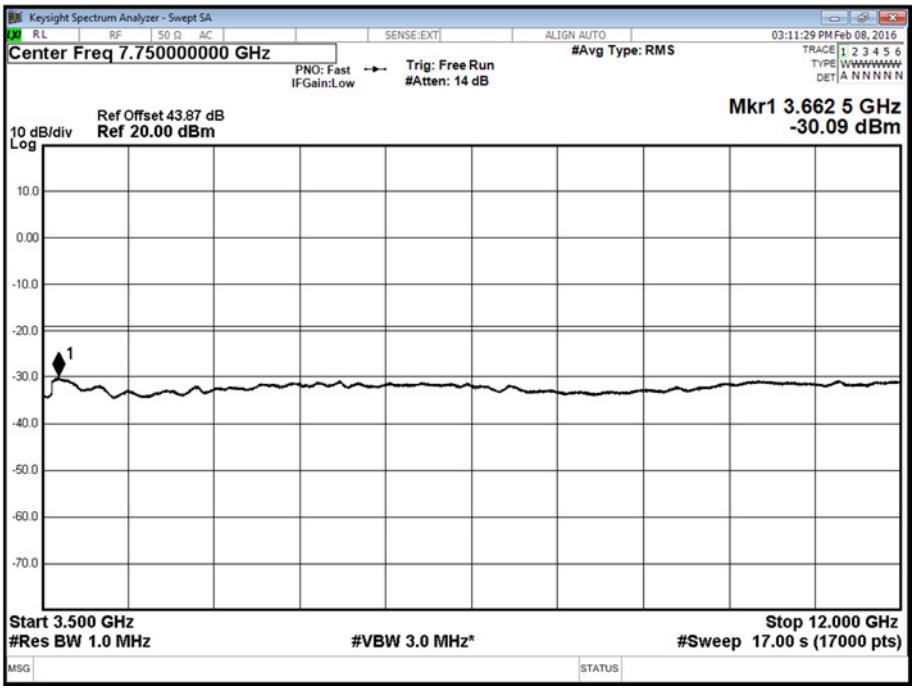
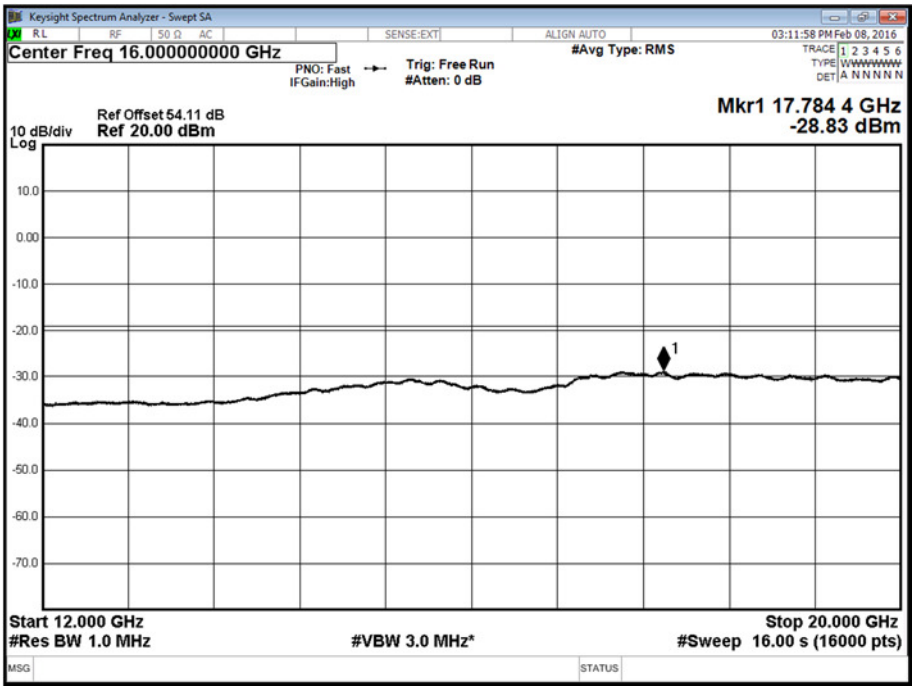
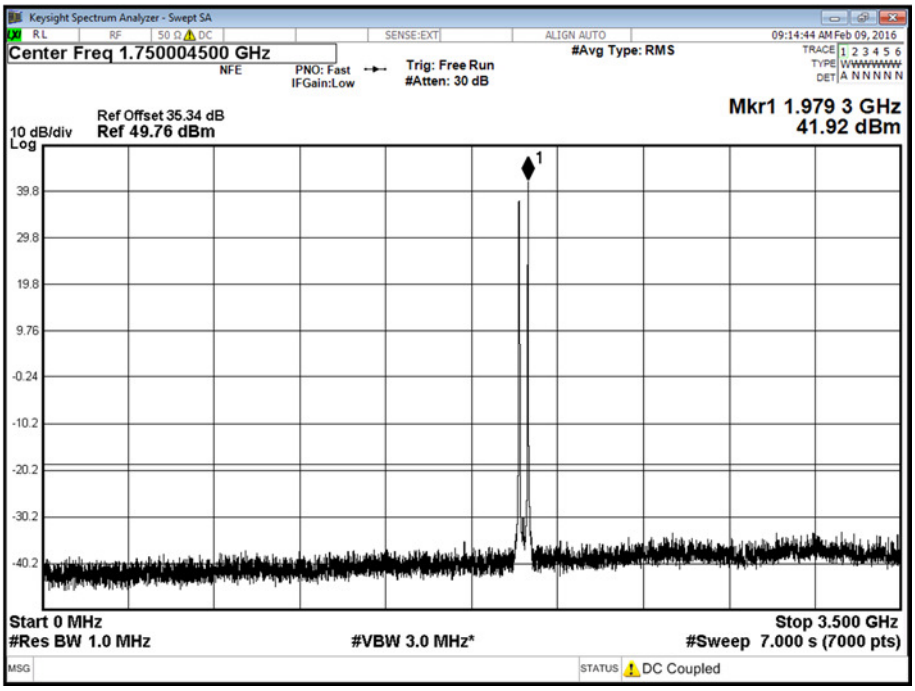
Channel Position BRFBW - Bandwidth 1.4 MHz - Antenna C



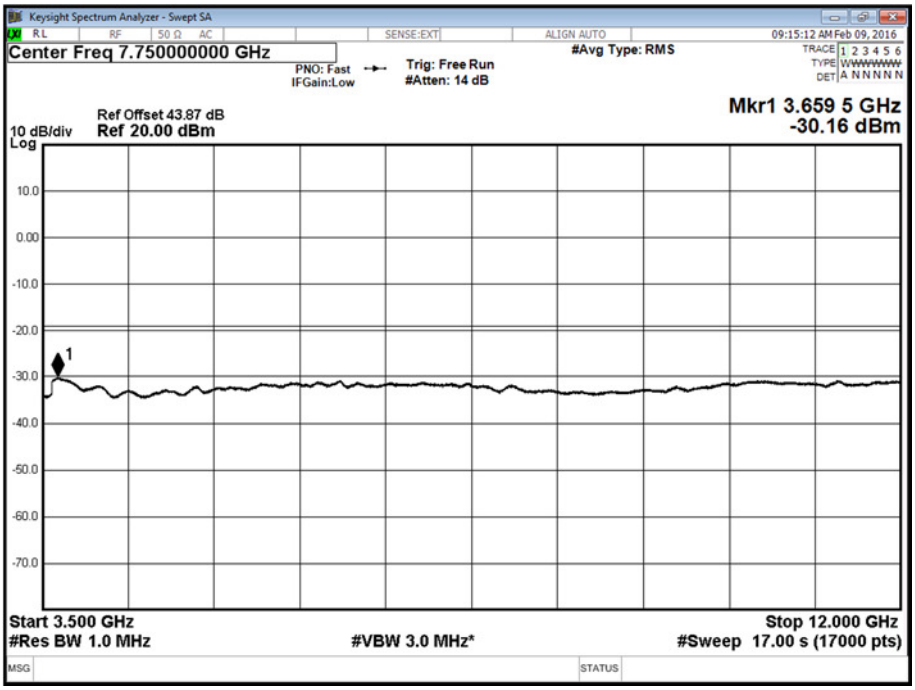
Channel Position BRFBW - Bandwidth 1.4 MHz - Antenna C



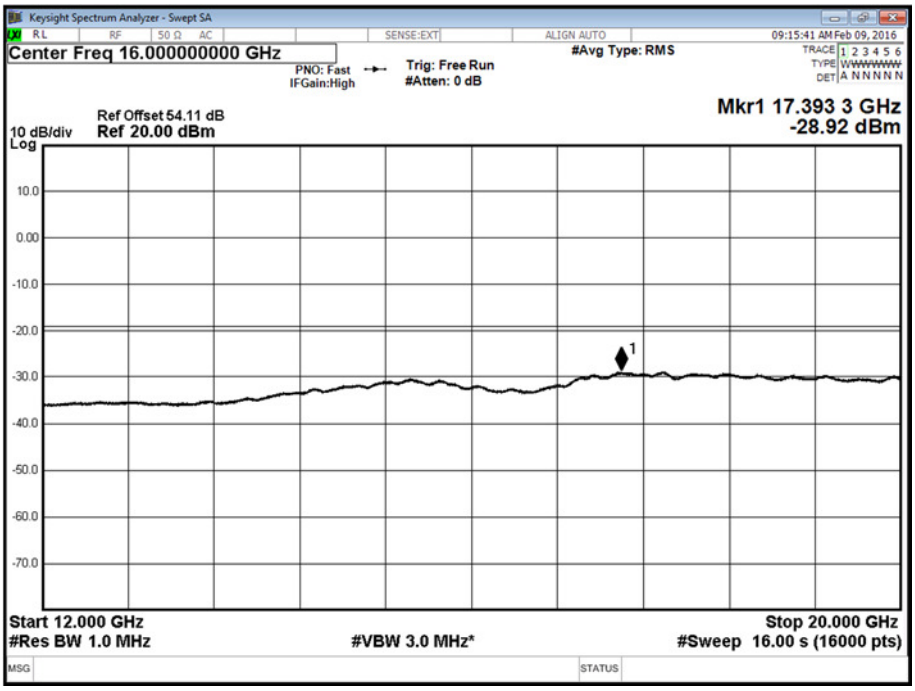
Channel Position MRFBW - Bandwidth 1.4 MHz - Antenna C



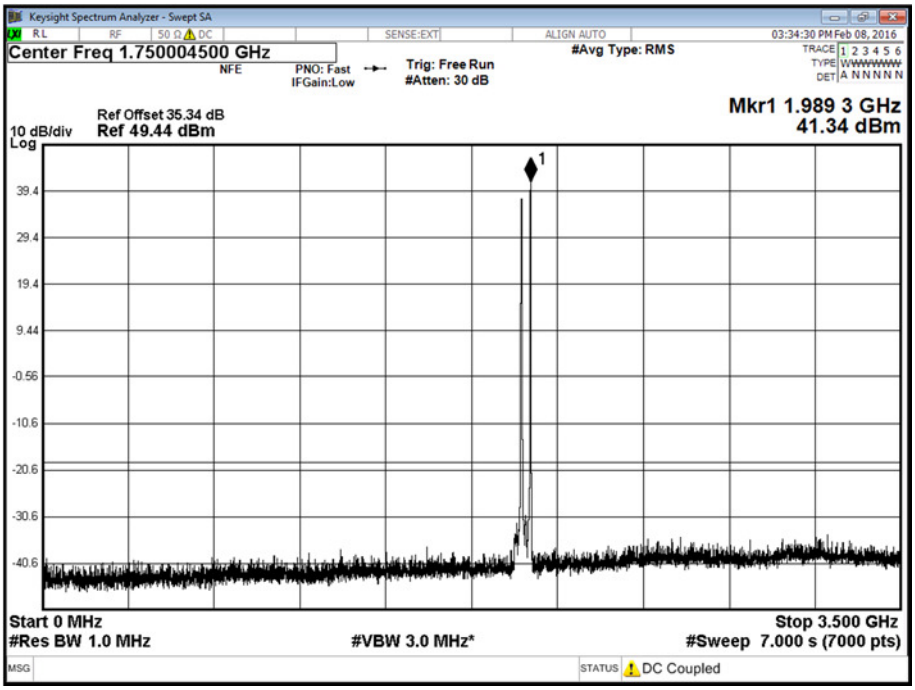
Channel Position MRFBW - Bandwidth 1.4 MHz - Antenna C



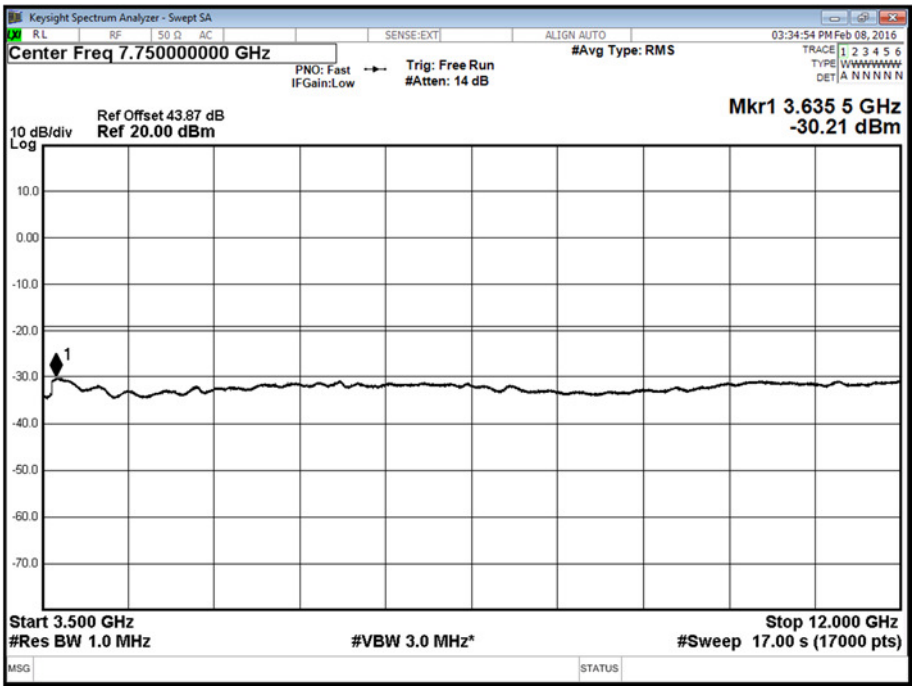
Channel Position MRFBW - Bandwidth 1.4 MHz - Antenna C



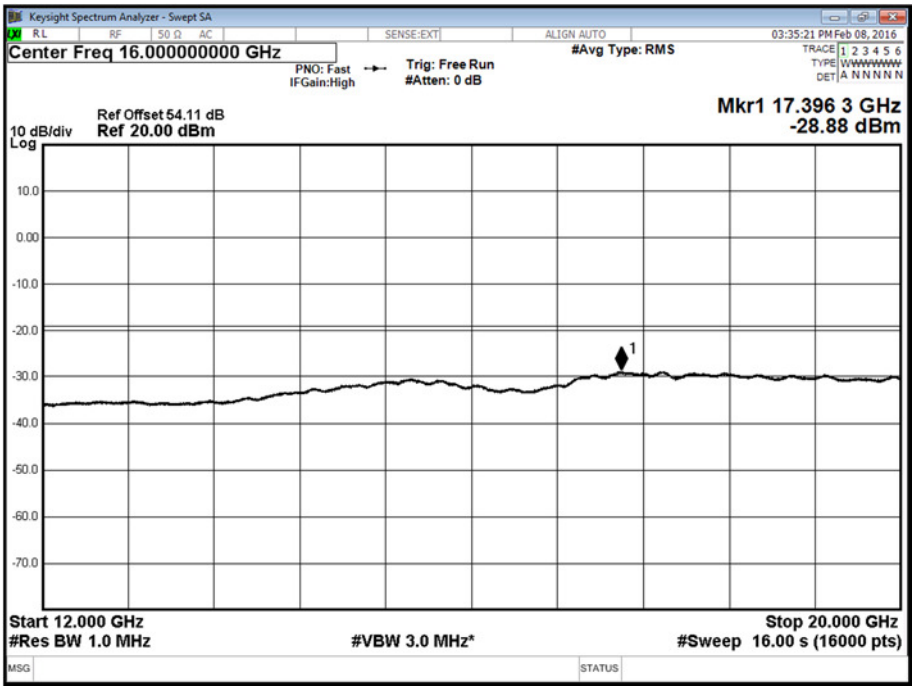
Channel Position TRFBW - Bandwidth 1.4 MHz - Antenna C



Channel Position TRFBW - Bandwidth 1.4 MHz - Antenna C



Channel Position TRFBW - Bandwidth 1.4 MHz - Antenna C



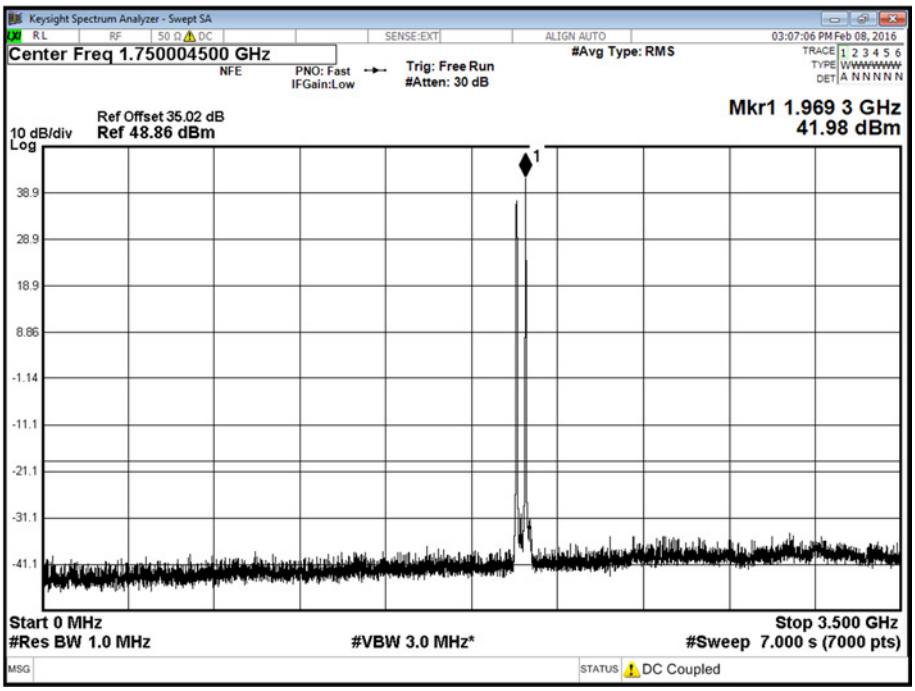
Configuration 6 Antenna D

Maximum Output Power 44.77 dBm

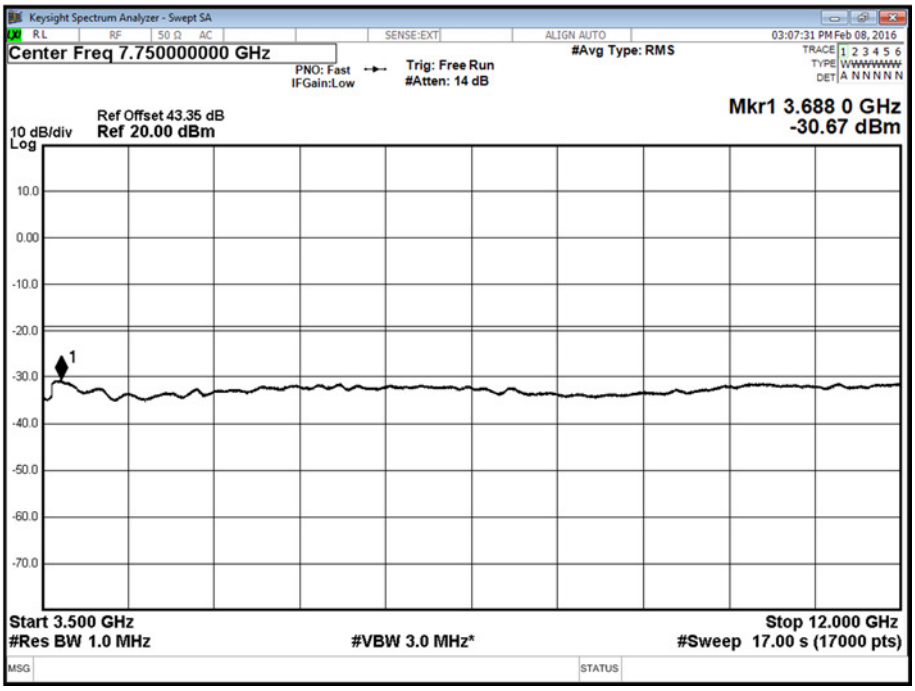
Remarks

LTE Modulation = QPSK

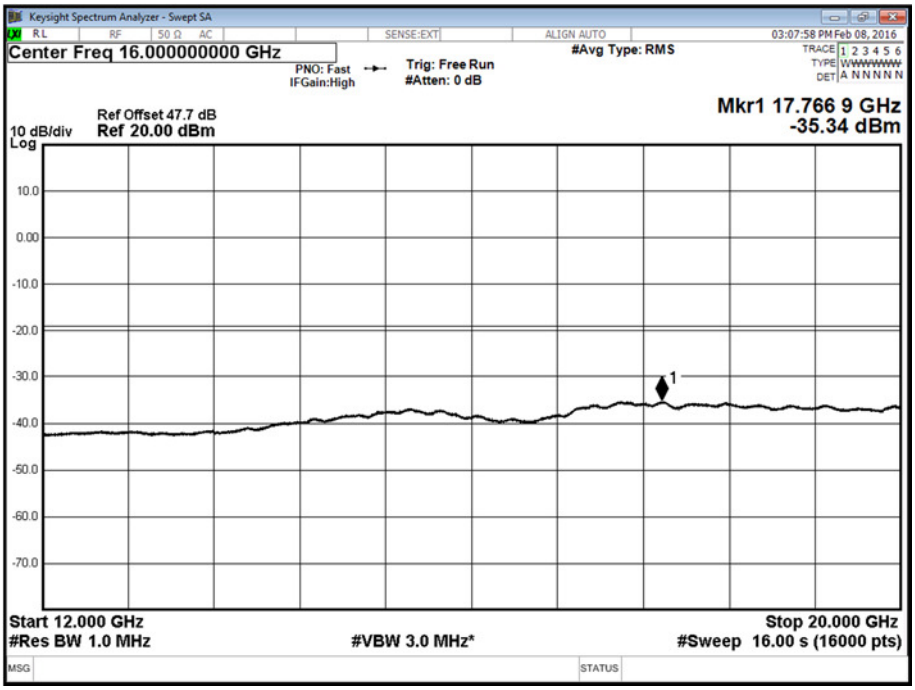
Channel Position BRFBW - Bandwidth 1.4 MHz - Antenna D



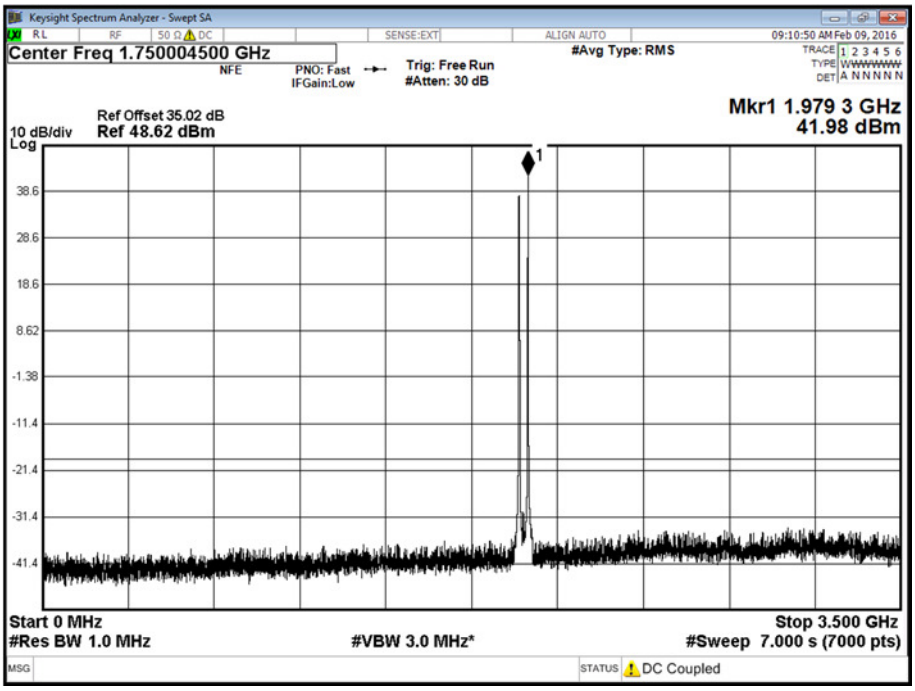
Channel Position BRFBW - Bandwidth 1.4 MHz - Antenna D



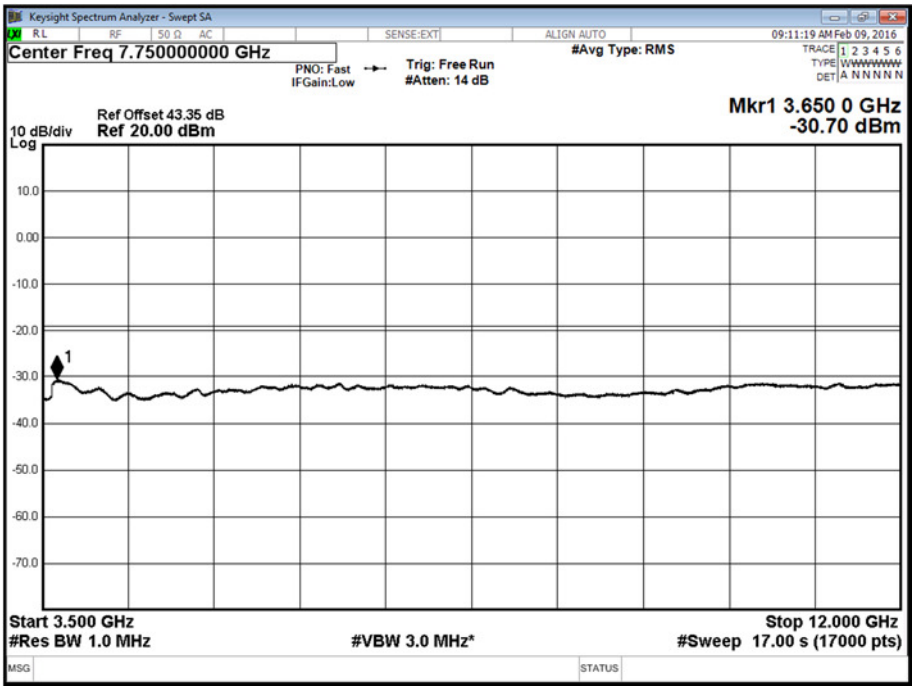
Channel Position BRFBW - Bandwidth 1.4 MHz - Antenna D



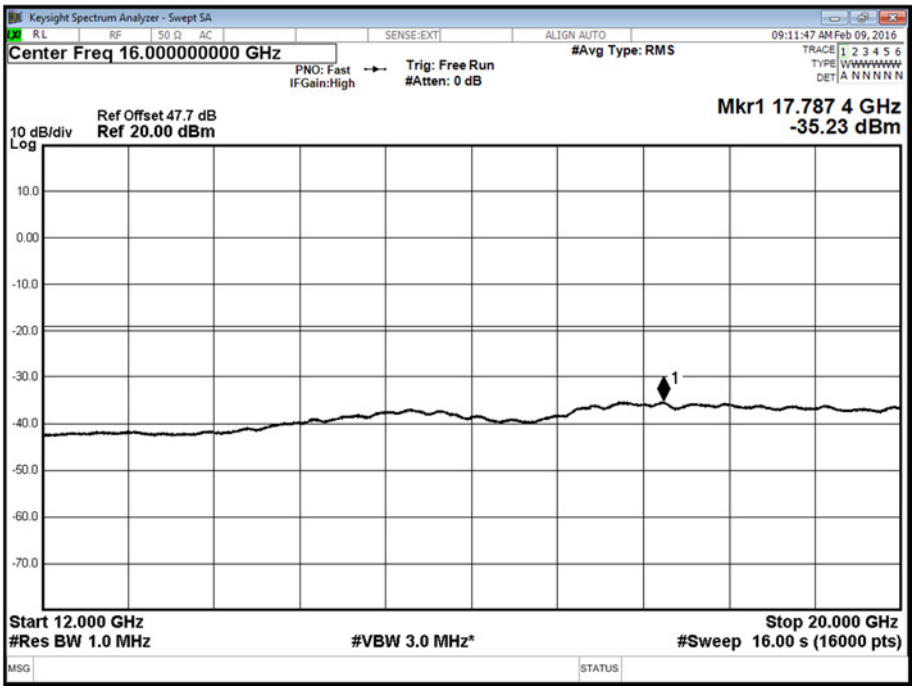
Channel Position MRFBW - Bandwidth 1.4 MHz - Antenna D



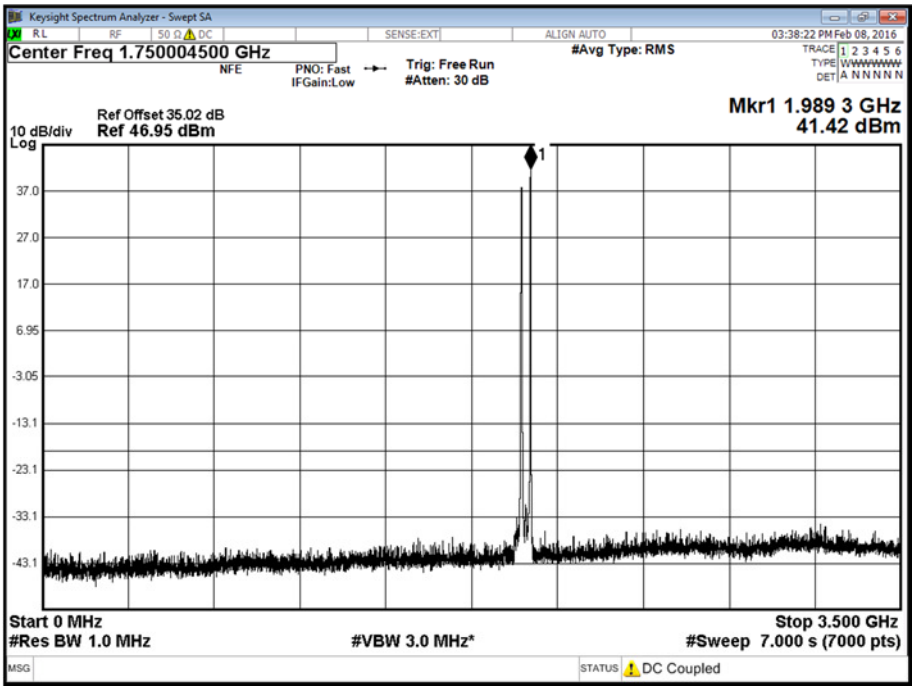
Channel Position MRFBW - Bandwidth 1.4 MHz - Antenna D



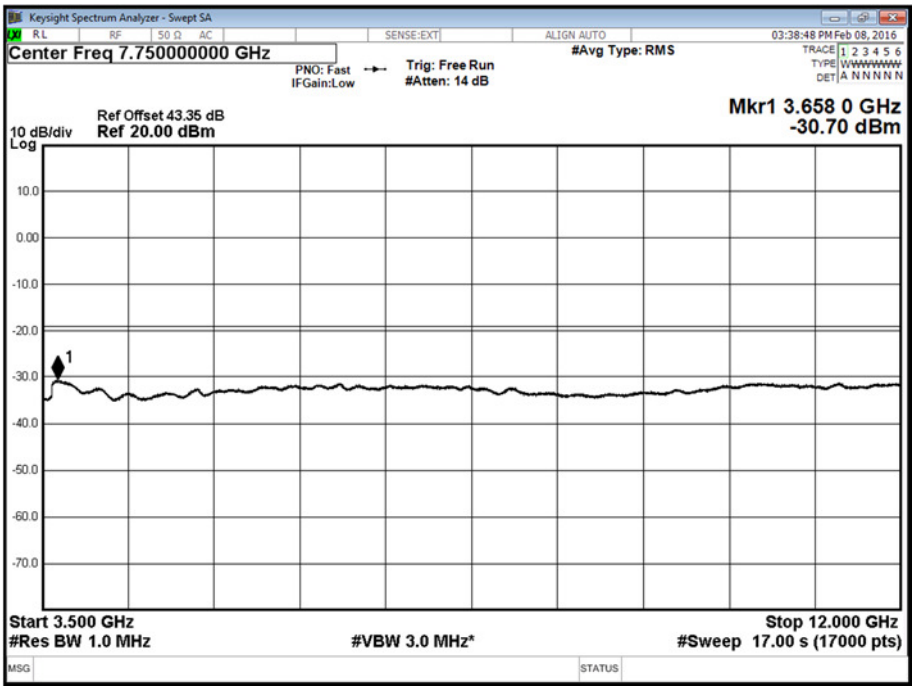
Channel Position MRFBW - Bandwidth 1.4 MHz - Antenna D



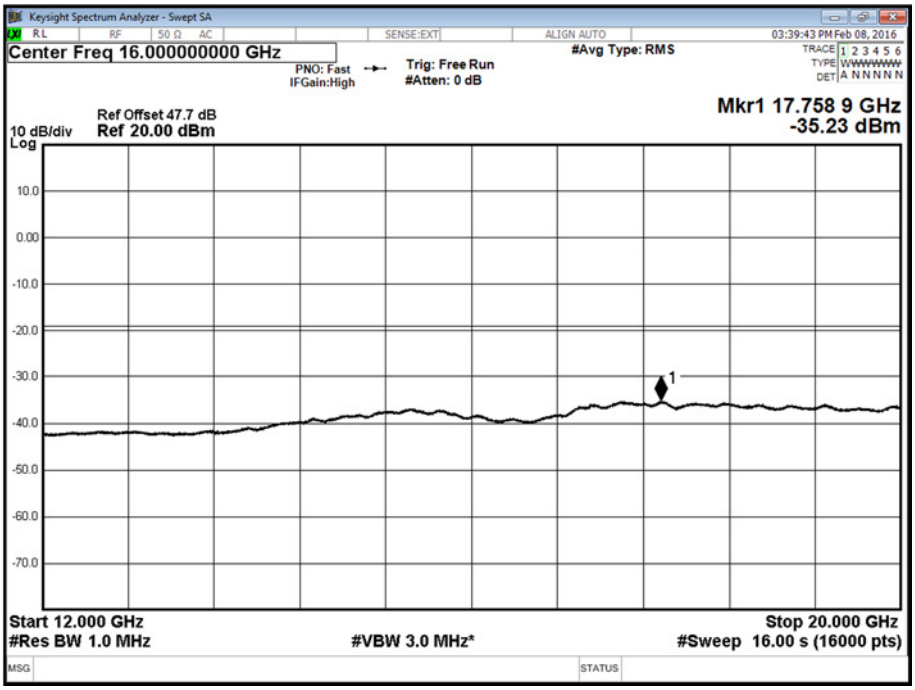
Channel Position TRFBW - Bandwidth 1.4 MHz - Antenna D



Channel Position TRFBW - Bandwidth 1.4 MHz - Antenna D



Channel Position TRFBW - Bandwidth 1.4 MHz - Antenna D



Limit	-19 dBm

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

19 February 2016 - 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	25.3°C
Relative Humidity	21.5%

2.5.5 Test Method

The EUT was placed in a Climatic Chamber and connected to a Signal Analyser via an attenuator and 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 Antenna A

Maximum Output Power 44.77 dBm

Temperature	Frequency Error (Hz)
	Channel Position M
-30°C	6.95
-20°C	-7.50
-10°C	7.03
0°C	7.06
+10°C	5.74
+20°C	6.40
+30°C	-6.46
+40°C	-8.68
+50°C	7.30

Remarks

Test Model = TM1 (QPSK)

Configuration 3 Antenna A

Maximum Output Power 44.77 dBm

Temperature	Frequency Error (Hz)
	Channel Position M
-30°C	5.56
-20°C	4.85
-10°C	4.71
0°C	4.99
+10°C	-5.97
+20°C	5.78
+30°C	5.37
+40°C	5.82
+50°C	-5.89

Remarks

Test Model = ETM1.1 (QPSK) / 5 MHz

Configuration 1 Antenna A

Maximum Output Power 44.77 dBm

Voltage	Frequency Error (Hz)
	Channel Position M
-40.8 V	-7.43
-48.0 V	6.40
-55.2 V	-7.14

Remarks

Test Model = TM1 (QPSK)

Configuration 3 Antenna A

Maximum Output Power 44.77 dBm

Voltage	Frequency Error (Hz)
	Channel Position M
-40.8 V	-6.15
-48.0 V	5.78
-55.2 V	-4.98

Remarks

Test Model = ETM1.1 (QPSK) / 5 MHz

Limit	±1.5 ppm or ±2.895 kHz

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
Output Power and Peak to Average Ratio - Conducted					
Hygrometer	Rotronic	A1	2138	12	09-Dec-2016
DMM	Fluke	79	3057	12	07-Oct-2016
Spectrum Analyser	Agilent	PXA N9030A	US49230391	12	29-Dec-2016
Network Analyser	Agilent	8722ES	US39175387	12	30-Sep-2016
PSU (DC)	Xantrex	XKW60-50	1001425551	-	O/P Mon
Attenuator (30dB)	Weinschel	WA48-30--33-LIM	1995	-	O/P Mon
Attenuator (30dB)	Weinschel	WA48-30--33-LIM	1996	-	O/P Mon
Attenuator (30dB)	Weinschel	WA48-30--33-LIM	1997	-	O/P Mon
Attenuator (30dB)	Weinschel	WA48-30--33-LIM	1998	-	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	A1	2138	12	09-Dec-2016
DMM	Fluke	79	3057	12	07-Oct-2016
Spectrum Analyser	Agilent	PXA N9030A	US49230391	12	29-Dec-2016
Network Analyser	Agilent	8722ES	US39175387	12	30-Sep-2016
PSU (DC)	Xantrex	XKW60-50	1001425551	-	O/P Mon
Attenuator (30dB)	Weinschel	WA48-30--33-LIM	1995	-	O/P Mon
Attenuator (30dB)	Weinschel	WA48-30--33-LIM	1996	-	O/P Mon
Attenuator (30dB)	Weinschel	WA48-30--33-LIM	1997	-	O/P Mon
Attenuator (30dB)	Weinschel	WA48-30--33-LIM	1998	-	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	A1	2138	12	09-Dec-2016
DMM	Fluke	79	3057	12	07-Oct-2016
Spectrum Analyser	Agilent	PXA N9030A	US49230391	12	29-Dec-2016
Network Analyser	Agilent	8722ES	US39175387	12	30-Sep-2016
PSU (DC)	Xantrex	XKW60-50	1001425551	-	O/P Mon
Attenuator (30dB)	Weinschel	WA48-30--33-LIM	1995	-	O/P Mon
Attenuator (30dB)	Weinschel	WA48-30--33-LIM	1996	-	O/P Mon
Attenuator (30dB)	Weinschel	WA48-30--33-LIM	1997	-	O/P Mon
Attenuator (30dB)	Weinschel	WA48-30--33-LIM	1998	-	O/P Mon

Instrument	Manufacturer	Type No.	TE No.	Calibration Period (months)	Calibration Due
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
Transmitter Spurious Emissions					
Hygrometer	Rotronic	A1	2138	12	09-Dec-2016
DMM	Fluke	79	3057	12	07-Oct-2016
Spectrum Analyser	Agilent	PXA N9030A	US49230391	12	29-Dec-2016
Network Analyser	Agilent	8722ES	US39175387	12	30-Sep-2016
PSU (DC)	Xantrex	XKW60-50	1001425551	-	O/P Mon
Attenuator (30dB)	Weinschel	WA48-30--33-LIM	1995	-	O/P Mon
Attenuator (30dB)	Weinschel	WA48-30--33-LIM	1996	-	O/P Mon
Attenuator (30dB)	Weinschel	WA48-30--33-LIM	1997	-	O/P Mon
Attenuator (30dB)	Weinschel	WA48-30--33-LIM	1998	-	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	A1	2138	12	09-Dec-2016
DMM	Fluke	79	3057	12	07-Oct-2016
Thermometer	Fluke	51	2267	12	09-Dec-2016
Spectrum Analyser	Agilent	PXA N9030A	MY55410202	12	24-Dec-2016
PSU (DC)	Xantrex	XKW60-50	1001425551	-	O/P Mon
Attenuator (30dB)	Weinschel	WA48-30--33-LIM	1995	-	O/P Mon
Climatic chamber	Burnsco	RTC-37P-3-3	07-07	-	O/P Mon

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	Frequency / Parameter	MU
Conducted Output Power	30 MHz to 20 GHz Amplitude	± 0.7 dB
Conducted Emissions	30 MHz to 20 GHz Amplitude	± 2.7 dB
Frequency Stability	30 MHz to 2 GHz	± 28.0 Hz
Occupied Bandwidth	Up to 20 MHz Bandwidth	± 3.2 - 46.1 KHz
Band Edge	30 MHz to 20 GHz Amplitude	± 0.8 dB

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).

ANNEX A

MODULE LIST

Configuration 1-11			
Product	Product No	R-State	Serial No
AIR 32 B4A B2P (Mockup)	-	-	D240166762
RRUS 32A B2	KRC 161 418/1	R1C	D16R536320
Software Version:	CXP9017316/5	Revision:	R60KM