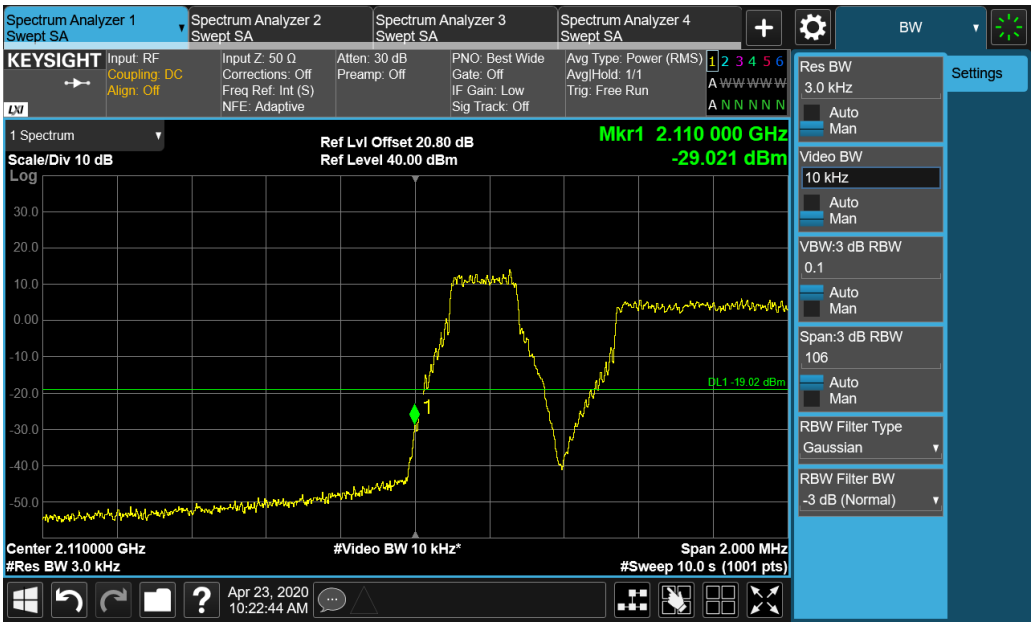
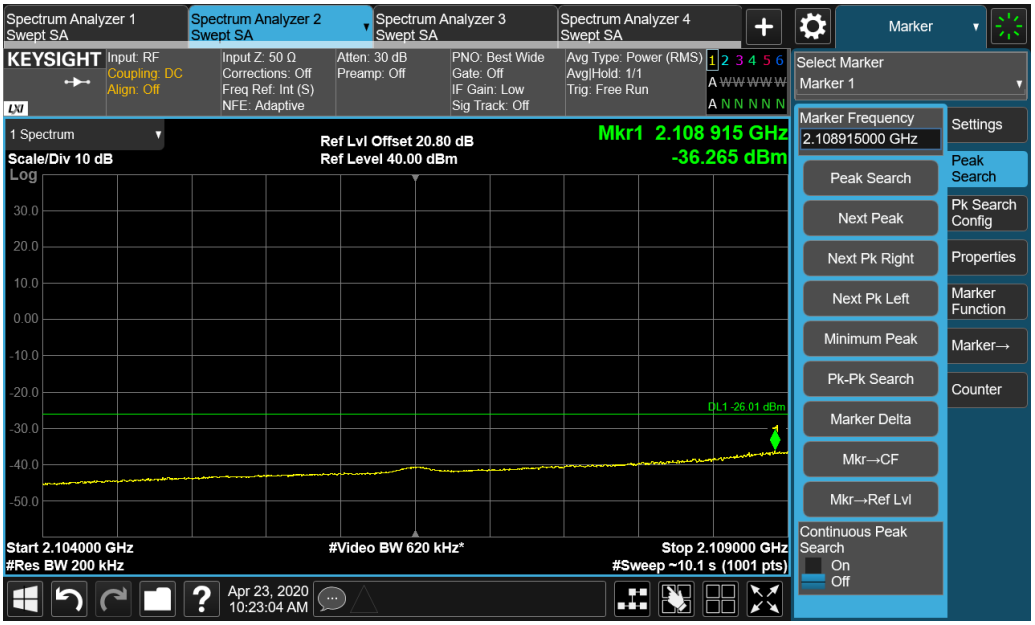
TEST REPORT

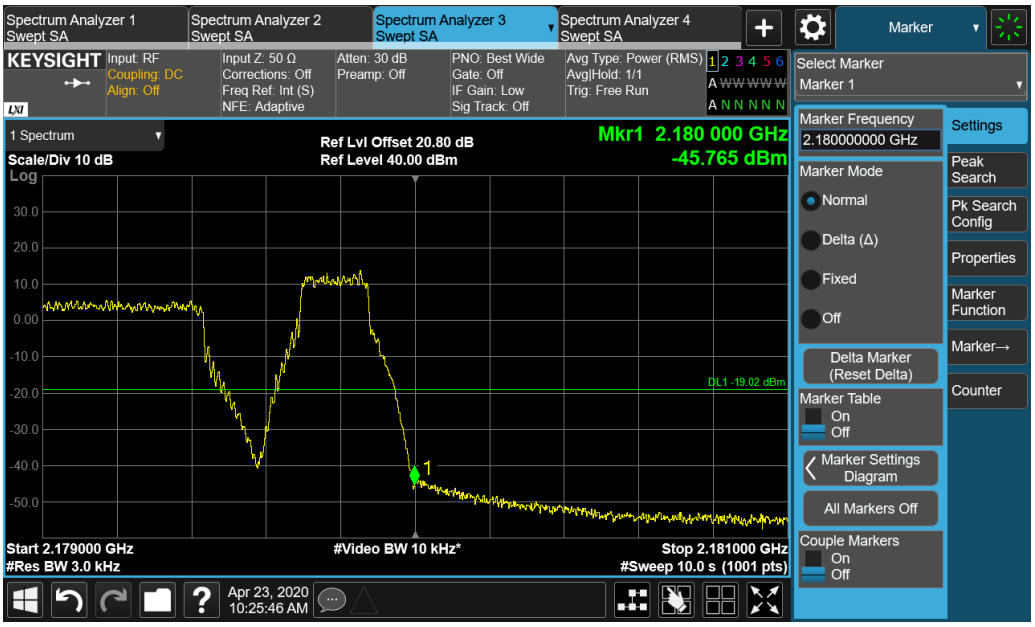
Antenna Port	Channel Position	NR Modulation	LTE Channel Bandwidth (MHz)	NR Channel Bandwidth (MHz)	RBW (kHz)	Limit (dBm)
A	B	QPSK	1.4	20	3	-19.02
					200	-26.01
A	T	QPSK	1.4	20	3	-19.02
					200	-26.01

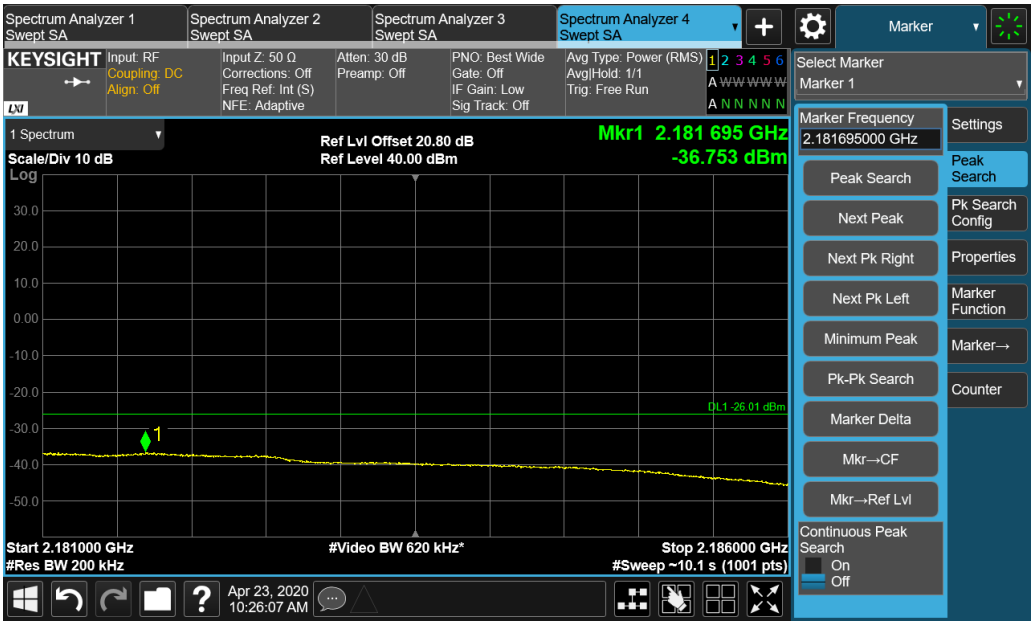
Channel Position B





Channel Position T

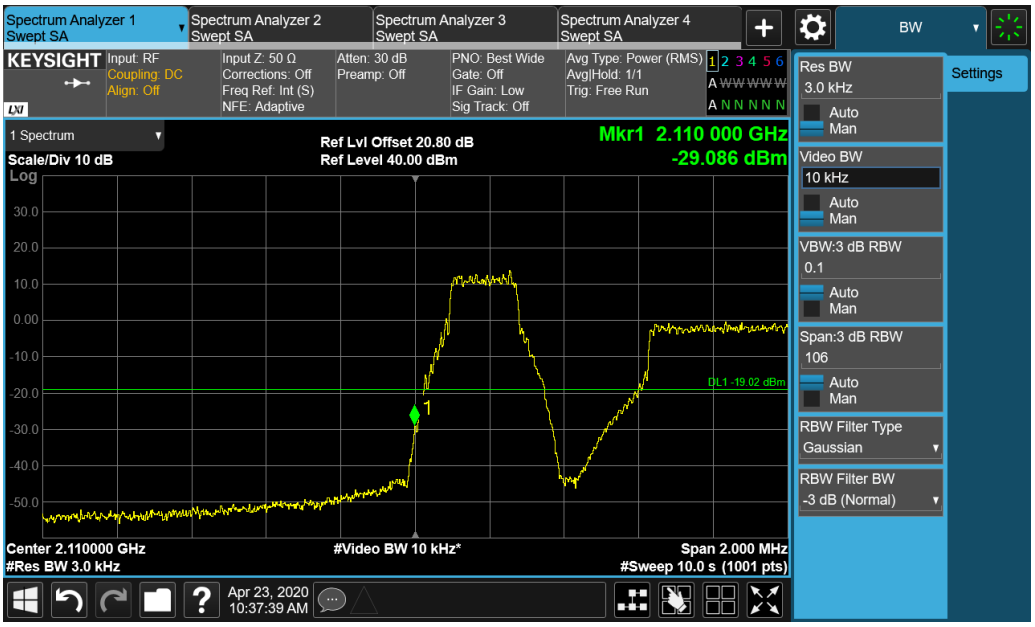


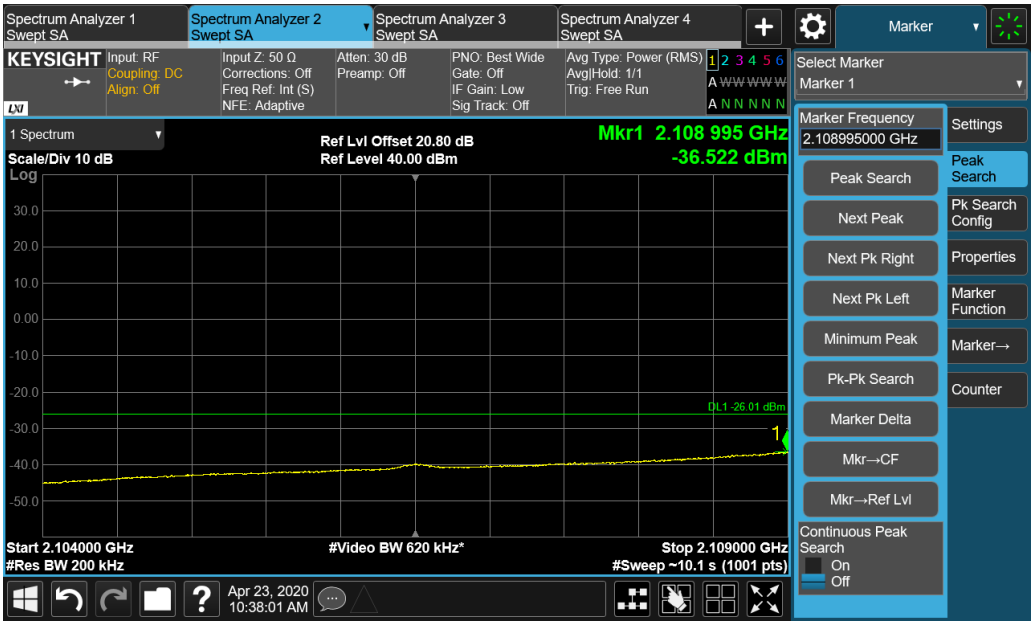


TEST REPORT

Antenna Port	Channel Position	NR Modulation	LTE Channel Bandwidth (MHz)	NR Channel Bandwidth (MHz)	RBW (kHz)	Limit (dBm)
A	B	QPSK	5	20	3	-19.02
					200	-26.01
A	T	QPSK	5	20	3	-19.02
					200	-26.01

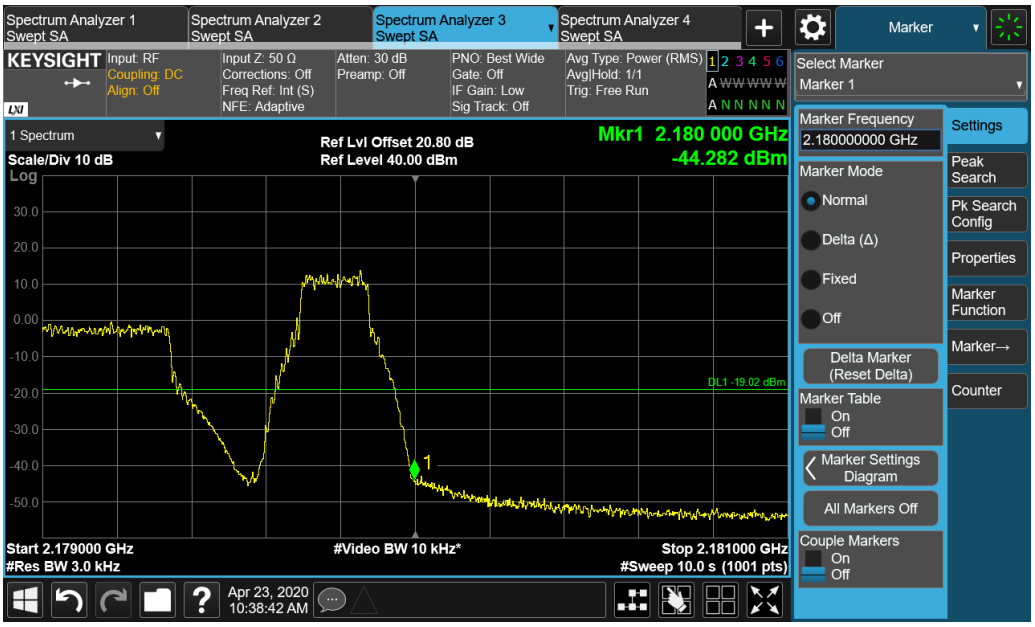
Channel Position B





TEST REPORT

Channel Position T



6 Conducted Unwanted Emission

Test result: **Pass**

6.1 Limit

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10log(P) dB.

6.2 Measurement Procedure

In accordance with FCC rules, the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB.

The spurious emissions from the antenna terminal were measured. The transmitter output power was attenuated using an attenuator and the frequency spectrum investigated from 9kHz to 22GHz. The resolution bandwidth of 1MHz was employed for frequency band 9kHz to 27GHz. The spectrum analyzer detector was set to RMS.

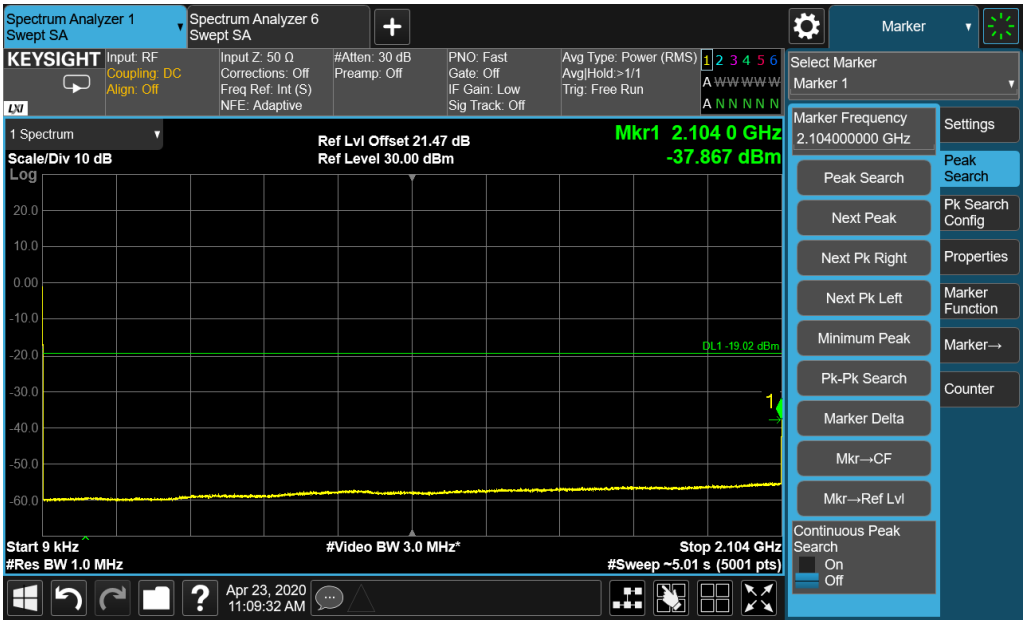
For MIMO mode configurations, the limit was adjusted with a correction of -6.02dB [10Log(1/4)] by using the Measure and Add 10Log(N) dB technique according to KDB 662911 D01 Multiple Transmitter Output accounting for simultaneous transmission from antenna ports. Then the limit was adjusted to -19.02dBm.

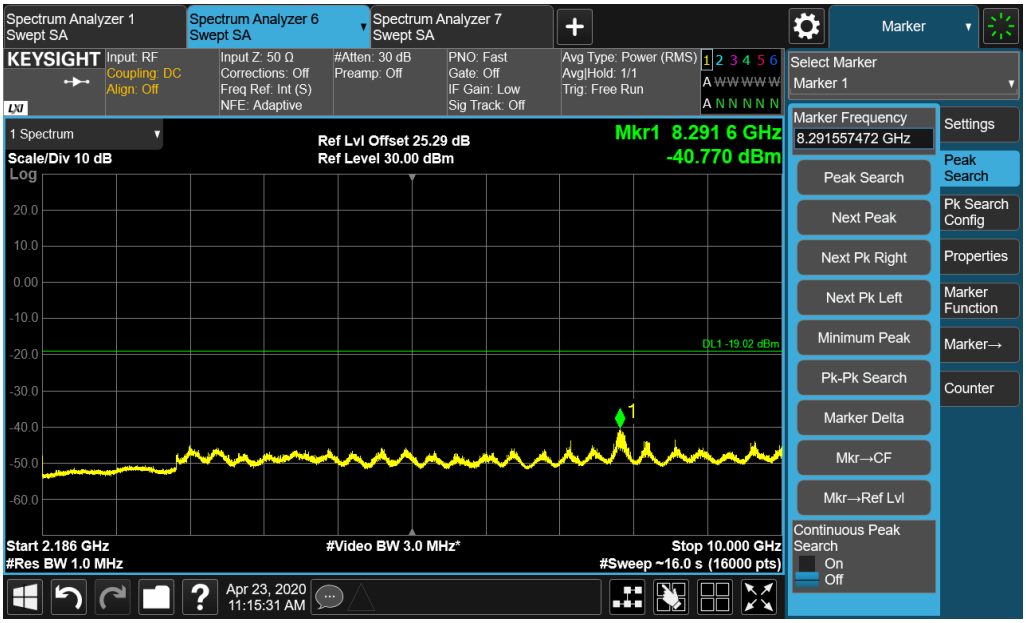
6.3 Measurement result

Configuration NR-MIMO-1C

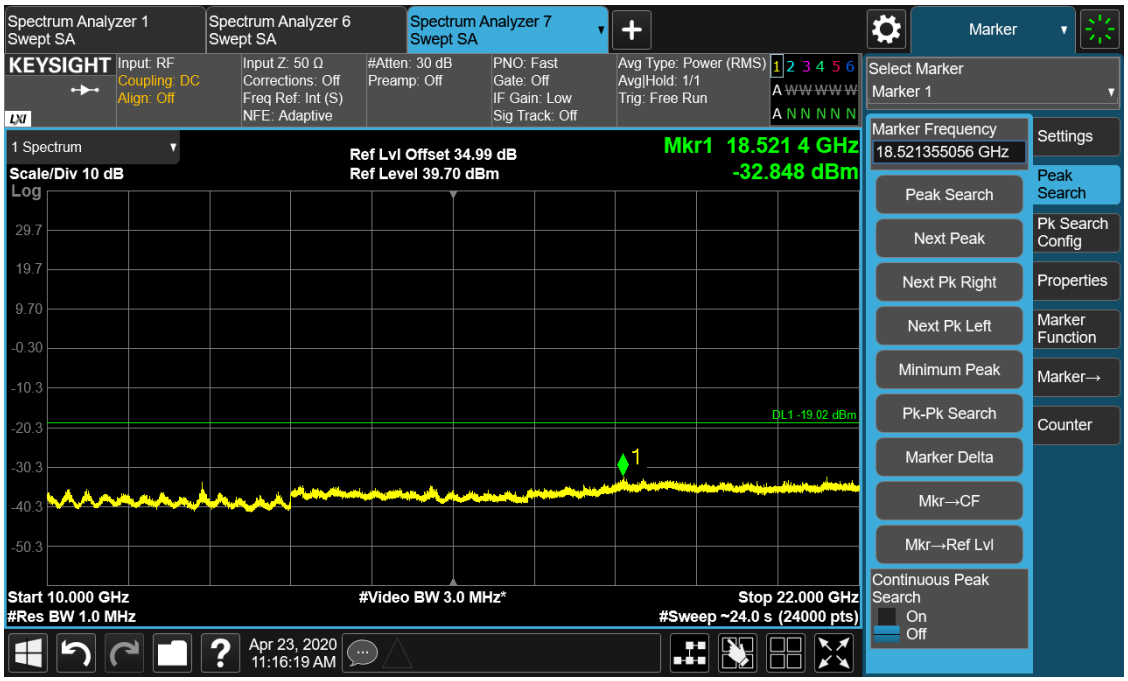
Antenna Port	Channel Position	NR Modulation	NR Channel Bandwidth (MHz)	RBW (kHz)	Limit (dBm)
A	B	QPSK	5	1000	-19.02
A	M	QPSK	5	1000	-19.02
A	T	QPSK	5	1000	-19.02

Channel Position B

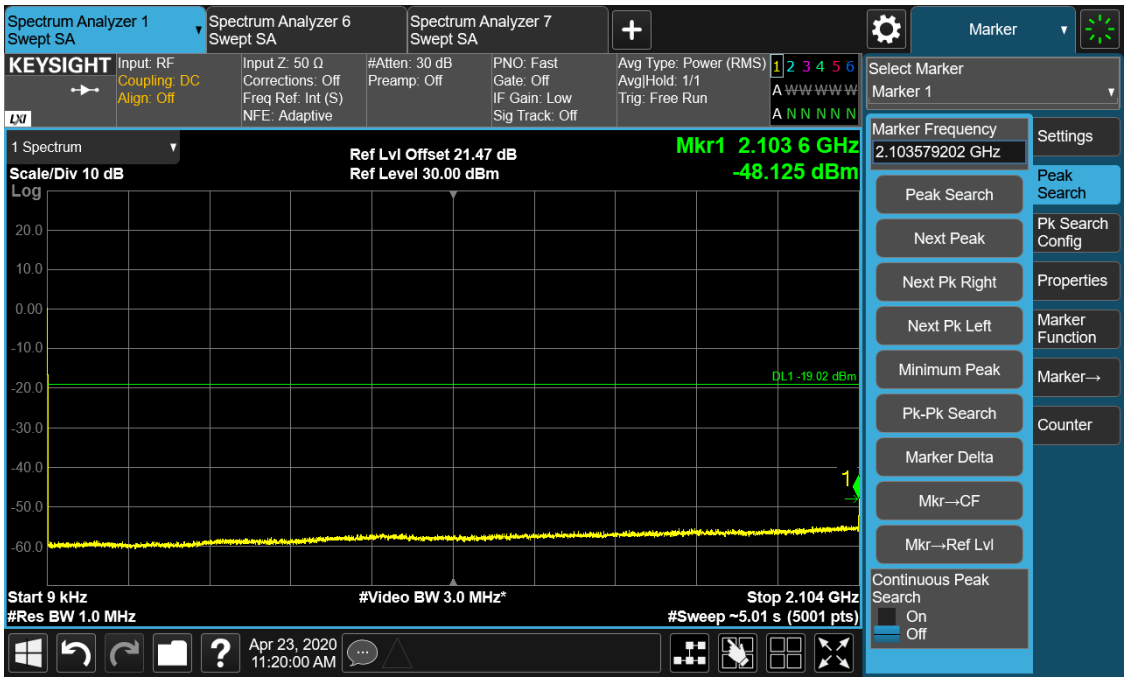




TEST REPORT

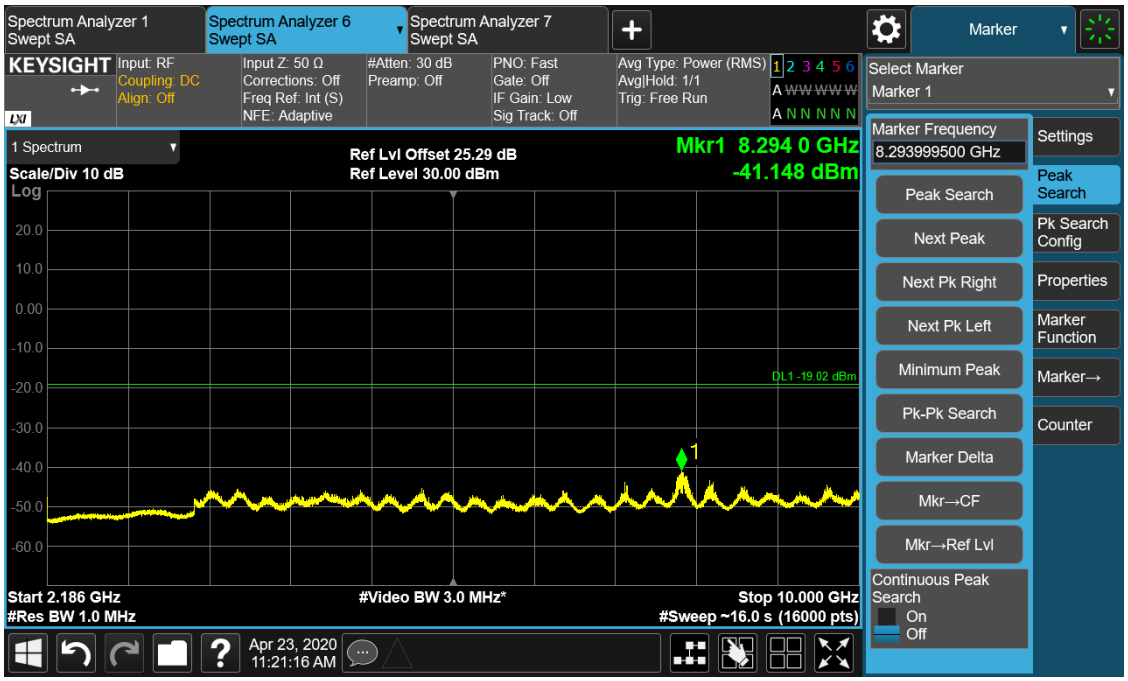


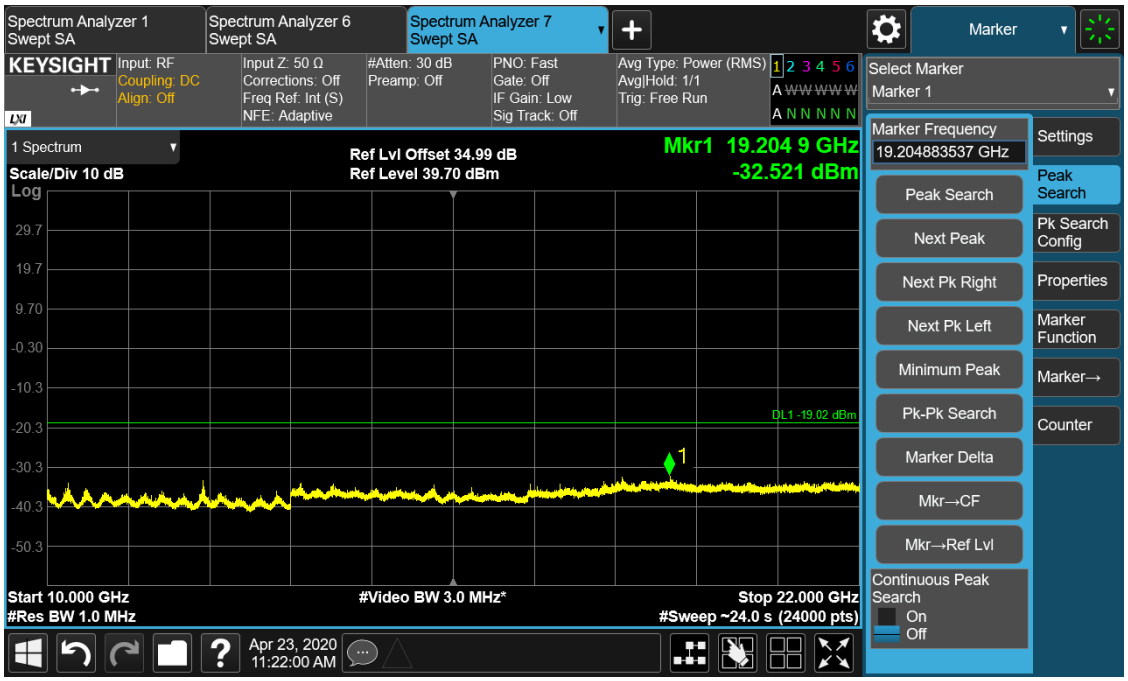
Channel Position M



Total Quality. Assured.

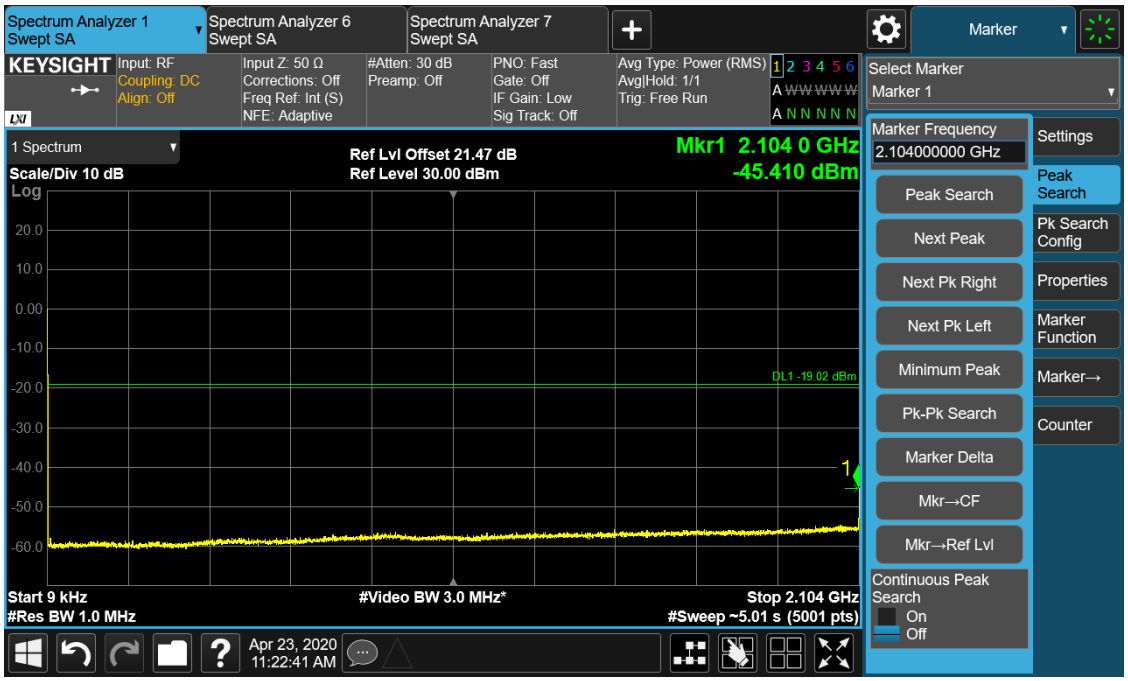
TEST REPORT

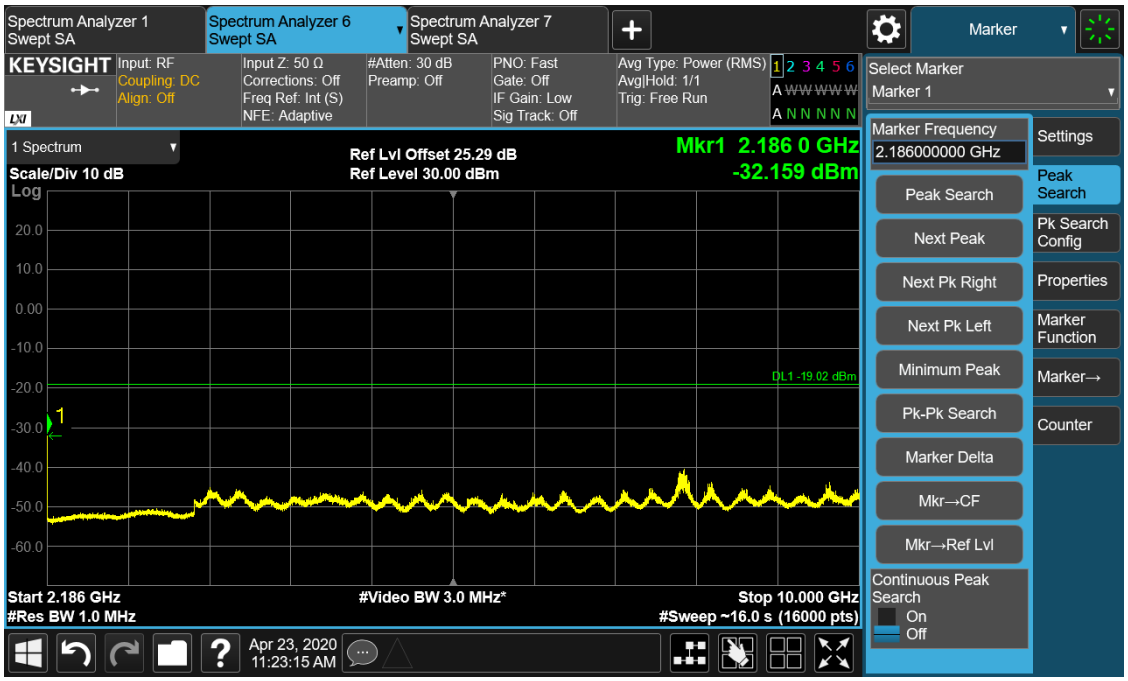




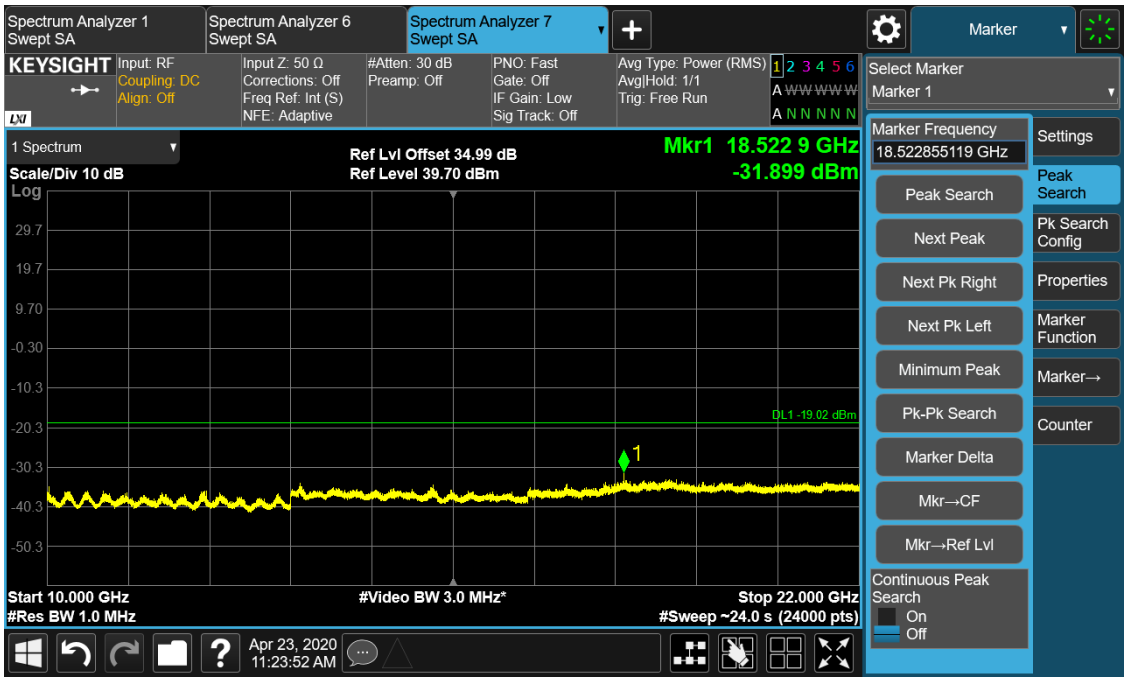
TEST REPORT

Channel Position T



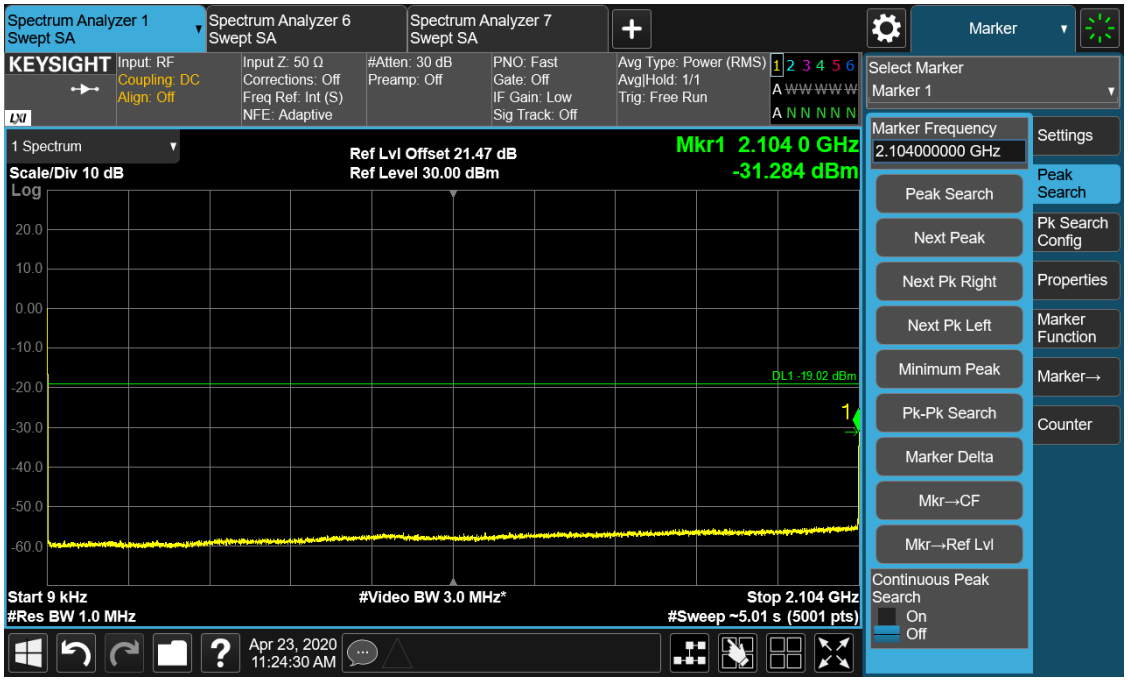


TEST REPORT



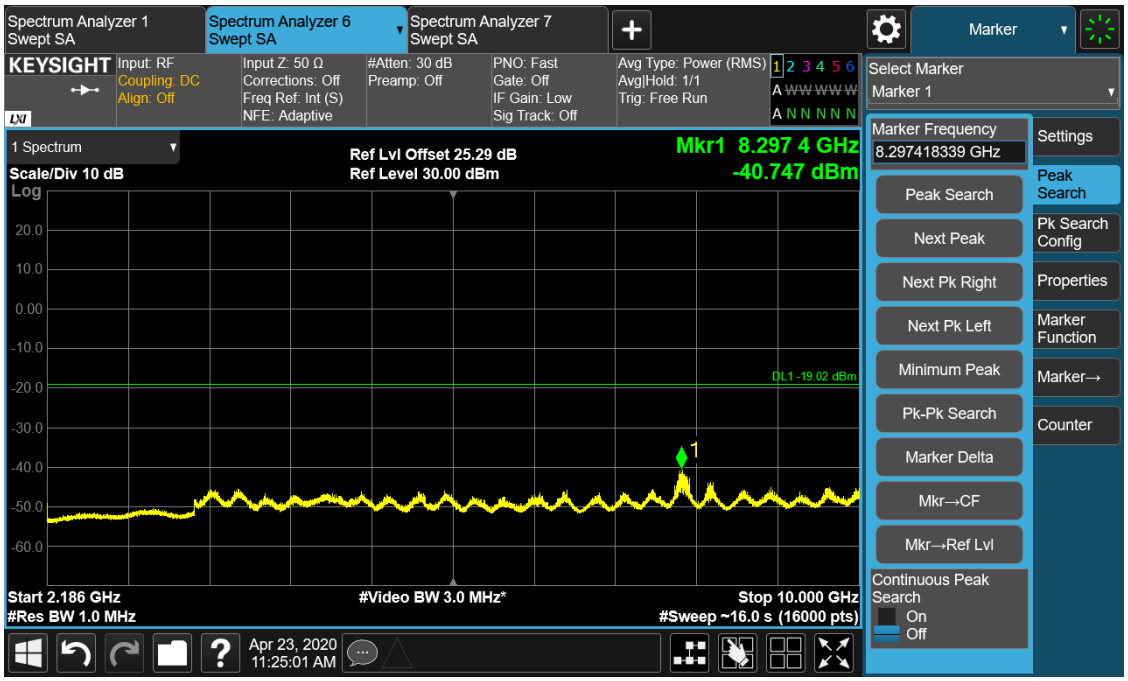
Antenna Port	Channel Position	NR Modulation	NR Channel Bandwidth (MHz)	RBW (kHz)	Limit (dBm)
A	B	QPSK	10	1000	-19.02
A	M	QPSK	10	1000	-19.02
A	T	QPSK	10	1000	-19.02

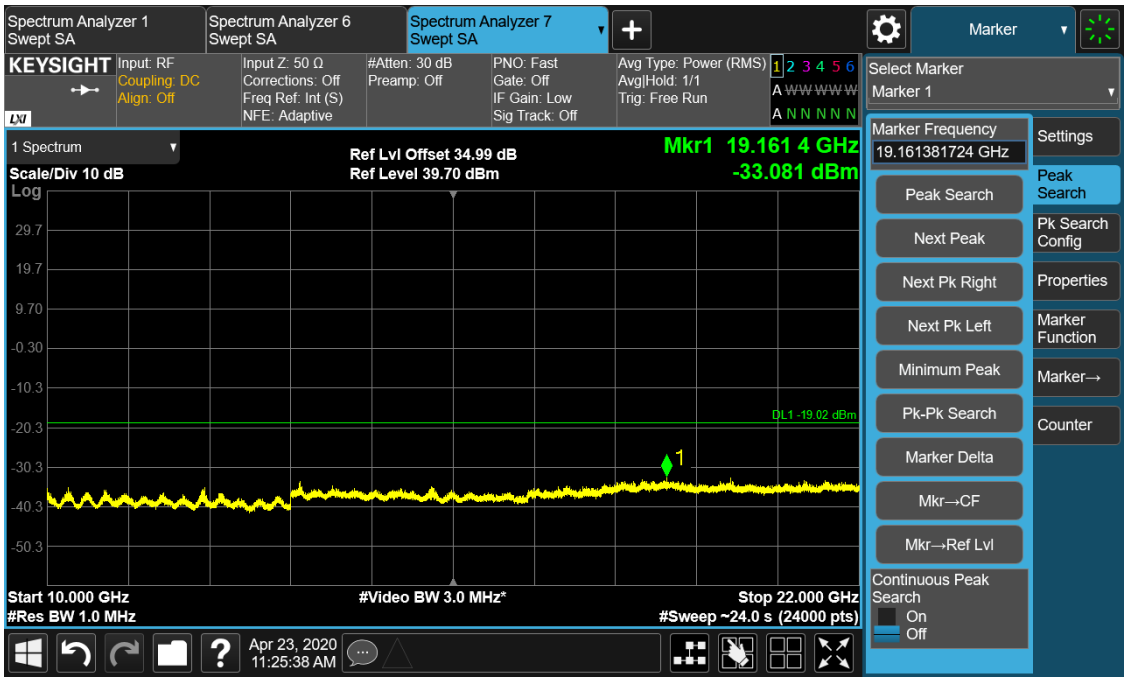
Channel Position B



Total Quality. Assured.

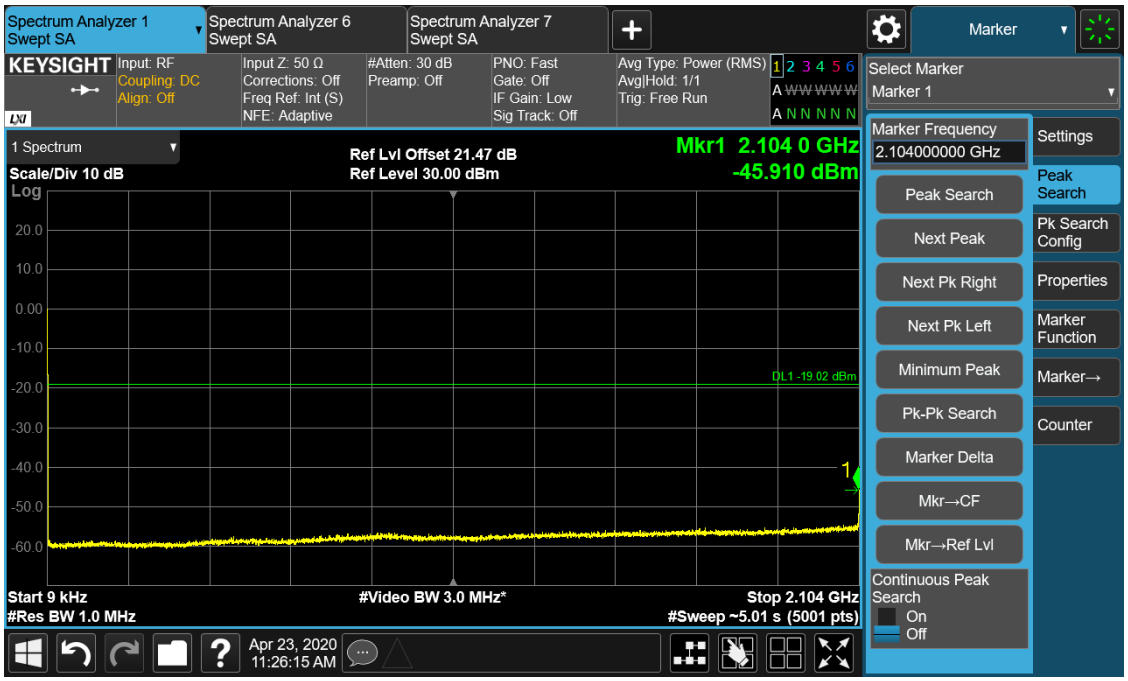
TEST REPORT

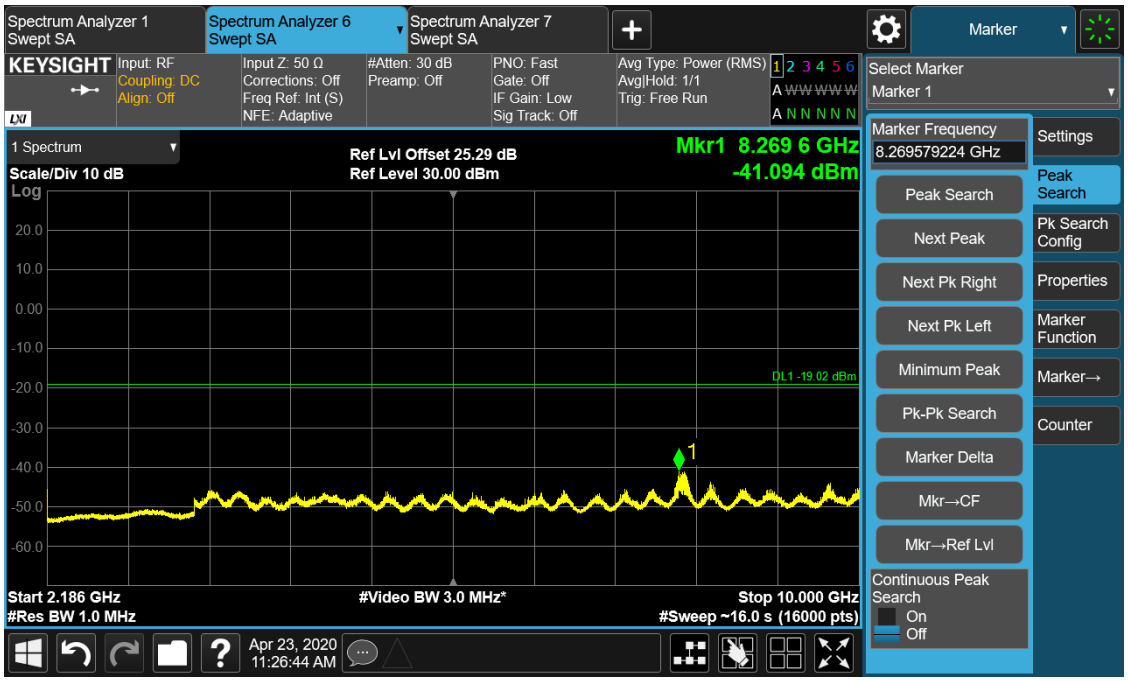


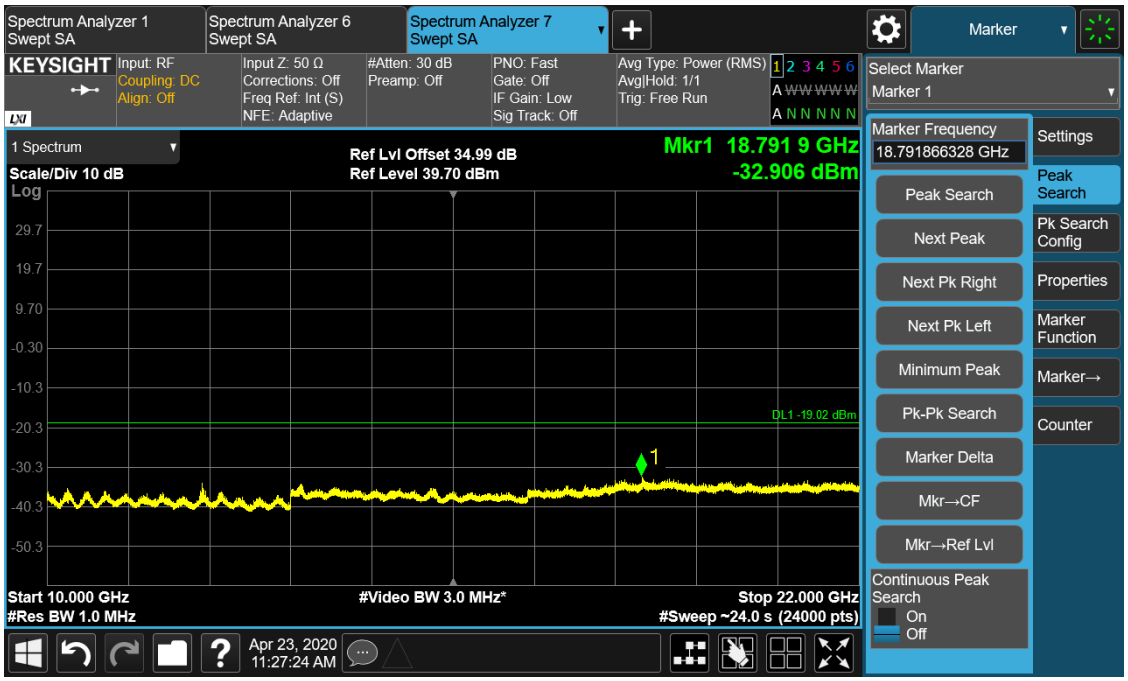


TEST REPORT

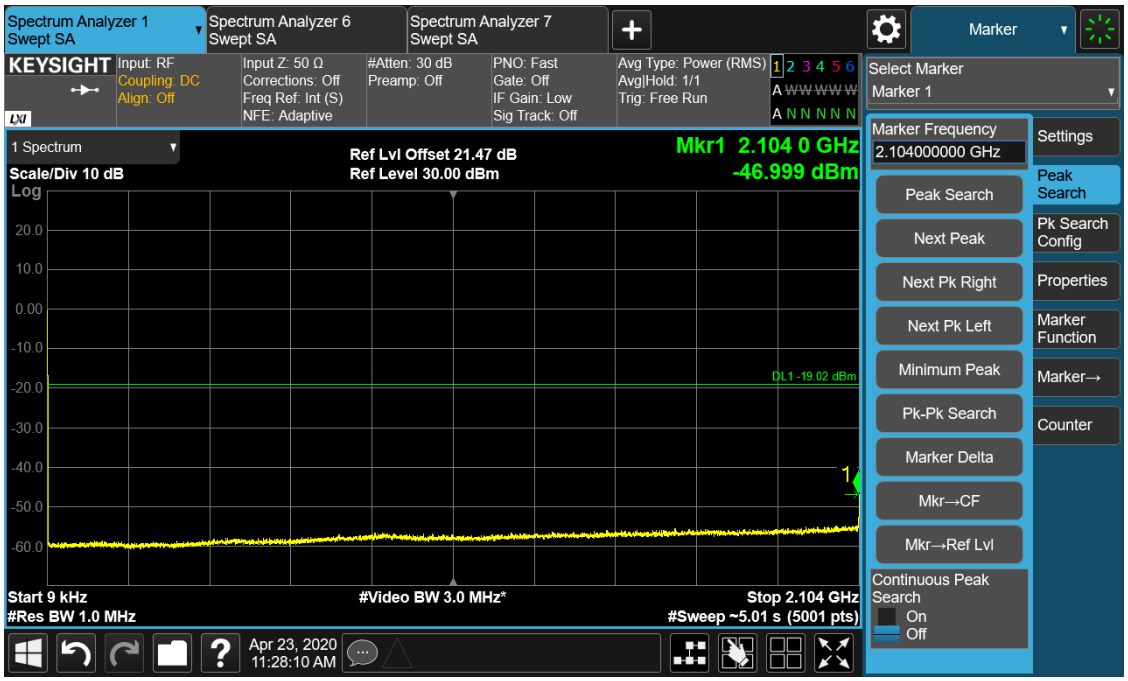
Channel Position M



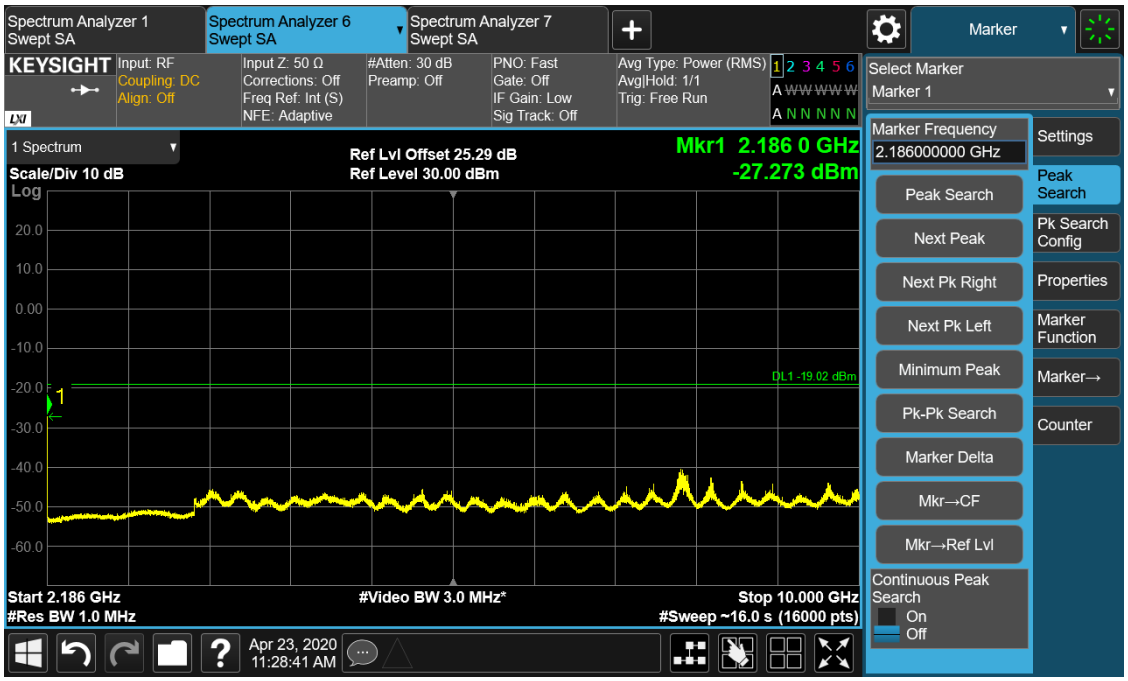


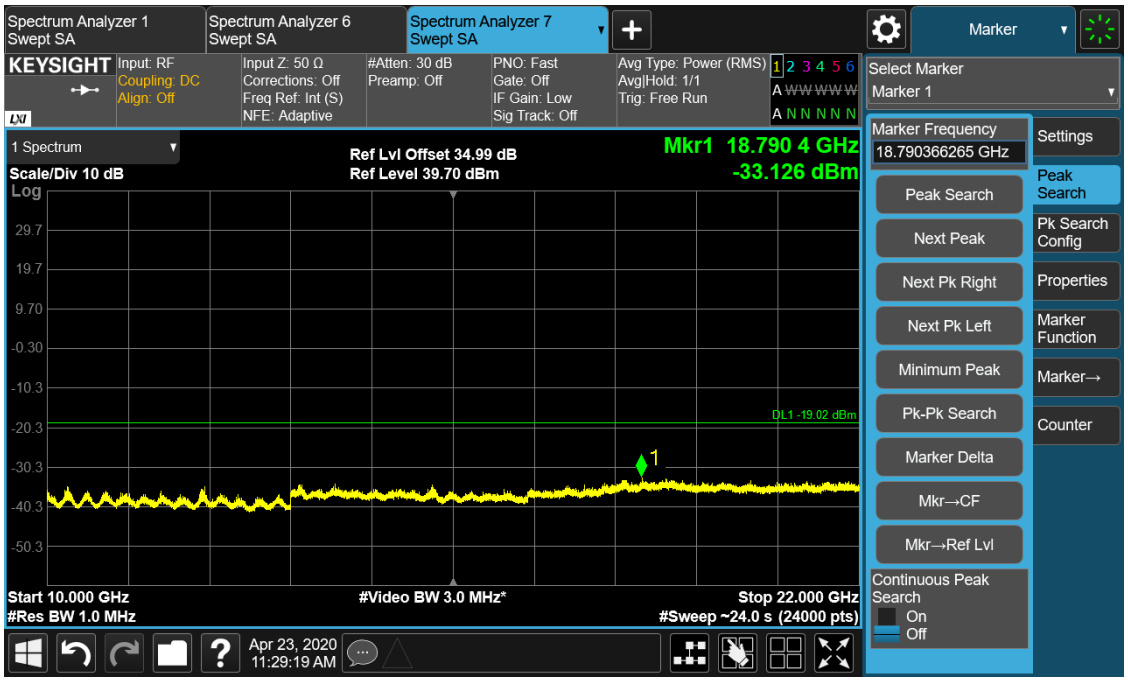


Channel Position T



TEST REPORT

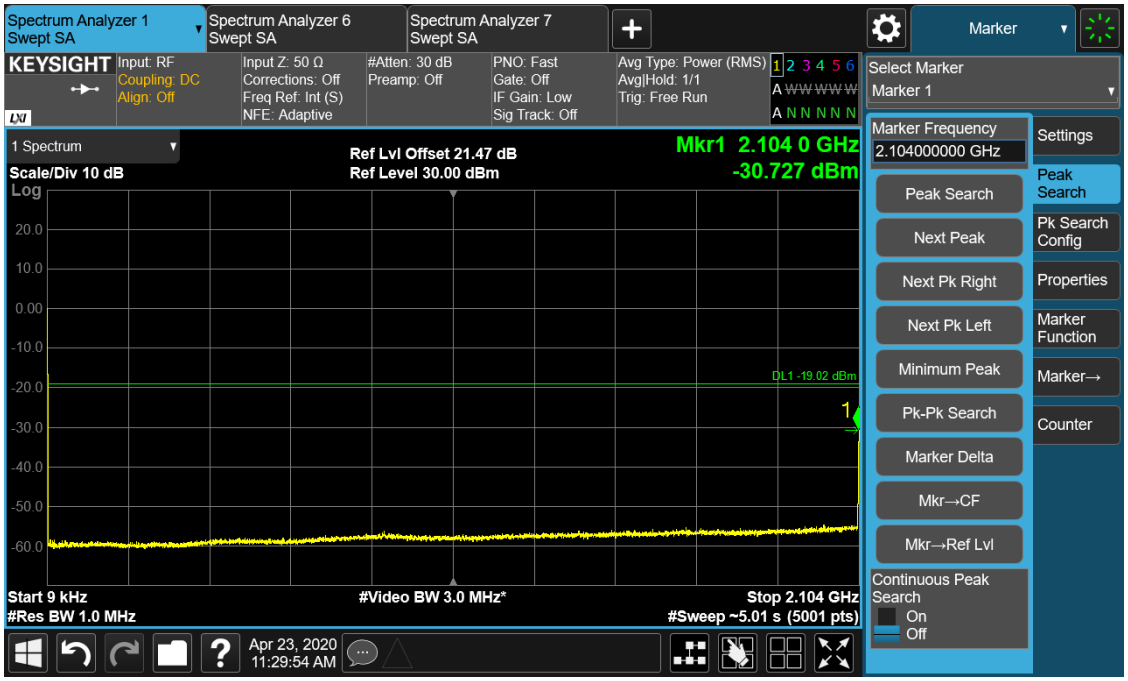

Spectrum Analyzer 1
Swept SA
Spectrum Analyzer 6
Swept SA
Spectrum Analyzer 7
Swept SA
KEYSIGHT
Input: RF
Coupling: DC
Align: Off
Input Z: 50 Ω
Corrections: Off
Freq Ref: Int (S)
NFE: Adaptive
#Atten: 30 dB
Preamp: Off
PNO: Fast
Gate: Off
IF Gain: Low
Sig Track: Off
Avg Type: Power (RMS)
Avg|Hold: 1/1
Trig: Free Run
Marker
Select Marker
Marker 1
1 Spectrum
Scale/Div 10 dB
Ref Lvl Offset 25.29 dB
Ref Level 30.00 dBm
Mkr1 2.186 0 GHz
-27.273 dBm
Log
20.0
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
DL1 -19.02 dBm
Start 2.186 GHz
#Res BW 1.0 MHz
#Video BW 3.0 MHz*
Stop 10.000 GHz
#Sweep ~16.0 s (16000 pts)
Marker Frequency
2.186000000 GHz
Settings
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Minimum Peak
Pk-Pk Search
Marker Delta
Mkr→CF
Mkr→Ref Lvl
Pk Search Config
Properties
Marker Function
Marker→
Counter
Continuous Peak Search
On
Off
Apr 23, 2020
11:28:41 AM

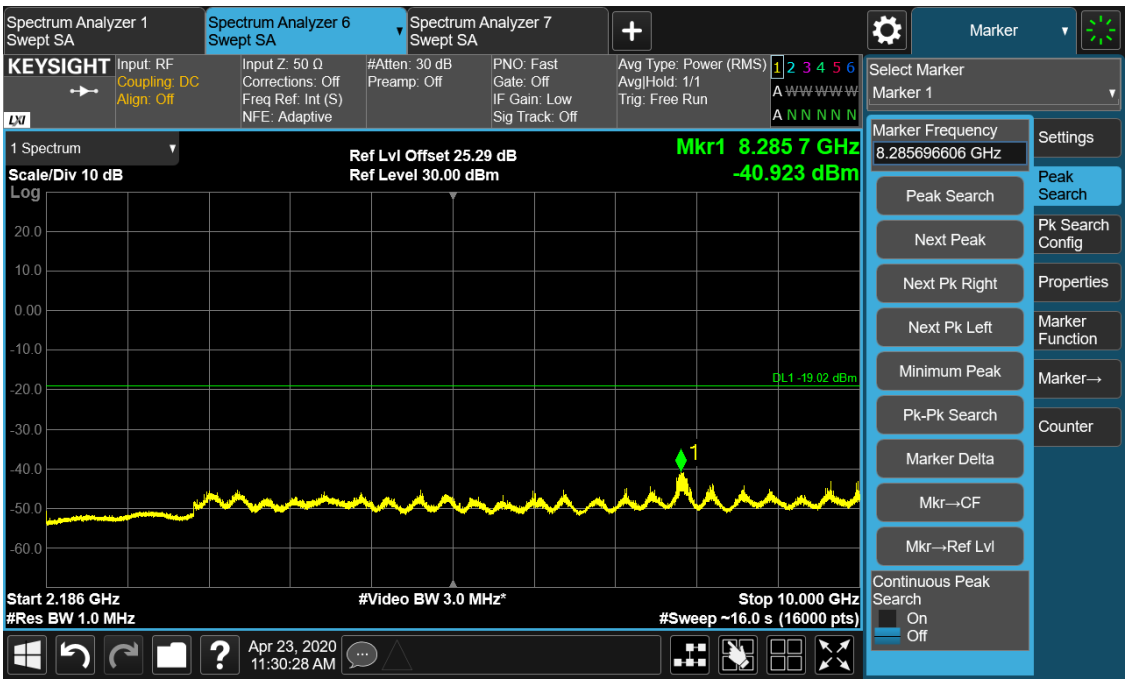

Spectrum Analyzer 1
Swept SA
Spectrum Analyzer 6
Swept SA
Spectrum Analyzer 7
Swept SA
KEYSIGHT
Input: RF
Coupling: DC
Align: Off
Input Z: 50 Ω
Corrections: Off
Freq Ref: Int (S)
NFE: Adaptive
#Atten: 30 dB
Preamp: Off
PNO: Fast
Gate: Off
IF Gain: Low
Sig Track: Off
Avg Type: Power (RMS)
Avg|Hold: 1/1
Trig: Free Run
Marker
Select Marker
Marker 1
1 Spectrum
Scale/Div 10 dB
Ref Lvl Offset 34.99 dB
Ref Level 39.70 dBm
Mkr1 18.790 4 GHz
-33.126 dBm
Log
29.7
19.7
9.70
-0.30
-10.3
-20.3
-30.3
-40.3
-50.3
DL1 -19.02 dBm
Start 10.000 GHz
#Res BW 1.0 MHz
#Video BW 3.0 MHz*
Stop 22.000 GHz
#Sweep ~24.0 s (24000 pts)
Marker Frequency
18.790366265 GHz
Settings
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Minimum Peak
Pk-Pk Search
Marker Delta
Mkr→CF
Mkr→Ref Lvl
Pk Search Config
Properties
Marker Function
Marker→
Counter
Continuous Peak Search
On
Off
Apr 23, 2020
11:29:19 AM

TEST REPORT

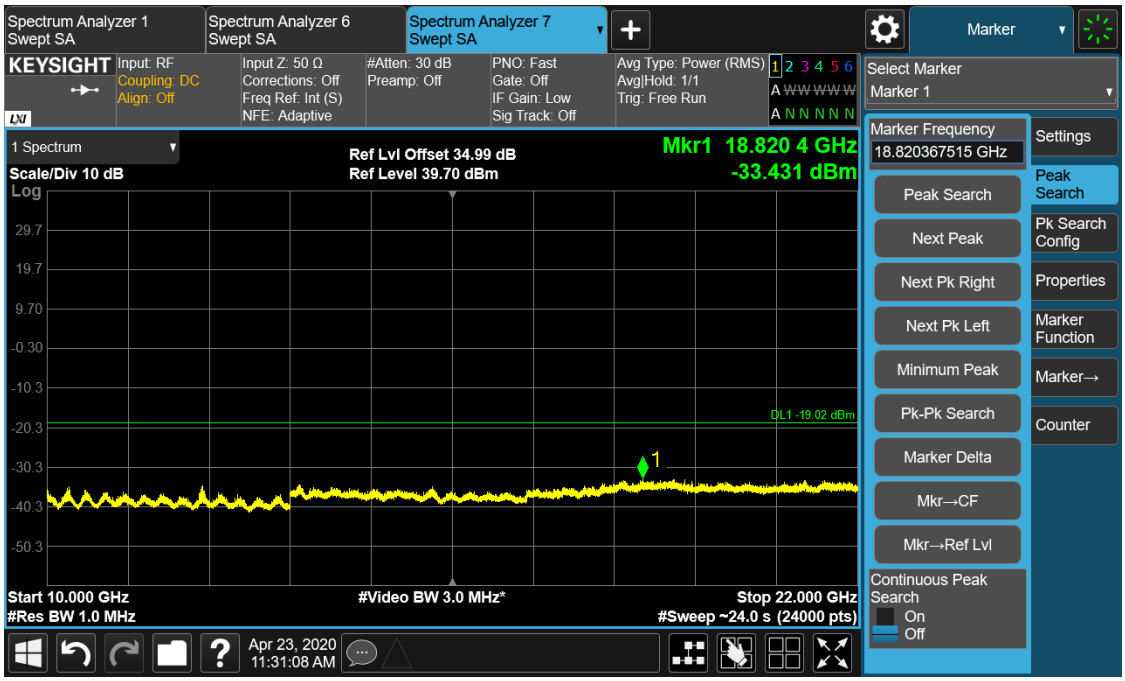
Antenna Port	Channel Position	NR Modulation	NR Channel Bandwidth (MHz)	RBW (kHz)	Limit (dBm)
A	B	QPSK	15	1000	-19.02
A	M	QPSK	15	1000	-19.02
A	T	QPSK	15	1000	-19.02

Channel Position B

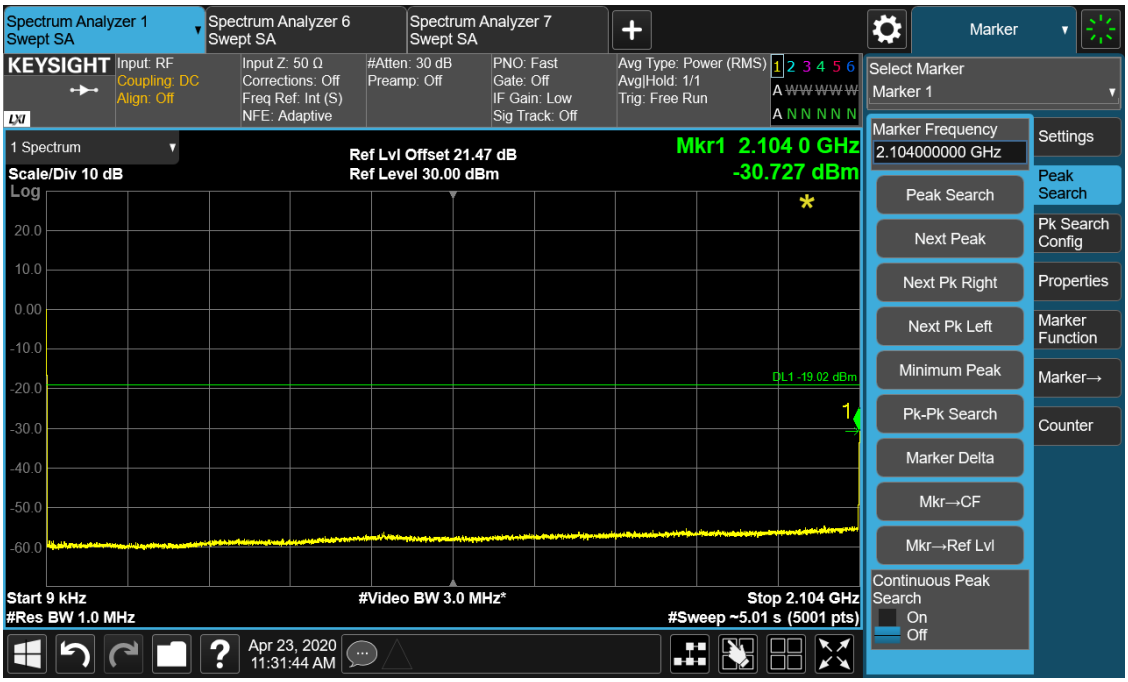




TEST REPORT

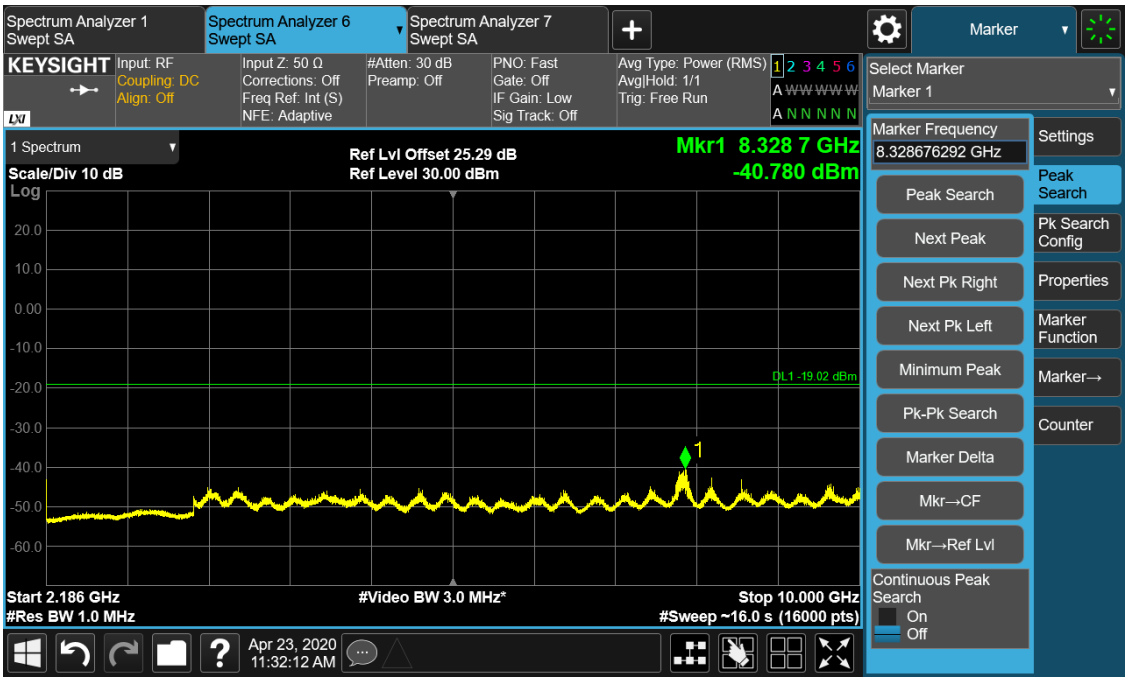


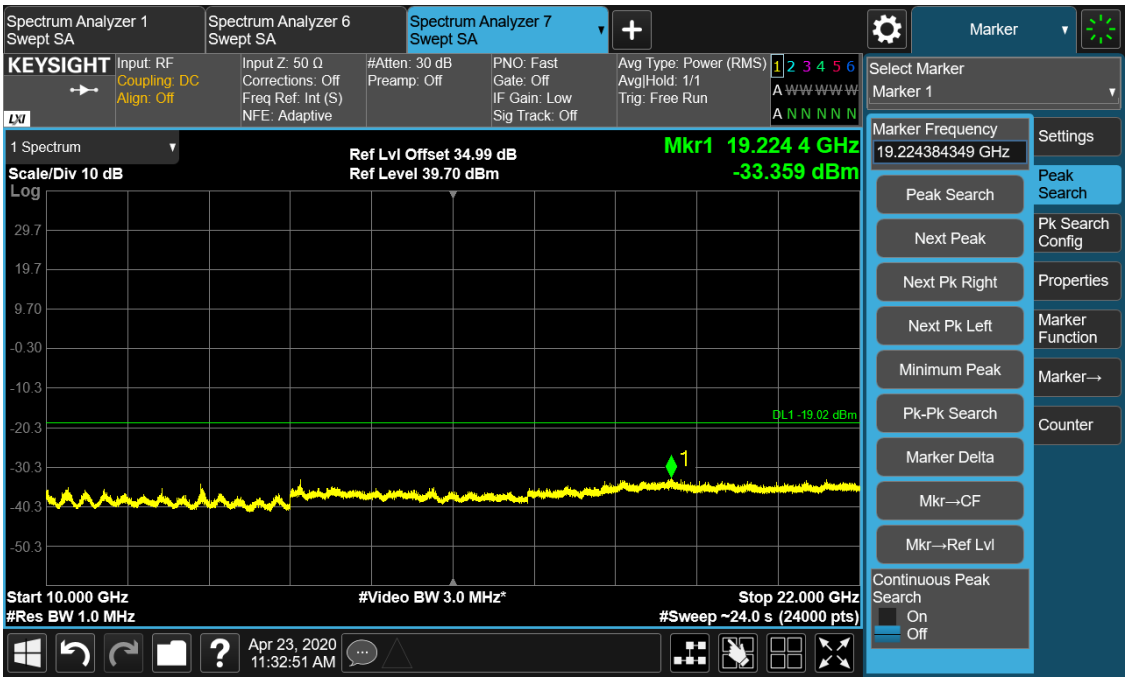
Channel Position M



Total Quality. Assured.

TEST REPORT

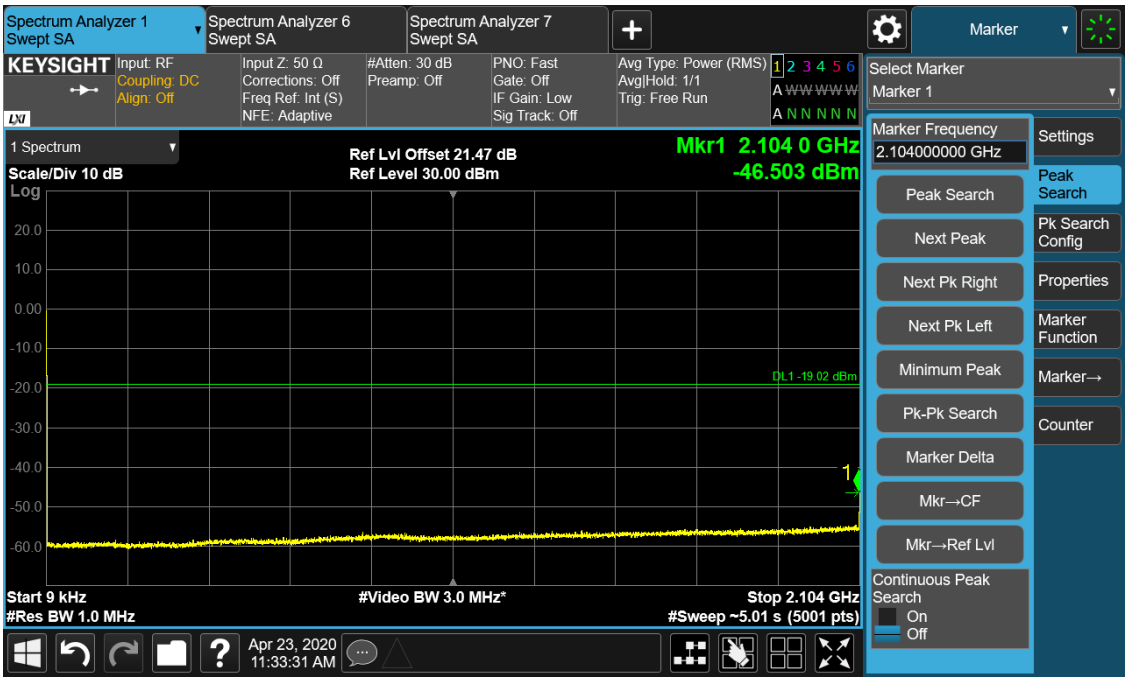


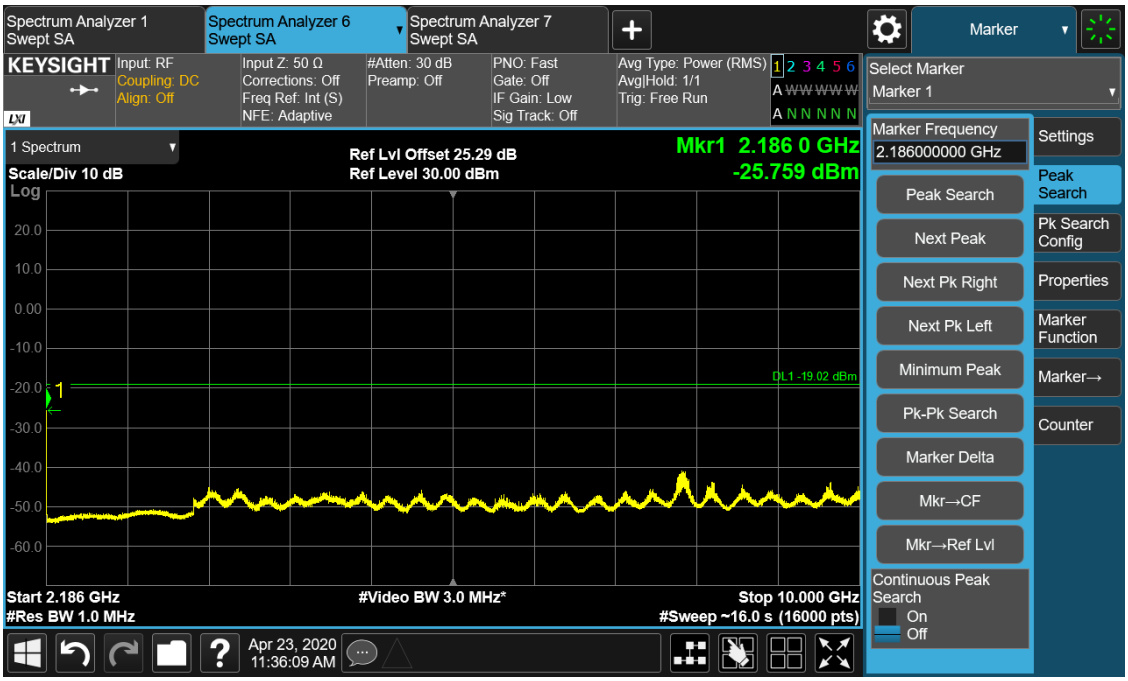


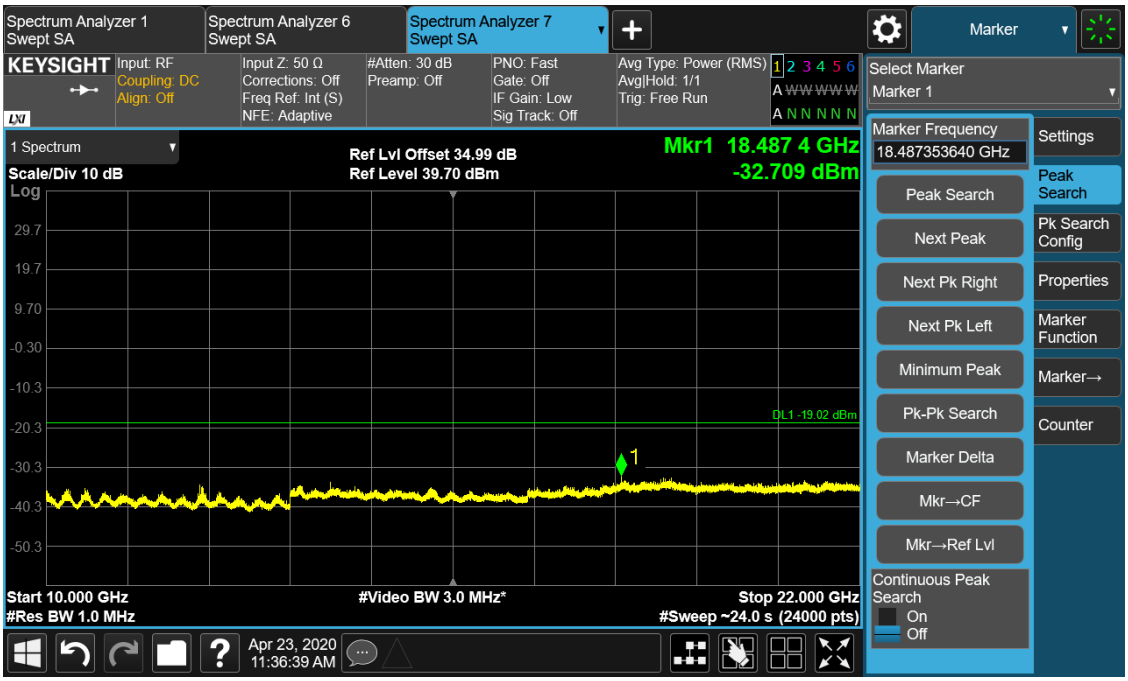
Total Quality. Assured.

TEST REPORT

Channel Position T

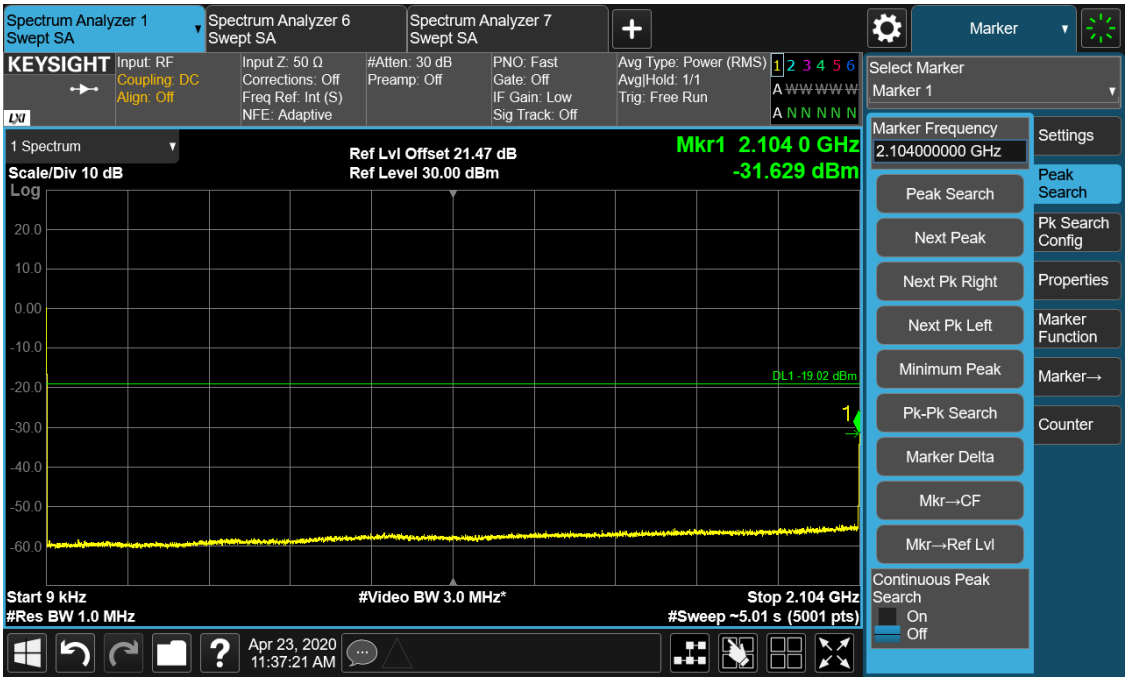






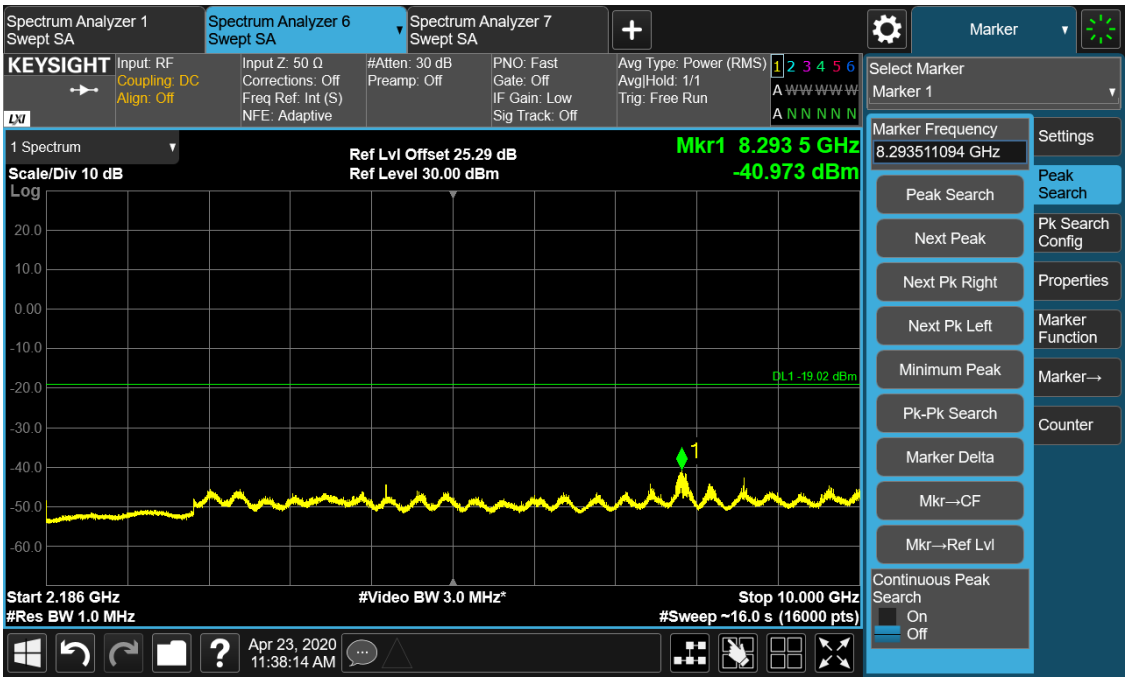
Antenna Port	Channel Position	NR Modulation	NR Channel Bandwidth (MHz)	RBW (kHz)	Limit (dBm)
A	B	QPSK	20	1000	-19.02
A	M	QPSK	20	1000	-19.02
A	T	QPSK	20	1000	-19.02

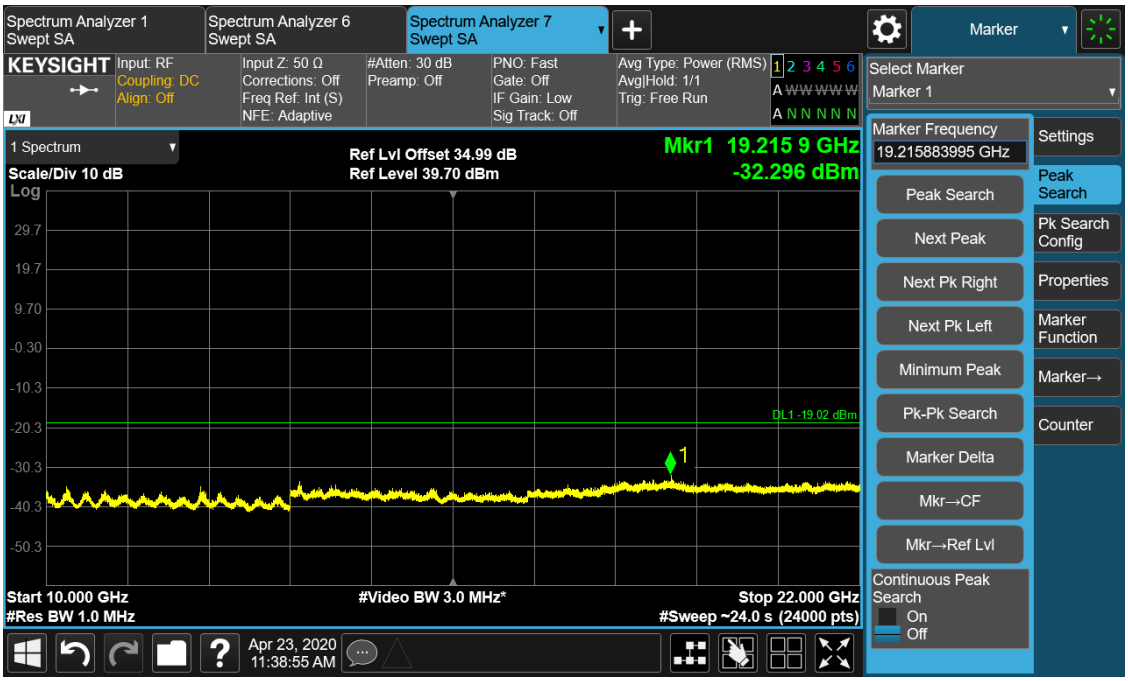
Channel Position B



Total Quality. Assured.

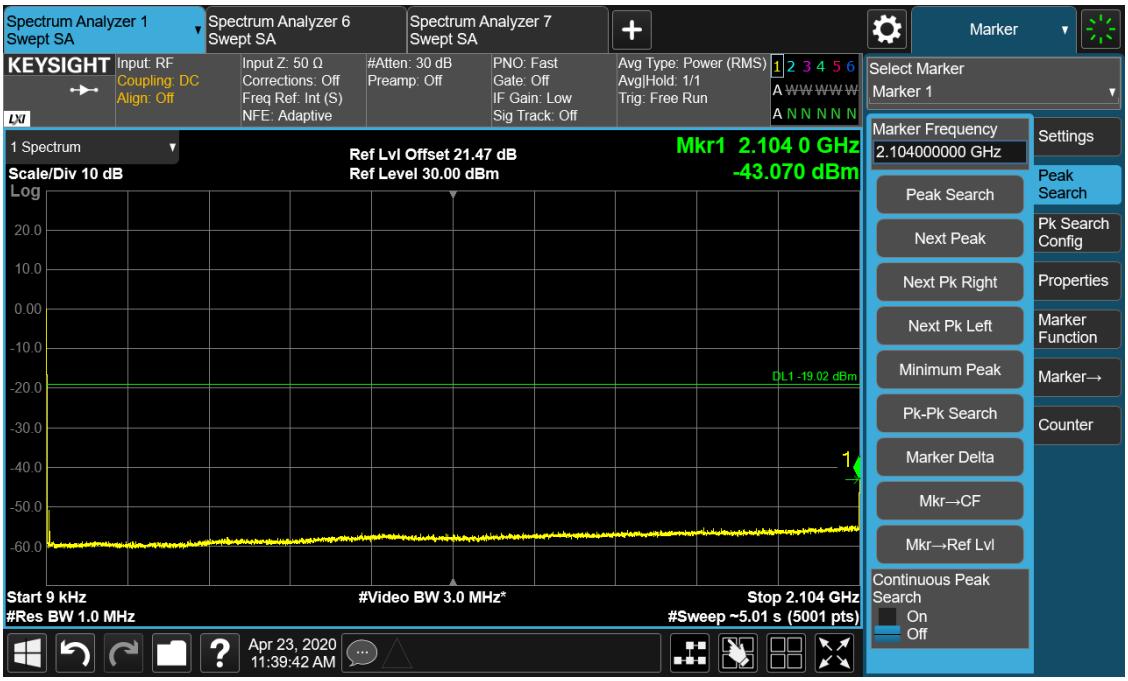
TEST REPORT

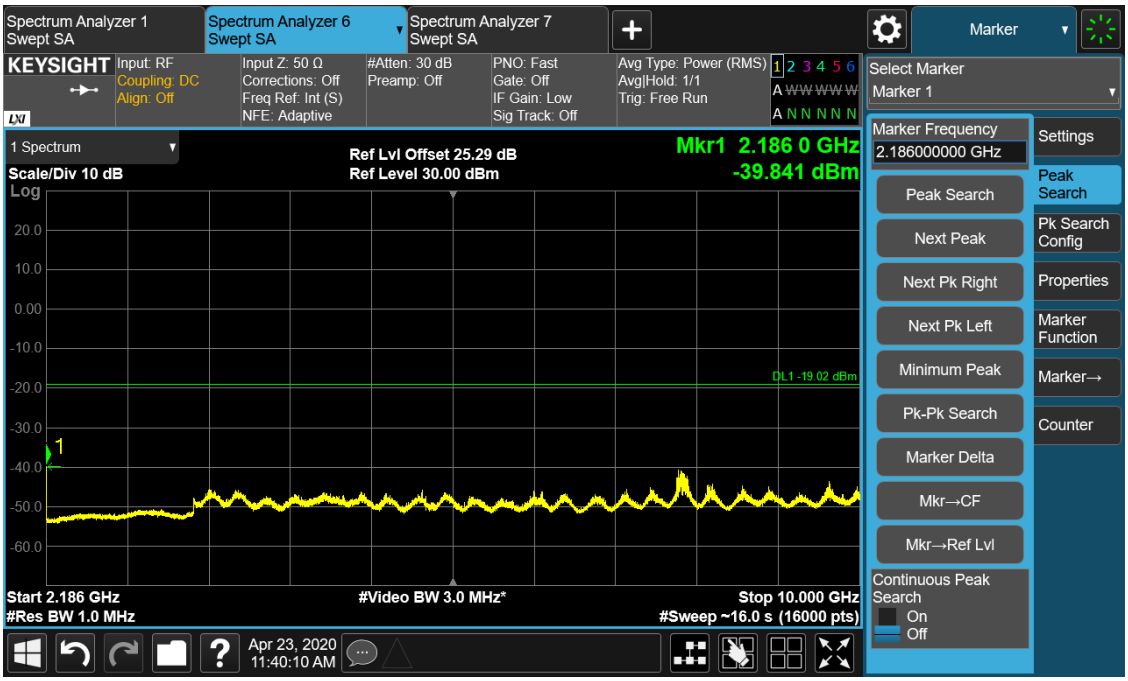




TEST REPORT

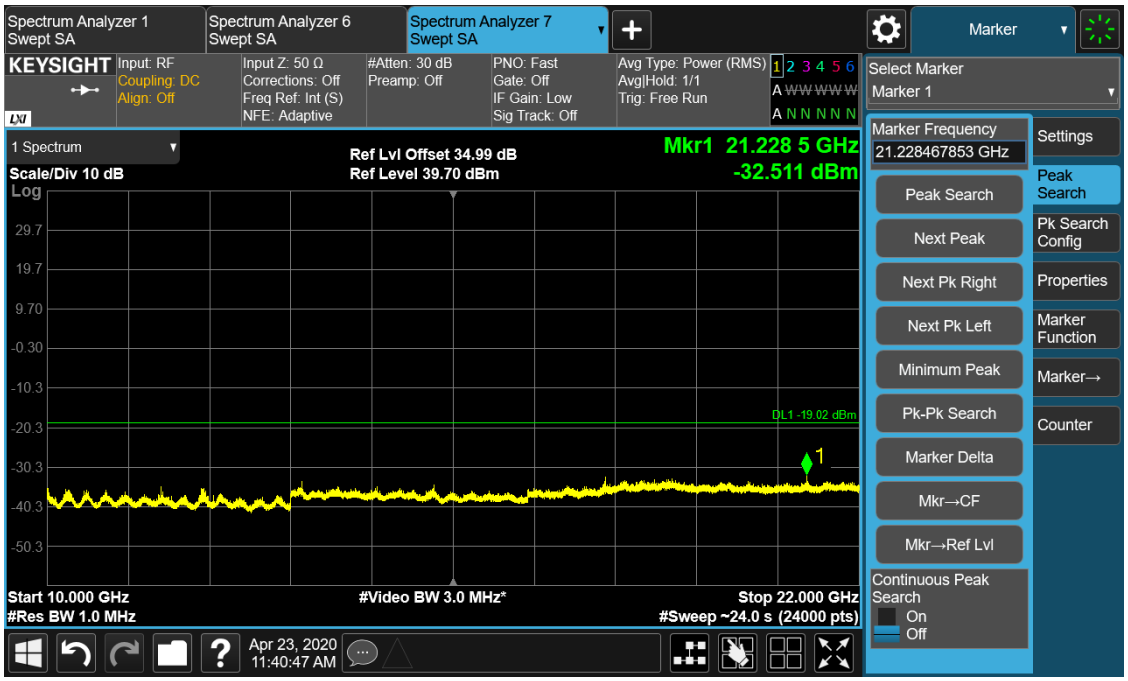
Channel Position M



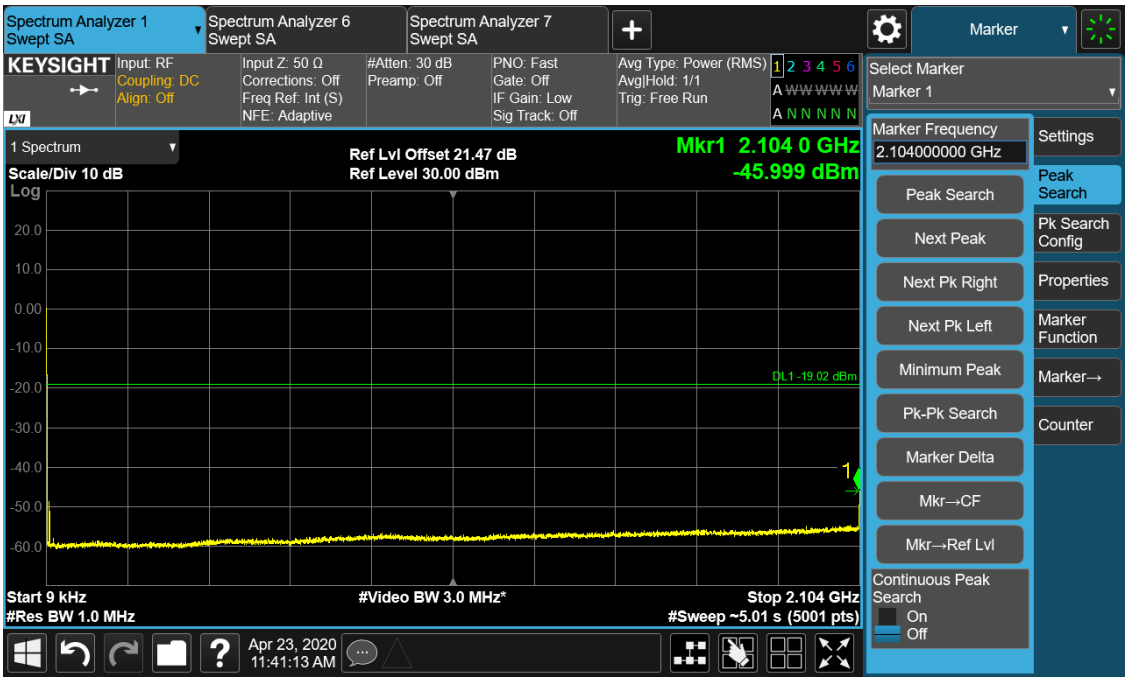


Total Quality. Assured.

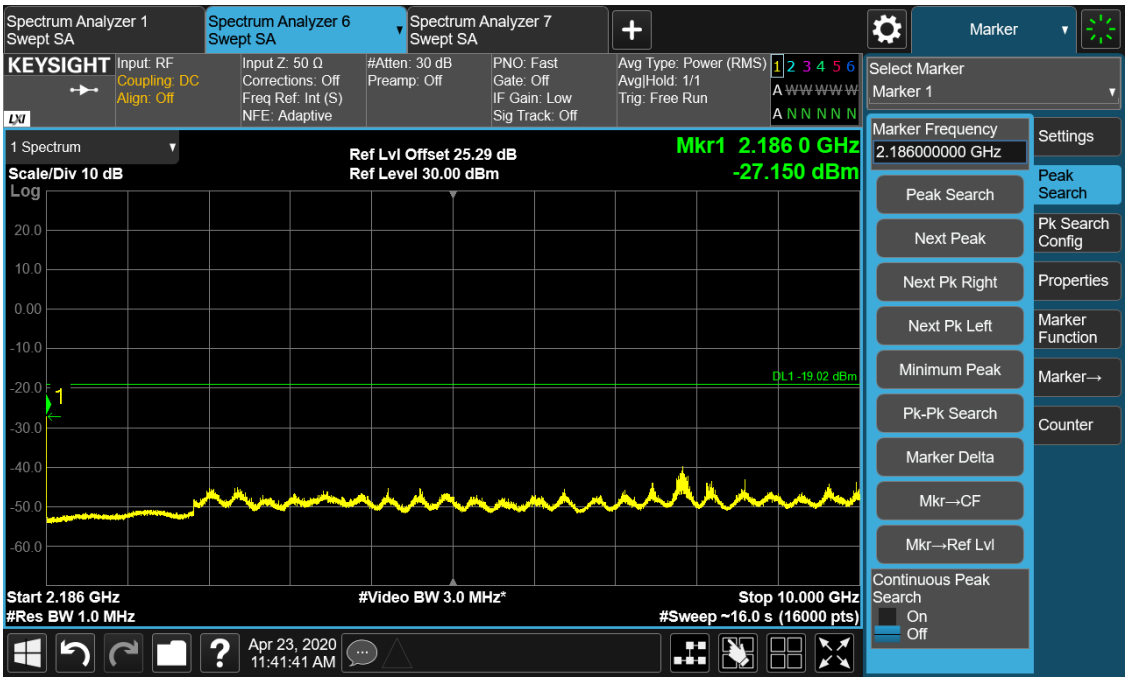
TEST REPORT

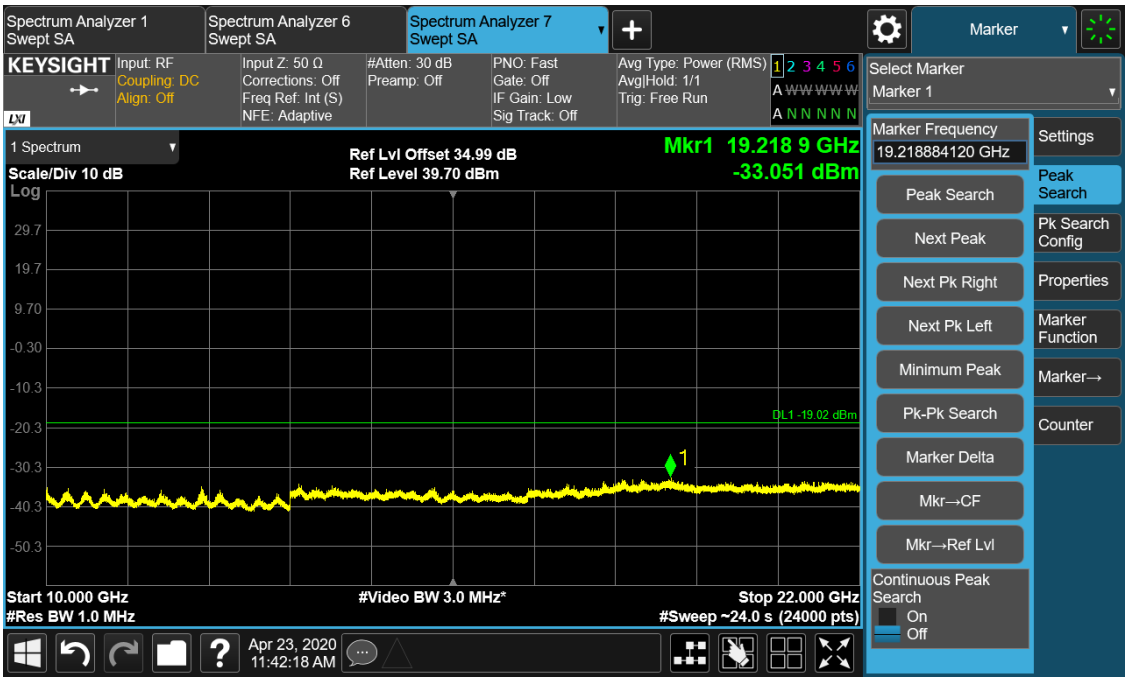


Channel Position T



TEST REPORT


Spectrum Analyzer 1
Swept SA
Spectrum Analyzer 6
Swept SA
Spectrum Analyzer 7
Swept SA
Marker
KEYSIGHT
Input: RF
Coupling: DC
Align: Off
Input Z: 50 Ω
Corrections: Off
Freq Ref: Int (S)
NFE: Adaptive
#Atten: 30 dB
Preamp: Off
PNO: Fast
Gate: Off
IF Gain: Low
Sig Track: Off
Avg Type: Power (RMS)
Avg|Hold: 1/1
Trig: Free Run
Select Marker
Marker 1
1 Spectrum
Scale/Div 10 dB
Ref Lvl Offset 25.29 dB
Ref Level 30.00 dBm
Mkr1 2.186 0 GHz
-27.150 dBm
Log
20.0
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
DL1 -19.02 dBm
Start 2.186 GHz
#Res BW 1.0 MHz
#Video BW 3.0 MHz*
Stop 10.000 GHz
#Sweep ~16.0 s (16000 pts)
Marker Frequency
2.186000000 GHz
Settings
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Minimum Peak
Pk-Pk Search
Marker Delta
Mkr→CF
Mkr→Ref Lvl
Pk Search Config
Properties
Marker Function
Marker→
Counter
Continuous Peak Search
On
Off
Apr 23, 2020
11:41:41 AM

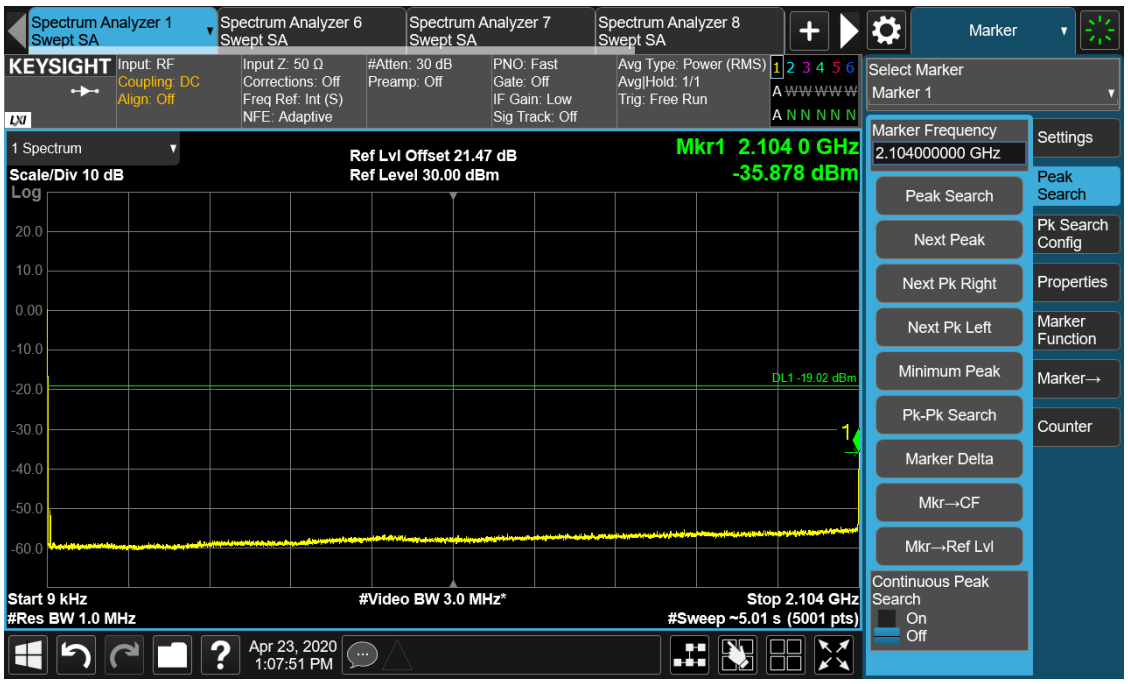

Spectrum Analyzer 1
Swept SA
Spectrum Analyzer 6
Swept SA
Spectrum Analyzer 7
Swept SA
Marker
KEYSIGHT
Input: RF
Coupling: DC
Align: Off
Input Z: 50 Ω
Corrections: Off
Freq Ref: Int (S)
NFE: Adaptive
#Atten: 30 dB
Preamp: Off
PNO: Fast
Gate: Off
IF Gain: Low
Sig Track: Off
Avg Type: Power (RMS)
Avg|Hold: 1/1
Trig: Free Run
Select Marker
Marker 1
1 Spectrum
Scale/Div 10 dB
Ref Lvl Offset 34.99 dB
Ref Level 39.70 dBm
Mkr1 19.218 9 GHz
-33.051 dBm
Log
29.7
19.7
9.70
-0.30
-10.3
-20.3
-30.3
-40.3
-50.3
DL1 -19.02 dBm
Start 10.000 GHz
#Res BW 1.0 MHz
#Video BW 3.0 MHz*
Stop 22.000 GHz
#Sweep ~24.0 s (24000 pts)
Marker Frequency
19.218884120 GHz
Settings
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Minimum Peak
Pk-Pk Search
Marker Delta
Mkr→CF
Mkr→Ref Lvl
Pk Search Config
Properties
Marker Function
Marker→
Counter
Continuous Peak Search
On
Off
Apr 23, 2020
11:42:18 AM

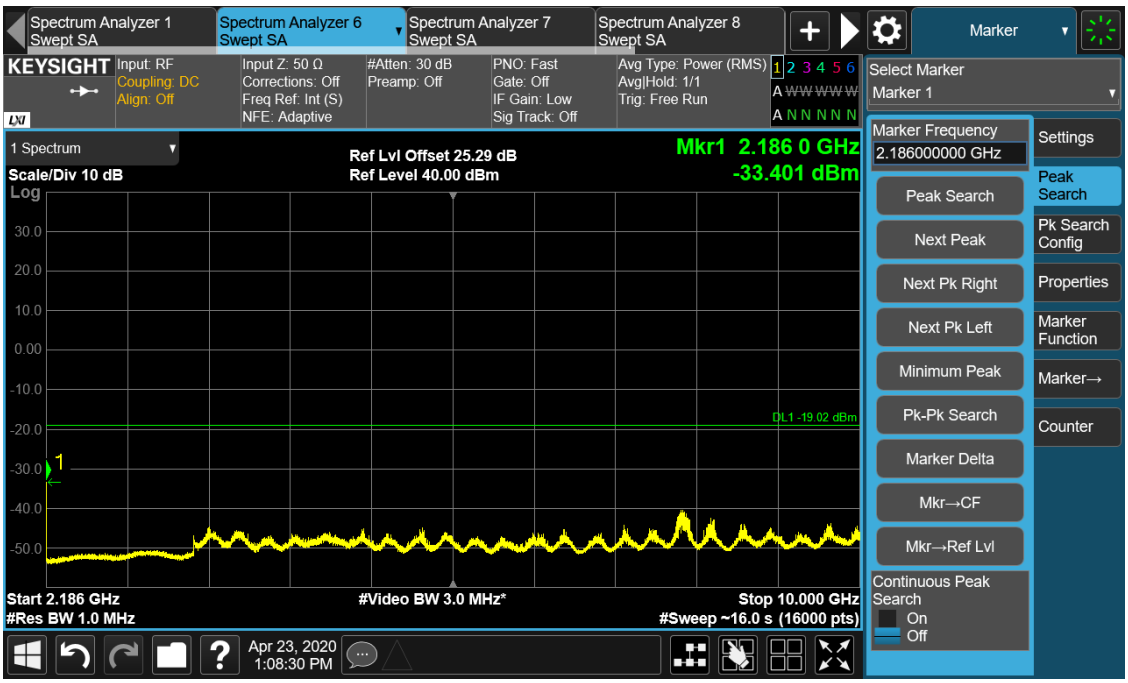
TEST REPORT

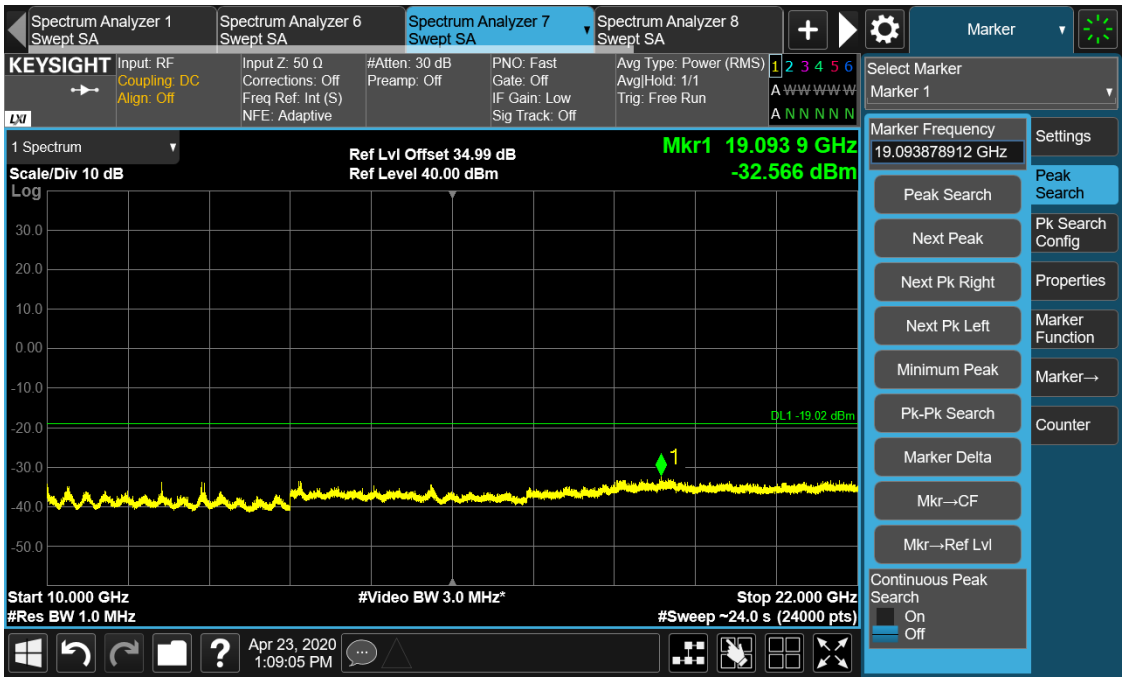
NR-MIMO-2C

Antenna Port	Channel Position	NR Modulation	NR Channel Bandwidth (MHz)	RBW (kHz)	Limit (dBm)
A	M	QPSK	5	1000	-19.02

Channel Position M

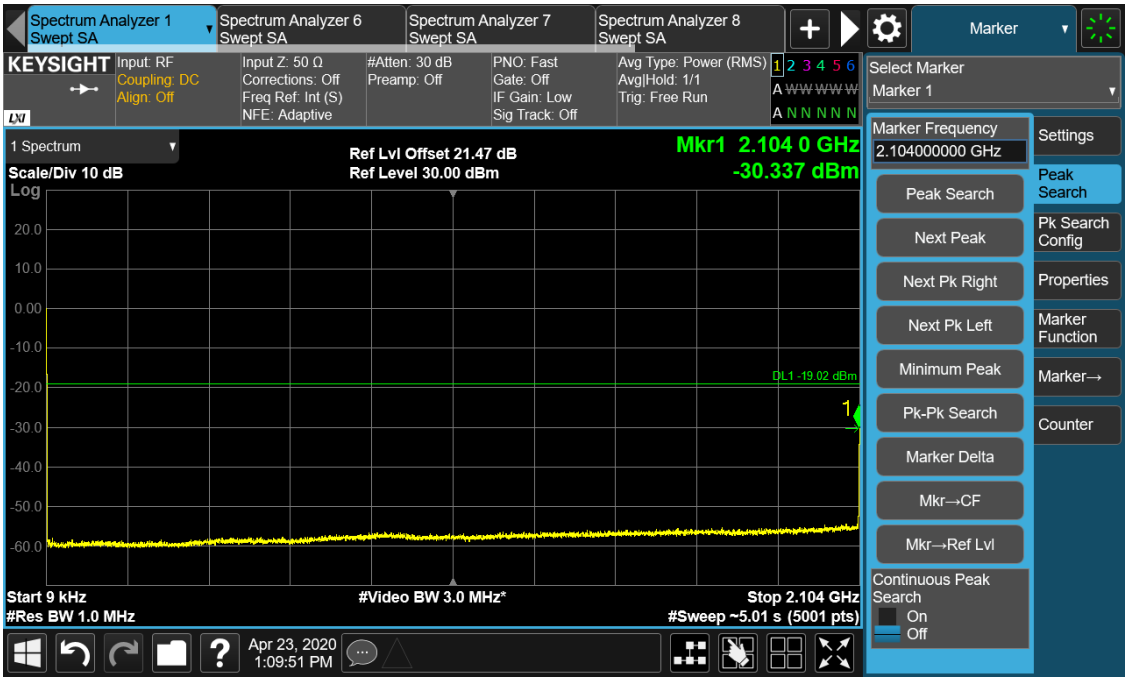






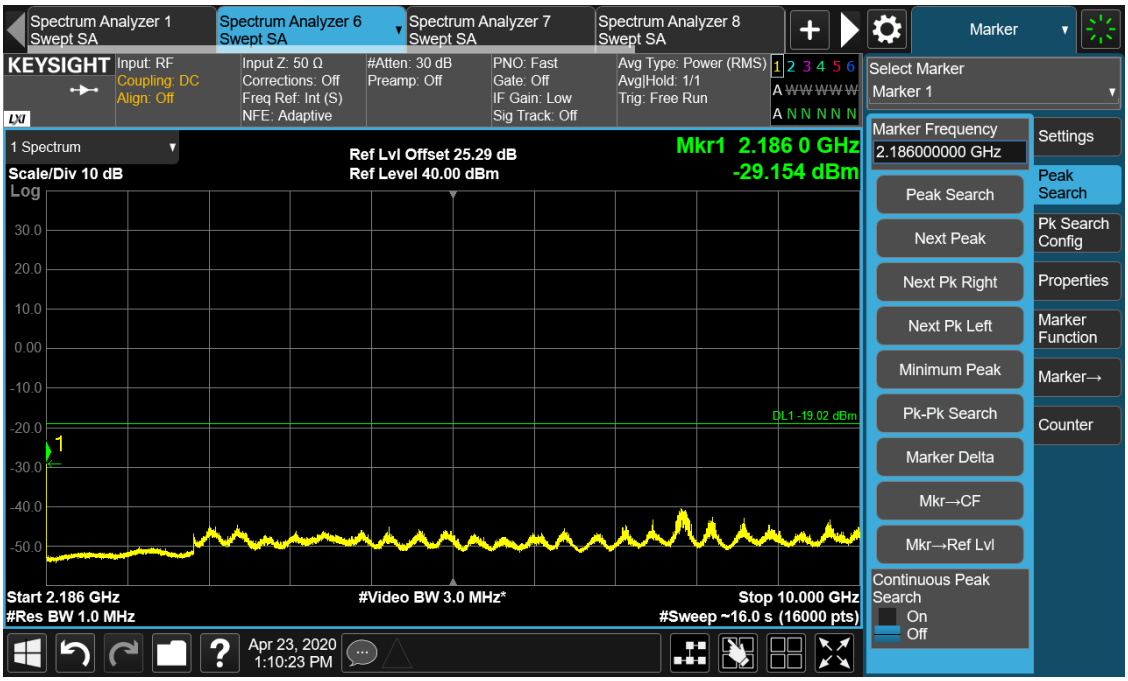
Antenna Port	Channel Position	NR Modulation	NR Channel Bandwidth (MHz)	RBW (kHz)	Limit (dBm)
A	M	QPSK	10	1000	-19.02

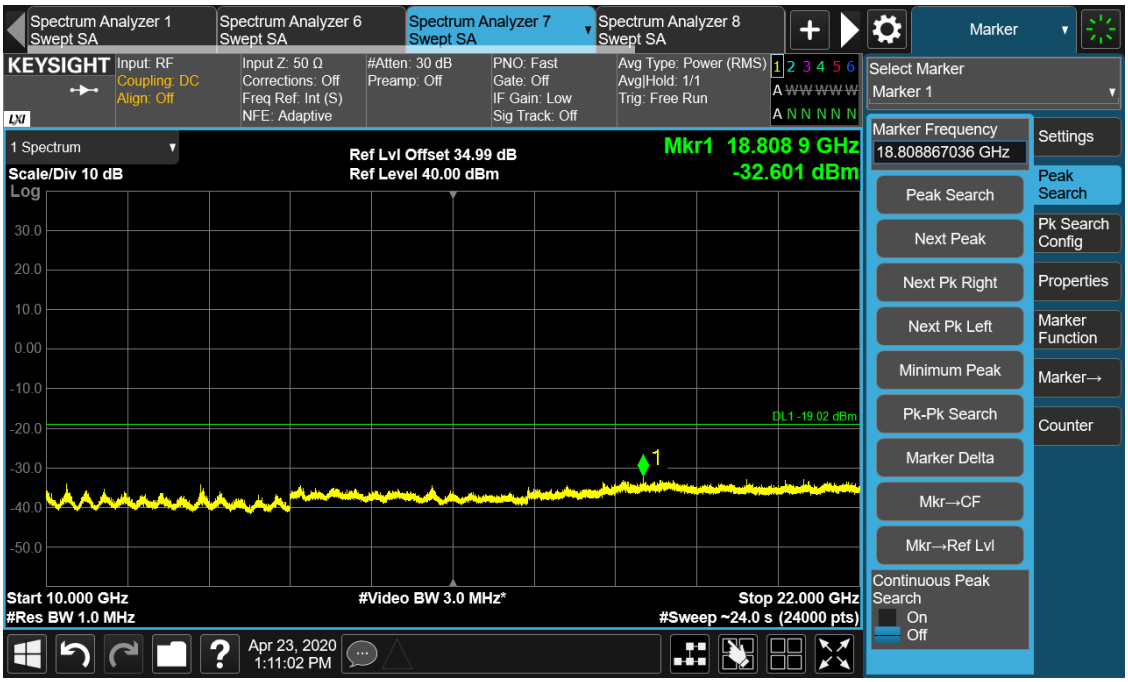
Channel Position M



Total Quality. Assured.

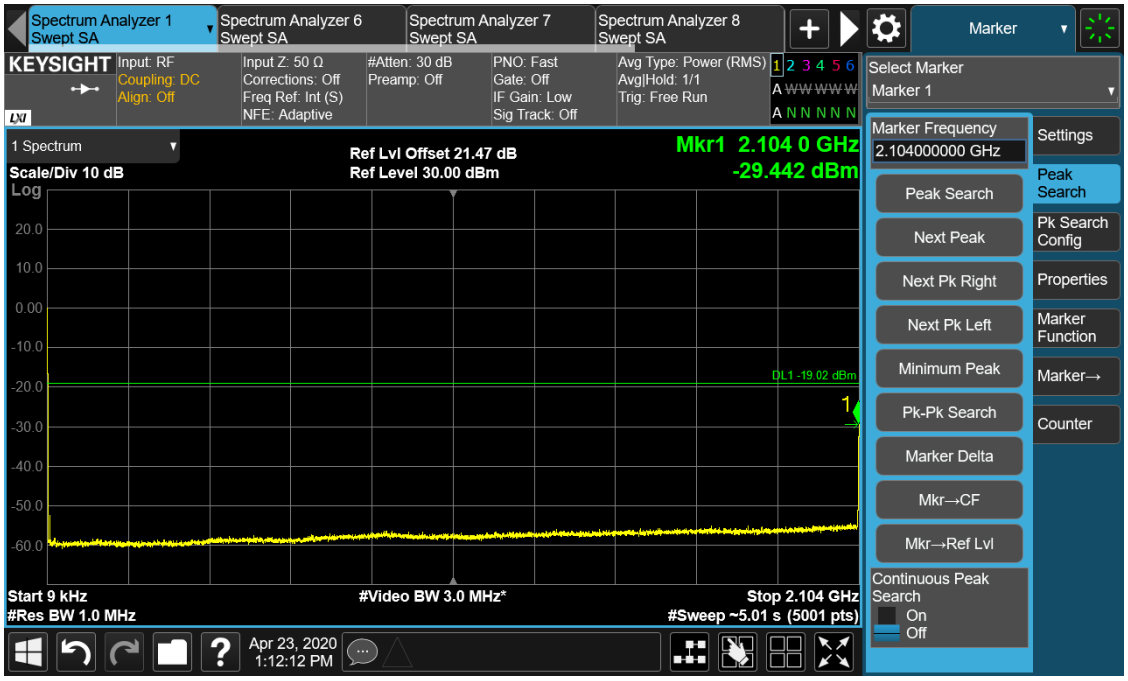
TEST REPORT

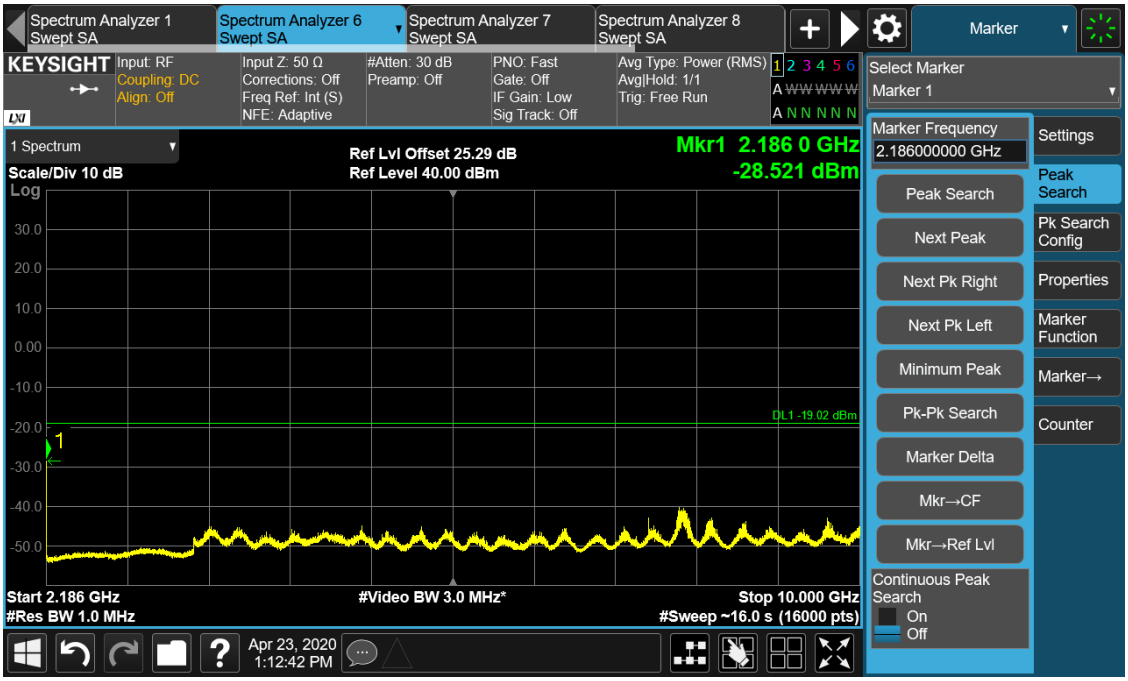




Antenna Port	Channel Position	NR Modulation	NR Channel Bandwidth (MHz)	RBW (kHz)	Limit (dBm)
A	M	QPSK	15	1000	-19.02

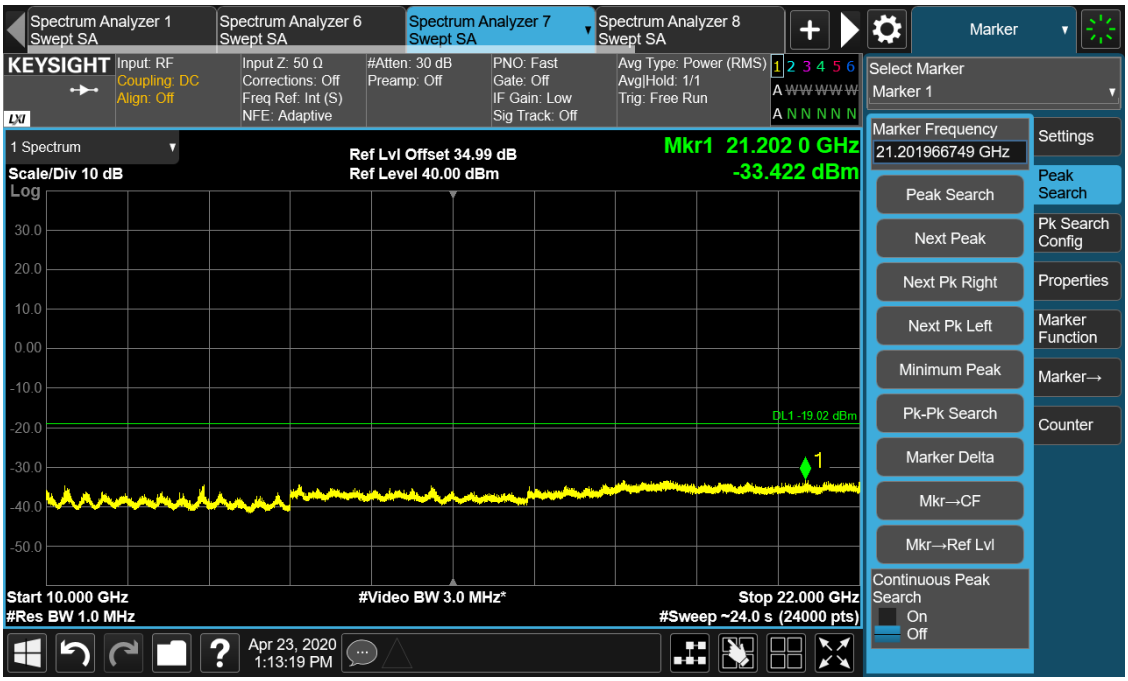
Channel Position M





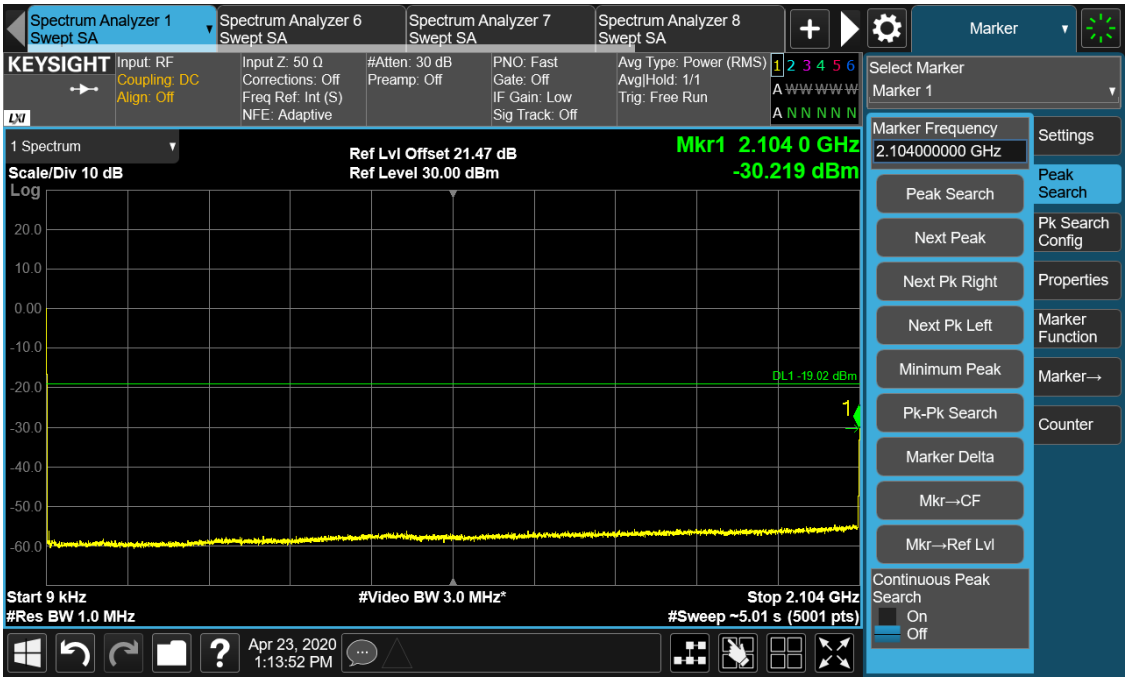
Total Quality. Assured.

TEST REPORT



Antenna Port	Channel Position	NR Modulation	NR Channel Bandwidth (MHz)	RBW (kHz)	Limit (dBm)
A	M	QPSK	20	1000	-19.02

Channel Position M



Total Quality. Assured.

TEST REPORT