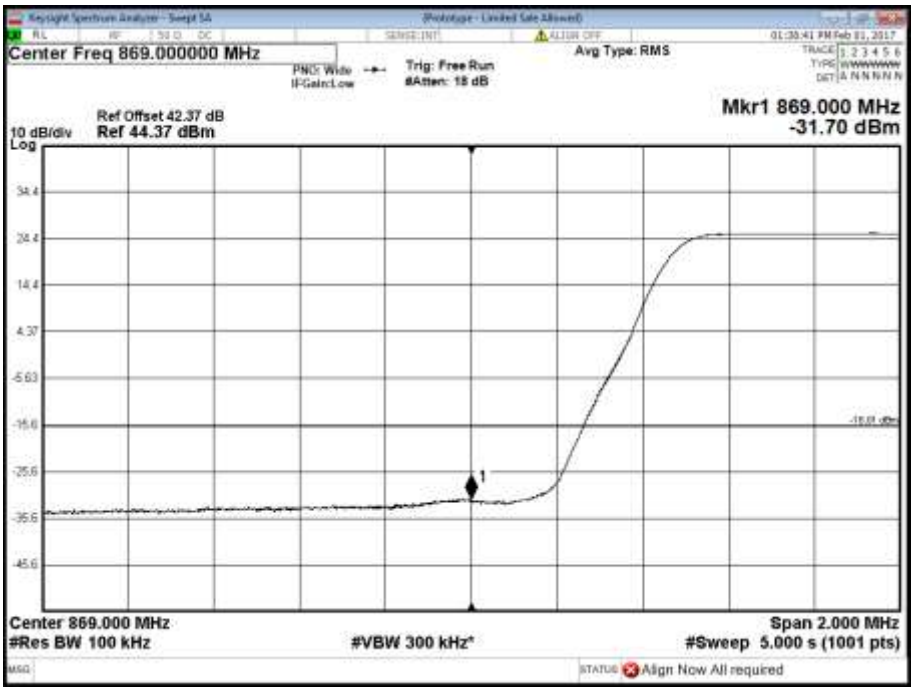
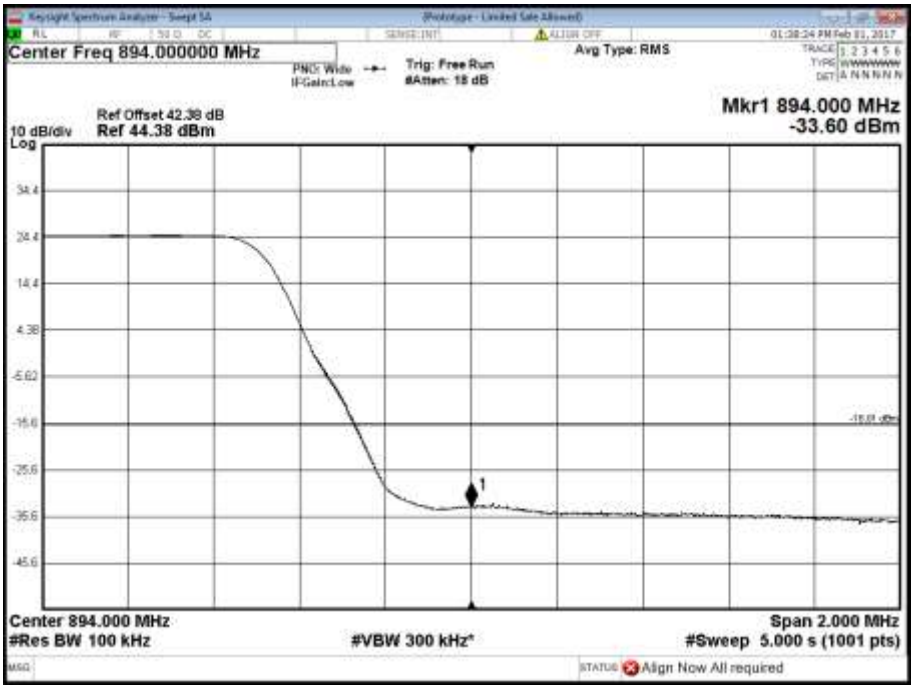
Antenna A - Channel Position B - Carrier Bandwidth 10.0 MHz - Modulation QPSK



Antenna A - Channel Position T - Carrier Bandwidth 10.0 MHz - Modulation QPSK

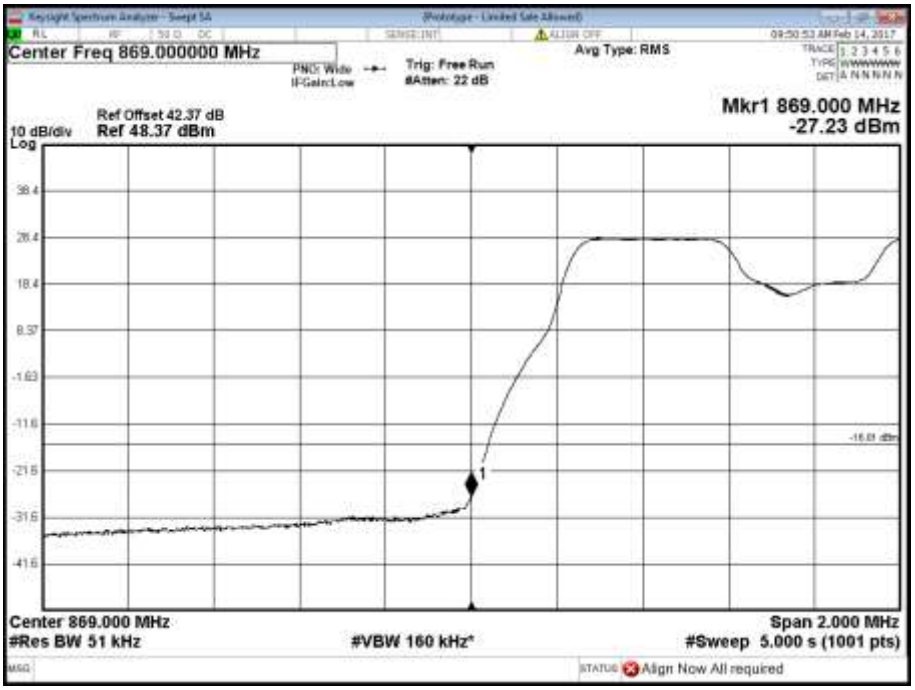


Configuration D

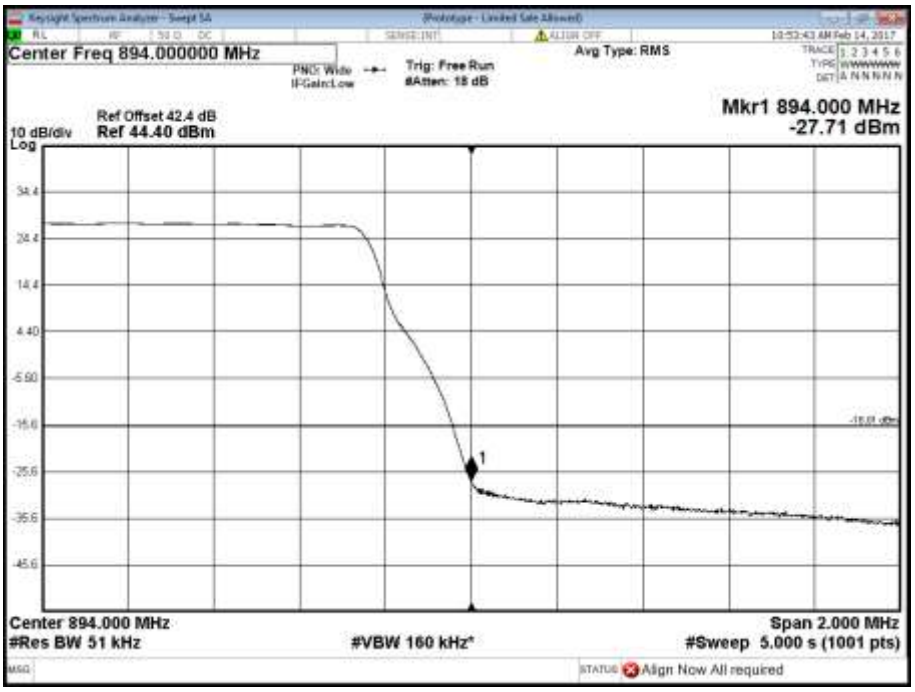
Maximum Output Power 46 dBm

Carrier Bandwidth	Modulation	Band Edge (MHz)	
		Channel Position B	Channel Position T
5.0 MHz	QPSK	871.5	891.5
10.0 MHz	QPSK	874.0	889.0

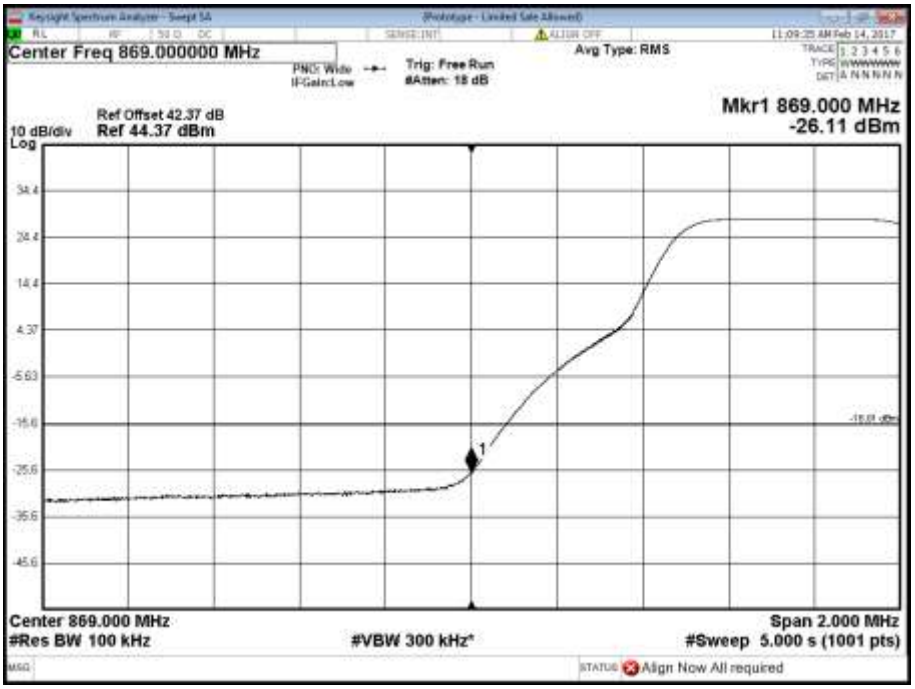
Antenna A - Channel Position B - Carrier Bandwidth 5.0 MHz - Modulation QPSK



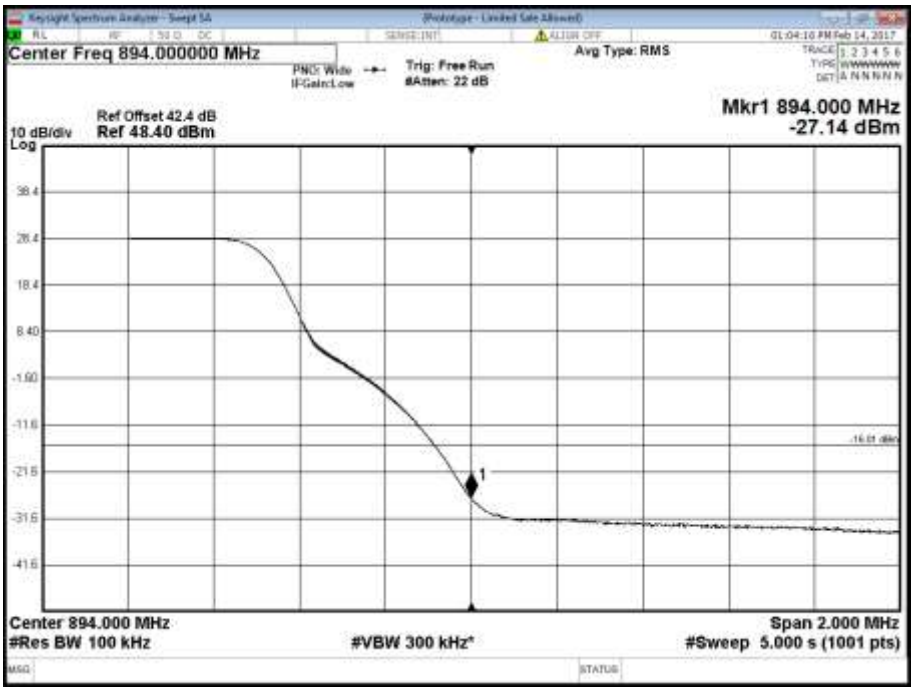
Antenna A - Channel Position T - Carrier Bandwidth 5.0 MHz - Modulation QPSK



Antenna A - Channel Position B - Carrier Bandwidth 10.0 MHz - Modulation QPSK



Antenna A - Channel Position T - Carrier Bandwidth 10.0 MHz - Modulation QPSK

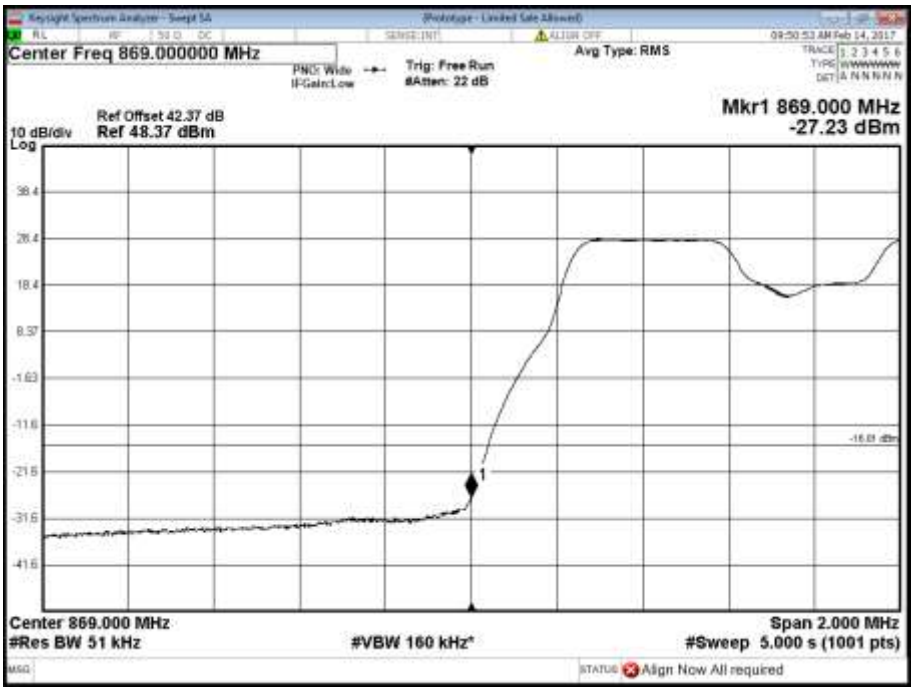


Configuration D

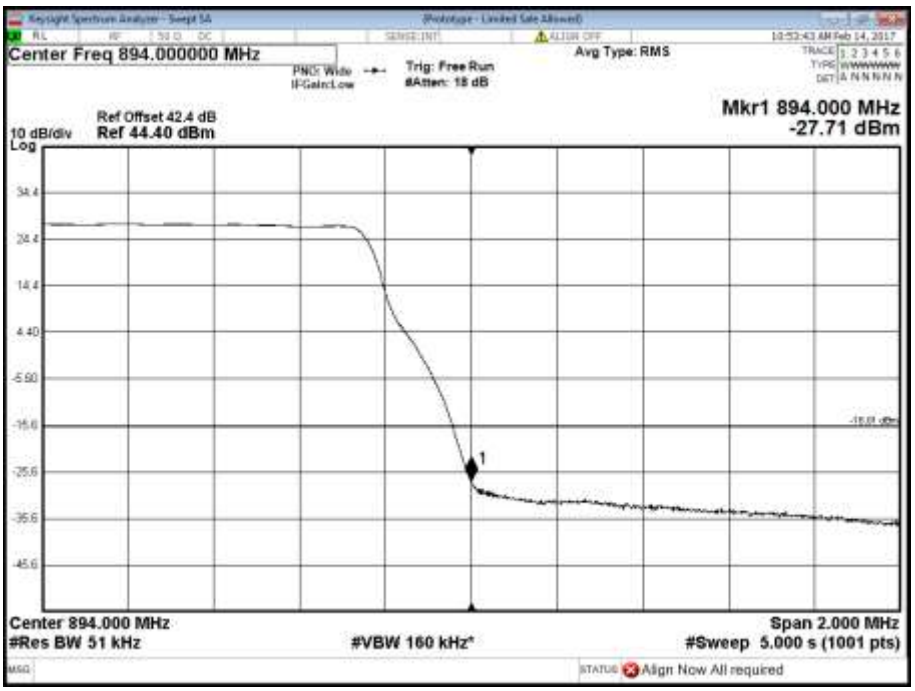
Maximum Output Power 46 dBm

Carrier Bandwidth	Modulation	Band Edge (MHz)	
		Channel Position B	Channel Position T
5.0 MHz	QPSK	871.5	891.5

Antenna A - Channel Position B - Carrier Bandwidth 5.0 MHz - Modulation QPSK



Antenna A - Channel Position T - Carrier Bandwidth 5.0 MHz - Modulation QPSK



Configuration L

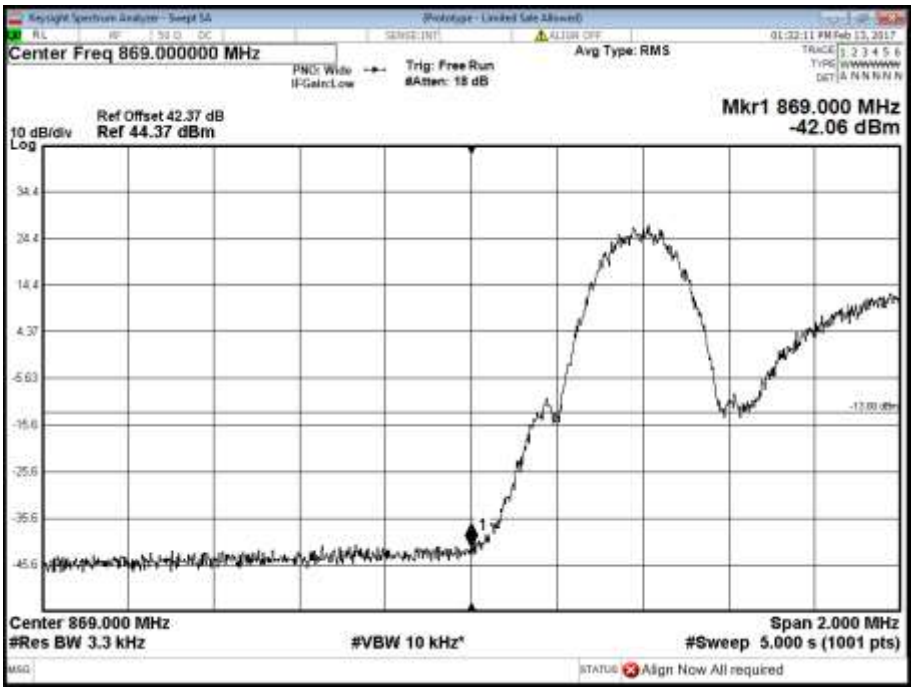
Maximum Output Power 46 dBm

WCDMA Bandwidth	GSM Modulation	Band Edge (MHz)	
		Channel Position BRFBW	Channel Position TRFBW
5.0 MHz	GMSK	869.4 (G) + 872 (W)	893.6 (G) + 891 (W)

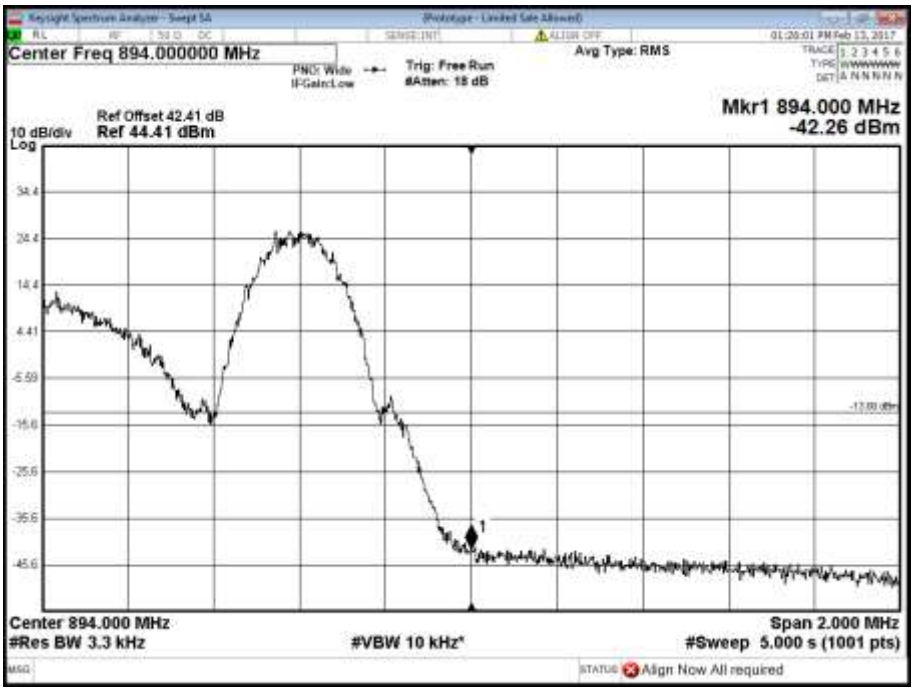
Remarks

GSM carrier nearest band edge moved by 0.2 MHz.

Antenna A - Channel Position BRFBW - WCDMA Bandwidth 5.0 MHz - GSM Modulation GMSK



Antenna A - Channel Position TRFBW - WCDMA Bandwidth 5.0 MHz - GSM Modulation GMSK



Configuration L

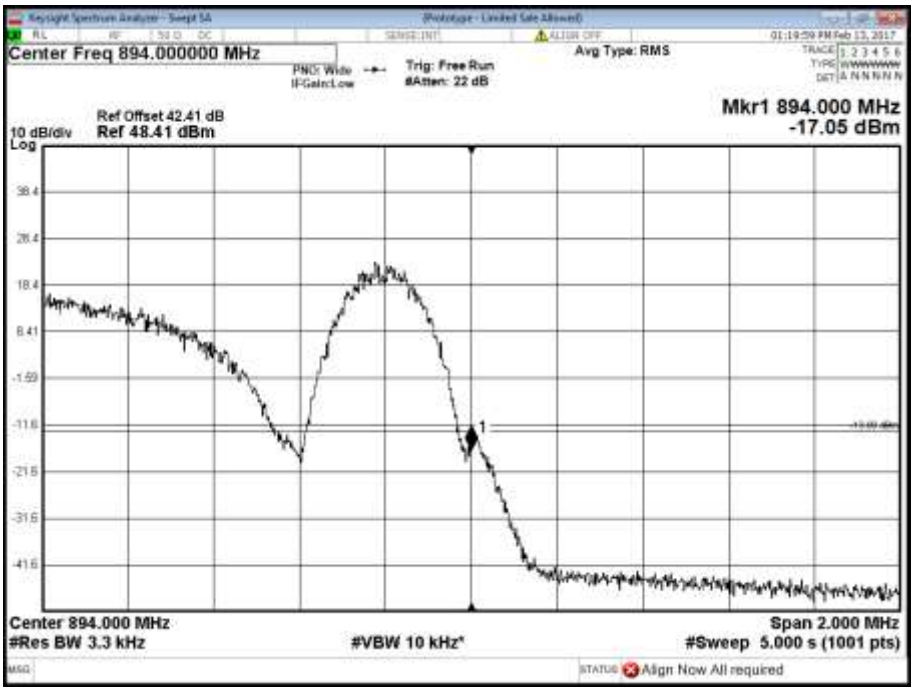
Maximum Output Power 46 dBm

WCDMA Bandwidth	GSM Modulation	Band Edge (MHz)	
		Channel Position BRFBW	Channel Position TRFBW
5.0 MHz	GMSK	893.8 (G) + 891.2 (W)	869.2 (G) + 871.8 (W)

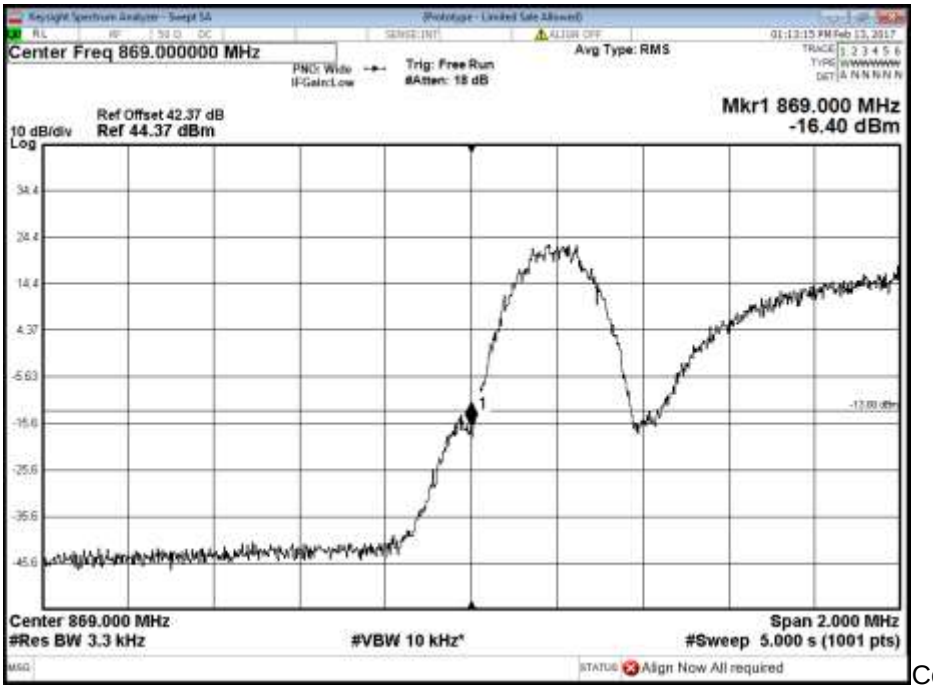
Remarks

GSM carrier nearest band edge, reduced by 4 dBm.

Antenna A - Channel Position BRFBW - WCDMA Bandwidth 5.0 MHz - GSM Modulation GMSK



Antenna A - Channel Position TRFBW - WCDMA Bandwidth 5.0 MHz - GSM Modulation GMSK



Configuration L

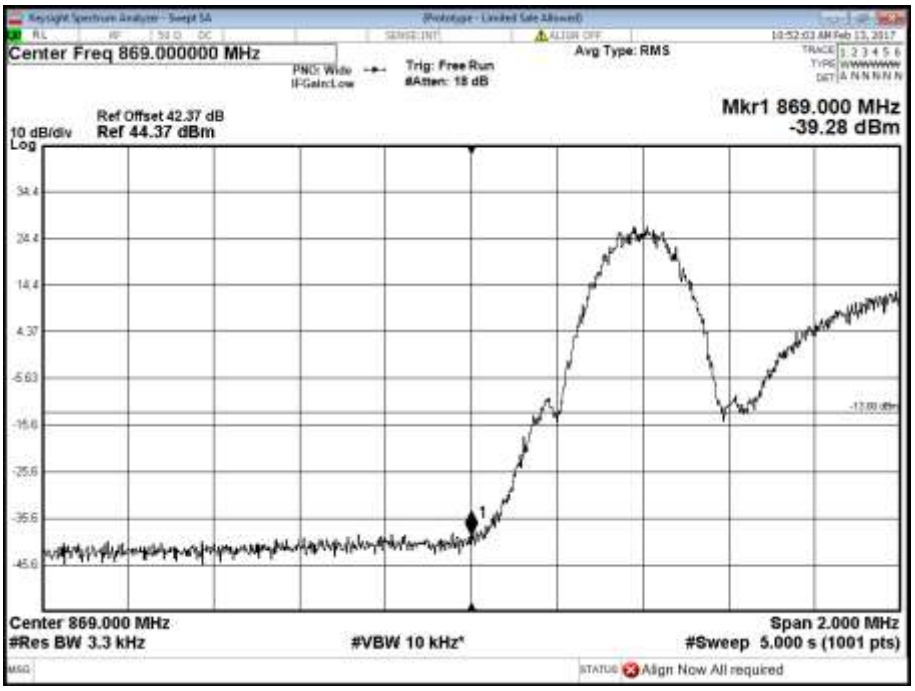
Maximum Output Power 49 dBm

WCDMA Bandwidth	GSM Modulation	Band Edge (MHz)	
		Channel Position BRFBW	Channel Position TRFBW
5.0 MHz	GMSK	869.4 (G) + 872 (W)	893.6 (G) + 891 (W)

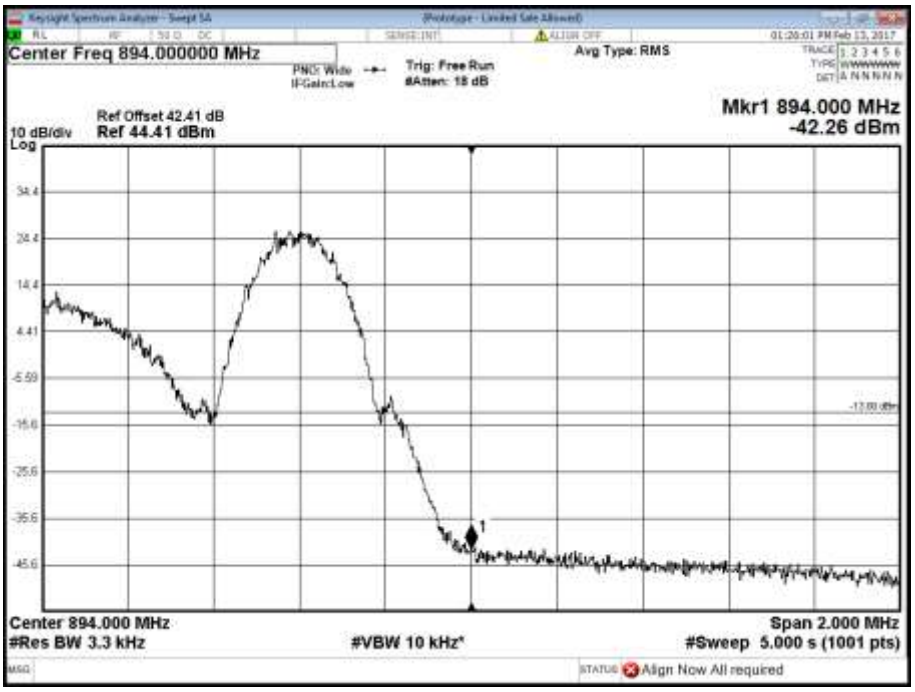
Remarks

GSM carrier nearest band edge moved by 0.2 MHz.

Antenna B - Channel Position BRFBW - WCDMA Bandwidth 5.0 MHz - GSM Modulation GMSK



Antenna B - Channel Position TRFBW - WCDMA Bandwidth 5.0 MHz - GSM Modulation GMSK



Configuration L

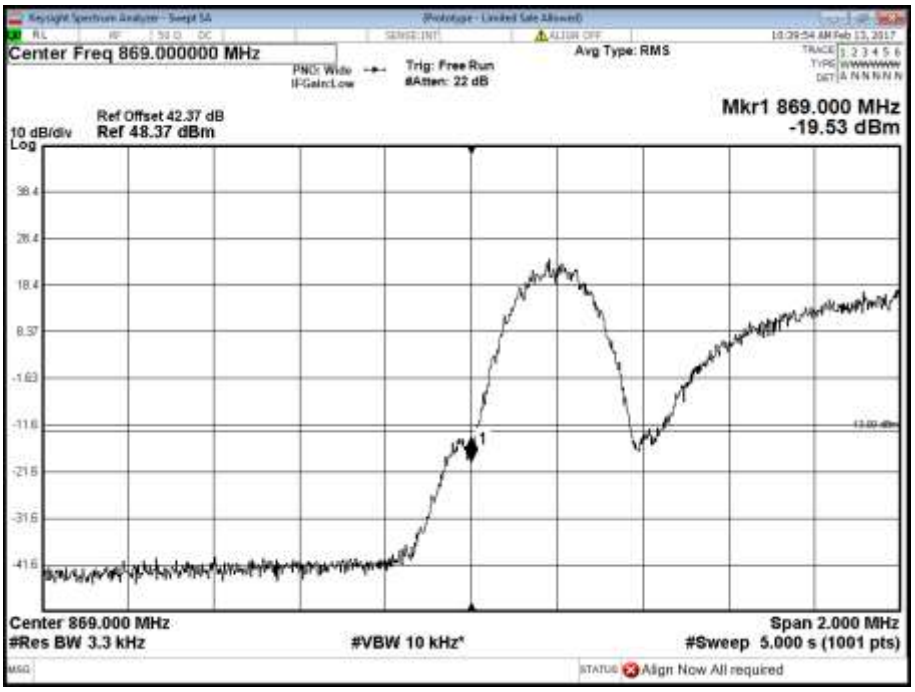
Maximum Output Power 49 dBm

WCDMA Bandwidth	GSM Modulation	Band Edge (MHz)	
		Channel Position BRFBW	Channel Position TRFBW
5.0 MHz	GMSK	869.2 (G) + 871.8 (W)	891.2 (W) + 893.8 (G)

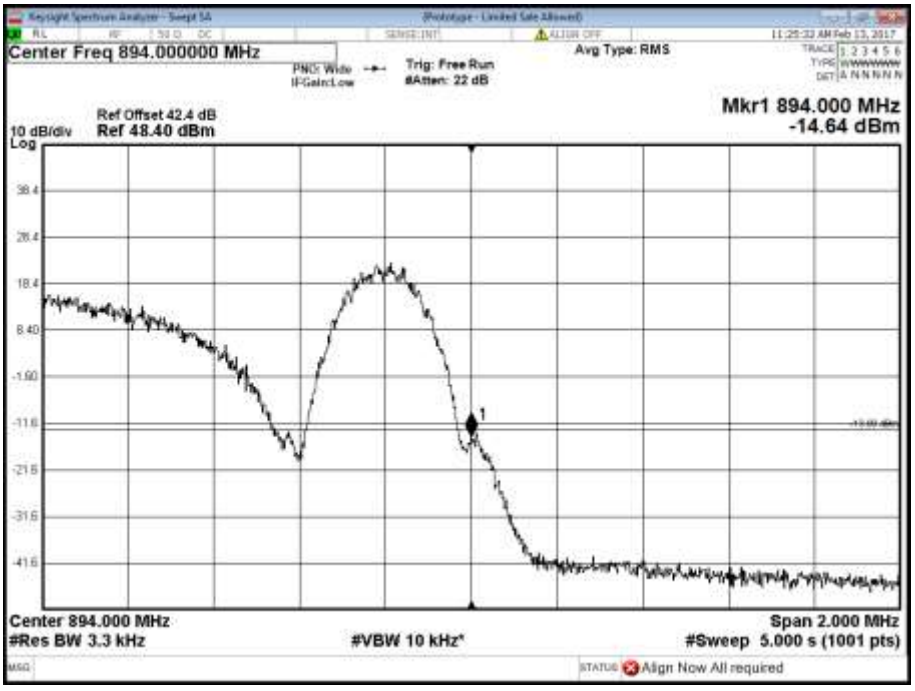
Remarks

GSM carrier nearest band edge, reduced by 4 dBm.

Antenna B - Channel Position BRFBW - WCDMA Bandwidth 5.0 MHz - GSM Modulation GMSK



Antenna B - Channel Position TRFBW - WCDMA Bandwidth 5.0 MHz - GSM Modulation GMSK



Configuration J

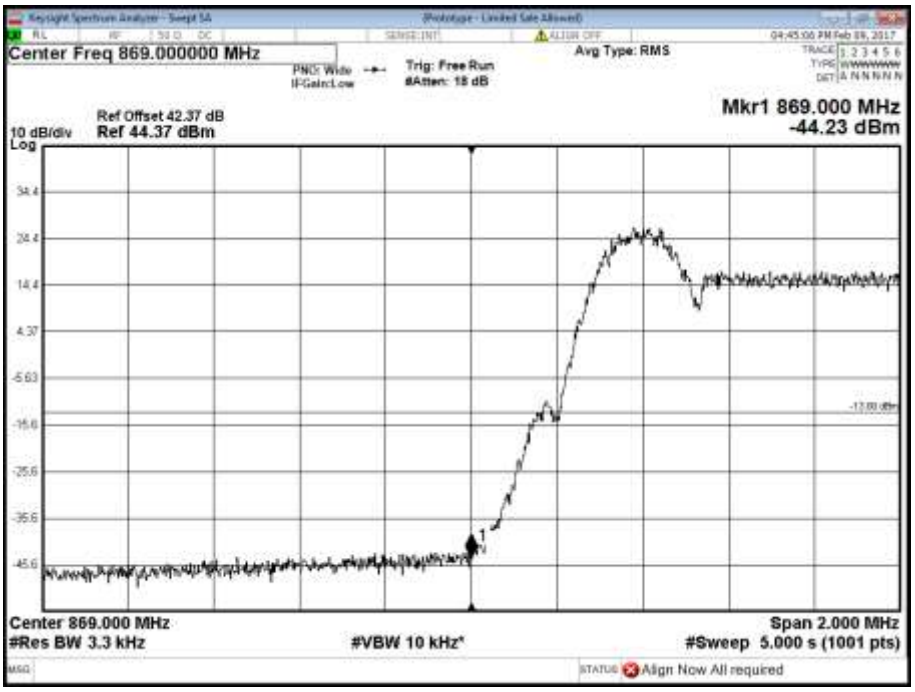
Maximum Output Power 49 dBm

LTE Bandwidth	GSM Modulation	Band Edge (MHz)	
		Channel Position BRFBW	Channel Position TRFBW
3.0 MHz	GMSK	869.4 (G) + 870.9 (L)	892.1 (L) + 893.6 (G)

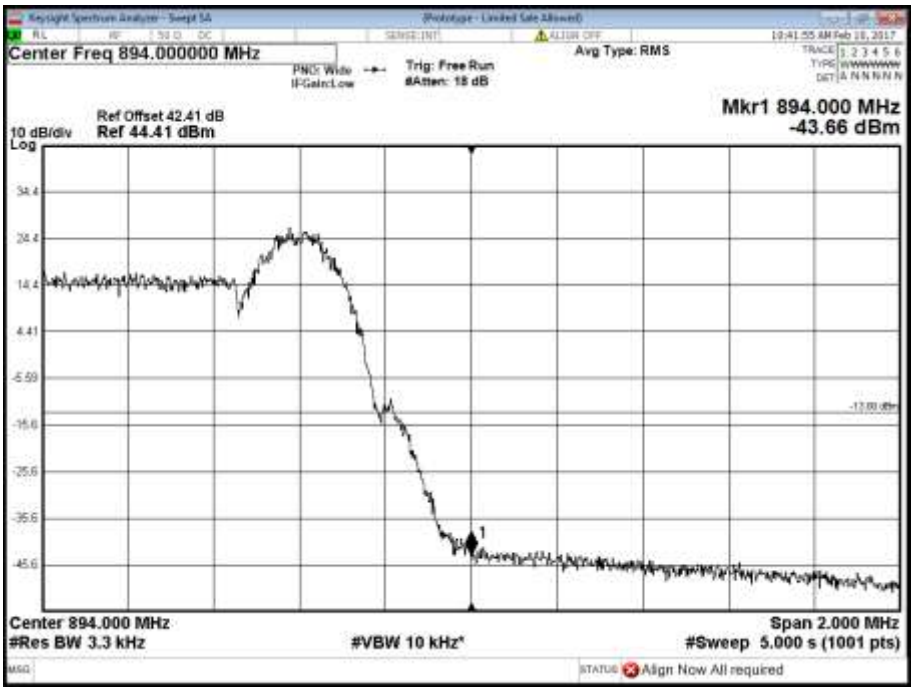
Remarks

GSM carrier nearest band edge moved by 0.2 MHz

Antenna A - Channel Position BRFBW - Carrier Bandwidth 3.0 MHz - GSM Modulation GMSK



Antenna A - Channel Position TRFBW - Carrier Bandwidth 3.0 MHz - GSM Modulation GMSK



Configuration J

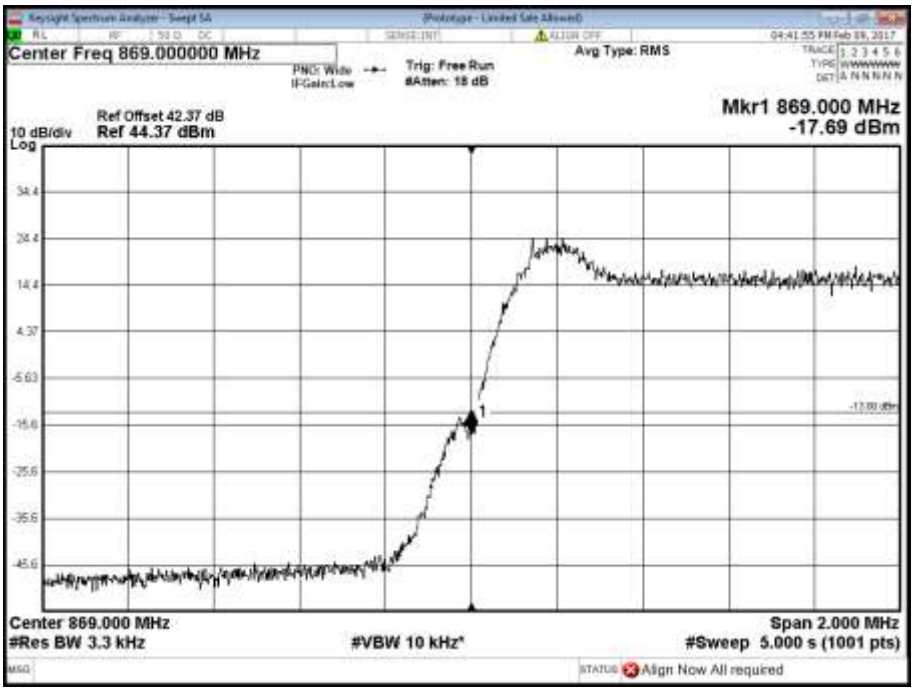
Maximum Output Power 49 dBm

LTE Bandwidth	GSM Modulation	Band Edge (MHz)	
		Channel Position BRFBW	Channel Position TRFBW
3.0 MHz	GMSK	869.2 (G) + 870.7 (L)	892.3 (L) + 893.8 (G)

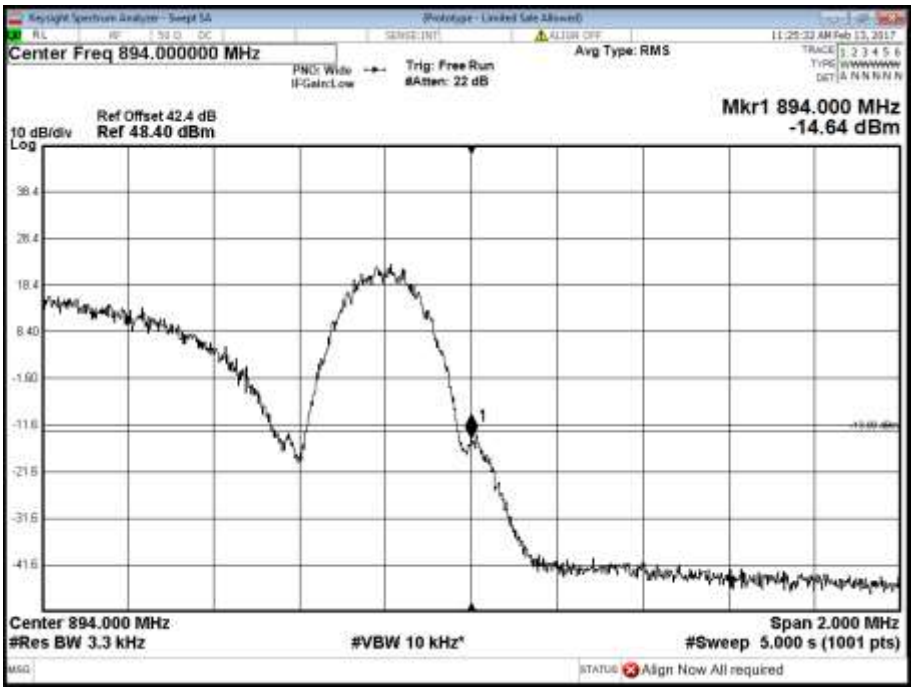
Remarks

GSM carrier nearest band edge, reduced by 4 dBm.

Antenna A - Channel Position BRFBW - Carrier Bandwidth 3.0 MHz - GSM Modulation GMSK



Antenna A - Channel Position TRFBW - Carrier Bandwidth 3.0 MHz - GSM Modulation GMSK



Configuration J

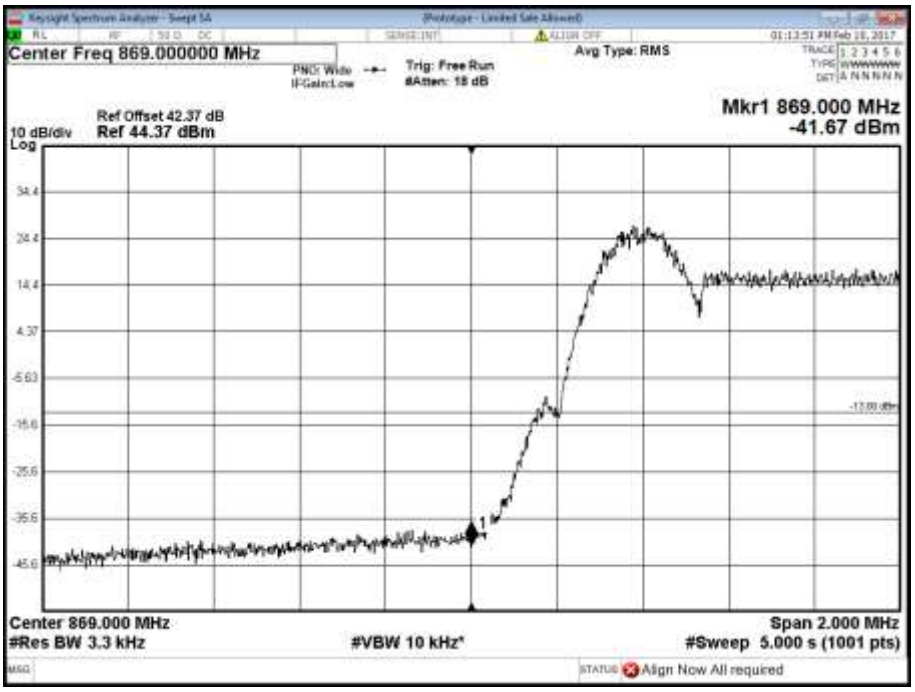
Maximum Output Power 49 dBm

LTE Bandwidth	GSM Modulation	Band Edge (MHz)	
		Channel Position BRFBW	Channel Position TRFBW
3.0 MHz	GMSK	869.5 (G) + 870.9 (L)	892.1 (L) + 893.6 (G)

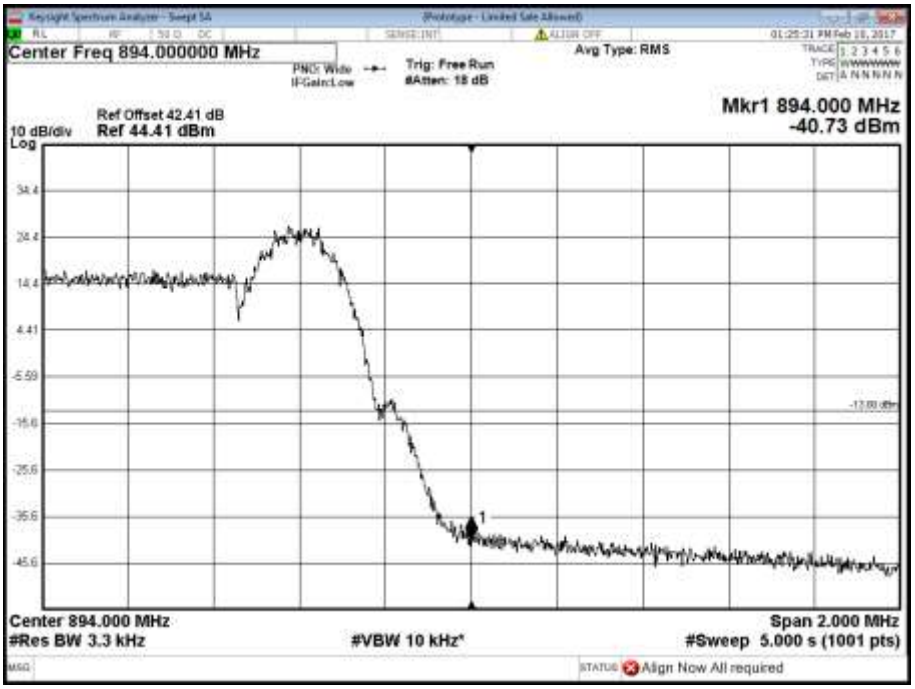
Remarks

GSM carrier nearest band edge moved by 0.2 MHz

Antenna B - Channel Position BRFBW - Carrier Bandwidth 3.0 MHz - GSM Modulation GMSK



Antenna B - Channel Position TRFBW - Carrier Bandwidth 3.0 MHz - GSM Modulation GMSK



Configuration J

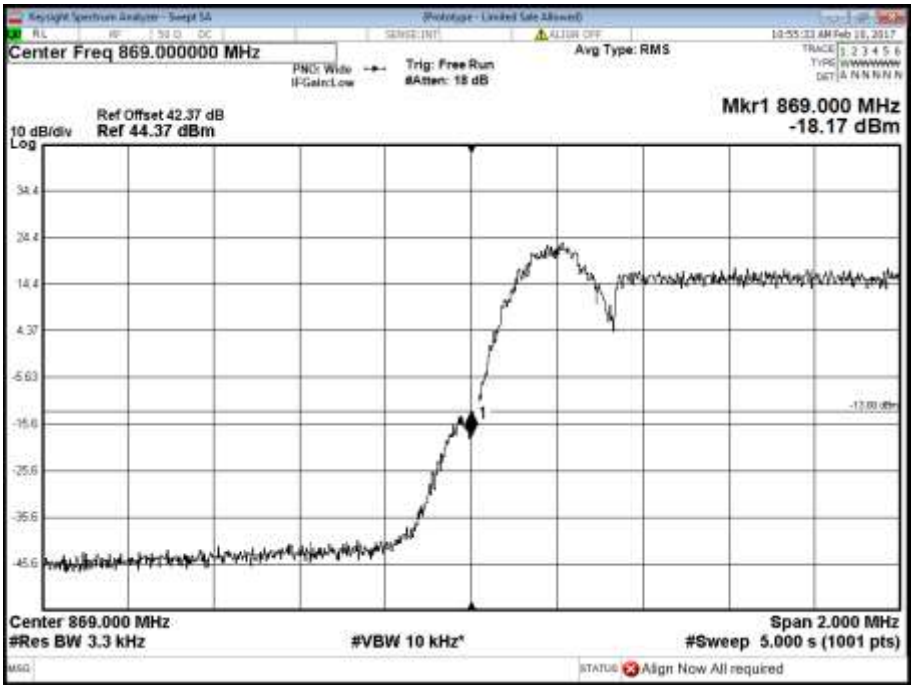
Maximum Output Power 49 dBm

LTE Bandwidth	GSM Modulation	Band Edge (MHz)	
		Channel Position BRFBW	Channel Position TRFBW
3.0 MHz	GMSK	869.2 (G) + 870.7 (L)	892.3 (L) + 893.8 (G)

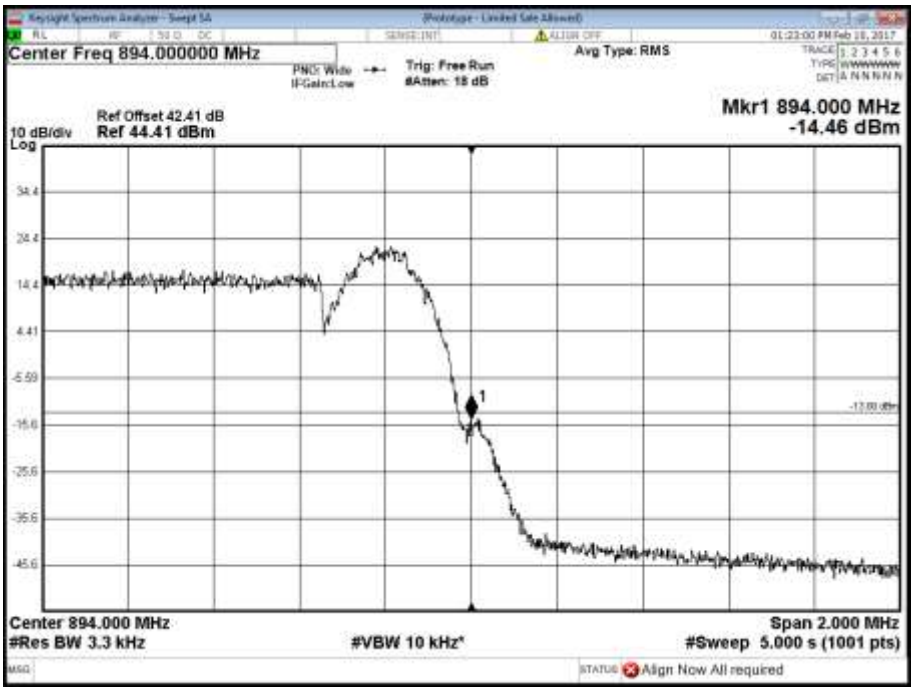
Remarks

GSM carrier nearest band edge, reduced by 4 dBm.

Antenna B - Channel Position BRFBW - Carrier Bandwidth 3.0 MHz - GSM Modulation GMSK



Antenna B - Channel Position TRFBW - Carrier Bandwidth 3.0 MHz - GSM Modulation GMSK

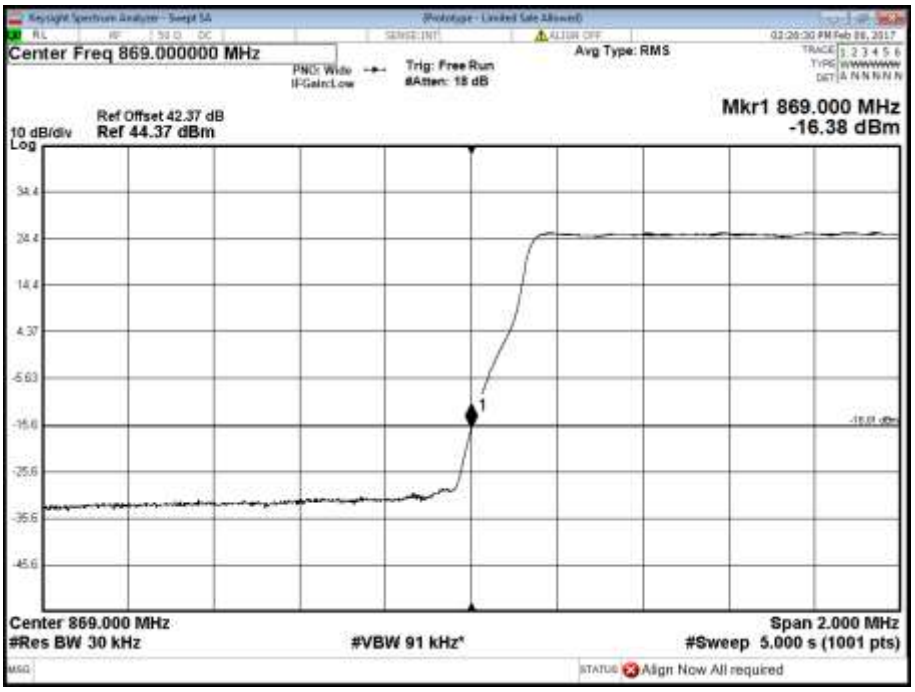


Configuration H

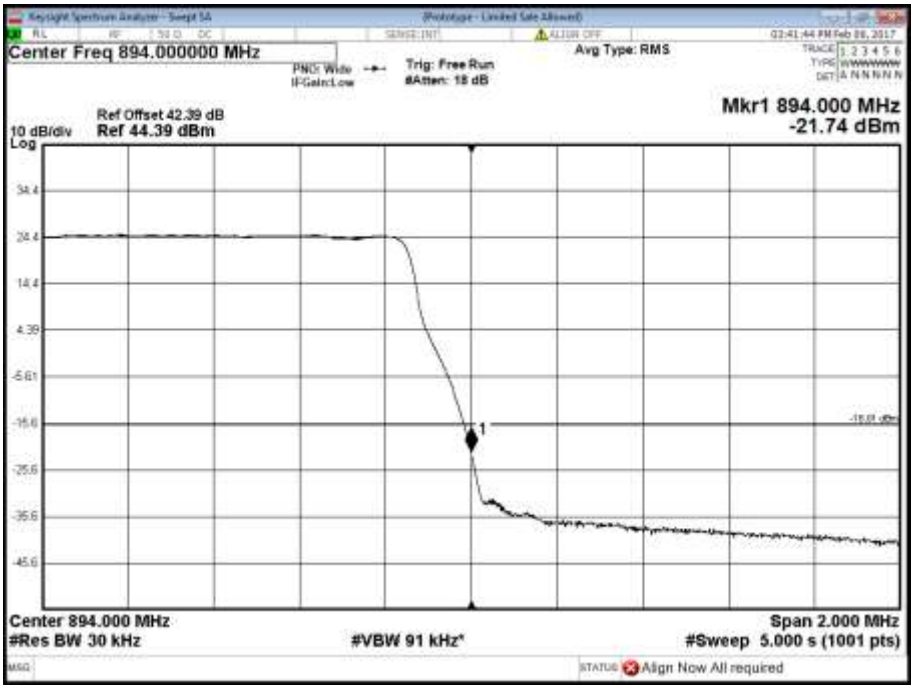
Maximum Output Power 49 dBm

LTE Bandwidth	WCDMA Modulation	Band Edge (MHz)	
		Channel Position BRFBW	Channel Position TRFBW
3.0 MHz	QPSK	870.5 (L) + 874.4 (W)	888.6 (W) + 892.5 (L)

Antenna A - Channel Position BRFBW - Carrier Bandwidth 3.0 MHz - Modulation QPSK



Antenna A - Channel Position TRFBW - Carrier Bandwidth 3.0 MHz - Modulation QPSK

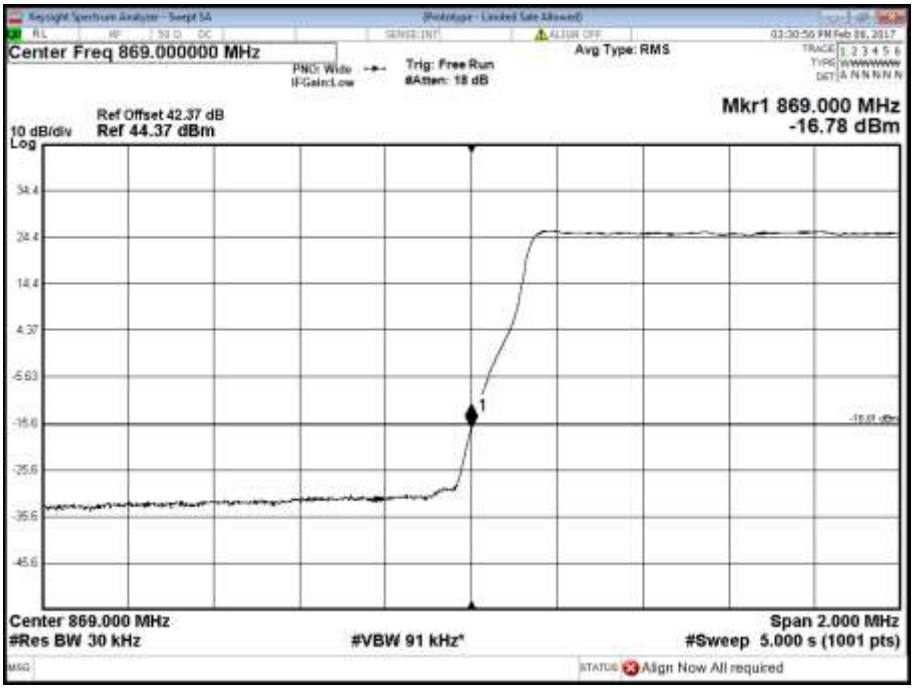


Configuration H

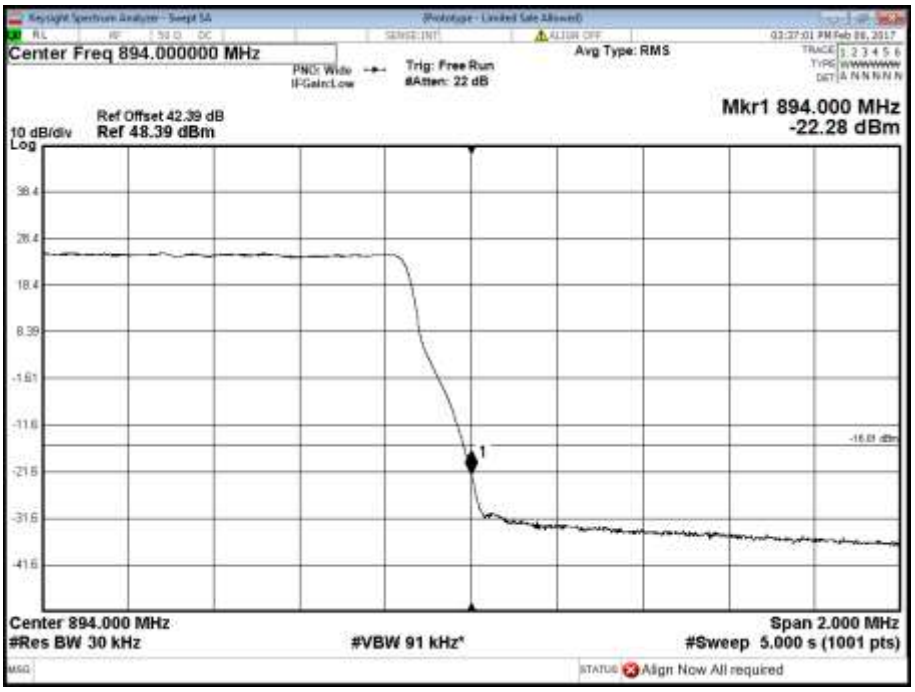
Maximum Output Power 49 dBm

LTE Bandwidth	WCDMA Modulation	Band Edge (MHz)	
		Channel Position BRFBW	Channel Position TRFBW
3.0 MHz	QPSK	870.5 (L) + 874.4 (W)	888.6 (W) + 892.5 (L)

Antenna B - Channel Position BRFBW - Carrier Bandwidth 3.0 MHz - Modulation QPSK



Antenna B - Channel Position TRFBW - Carrier Bandwidth 3.0 MHz - Modulation QPSK



Limit	-13 dBm

2.4 TRANSMITTER SPURIOUS EMISSIONS

2.4.1 Specification Reference

FCC CFR 47 Part 2, Clause 2.1051
FCC CFR 47 Part 22, Clause 24.238 (a)
Industry Canada RSS-132, Clause 6.5

2.4.2 Date of Test and Modification State

01, 03, 06, 07, 10, 14 February 2017 - Modification State 0

2.4.3 Test Equipment Used

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

2.4.4 Environmental Conditions

Ambient Temperature	22.5 - 23.7°C
Relative Humidity	11.7 - 18.7%

2.4.5 Test Method

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

Each antenna port has been declared as being equivalent, therefore measurements were made on one antenna port only. To account for this, the limit was tightened by 10 * Log(N), where N is equal to the number of MIMO antenna ports.

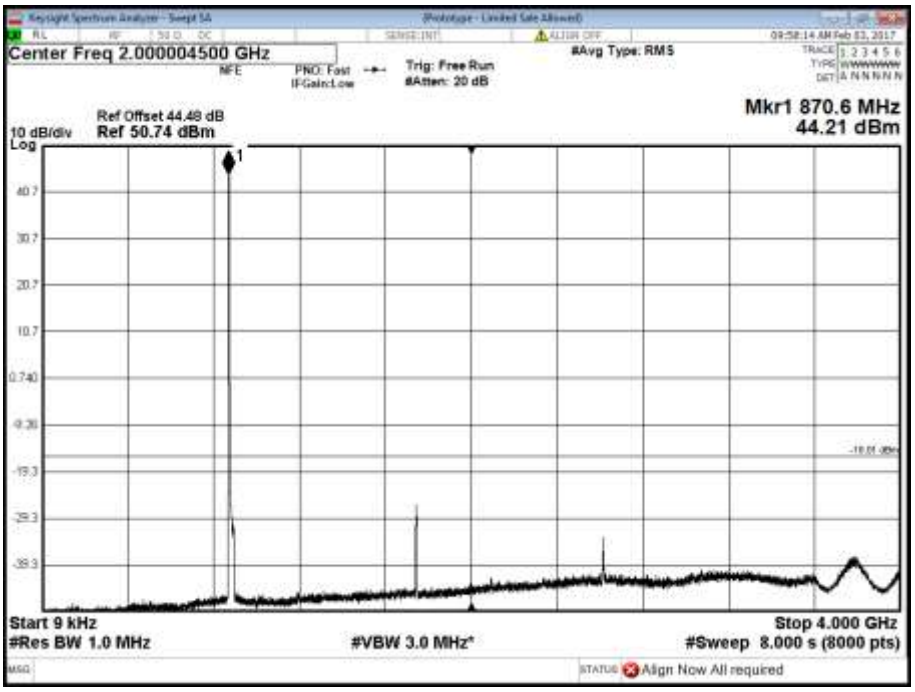
The limit was calculated as being -13 dBm - 10 * Log (2) = -16 dBm.

2.4.6 Test Results

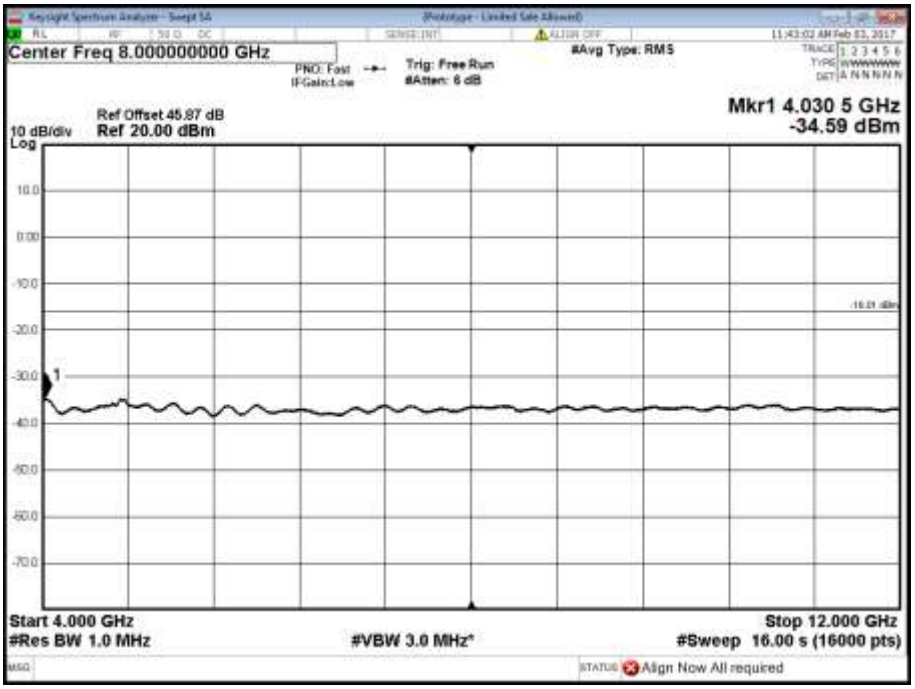
Configuration E

Maximum Output Power 49 dBm

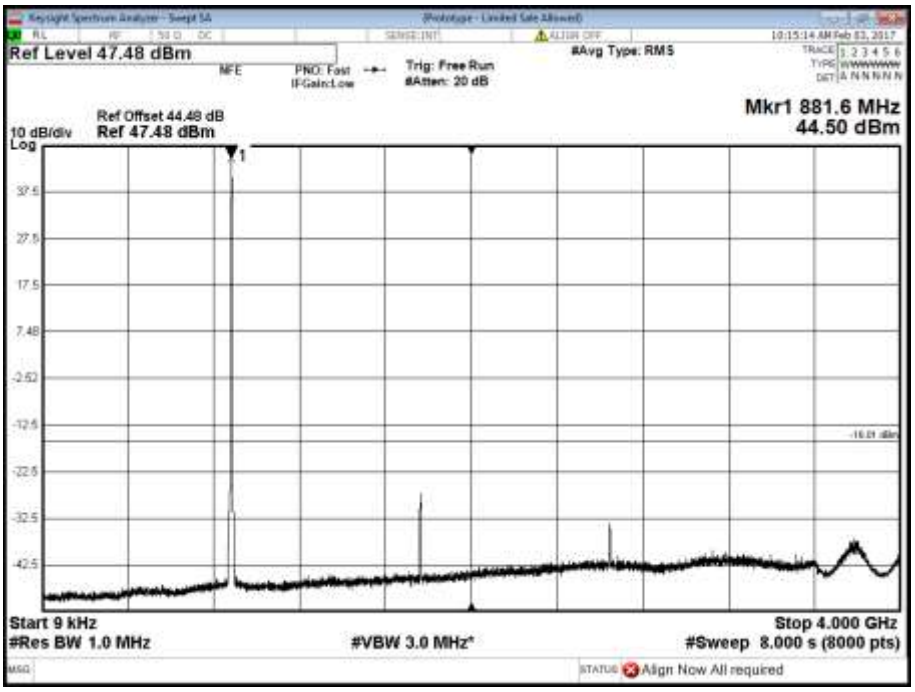
Antenna A - Channel Position B - Modulation QPSK - Band 1 - Range 0.009 to 4000 MHz



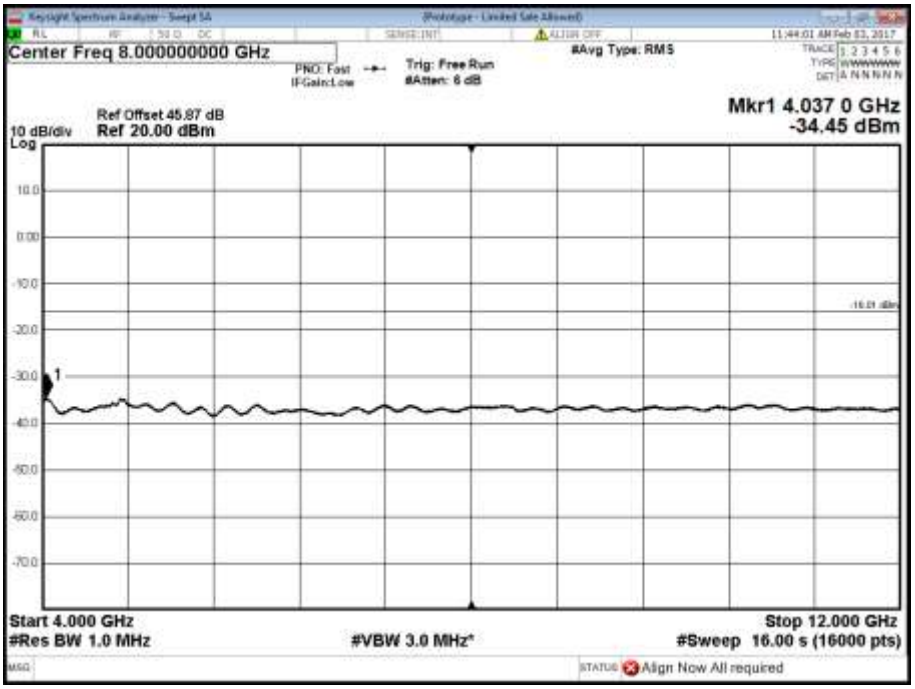
Antenna A - Channel Position B - Modulation QPSK - Band 2 - Range 4000 to 12000 MHz



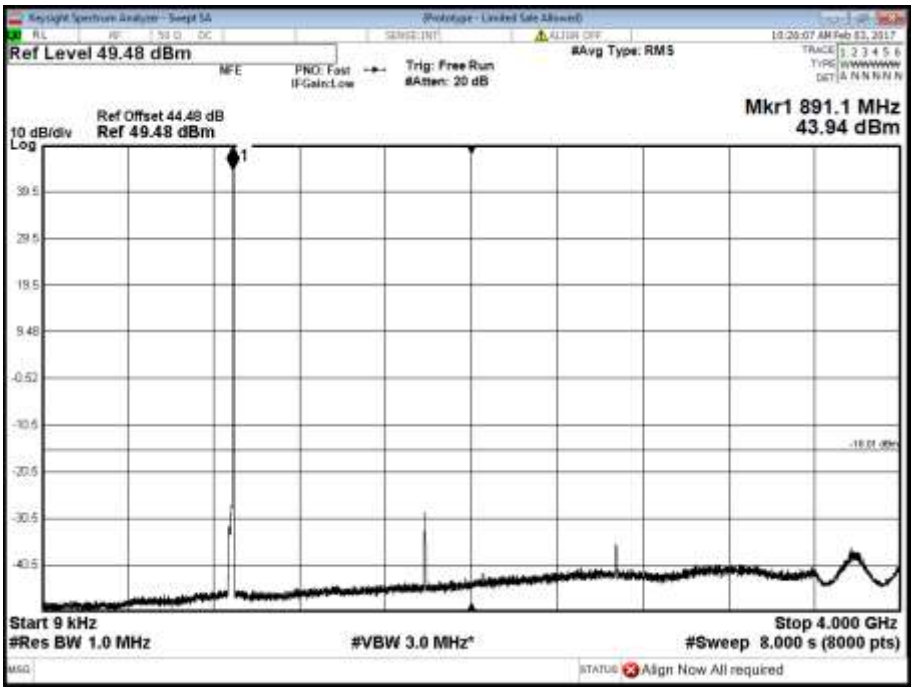
Antenna A - Channel Position M - Modulation QPSK - Band 1 - Range 0.009 to 4000 MHz



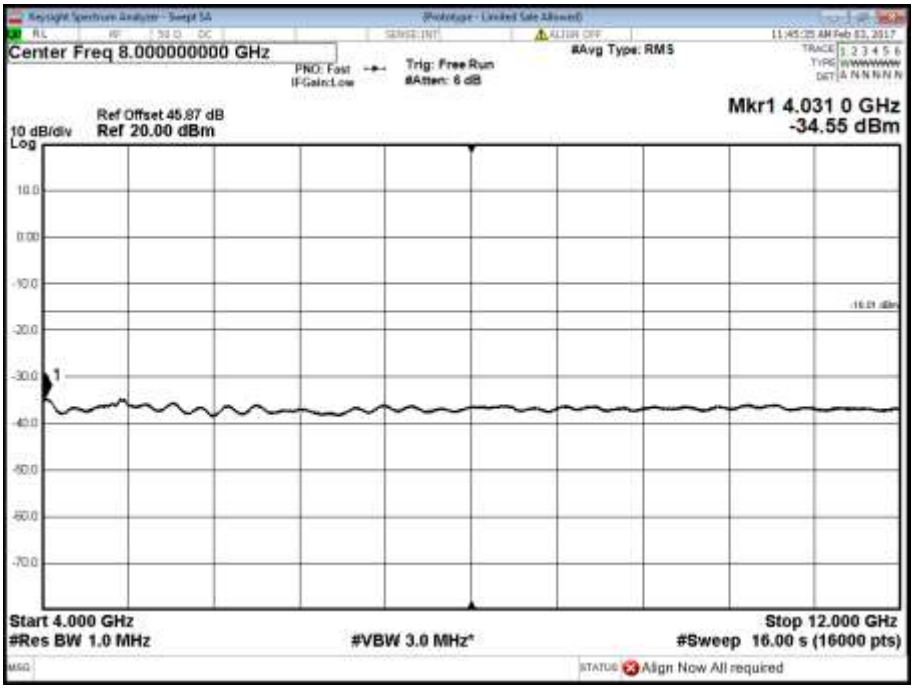
Antenna A - Channel Position M - Modulation QPSK - Band 2 - Range 4000 to 12000 MHz



Antenna A - Channel Position T - Modulation QPSK - Band 1 - Range 0.009 to 4000 MHz



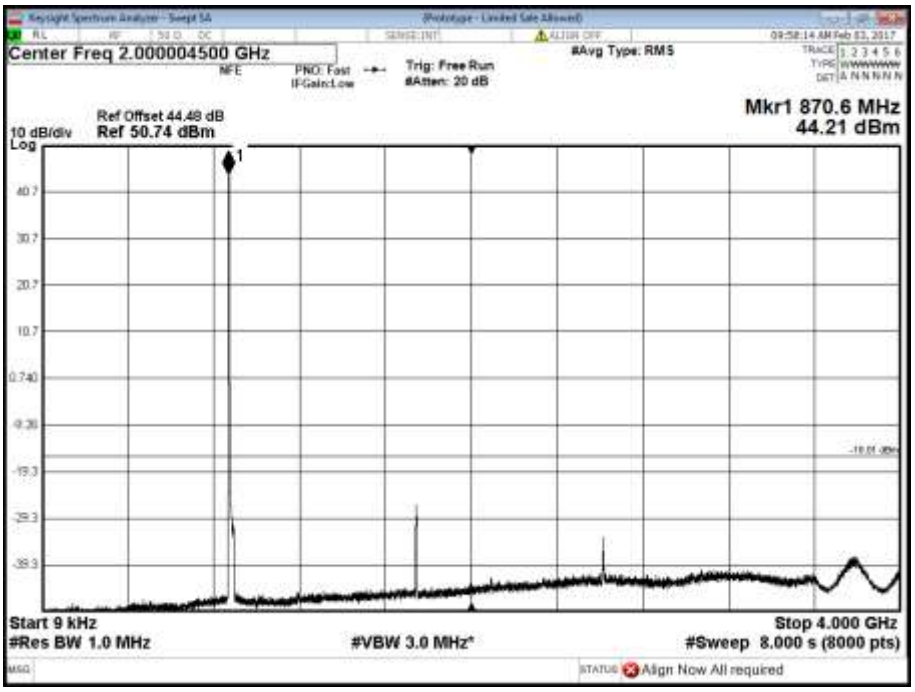
Antenna A - Channel Position T - Modulation QPSK - Band 2 - Range 4000 to 12000 MHz



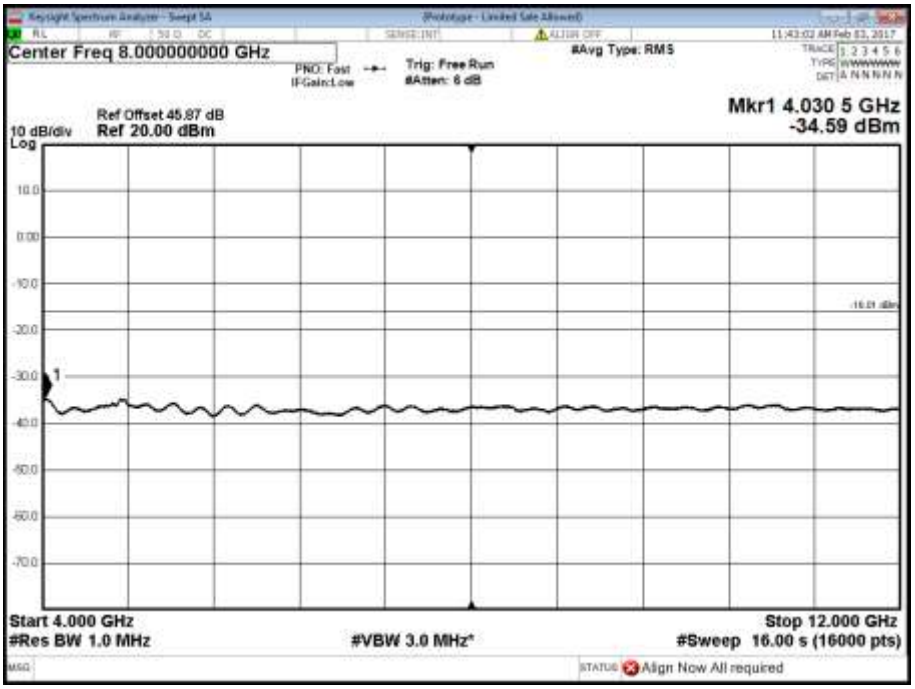
Configuration E

Maximum Output Power 49 dBm

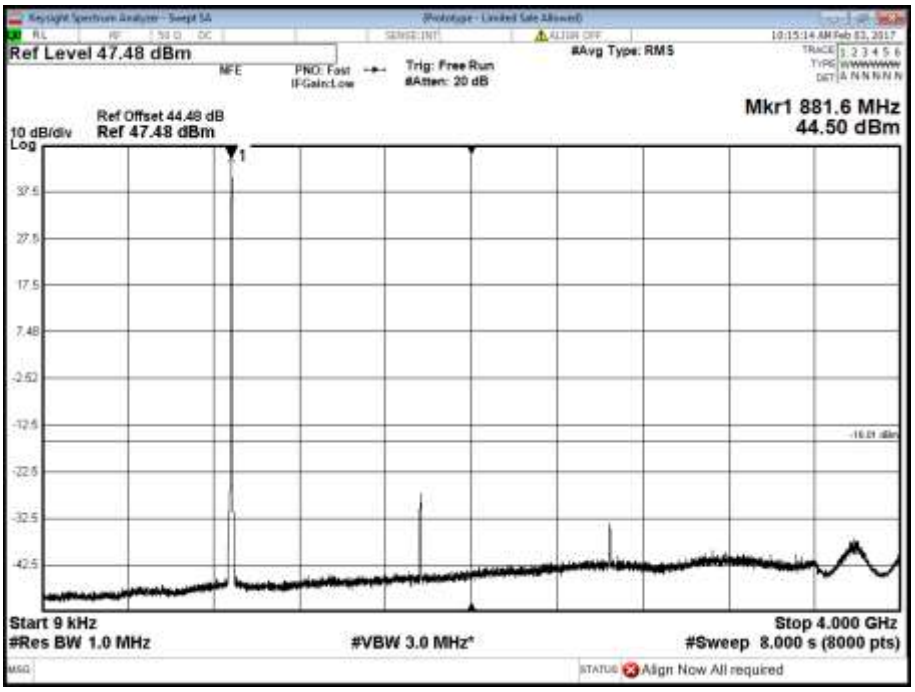
Antenna A - Channel Position B - Modulation QPSK - Band 1 - Range 0.009 to 4000 MHz



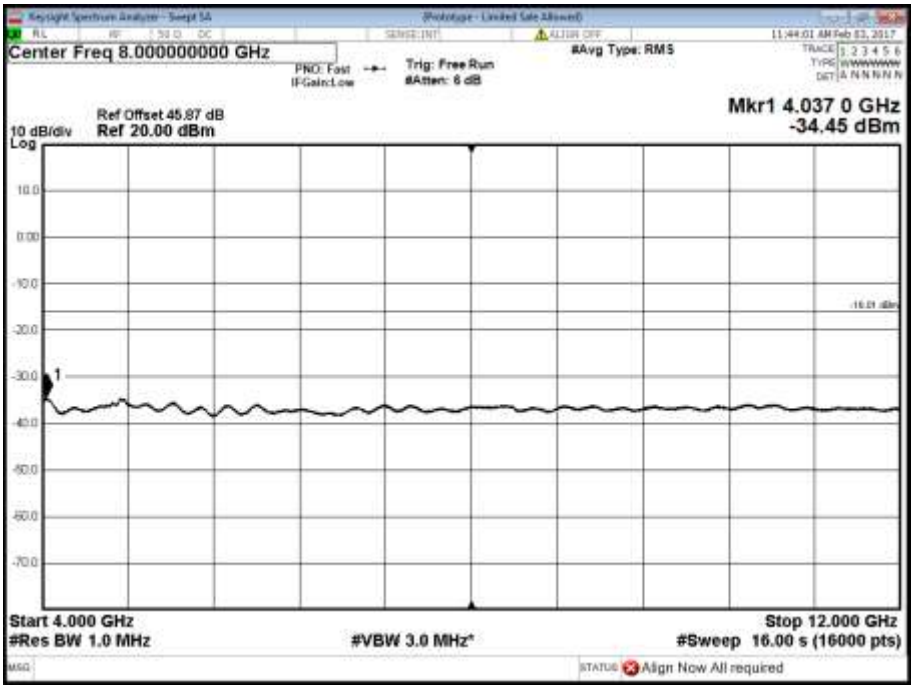
Antenna A - Channel Position B - Modulation QPSK - Band 2 - Range 4000 to 12000 MHz



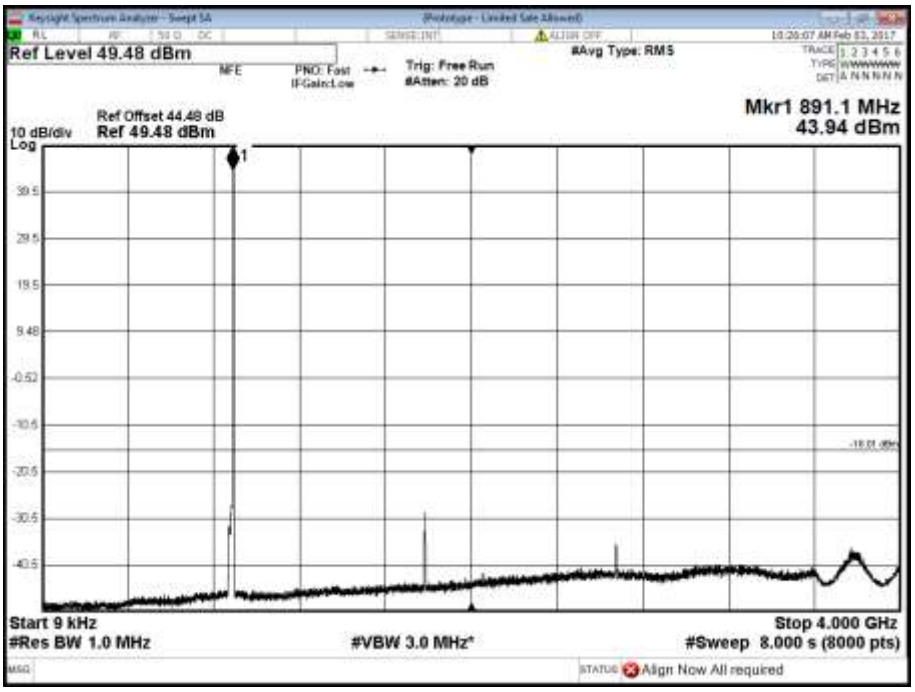
Antenna A - Channel Position M - Modulation QPSK - Band 1 - Range 0.009 to 4000 MHz



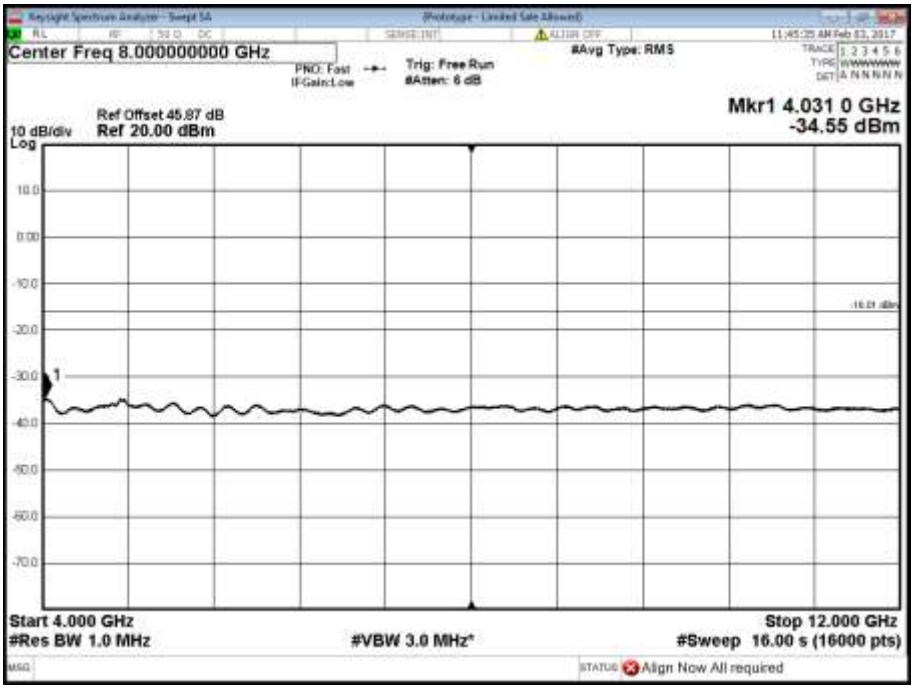
Antenna A - Channel Position M - Modulation QPSK - Band 2 - Range 4000 to 12000 MHz



Antenna A - Channel Position T - Modulation QPSK - Band 1 - Range 0.009 to 4000 MHz



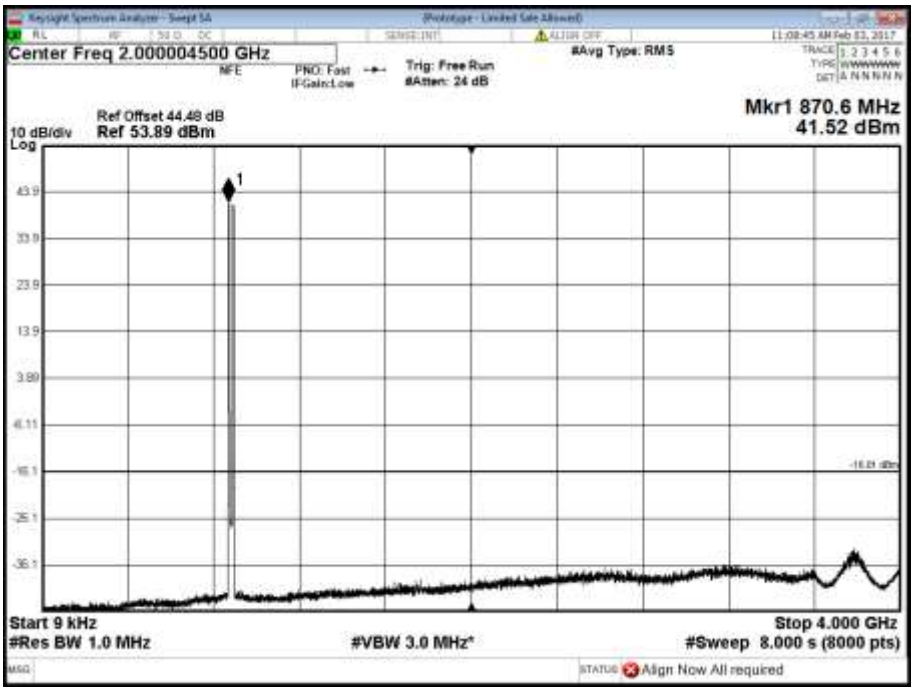
Antenna A - Channel Position T - Modulation QPSK - Band 2 - Range 4000 to 12000 MHz



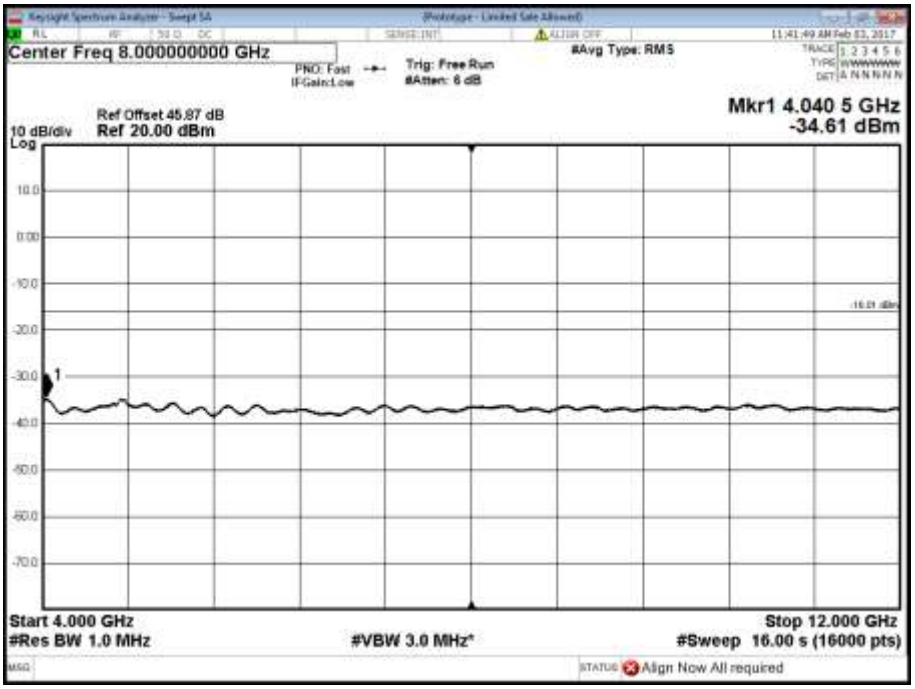
Configuration F

Maximum Output Power 49 dBm

Antenna A - Channel Position B - Modulation QPSK - Band 1 - Range 0.009 to 4000 MHz



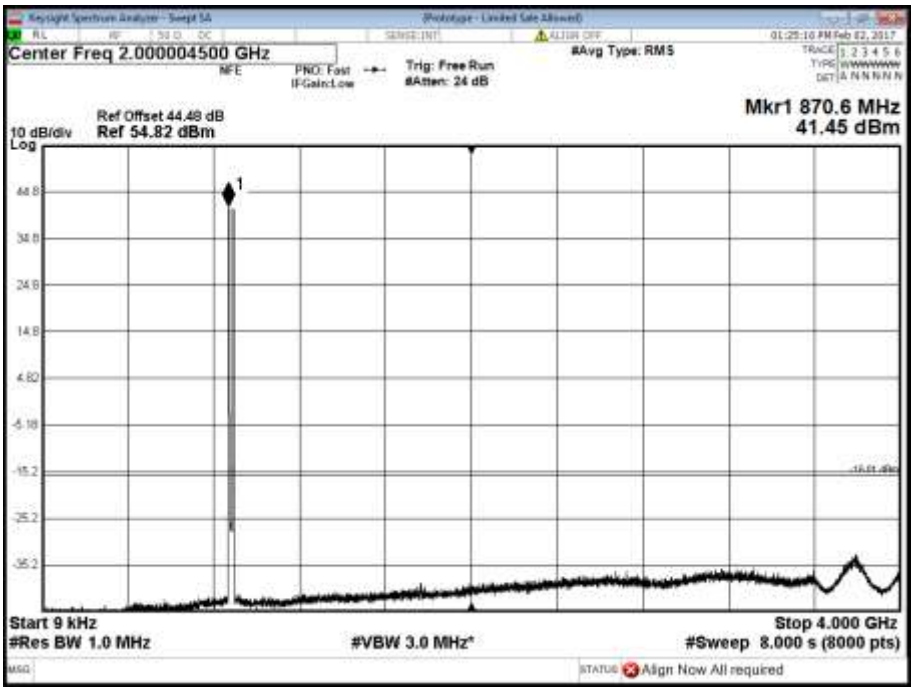
Antenna A - Channel Position B - Modulation QPSK - Band 2 - Range 4000 to 12000 MHz



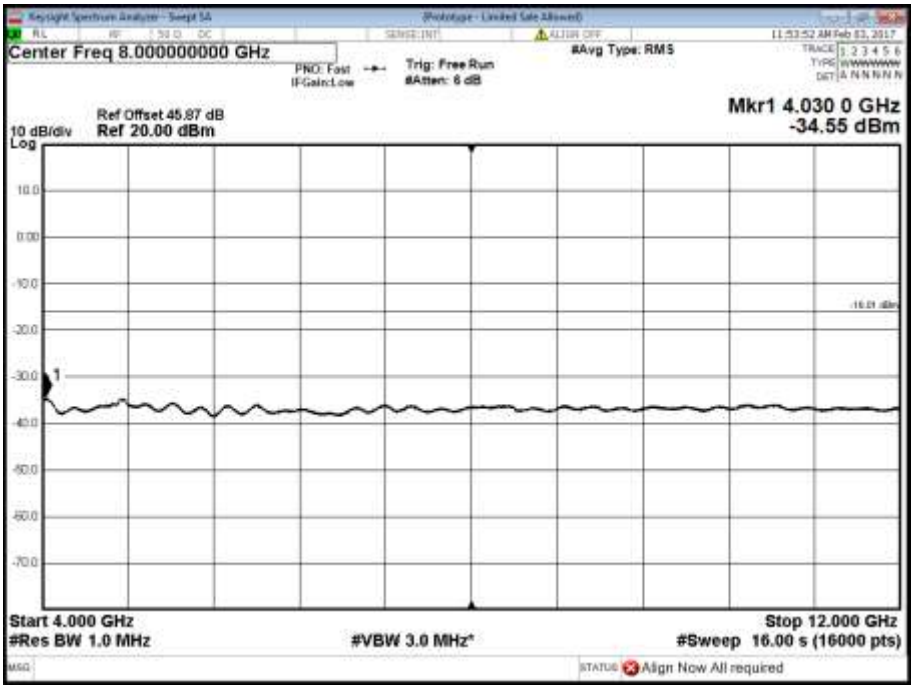
Configuration F

Maximum Output Power 49 dBm

Antenna B - Channel Position B - Modulation QPSK - Band 1 - Range 0.009 to 4000 MHz



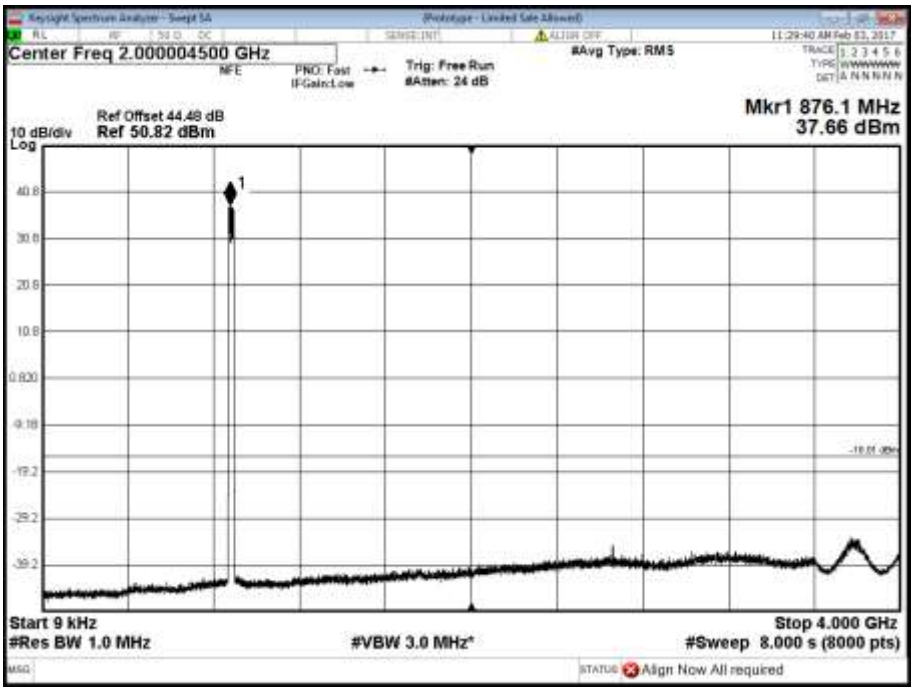
Antenna B - Channel Position B - Modulation QPSK - Band 2 - Range 4000 to 12000 MHz



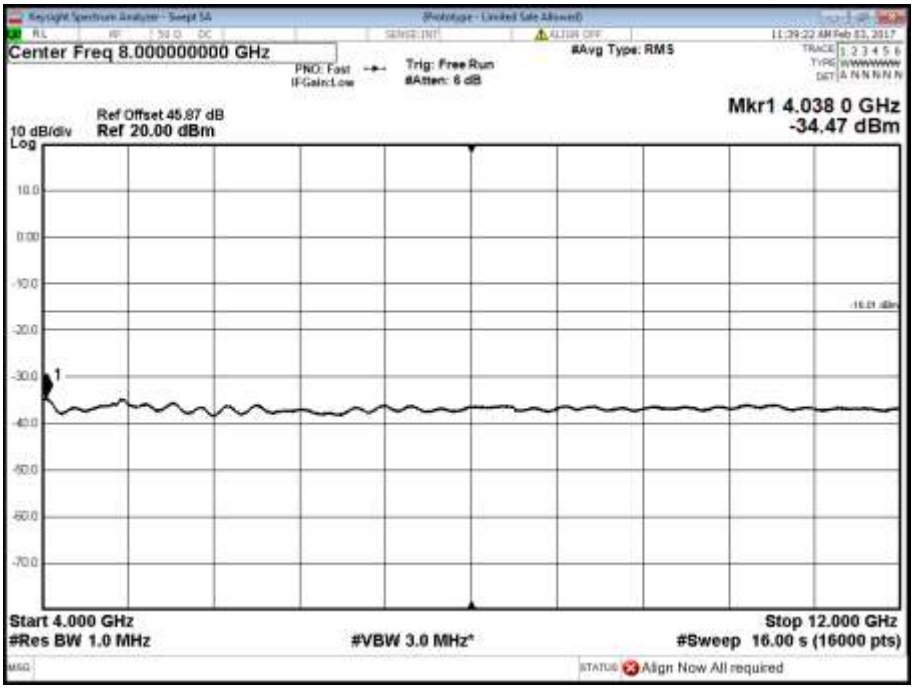
Configuration G

Maximum Output Power 49 dBm

Antenna A - Channel Position B - Modulation QPSK - Band 1 - Range 0.009 to 4000 MHz



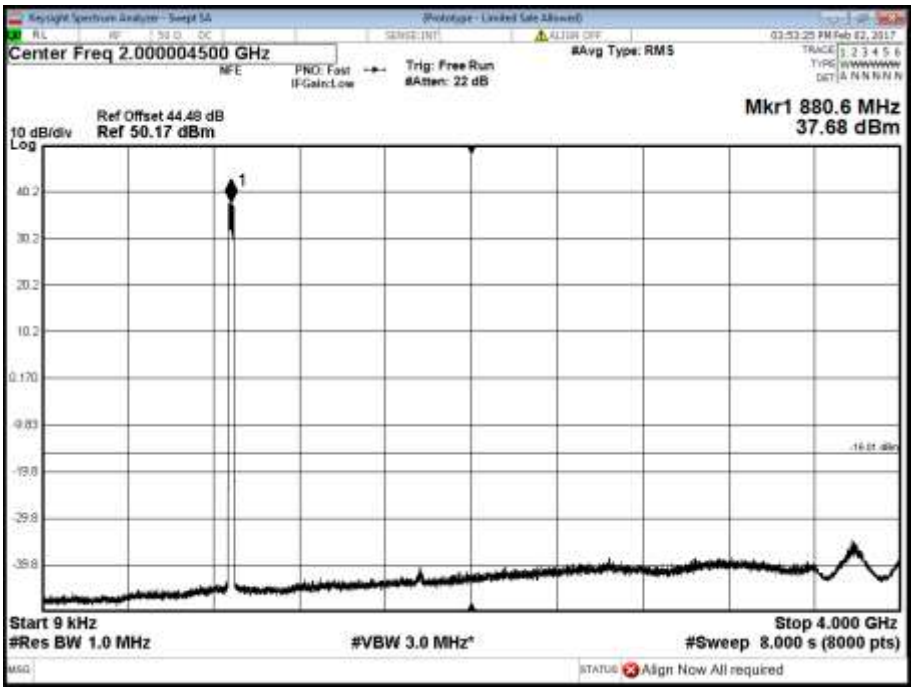
Antenna A - Channel Position B - Modulation QPSK - Band 2 - Range 4000 to 12000 MHz



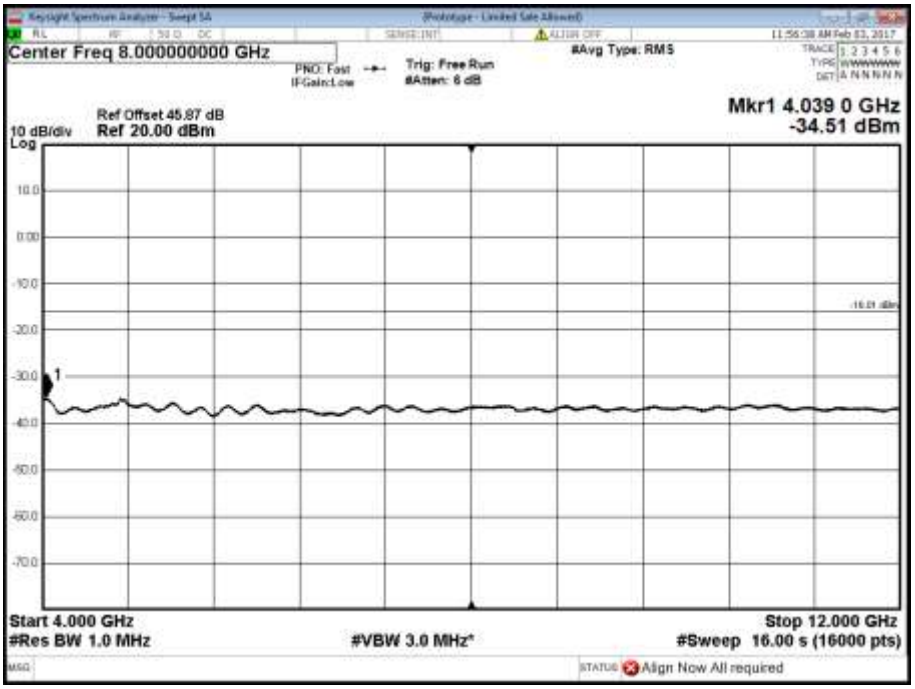
Configuration G

Maximum Output Power 49 dBm

Antenna B - Channel Position B - Modulation QPSK - Band 1 - Range 0.009 to 4000 MHz



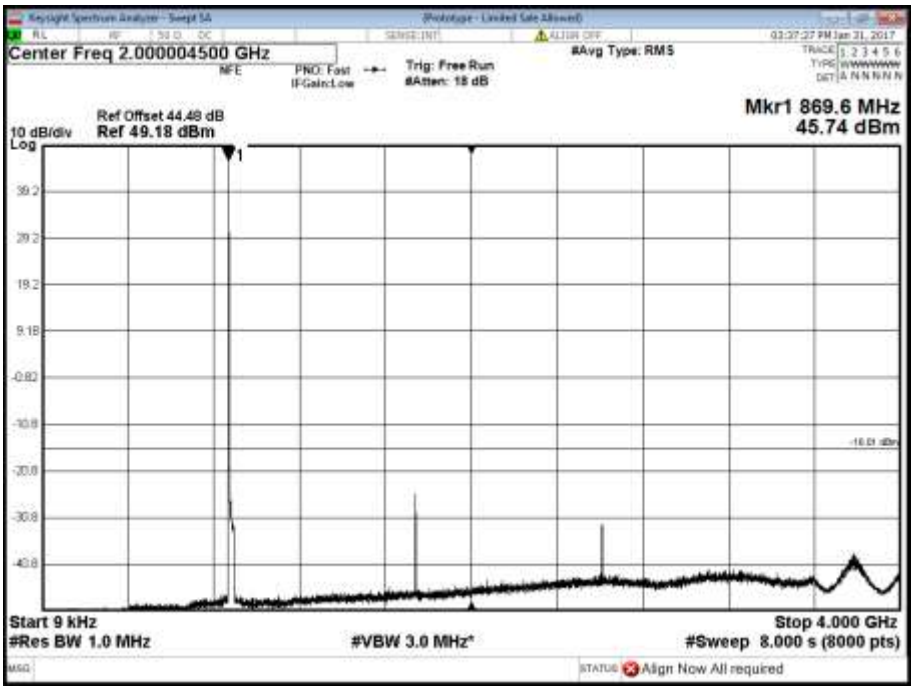
Antenna B - Channel Position B - Modulation QPSK - Band 2 - Range 4000 to 12000 MHz



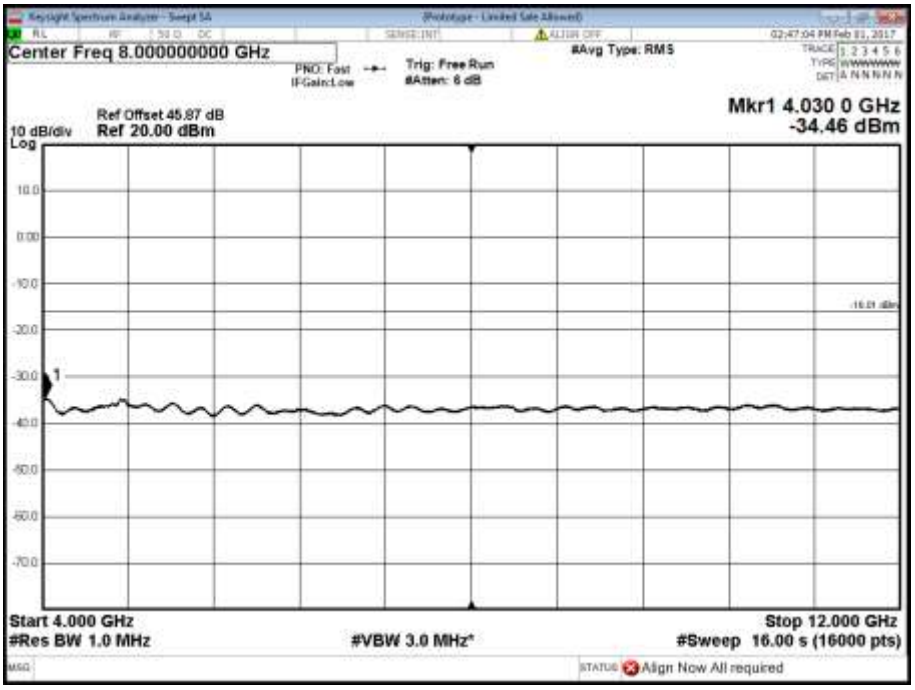
Configuration A

Maximum Output Power 49 dBm

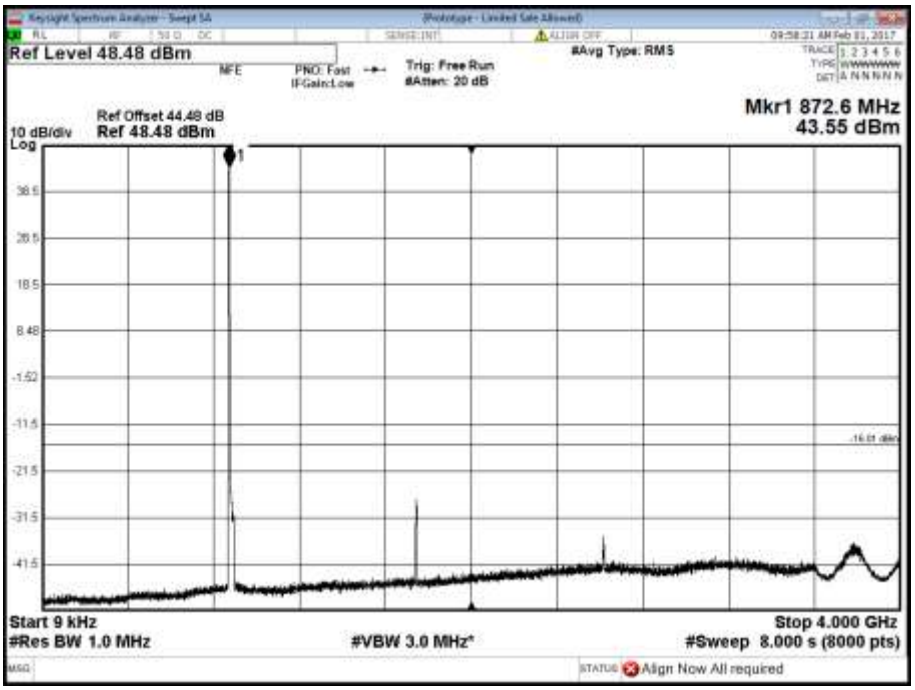
Antenna A - Channel Position B - Carrier Bandwidth 1.4 MHz - Band 1 - Range 0.009 to 4000 MHz



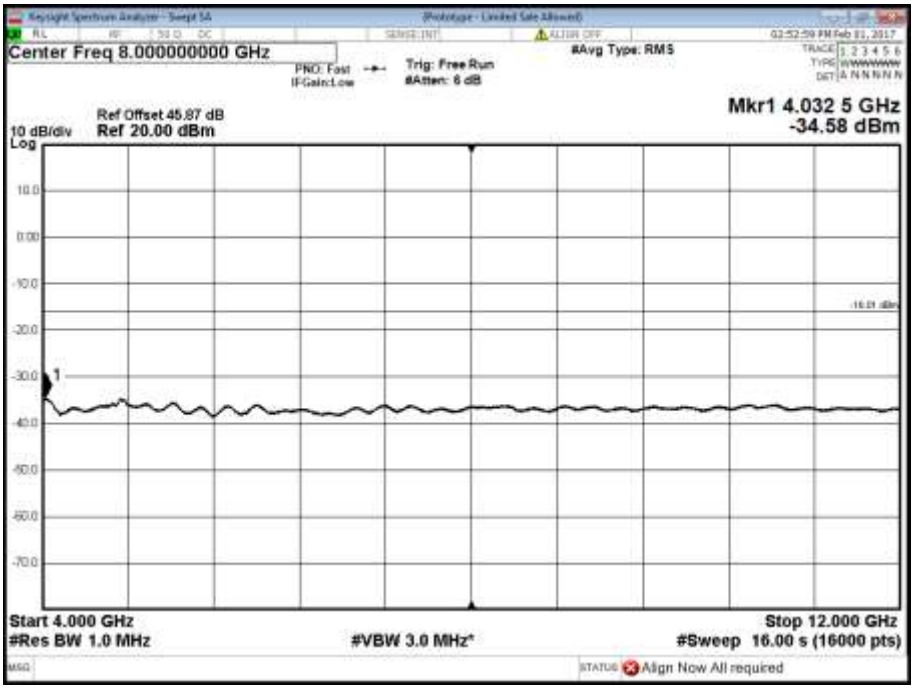
Antenna A - Channel Position B - Carrier Bandwidth 1.4 MHz - Band 2 - Range 4000 to 12000 MHz



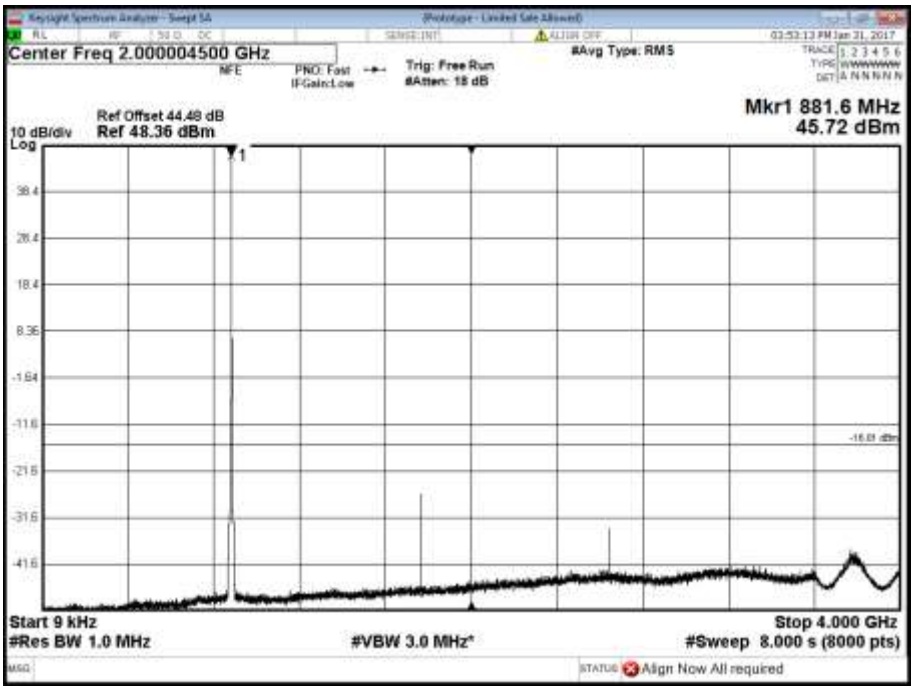
Antenna A - Channel Position B - Carrier Bandwidth 5.0 MHz - Band 1 - Range 0.009 to 4000 MHz



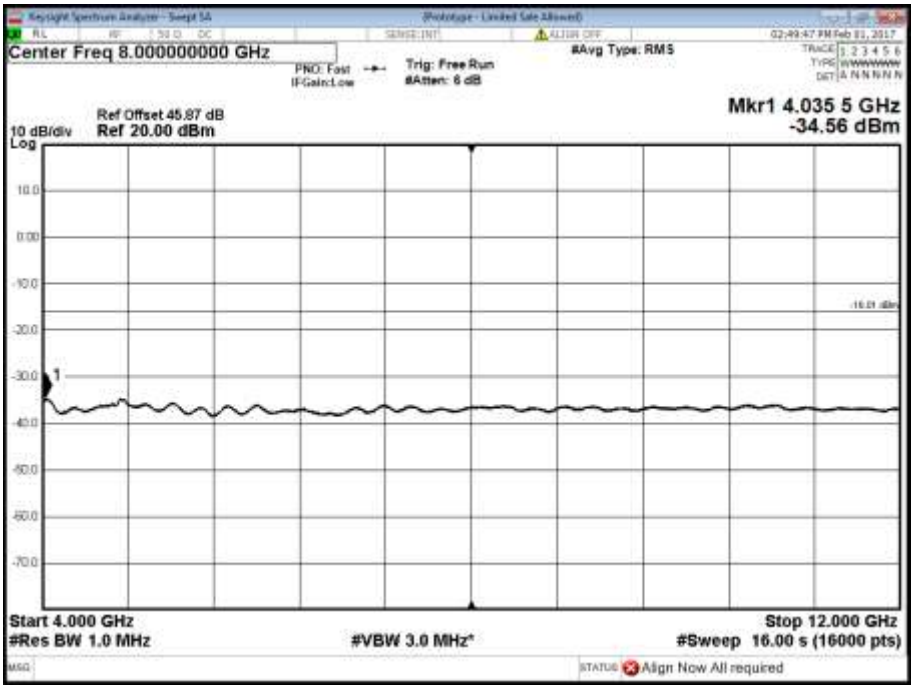
Antenna A - Channel Position B - Carrier Bandwidth 5.0 MHz - Band 2 - Range 4000 to 12000 MHz



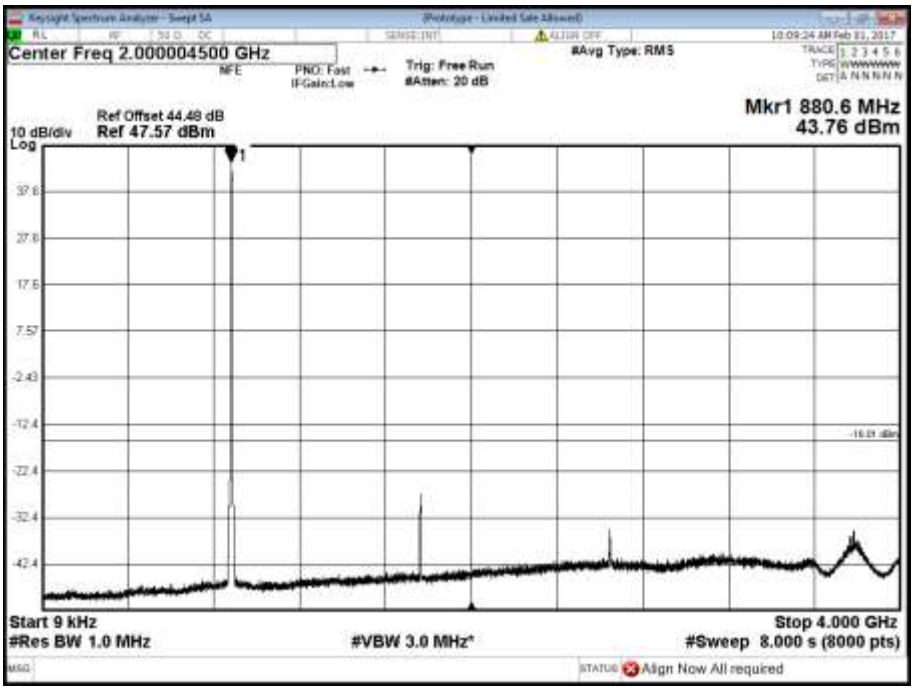
Antenna A - Channel Position M - Carrier Bandwidth 1.4 MHz - Band 1 - Range 0.009 to 4000 MHz



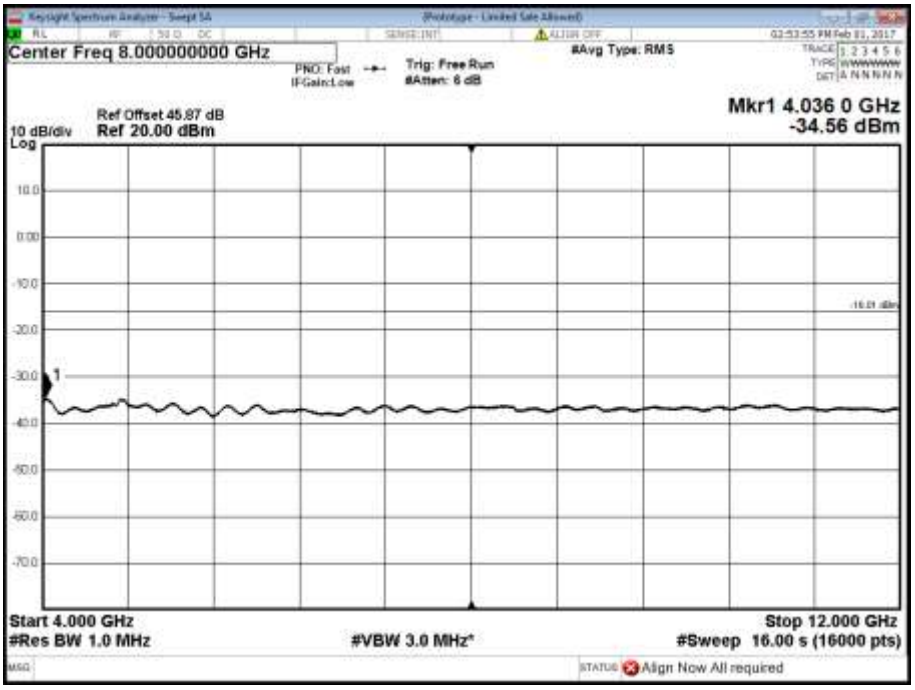
Antenna A - Channel Position M - Carrier Bandwidth 1.4 MHz - Band 2 - Range 4000 to 12000 MHz



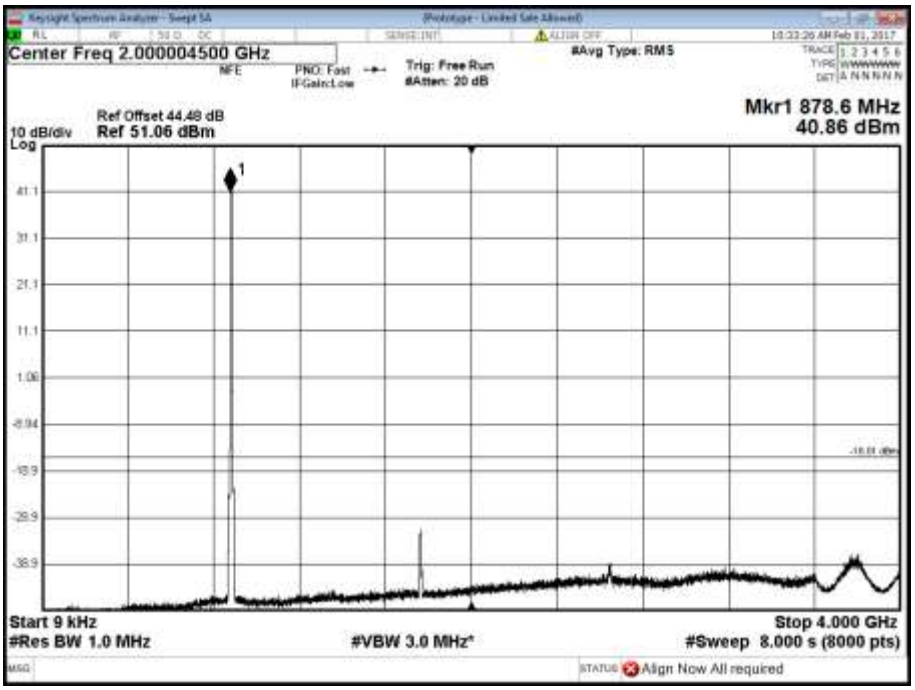
Antenna A - Channel Position M - Carrier Bandwidth 5.0 MHz - Band 1 - Range 0.009 to 4000 MHz



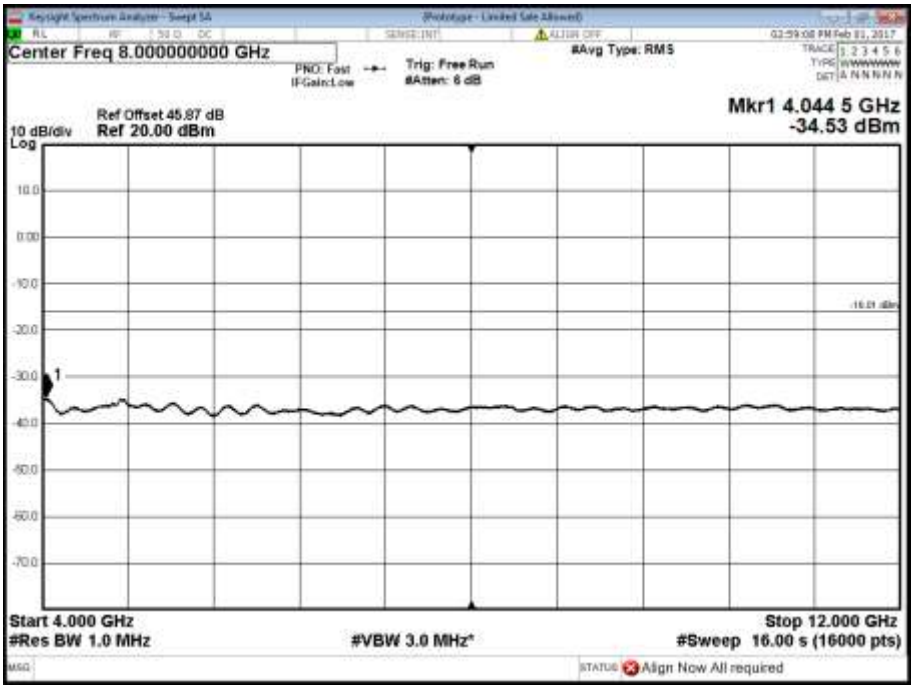
Antenna A - Channel Position M - Carrier Bandwidth 5.0 MHz - Band 2 - Range 4000 to 12000 MHz



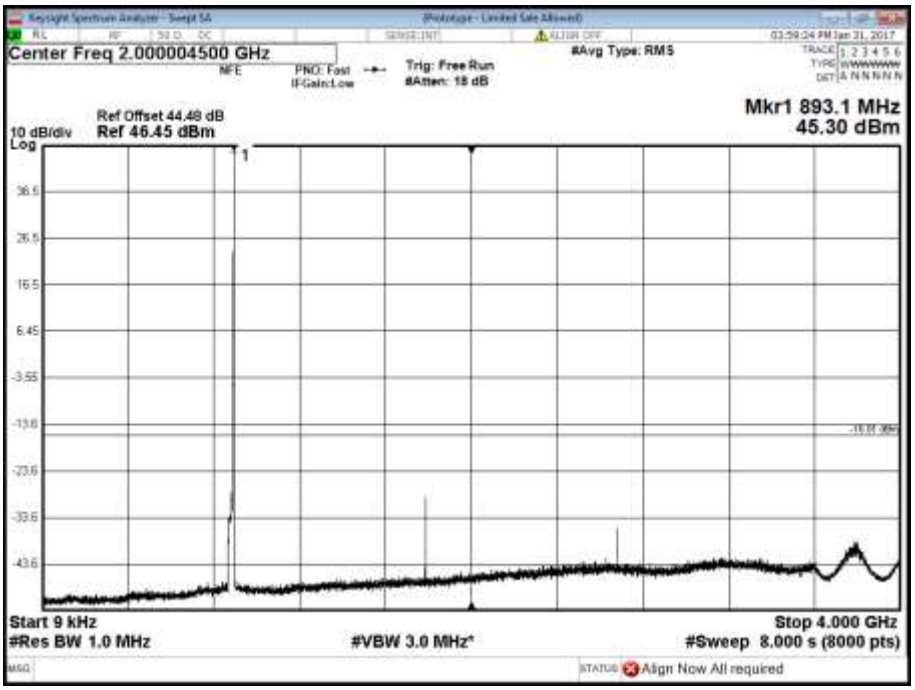
Antenna A - Channel Position M - Carrier Bandwidth 10.0 MHz - Band 1 - Range 0.009 to 4000 MHz



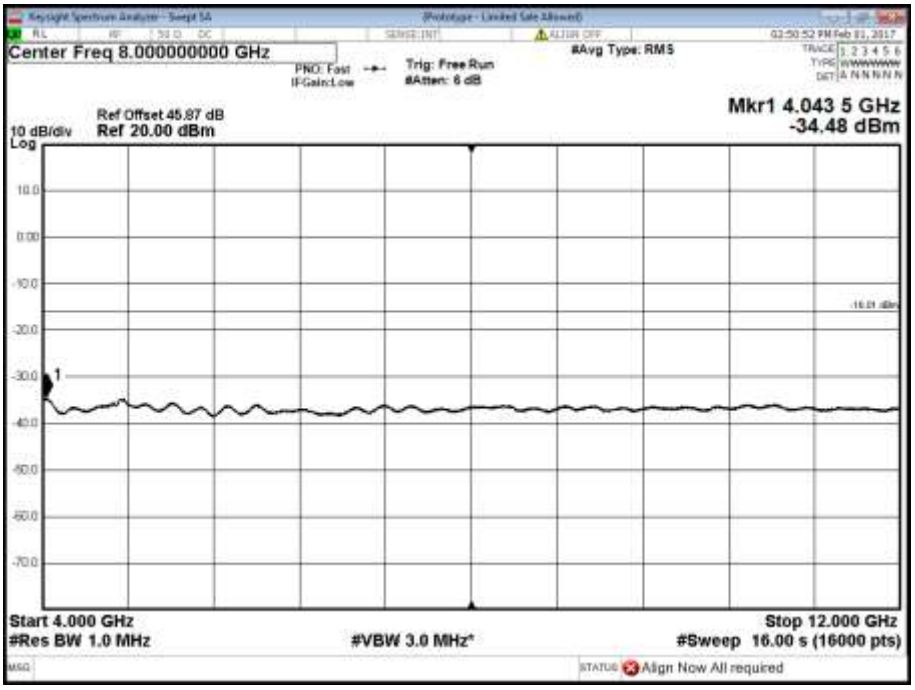
Antenna A - Channel Position M - Carrier Bandwidth 10.0 MHz - Band 2 - Range 4000 to 12000 MHz



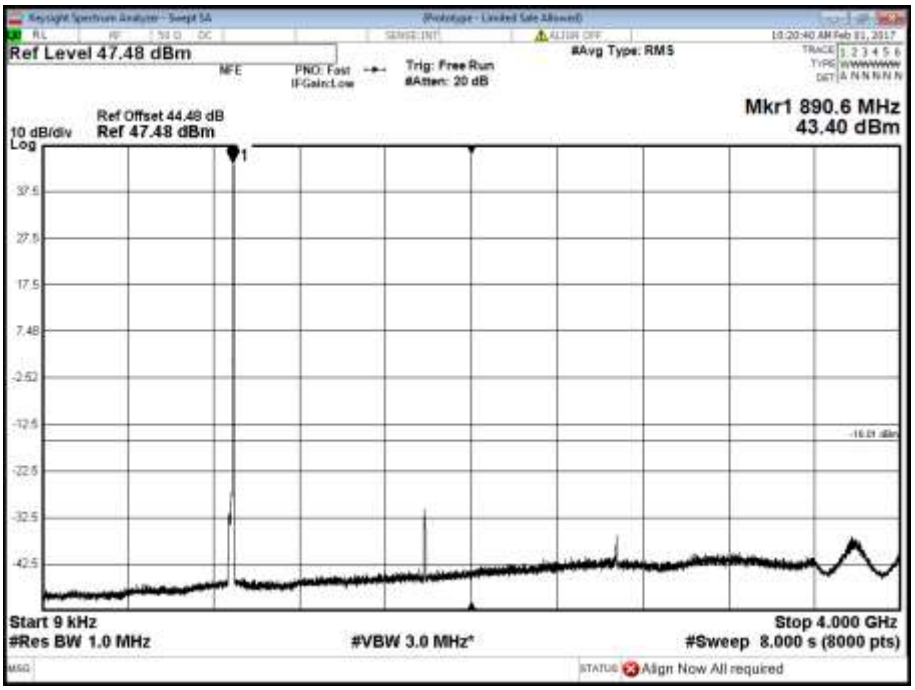
Antenna A - Channel Position T - Carrier Bandwidth 1.4 MHz - Band 1 - Range 0.009 to 4000 MHz



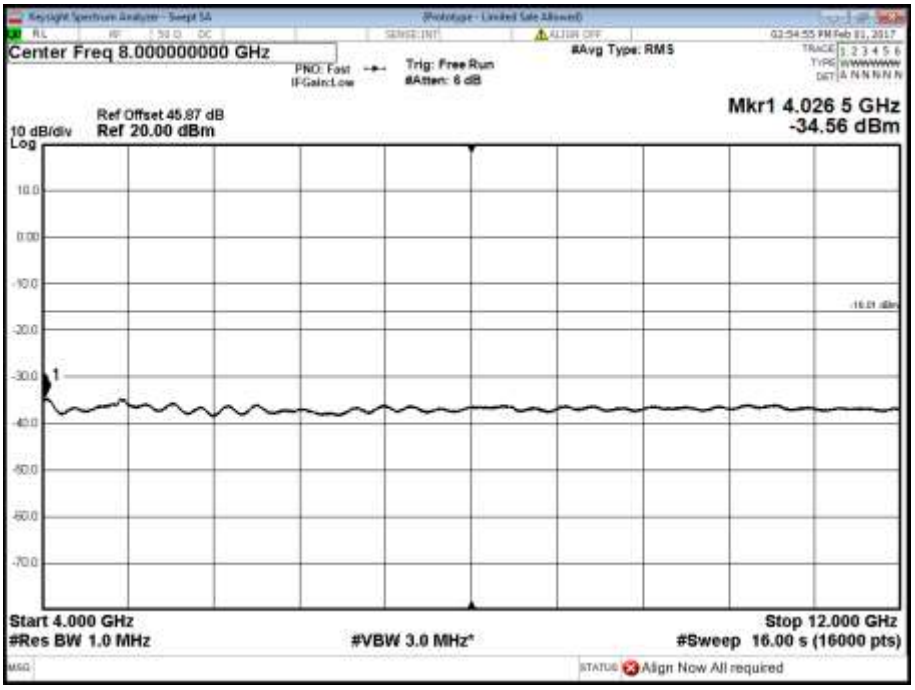
Antenna A - Channel Position T - Carrier Bandwidth 1.4 MHz - Band 2 - Range 4000 to 12000 MHz



Antenna A - Channel Position T - Carrier Bandwidth 5.0 MHz - Band 1 - Range 0.009 to 4000 MHz



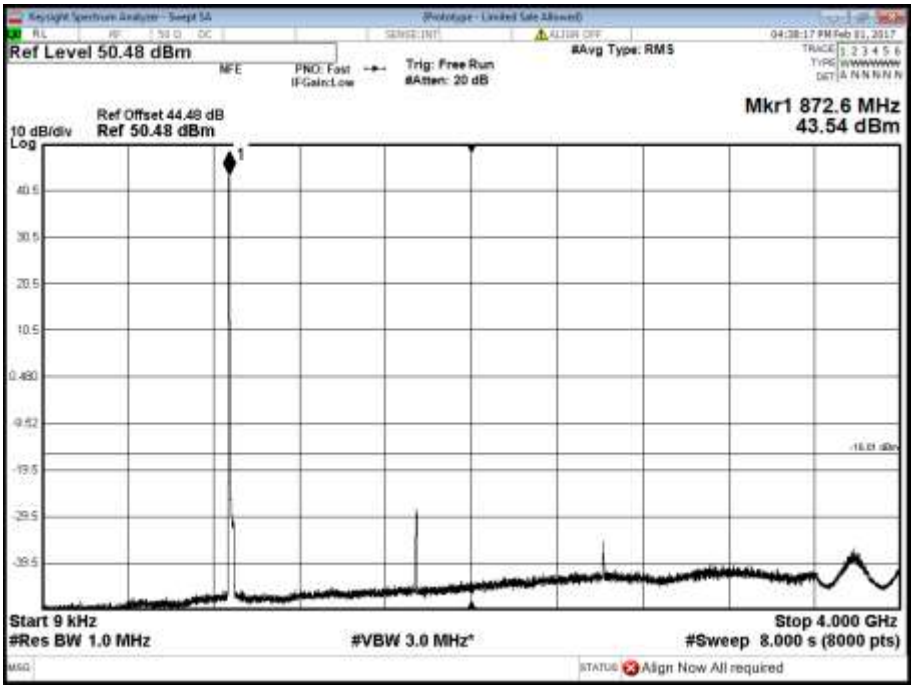
Antenna A - Channel Position T - Carrier Bandwidth 5.0 MHz - Band 2 - Range 4000 to 12000 MHz



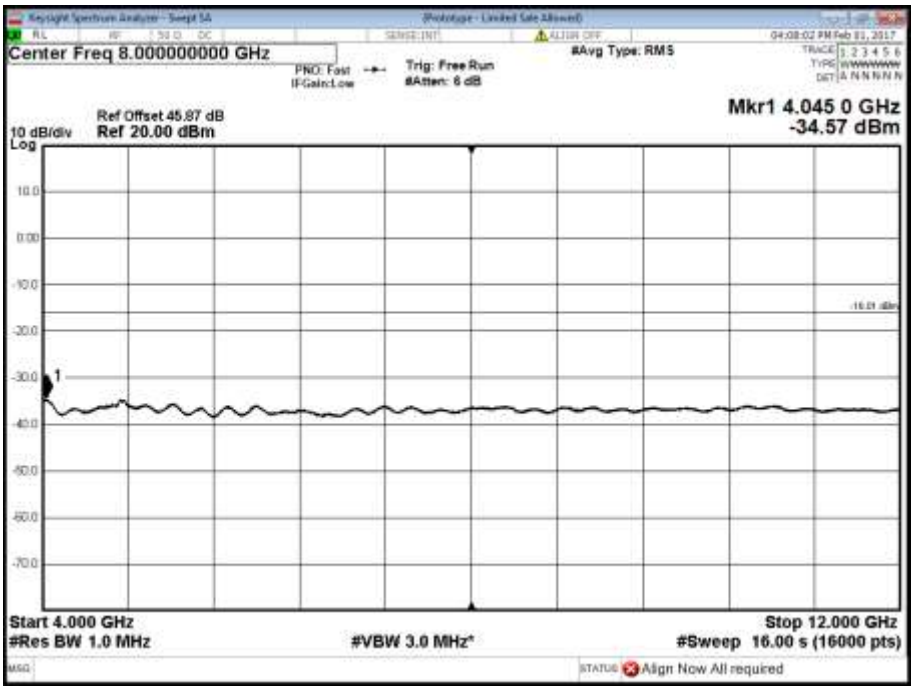
Configuration A

Maximum Output Power 49 dBm

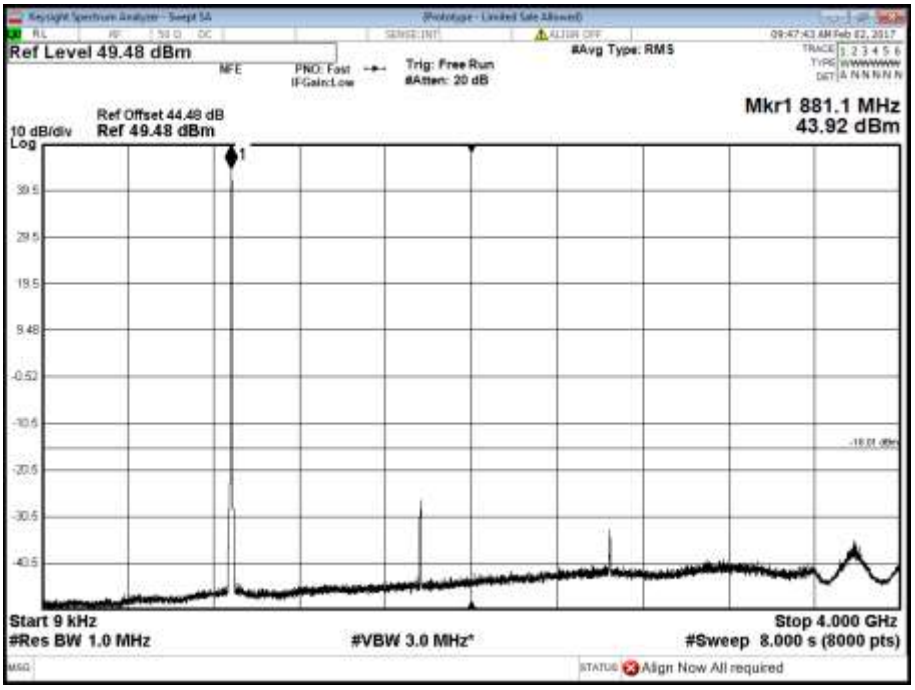
Antenna B - Channel Position B - Carrier Bandwidth 5.0 MHz - Band 1 - Range 0.009 to 4000 MHz



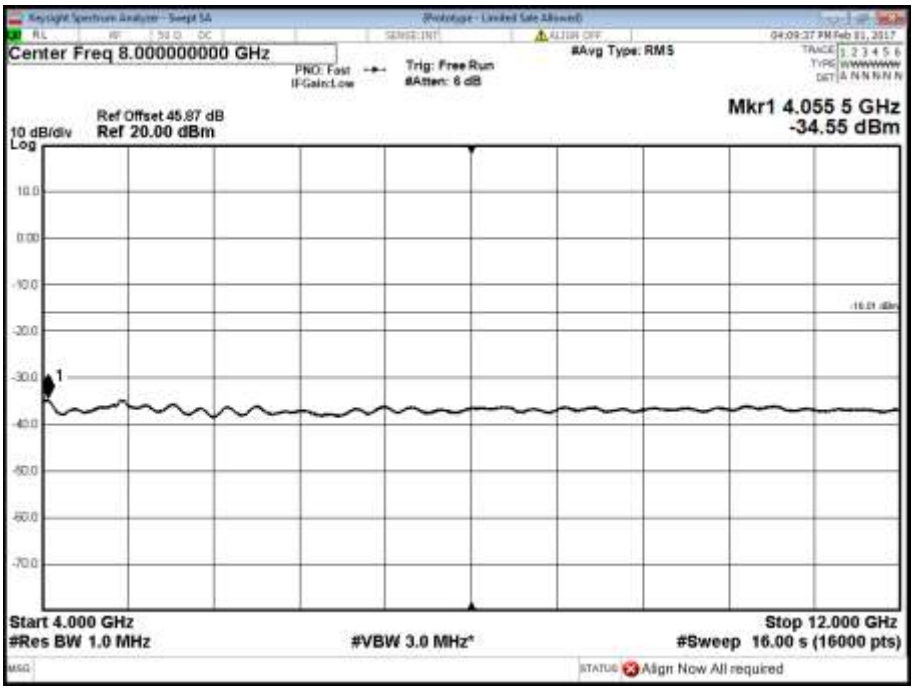
Antenna B - Channel Position B - Carrier Bandwidth 5.0 MHz - Band 2 - Range 4000 to 12000 MHz



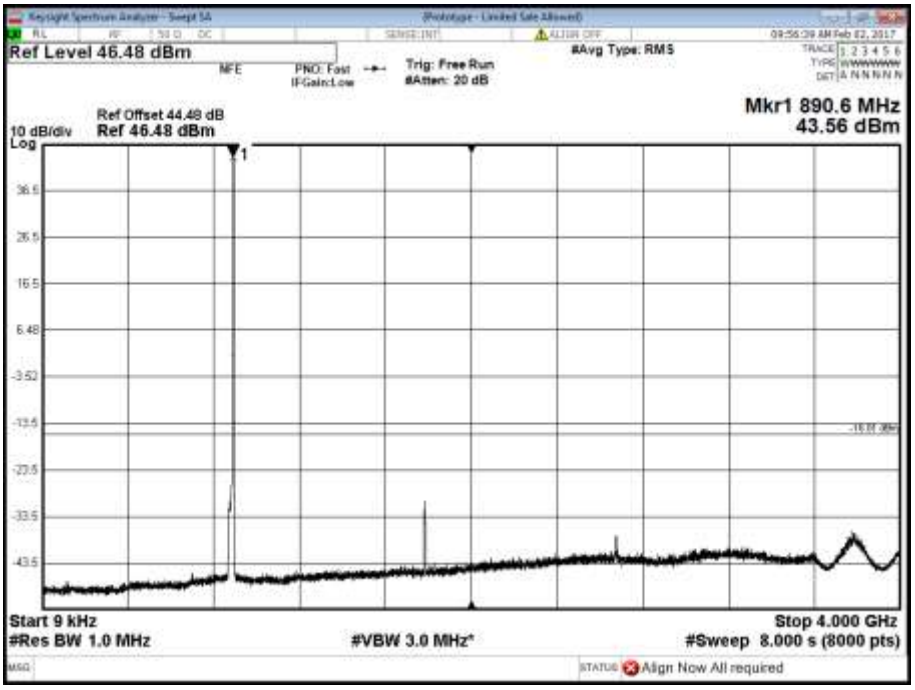
Antenna B - Channel Position M - Carrier Bandwidth 5.0 MHz - Band 1 - Range 0.009 to 4000 MHz



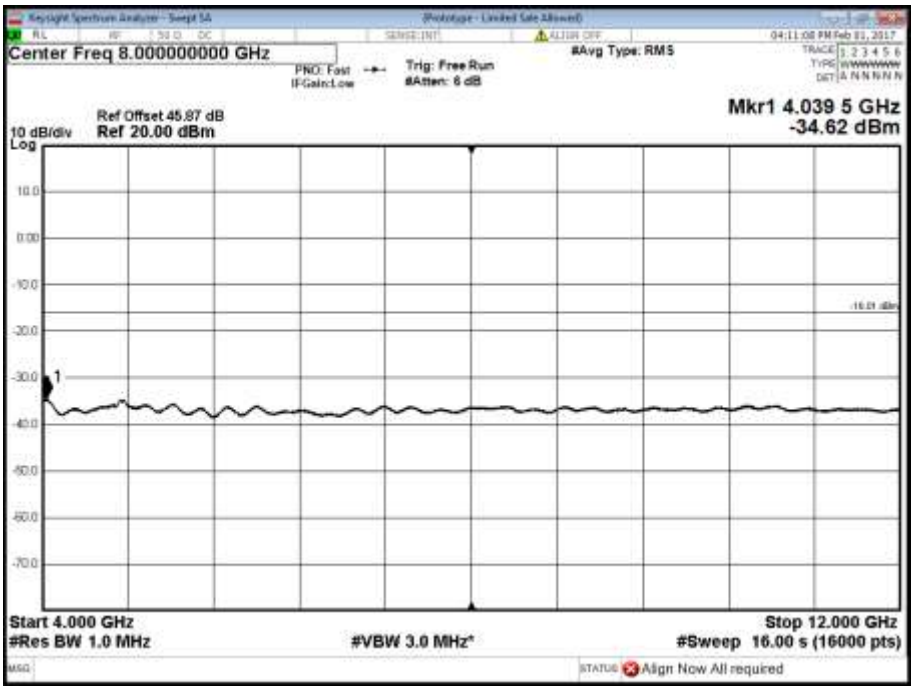
Antenna B - Channel Position M - Carrier Bandwidth 5.0 MHz - Band 2 - Range 4000 to 12000 MHz



Antenna B - Channel Position T - Carrier Bandwidth 5.0 MHz - Band 1 - Range 0.009 to 4000 MHz



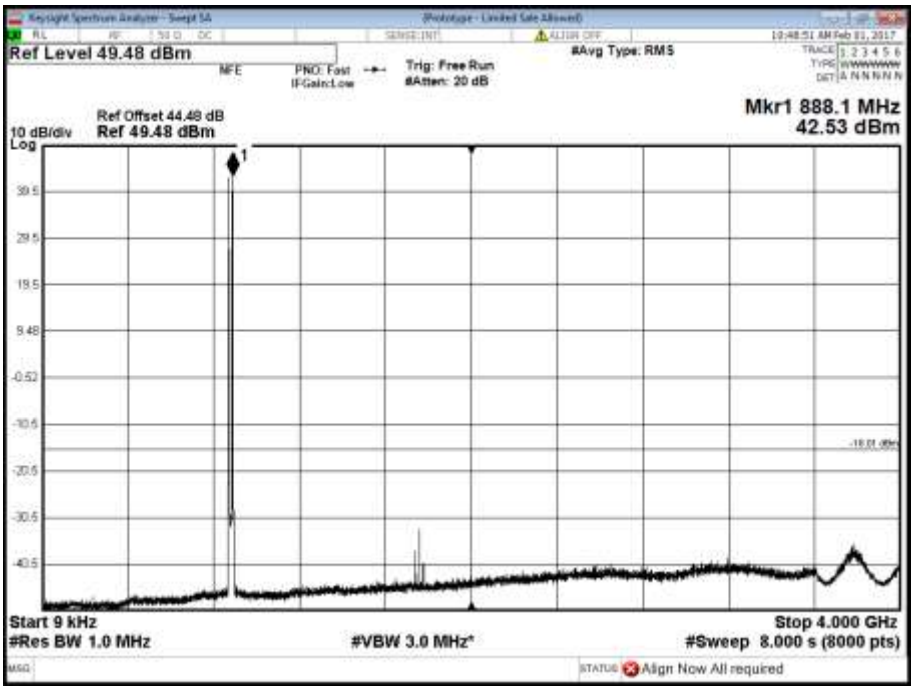
Antenna B - Channel Position T - Carrier Bandwidth 5.0 MHz - Band 2 - Range 4000 to 12000 MHz



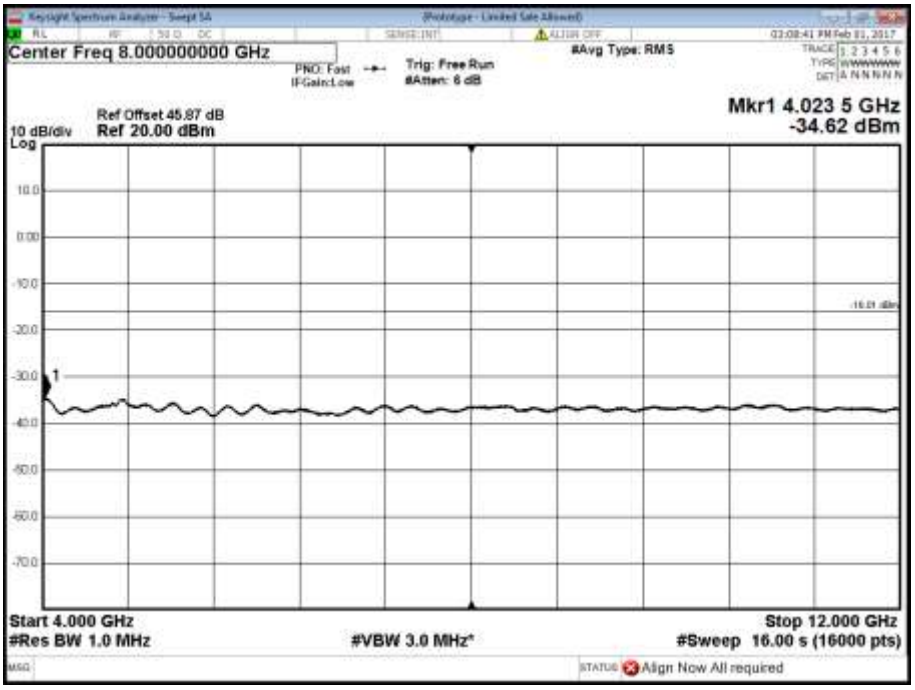
Configuration B

Maximum Output Power dBm

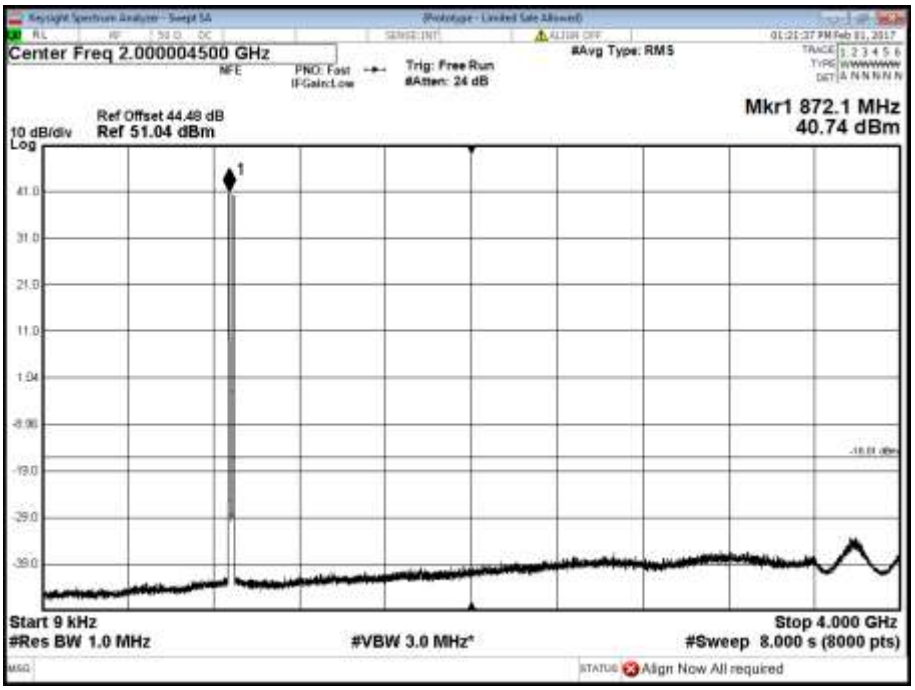
Antenna A - Channel Position B - Carrier Bandwidth 1.4 MHz - Band 1 - Range 0.009 to 4000 MHz



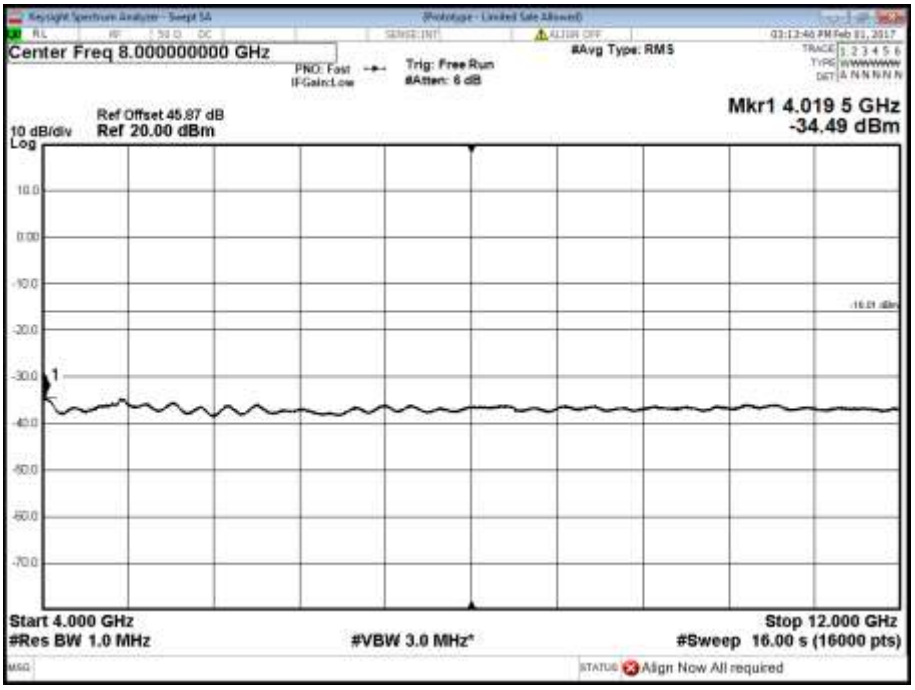
Antenna A - Channel Position B - Carrier Bandwidth 1.4 MHz - Band 2 - Range 4000 to 12000 MHz



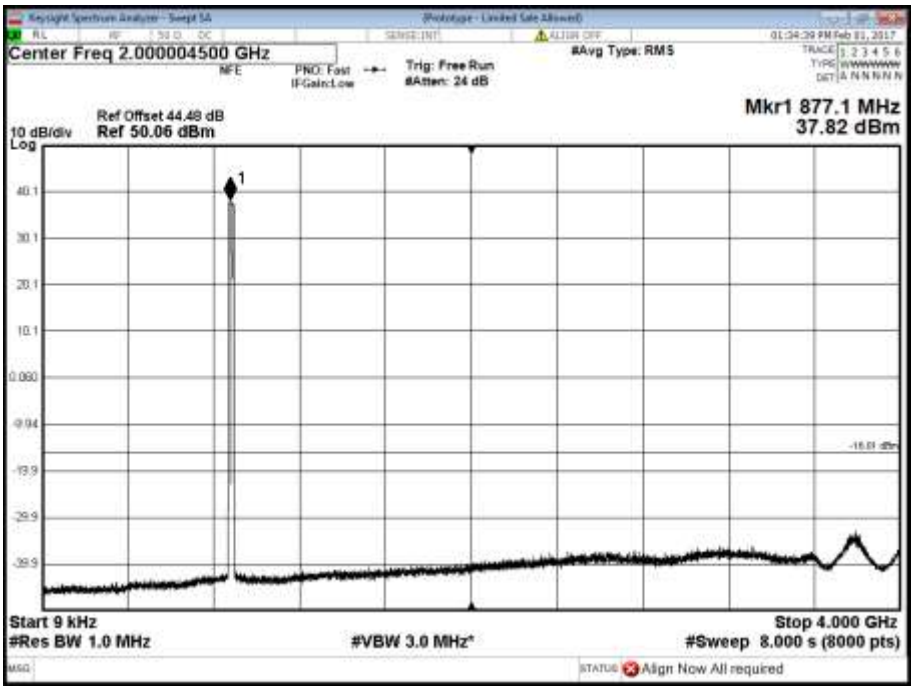
Antenna A - Channel Position B - Carrier Bandwidth 5.0 MHz - Band 1 - Range 0.009 to 4000 MHz



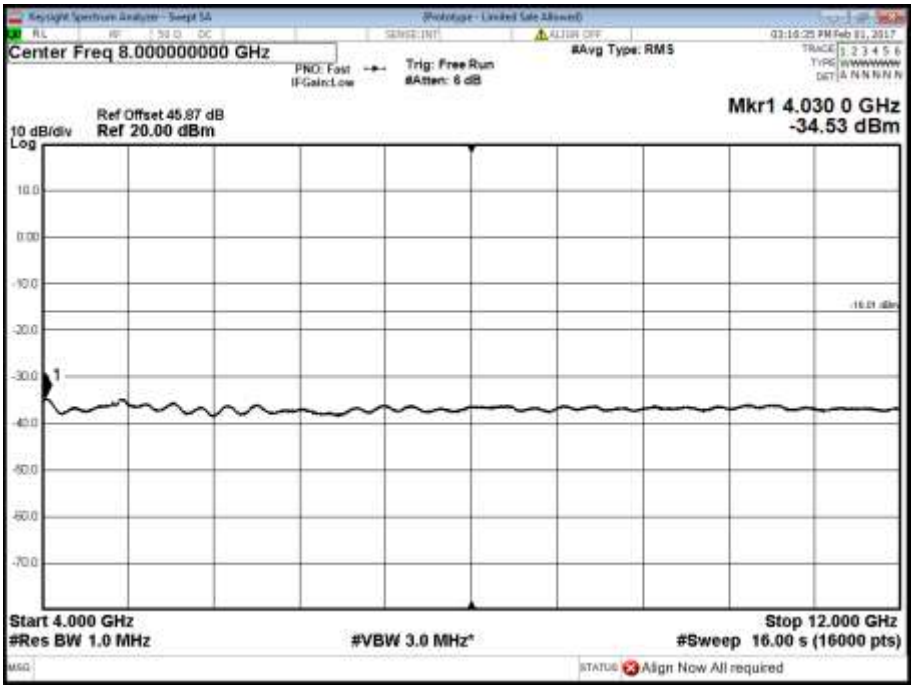
Antenna A - Channel Position B - Carrier Bandwidth 5.0 MHz - Band 2 - Range 4000 to 12000 MHz



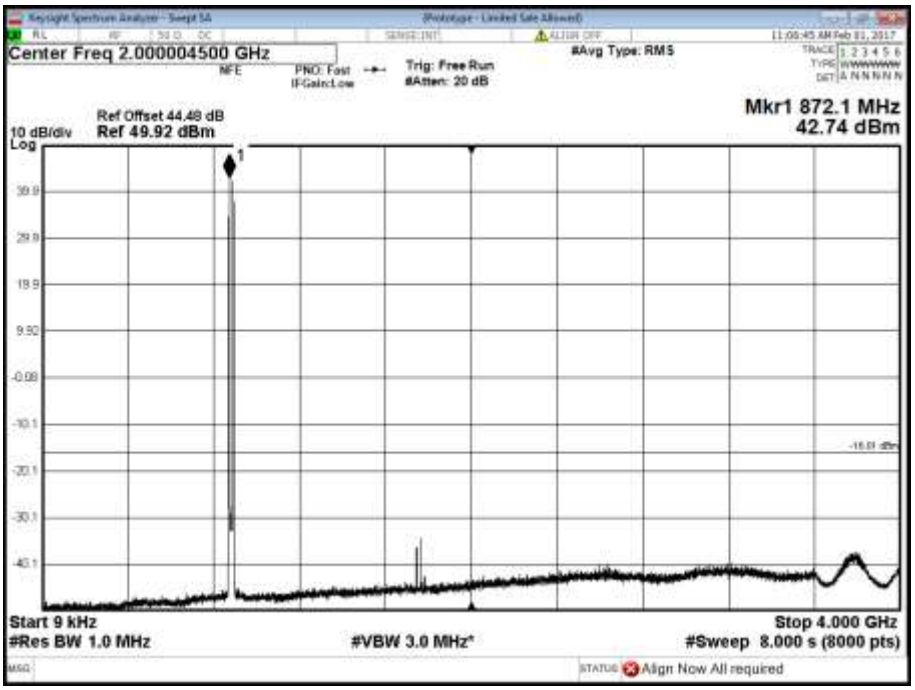
Antenna A - Channel Position B - Carrier Bandwidth 10.0 MHz - Band 1 - Range 0.009 to 4000 MHz



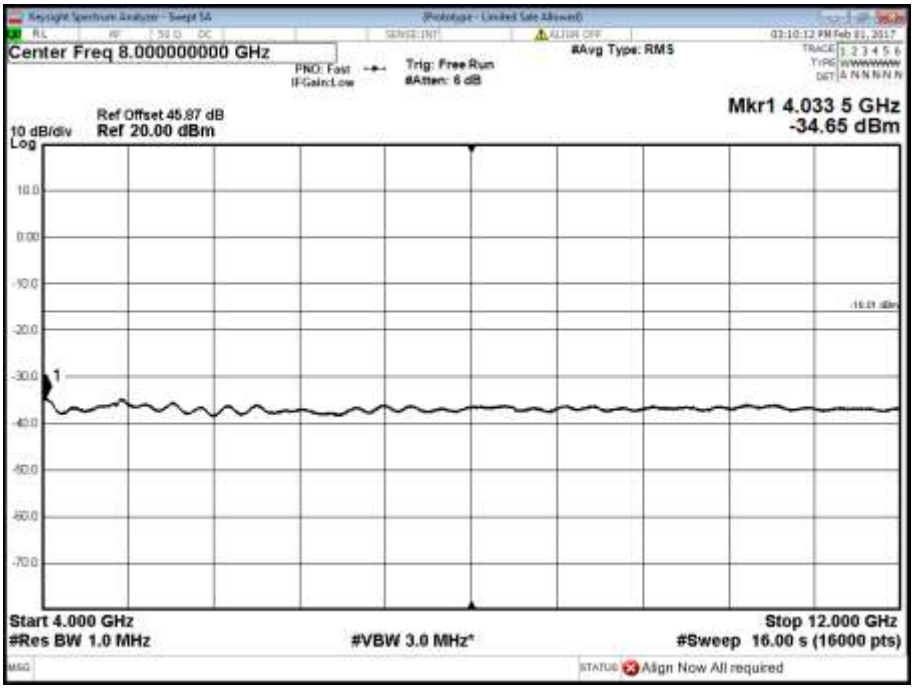
Antenna A - Channel Position B - Carrier Bandwidth 10.0 MHz - Band 2 - Range 4000 to 12000 MHz



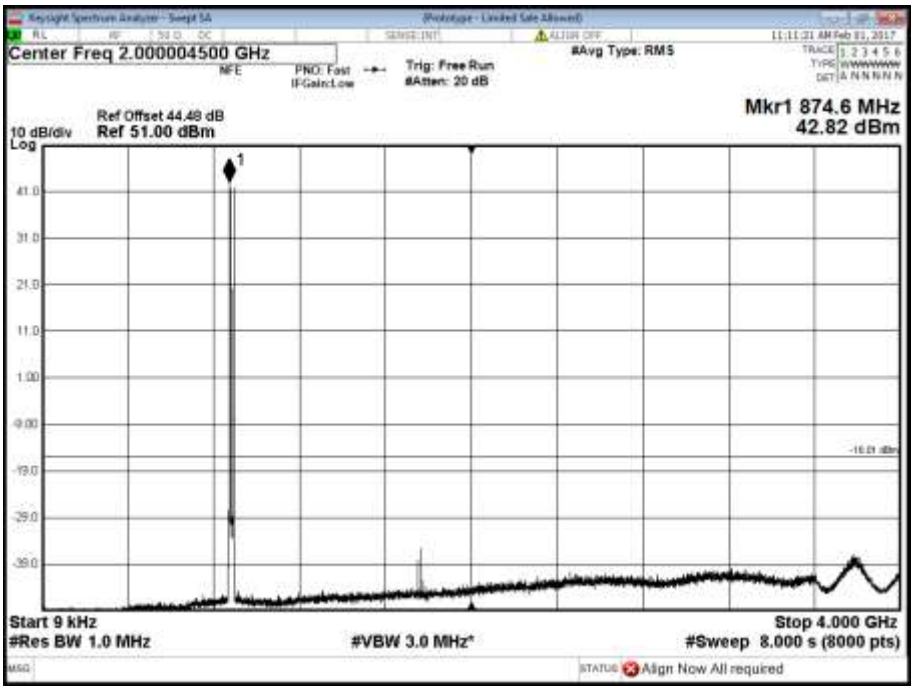
Antenna A - Channel Position M - Carrier Bandwidth 1.4 MHz - Band 1 - Range 0.009 to 4000 MHz



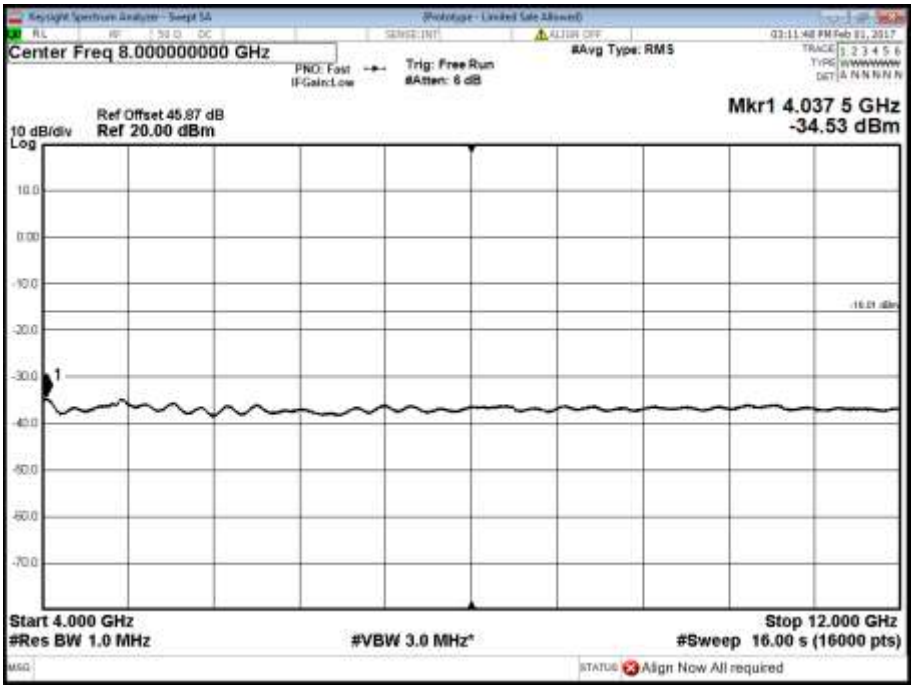
Antenna A - Channel Position M - Carrier Bandwidth 1.4 MHz - Band 2 - Range 4000 to 12000 MHz



Antenna A - Channel Position T - Carrier Bandwidth 1.4 MHz - Band 1 - Range 0.009 to 4000 MHz



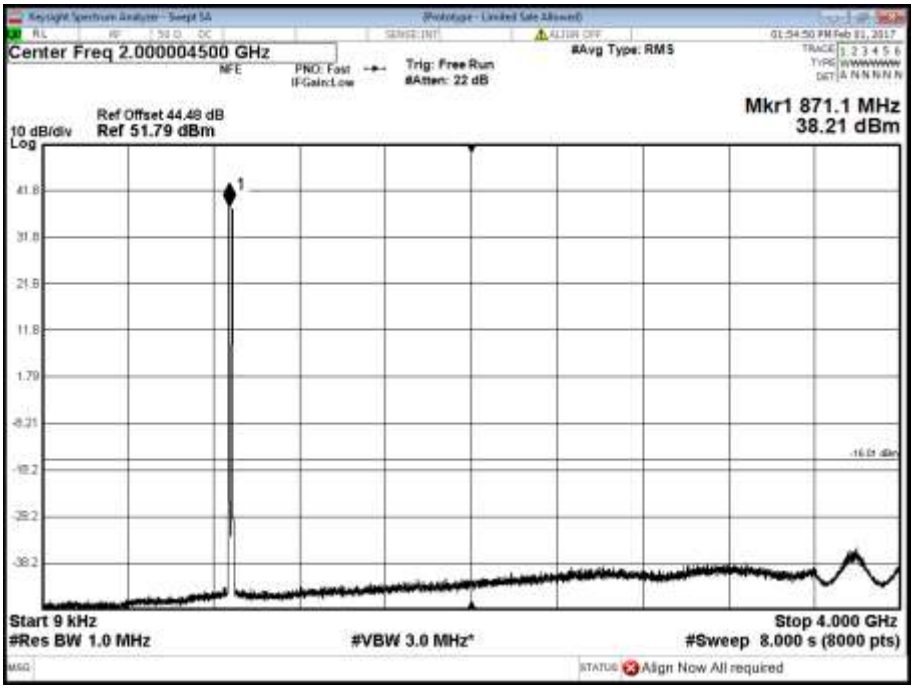
Antenna A - Channel Position T - Carrier Bandwidth 1.4 MHz - Band 2 - Range 4000 to 12000 MHz



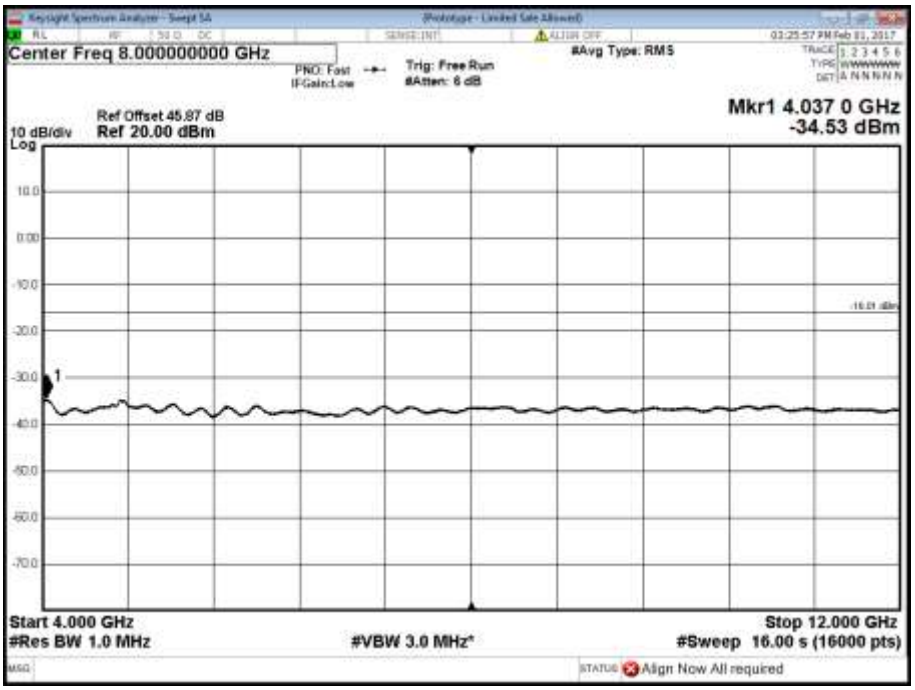
Configuration C

Maximum Output Power 49 dBm

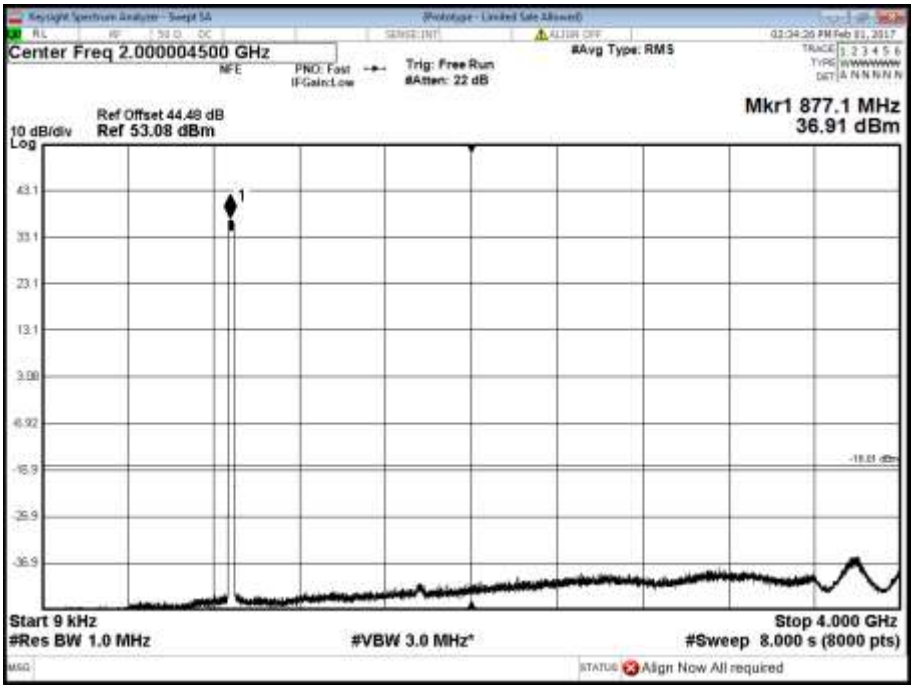
Antenna A - Channel Position B - Carrier Bandwidth 1.4 MHz - Band 1 - Range 0.009 to 4000 MHz



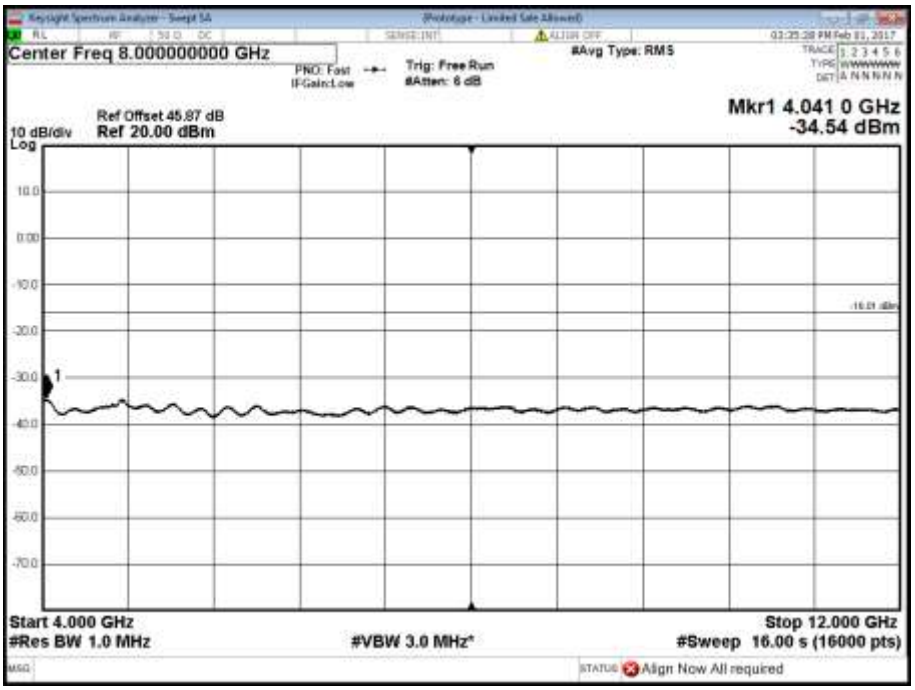
Antenna A - Channel Position B - Carrier Bandwidth 1.4 MHz - Band 2 - Range 4000 to 12000 MHz



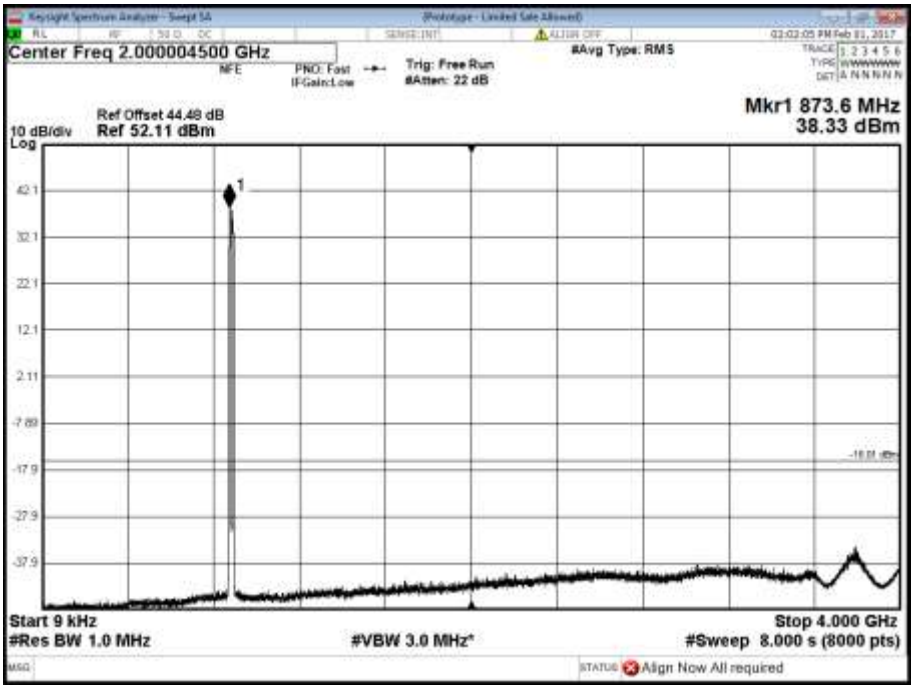
Antenna A - Channel Position B - Carrier Bandwidth 5.0 MHz - Band 1 - Range 0.009 to 4000 MHz



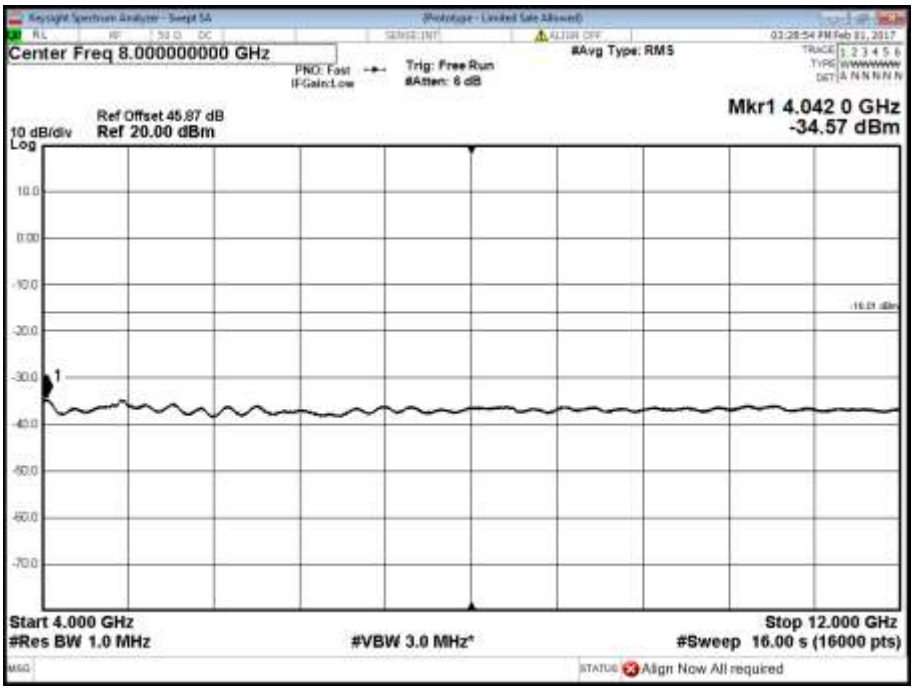
Antenna A - Channel Position B - Carrier Bandwidth 5.0 MHz - Band 2 - Range 4000 to 12000 MHz



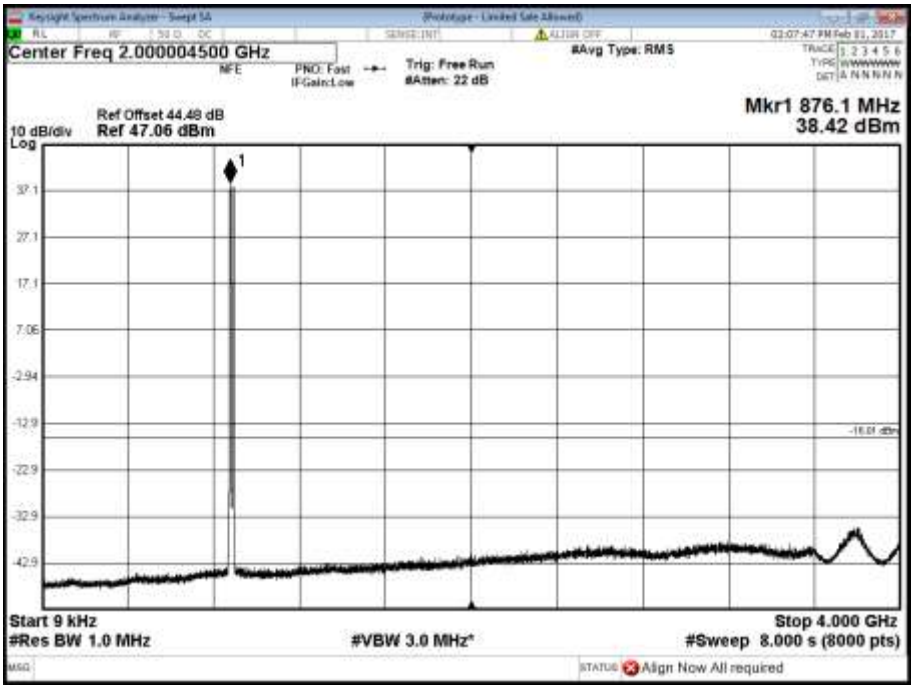
Antenna A - Channel Position M - Carrier Bandwidth 1.4 MHz - Band 1 - Range 0.009 to 4000 MHz



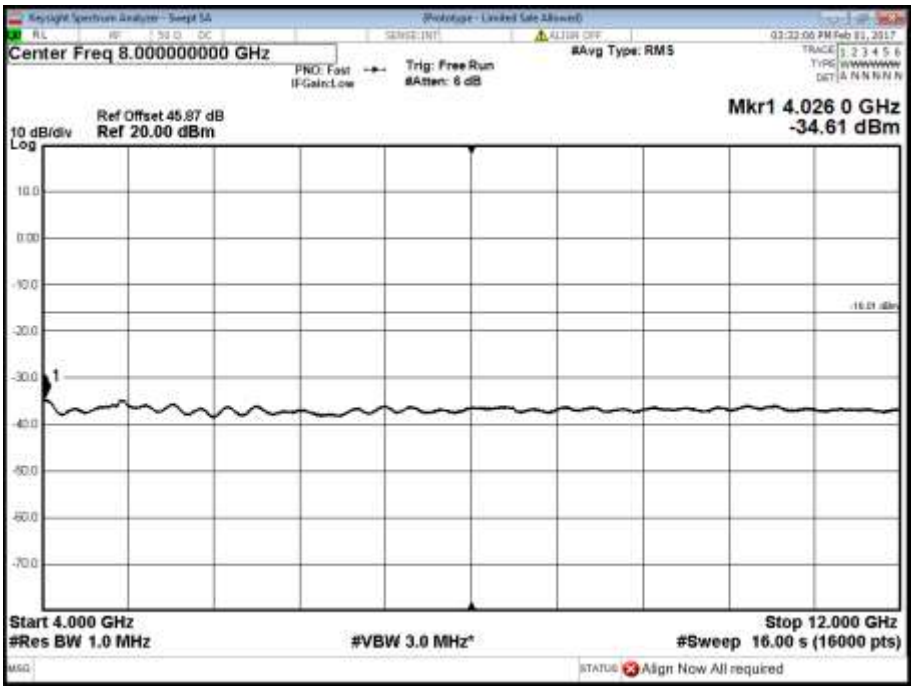
Antenna A - Channel Position M - Carrier Bandwidth 1.4 MHz - Band 2 - Range 4000 to 12000 MHz



Antenna A - Channel Position T - Carrier Bandwidth 1.4 MHz - Band 1 - Range 0.009 to 4000 MHz



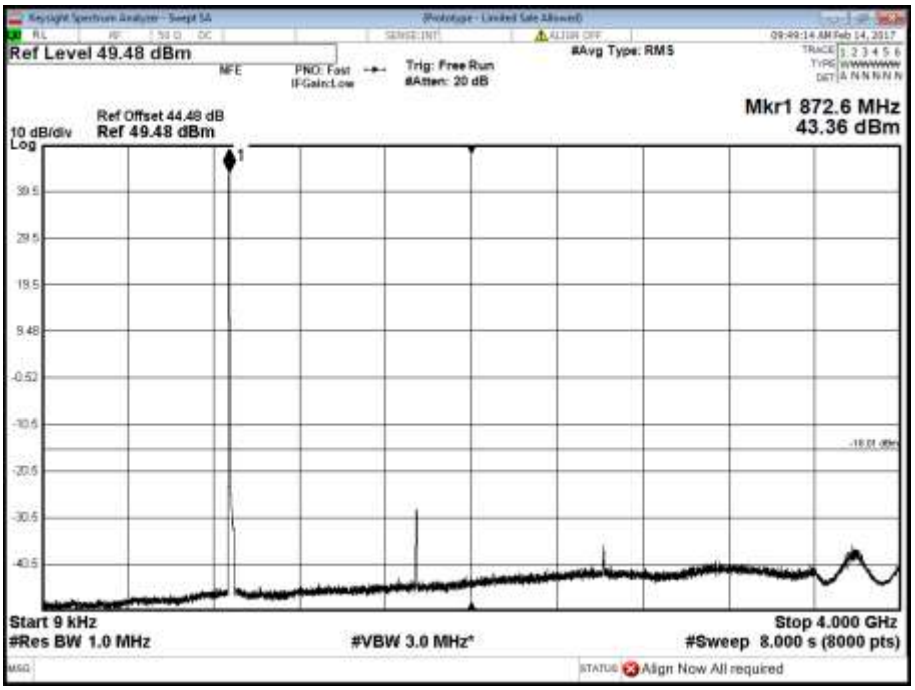
Antenna A - Channel Position T - Carrier Bandwidth 1.4 MHz - Band 2 - Range 4000 to 12000 MHz



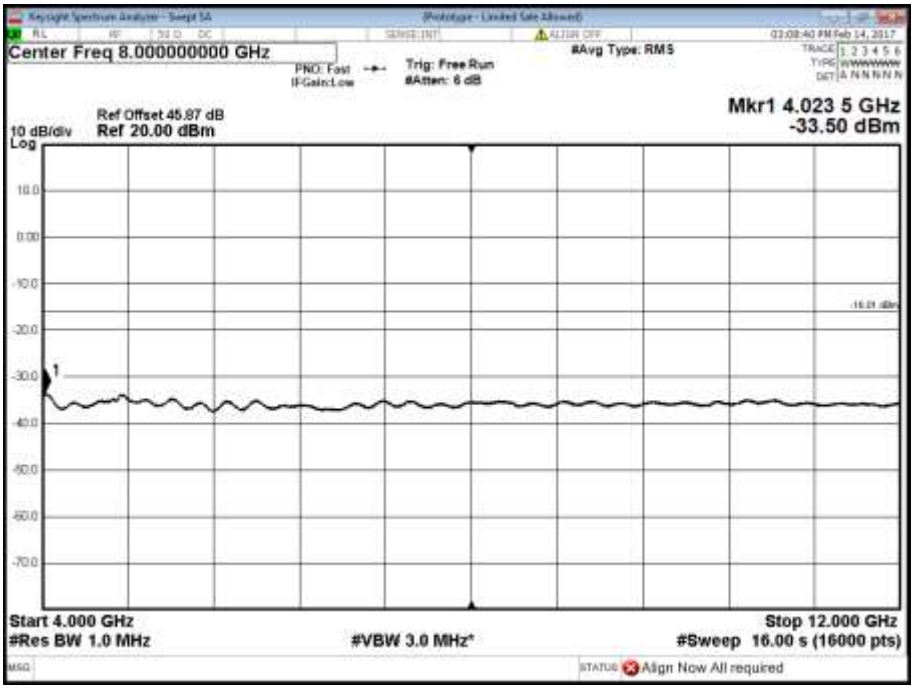
Configuration D

Maximum Output Power 46 dBm

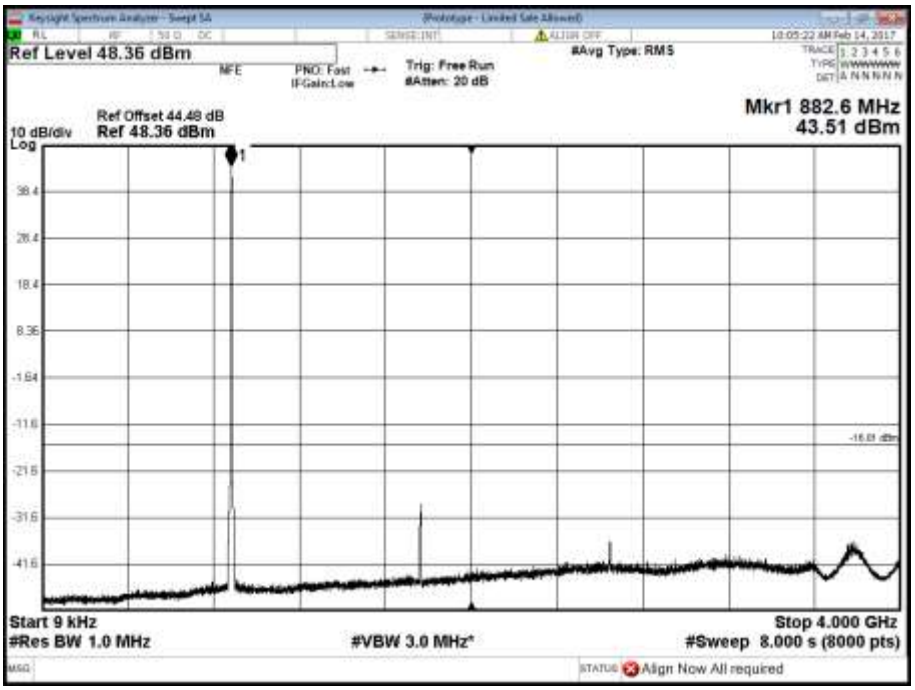
Antenna A - Channel Position B - Carrier Bandwidth 5.0 MHz - Band 1 - Range 0.009 to 4000 MHz



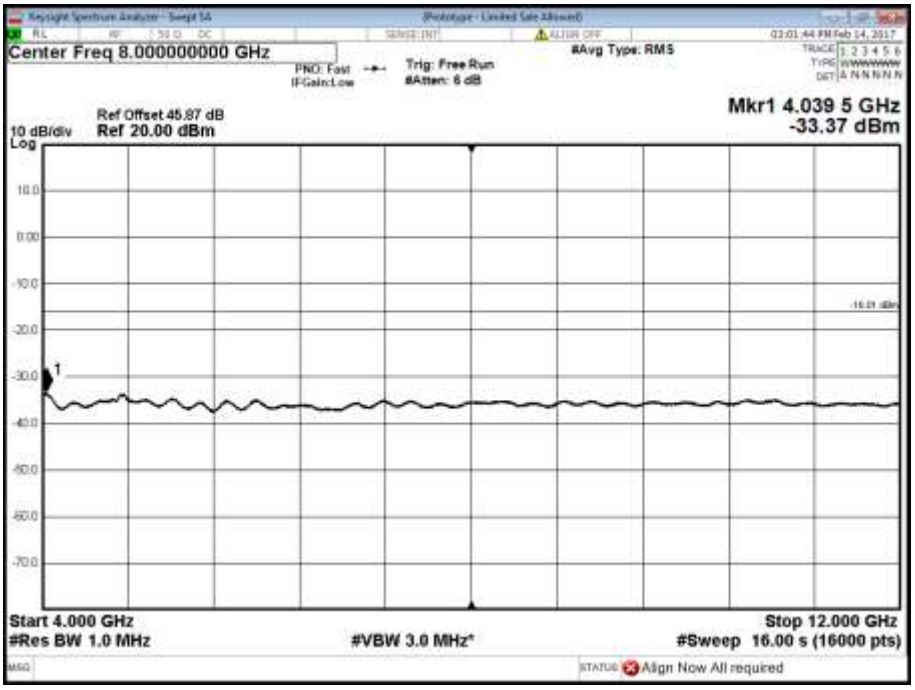
Antenna A - Channel Position B - Carrier Bandwidth 5.0 MHz - Band 2 - Range 4000 to 12000 MHz



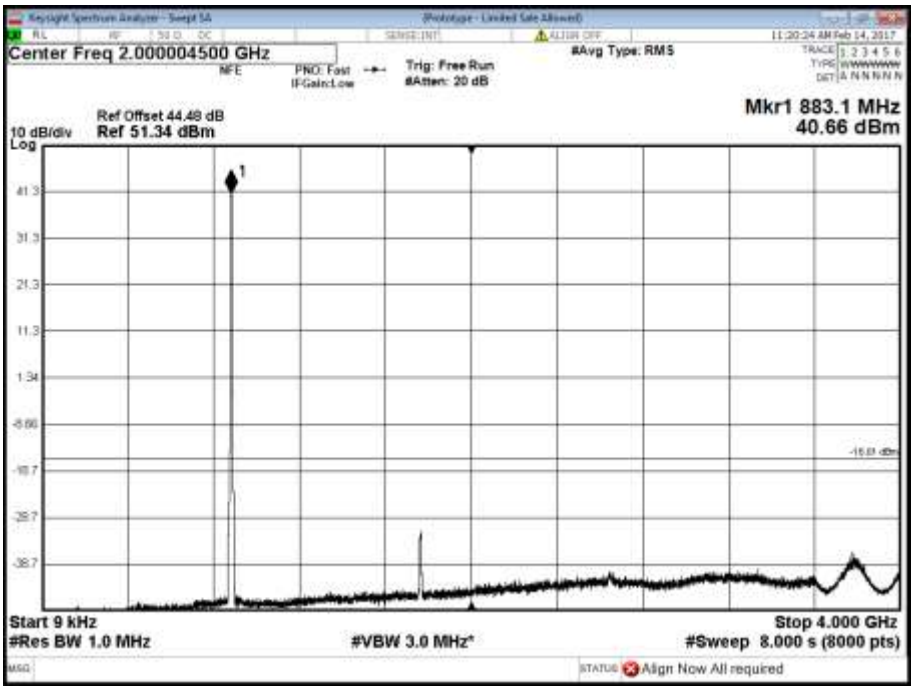
Antenna A - Channel Position M - Carrier Bandwidth 5.0 MHz - Band 1 - Range 0.009 to 4000 MHz



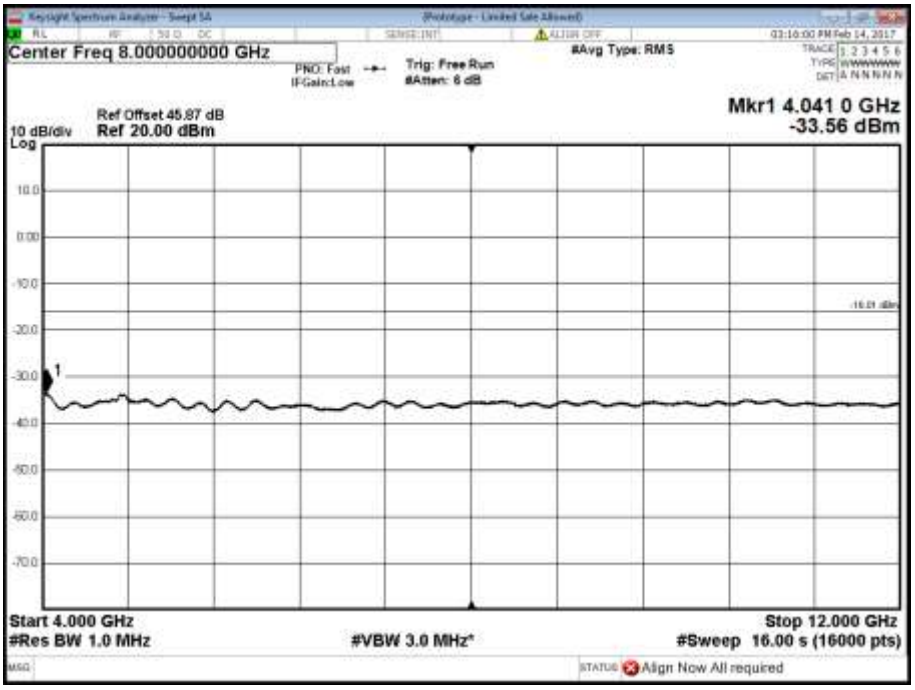
Antenna A - Channel Position M - Carrier Bandwidth 5.0 MHz - Band 2 - Range 4000 to 12000 MHz



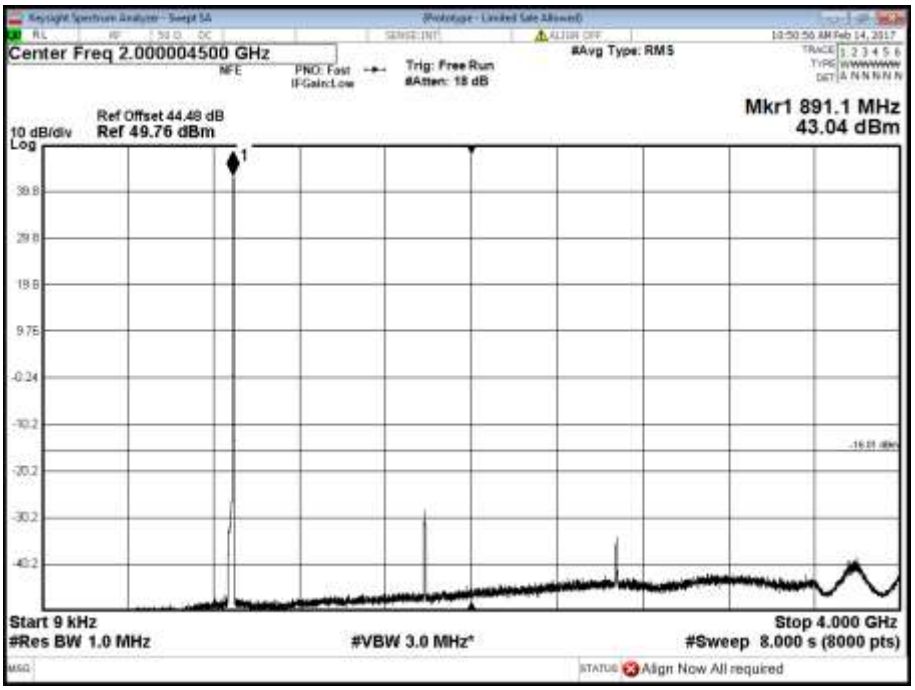
Antenna A - Channel Position M - Carrier Bandwidth 10.0 MHz - Band 1 - Range 0.009 to 4000 MHz



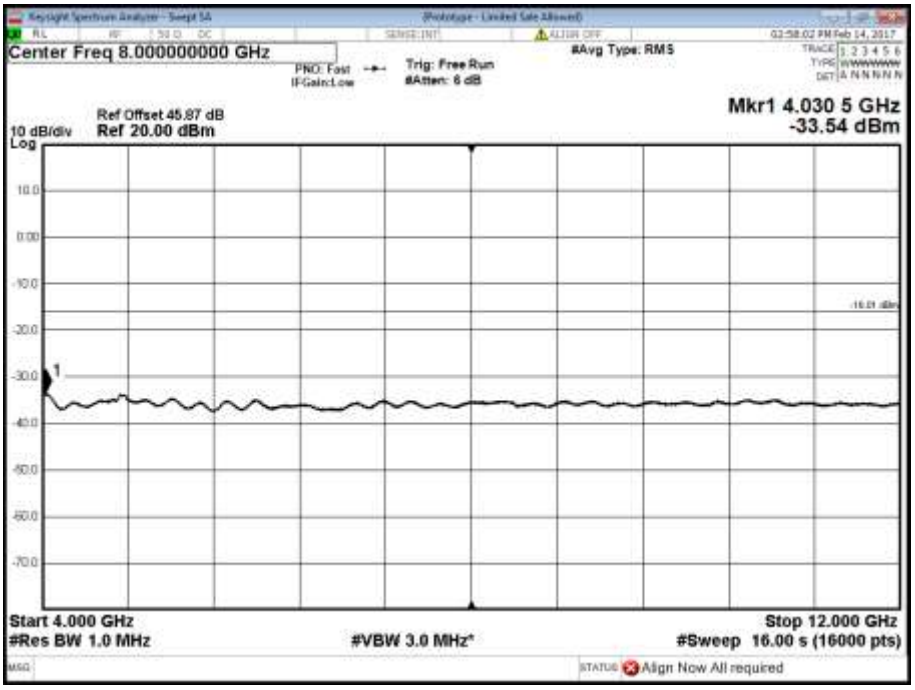
Antenna A - Channel Position M - Carrier Bandwidth 10.0 MHz - Band 2 - Range 4000 to 12000 MHz



Antenna A - Channel Position T - Carrier Bandwidth 5.0 MHz - Band 1 - Range 0.009 to 4000 MHz



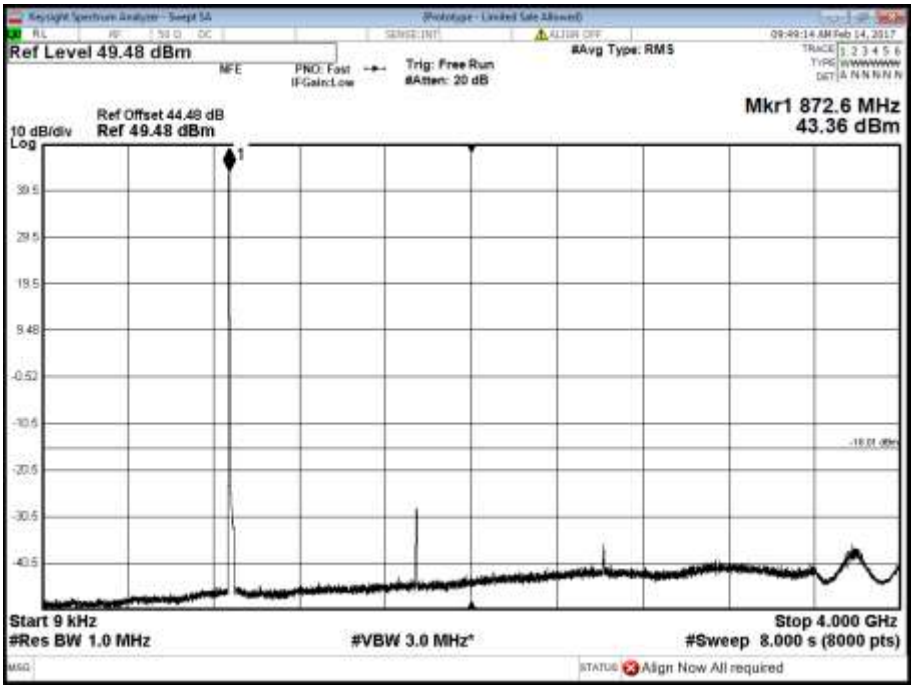
Antenna A - Channel Position T - Carrier Bandwidth 5.0 MHz - Band 2 - Range 4000 to 12000 MHz



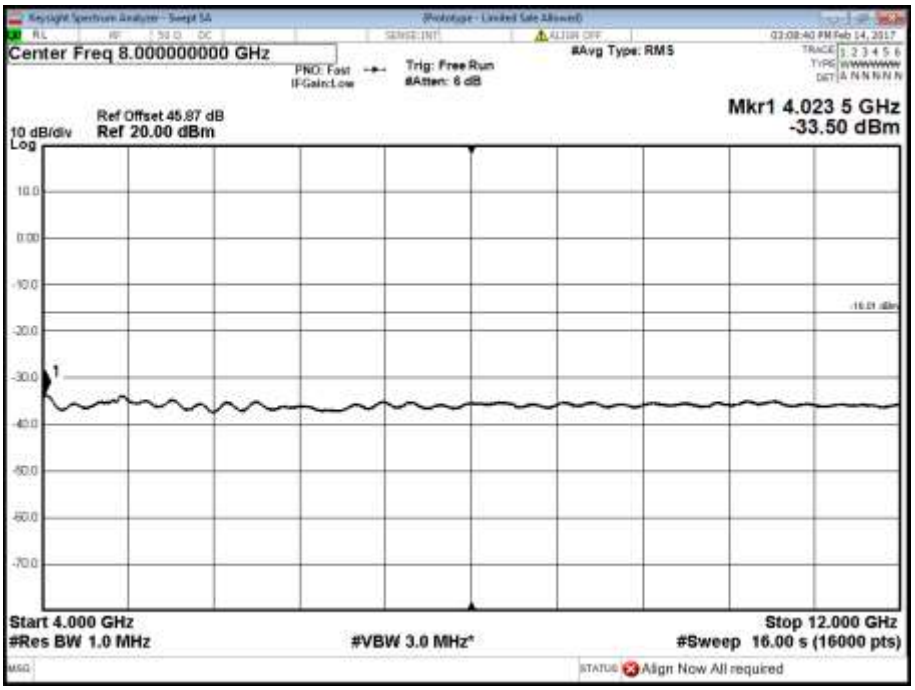
Configuration D

Maximum Output Power 46 dBm

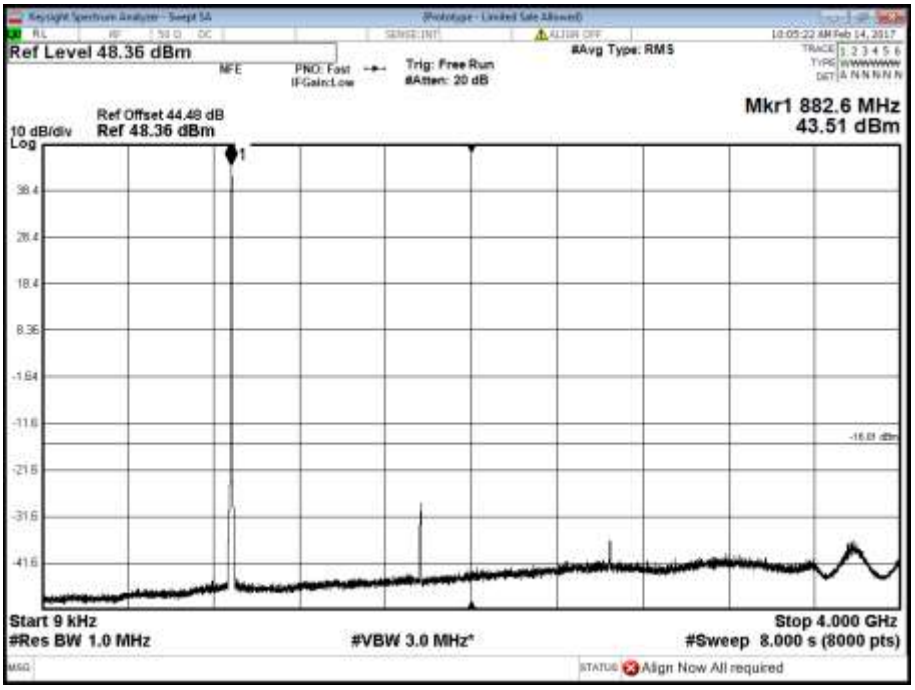
Antenna A - Channel Position B - Carrier Bandwidth 5.0 MHz - Band 1 - Range 0.009 to 4000 MHz



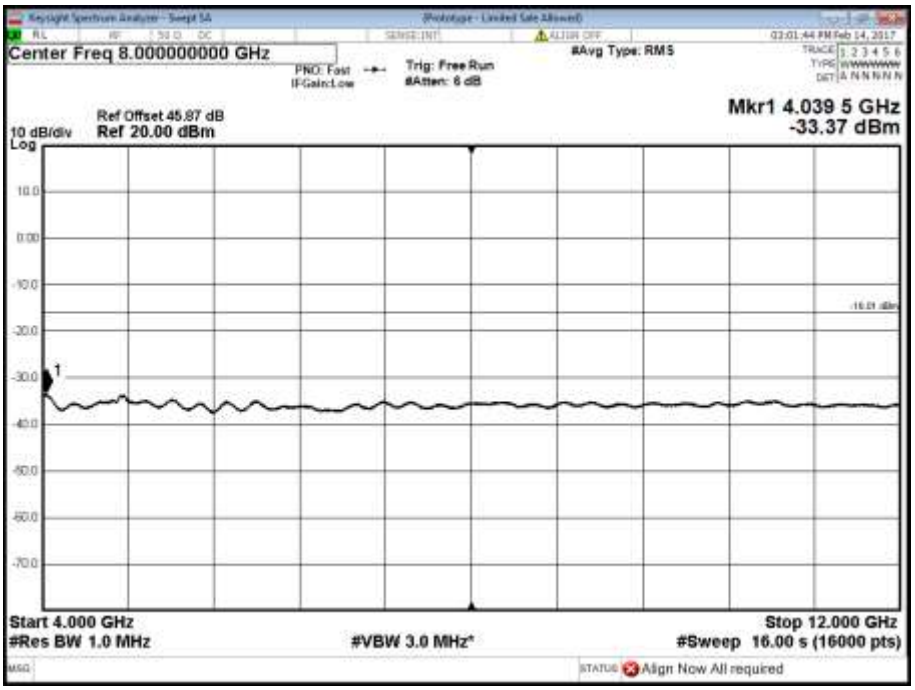
Antenna A - Channel Position B - Carrier Bandwidth 5.0 MHz - Band 2 - Range 4000 to 12000 MHz



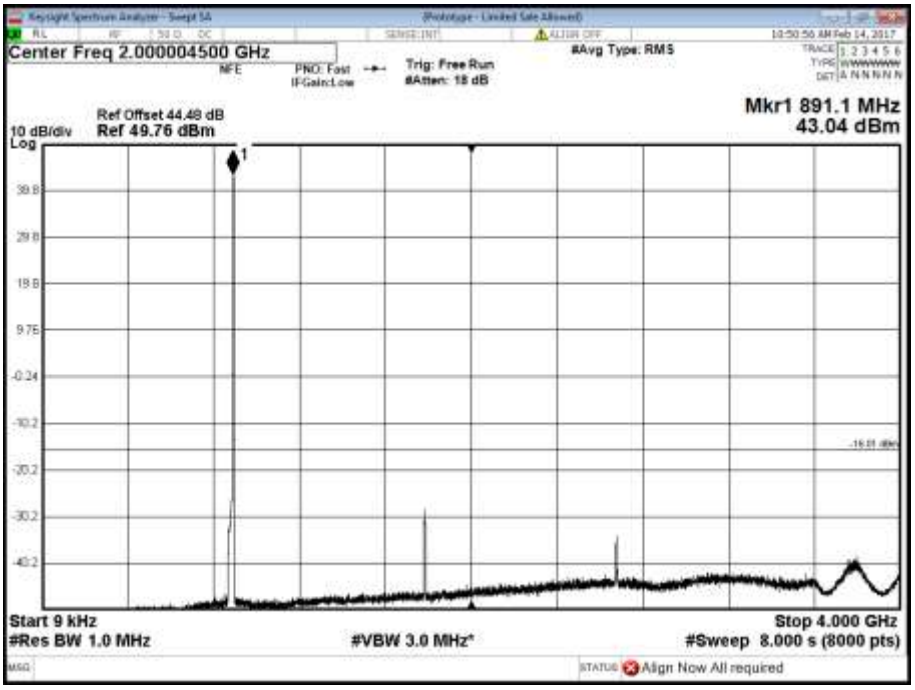
Antenna A - Channel Position M - Carrier Bandwidth 5.0 MHz - Band 1 - Range 0.009 to 4000 MHz



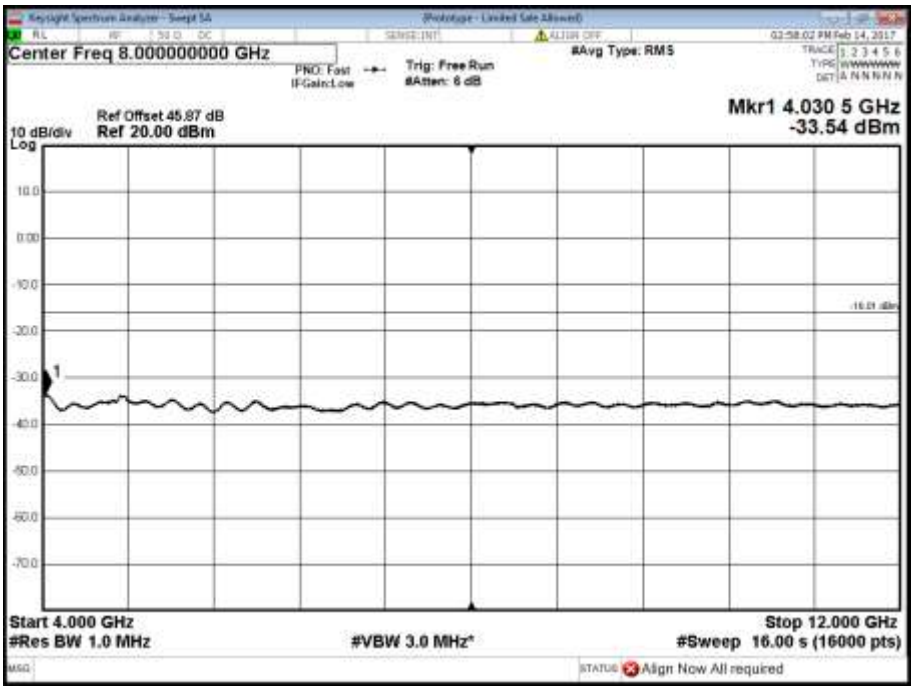
Antenna A - Channel Position M - Carrier Bandwidth 5.0 MHz - Band 2 - Range 4000 to 12000 MHz



Antenna A - Channel Position T - Carrier Bandwidth 5.0 MHz - Band 1 - Range 0.009 to 4000 MHz



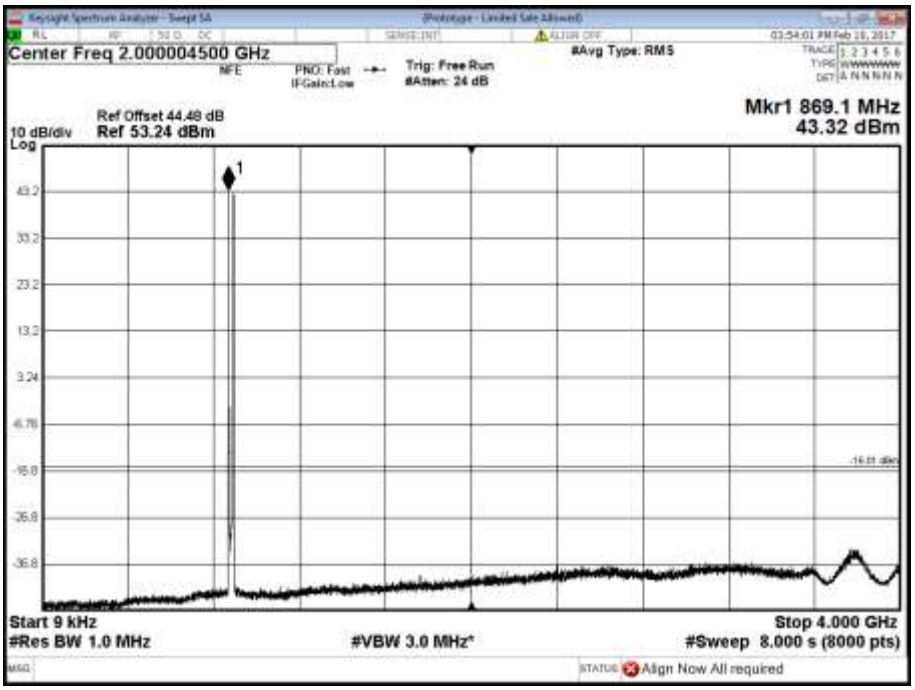
Antenna A - Channel Position T - Carrier Bandwidth 5.0 MHz - Band 2 - Range 4000 to 12000 MHz



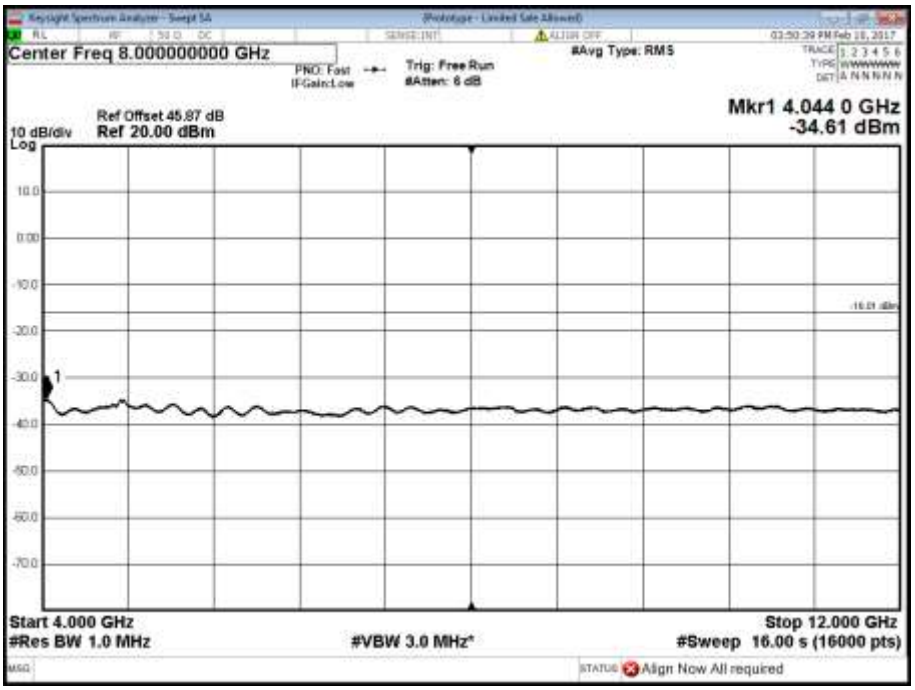
Configuration L

Maximum Output Power 49 dBm

Antenna A - Channel Position BRFBW - GSM Modulation / WCDMA BW GMSK / 5.0 MHz - Band 1 - Range 0.009 to 4000 MHz



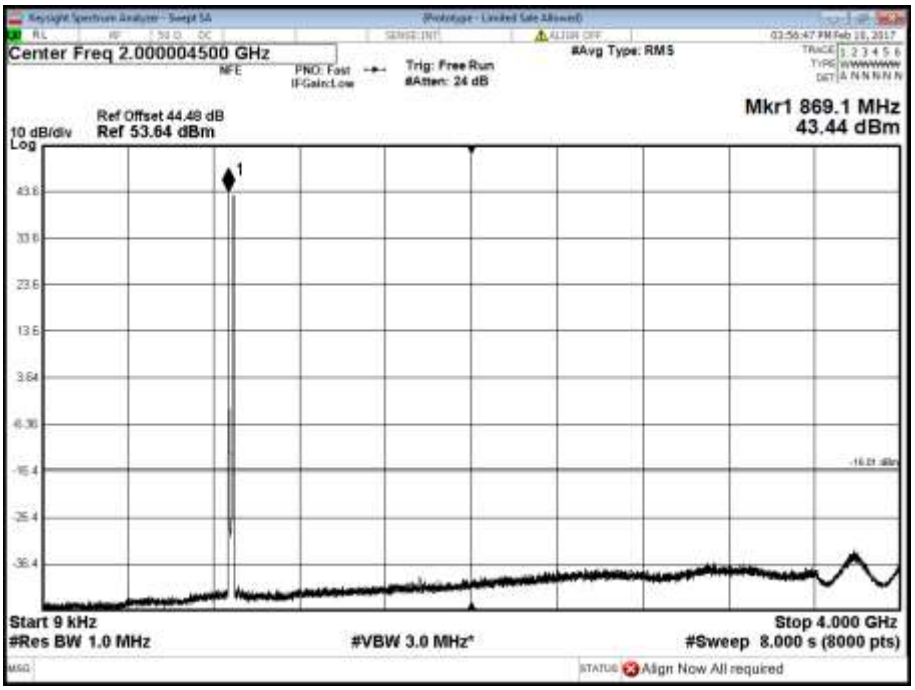
Antenna A - Channel Position BRFBW - GSM Modulation / WCDMA BW GMSK / 5.0 MHz - Band 2 - Range 4000 to 12000 MHz



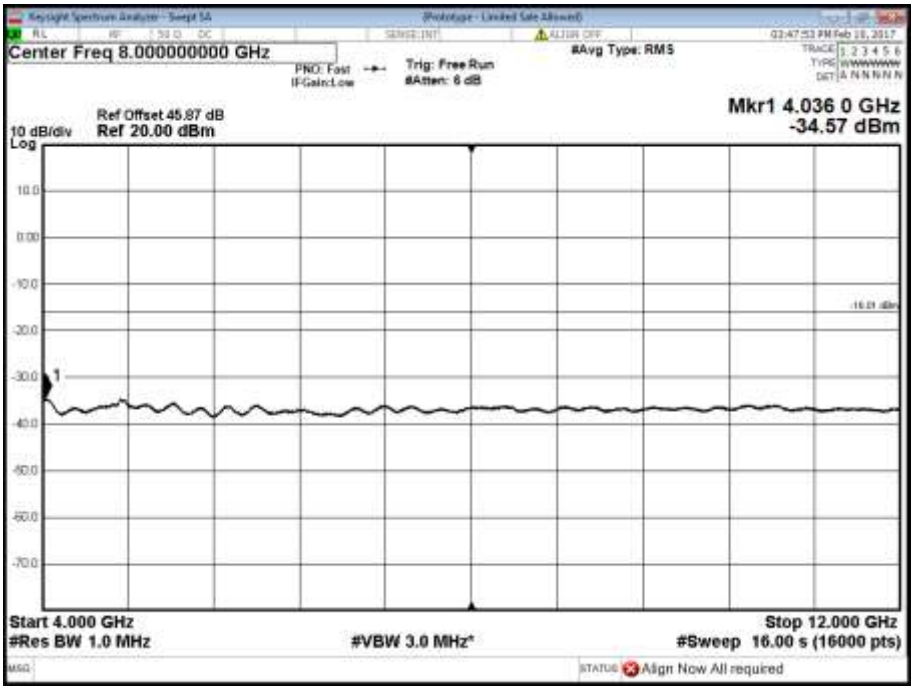
Configuration L

Maximum Output Power 49 dBm
Maximum Output Power 49 dBm

Antenna B - Channel Position BRFBW - GSM Modulation / WCDMA BW GMSK / 5.0 MHz - Band 1 - Range 0.009 to 4000 MHz



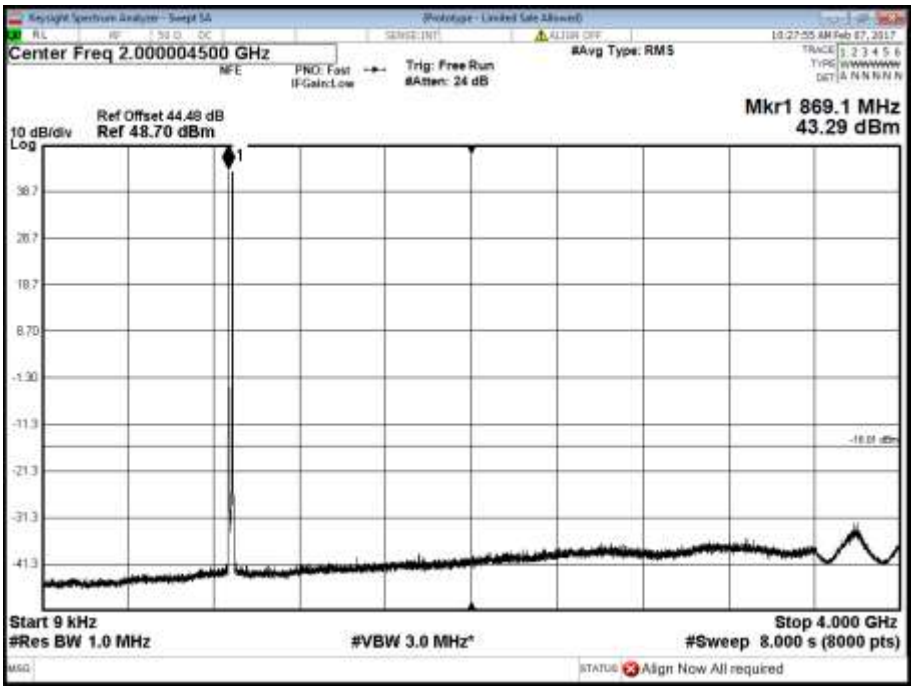
Antenna B - Channel Position BRFBW - GSM Modulation / WCDMA BW GMSK / 5.0 MHz - Band 2 - Range 4000 to 12000 MHz



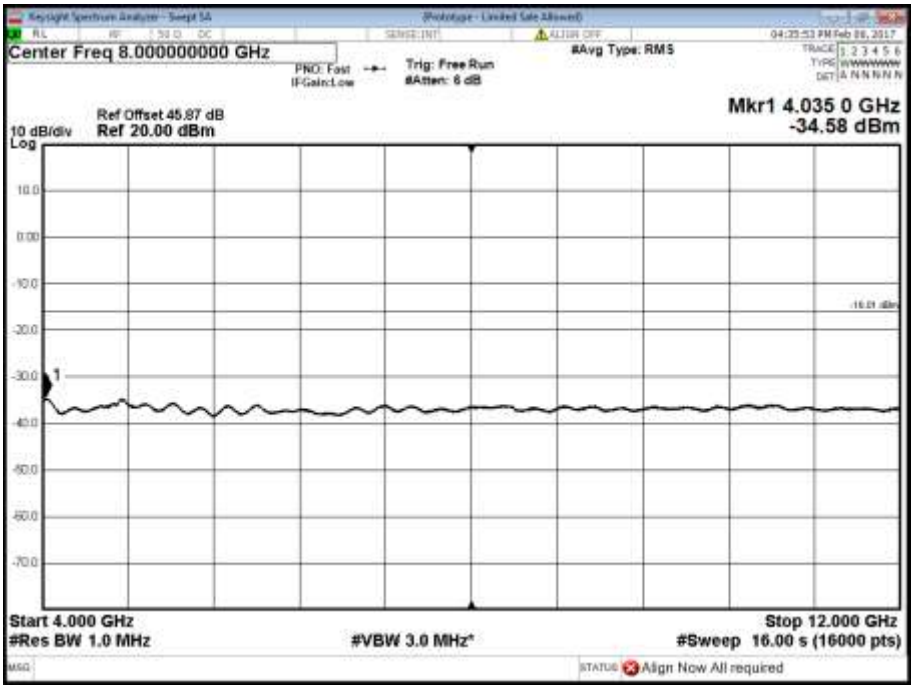
Configuration J

Maximum Output Power 49 dBm

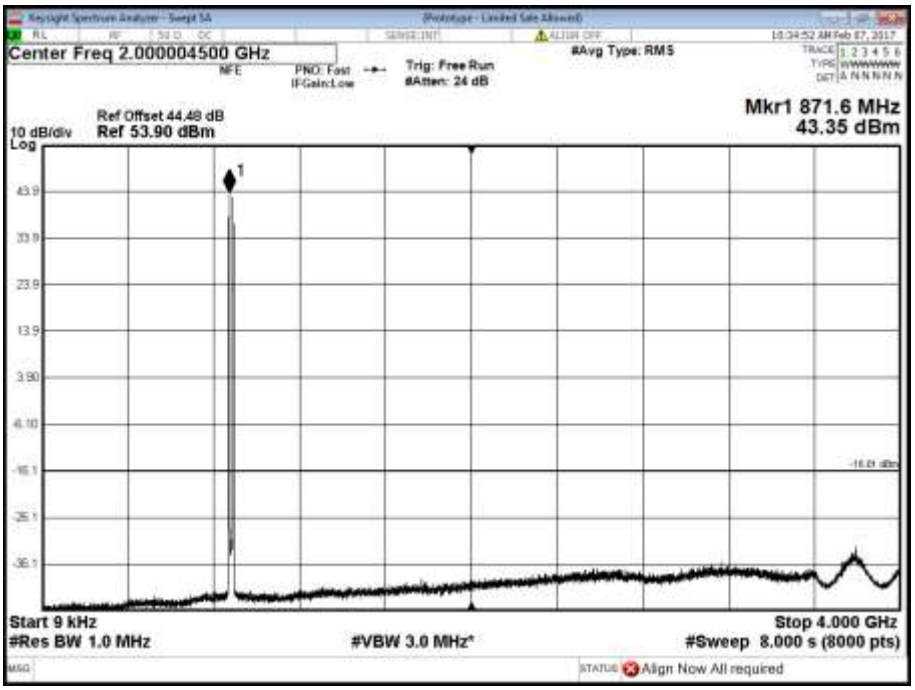
Antenna A - Channel Position BRFBW - GSM Modulation / LTE BW GMSK / 3.0 MHz - Band 1 - Range 0.009 to 4000 MHz



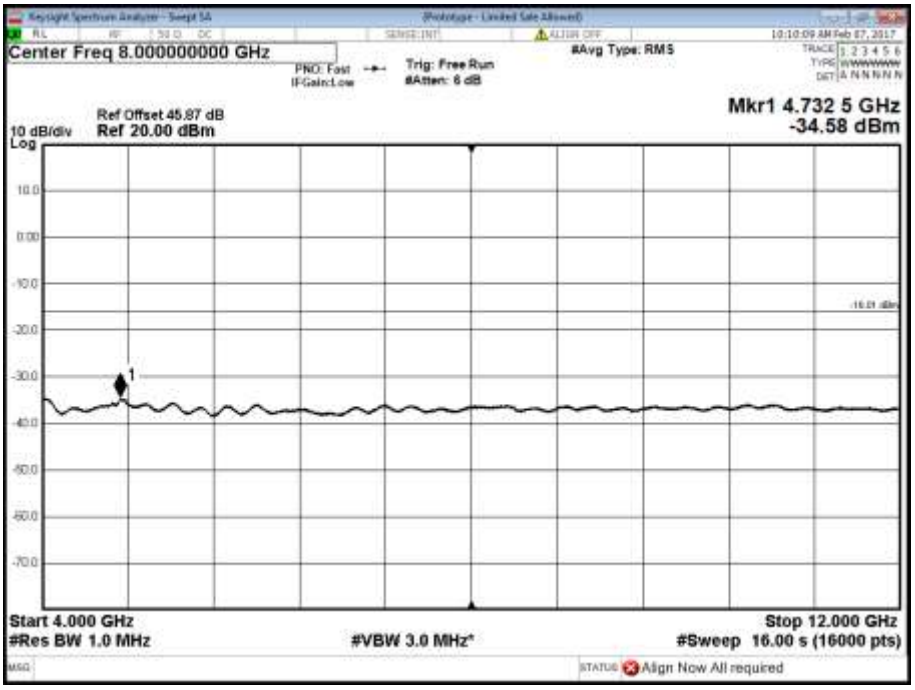
Antenna A - Channel Position BRFBW - GSM Modulation / LTE BW GMSK / 3.0 MHz - Band 2 - Range 4000 to 12000 MHz



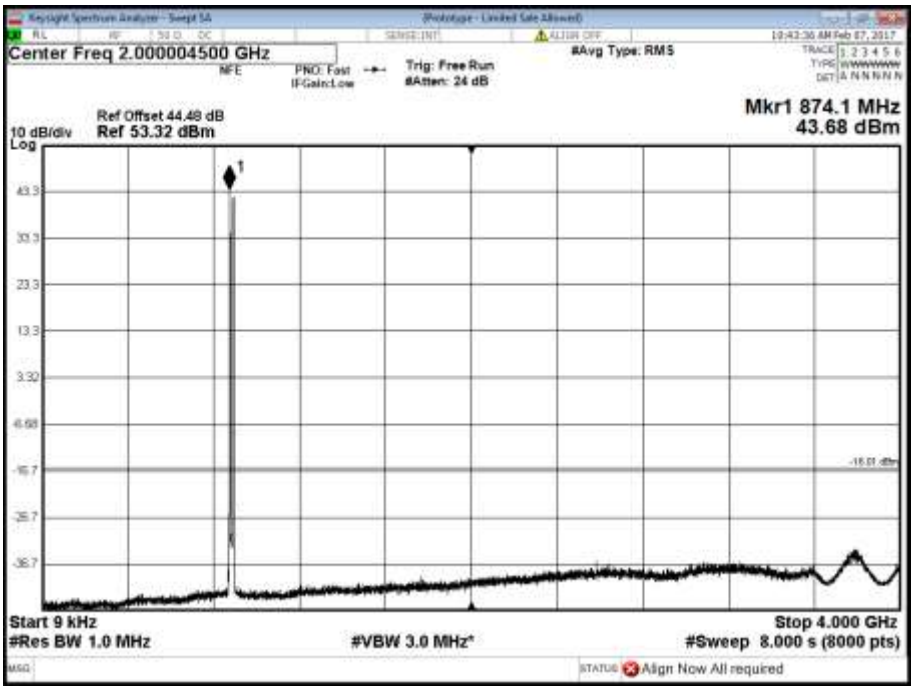
Antenna A - Channel Position MRFBW - GSM Modulation / LTE BW GMSK / 3.0 MHz - Band 1 - Range 0.009 to 4000 MHz



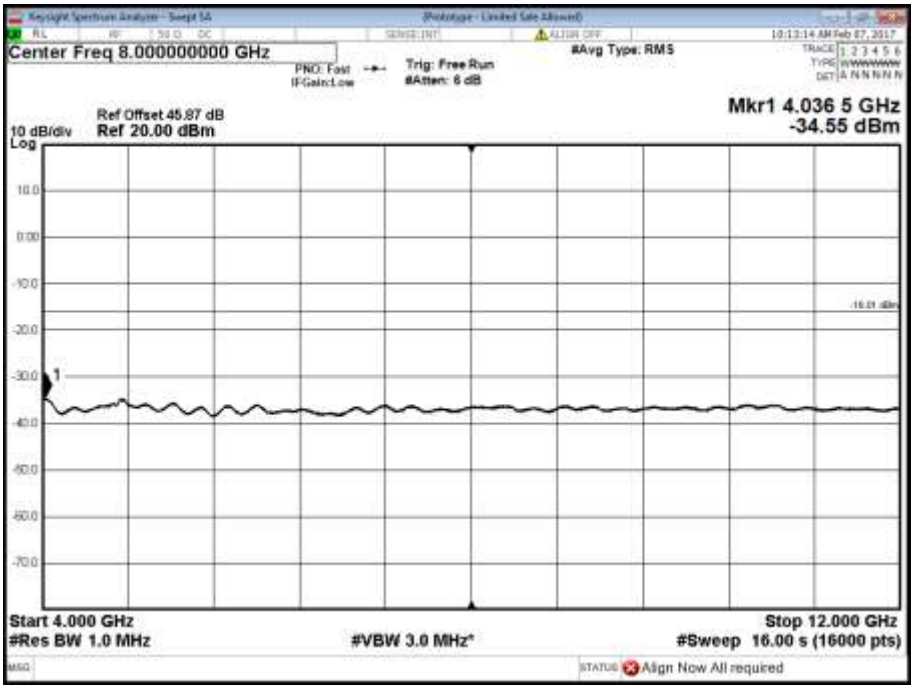
Antenna A - Channel Position MRFBW - GSM Modulation / LTE BW GMSK / 3.0 MHz - Band 2 - Range 4000 to 12000 MHz



Antenna A - Channel Position TRFBW - GSM Modulation / LTE BW GMSK / 3.0 MHz - Band 1 - Range 0.009 to 4000 MHz



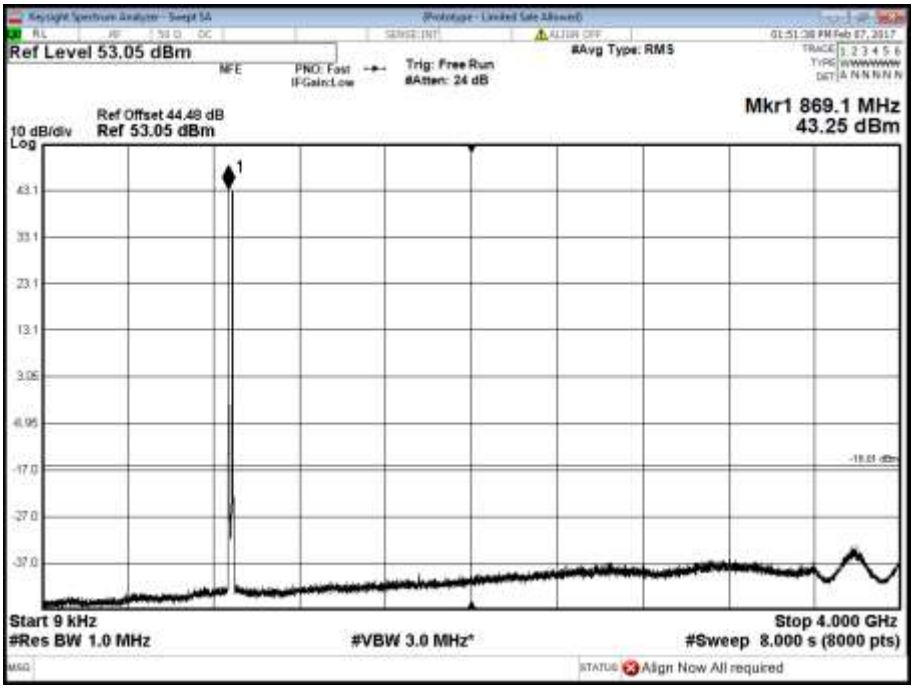
Antenna A - Channel Position TRFBW - GSM Modulation / LTE BW GMSK / 3.0 MHz - Band 2 - Range 4000 to 12000 MHz



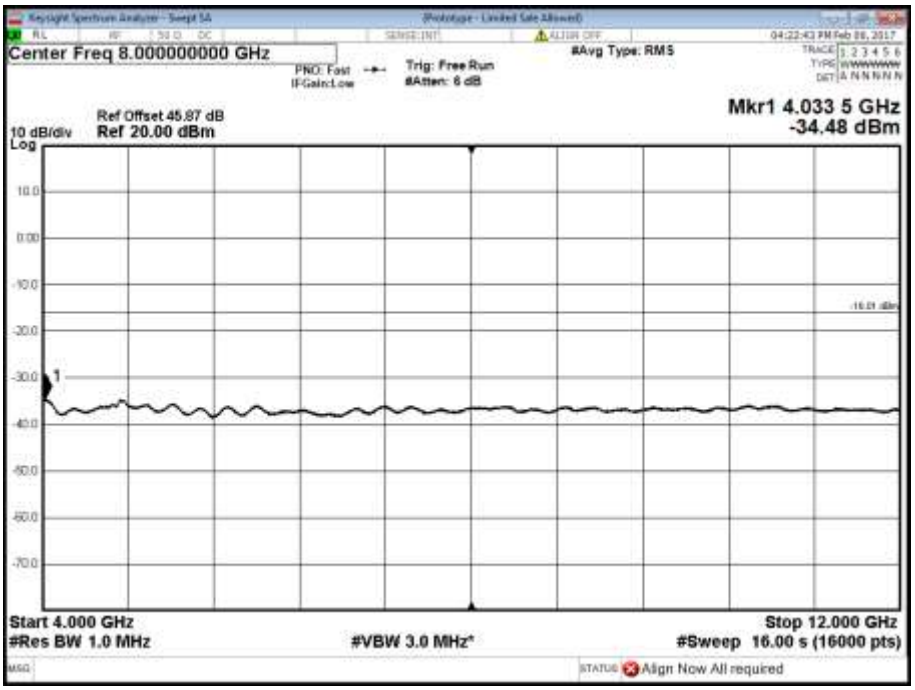
Configuration J

Maximum Output Power 49 dBm

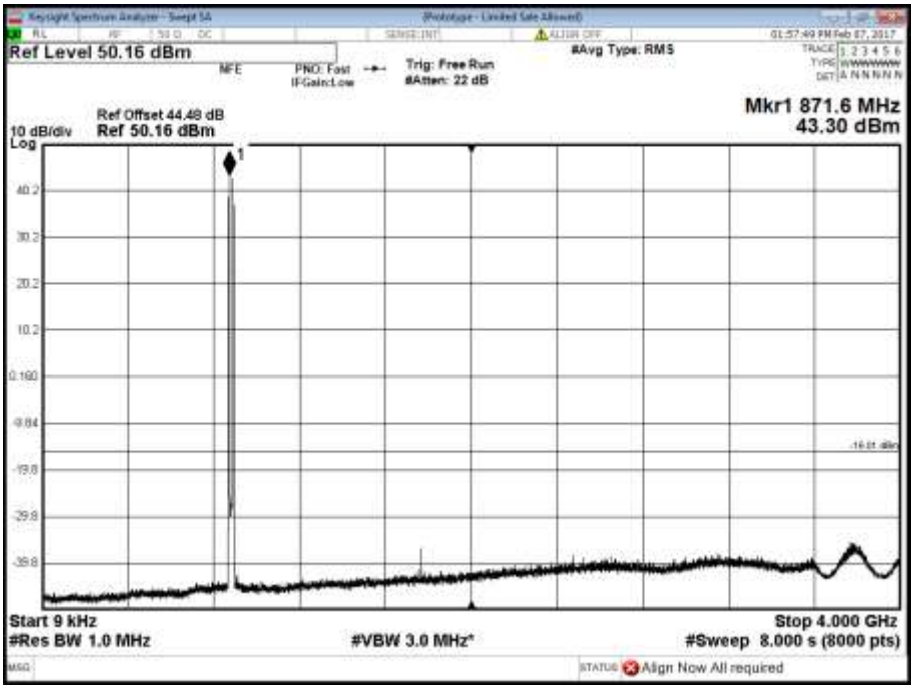
Antenna B - Channel Position BRFBW - GSM Modulation / LTE BW GMSK / 3.0 MHz - Band 1 - Range 0.009 to 4000 MHz



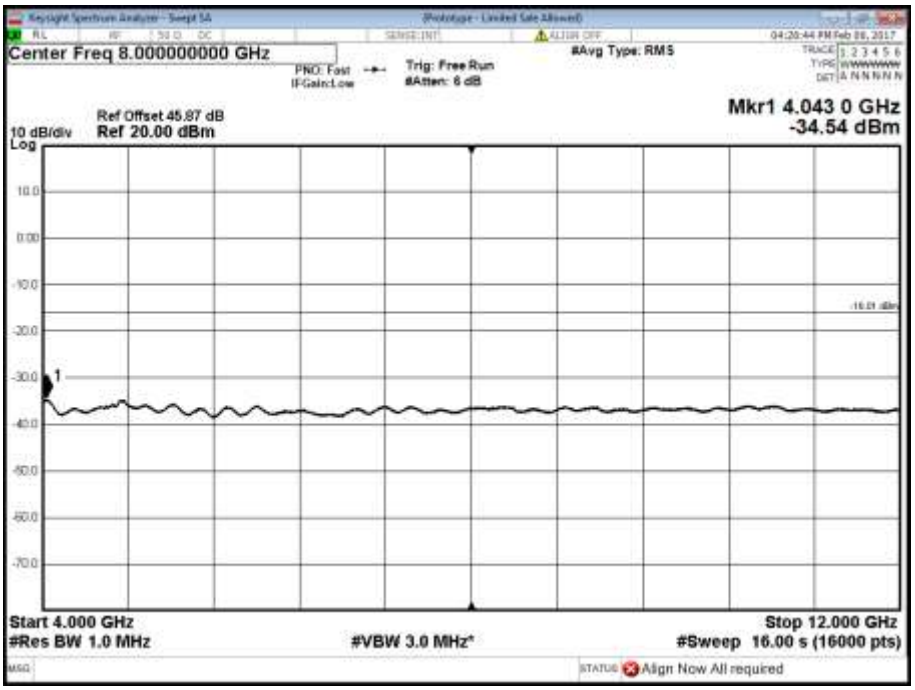
Antenna B - Channel Position BRFBW - GSM Modulation / LTE BW GMSK / 3.0 MHz - Band 2 - Range 4000 to 12000 MHz



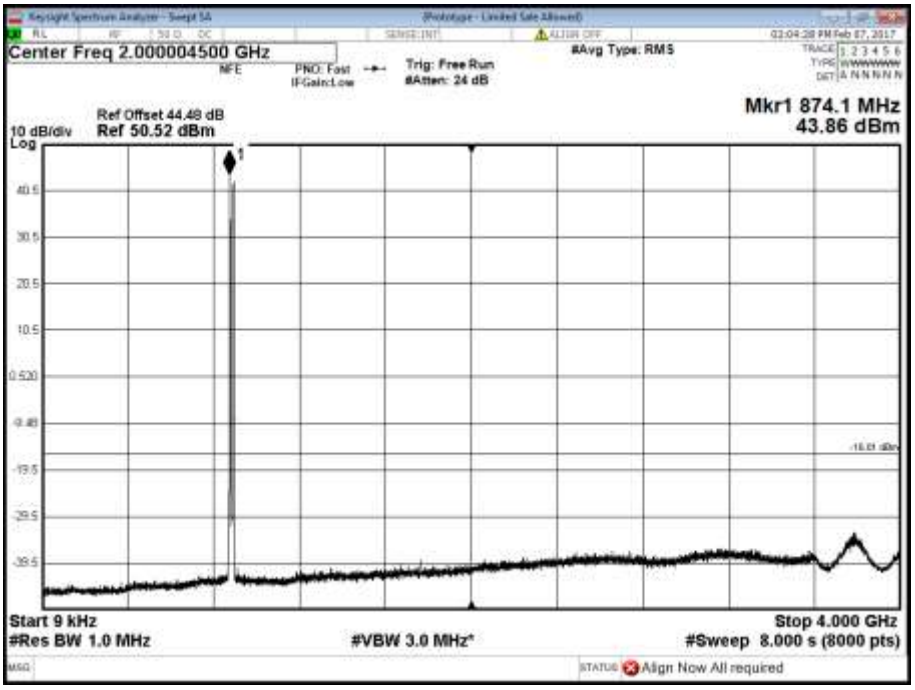
Antenna B - Channel Position MRFBW - GSM Modulation / LTE BW GMSK / 3.0 MHz - Band 1 - Range 0.009 to 4000 MHz



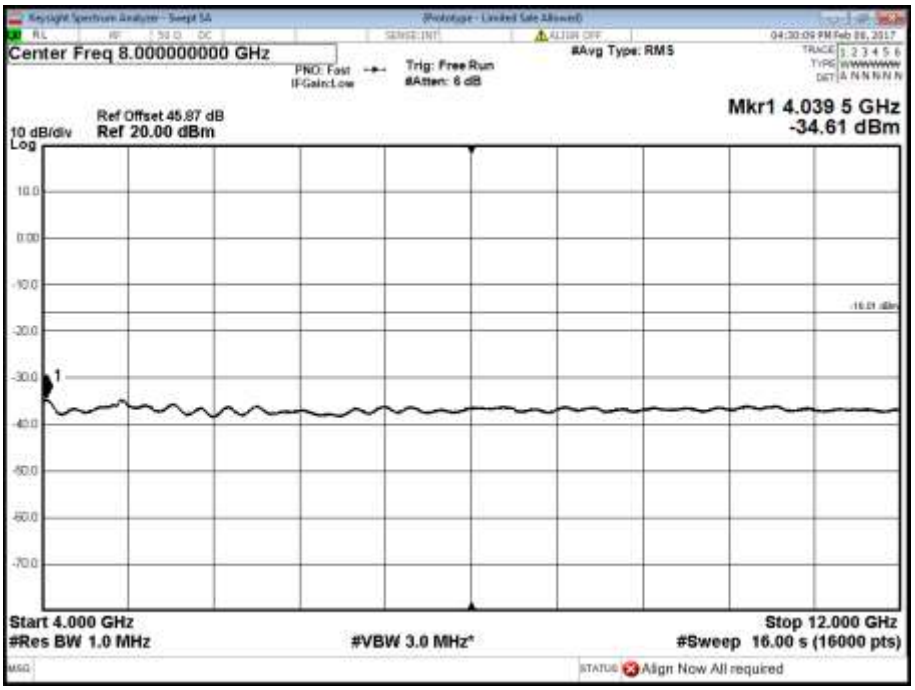
Antenna B - Channel Position MRFBW - GSM Modulation / LTE BW GMSK / 3.0 MHz - Band 2 - Range 4000 to 12000 MHz



Antenna B - Channel Position TRFBW - GSM Modulation / LTE BW GMSK / 3.0 MHz - Band 1 - Range 0.009 to 4000 MHz



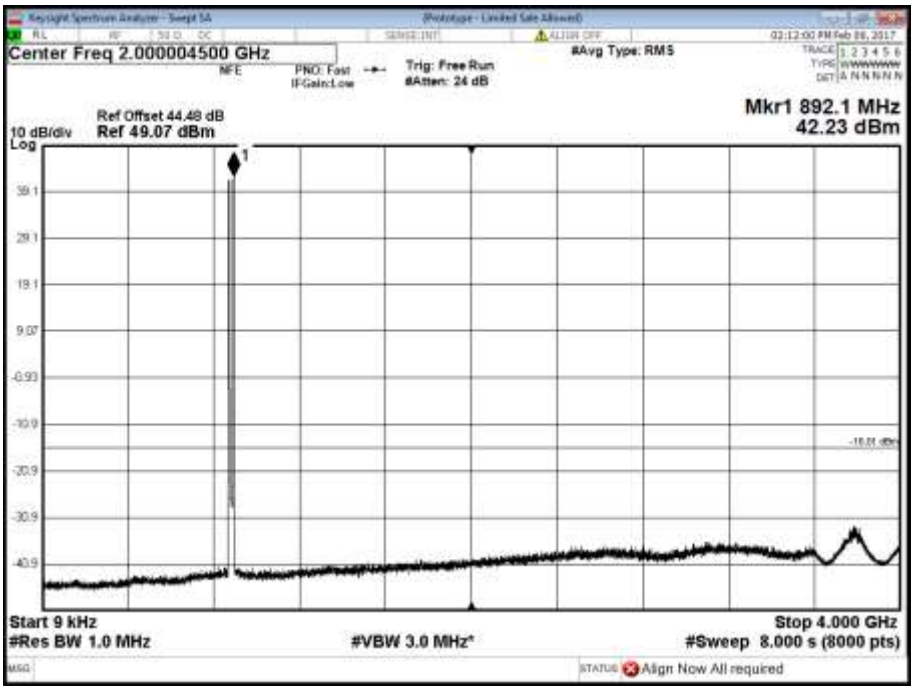
Antenna B - Channel Position TRFBW - GSM Modulation / LTE BW GMSK / 3.0 MHz - Band 2 - Range 4000 to 12000 MHz



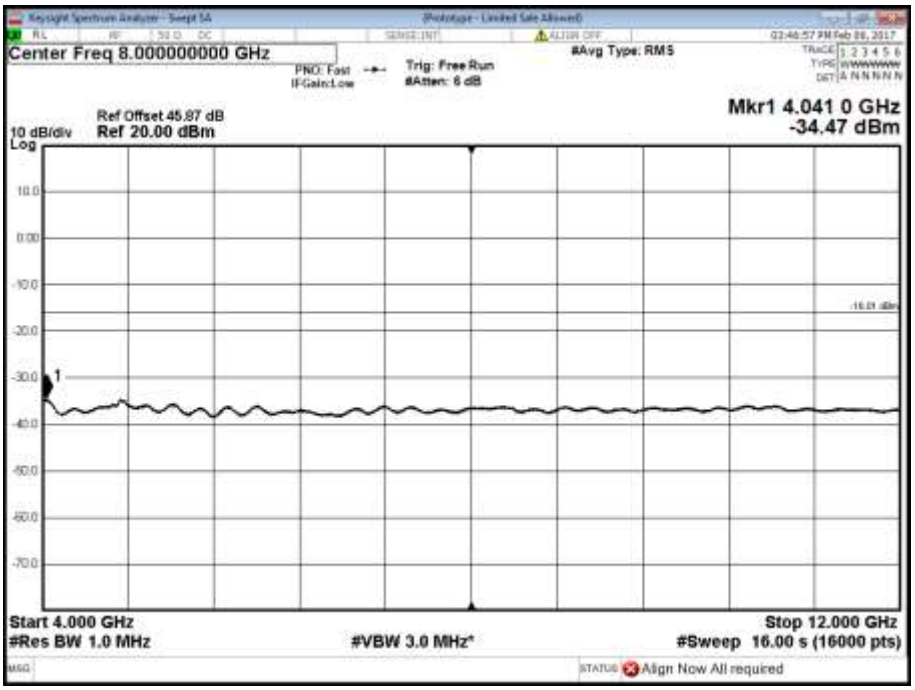
Configuration H

Maximum Output Power 49 dBm

Antenna A - Channel Position BRFBW - WCDMA Modulation / LTE BW QPSK / 3.0 MHz - Band 1 - Range 0.009 to 4000 MHz



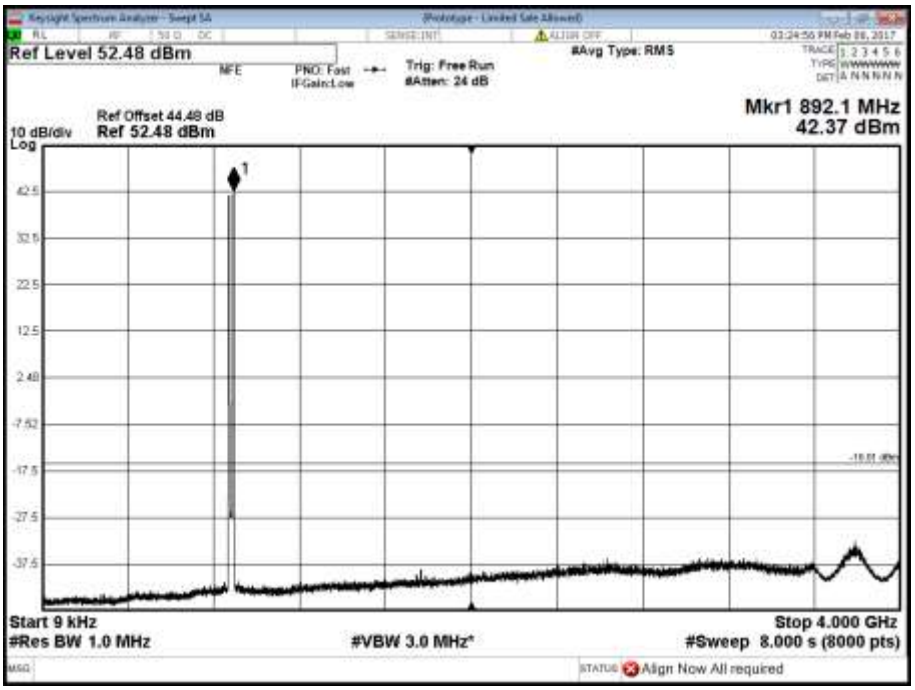
Antenna A - Channel Position BRFBW - WCDMA Modulation / LTE BW QPSK / 3.0 MHz - Band 2 - Range 4000 to 12000 MHz



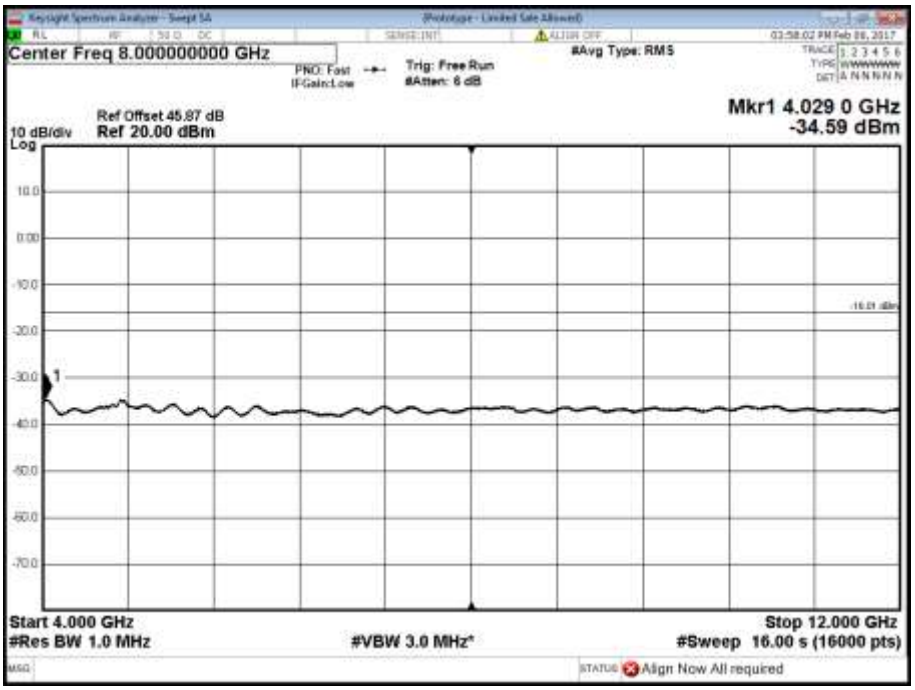
Configuration H

Maximum Output Power 49 dBm

Antenna B - Channel Position BRFBW - WCDMA Modulation / LTE BW QPSK / 3.0 MHz - Band 1 - Range 0.009 to 4000 MHz



Antenna B - Channel Position BRFBW - WCDMA Modulation / LTE BW QPSK / 3.0 MHz - Band 2 - Range 4000 to 12000 MHz



Limit	-13dBm

2.5 FREQUENCY STABILITY

2.5.1 Specification Reference

FCC CFR 47 Part 2, Clause 2.1055
FCC CFR 47 Part 22, Clause 22.355
Industry Canada RSS-132, Clause 5.3

2.5.2 Date of Test and Modification State

01 February – 08 March 2017 - 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	20.9-22.5°C
Relative Humidity	11.7-19.0%

2.5.5 Test Method

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

2.5.6 Test Results

Configuration A, D & E

Temperature	Parameter	LTE	WCDMA	NBIOT LTE
-30°C	Max Frequency Error(Hz)	3.022	-16.88m	-11.29
	Min Frequency Error(Hz)	-1.076	-51.44	-12.70
	Mean Frequency Error(Hz)	60.72m	-34.16m	-12.06
-20°C	Max Frequency Error(Hz)	0.78	-21.24m	-11.42
	Min Frequency Error(Hz)	-1.08	-82.62m	-12.68
	Mean Frequency Error(Hz)	-34.86m	-51.93m	-12.05
-10°C	Max Frequency Error(Hz)	1.081	-40.03m	-10.73
	Min Frequency Error(Hz)	-0.68	-87.79m	-12.76
	Mean Frequency Error(Hz)	35.21m	-63.91m	-11.94
0°C	Max Frequency Error(Hz)	1.27	-12.6m	-9.70
	Min Frequency Error(Hz)	-0.59	-41.13m	-13.75
	Mean Frequency Error(Hz)	43.43m	-26.87m	-12.02
10°C	Max Frequency Error(Hz)	0.84	-78.68m	-11.57
	Min Frequency Error(Hz)	-0.71	-0.12	-12.77
	Mean Frequency Error(Hz)	36.95m	-0.10	-12.19
20°C	Max Frequency Error(Hz)	0.74	23.62m	11.23
	Min Frequency Error(Hz)	-0.49	-88.49m	12.84
	Mean Frequency Error(Hz)	42.9	-32.43m	12.14
30°C	Max Frequency Error(Hz)	0.84	12.91	-11.35
	Min Frequency Error(Hz)	-0.92	-52.00m	-12.67
	Mean Frequency Error(Hz)	-37.22	-19.54m	-12.11
40°C	Max Frequency Error(Hz)	0.83	66.54m	-11.04
	Min Frequency Error(Hz)	-1.04	-32.09m	-12.67
	Mean Frequency Error(Hz)	-2.01m	17.23m	-11.88
50°C	Max Frequency Error(Hz)	0.82	8.61m	-11.14
	Min Frequency Error(Hz)	-0.75	0.73m	-12.22
	Mean Frequency Error(Hz)	-23.54m	4.67m	-11.71

Configuration A, D, E & N

Temperature	Voltage	Parameter	LTE	WCDMA	GSM	NBIOT LTE
20°C	-40.8 V DC	Max Frequency Error(Hz)	1.28	19.24m	10.08	-10.45
		Min Frequency Error(Hz)	-0.66	-23.38m	-9.16	-10.92
		Mean Frequency Error(Hz)	0.81	-2.07m	0.77	-11.19
	-55.2 V DC	Max Frequency Error(Hz)	0.52	20.6mm	9.79	-11.25
		Min Frequency Error(Hz)	-0.94	16.92m	-9.45	-12.19
		Mean Frequency Error(Hz)	-79.89m	18.76mm	-25.55m	-12.01

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					
Hygromer	RS	4741	0407292	12	26-Jun-2017
Digital Volt Meter	Fluke	0411	029096	12	12-Aug-2017
Spectrum Analyser	Keysight	PXA	MY54410231	12	20-Dec-2017
Network Analyser	Agilent	PNA-L	MY5000737	12	09-Sep-2017
Attenuator	Aeroflex	6834-20-11	QC181	-	OP MON
Attenuator	Weinschel	56-10	T3515	-	OP MON
Attenuator	Weinschel	56-10	T3520	-	OP MON
High Pass Filter	Wainwright	WHNX3.8/26.5G-6SS	1	-	OP MON
RF Load	Weinschel	49-40-33	SX815	-	OP MON
Attenuator	Weinschel	56-10	T4390	-	OP MON
Thermometer	Fluke	51	1385	12	13-Oct-2017
Occupied Bandwidth					
Hygromer	RS	4741	0407292	12	26-Jun-2017
Digital Volt Meter	Fluke	0411	029096	12	12-Aug-2017
Spectrum Analyser	Keysight	PXA	MY54410231	12	20-Dec-2017
Network Analyser	Agilent	PNA-L	MY5000737	12	09-Sep-2017
Attenuator	Aeroflex	6834-20-11	QC181	-	OP MON
Attenuator	Weinschel	56-10	T3515	-	OP MON
Attenuator	Weinschel	56-10	T3520	-	OP MON
High Pass Filter	Wainwright	WHNX3.8/26.5G-6SS	1	-	OP MON
RF Load	Weinschel	49-40-33	SX815	-	OP MON
Attenuator	Weinschel	56-10	T4390	-	OP MON
Thermometer	Fluke	51	1385	12	13-Oct-2017
Band Edge					
Hygromer	RS	4741	0407292	12	26-Jun-2017
Digital Volt Meter	Fluke	0411	029096	12	12-Aug-2017
Spectrum Analyser	Keysight	PXA	MY54410231	12	20-Dec-2017
Network Analyser	Agilent	PNA-L	MY5000737	12	09-Sep-2017
Attenuator	Aeroflex	6834-20-11	QC181	-	OP MON
Attenuator	Weinschel	56-10	T3515	-	OP MON
Attenuator	Weinschel	56-10	T3520	-	OP MON
High Pass Filter	Wainwright	WHNX3.8/26.5G-6SS	1	-	OP MON
RF Load	Weinschel	49-40-33	SX815	-	OP MON
Attenuator	Weinschel	56-10	T4390	-	OP MON
Thermometer	Fluke	51	1385	12	13-Oct-2017
Transmitter Spurious Emissions					
Hygromer	RS	4741	0407292	12	26-Jun-2017
Digital Volt Meter	Fluke	0411	029096	12	12-Aug-2017
Spectrum Analyser	Keysight	PXA	MY54410231	12	20-Dec-2017
Network Analyser	Agilent	PNA-L	MY5000737	12	09-Sep-2017
Attenuator	Aeroflex	6834-20-11	QC181	-	OP MON
Attenuator	Weinschel	56-10	T3515	-	OP MON
Attenuator	Weinschel	56-10	T3520	-	OP MON
High Pass Filter	Wainwright	WHNX3.8/26.5G-6SS	1	-	OP MON
RF Load	Weinschel	49-40-33	SX815	-	OP MON
Attenuator	Weinschel	56-10	T4390	-	OP MON
Thermometer	Fluke	51	1385	12	13-Oct-2017

Instrument	Manufacturer	Type No.	TE No.	Calibration Period (months)	Calibration Due
Frequency Stability					
Hygromer	RS	4741	0407292	12	26-Jun-2017
Digital Volt Meter	Fluke	0411	029096	12	12-Aug-2017
Spectrum Analyser	Keysight	PXA	MY54410231	12	20-Dec-2017
Network Analyser	Agilent	PNA-L	MY5000737	12	09-Sep-2017
Attenuator	Aeroflex	6834-20-11	QC181	-	OP MON
Attenuator	Weinschel	56-10	T3515	-	OP MON
Attenuator	Weinschel	56-10	T3520	-	OP MON
High Pass Filter	Wainwright	WHNX3.8/26.5G-6SS	1	-	OP MON
RF Load	Weinschel	49-40-33	SX815	-	OP MON
Attenuator	Weinschel	56-10	T4390	-	OP MON
Thermometer	Fluke	51	1385	12	13-Oct-2017

N/A – Not Applicable
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 Maximum Peak Output Power	30 MHz to 20 GHz Amplitude	± 0.1 dB
Conducted Emissions	30 MHz to 20 GHz Amplitude	± 2.3 dB
Frequency Stability	30 MHz to 2 GHz	± 5.0 Hz
Occupied Bandwidth	Up to 20 MHz Bandwidth	± 1.1 Hz
Band Edge	30 MHz to 20 GHz Amplitude	± 2.3 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).

Product Service

ANNEX A

MODULE LIST

Product	Product No	R-State	Serial No
Radio 2212 B5	KRC 161 652/2	R1A	D824847243
Software Version:	CXP 901 7316/7	Revision:	R64HE