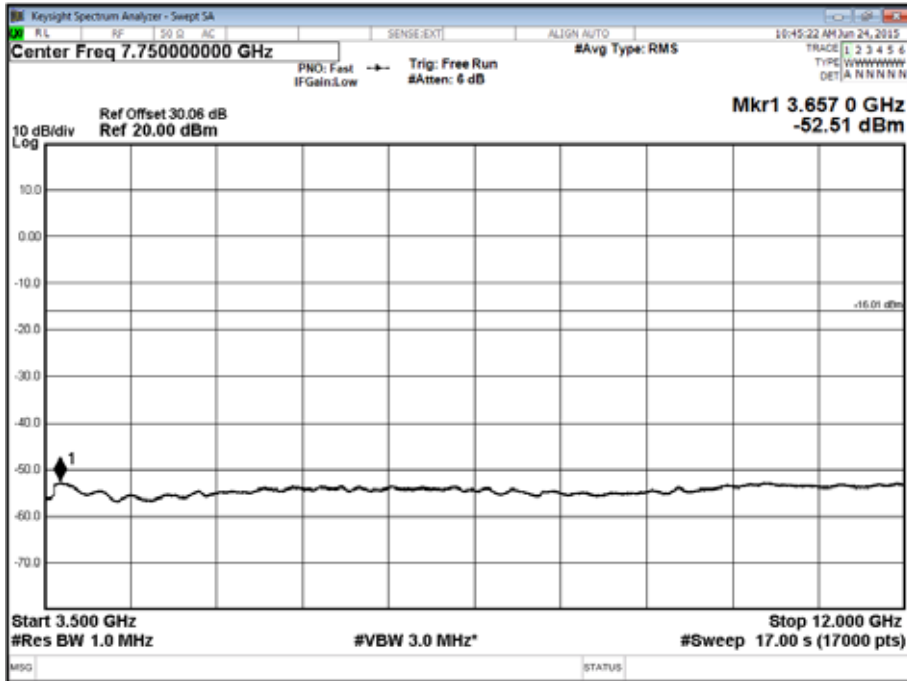
Channel Position B - Bandwidth 5.0 MHz - Antenna B



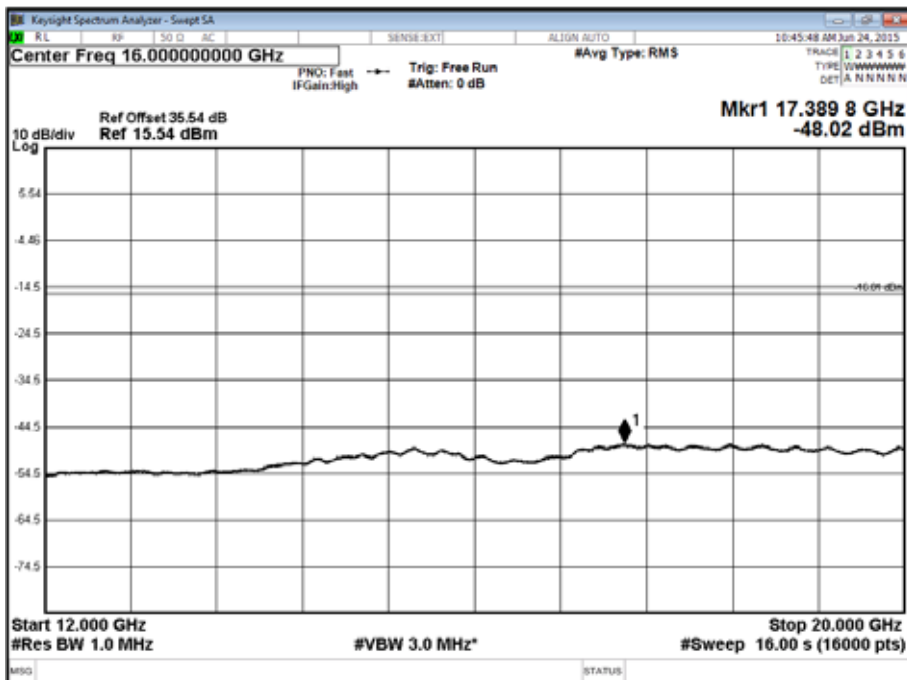
Channel Position M - Bandwidth 5.0 MHz - Antenna B



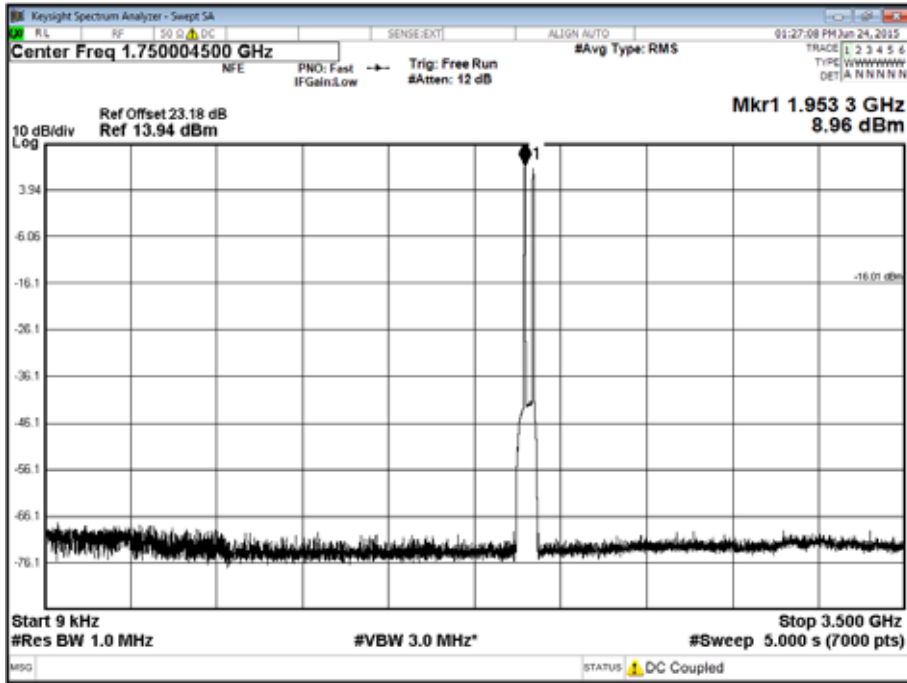
Channel Position M - Bandwidth 5.0 MHz - Antenna B



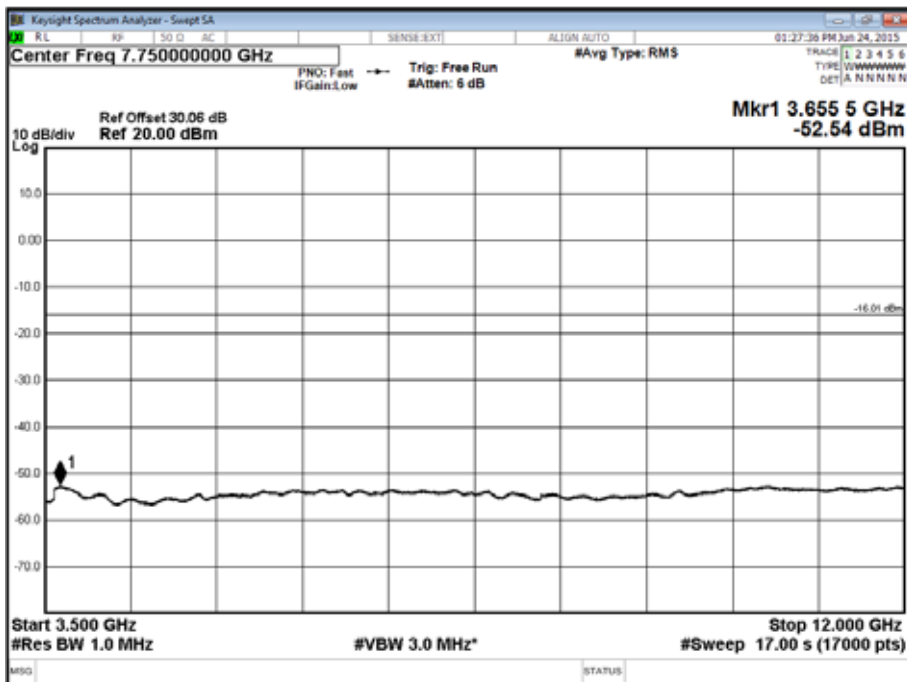
Channel Position M - Bandwidth 5.0 MHz - Antenna B



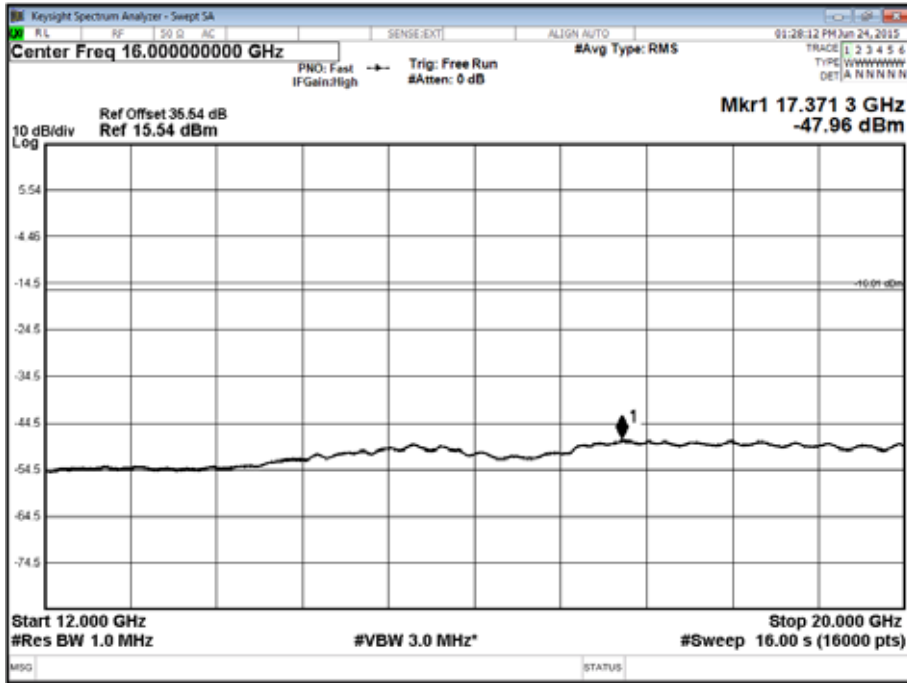
Channel Position T - Bandwidth 5.0 MHz - Antenna B



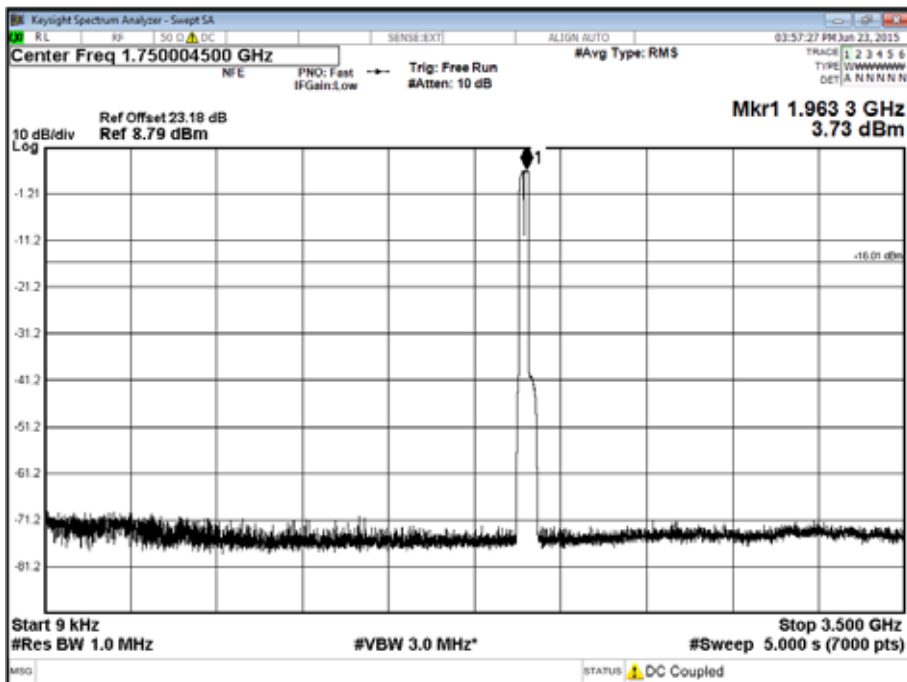
Channel Position T - Bandwidth 5.0 MHz - Antenna B



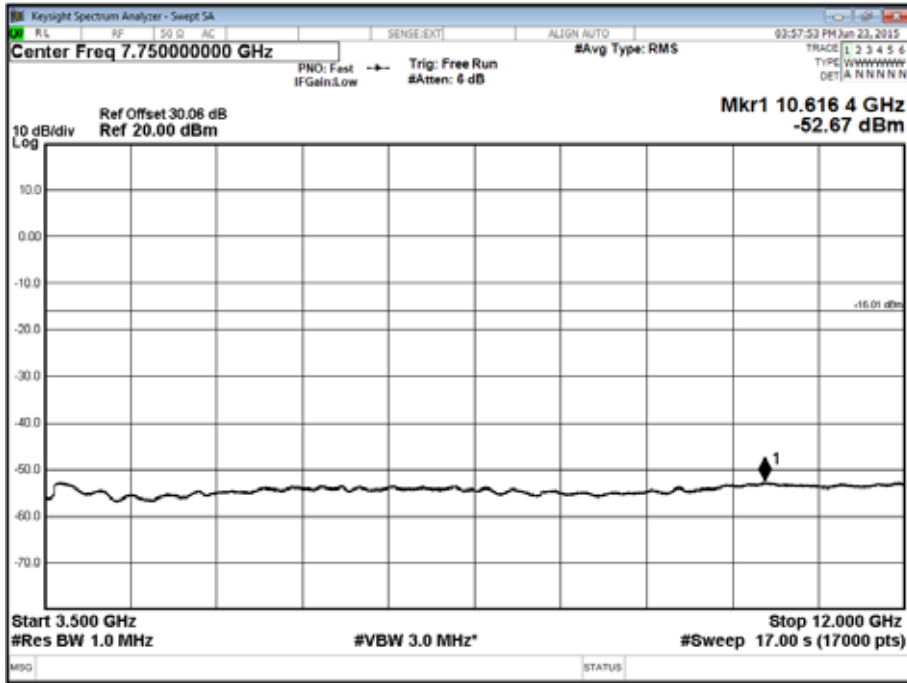
Channel Position T - Bandwidth 5.0 MHz - Antenna B



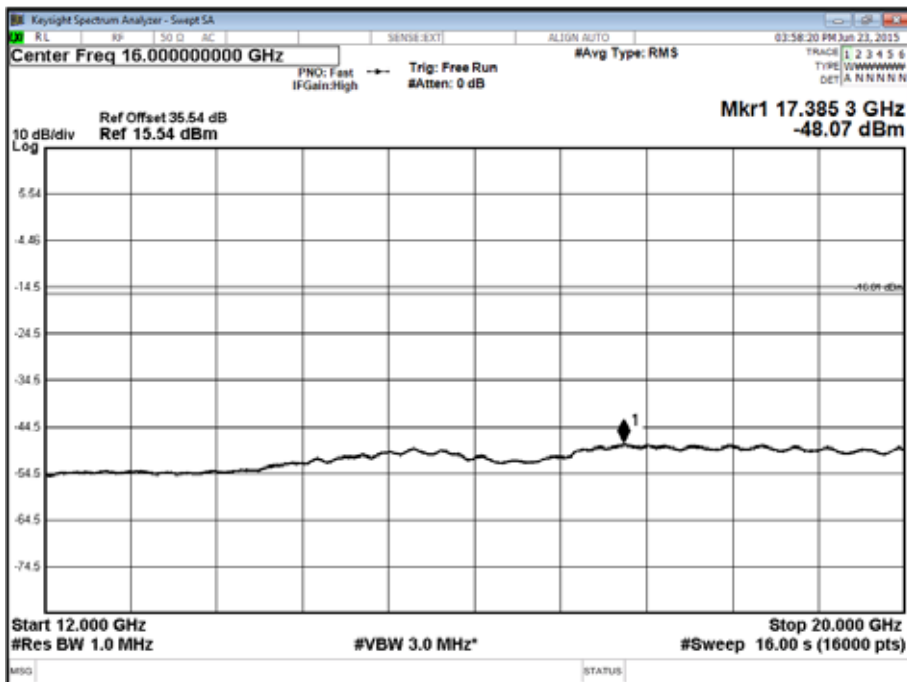
Channel Position B - Bandwidth 20.0 MHz - Antenna B



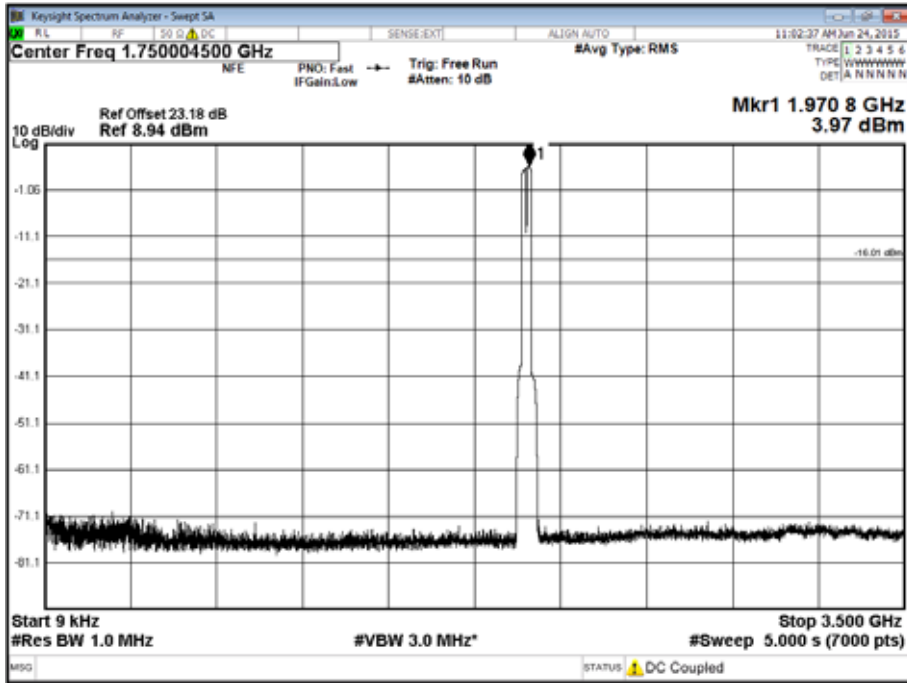
Channel Position B - Bandwidth 20.0 MHz - Antenna B



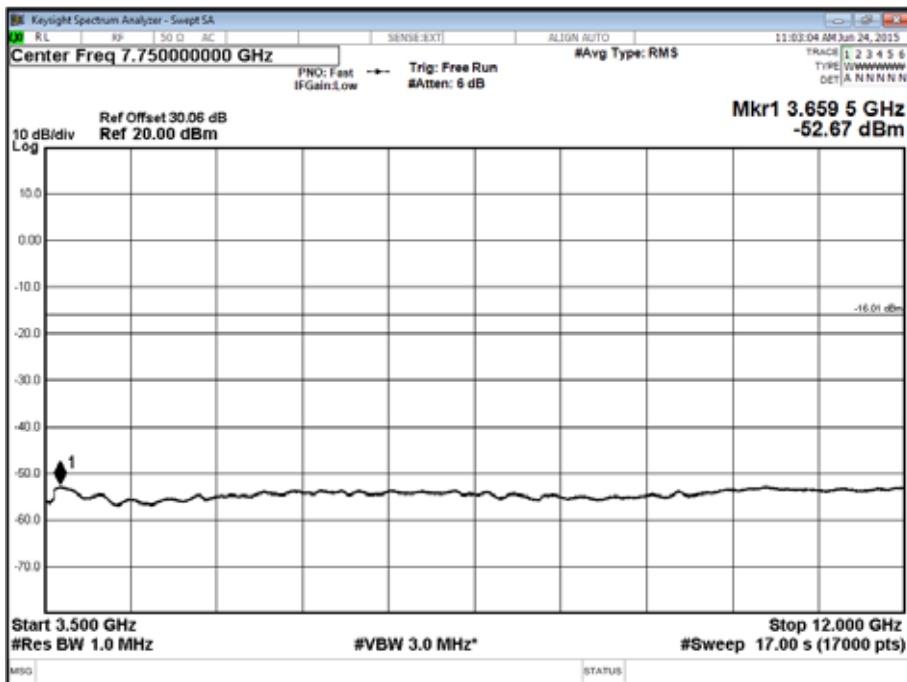
Channel Position B - Bandwidth 20.0 MHz - Antenna B



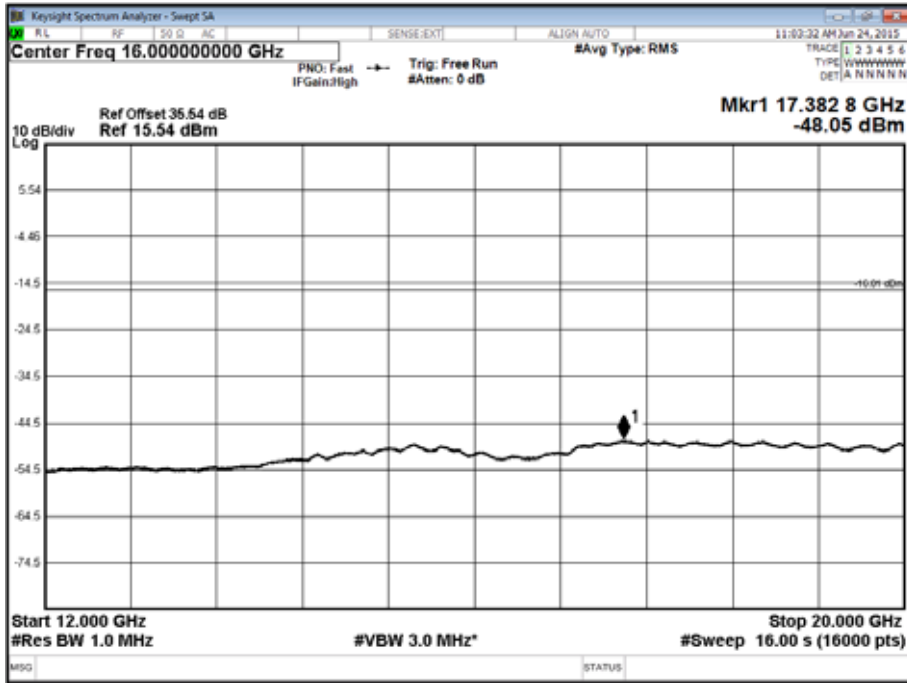
Channel Position M - Bandwidth 20.0 MHz - Antenna B



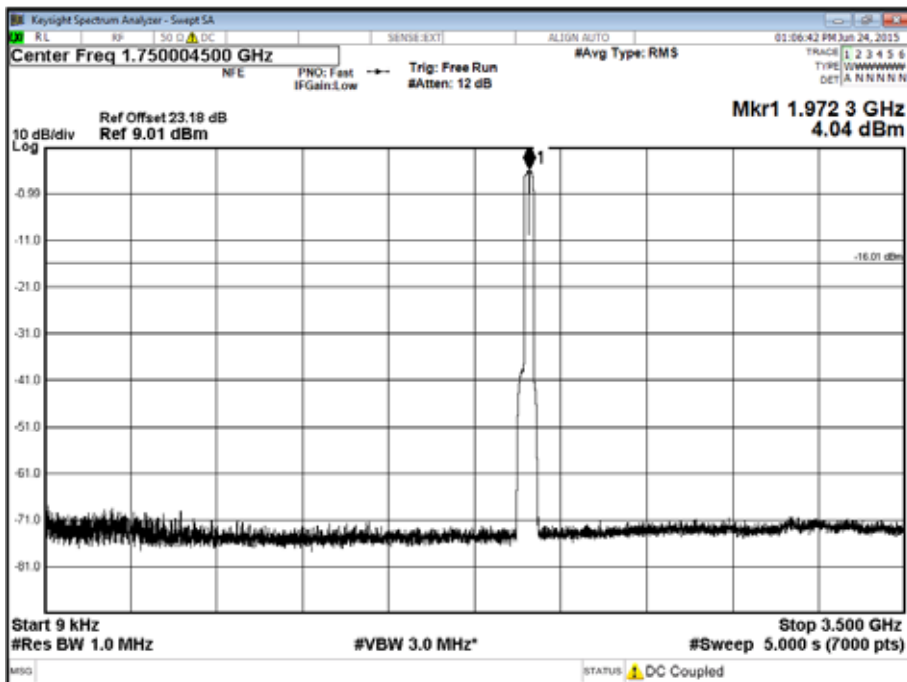
Channel Position M - Bandwidth 20.0 MHz - Antenna B



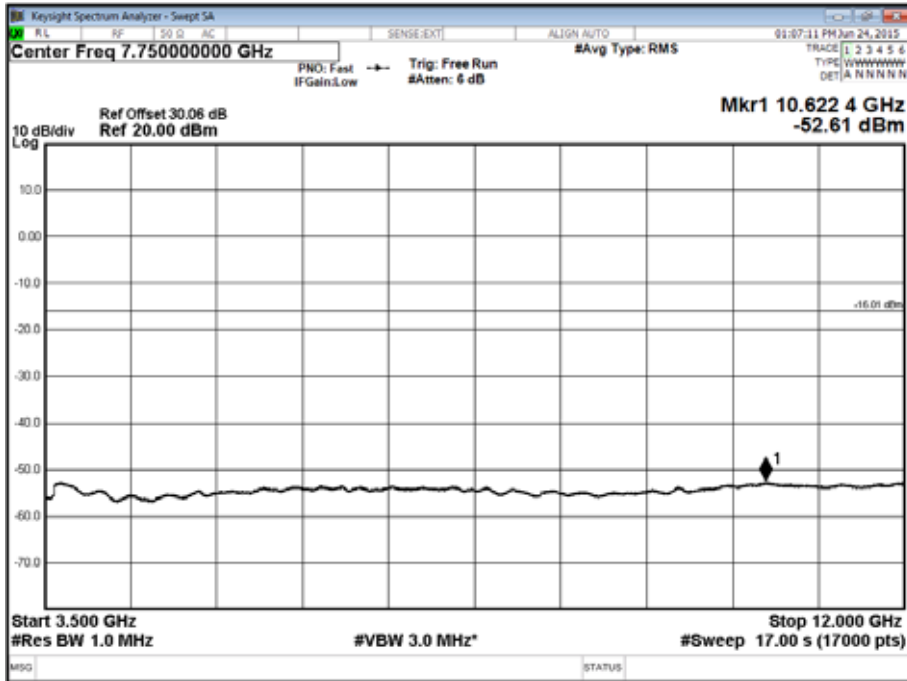
Channel Position M - Bandwidth 20.0 MHz - Antenna B



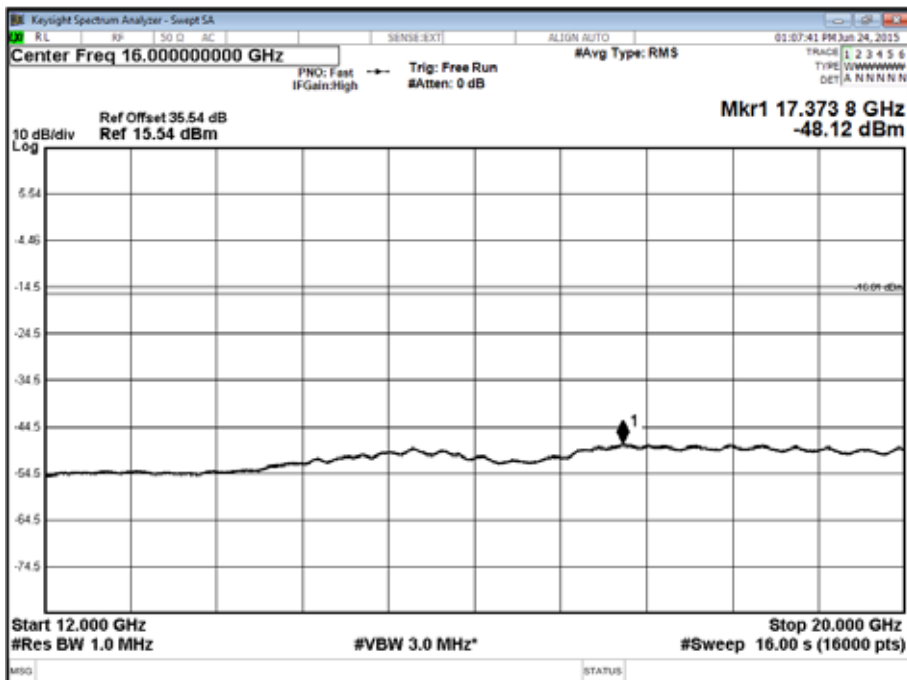
Channel Position T - Bandwidth 20.0 MHz - Antenna B



Channel Position T - Bandwidth 20.0 MHz - Antenna B



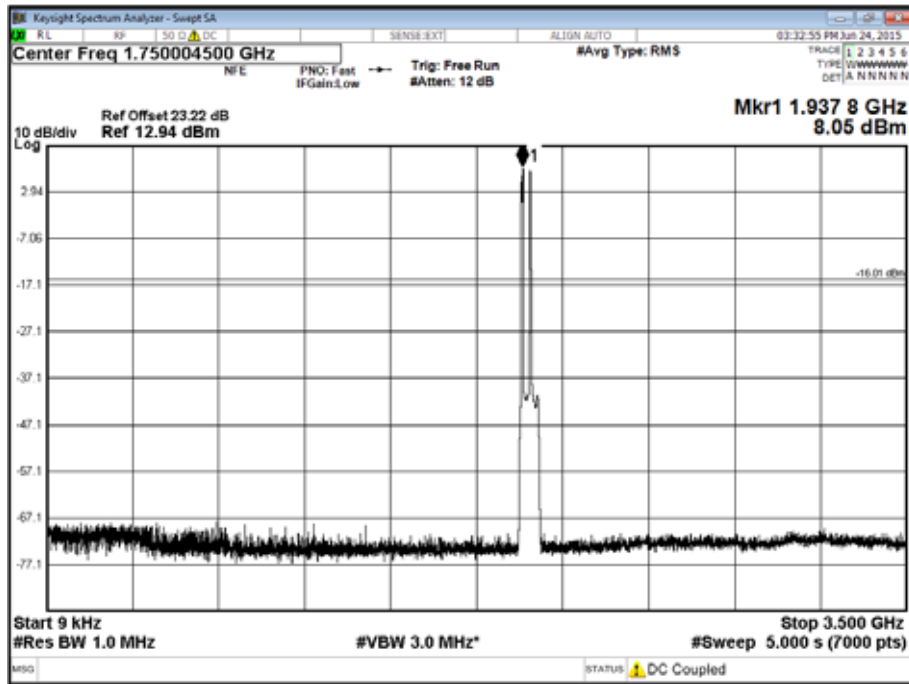
Channel Position T - Bandwidth 20.0 MHz - Antenna B



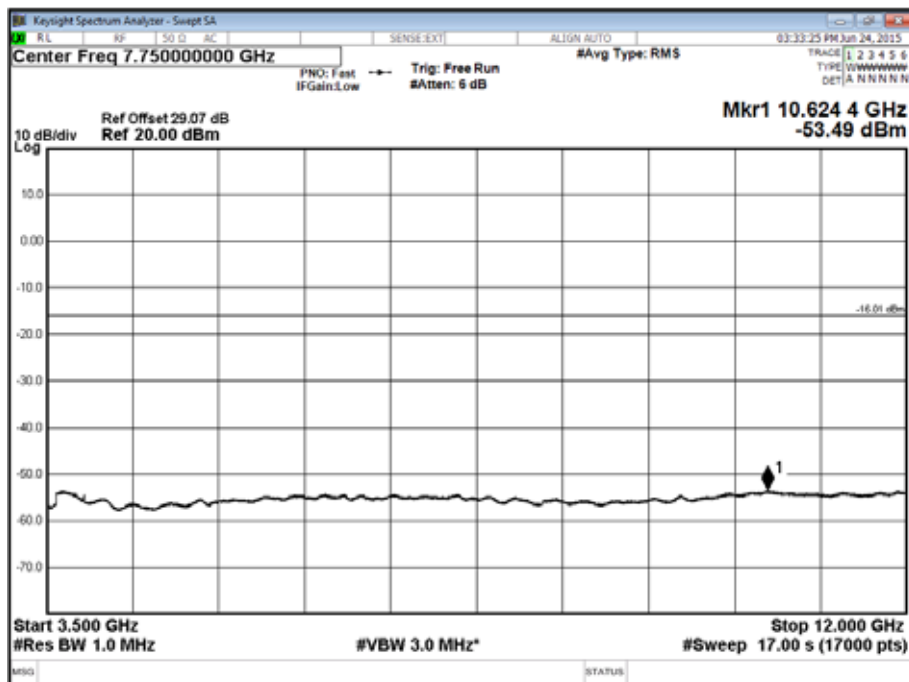
Configuration 7 WCDMA/LTE MM, Antenna A (See table 5)

Maximum Output Power 17 dBm

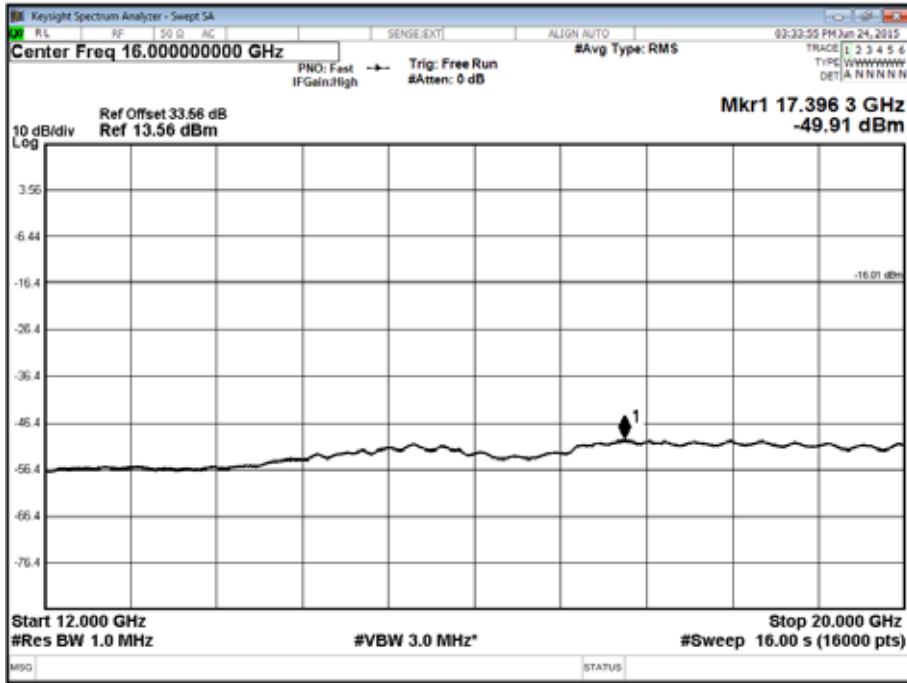
Channel Position BRFBW - Antenna A



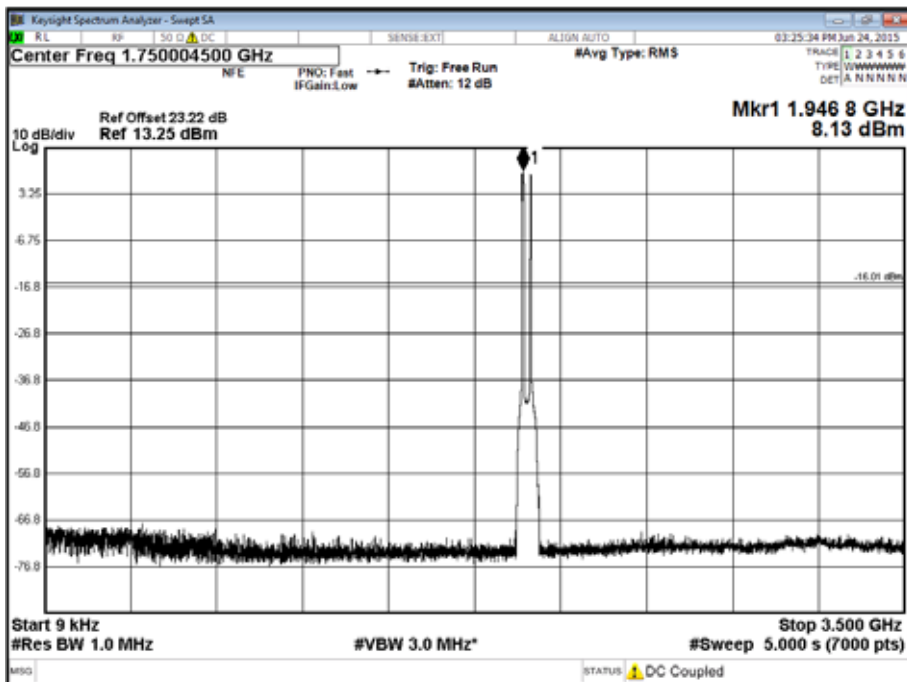
Channel Position BRFBW - Antenna A



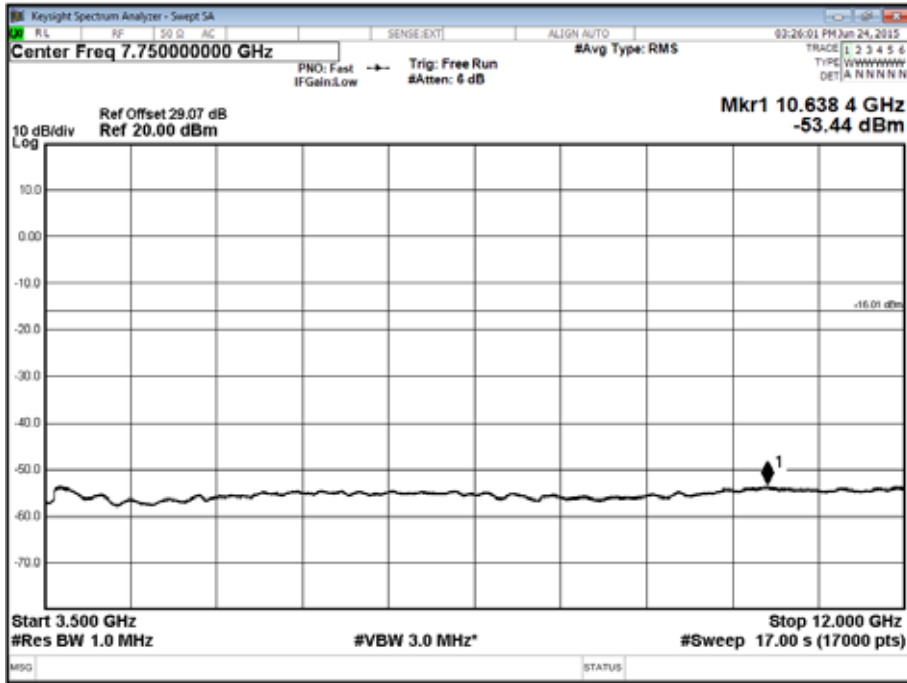
Channel Position BRFBW - Antenna A



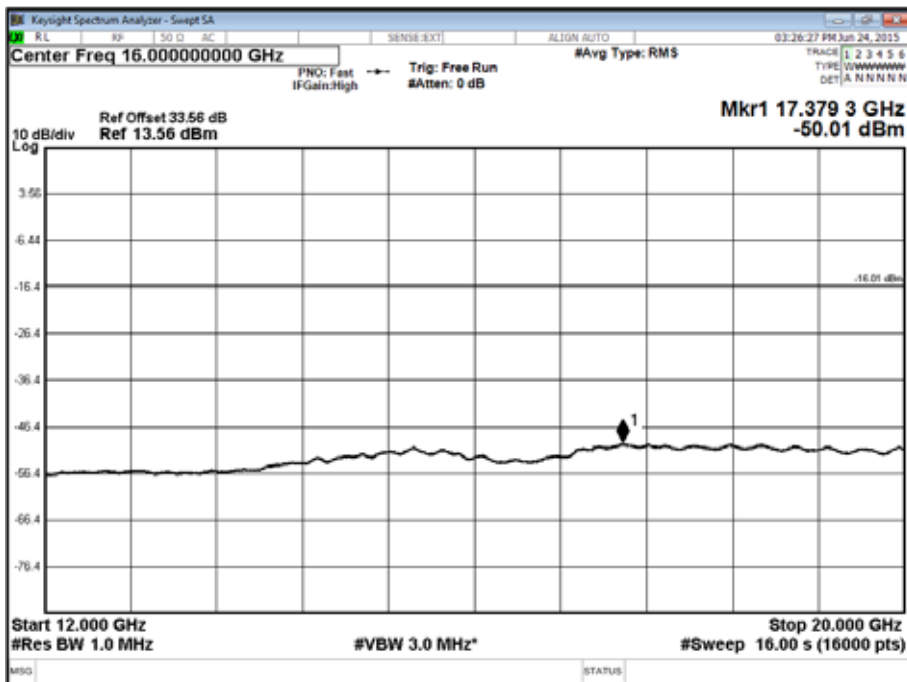
Channel Position MRFBW - Antenna A



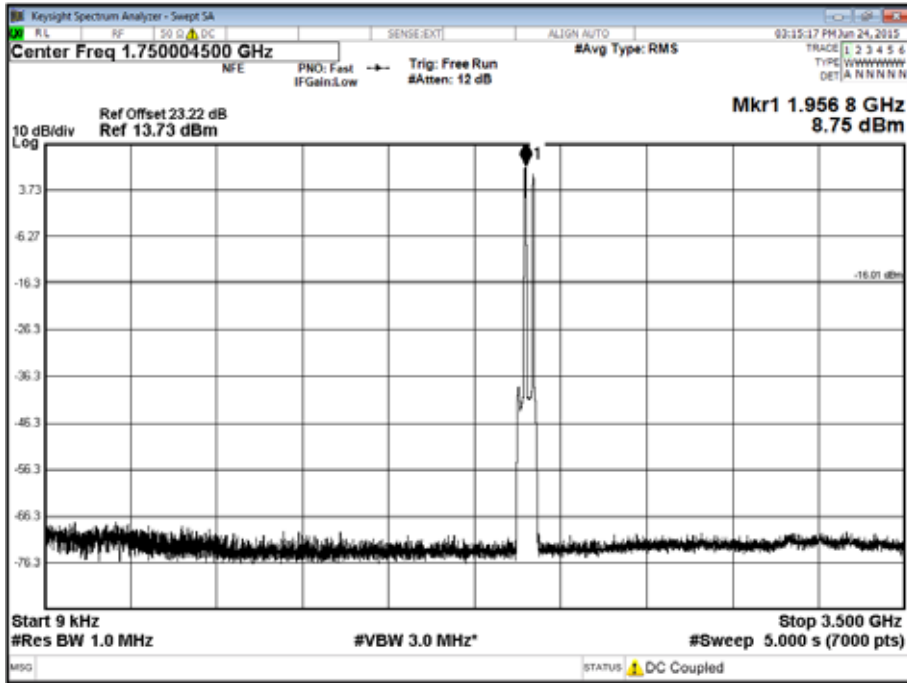
Channel Position MRFBW - Antenna A



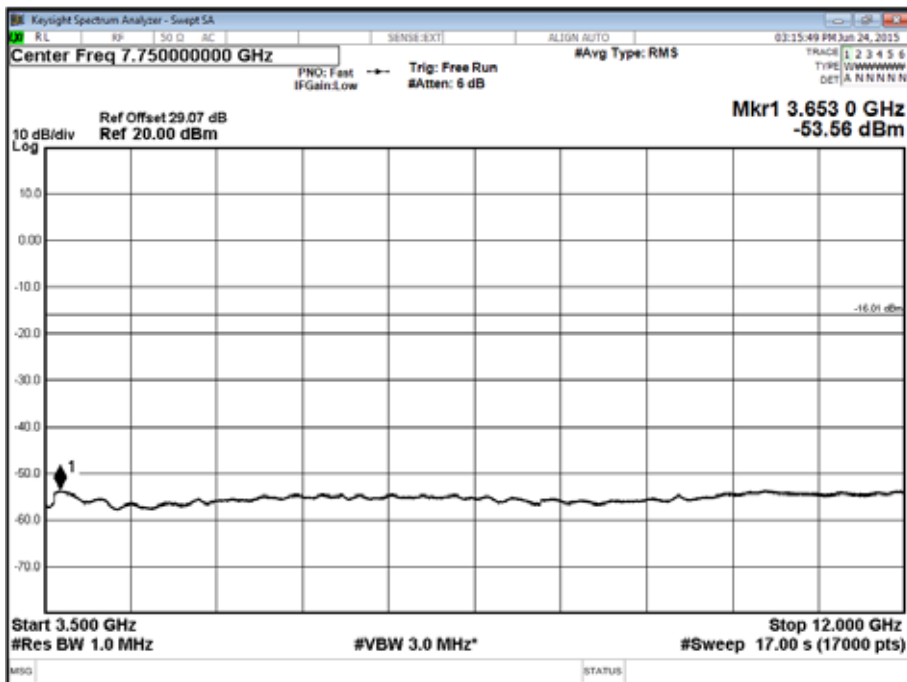
Channel Position MRFBW - Antenna A



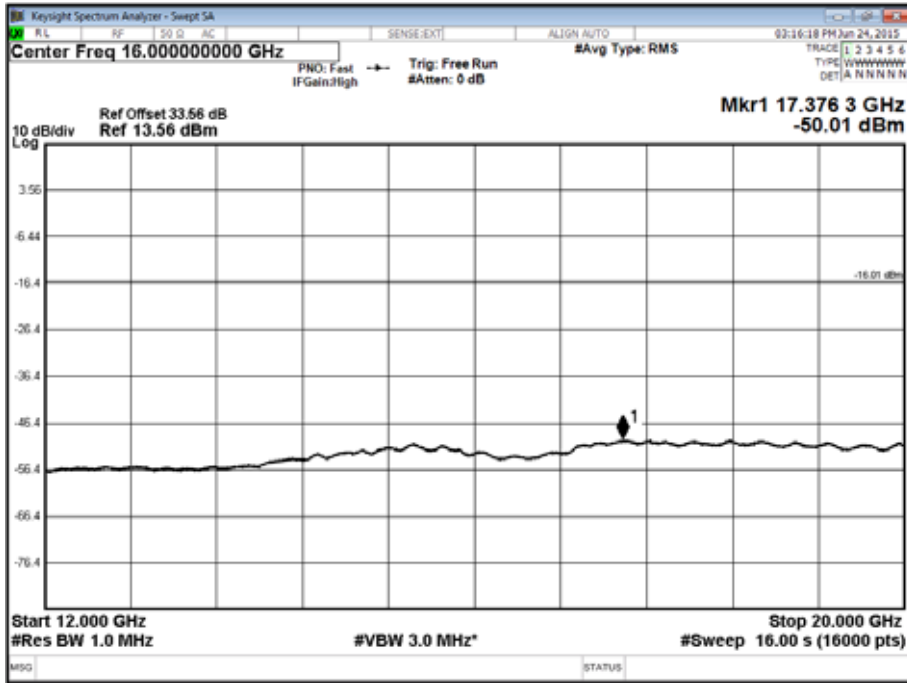
Channel Position TRFBW - Antenna A



Channel Position TRFBW - Antenna A



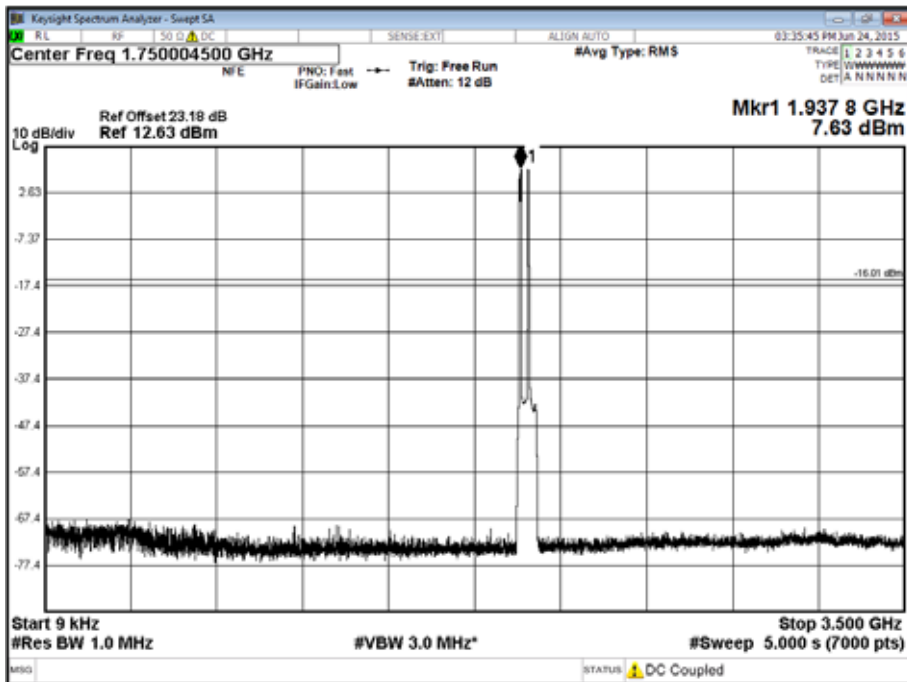
Channel Position TRFBW - Antenna A



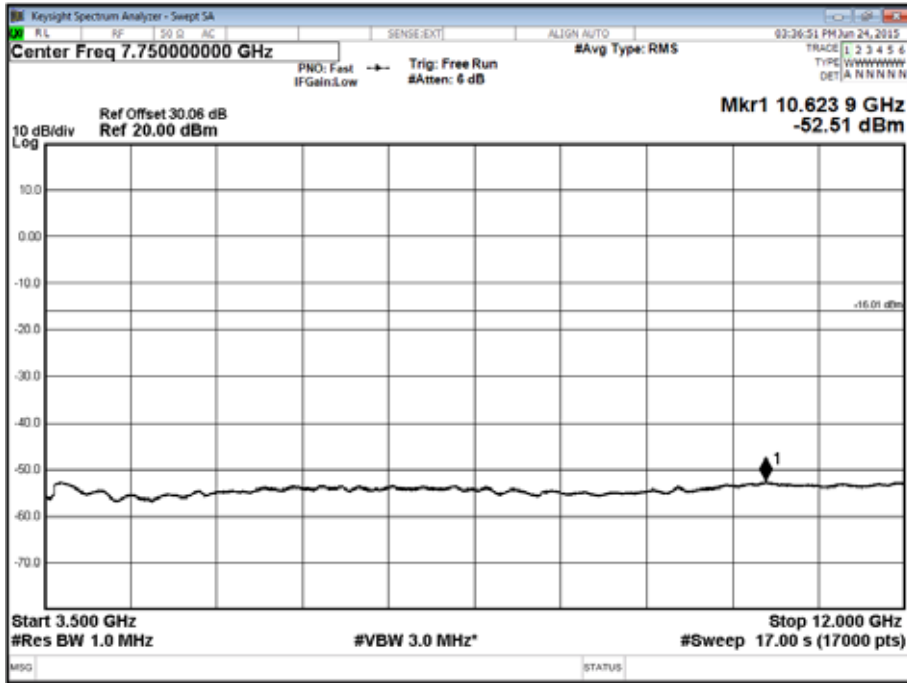
Configuration 7 WCDMA/LTE MM, Antenna B (See table 5)

Maximum Output Power 17 dBm

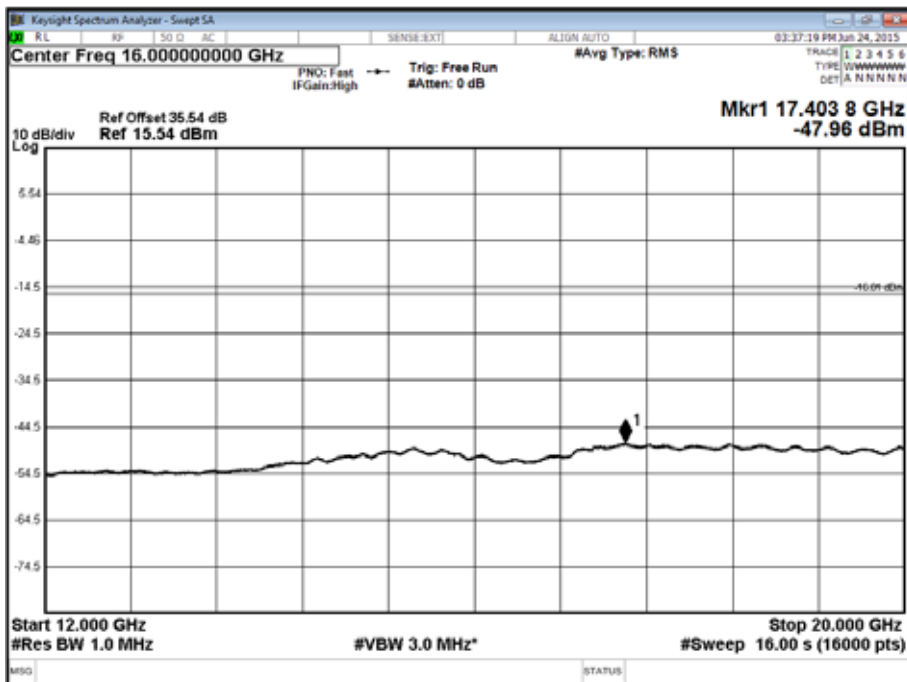
Channel Position BRFBW - Antenna B



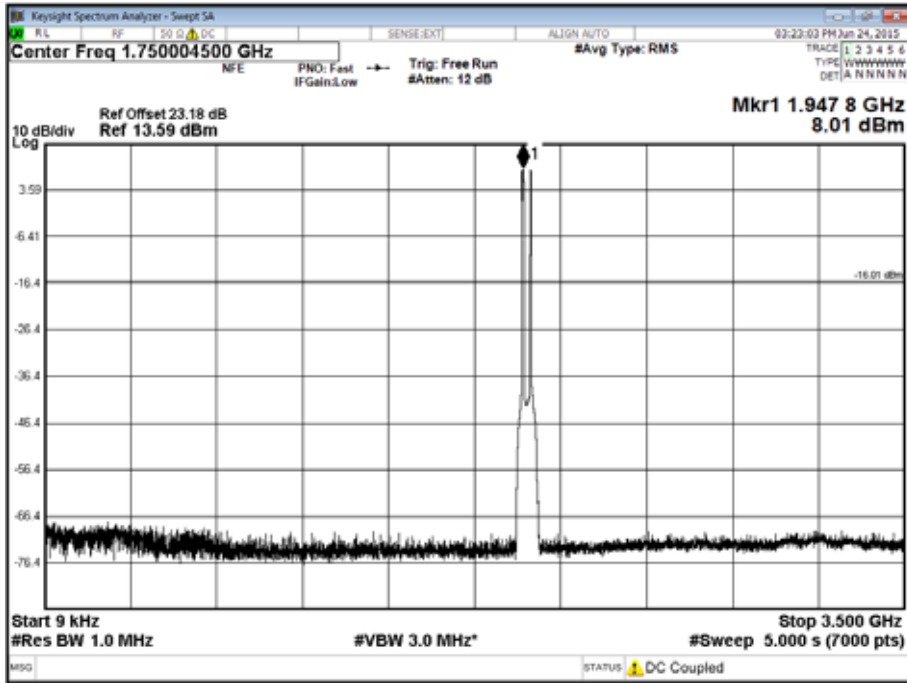
Channel Position BRFBW - Antenna B



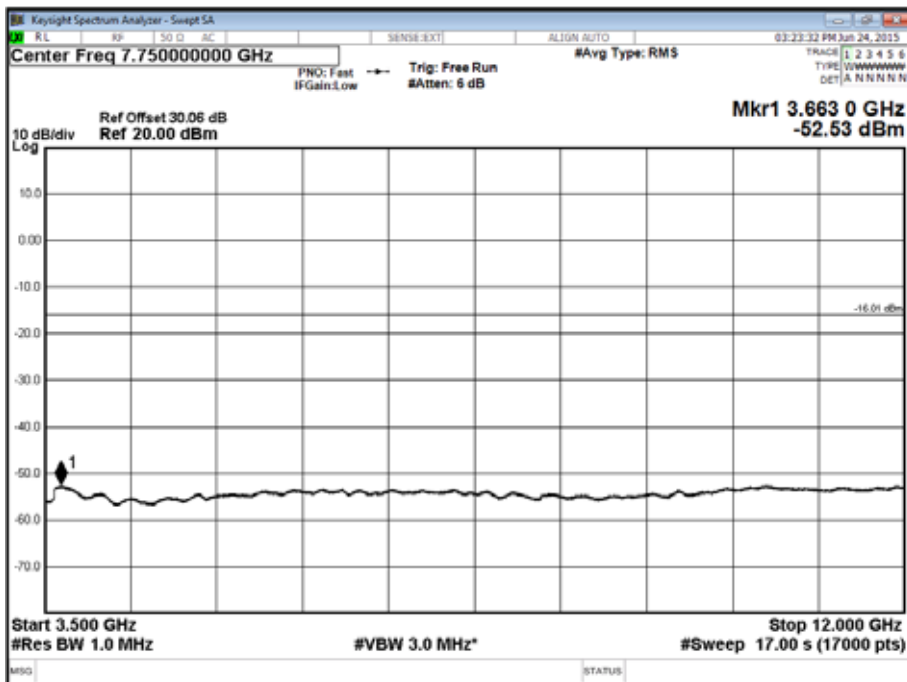
Channel Position BRFBW - Antenna B



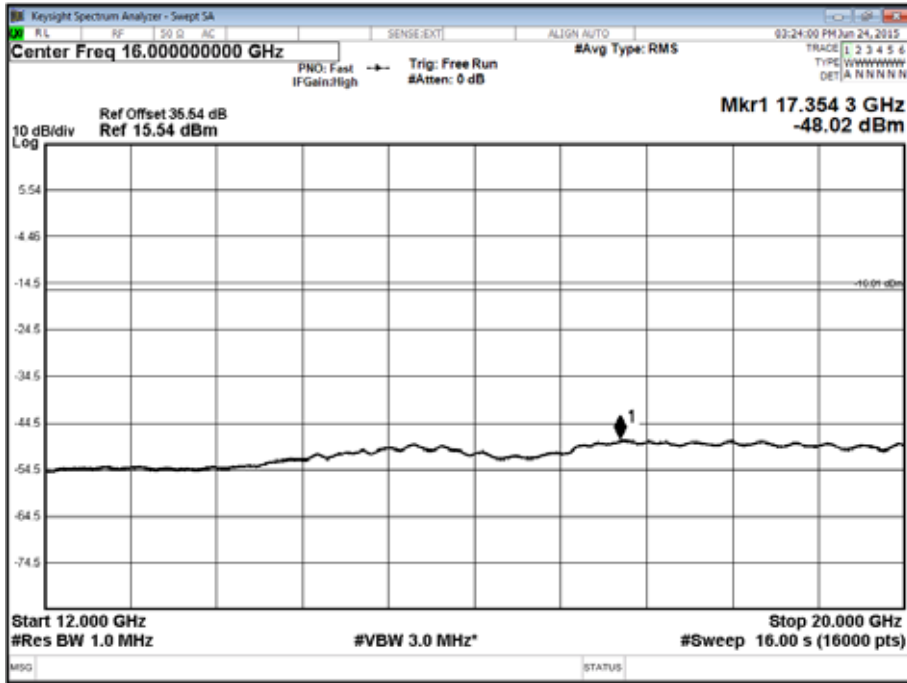
Channel Position MRFBW - Antenna B



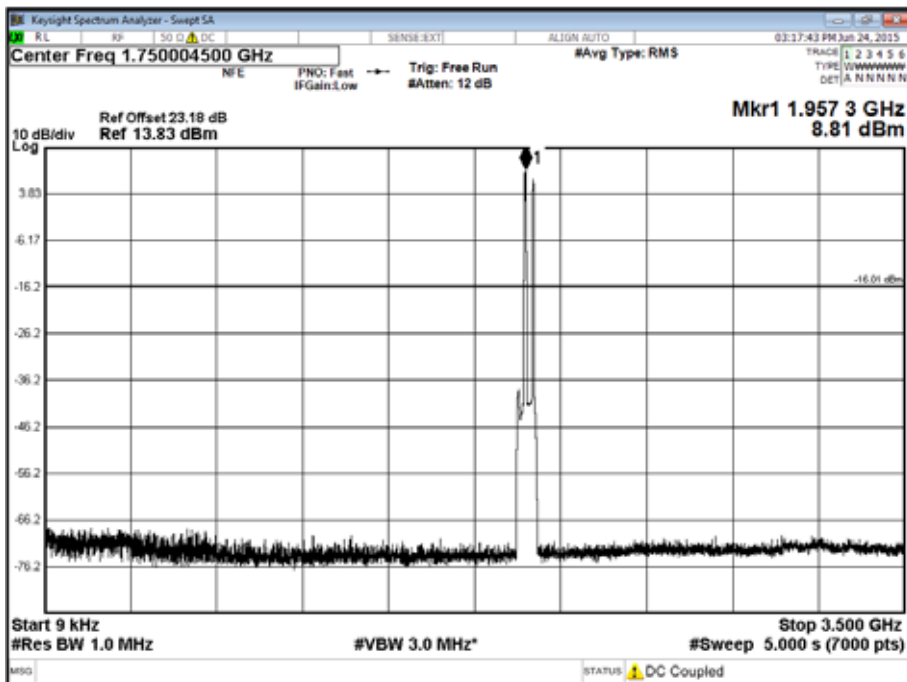
Channel Position MRFBW - Antenna B



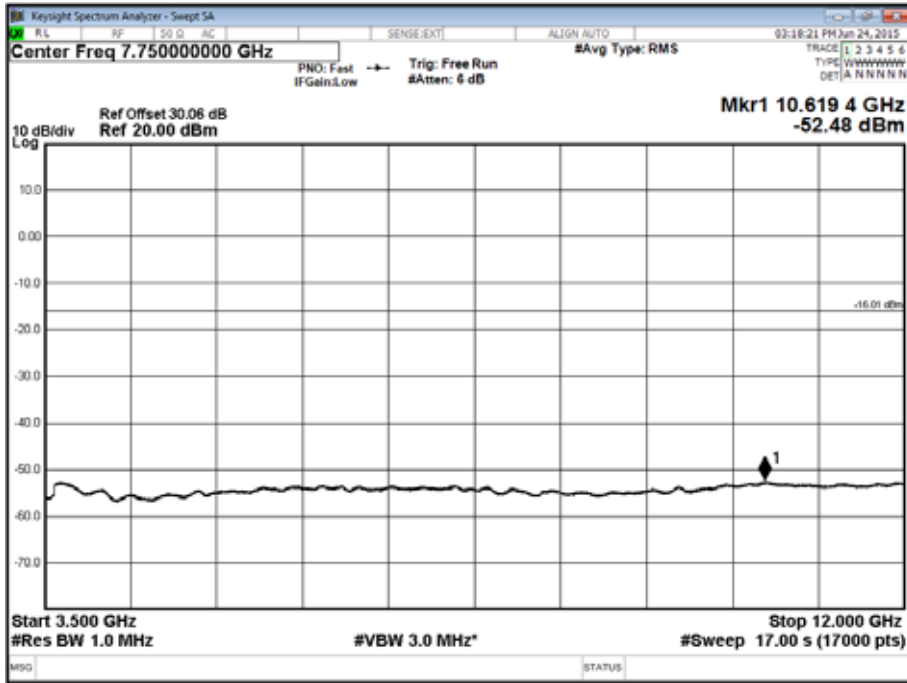
Channel Position MRFBW - Antenna B



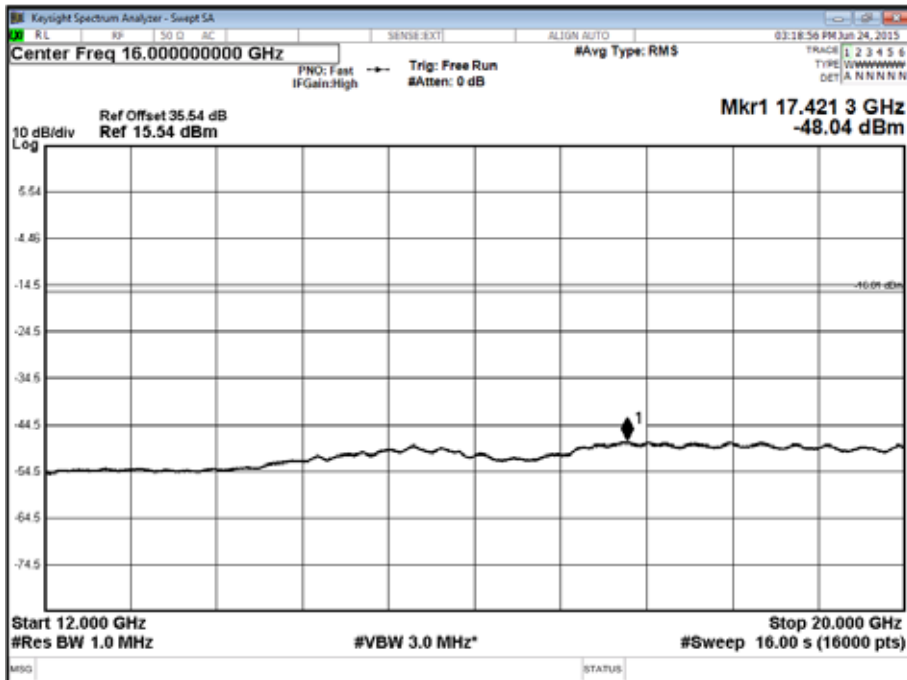
Channel Position TRFBW - Antenna B



Channel Position TRFBW - Antenna B



Channel Position TRFBW - Antenna B



Limit	-16dBm
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2.5 FREQUENCY STABILITY

2.5.1 Specification Reference

FCC CFR 47 Part 2, Clause 2.1055
FCC CFR 47 Part 24, Clause 24.235
Industry Canada RSS-133, Clause 6.3

2.5.2 Date of Test and Modification State

25 June 2015 - 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	25.6°C
Relative Humidity	42.7%

2.5.5 Test Method

The EUT was placed in a Climatic Chamber and connected to a Signal Analyser via 20dB of attenuation. The EUT was set to transmit at its maximum rated output power in the configuration described below.

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 mean Frequency Error was measured and recorded on the Middle channel.

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

2.5.6 Test Results

Configuration 1 WCDMA SC, Antenna A

Maximum Output Power 17 dBm

Temperature	Frequency Error (Hz)
	Channel Position M
-30°C	NPD
-20°C	6.23
-10°C	5.02
0°C	-4.67
+10°C	-3.90
+20°C	6.74
+30°C	5.68
+40°C	4.80
+50°C	-6.14

Remarks

IRU 2242 was outside climatic chamber at ambient temperature. Test Model = TM1 (QPSK).
NPD = No Power Detected.

Configuration 4 LTE SC, Antenna A

Maximum Output Power 17 dBm

Temperature	Frequency Error (Hz)
	Channel Position M
-30°C	NPD
-20°C	-4.66
-10°C	-2.76
0°C	2.39
+10°C	3.76
+20°C	1.93
+30°C	2.18
+40°C	-1.63
+50°C	2.04

Remarks

IRU 2242 was outside climatic chamber at ambient temperature. Test Model = ETM1.1 (QPSK) / 5MHz. NPD = No Power Detected.

Configuration 1 WCDMA SC, Antenna A

Maximum Output Power 17 dBm

Voltage	Frequency Error (Hz)
	Channel Position M
-40.8 V	7.47
-48.0 V	6.74
-55.2 V	6.09

Remarks

IRU 2242 was outside climatic chamber at ambient temperature. Test Model = TM1 (QPSK).

Configuration 4 LTE SC, Antenna A

Maximum Output Power 17 dBm

Voltage	Frequency Error (Hz)
	Channel Position M
-40.5 V	1.78
-48.0 V	1.93
-55.2 V	2.87

Remarks

IRU 2242 was outside climatic chamber at ambient temperature. Test Model = ETM1.1 (QPSK) / 5MHz.

Limit	± 1.0 ppm or ± 1.960 kHz
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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
Maximum Peak Output Power and Peak to Average Ratio - Conducted					
Hygrometer	Rotronic	HP21	4410	12	15-Apr-2016
DMM	Fluke	179	4007	12	31-Jul-2015
Spectrum Analyser	Agilent	PXA N9030A	US49230391	12	22-Sep-2015
Network Analyser	Agilent	8722ES	US39175387	12	15-Oct-2015
Power Meter	Agilent	1912A	MY45101348	24	O/P Mon
Power Sensor	Agilent	1921A	MY52410016	12	O/P Mon
Power Sensor	Agilent	1921A	MY45200381	12	O/P Mon
PSU (DC)	Xantrex	XKW60-50	1001425551	-	O/P Mon
Attenuator (20dB)	Hewlett Packard	8491A	-	-	O/P Mon
RF Switch	Ericsson	RARFSW 4X1	001	-	O/P Mon
Switch Driver	Hewlett Packard	11713A	3748A06076	-	O/P Mon
PSU (DC)	Leader	730-3D	9801135	-	O/P Mon
Occupied Bandwidth					
Hygrometer	Rotronic	HP21	4410	12	15-Apr-2016
DMM	Fluke	179	4007	12	31-Jul-2015
Spectrum Analyser	Agilent	PXA N9030A	US49230391	12	22-Sep-2015
Network Analyser	Agilent	8722ES	US39175387	12	15-Oct-2015
Power Meter	Agilent	1912A	MY45101348	24	O/P Mon
Power Sensor	Agilent	1921A	MY52410016	12	O/P Mon
Power Sensor	Agilent	1921A	MY45200381	12	O/P Mon
PSU (DC)	Xantrex	XKW60-50	1001425551	-	O/P Mon
Attenuator (20dB)	Hewlett Packard	8491A	-	-	O/P Mon
RF Switch	Ericsson	RARFSW 4X1	001	-	O/P Mon
Switch Driver	Hewlett Packard	11713A	3748A06076	-	O/P Mon
PSU (DC)	Leader	730-3D	9801135	-	O/P Mon
Band Edge					
Hygrometer	Rotronic	HP21	4410	12	15-Apr-2016
DMM	Fluke	179	4007	12	31-Jul-2015
Spectrum Analyser	Agilent	PXA N9030A	US49230391	12	22-Sep-2015
Network Analyser	Agilent	8722ES	US39175387	12	15-Oct-2015
Power Meter	Agilent	1912A	MY45101348	24	O/P Mon
Power Sensor	Agilent	1921A	MY52410016	12	O/P Mon
Power Sensor	Agilent	1921A	MY45200381	12	O/P Mon
PSU (DC)	Xantrex	XKW60-50	1001425551	-	O/P Mon
Attenuator (20dB)	Hewlett Packard	8491A	-	-	O/P Mon
RF Switch	Ericsson	RARFSW 4X1	001	-	O/P Mon
Switch Driver	Hewlett Packard	11713A	3748A06076	-	O/P Mon
PSU (DC)	Leader	730-3D	9801135	-	O/P Mon

Instrument	Manufacturer	Type No.	TE No.	Calibration Period (months)	Calibration Due
Transmitter Spurious Emissions					
Hygrometer	Rotronic	HP21	4410	12	15-Apr-2016
DMM	Fluke	179	4007	12	31-Jul-2015
Spectrum Analyser	Agilent	PXA N9030A	US49230391	12	22-Sep-2015
Network Analyser	Agilent	8722ES	US39175387	12	15-Oct-2015
Power Meter	Agilent	1912A	MY45101348	-	O/P Mon
Power Sensor	Agilent	1921A	MY52410016	-	O/P Mon
Power Sensor	Agilent	1921A	MY45200381	-	O/P Mon
PSU (DC)	Xantrex	XKW60-50	1001425551	-	O/P Mon
Attenuator (20dB)	Hewlett Packard	8491A	-	-	O/P Mon
RF Switch	Ericsson	RARFSW 4X1	001	-	O/P Mon
Switch Driver	Hewlett Packard	11713A	3748A06076	-	O/P Mon
PSU (DC)	Leader	730-3D	9801135	-	O/P Mon
HPF	Wainwright	WHNX6-2766-3500-26500-40	001	-	O/P Mon
Frequency Stability					
Hygrometer	Rotronic	HP21	4410	12	15-Apr-2016
DMM	Fluke	179	4007	12	31-Jul-2015
Thermometer	Fluke	51	3174	12	01-Dec-2015
Spectrum Analyser	Agilent	PXA N9030A	US49230391	12	22-Sep-2015
PSU (DC)	Xantrex	XKW60-50	1001425551	-	O/P Mon
Attenuator (20dB)	Hewlett Packard	8491A	-	-	O/P Mon
Climatic chamber	Burnsco	RTC-37P-3-3	07-07	-	O/P Mon

OP MON – Output Monitored with Calibrated Equipment

3.2 MEASUREMENT UNCERTAINTY

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

Test Discipline	Frequency / Parameter	MU
Conducted Average Output Power	30 MHz to 20 GHz Amplitude	± 0.5 dB
Conducted Emissions	30 MHz to 20 GHz Amplitude	± 3.5 dB
Frequency Stability	30 MHz to 2 GHz Amplitude	± 0.03 Hz
Occupied Bandwidth	Up to 20 MHz Bandwidth	± 290 kHz
Band Edge	30 MHz to 20 GHz Amplitude	± 3.5 dB



Product Service

SECTION 5

ACCREDITATION, DISCLAIMERS AND COPYRIGHT

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

Configuration A			
Product	Product No	R-State	Serial No
IRU 2242	KRC 161 444/1	R2B	C829886796
RD 2242 B2	KRY 901 328/1	R2C	C829931604
SUP 6601	BFL 901 009/1	R3B	BR81278870
Software Version:	CXP9013268/14	Revision:	R60GY