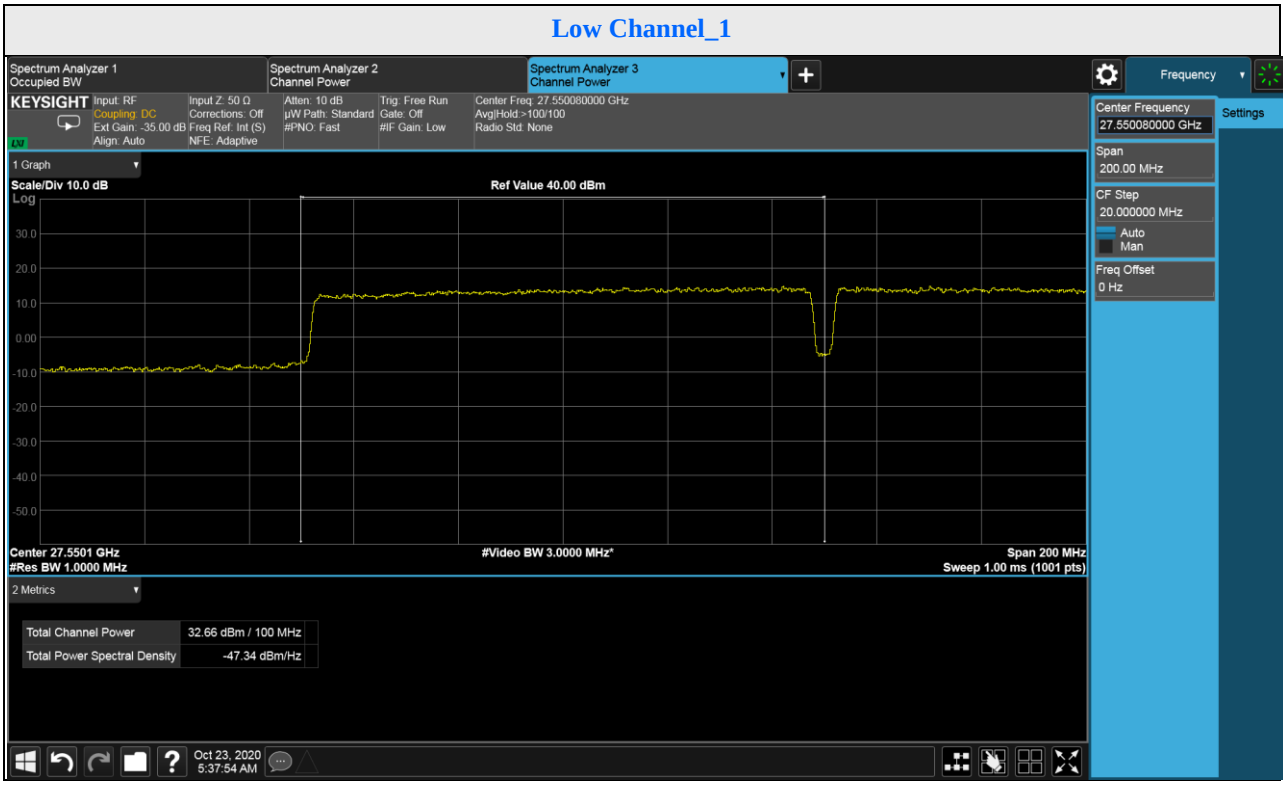
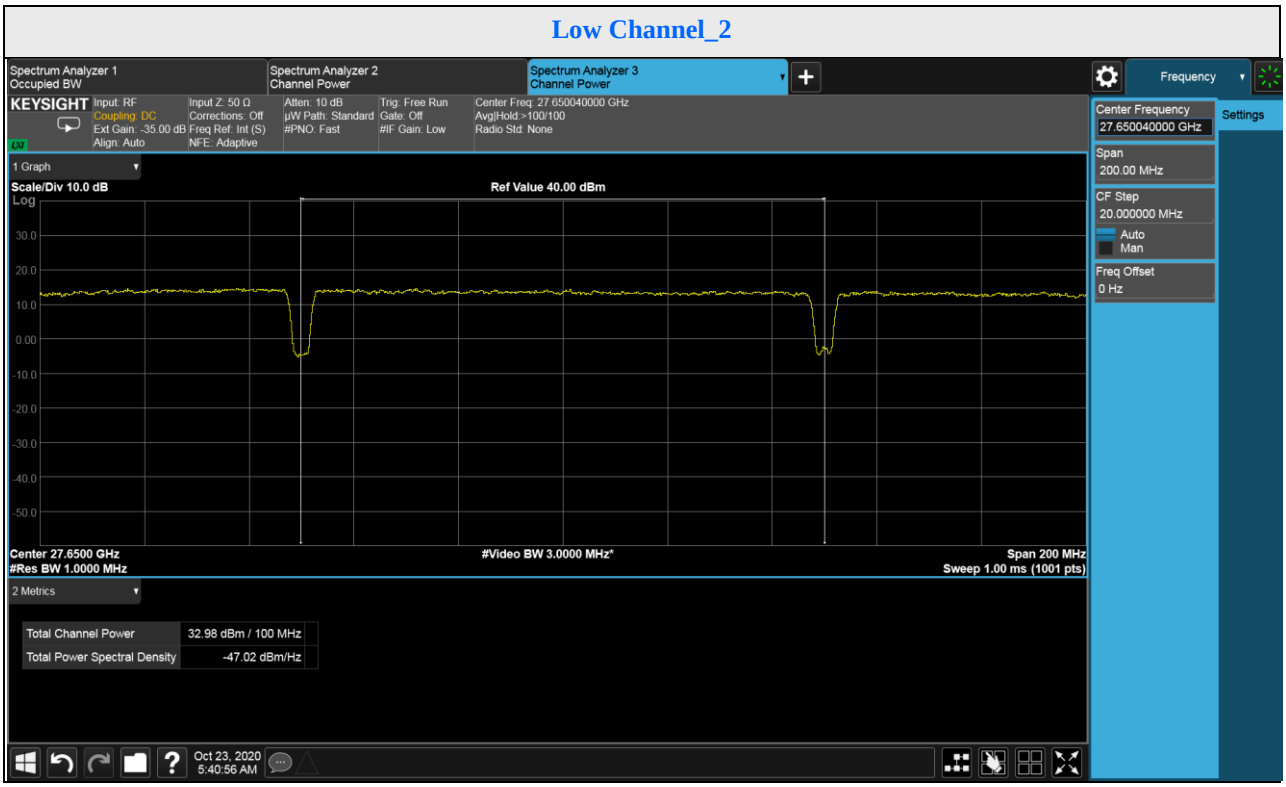
QPSK-4CC(Worse case plots)

Beam ID: 139

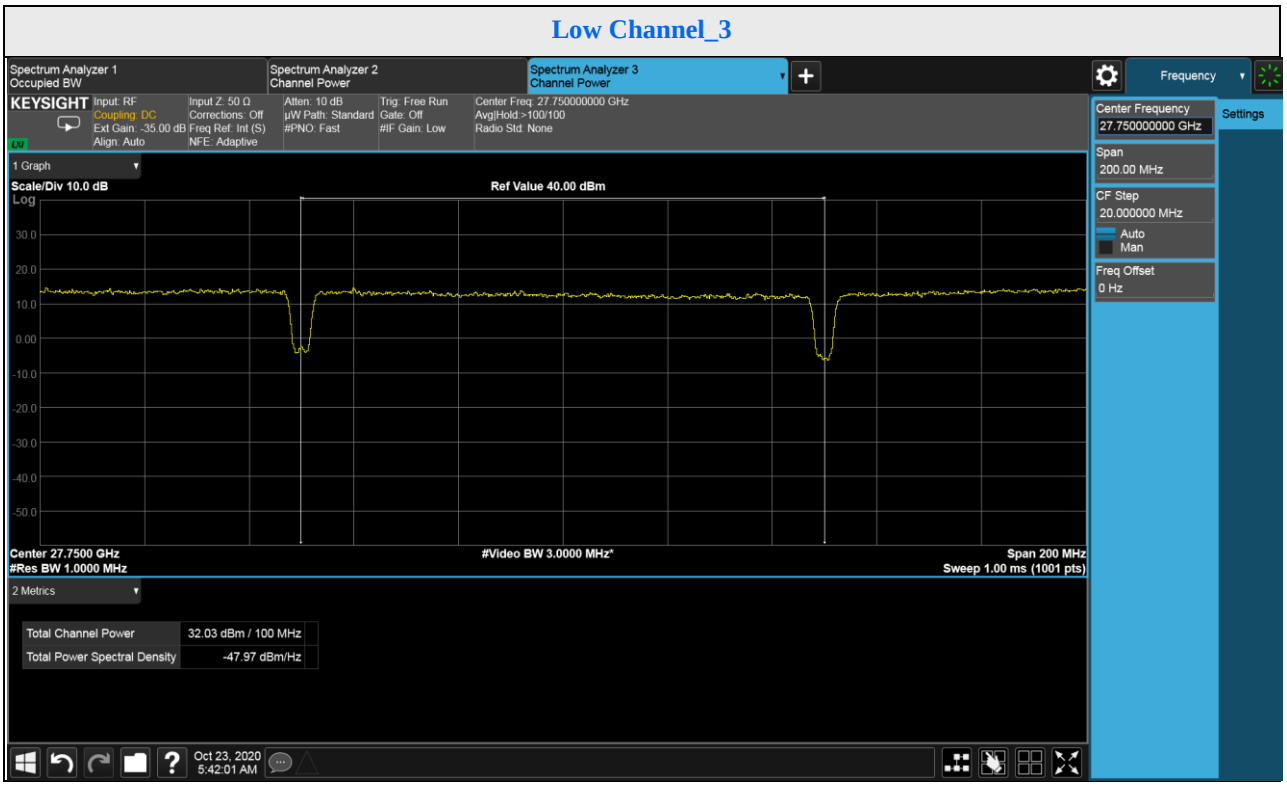
Low Channel_1



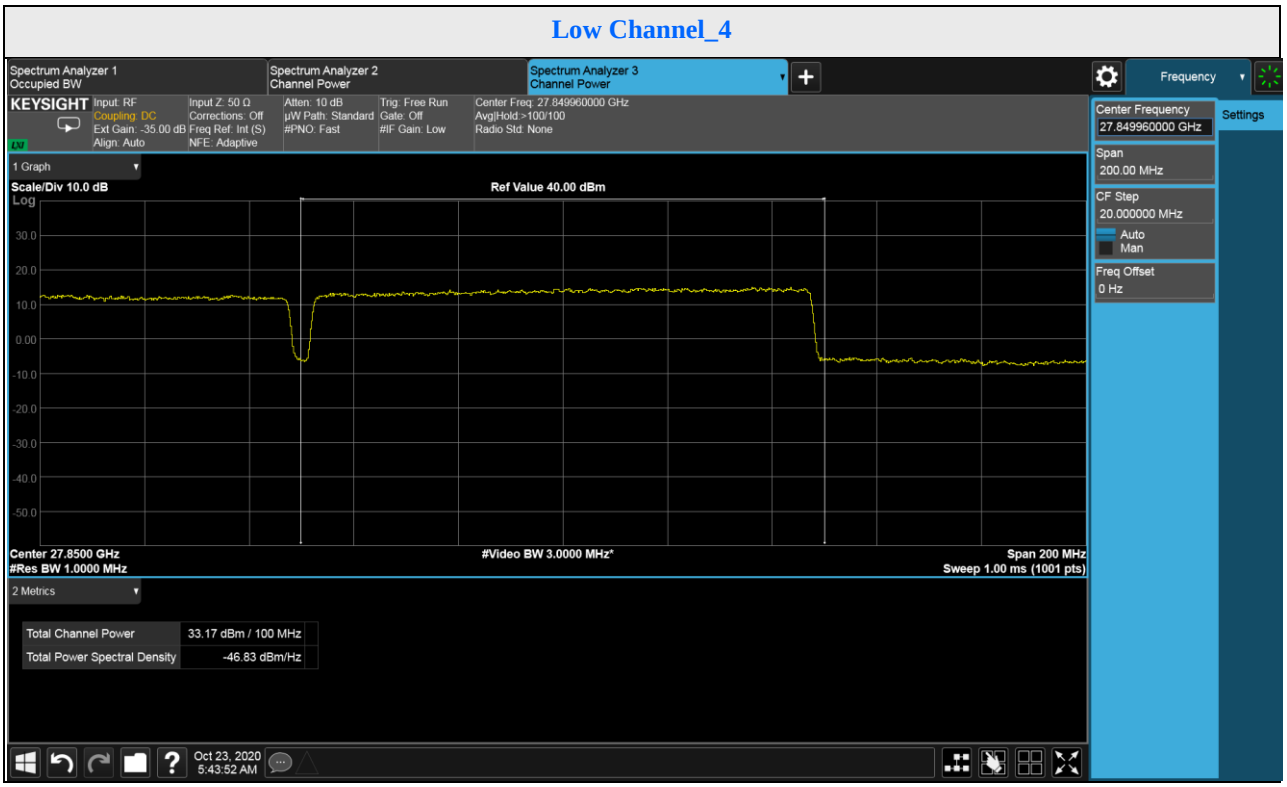
Low Channel_2



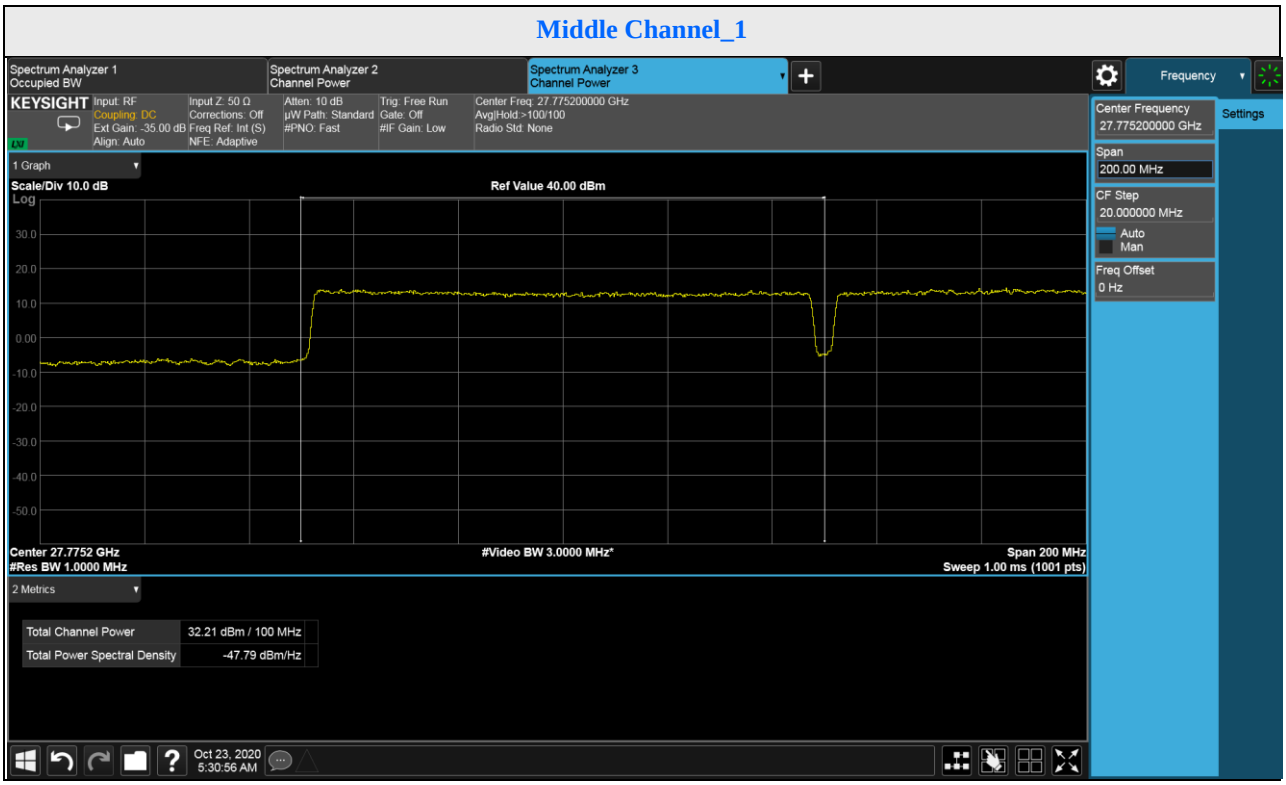
Low Channel_3



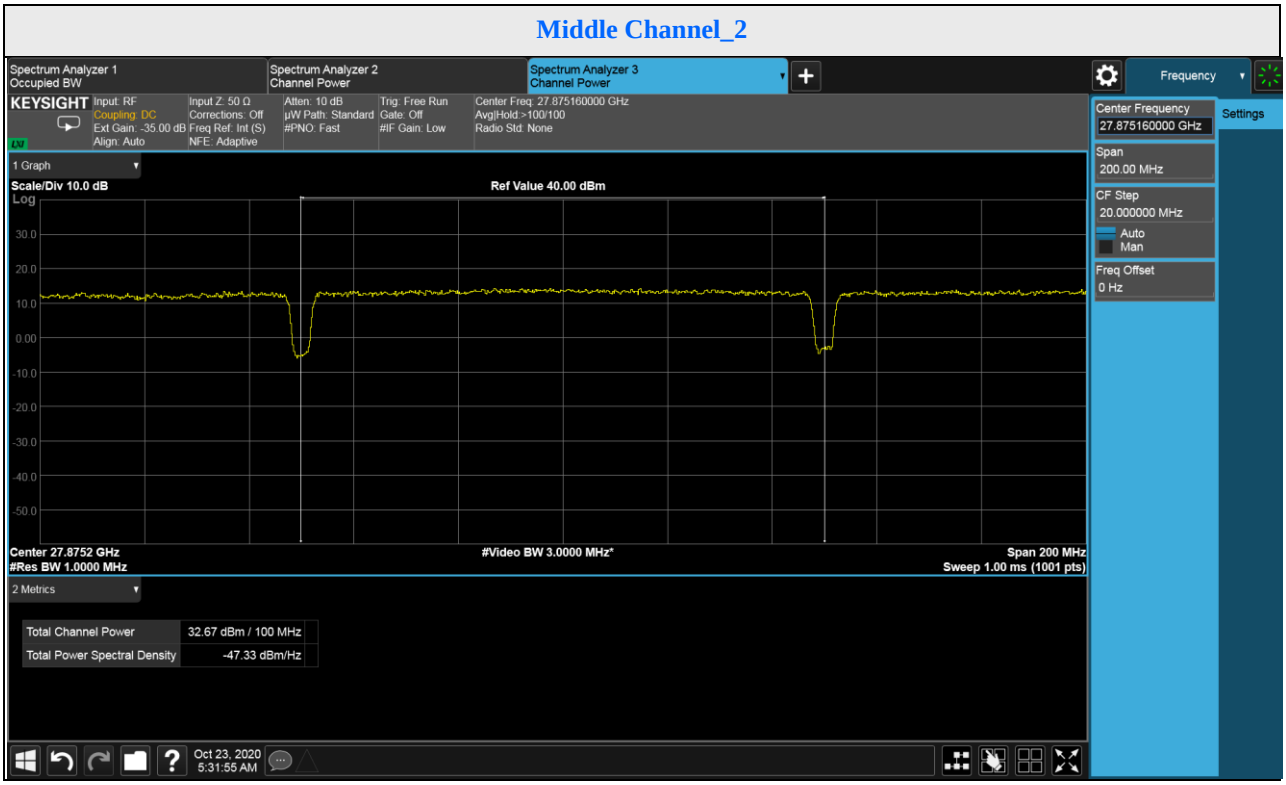
Low Channel_4



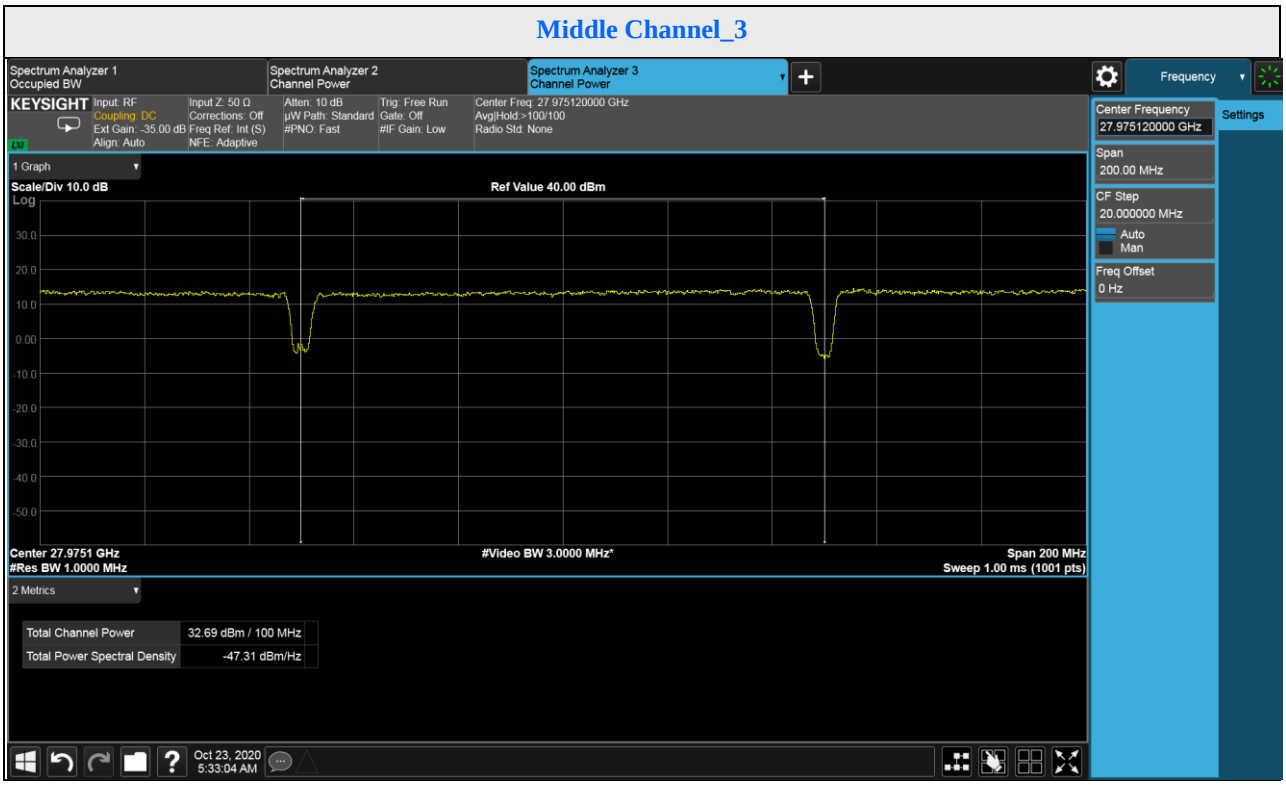
Middle Channel_1



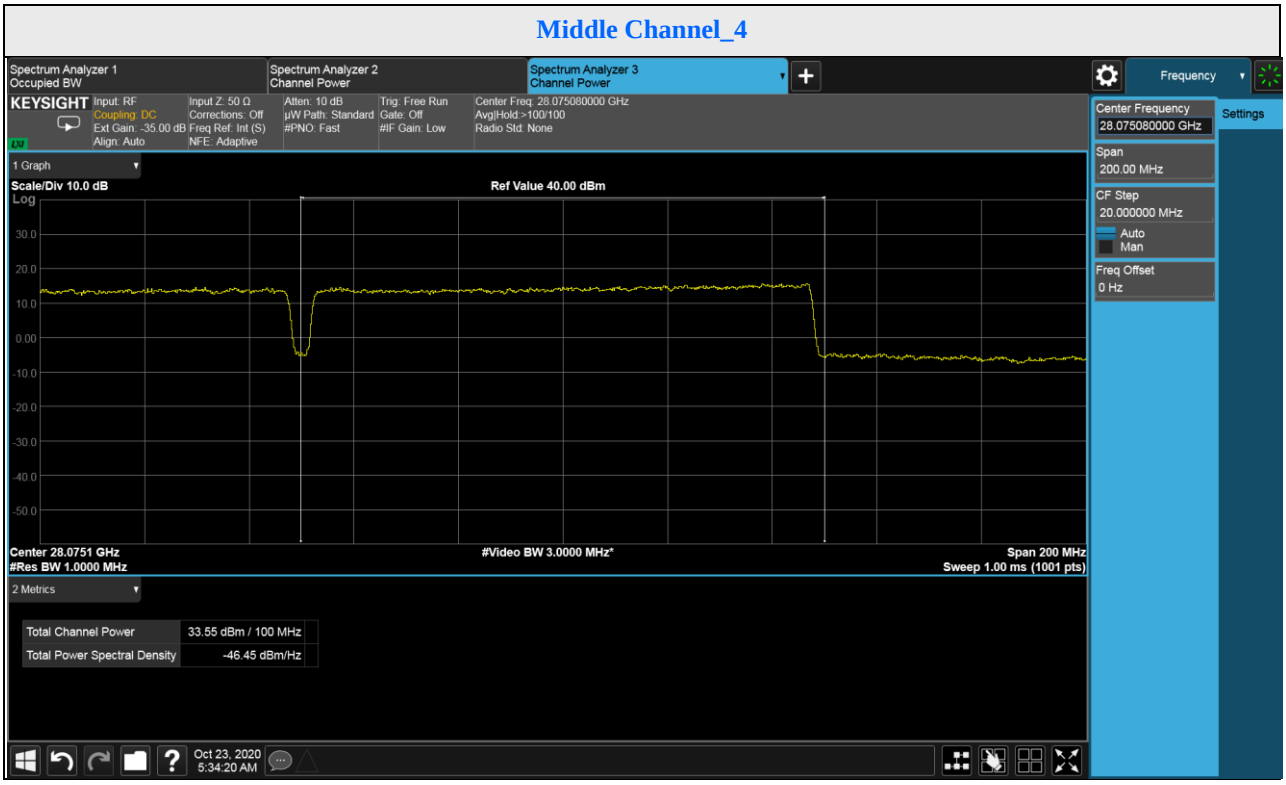
Middle Channel_2



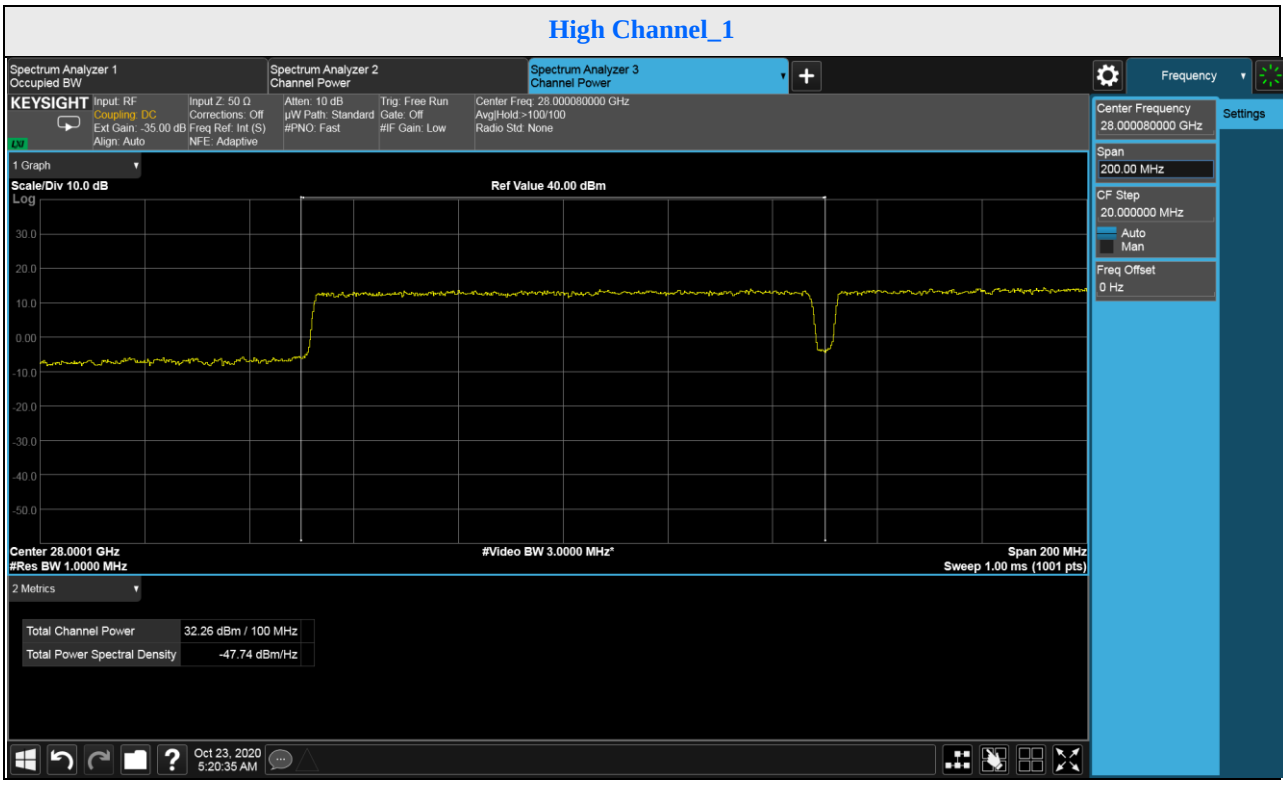
Middle Channel_3



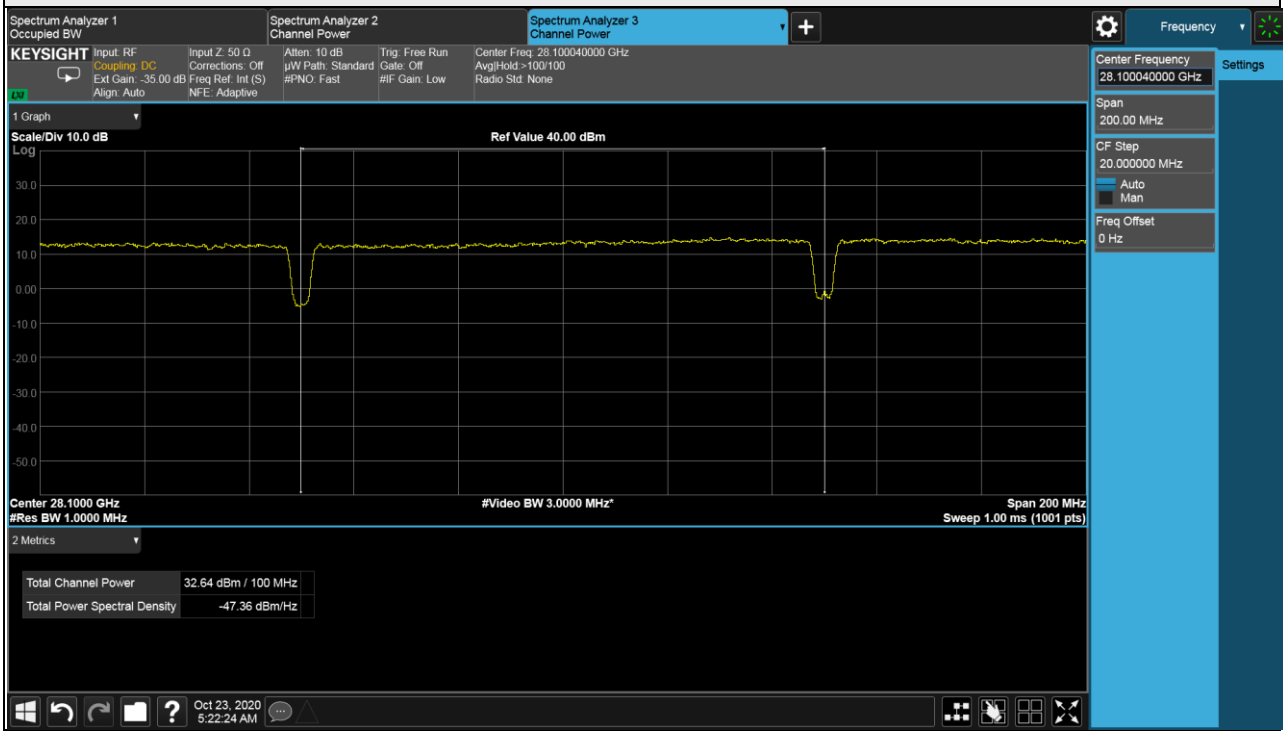
Middle Channel_4



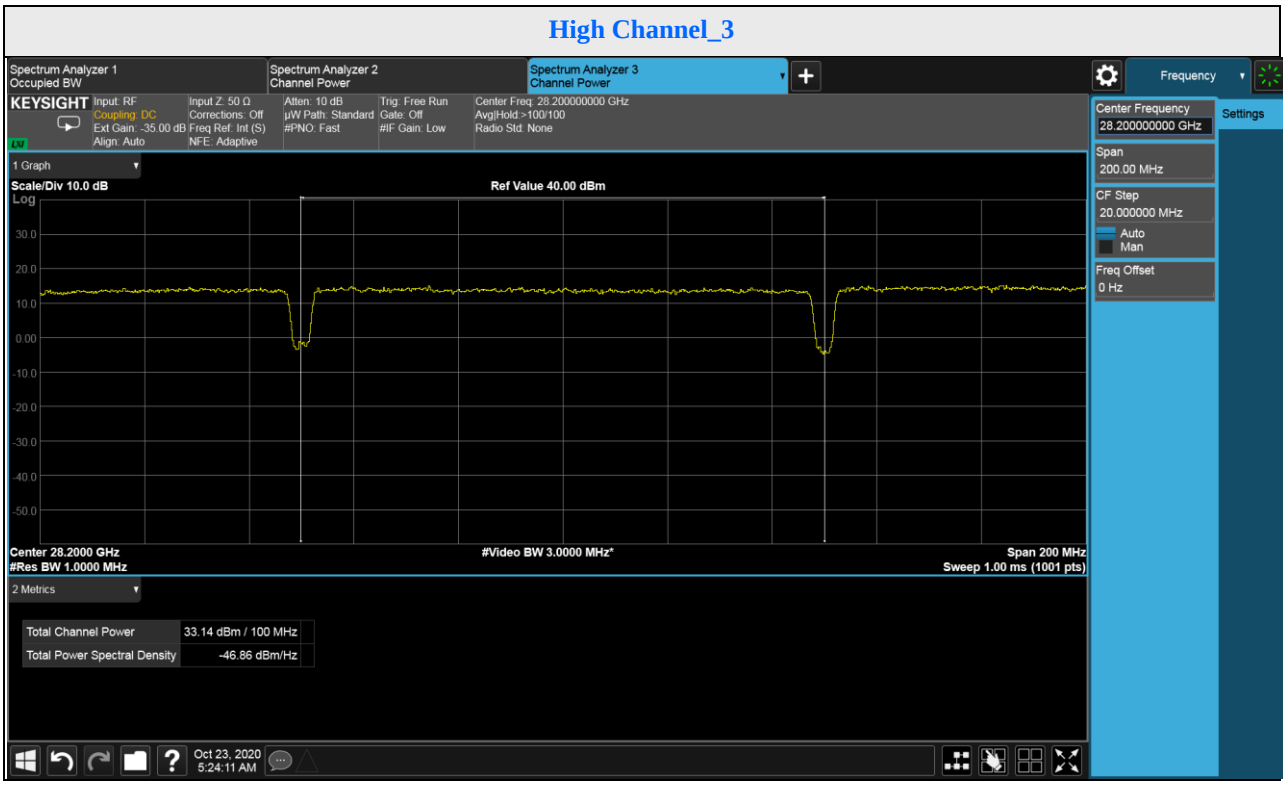
High Channel_1



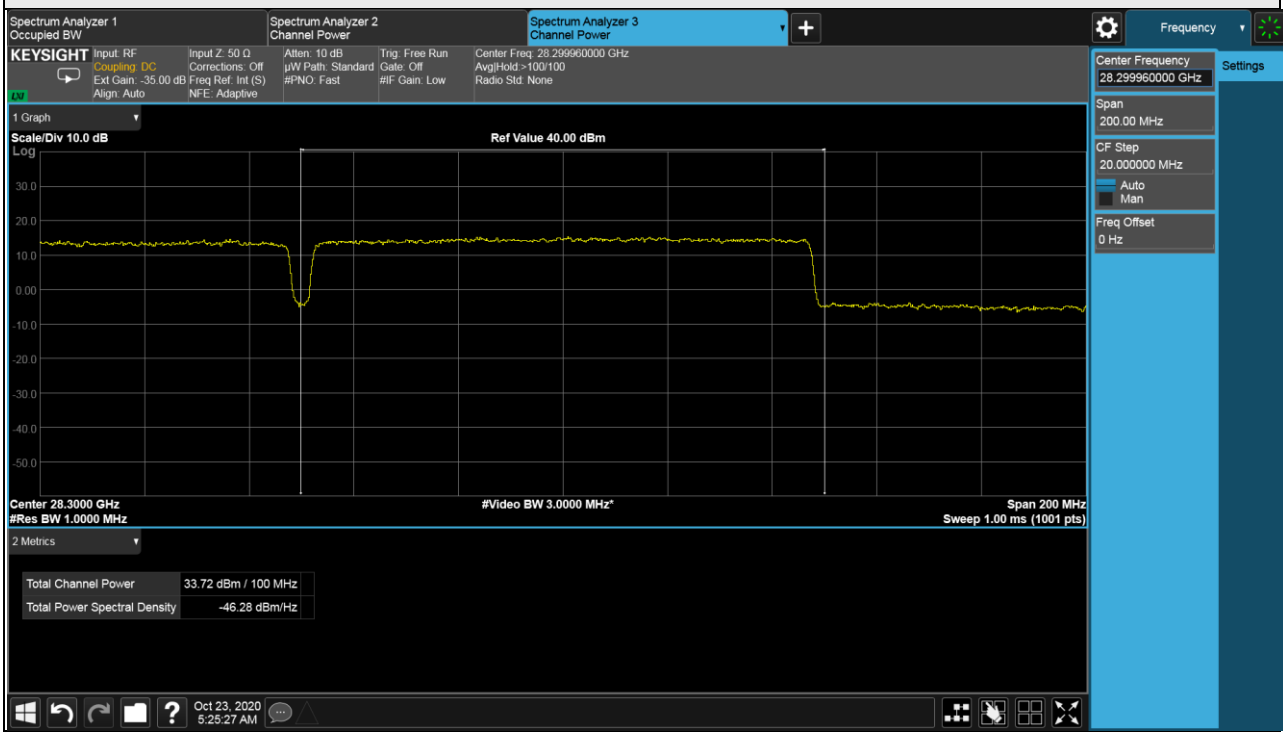
High Channel_2



High Channel_3



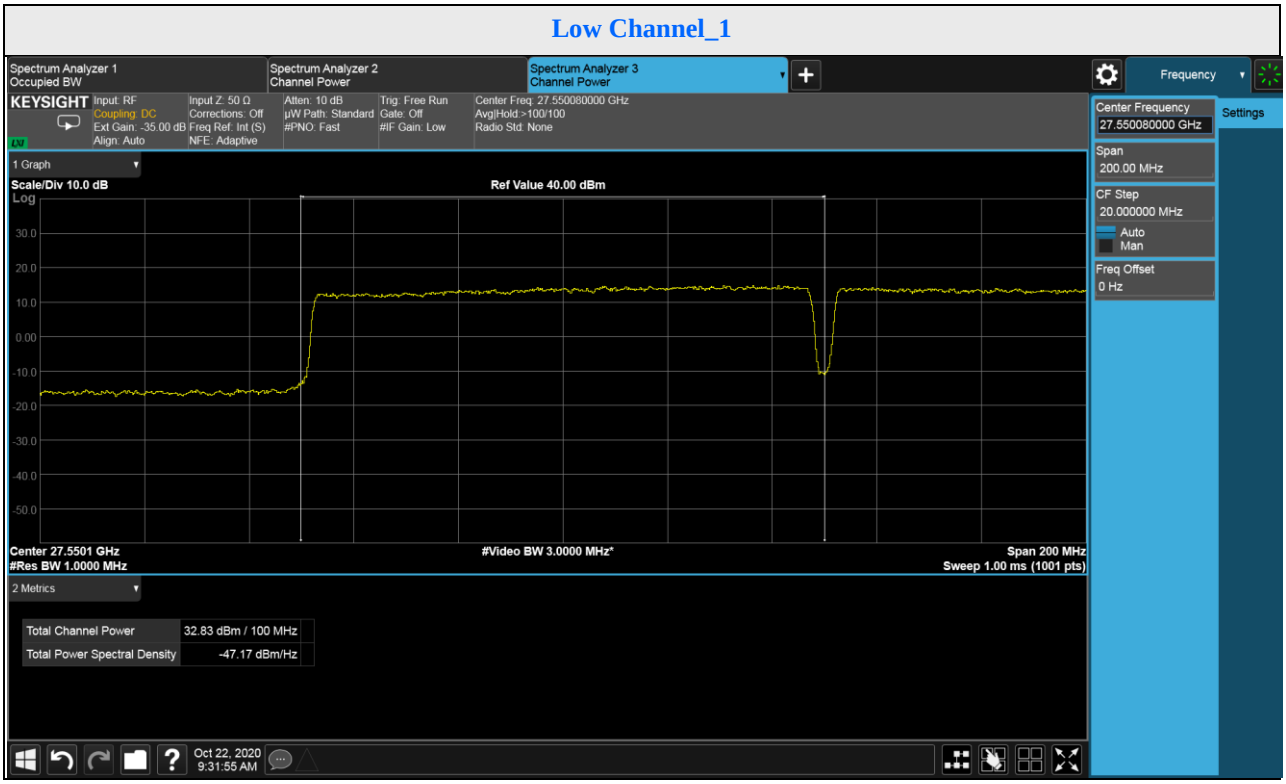
High Channel_4



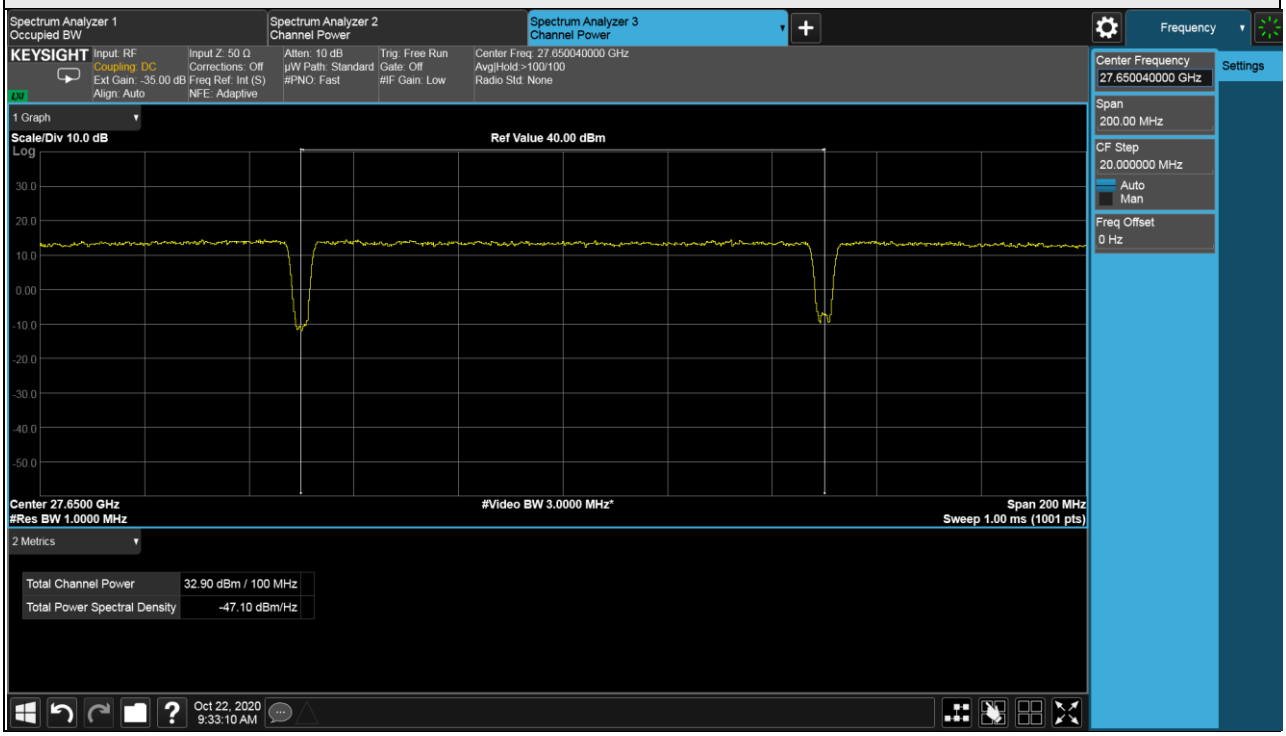
64QAM-4CC(Worse case plots)

Beam ID: 11

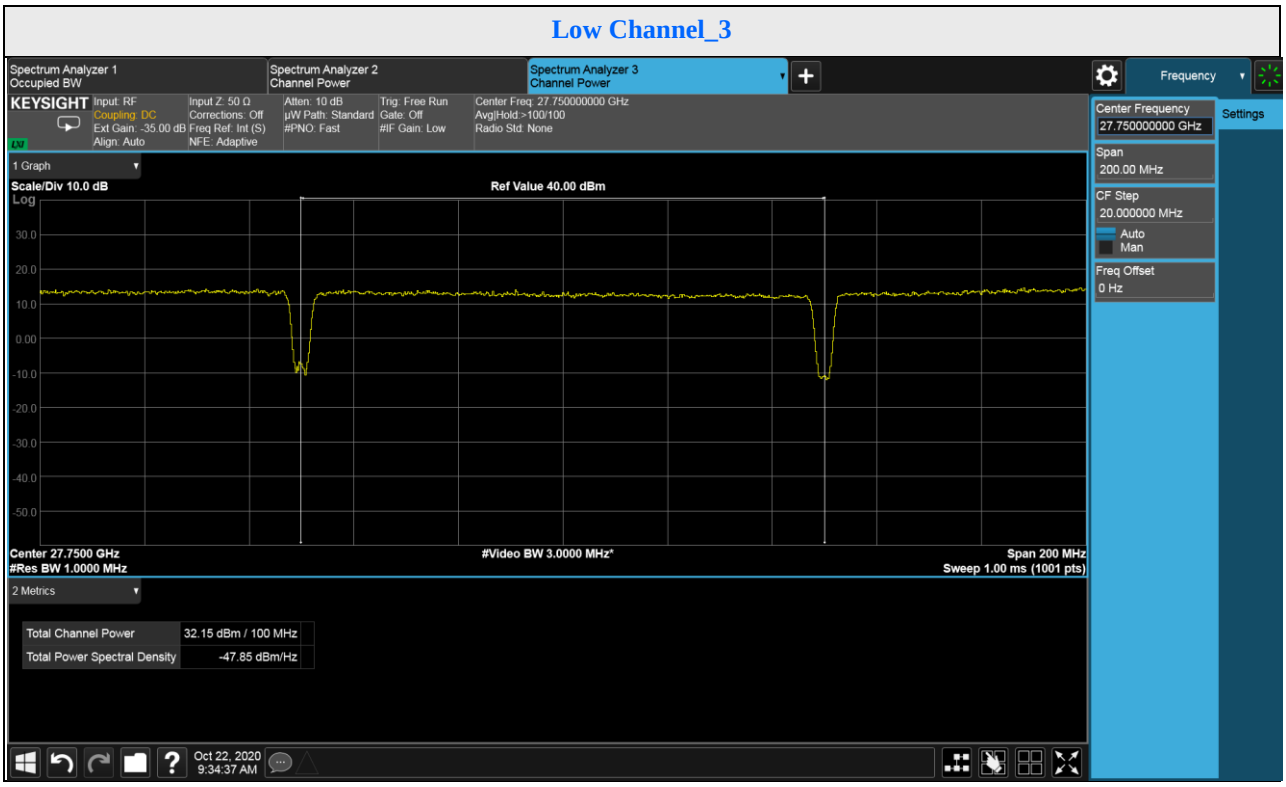
Low Channel_1



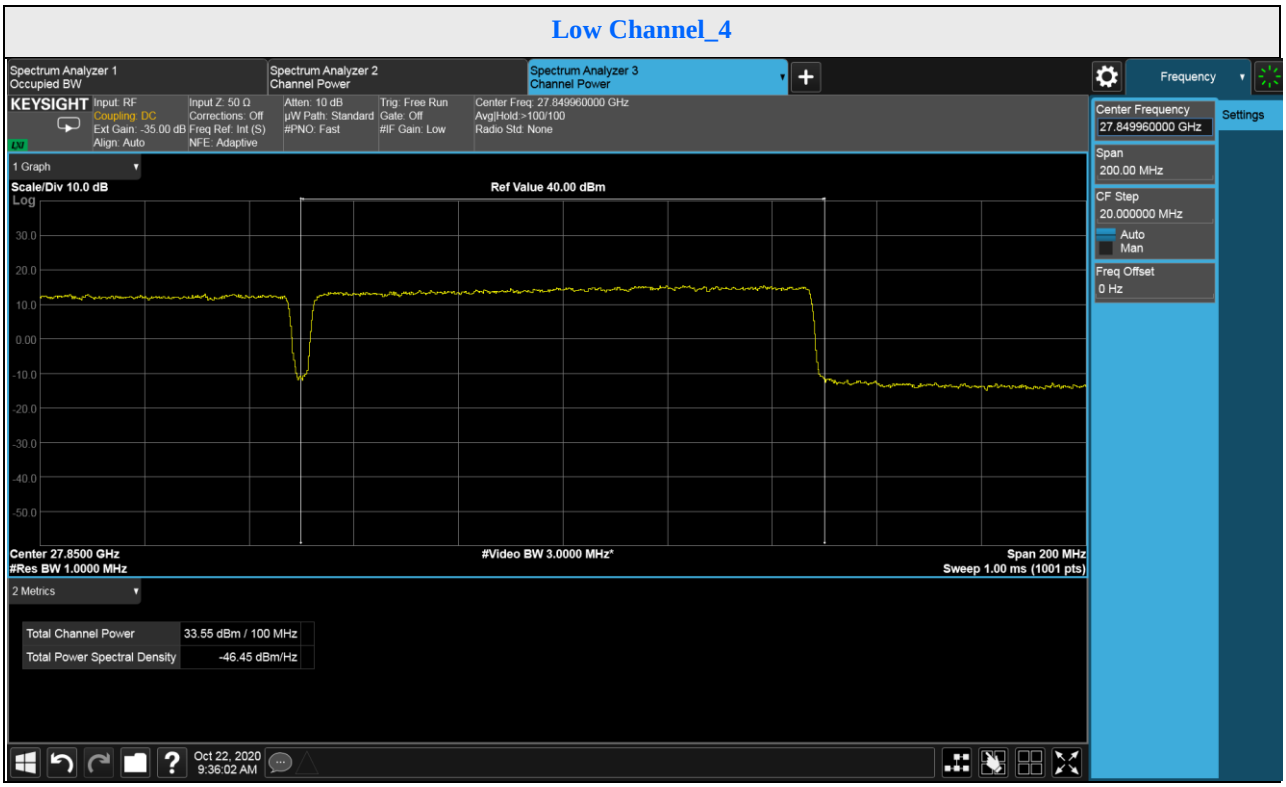
Low Channel_2



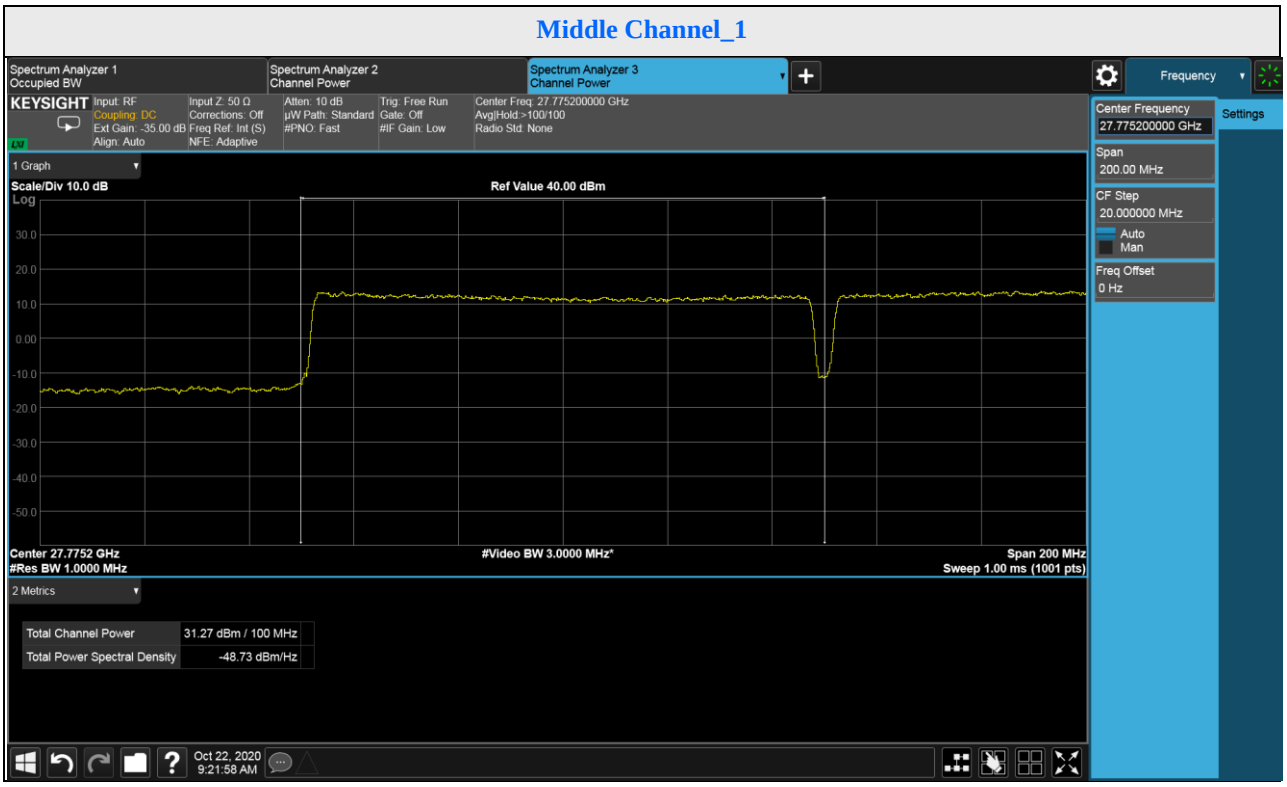
Low Channel_3



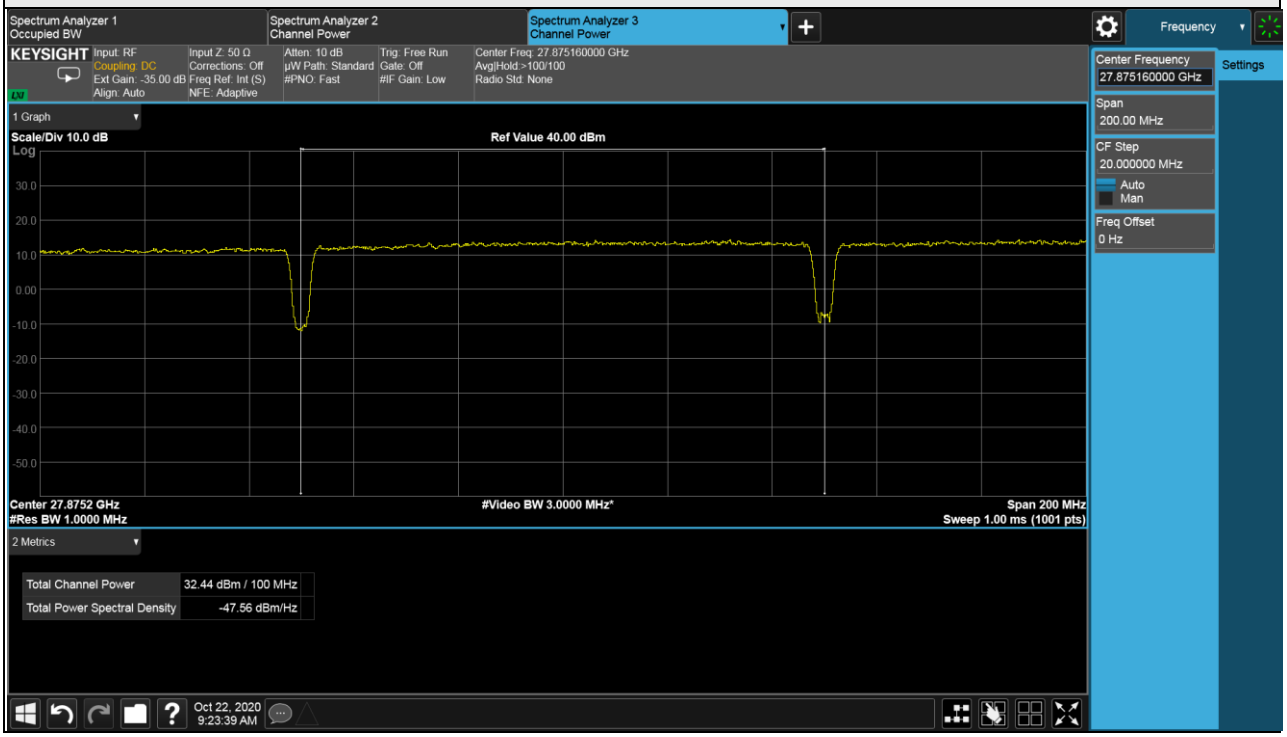
Low Channel_4



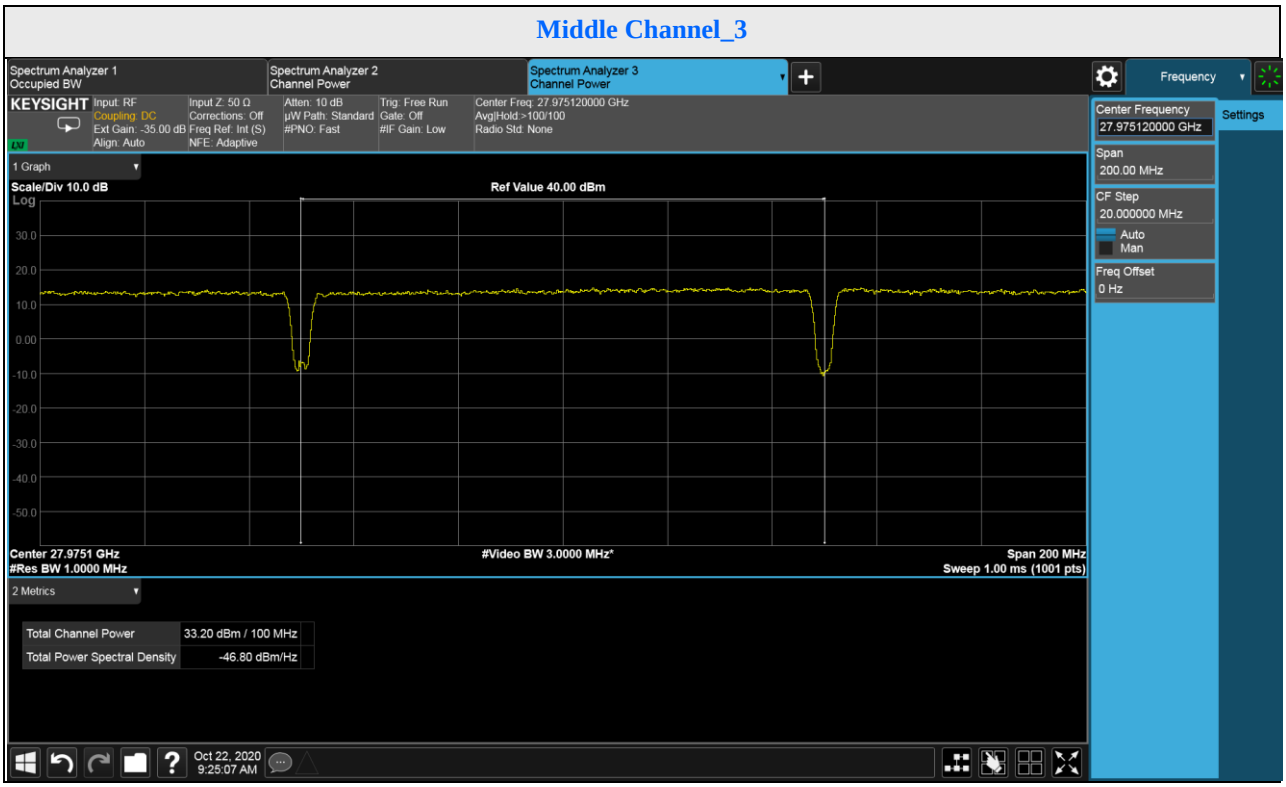
Middle Channel_1



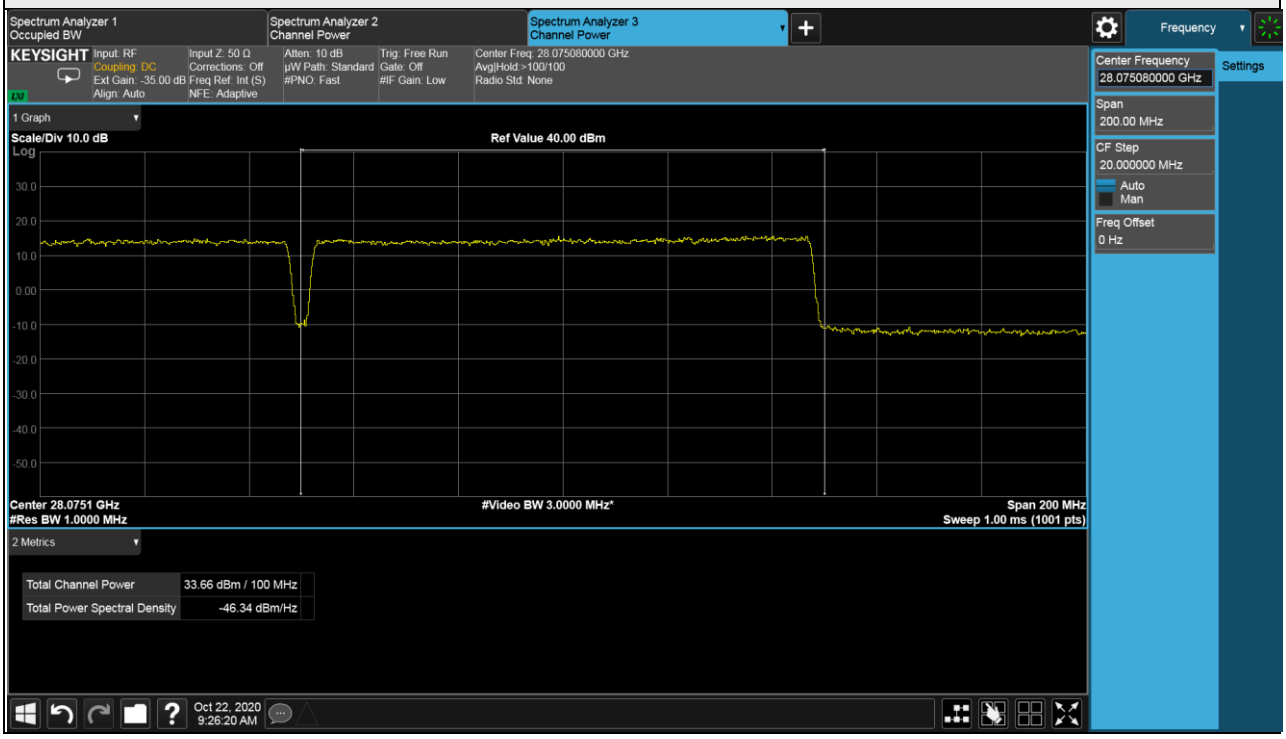
Middle Channel_2



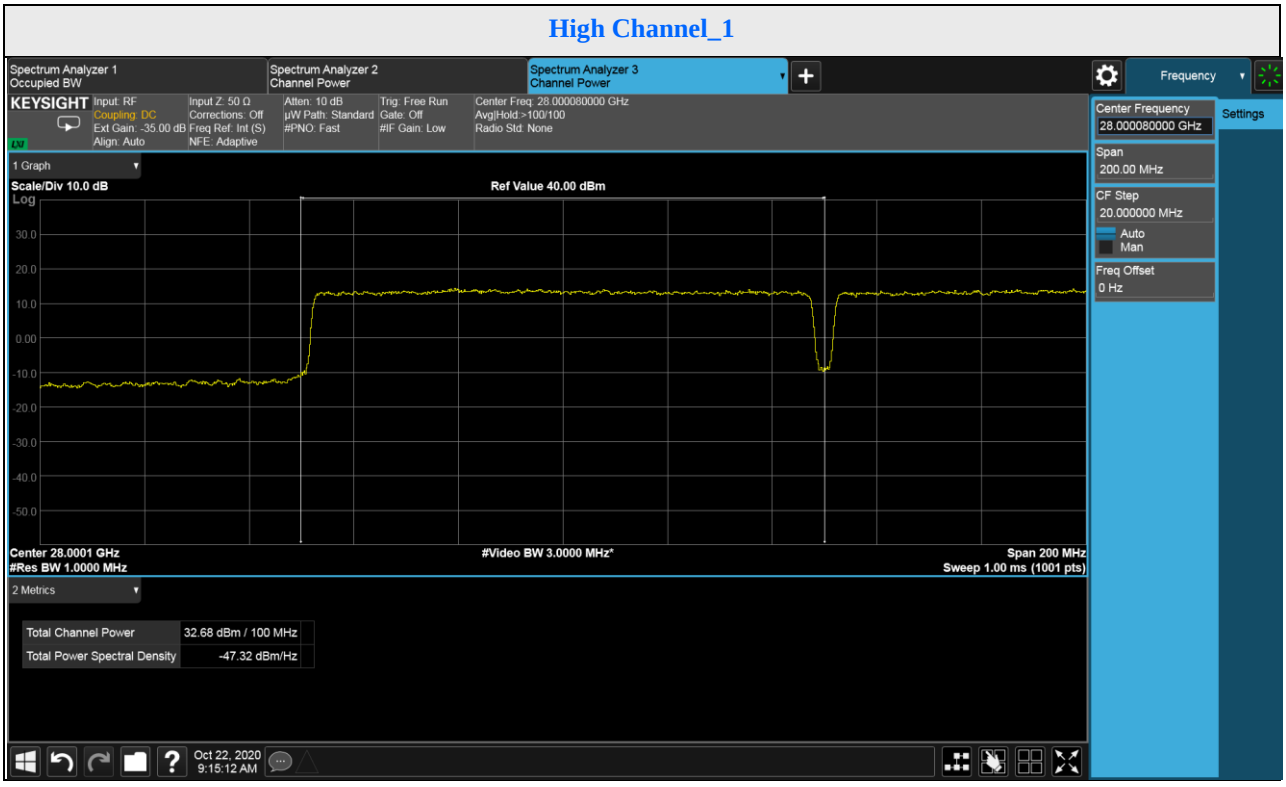
Middle Channel_3



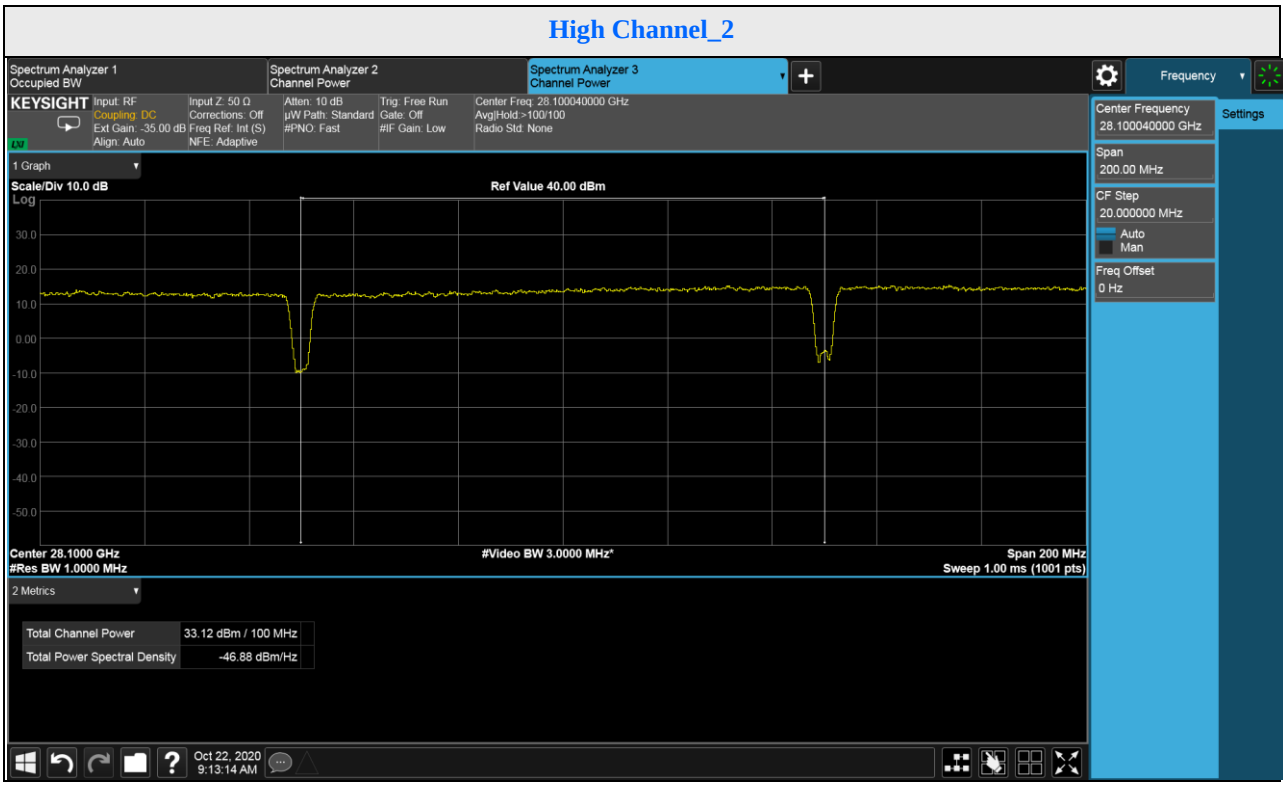
Middle Channel_4



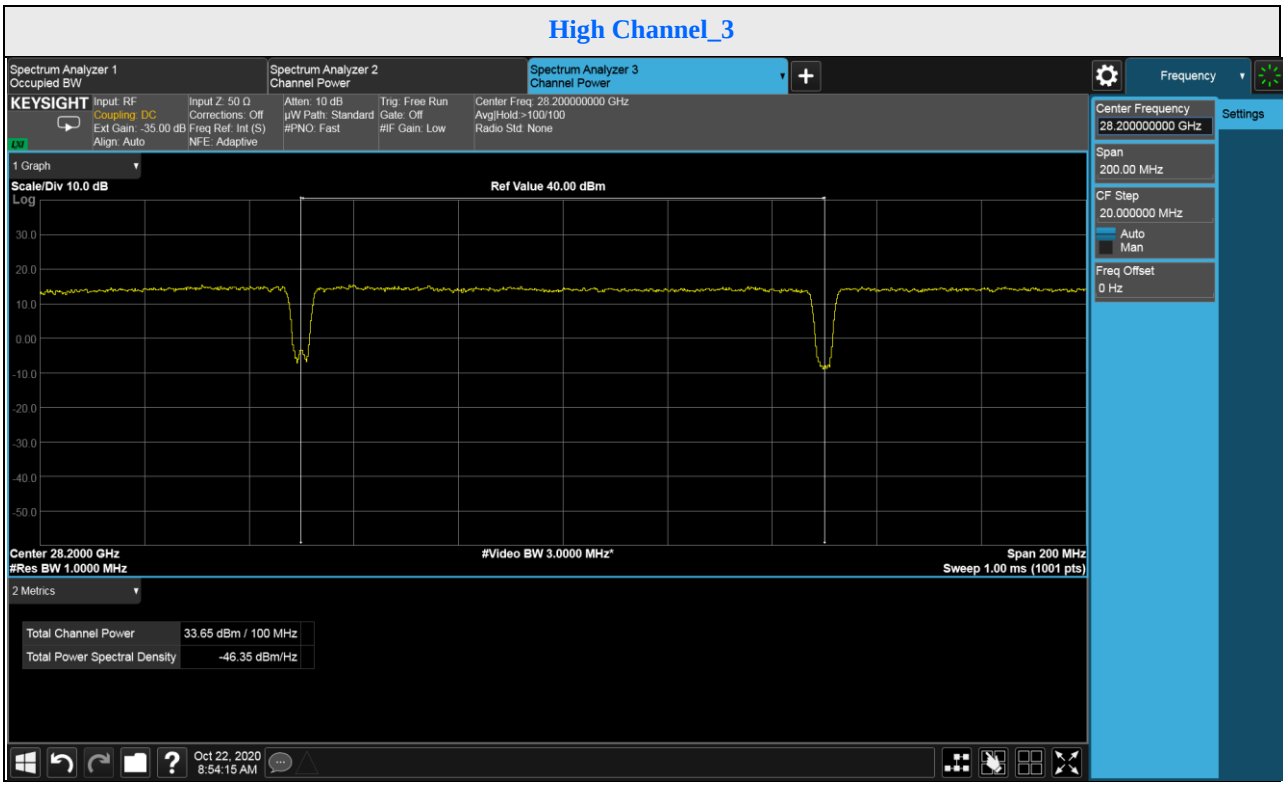
High Channel_1



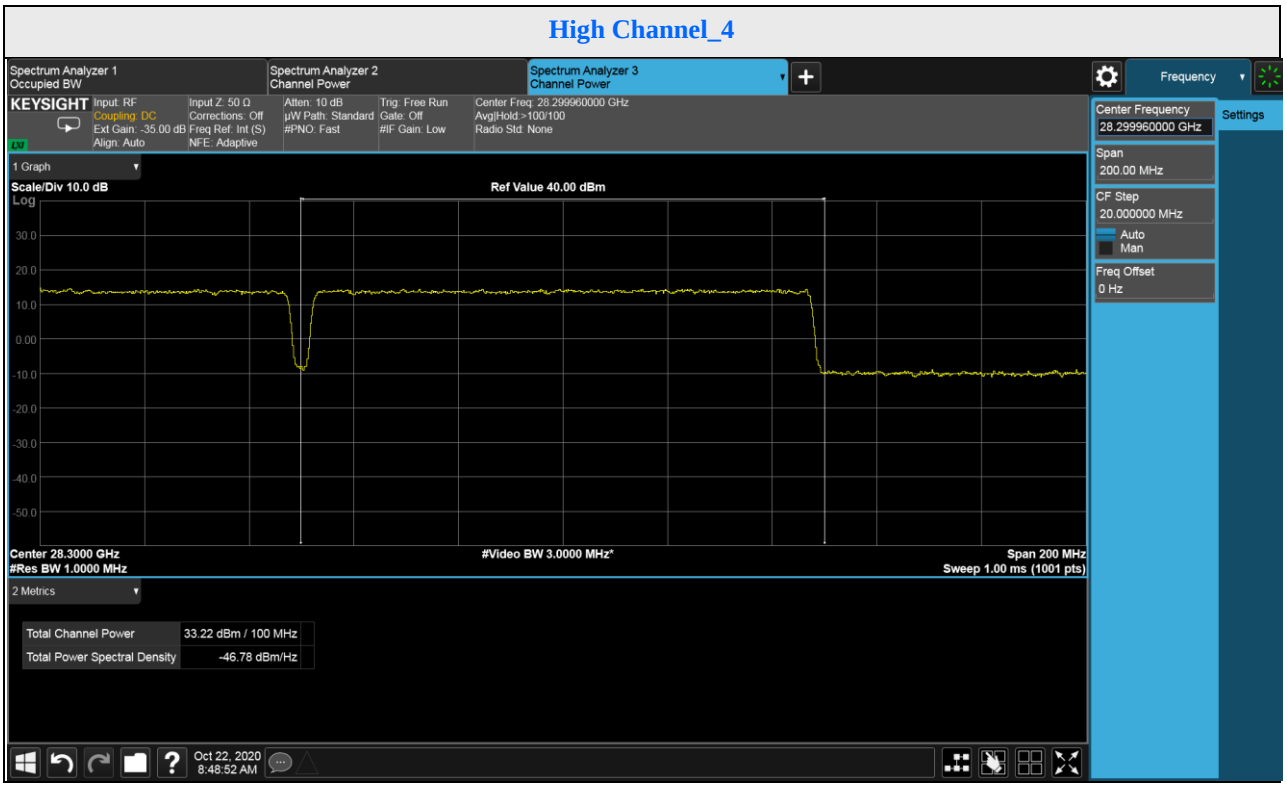
High Channel_2



High Channel_3



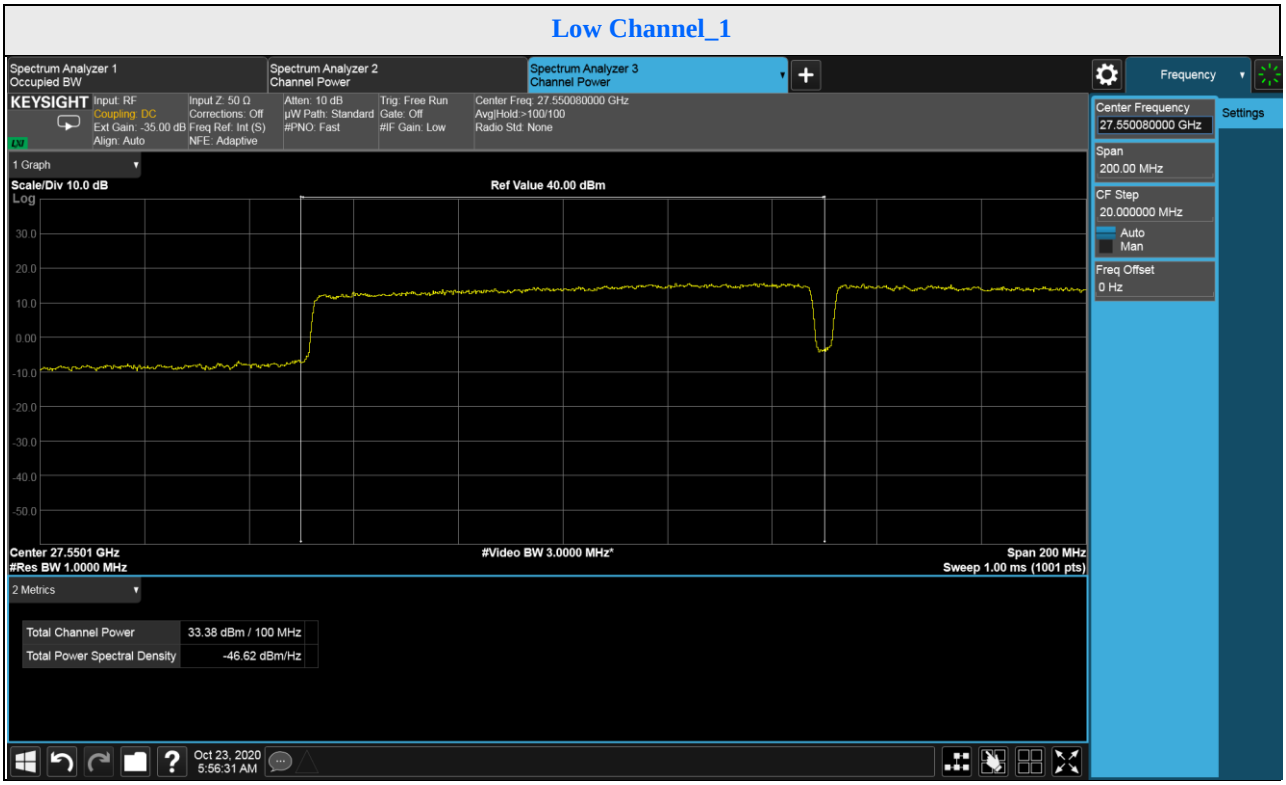
High Channel_4



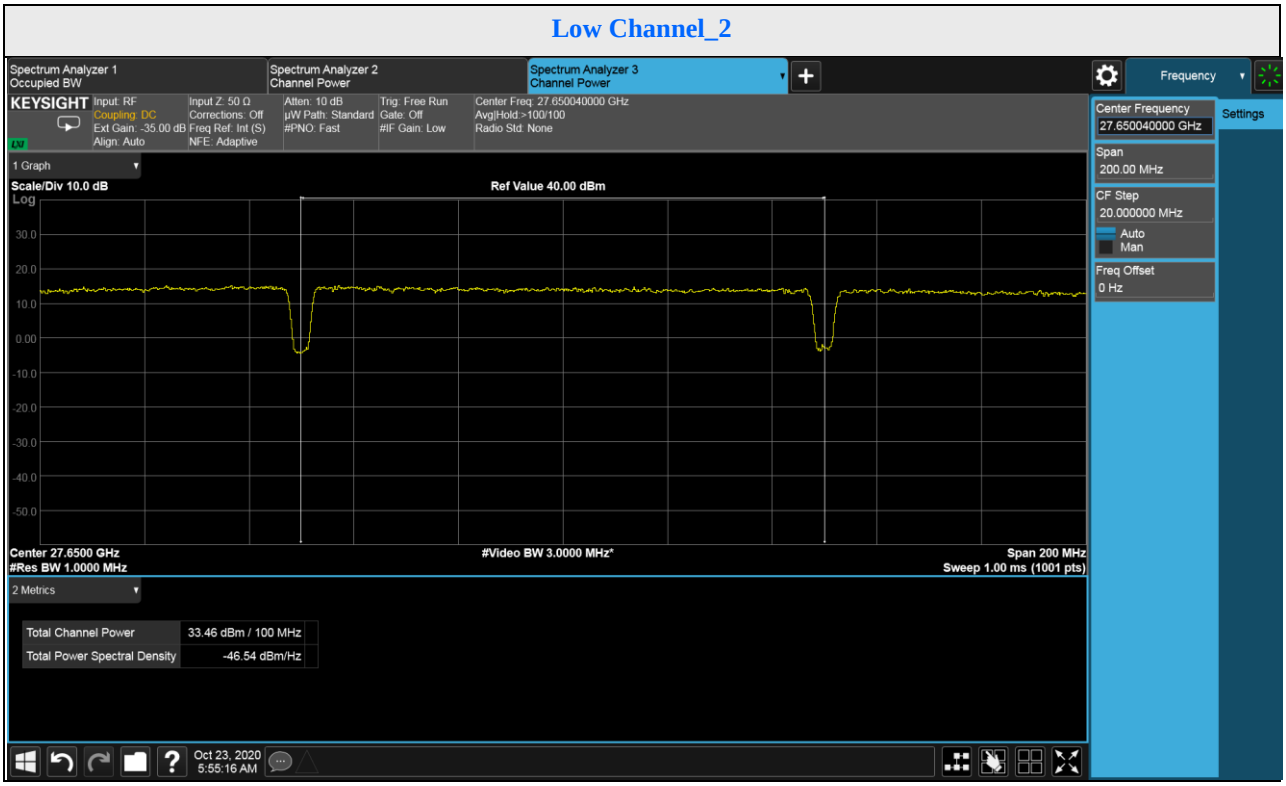
64QAM-4CC(Worse case plots)

Beam ID: 139

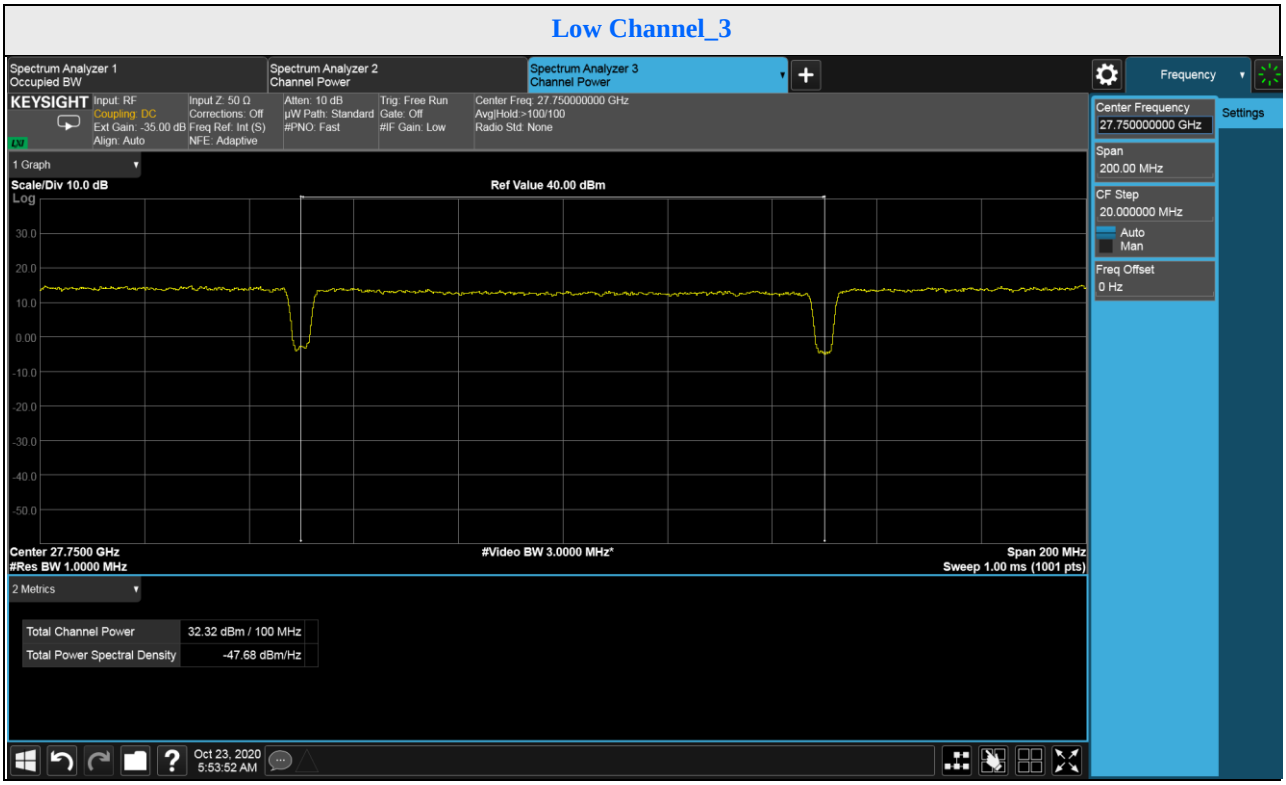
Low Channel_1



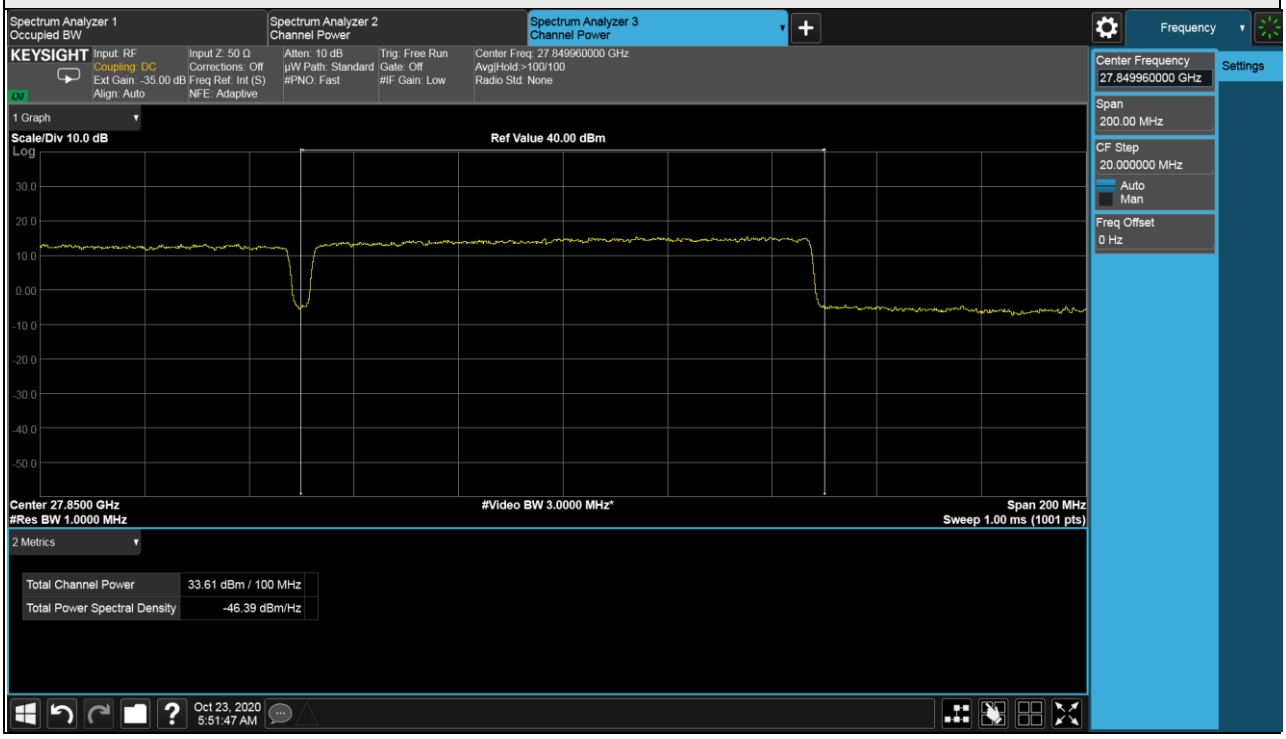
Low Channel_2



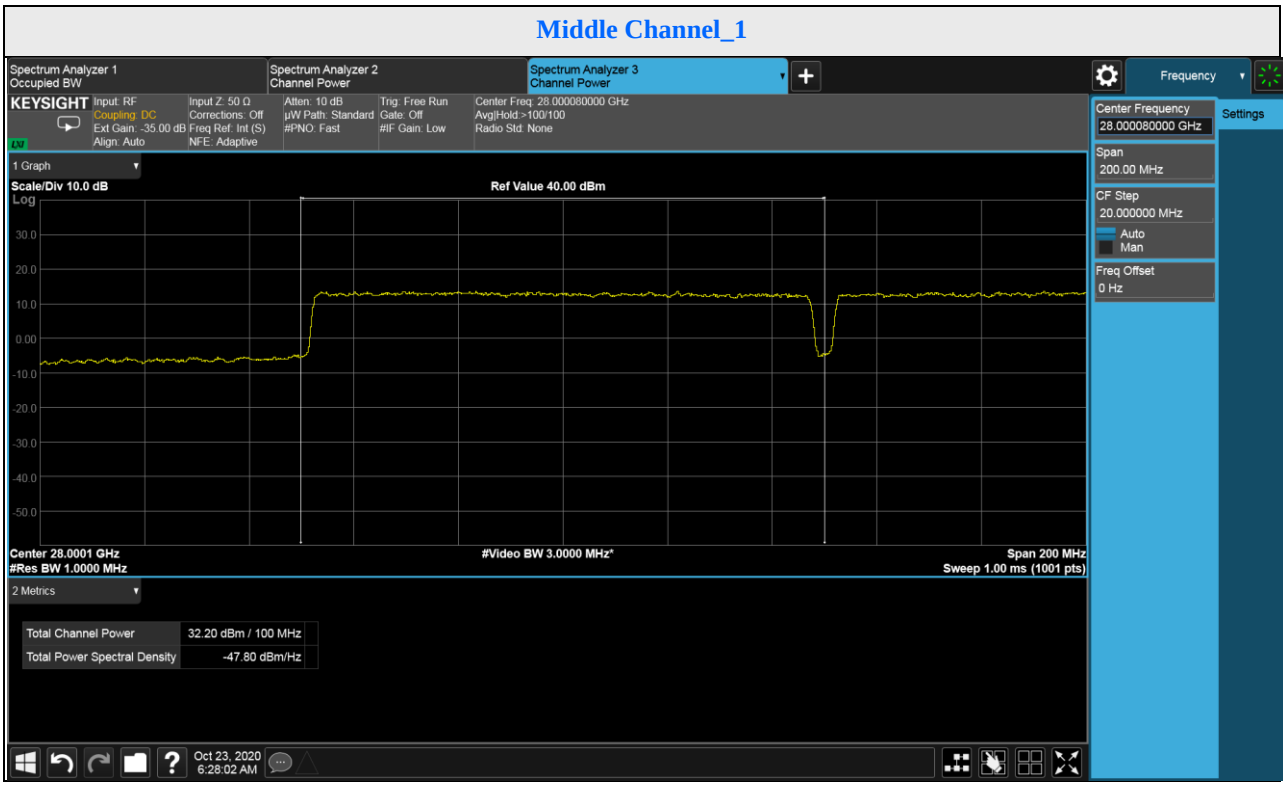
Low Channel_3



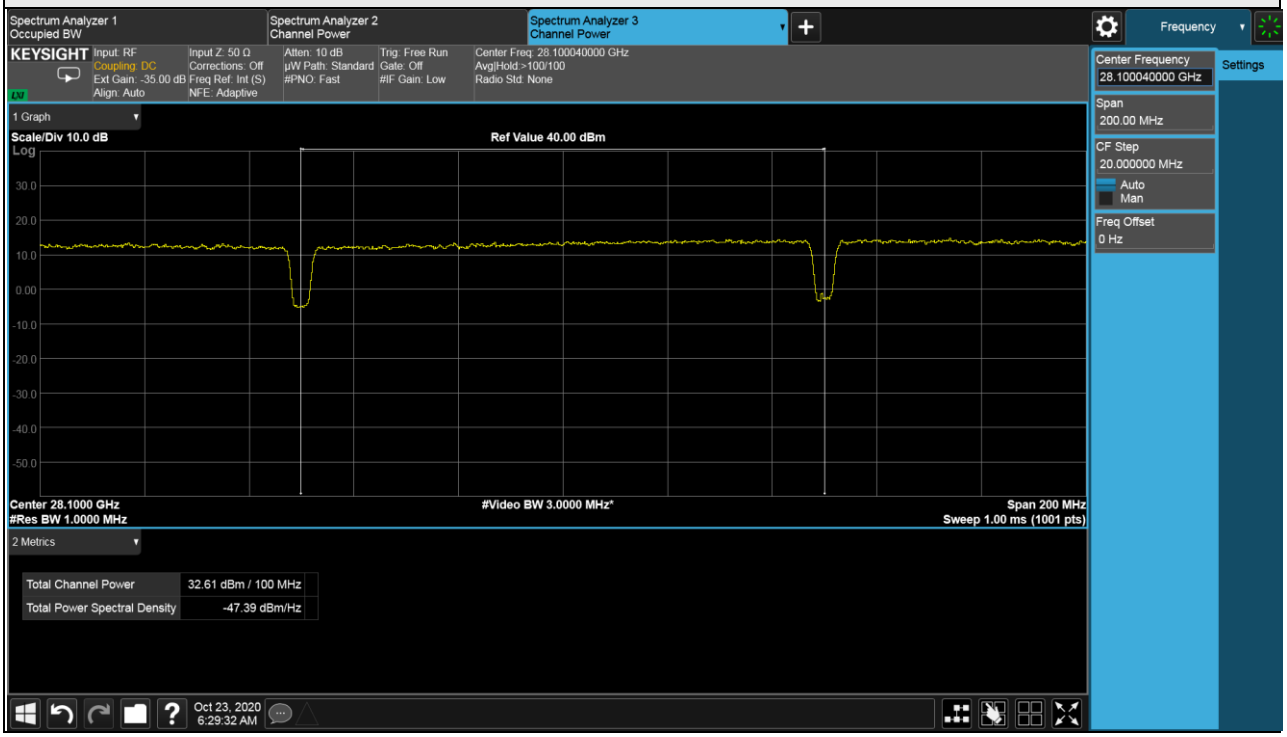
Low Channel_4



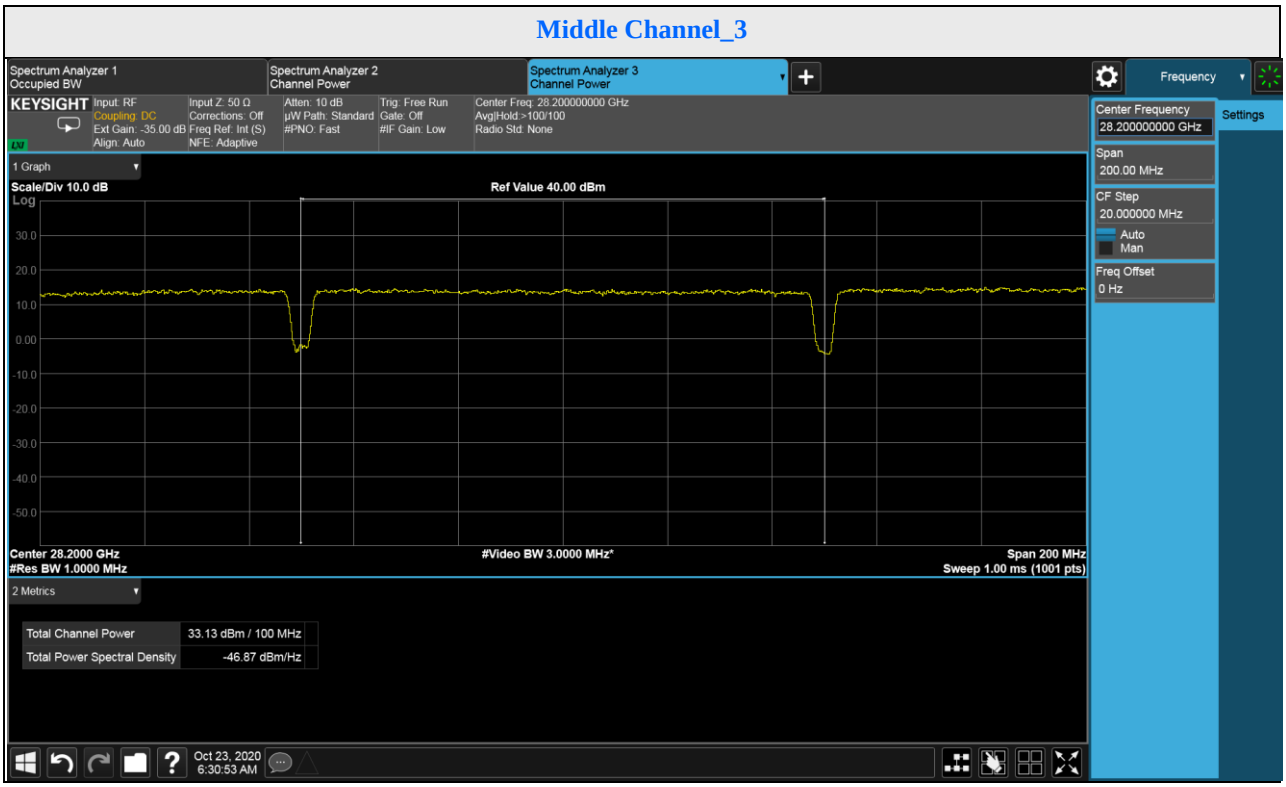
Middle Channel_1



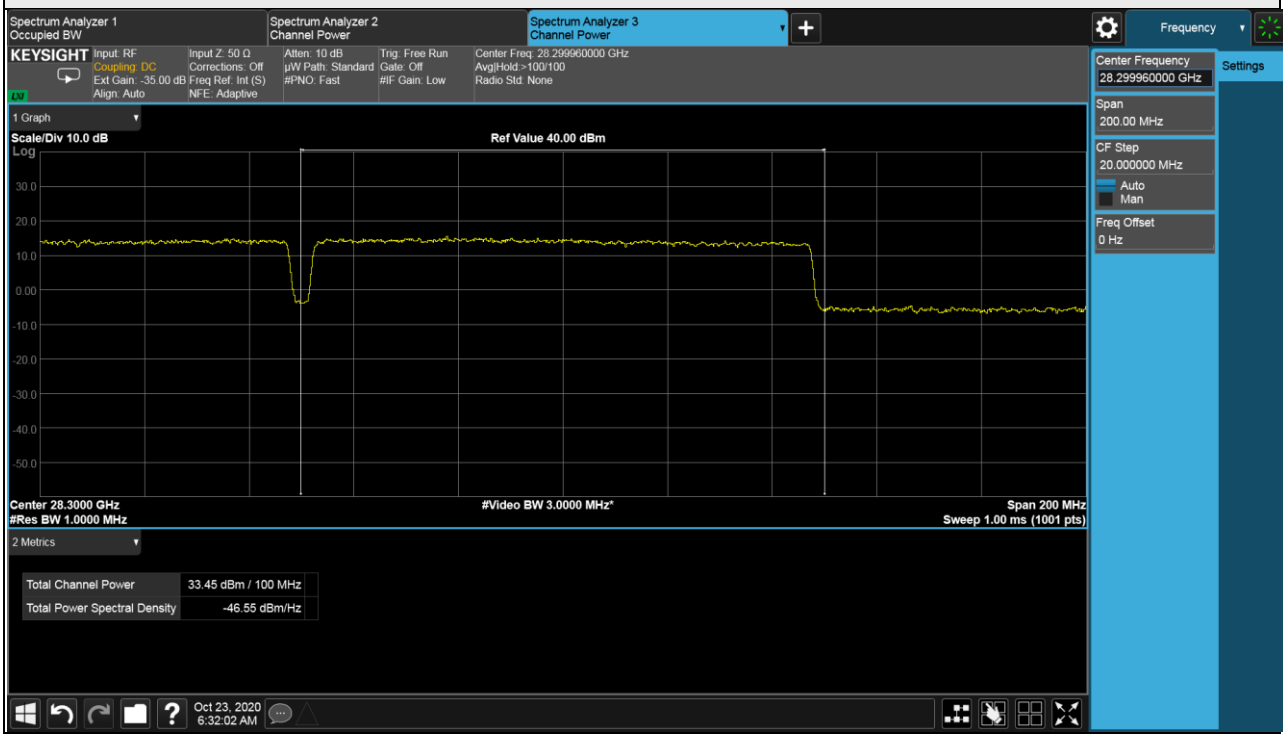
Middle Channel_2



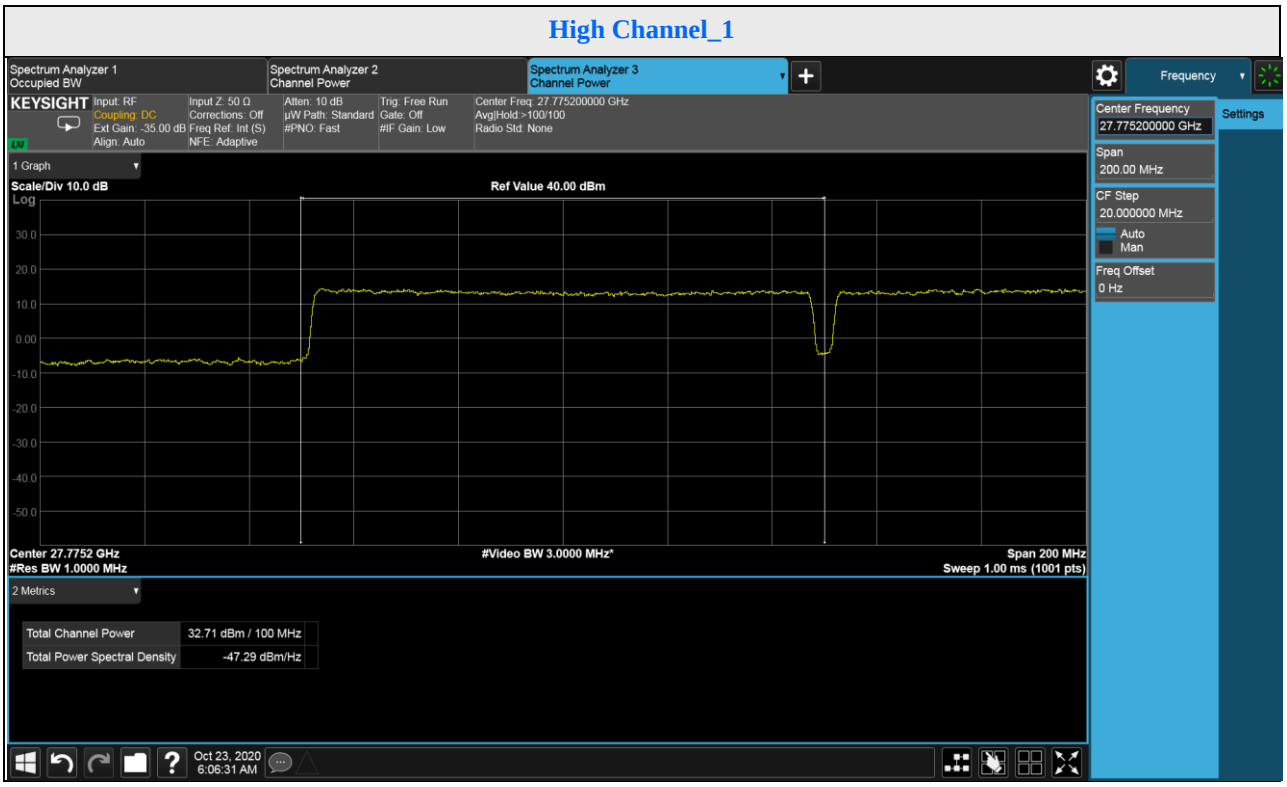
Middle Channel_3



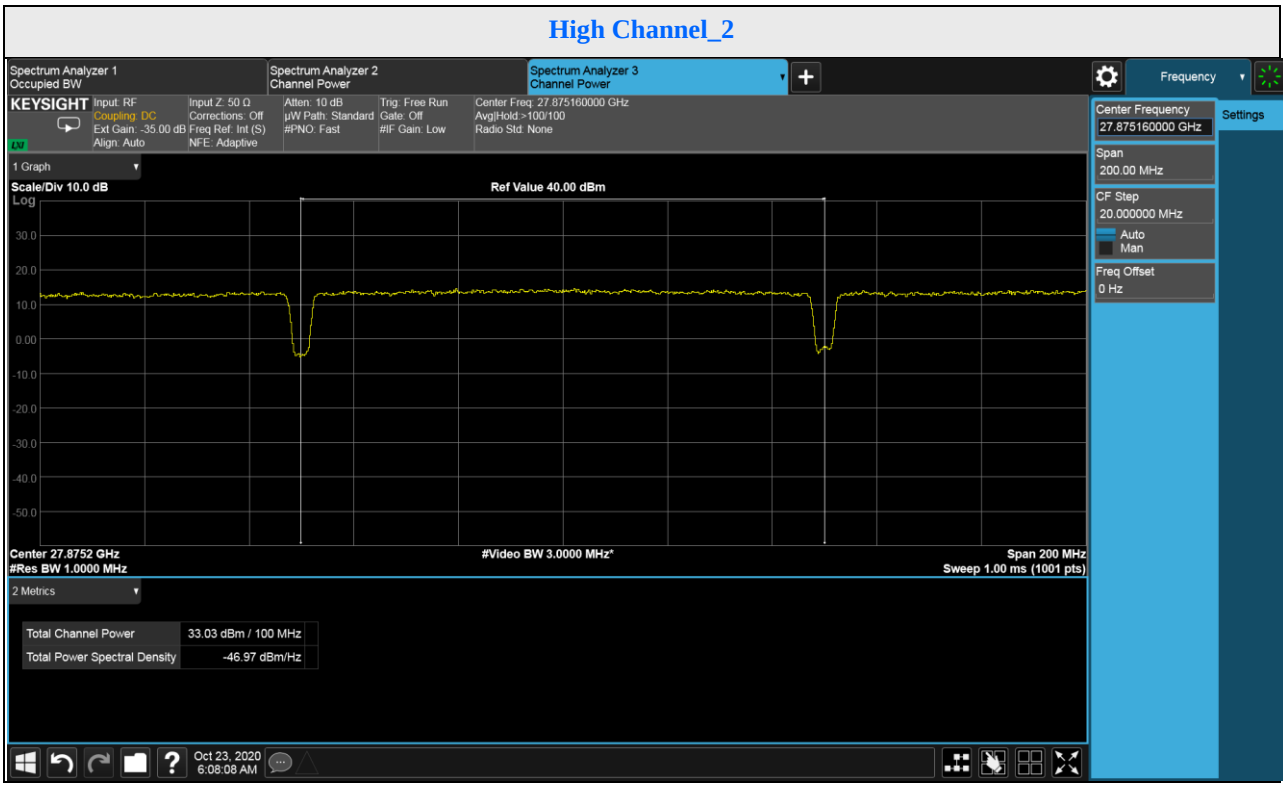
Middle Channel_4



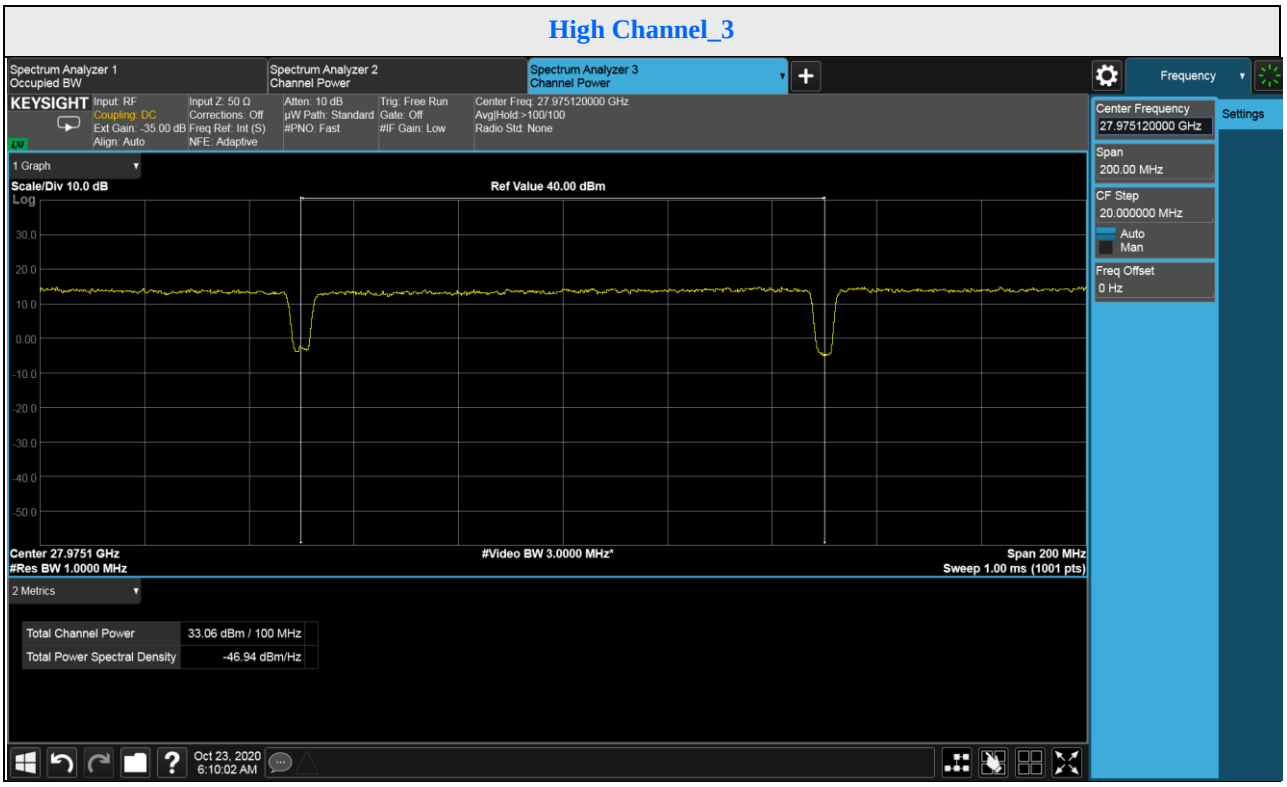
High Channel_1



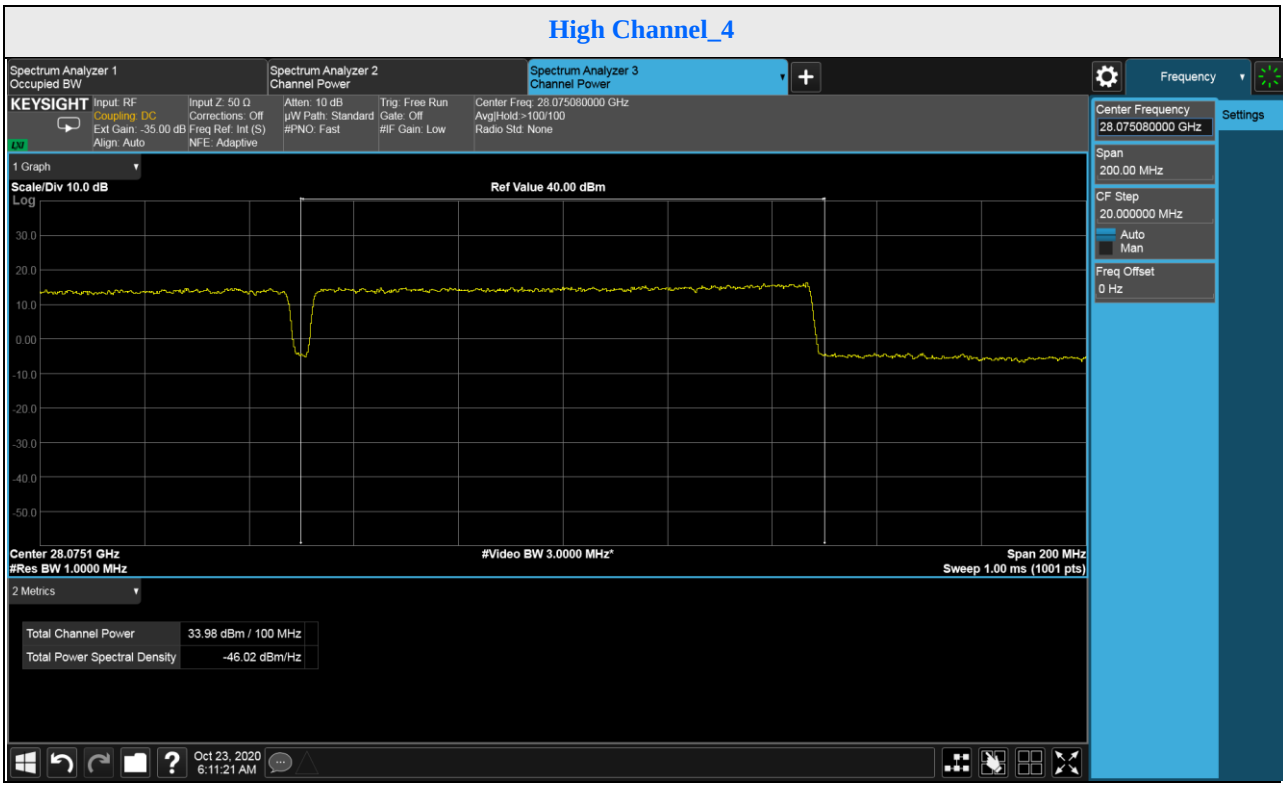
High Channel_2



High Channel_3



High Channel_4



Conducted Power Measurement

Band	n261	Beam ID	11
EUT position	Z-plane	Receive Antenna polarization	Vertical

QPSK-1CC

Channel No.	Freq. (MHz)	EIRP (dBm)	Ant. Gain (dBi)	Conducted Power (dBm)
2071666	27550	39.21	22.5	16.71
2077916	27925	39.76	22.5	17.26
2084166	28300	39.37	22.5	16.87

64QAM-1CC

Channel No.	Freq. (MHz)	EIRP (dBm)	Ant. Gain (dBi)	Conducted Power (dBm)
2071666	27550	37.76	22.5	15.26
2077916	27925	39.70	22.5	17.20
2084166	28300	39.45	22.5	16.95

QPSK-4CC

Channel No.	Freq. (MHz)	EIRP (dBm)	Ant. Gain (dBi)	Conducted Power (dBm)
2074166	27700.02	39.63	22.5	17.13
2077918	27925.14	39.58	22.5	17.08
2081666	28150.02	39.63	22.5	17.13

64QAM-4CC

Channel No.	Freq. (MHz)	EIRP (dBm)	Ant. Gain (dBi)	Conducted Power (dBm)
2074166	27700.02	39.57	22.5	17.07
2077918	27925.14	39.68	22.5	17.18
2081666	28150.02	39.59	22.5	17.09

Band	n261	Beam ID	139
EUT position	Z-plane	Receive Antenna polarization	Horizontal

QPSK-1CC

Channel No.	Freq. (MHz)	EIRP (dBm)	Ant. Gain (dBi)	Conducted Power (dBm)
2071666	27550	38.66	22.5	16.16
2077916	27925	39.30	22.5	16.80
2084166	28300	39.48	22.5	16.98

64QAM-1CC

Channel No.	Freq. (MHz)	EIRP (dBm)	Ant. Gain (dBi)	Conducted Power (dBm)
2071666	27550	38.65	22.5	16.15
2077916	27925	39.25	22.5	16.75
2084166	28300	39.57	22.5	17.07

QPSK-4CC

Channel No.	Freq. (MHz)	EIRP (dBm)	Ant. Gain (dBi)	Conducted Power (dBm)
2074166	27700.02	39.42	22.5	16.92
2077918	27925.14	39.69	22.5	17.19
2081666	28150.02	39.67	22.5	17.17

64QAM-4CC

Channel No.	Freq. (MHz)	EIRP (dBm)	Ant. Gain (dBi)	Conducted Power (dBm)
2074166	27700.02	39.40	22.5	16.90
2077918	27925.14	39.50	22.5	17.00
2081666	28150.02	39.48	22.5	16.98

Band	n261	Beam ID	11 + 139
EUT position	Z-plane	Receive Antenna polarization	Vertical + Horizontal

QPSK-1CC

Channel No.	Freq. (MHz)	MIMO Beam		
		11 + 139		
		EIRP (dBm)	Ant. Gain (dBi)	Conducted Power (dBm)
2071666	27550	41.95	22.5	19.45
2077916	27925	42.55	22.5	20.05
2084166	28300	42.44	22.5	19.94

64QAM-1CC

Channel No.	Freq. (MHz)	MIMO Beam		
		11 + 139		
		EIRP (dBm)	Ant. Gain (dBi)	Conducted Power (dBm)
2071666	27550	41.24	22.5	18.74
2077916	27925	42.49	22.5	19.99
2084166	28300	42.52	22.5	20.02

QPSK-4CC

Channel No.	Freq. (MHz)	MIMO Beam		
		11 + 139		
		EIRP (dBm)	Ant. Gain (dBi)	Conducted Power (dBm)
2074166	27700.02	42.00	22.5	19.5
2077918	27925.14	41.86	22.5	19.36
2081666	28150.02	42.17	22.5	19.67

64QAM-4CC

Channel No.	Freq. (MHz)	MIMO Beam		
		11 + 139		
		EIRP (dBm)	Ant. Gain (dBi)	Conducted Power (dBm)
2074166	27700.02	42.09	22.5	19.59
2077918	27925.14	41.84	22.5	19.34
2081666	28150.02	42.24	22.5	19.74

4.3 Occupied Bandwidth Measurement

4.3.1 Limits of Occupied Bandwidth Measurement

Occupied bandwidth of transmissions falls within authorized bands.

4.3.2 Test Setup

Refer to section 4.2.2

4.3.3 Test Instruments

Refer to section 4.2.3 to get information of above instrument.

4.3.4 Test Procedure

1. The spectrum analyzer's automatic bandwidth measurement function was used to perform the 99% occupied bandwidth measurement.
2. Set the RBW =1~5% of the anticipated OBW, and the VBW≥3 x RBW.
3. Set spectrum analyzer detection mode to peak, and the trace mode to max hold.
4. Sweep = auto couple.
5. Record the test plots and test results.

4.3.5 Deviation fromTest Standard

No deviation.

4.3.6 EUT Operating Conditions

Refer to section 4.2.7 to get information of EUT operating conditions.

4.3.7 Test Result

Beam ID: 11

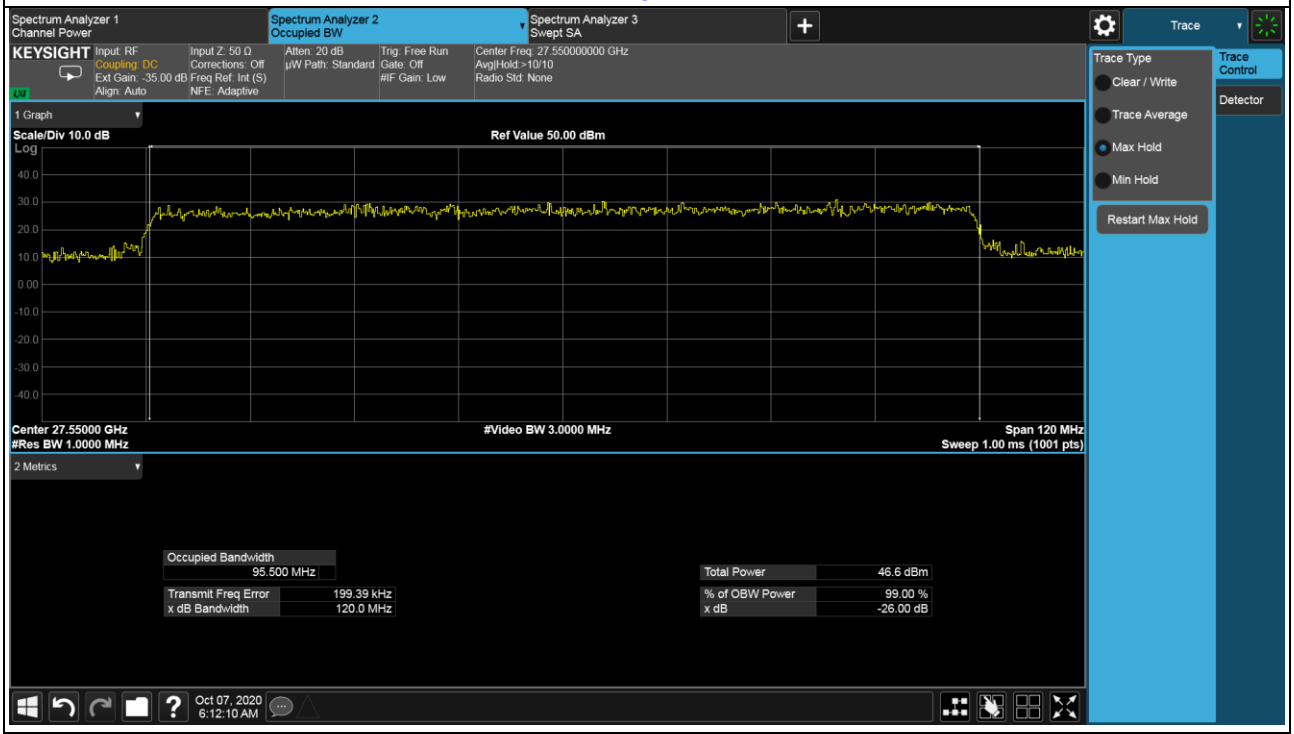
Band	Component Carriers	Modulation	Channel	Occupied Bandwidth (MHz)
n261	1CC	QPSK	Low	95.50
			Middle	96.01
			High	96.29
		64QAM	Low	94.65
			Middle	95.47
			High	96.45
	4CC	QPSK	Low	393.08
			Middle	394.33
			High	393.56
		64QAM	Low	393.60
			Middle	394.40
			High	393.63

Beam ID: 139

Band	Component Carriers	Modulation	Channel	Occupied Bandwidth (MHz)
n261	1CC	QPSK	Low	95.36
			Middle	95.39
			High	95.99
		64QAM	Low	95.17
			Middle	95.26
			High	96.06
	4CC	QPSK	Low	396.04
			Middle	396.78
			High	398.74
		64QAM	Low	396.76
			Middle	396.10
			High	398.33

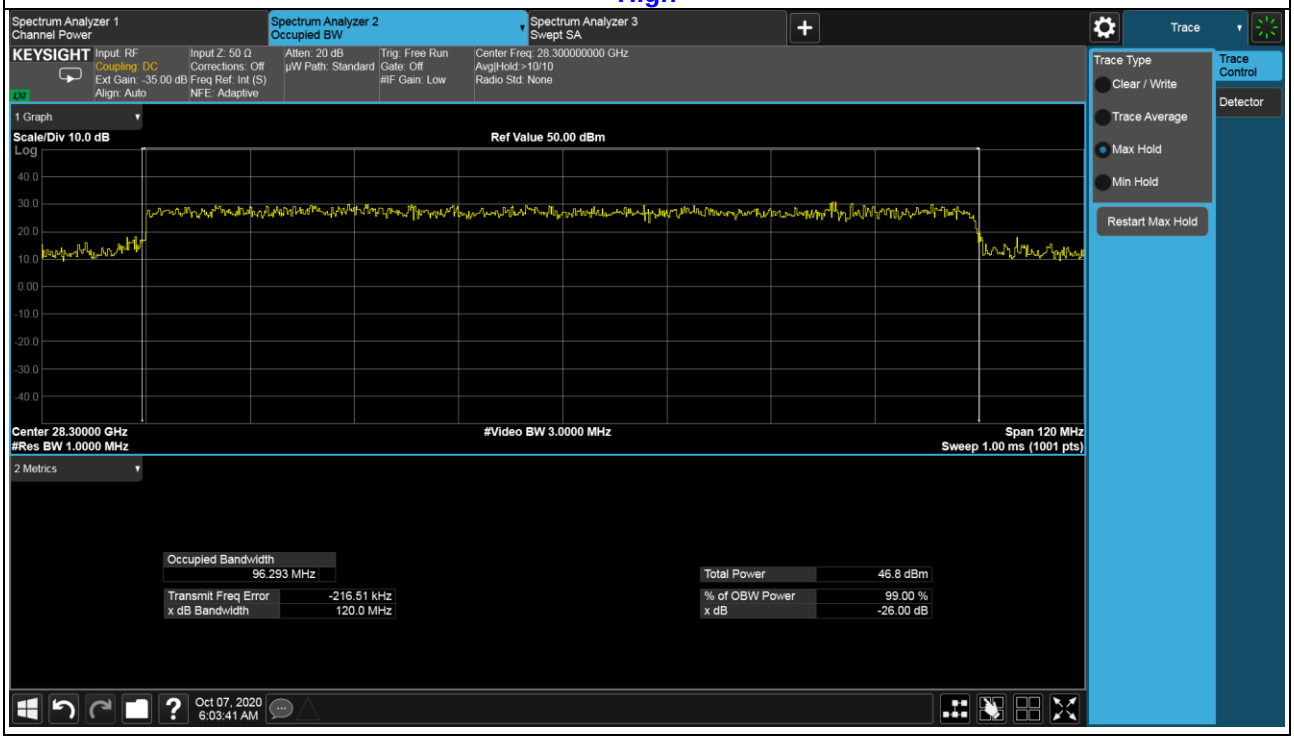
Beam ID: 11 1CC QPSK

Low



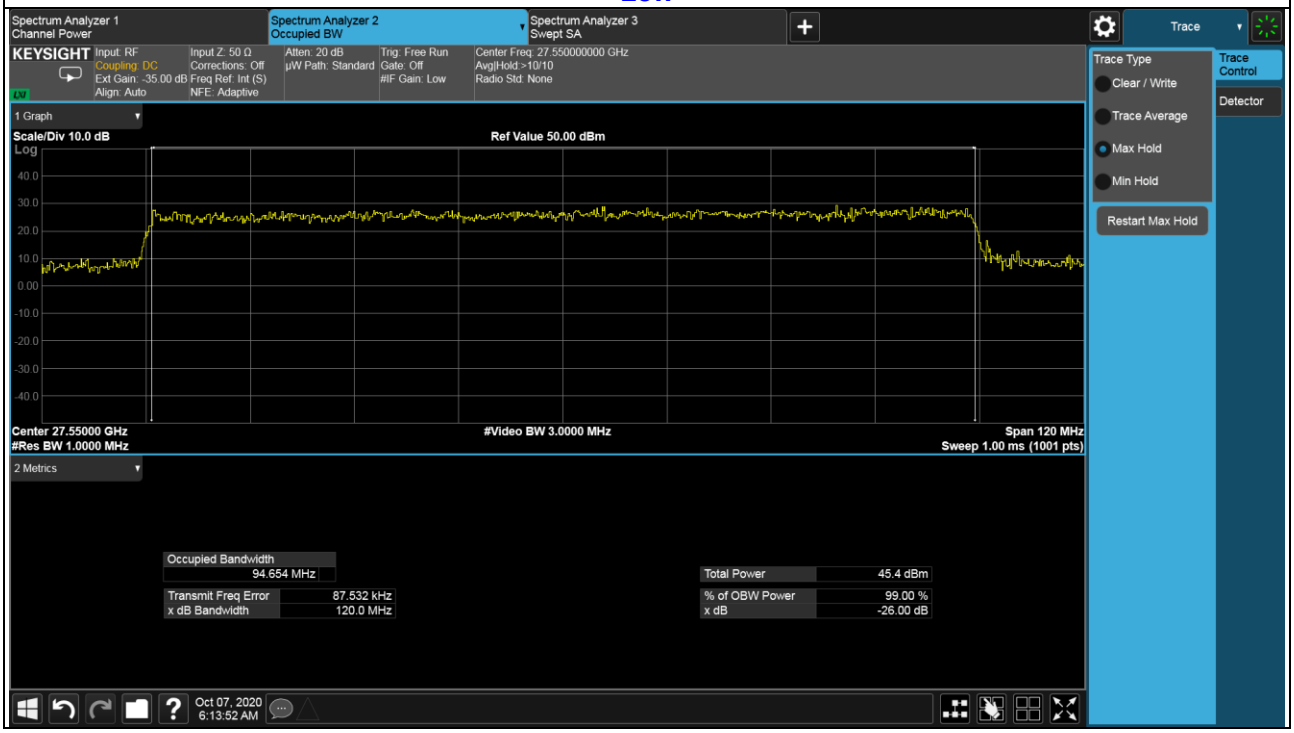
Middle

High

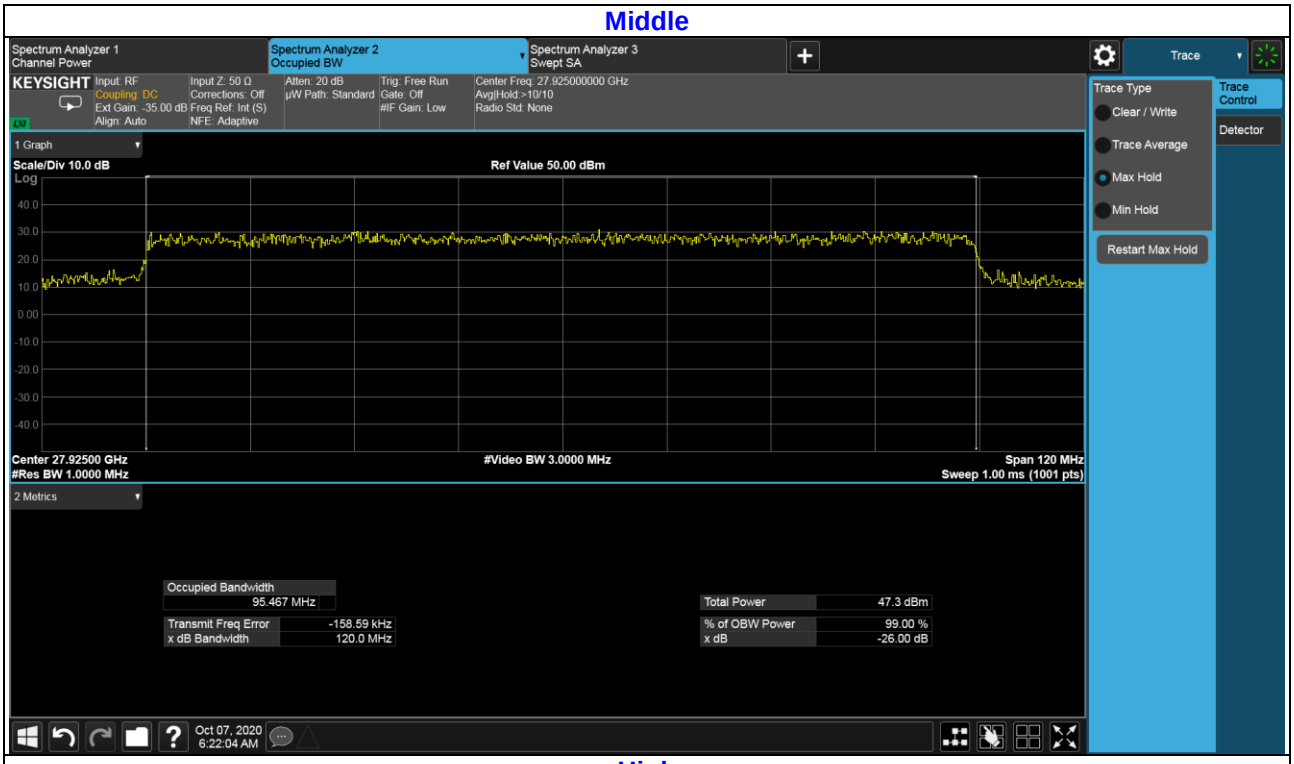


Beam ID: 11 1CC 64QAM

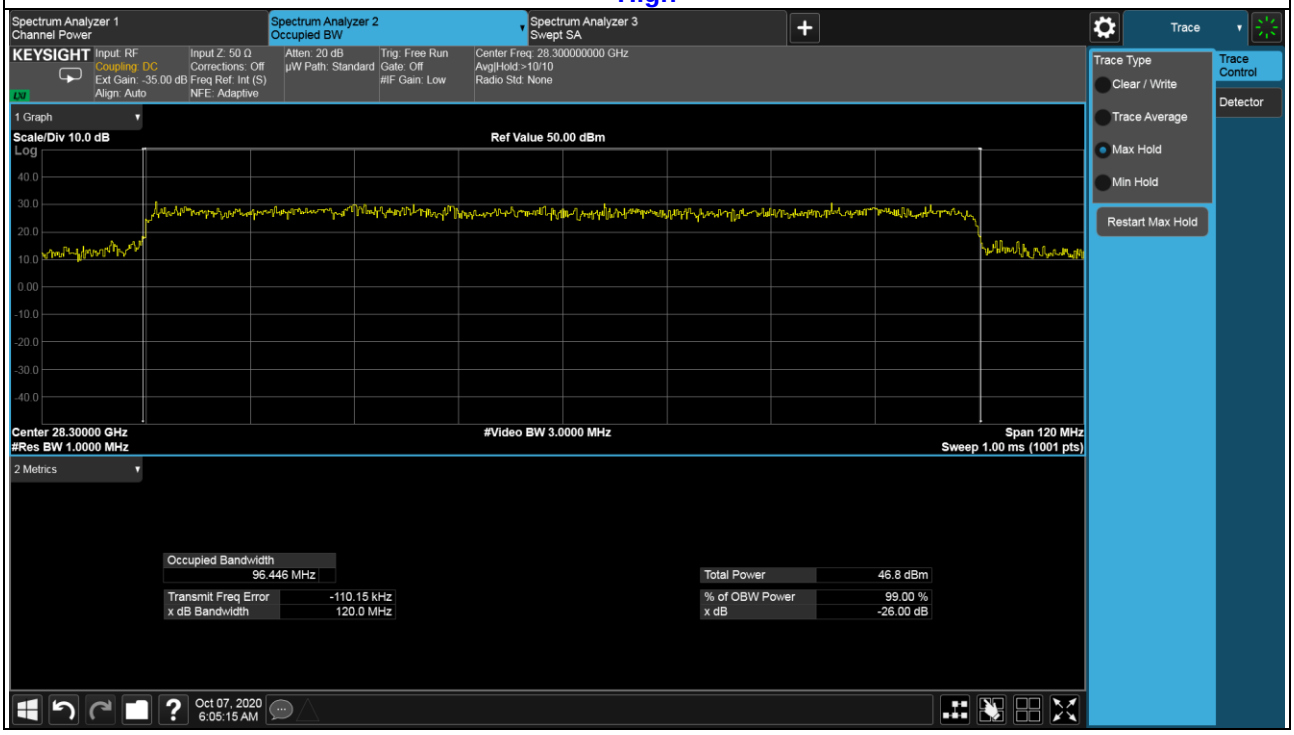
Low

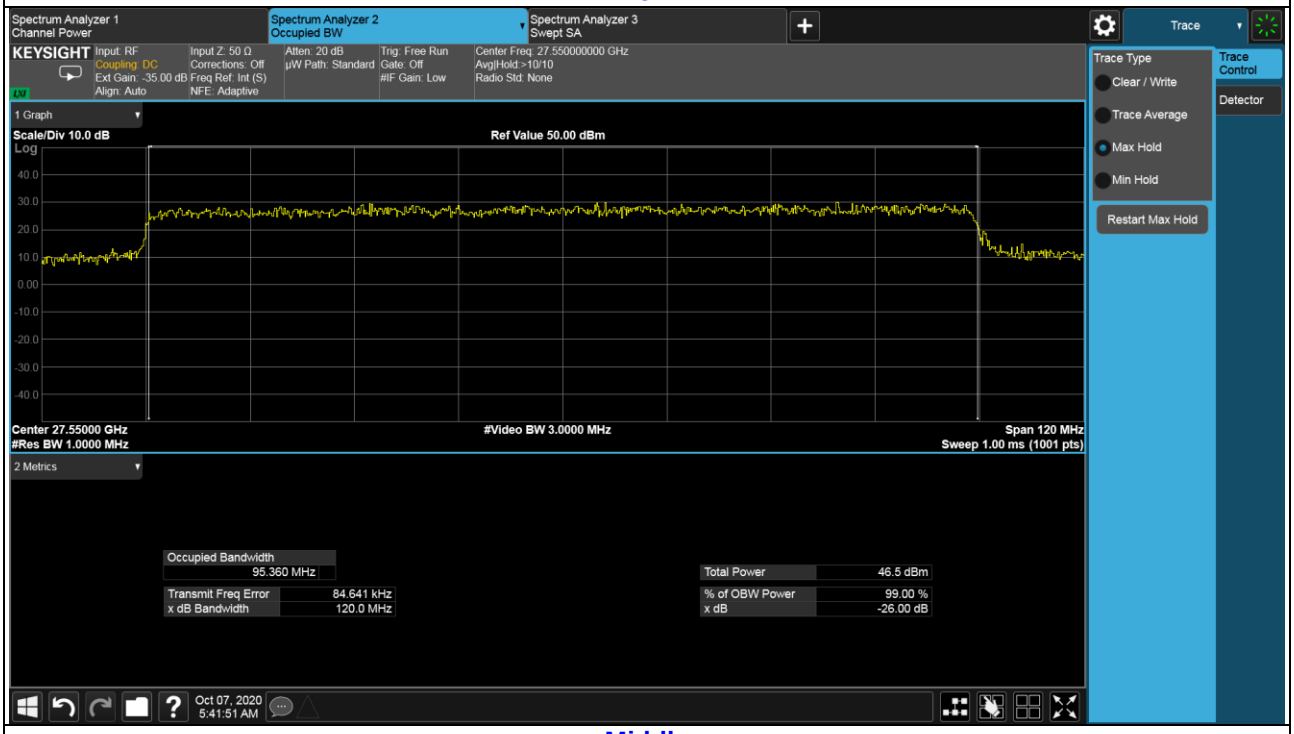
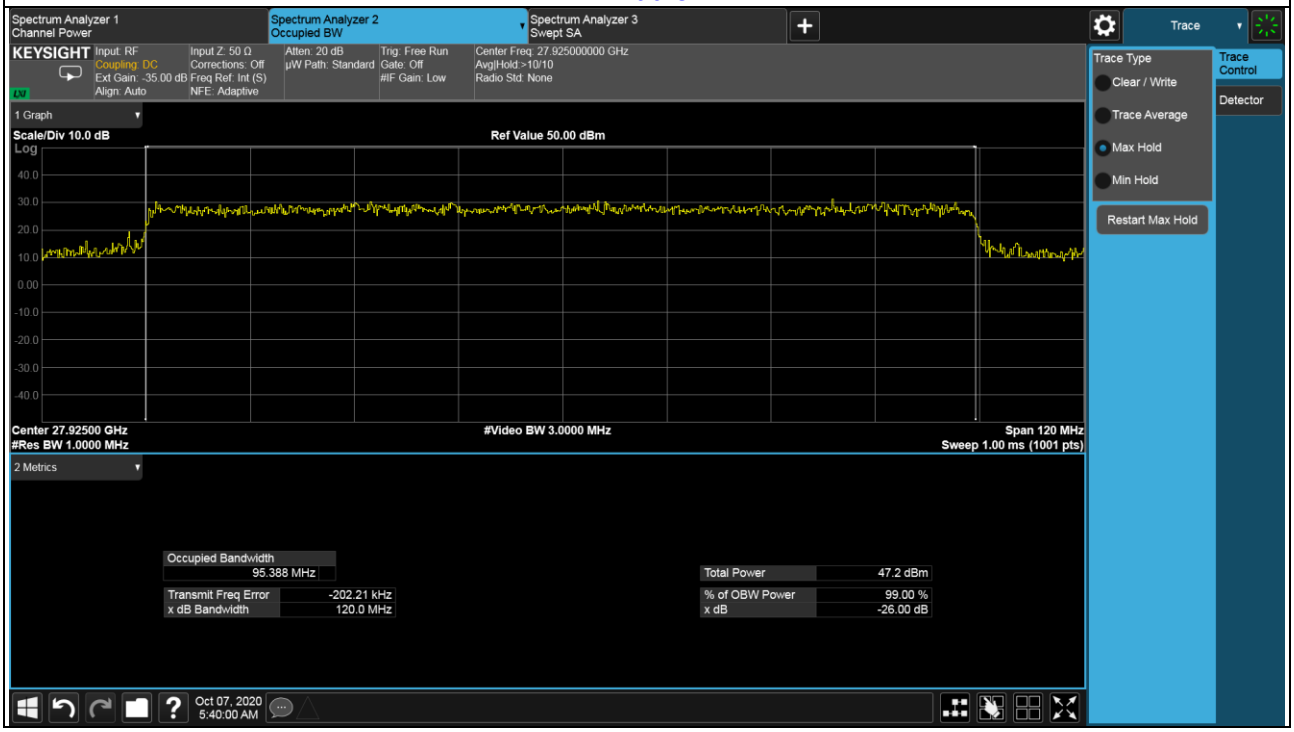


Middle

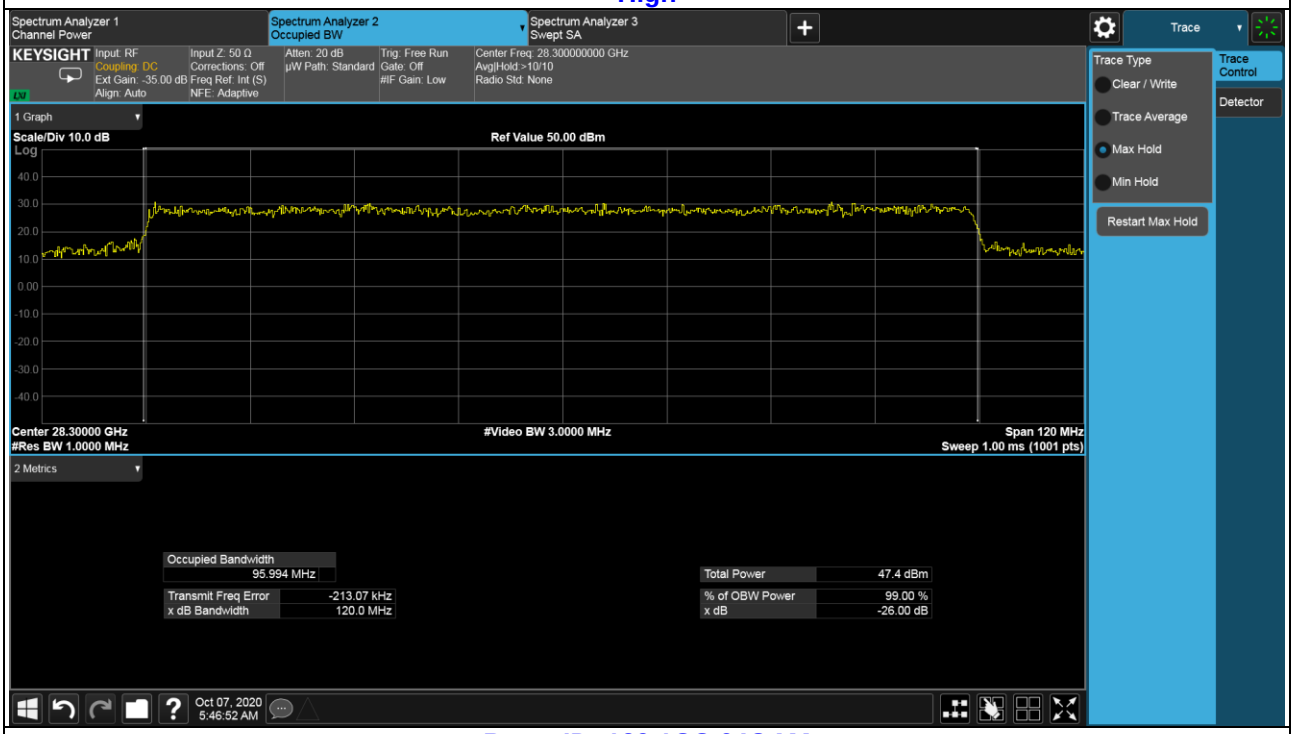

Spectrum Analyzer 1
Channel Power
Spectrum Analyzer 2
Occupied BW
Spectrum Analyzer 3
Swept SA
Trace
KEYSIGHT
Input: RF
Coupling: DC
Ext Gain: -35.00 dB
Align: Auto
Input Z: 50 Ω
Corrections: Off
Freq Ref: Int (S)
NFE: Adaptive
Atten: 20 dB
µW Path: Standard
Trig: Free Run
Gate: Off
#IF Gain: Low
Center Freq: 27.925000000 GHz
Avg|Hold:>10/10
Radio Std: None
1 Graph
Scale/Div 10.0 dB
Ref Value 50.00 dBm
Log
40.0
30.0
20.0
10.0
0.00
-10.0
-20.0
-30.0
-40.0
Center 27.92500 GHz
#Res BW 1.0000 MHz
#Video BW 3.0000 MHz
Span 120 MHz
Sweep 1.00 ms (1001 pts)
2 Metrics
Occupied Bandwidth
95.467 MHz
Transmit Freq Error
-158.59 kHz
x dB Bandwidth
120.0 MHz
Total Power
47.3 dBm
% of OBW Power
99.00 %
x dB
-26.00 dB
Oct 07, 2020
6:22:04 AM
Trace Type
Clear / Write
Trace Average
Max Hold
Min Hold
Restart Max Hold
Trace Control
Detector

High


Spectrum Analyzer 1
Channel Power
Spectrum Analyzer 2
Occupied BW
Spectrum Analyzer 3
Swept SA
Trace
KEYSIGHT
Input: RF
Coupling: DC
Ext Gain: -35.00 dB
Align: Auto
Input Z: 50 Ω
Corrections: Off
Freq Ref: Int (S)
NFE: Adaptive
Atten: 20 dB
µW Path: Standard
Trig: Free Run
Gate: Off
#IF Gain: Low
Center Freq: 28.300000000 GHz
Avg|Hold:>10/10
Radio Std: None
1 Graph
Scale/Div 10.0 dB
Ref Value 50.00 dBm
Log
40.0
30.0
20.0
10.0
0.00
-10.0
-20.0
-30.0
-40.0
Center 28.30000 GHz
#Res BW 1.0000 MHz
#Video BW 3.0000 MHz
Span 120 MHz
Sweep 1.00 ms (1001 pts)
2 Metrics
Occupied Bandwidth
96.446 MHz
Transmit Freq Error
-110.15 kHz
x dB Bandwidth
120.0 MHz
Total Power
46.8 dBm
% of OBW Power
99.00 %
x dB
-26.00 dB
Oct 07, 2020
6:05:15 AM
Trace Type
Clear / Write
Trace Average
Max Hold
Min Hold
Restart Max Hold
Trace Control
Detector

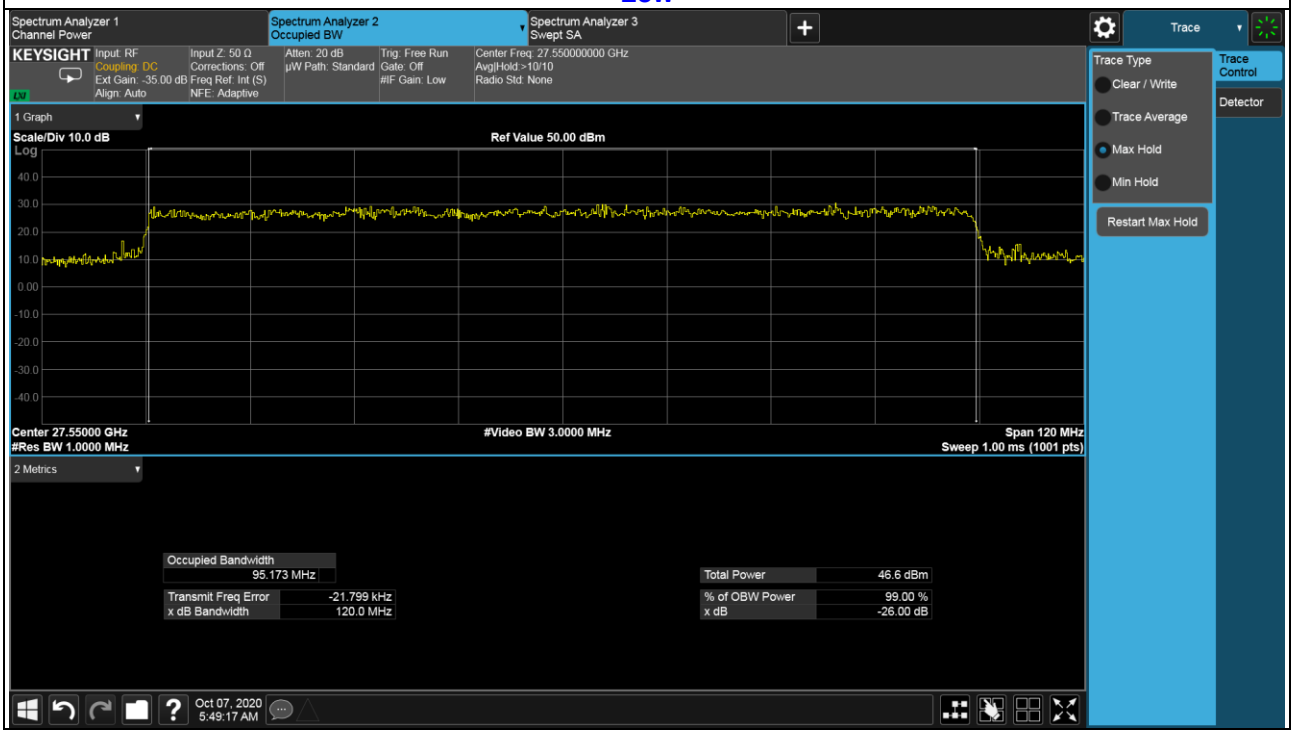
Beam ID: 139 1CC QPSK
Low

Middle


High

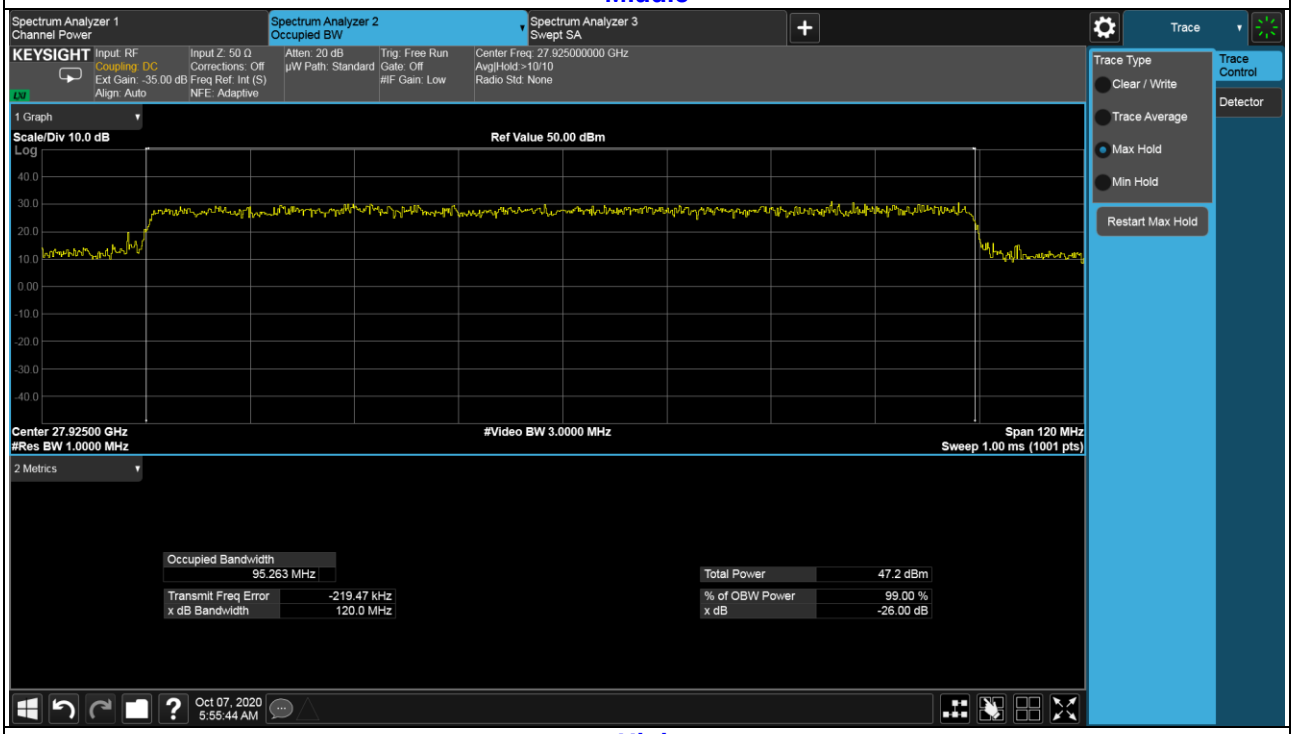


Beam ID: 139 1CC 64QAM

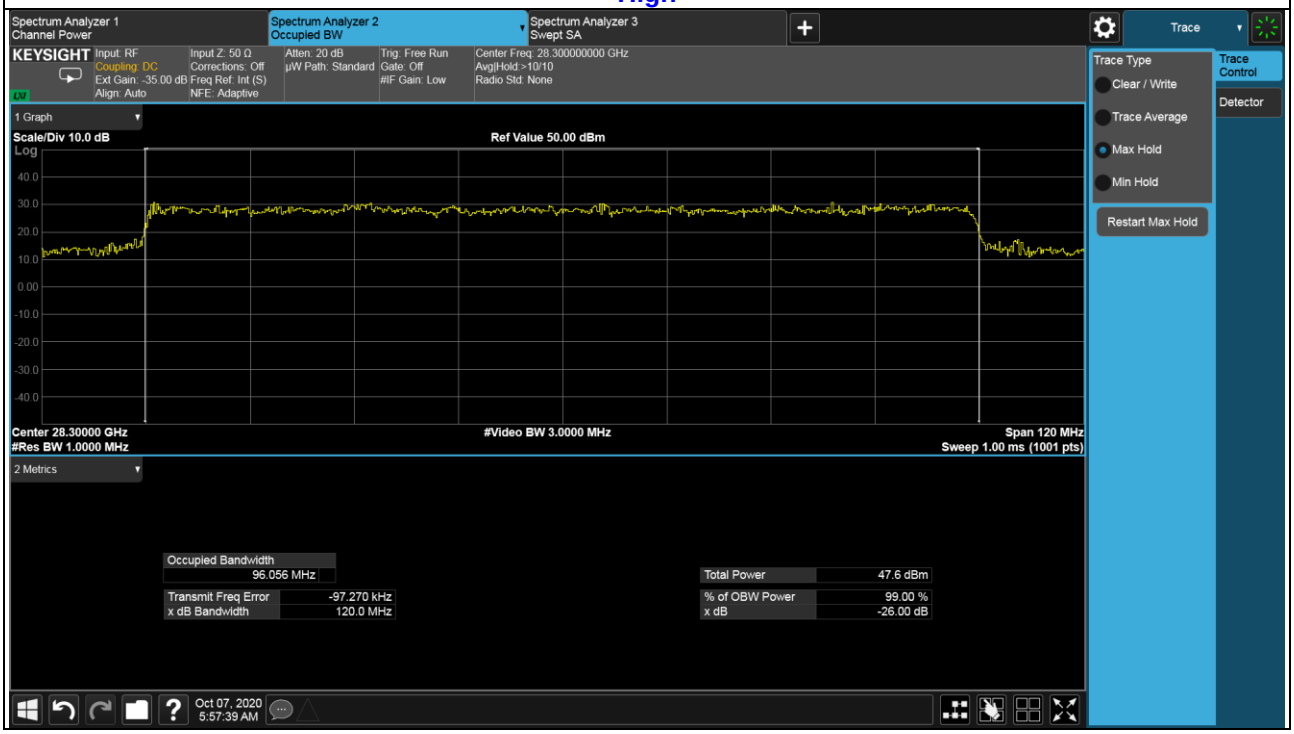
Low



Middle


Spectrum Analyzer 1
Channel Power
Spectrum Analyzer 2
Occupied BW
Spectrum Analyzer 3
Swept SA
Trace
KEYSIGHT
Input: RF
Coupling: DC
Ext Gain: -35.00 dB
Align: Auto
Input Z: 50 Ω
Corrections: Off
Freq Ref: Int (S)
NFE: Adaptive
Atten: 20 dB
µW Path: Standard
Trig: Free Run
Gate: Off
#IF Gain: Low
Center Freq: 27.925000000 GHz
Avg|Hold:>10/10
Radio Std: None
Trace Type
Clear / Write
Trace Average
Max Hold
Min Hold
Restart Max Hold
Trace Control
Detector
1 Graph
Scale/Div 10.0 dB
Ref Value 50.00 dBm
Log
40.0
30.0
20.0
10.0
0.00
-10.0
-20.0
-30.0
-40.0
Center 27.92500 GHz
#Res BW 1.0000 MHz
#Video BW 3.0000 MHz
Span 120 MHz
Sweep 1.00 ms (1001 pts)
2 Metrics
Occupied Bandwidth
95.263 MHz
Transmit Freq Error
-219.47 kHz
x dB Bandwidth
120.0 MHz
Total Power
47.2 dBm
% of OBW Power
99.00 %
x dB
-26.00 dB
Oct 07, 2020
5:55:44 AM

High


Spectrum Analyzer 1
Channel Power
Spectrum Analyzer 2
Occupied BW
Spectrum Analyzer 3
Swept SA
Trace
KEYSIGHT
Input: RF
Coupling: DC
Ext Gain: -35.00 dB
Align: Auto
Input Z: 50 Ω
Corrections: Off
Freq Ref: Int (S)
NFE: Adaptive
Atten: 20 dB
µW Path: Standard
Trig: Free Run
Gate: Off
#IF Gain: Low
Center Freq: 28.300000000 GHz
Avg|Hold:>10/10
Radio Std: None
Trace Type
Clear / Write
Trace Average
Max Hold
Min Hold
Restart Max Hold
Trace Control
Detector
1 Graph
Scale/Div 10.0 dB
Ref Value 50.00 dBm
Log
40.0
30.0
20.0
10.0
0.00
-10.0
-20.0
-30.0
-40.0
Center 28.30000 GHz
#Res BW 1.0000 MHz
#Video BW 3.0000 MHz
Span 120 MHz
Sweep 1.00 ms (1001 pts)
2 Metrics
Occupied Bandwidth
96.056 MHz
Transmit Freq Error
-97.270 kHz
x dB Bandwidth
120.0 MHz
Total Power
47.6 dBm
% of OBW Power
99.00 %
x dB
-26.00 dB
Oct 07, 2020
5:57:39 AM