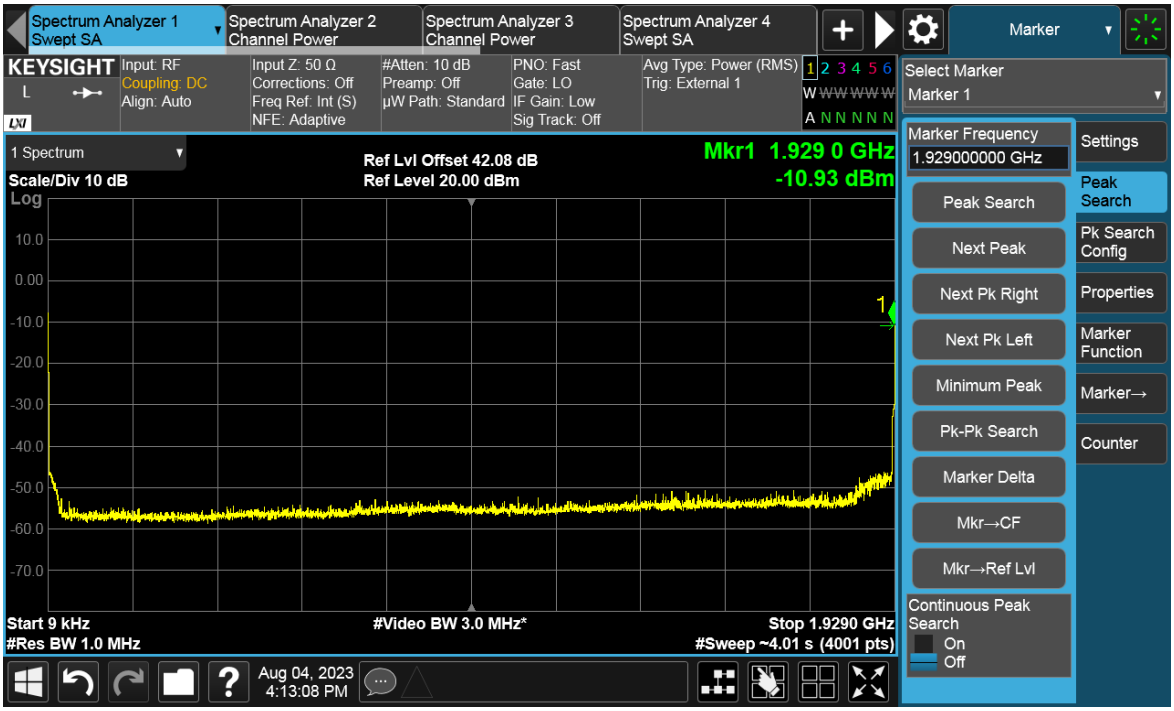
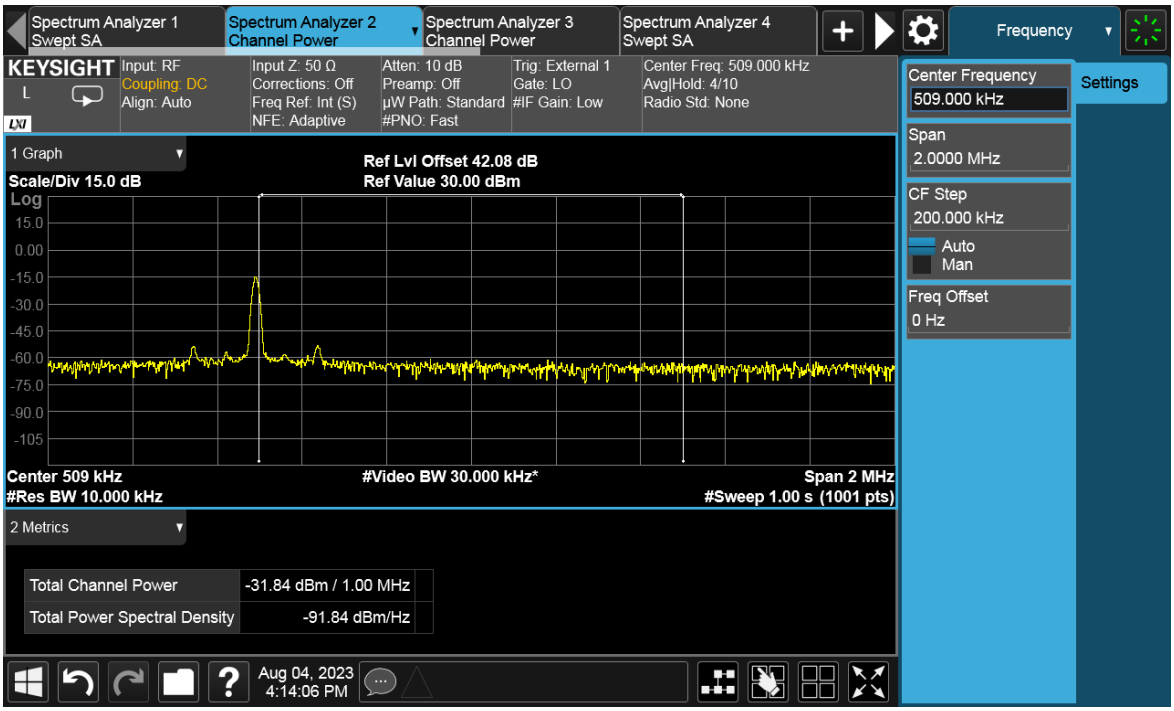
TEST REPORT

Antenna Port	Channel Position	Modulation	Carrier BW (MHz)	RBW (kHz)	Limit (dBm)
B	B	QPSK	35	1000	-19.02
B	T	QPSK	35	1000	-19.02

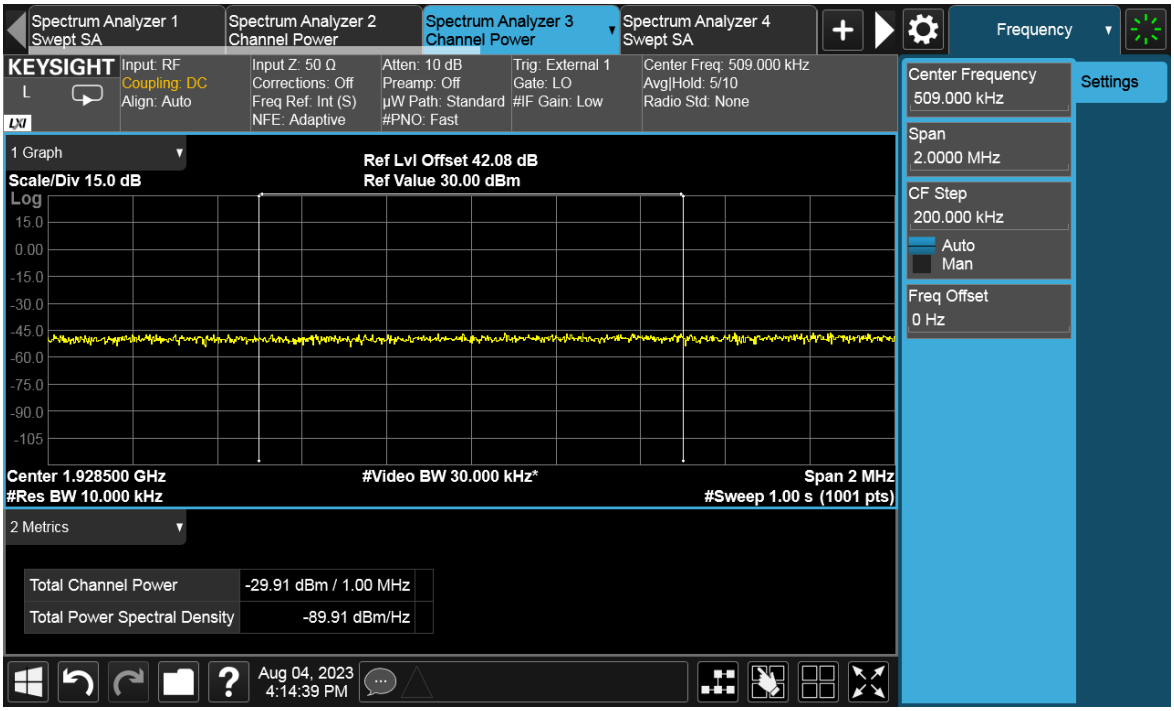
Channel Position B

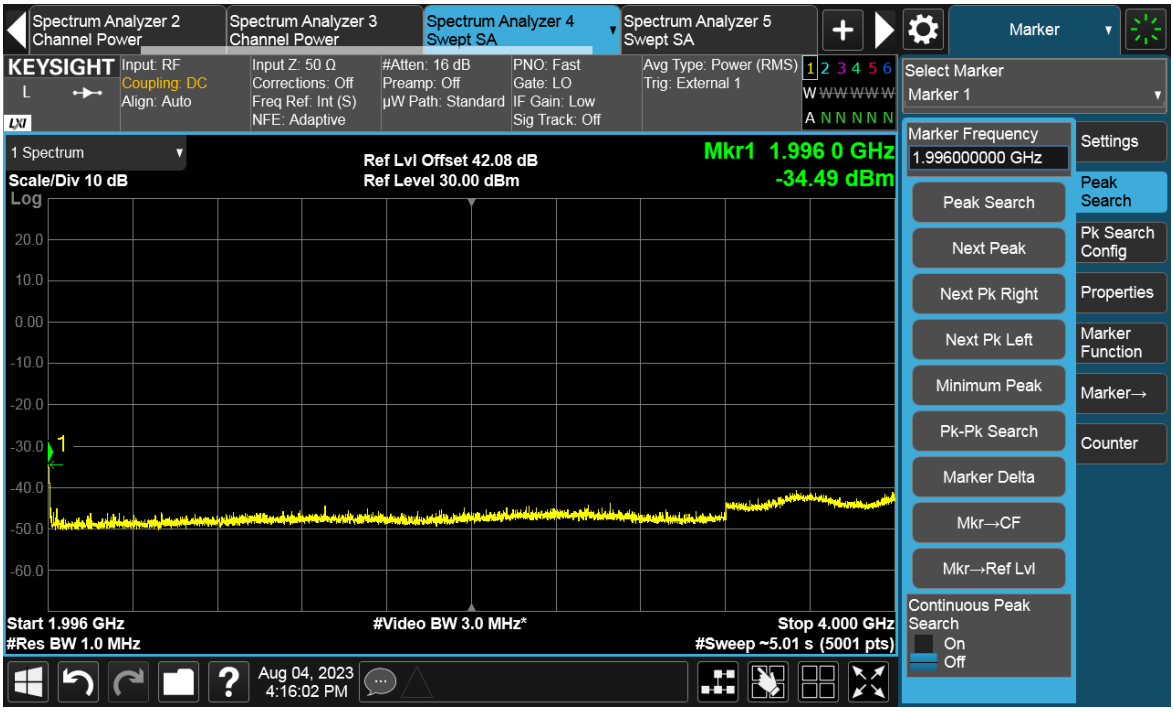




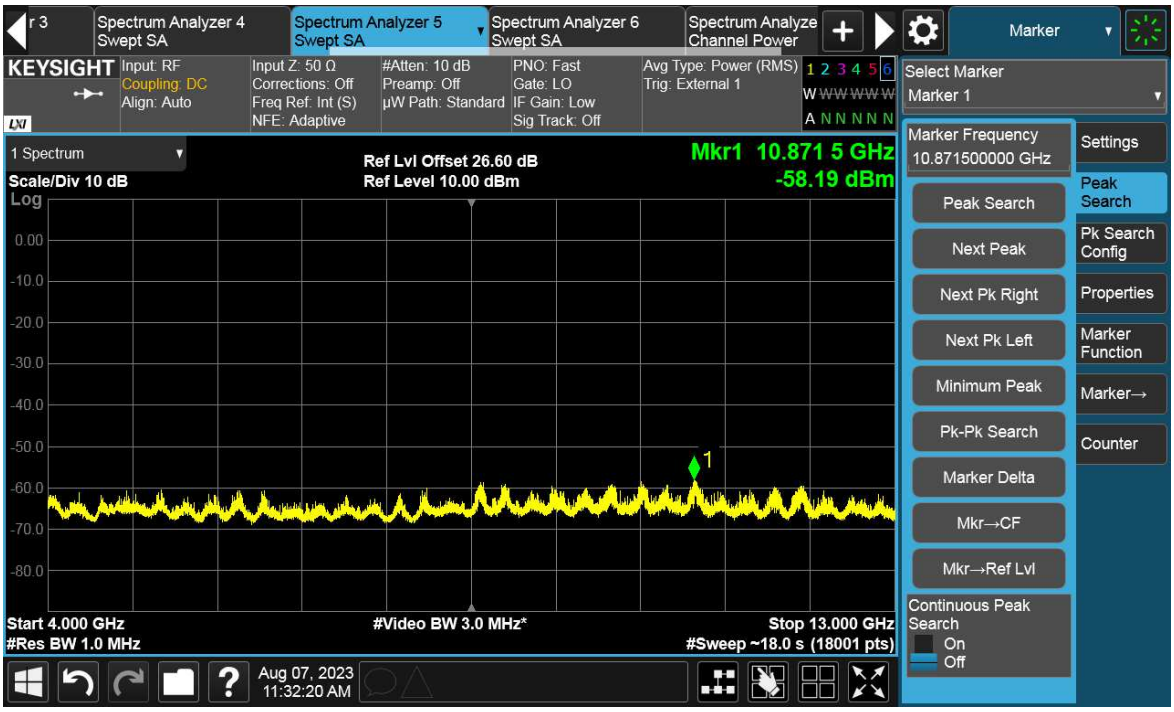
Total Quality. Assured.

TEST REPORT





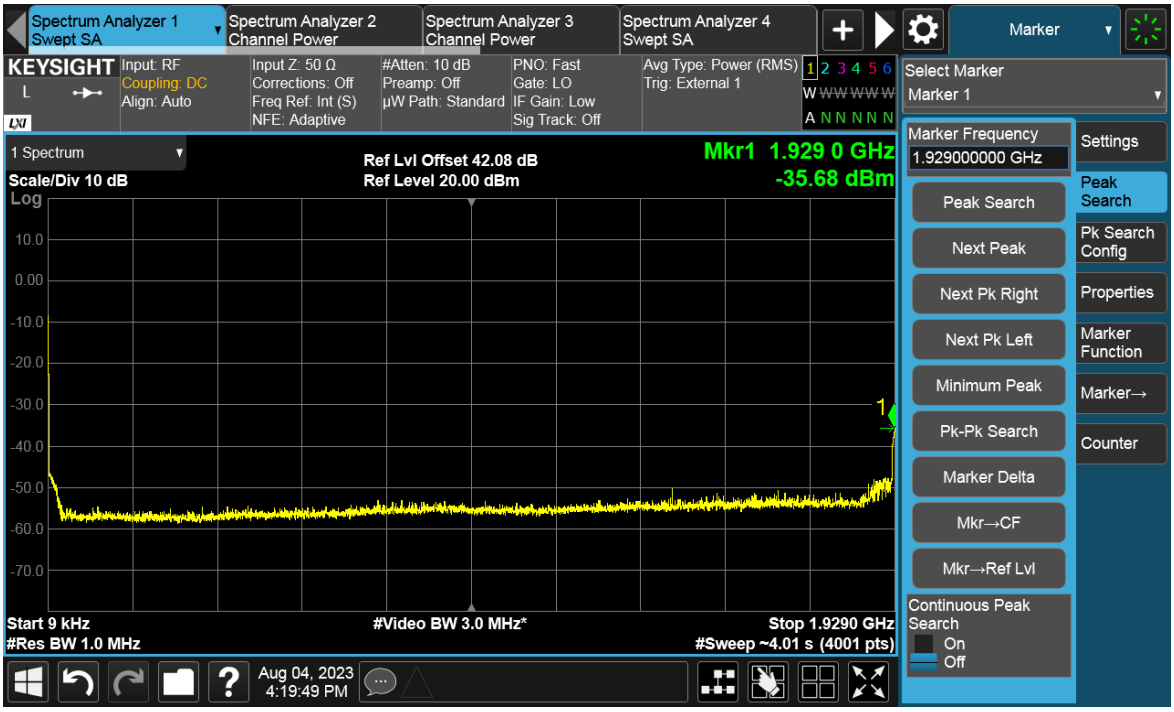
TEST REPORT

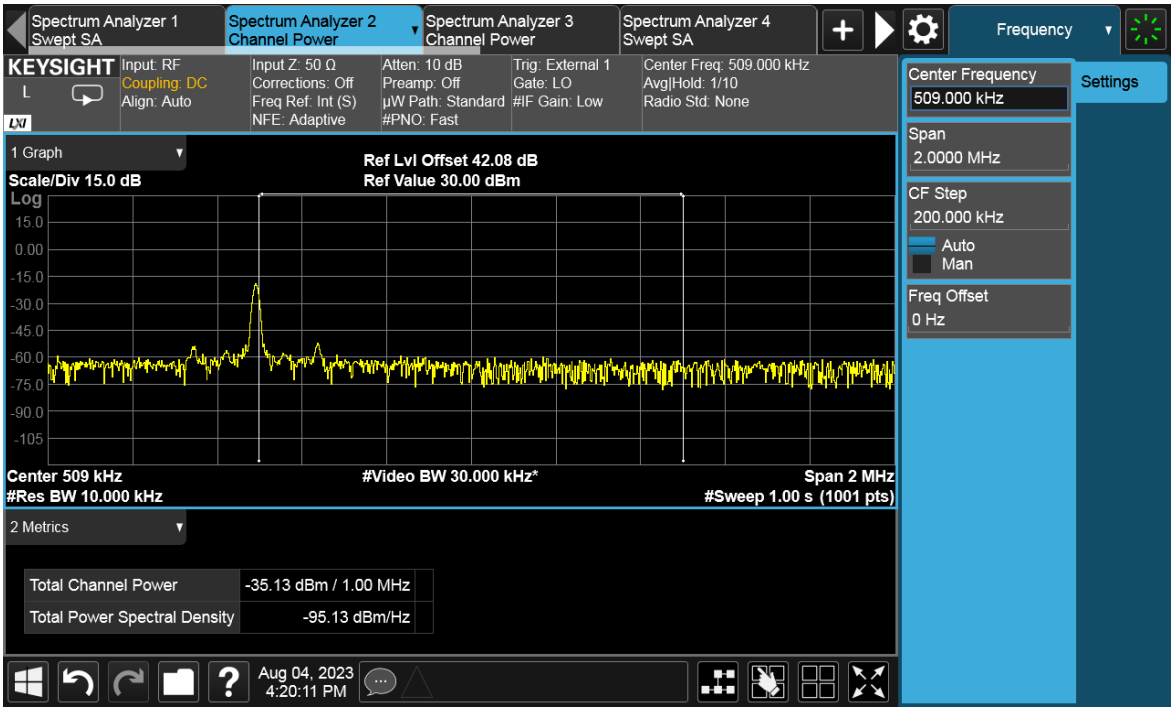

Spectrum Analyzer 4 Swept SA
Spectrum Analyzer 5 Swept SA
Spectrum Analyzer 6 Swept SA
Spectrum Analyze Channel Power
Marker
KEYSIGHT
Input: RF
Coupling: DC
Align: Auto
Input Z: 50 Ω
Corrections: Off
Freq Ref: Int (S)
NFE: Adaptive
#Atten: 10 dB
Preamp: Off
µW Path: Standard
PNO: Fast
Gate: LO
IF Gain: Low
Sig Track: Off
Avg Type: Power (RMS)
Trig: External 1
Select Marker
Marker 1
1 Spectrum
Ref Lvl Offset 26.60 dB
Ref Level 10.00 dBm
Mkr1 10.871 5 GHz
-58.19 dBm
Scale/Div 10 dB
Log
Marker Frequency
10.871500000 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
Start 4.000 GHz
#Res BW 1.0 MHz
#Video BW 3.0 MHz*
Stop 13.000 GHz
#Sweep ~18.0 s (18001 pts)
Aug 07, 2023
11:32:20 AM


Spectrum Analyzer 5 Swept SA
Spectrum Analyzer 6 Swept SA
Spectrum Analyzer 7 Channel Power
Spectrum Analyzer 8 Swept SA
Marker
KEYSIGHT
Input: RF
Coupling: DC
Align: Auto
Input Z: 50 Ω
Corrections: Off
Freq Ref: Int (S)
NFE: Adaptive
#Atten: 0 dB
Preamp: Off
µW Path: Standard
PNO: Fast
Gate: LO
IF Gain: High
Sig Track: Off
Avg Type: Power (RMS)
Trig: External 1
Select Marker
Marker 1
1 Spectrum
Ref Lvl Offset 55.30 dB
Ref Level 20.00 dBm
Mkr1 19.517 0 GHz
-43.02 dBm
Scale/Div 10 dB
Log
Marker Frequency
19.517000000 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
Start 13.000 GHz
#Res BW 1.0 MHz
#Video BW 3.0 MHz*
Stop 20.000 GHz
#Sweep ~14.0 s (14001 pts)
Aug 07, 2023
3:10:54 PM

TEST REPORT

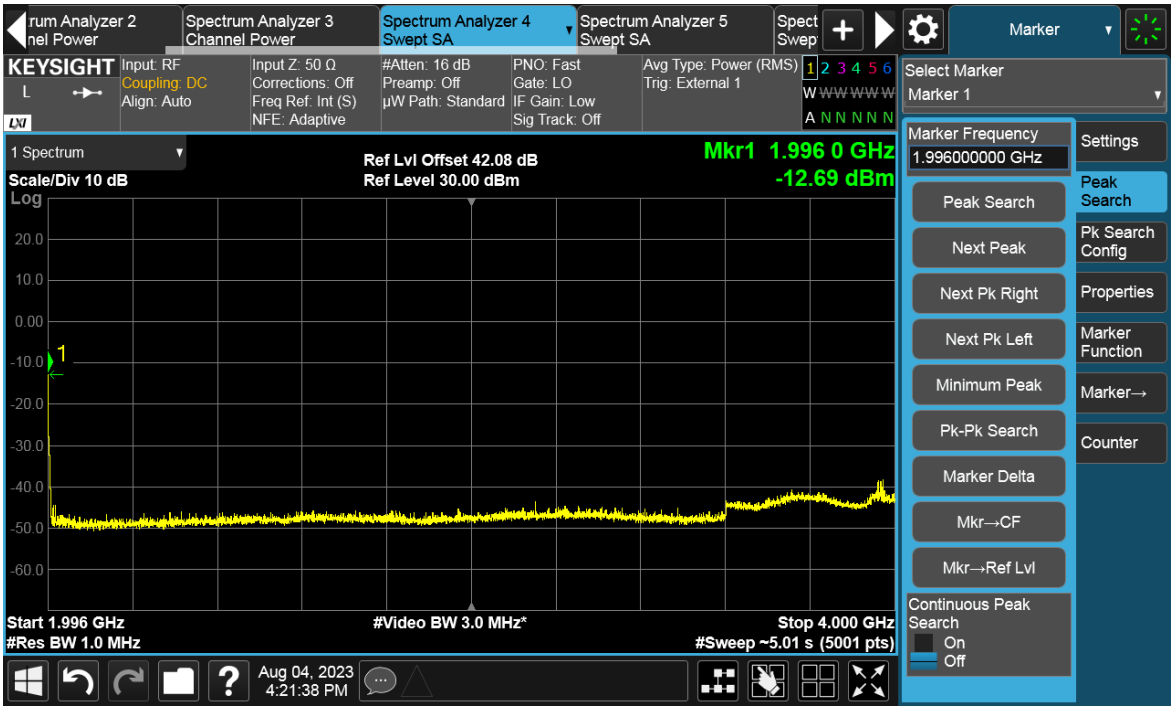
Channel Position T

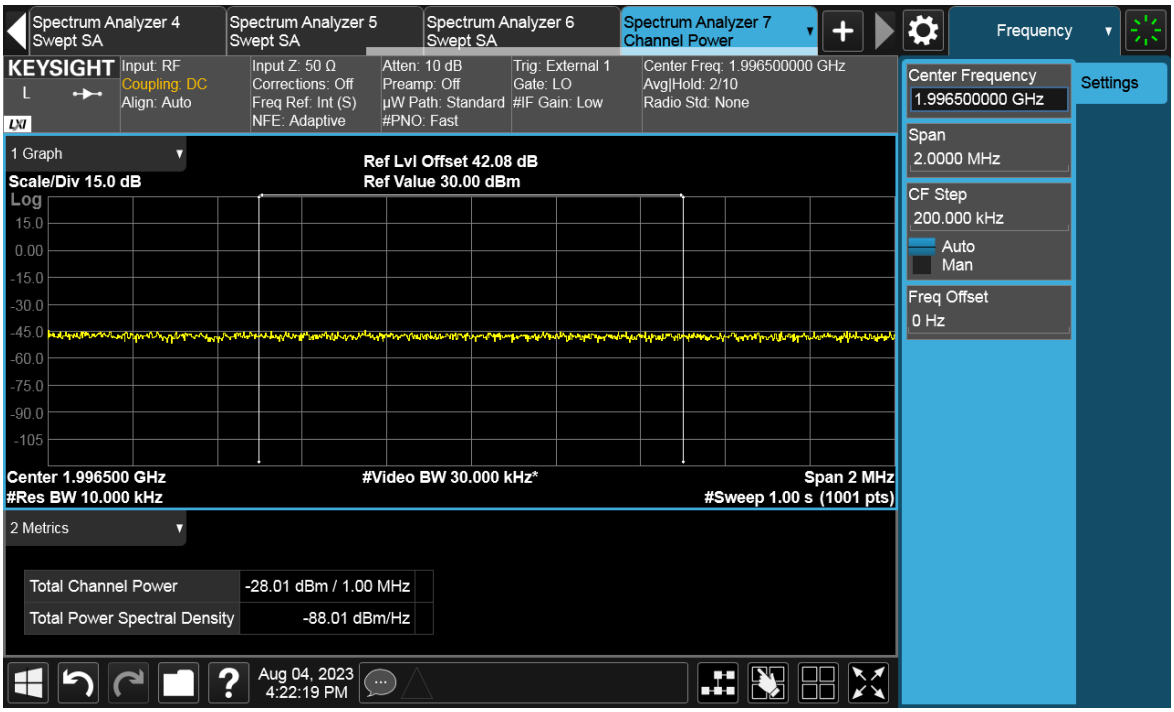




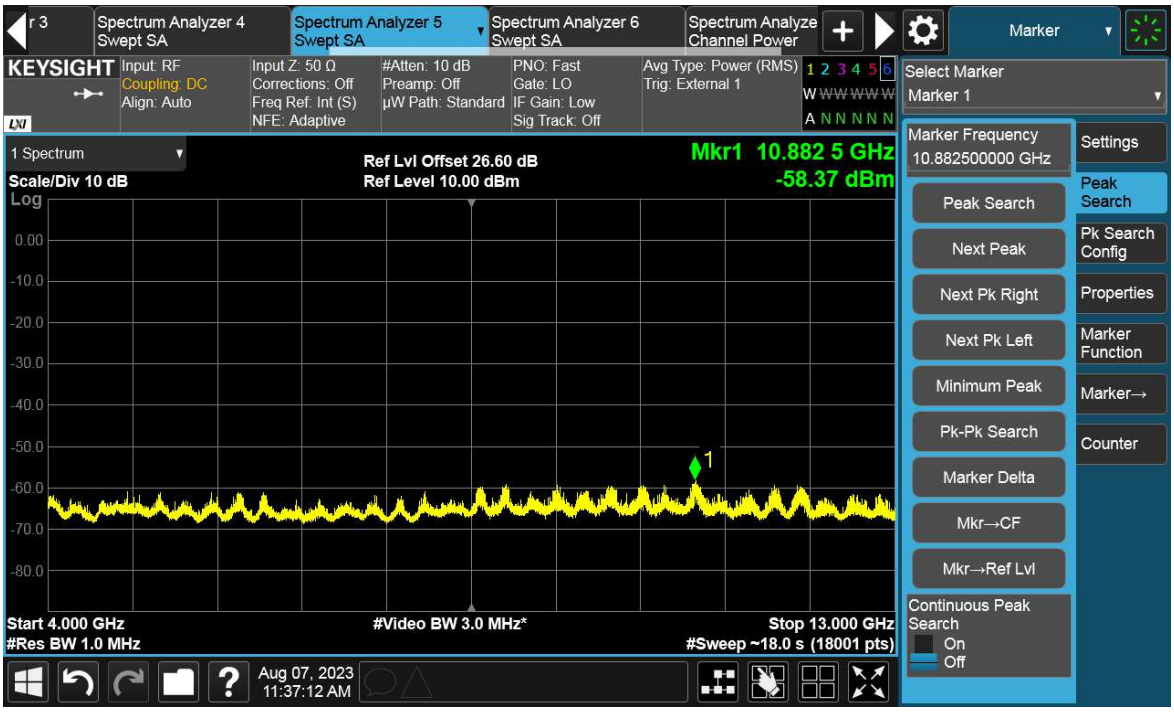
Total Quality. Assured.

TEST REPORT





TEST REPORT

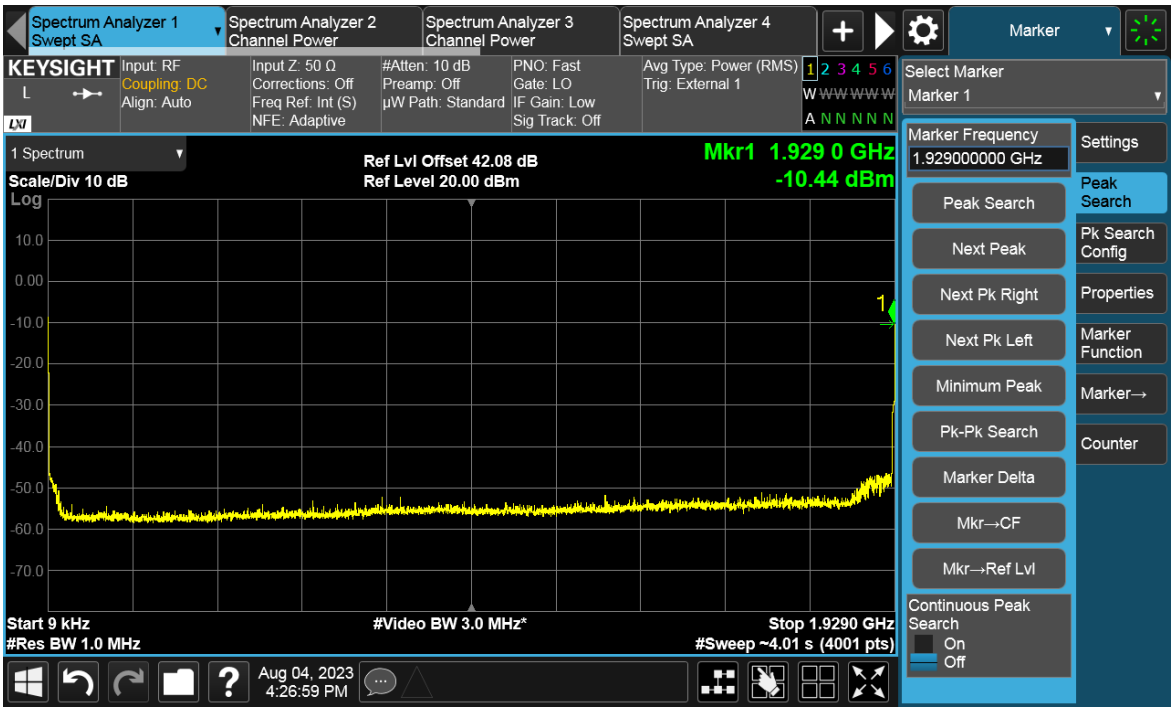

Spectrum Analyzer 4 Swept SA
Spectrum Analyzer 5 Swept SA
Spectrum Analyzer 6 Swept SA
Spectrum Analyze Channel Power
Marker
KEYSIGHT
Input: RF
Coupling: DC
Align: Auto
Input Z: 50 Ω
Corrections: Off
Freq Ref: Int (S)
NFE: Adaptive
#Atten: 10 dB
Preamp: Off
µW Path: Standard
PNO: Fast
Gate: LO
IF Gain: Low
Sig Track: Off
Avg Type: Power (RMS)
Trig: External 1
Select Marker
Marker 1
1 Spectrum
Ref Lvl Offset 26.60 dB
Ref Level 10.00 dBm
Mkr1 10.882 5 GHz
-58.37 dBm
Scale/Div 10 dB
Log
Marker Frequency
10.882500000 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
Start 4.000 GHz
#Res BW 1.0 MHz
#Video BW 3.0 MHz*
Stop 13.000 GHz
#Sweep ~18.0 s (18001 pts)
Aug 07, 2023
11:37:12 AM

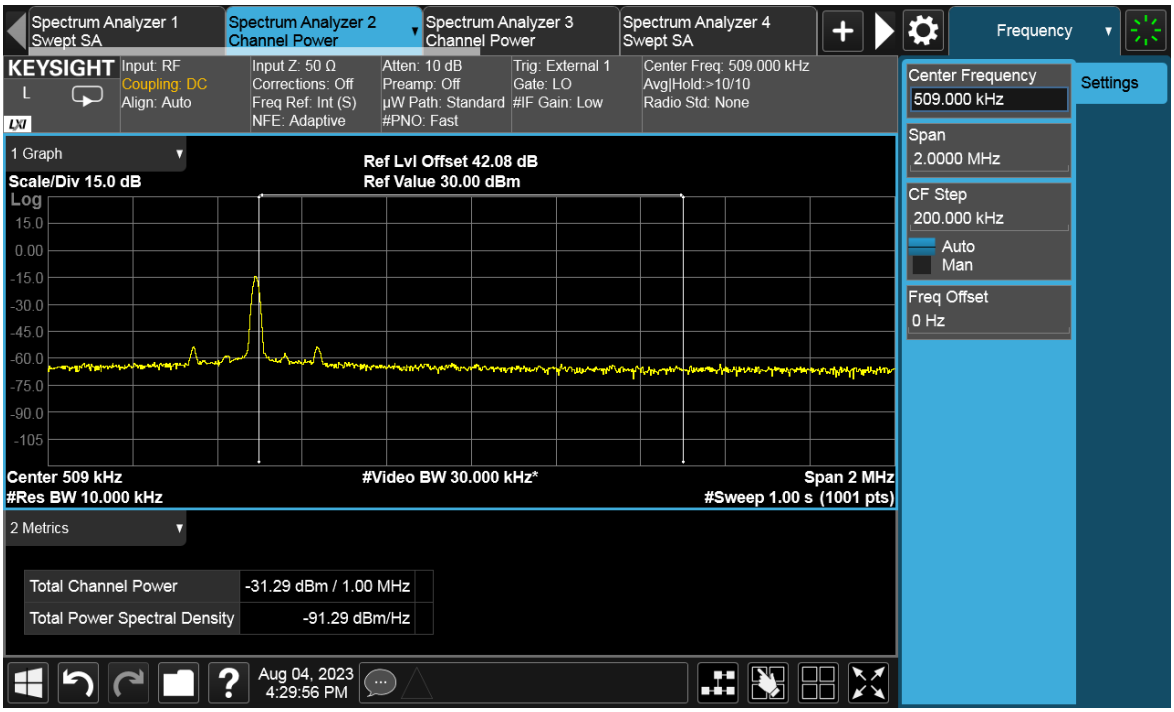

Spectrum Analyzer 5 Swept SA
Spectrum Analyzer 6 Swept SA
Spectrum Analyzer 7 Channel Power
Spectrum Analyzer 8 Swept SA
Marker
KEYSIGHT
Input: RF
Coupling: DC
Align: Auto
Input Z: 50 Ω
Corrections: Off
Freq Ref: Int (S)
NFE: Adaptive
#Atten: 0 dB
Preamp: Off
µW Path: Standard
PNO: Fast
Gate: LO
IF Gain: High
Sig Track: Off
Avg Type: Power (RMS)
Trig: External 1
Select Marker
Marker 1
1 Spectrum
Ref Lvl Offset 55.30 dB
Ref Level 20.00 dBm
Mkr1 19.512 0 GHz
-42.74 dBm
Scale/Div 10 dB
Log
Marker Frequency
19.512000000 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
Start 13.000 GHz
#Res BW 1.0 MHz
#Video BW 3.0 MHz*
Stop 20.000 GHz
#Sweep ~14.0 s (14001 pts)
Aug 07, 2023
3:15:31 PM

TEST REPORT

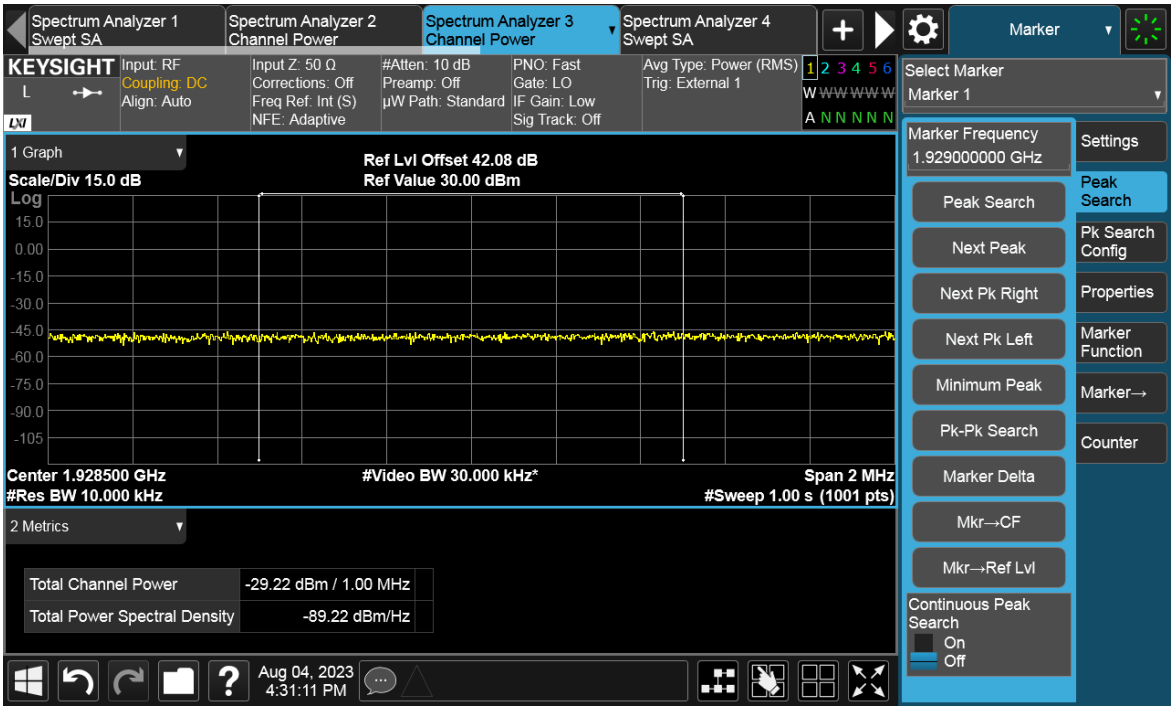
Antenna Port	Channel Position	Modulation	Carrier BW (MHz)	RBW (kHz)	Limit (dBm)
B	B	QPSK	40	1000	-19.02
B	T	QPSK	40	1000	-19.02

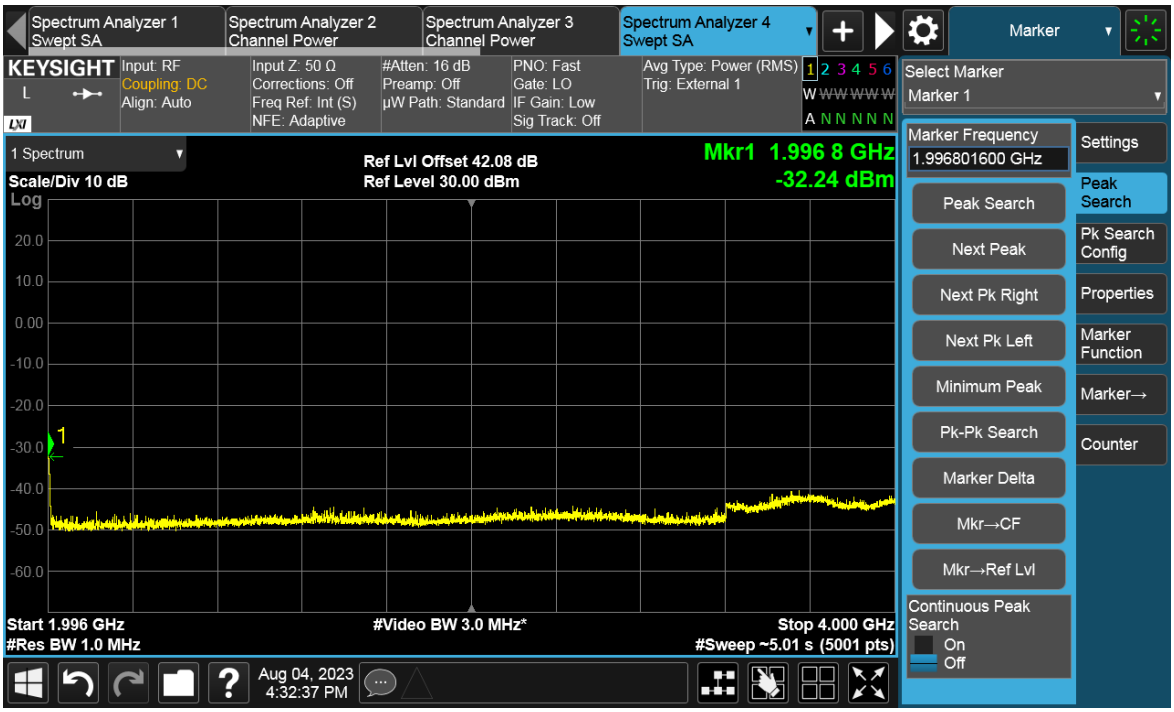
Channel Position B



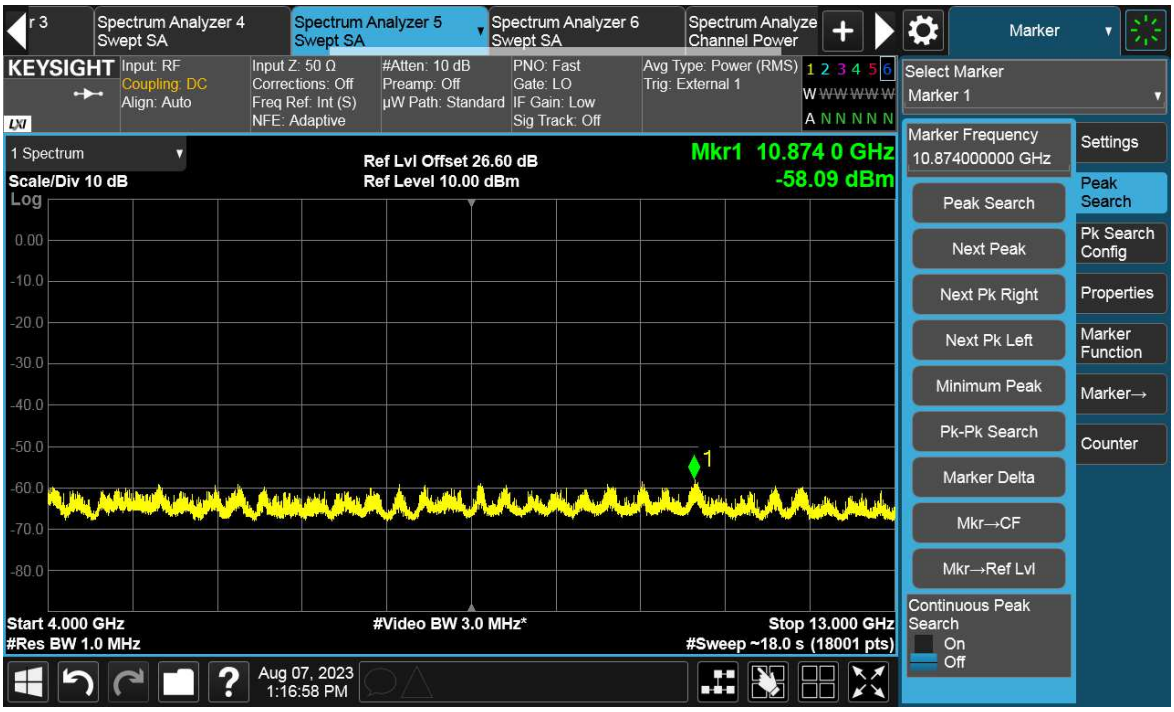


TEST REPORT


Spectrum Analyzer 1 Swept SA
Spectrum Analyzer 2 Channel Power
Spectrum Analyzer 3 Channel Power
Spectrum Analyzer 4 Swept SA
Marker
KEYSIGHT
Input: RF
Coupling: DC
Align: Auto
Input Z: 50 Ω
Corrections: Off
Freq Ref: Int (S)
NFE: Adaptive
#Atten: 10 dB
Preamp: Off
μW Path: Standard
PNO: Fast
Gate: LO
IF Gain: Low
Sig Track: Off
Avg Type: Power (RMS)
Trig: External 1
Select Marker
Marker 1
1 Graph
Ref Lvl Offset 42.08 dB
Scale/Div 15.0 dB
Ref Value 30.00 dBm
Log
15.0
0.00
-15.0
-30.0
-45.0
-60.0
-75.0
-90.0
-105
Center 1.928500 GHz
#Res BW 10.000 kHz
#Video BW 30.000 kHz*
Span 2 MHz
#Sweep 1.00 s (1001 pts)
2 Metrics
Total Channel Power
-29.22 dBm / 1.00 MHz
Total Power Spectral Density
-89.22 dBm/Hz
Marker Frequency
1.929000000 GHz
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Minimum Peak
Pk-Pk Search
Marker Delta
Mkr→CF
Mkr→Ref Lvl
Continuous Peak Search
On
Off
Settings
Peak Search
Pk Search Config
Properties
Marker Function
Marker→
Counter
Aug 04, 2023
4:31:11 PM


Spectrum Analyzer 1 Swept SA
Spectrum Analyzer 2 Channel Power
Spectrum Analyzer 3 Channel Power
Spectrum Analyzer 4 Swept SA
Marker
KEYSIGHT
Input: RF
Coupling: DC
Align: Auto
Input Z: 50 Ω
Corrections: Off
Freq Ref: Int (S)
NFE: Adaptive
#Atten: 16 dB
Preamp: Off
μW Path: Standard
PNO: Fast
Gate: LO
IF Gain: Low
Sig Track: Off
Avg Type: Power (RMS)
Trig: External 1
Select Marker
Marker 1
1 Spectrum
Ref Lvl Offset 42.08 dB
Ref Level 30.00 dBm
Mkr1 1.996 8 GHz
-32.24 dBm
Scale/Div 10 dB
Log
20.0
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
Start 1.996 GHz
#Res BW 1.0 MHz
#Video BW 3.0 MHz*
Stop 4.000 GHz
#Sweep ~5.01 s (5001 pts)
Marker Frequency
1.996801600 GHz
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Minimum Peak
Pk-Pk Search
Marker Delta
Mkr→CF
Mkr→Ref Lvl
Continuous Peak Search
On
Off
Settings
Peak Search
Pk Search Config
Properties
Marker Function
Marker→
Counter
Aug 04, 2023
4:32:37 PM

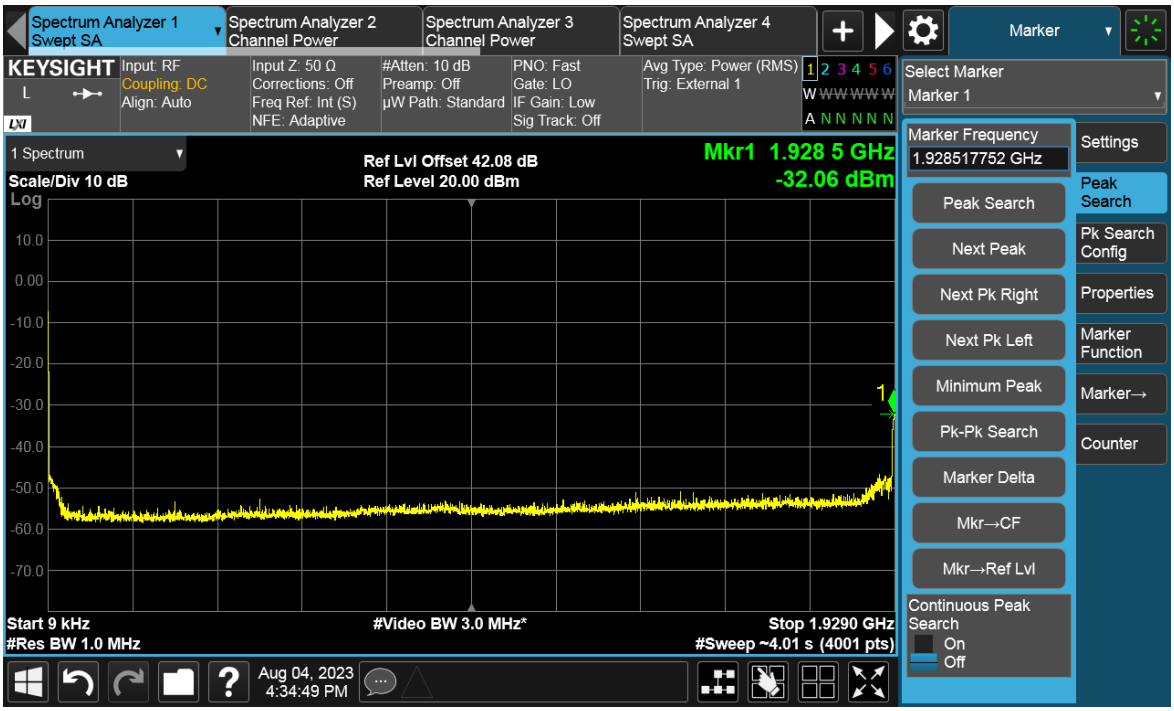
TEST REPORT

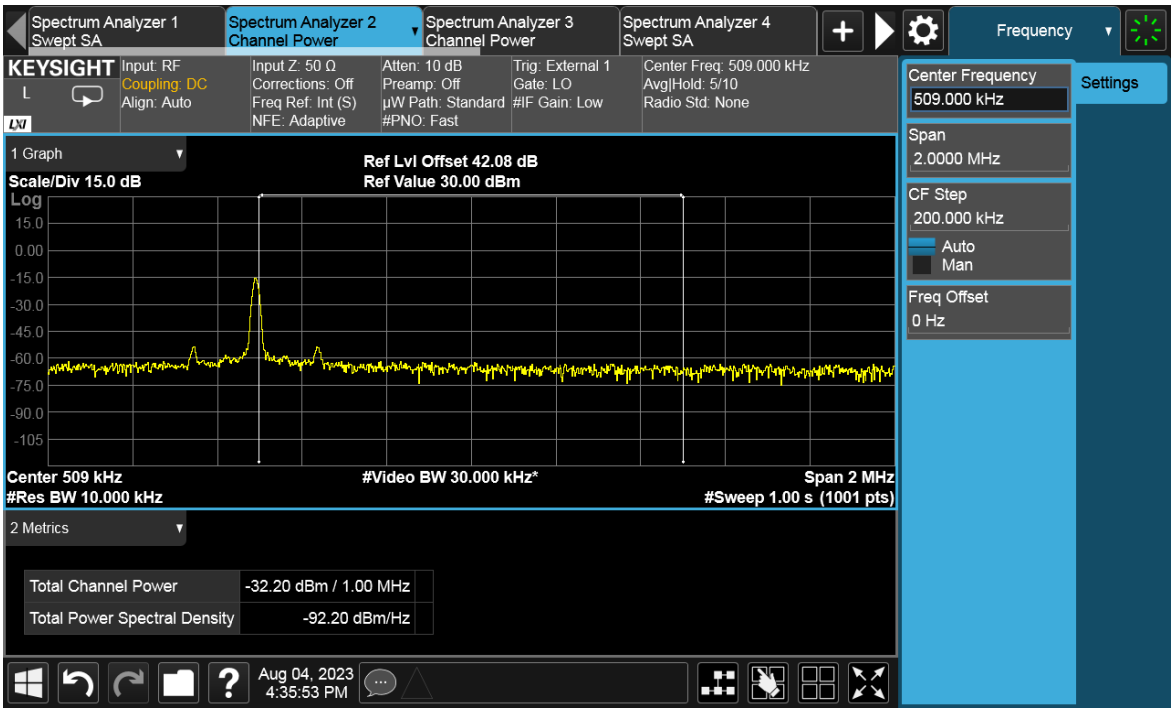

Spectrum Analyzer 4
Swept SA
Spectrum Analyzer 5
Swept SA
Spectrum Analyzer 6
Swept SA
Spectrum Analyze
Channel Power
Marker
KEYSIGHT
Input: RF
Coupling: DC
Align: Auto
Input Z: 50 Ω
Corrections: Off
Freq Ref: Int (S)
NFE: Adaptive
#Atten: 10 dB
Preamp: Off
µW Path: Standard
PNO: Fast
Gate: LO
IF Gain: Low
Sig Track: Off
Avg Type: Power (RMS)
Trig: External 1
Select Marker
Marker 1
1 Spectrum
Ref Lvl Offset 26.60 dB
Ref Level 10.00 dBm
Mkr1 10.874 0 GHz
-58.09 dBm
Scale/Div 10 dB
Log
Marker Frequency
10.874000000 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
Start 4.000 GHz
#Res BW 1.0 MHz
#Video BW 3.0 MHz*
Stop 13.000 GHz
#Sweep ~18.0 s (18001 pts)
Aug 07, 2023
1:16:58 PM


Spectrum Analyzer 5
Swept SA
Spectrum Analyzer 6
Swept SA
Spectrum Analyzer 7
Channel Power
Spectrum Analyzer 8
Swept SA
Marker
KEYSIGHT
Input: RF
Coupling: DC
Align: Auto
Input Z: 50 Ω
Corrections: Off
Freq Ref: Int (S)
NFE: Adaptive
#Atten: 0 dB
Preamp: Off
µW Path: Standard
PNO: Fast
Gate: LO
IF Gain: High
Sig Track: Off
Avg Type: Power (RMS)
Trig: External 1
Select Marker
Marker 1
1 Spectrum
Ref Lvl Offset 55.30 dB
Ref Level 20.00 dBm
Mkr1 19.524 5 GHz
-42.46 dBm
Scale/Div 10 dB
Log
Marker Frequency
19.524500000 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
Start 13.000 GHz
#Res BW 1.0 MHz
#Video BW 3.0 MHz*
Stop 20.000 GHz
#Sweep ~14.0 s (14001 pts)
Aug 07, 2023
3:20:30 PM

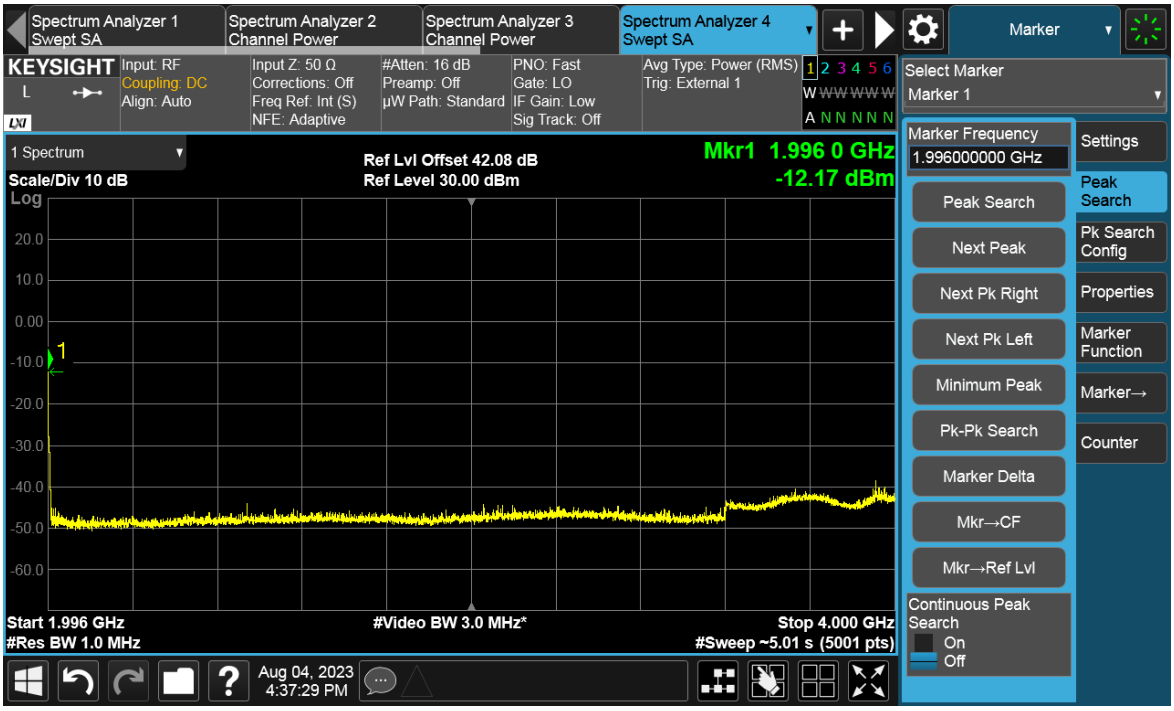
TEST REPORT

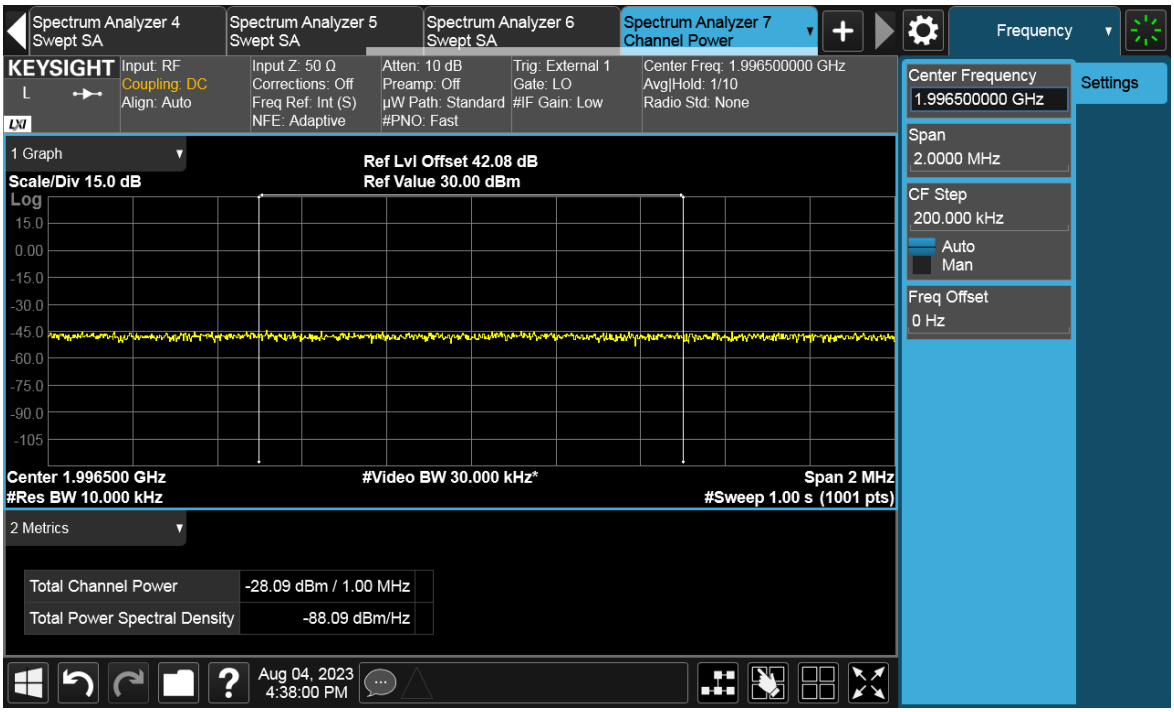
Channel Position T





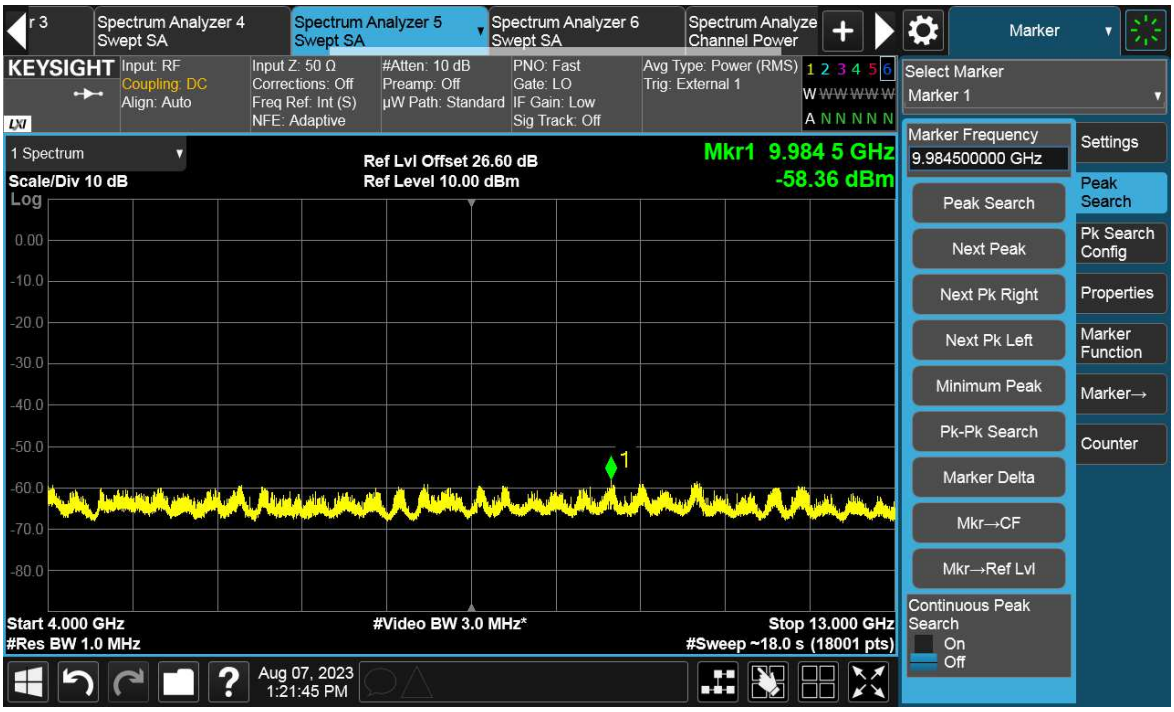
TEST REPORT


Spectrum Analyzer 1 Swept SA
Spectrum Analyzer 2 Channel Power
Spectrum Analyzer 3 Channel Power
Spectrum Analyzer 4 Swept SA
Marker
KEYSIGHT
Input: RF
Coupling: DC
Align: Auto
Input Z: 50 Ω
Corrections: Off
Freq Ref: Int (S)
NFE: Adaptive
#Atten: 16 dB
Preamp: Off
µW Path: Standard
PNO: Fast
Gate: LO
IF Gain: Low
Sig Track: Off
Avg Type: Power (RMS)
Trig: External 1
Select Marker
Marker 1
1 Spectrum
Ref Lvl Offset 42.08 dB
Ref Level 30.00 dBm
Mkr1 1.996 0 GHz
-12.17 dBm
Scale/Div 10 dB
Log
Start 1.996 GHz
#Res BW 1.0 MHz
#Video BW 3.0 MHz*
Stop 4.000 GHz
#Sweep ~5.01 s (5001 pts)
Marker Frequency
1.996000000 GHz
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Minimum Peak
Pk-Pk Search
Marker Delta
Mkr→CF
Mkr→Ref Lvl
Continuous Peak Search
On
Off
Settings
Peak Search
Pk Search Config
Properties
Marker Function
Marker→
Counter
Aug 04, 2023
4:37:29 PM


Spectrum Analyzer 4 Swept SA
Spectrum Analyzer 5 Swept SA
Spectrum Analyzer 6 Swept SA
Spectrum Analyzer 7 Channel Power
Frequency
KEYSIGHT
Input: RF
Coupling: DC
Align: Auto
Input Z: 50 Ω
Corrections: Off
Freq Ref: Int (S)
NFE: Adaptive
Atten: 10 dB
Preamp: Off
µW Path: Standard
#PNO: Fast
Trig: External 1
Gate: LO
#IF Gain: Low
Center Freq: 1.996500000 GHz
Avg|Hold: 1/10
Radio Std: None
1 Graph
Ref Lvl Offset 42.08 dB
Ref Value 30.00 dBm
Scale/Div 15.0 dB
Log
Center 1.996500 GHz
#Res BW 10.000 kHz
#Video BW 30.000 kHz*
Span 2 MHz
#Sweep 1.00 s (1001 pts)
2 Metrics
Total Channel Power
-28.09 dBm / 1.00 MHz
Total Power Spectral Density
-88.09 dBm/Hz
Center Frequency
1.996500000 GHz
Span
2.0000 MHz
CF Step
200.000 kHz
Auto
Man
Freq Offset
0 Hz
Settings
Aug 04, 2023
4:38:00 PM

Total Quality. Assured.

TEST REPORT

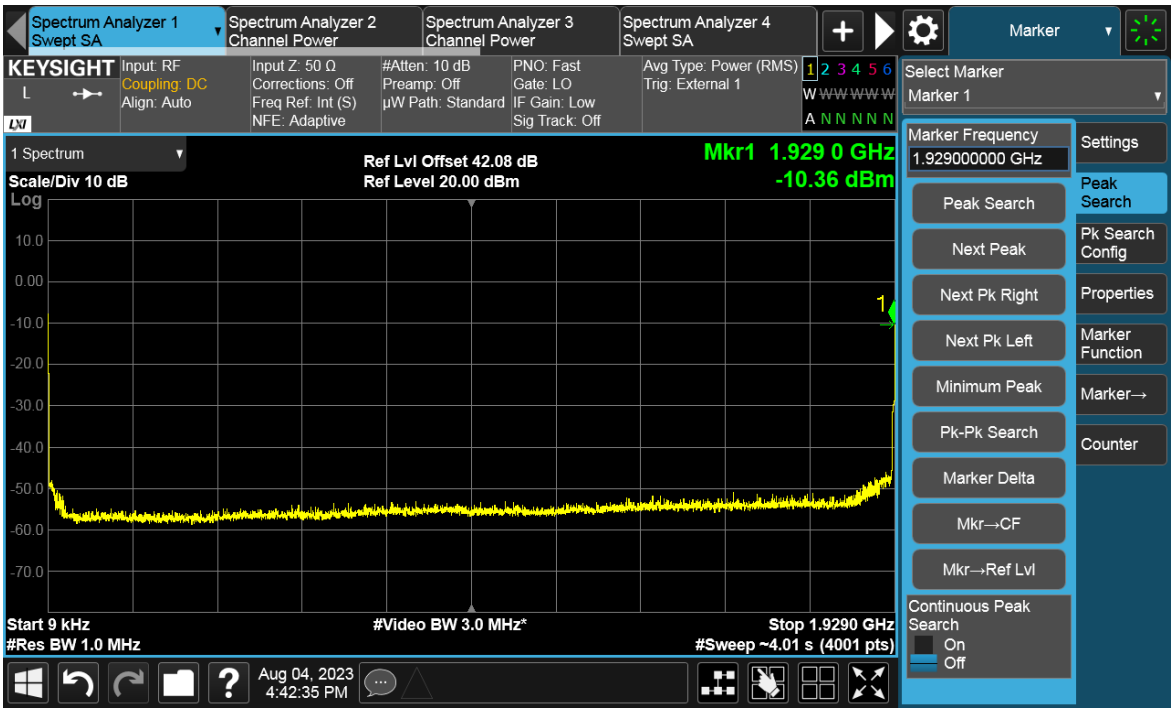


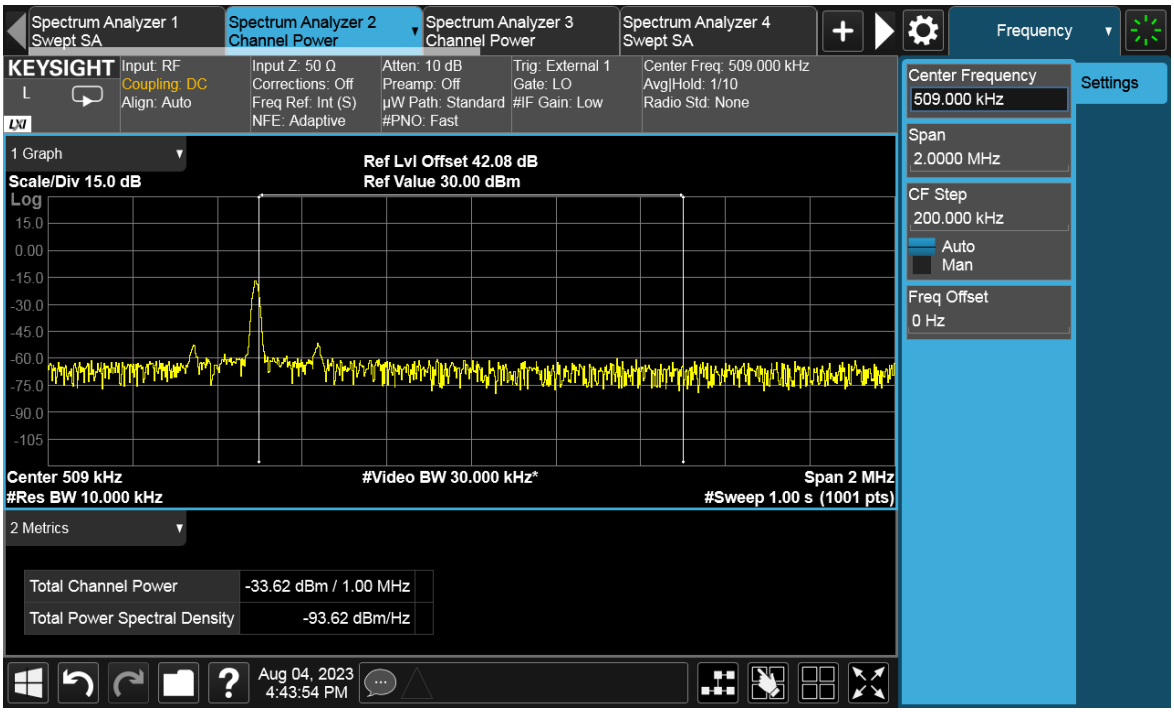
TEST REPORT

NR-2C

Antenna Port	Channel Position	Modulation	Carrier BW (MHz)	RBW (kHz)	Limit (dBm)
M	B	QPSK	25	1000	-19.02

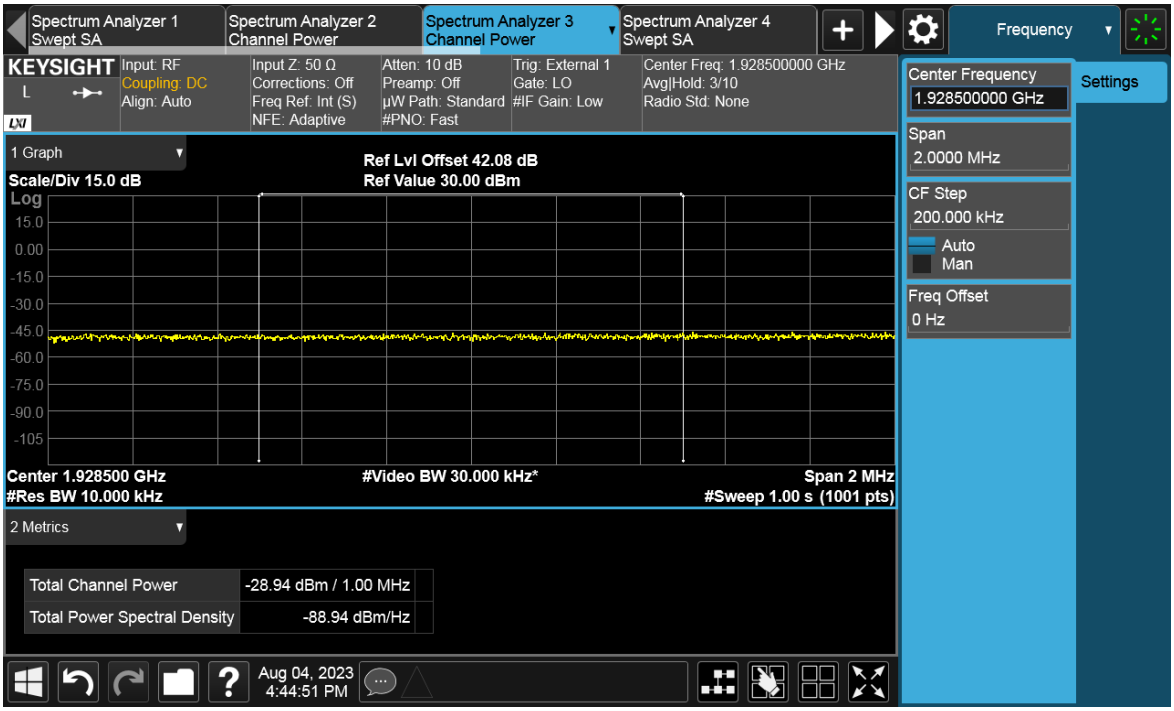
Channel Position M

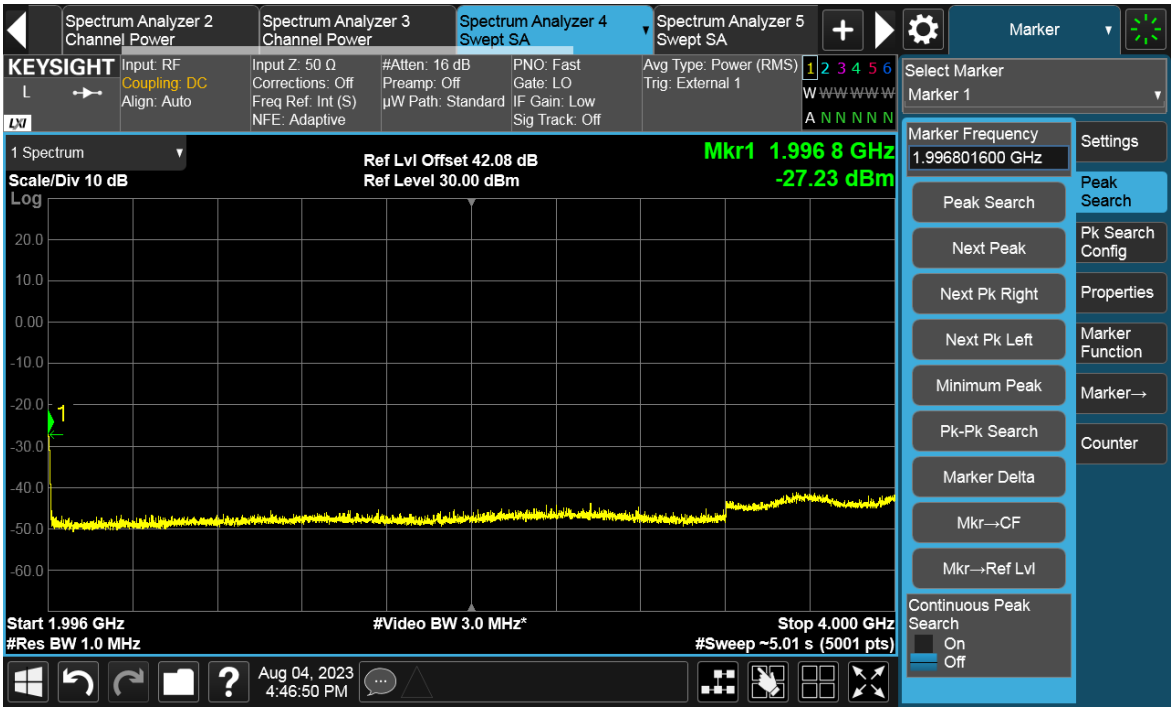




Total Quality. Assured.

TEST REPORT





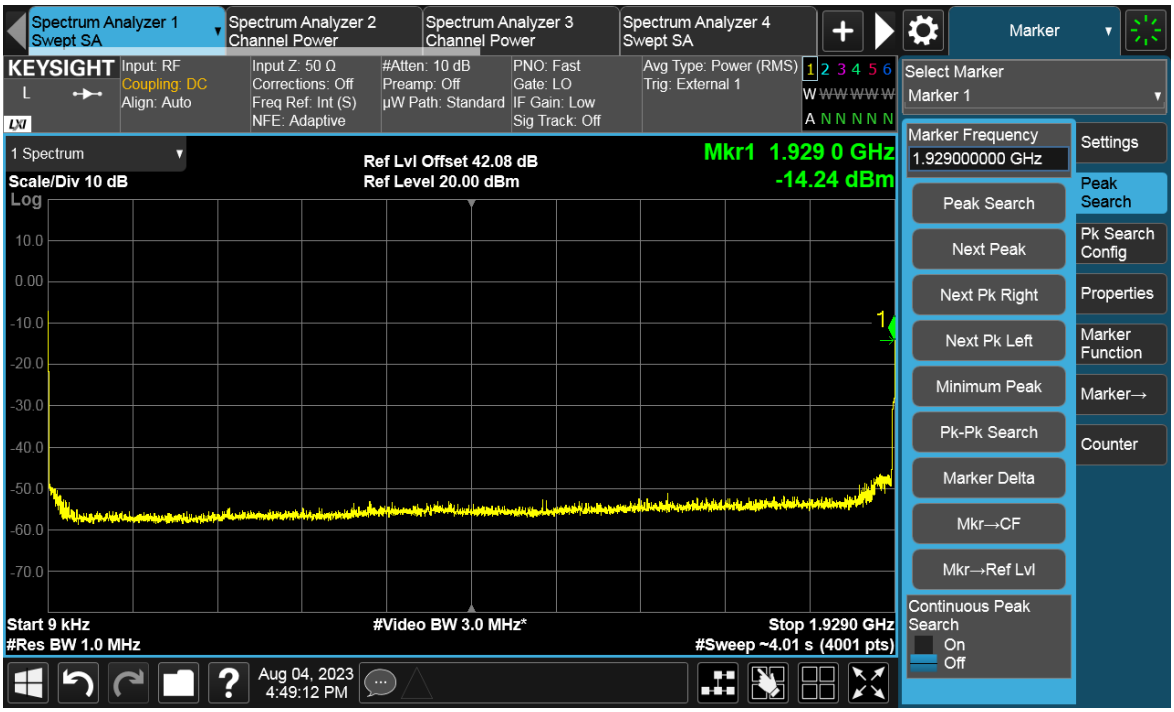
Total Quality. Assured.

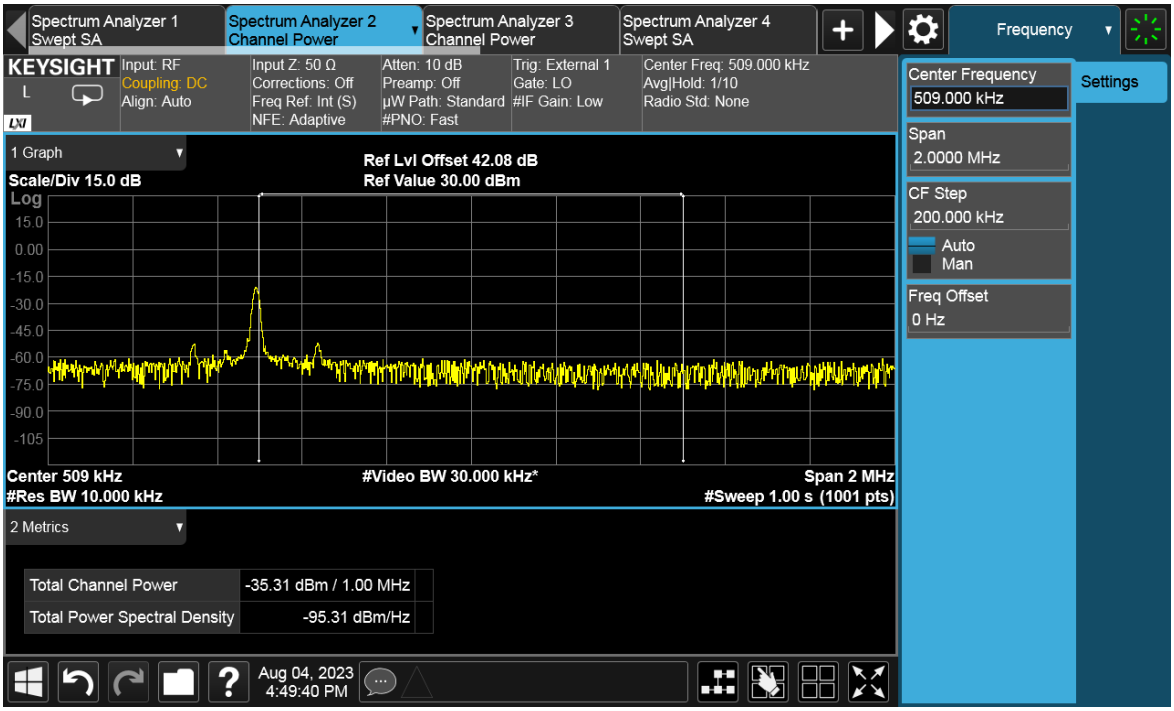
TEST REPORT

TEST REPORT

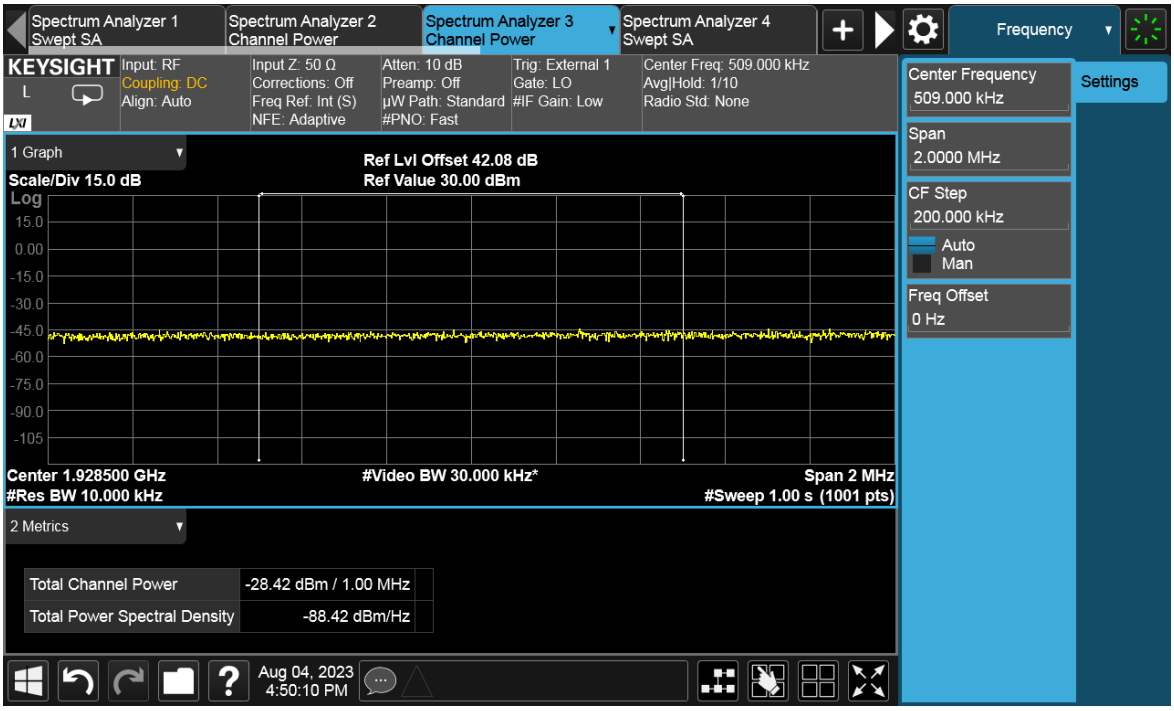
Antenna Port	Channel Position	Modulation	Carrier BW (MHz)	RBW (kHz)	Limit (dBm)
M	B	QPSK	30	1000	-19.02

Channel Position M



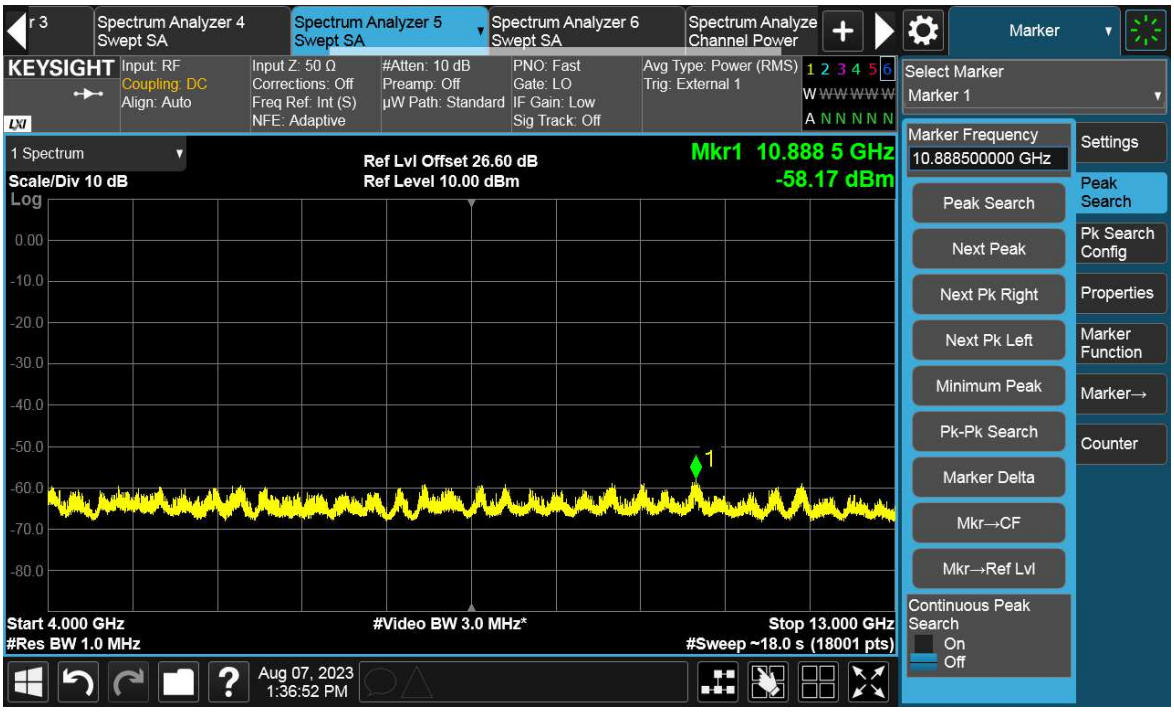


TEST REPORT


Spectrum Analyzer 1 Swept SA
Spectrum Analyzer 2 Channel Power
Spectrum Analyzer 3 Channel Power
Spectrum Analyzer 4 Swept SA
Frequency
KEYSIGHT
Input: RF
Coupling: DC
Align: Auto
Input Z: 50 Ω
Corrections: Off
Freq Ref: Int (S)
NFE: Adaptive
Atten: 10 dB
Preamp: Off
µW Path: Standard
#PNO: Fast
Trig: External 1
Gate: LO
#IF Gain: Low
Center Freq: 509.000 kHz
Avg|Hold: 1/10
Radio Std: None
1 Graph
Ref Lvl Offset 42.08 dB
Ref Value 30.00 dBm
Scale/Div 15.0 dB
Log
15.0
0.00
-15.0
-30.0
-45.0
-60.0
-75.0
-90.0
-105
Center 1.928500 GHz
#Res BW 10.000 kHz
#Video BW 30.000 kHz*
Span 2 MHz
#Sweep 1.00 s (1001 pts)
2 Metrics
Total Channel Power
-28.42 dBm / 1.00 MHz
Total Power Spectral Density
-88.42 dBm/Hz
Aug 04, 2023
4:50:10 PM
Center Frequency
509.000 kHz
Settings
Span
2.0000 MHz
CF Step
200.000 kHz
Auto
Man
Freq Offset
0 Hz


Spectrum Analyzer 2 Channel Power
Spectrum Analyzer 3 Channel Power
Spectrum Analyzer 4 Swept SA
Spectrum Analyzer 5 Swept SA
Marker
KEYSIGHT
Input: RF
Coupling: DC
Align: Auto
Input Z: 50 Ω
Corrections: Off
Freq Ref: Int (S)
NFE: Adaptive
#Atten: 16 dB
Preamp: Off
µW Path: Standard
PNO: Fast
Gate: LO
IF Gain: Low
Sig Track: Off
Avg Type: Power (RMS)
Trig: External 1
1 Spectrum
Ref Lvl Offset 42.08 dB
Ref Level 30.00 dBm
Mkr1 1.996 4 GHz
-26.40 dBm
Scale/Div 10 dB
Log
20.0
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
Start 1.996 GHz
#Res BW 1.0 MHz
#Video BW 3.0 MHz*
Stop 4.000 GHz
#Sweep ~5.01 s (5001 pts)
Aug 04, 2023
4:51:11 PM
Select Marker
Marker 1
Marker Frequency
1.996400800 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

TEST REPORT


Spectrum Analyzer 4
Swept SA
Spectrum Analyzer 5
Swept SA
Spectrum Analyzer 6
Swept SA
Spectrum Analyze
Channel Power
Marker
KEYSIGHT
Input: RF
Coupling: DC
Align: Auto
Input Z: 50 Ω
Corrections: Off
Freq Ref: Int (S)
NFE: Adaptive
#Atten: 10 dB
Preamp: Off
µW Path: Standard
PNO: Fast
Gate: LO
IF Gain: Low
Sig Track: Off
Avg Type: Power (RMS)
Trig: External 1
Select Marker
Marker 1
1 Spectrum
Ref Lvl Offset 26.60 dB
Ref Level 10.00 dBm
Mkr1 10.888 5 GHz
-58.17 dBm
Scale/Div 10 dB
Log
Marker Frequency
10.888500000 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
Start 4.000 GHz
#Res BW 1.0 MHz
#Video BW 3.0 MHz*
Stop 13.000 GHz
#Sweep ~18.0 s (18001 pts)
Aug 07, 2023
1:36:52 PM


Spectrum Analyzer 5
Swept SA
Spectrum Analyzer 6
Swept SA
Spectrum Analyzer 7
Channel Power
Spectrum Analyzer 8
Swept SA
Marker
KEYSIGHT
Input: RF
Coupling: DC
Align: Auto
Input Z: 50 Ω
Corrections: Off
Freq Ref: Int (S)
NFE: Adaptive
#Atten: 0 dB
Preamp: Off
µW Path: Standard
PNO: Fast
Gate: LO
IF Gain: High
Sig Track: Off
Avg Type: Power (RMS)
Trig: External 1
Select Marker
Marker 1
1 Spectrum
Ref Lvl Offset 55.30 dB
Ref Level 20.00 dBm
Mkr1 19.525 5 GHz
-42.67 dBm
Scale/Div 10 dB
Log
Marker Frequency
19.525500000 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
Start 13.000 GHz
#Res BW 1.0 MHz
#Video BW 3.0 MHz*
Stop 20.000 GHz
#Sweep ~14.0 s (14001 pts)
Aug 07, 2023
3:36:29 PM

7 Frequency Stability

Test result: **Tested**

7.1 Limit

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

7.2 Measurement Procedure

Temperature Variation
The EUT was tested over the temperature range -30°C to +50°C in 10°C steps with 120 VAC Power Supply. At each temperature step, the Base Station was configured to transmit at maximum power on the middle channel of the operating band.

Voltage Variation
The EUT was tested at the supplied voltages varied from 85 to 115 percent of the nominal values of 120 VAC. At +20°C, the Base Station was configured to transmit at maximum power on the middle channel of the frequency block.

7.3 Measurement result

Frequency Error – Temperature Variation

NR-1C, Channel Bandwidth: 40MHz

Antenna Port	Modulation	Temperature (°C)	Frequency Stability (Hz)		
			Channel Position B	Channel Position M	Channel Position T
B	QPSK	-30	-3.32	-3.68	-3.85
		-20	-3.75	-3.67	-3.85
		-10	-3.95	-3.30	3.22
		0	-3.60	-3.41	-3.33
		10	3.47	-3.31	-3.32
		20	-3.34	-3.38	-3.68
		30	-4.20	-3.55	-3.61
		40	-3.62	-3.38	-3.86
		50	-3.40	-3.23	-3.52

Frequency Error – Voltage Variation

NR-1C, Channel Bandwidth: 40MHz

Antenna Port	Modulation	Temperature (°C)	Supply Voltage (V)	Frequency Stability (Hz)		
				Channel Position B	Channel Position M	Channel Position T
B	QPSK	20	102	-3.50	-3.55	-3.67
			120	-3.60	-3.41	-3.33
			138	-3.31	-3.80	-3.61

********** END **********