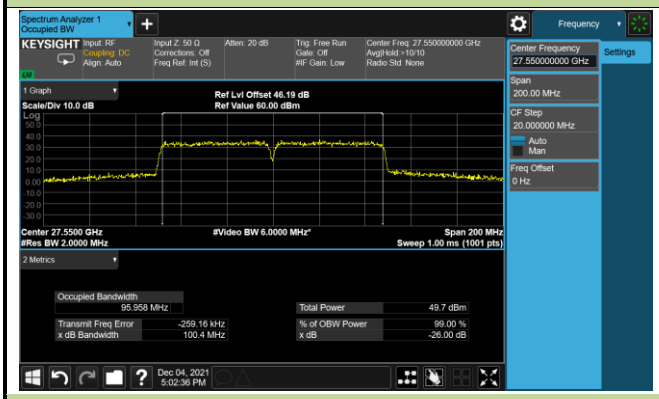
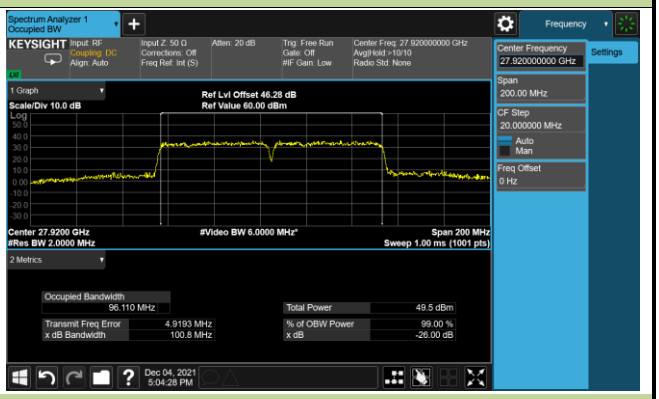
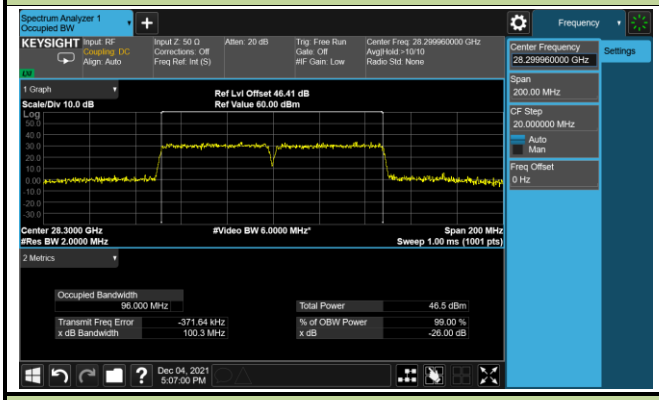
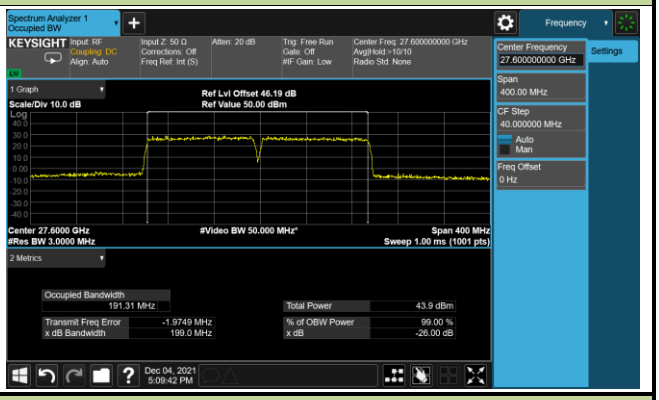
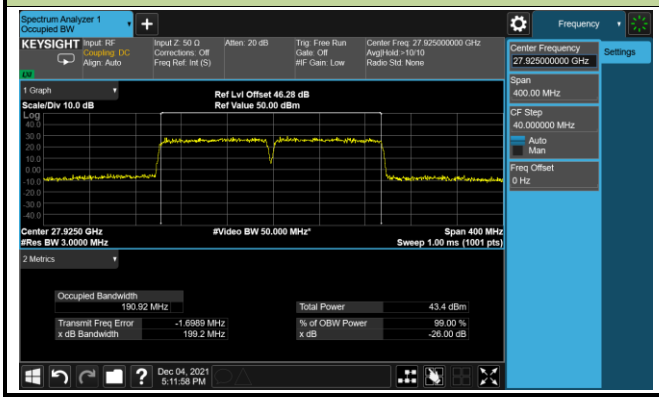
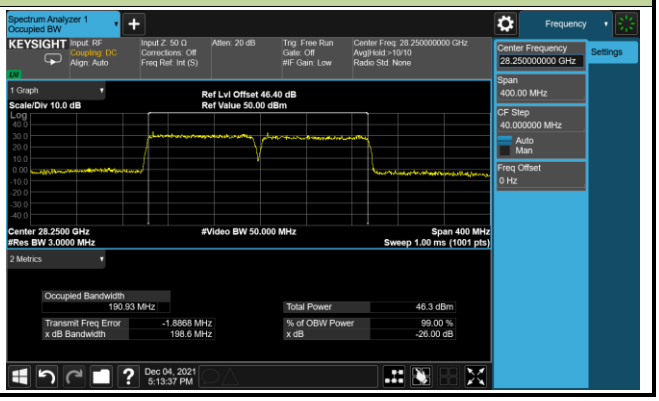
99% Bandwidth - 256QAM	
50+50MHz Low Channel	50+50MHz Middle Channel
	
50+50MHz High Channel	100+100MHz Low Channel
	
100+100MHz Middle Channel	100+100MHz High Channel
	

4.3. Frequency Stability Measurement

4.3.1.Test Limit

The frequency stability shall be measured by variation of ambient temperature and variation of primary supply voltage to ensure that the fundamental emission stays within the authorized frequency block.

4.3.2.Test Procedures Used

ANSI C63.26-2015 - Section 5.6

4.3.3.Test Setting

Frequency Stability Under Temperature Variations:

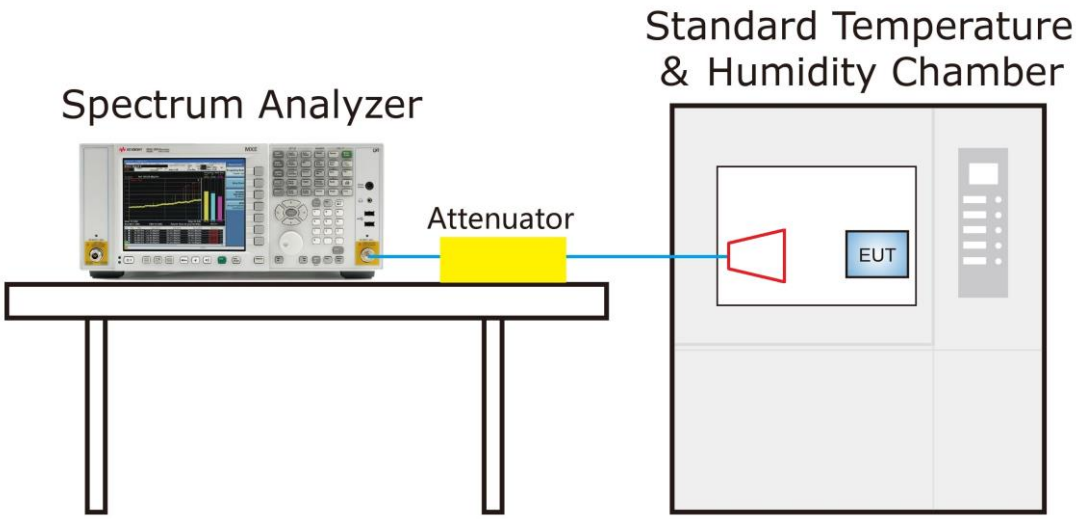
The equipment under test was connected to an external AC or DC power supply and input rated voltage. RF output was connected to a frequency counter or spectrum analyzer via feed through attenuators. The EUT was placed inside the temperature chamber. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and measure EUT 20°C operating frequency as reference frequency. Turn EUT off and set the chamber temperature to highest. After the temperature stabilized for approximately 30 minutes recorded the frequency. Repeat step measure with 10°C decreased per stage until the lowest temperature reached.

Frequency Stability Under Voltage Variations:

Set chamber temperature to 20°C. Use a variable AC power supply / DC power source to power the EUT and set the voltage to rated voltage. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and recorded the frequency.

Reduce the inputvoltage to specify extreme voltage variation (±15%) and end point, record the maximum frequency change.

4.3.4.Test Setup



4.3.5.Test Result

Product	5G High Power mmWave Outdoor CPE	Test Site	SIP-TR1
Test Engineer	Candy Luo	Test Date	2021/12/03
Test Mode	n261_CW tone		

Voltage (%)	Temp. (°C)	Frequency (MHz)	Deviation (kHz)	Deviation (ppm)
100%	- 30	27930.043630	208.94	7.48
	- 20	27929.994786	160.09	5.73
	- 10	27929.924465	89.77	3.21
	0	27929.873769	39.08	1.40
	+ 10	27929.845096	10.40	0.37
	+ 20	27929.834692	0.00	0.00
	+ 30	27929.833519	-1.17	-0.04
	+ 40	27929.838895	4.20	0.15
	+ 50	27929.854456	19.76	0.71
	+ 55	27929.865648	30.96	1.11
115%	+ 20	27929.969778	2.05	0.07
85%	+ 20	27929.965872	-1.85	-0.07

4.4. Equivalent Isotropically Radiated Power Measurement

4.4.1.Test Limit

For transportable stations, as defined in §30.202, the average power of the sum of all antenna elements is limited to a maximum EIRP of +55 dBm.

4.4.2.Test Procedures Used

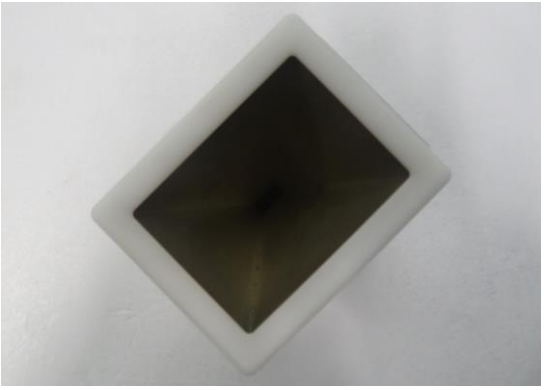
ANSI C63.26-2015 - Section 5.2.4.4.1

KDB 842590 D01v01r02 Section 4.2

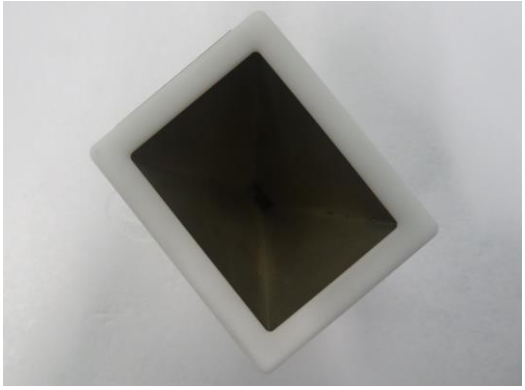
4.4.3.Test Setting

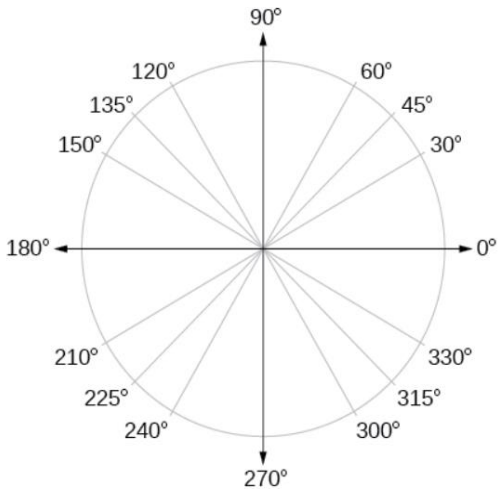
1. The receiver antenna was rotated on various angles to investigate worst case emission. The horn antennas angle is denoted as follow:

Horn Antenna at 135°



Horn Antenna at 45°

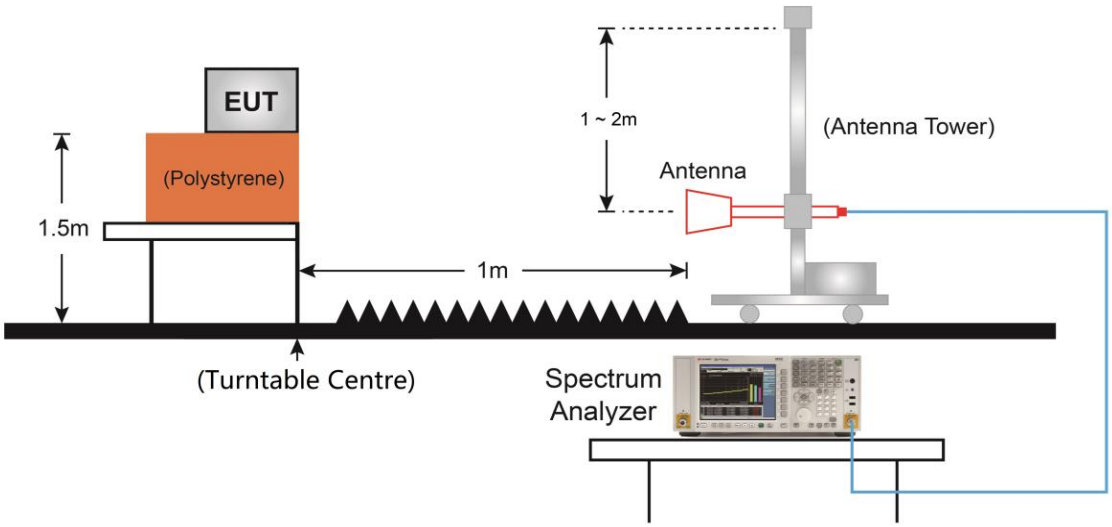




2. Set the spectrum analyzer on the channel power measurement function for testing.
3. Set span to 2 × to 3 × the OBW.
4. Set RBW = 1% to 5% of the OBW and VBW ≥ 3 × RBW.
5. Number of sweep points ≥ 2 × span / RBW.

6. Sweep time = auto-couple
7. Detector = power averaging (rms).
8. The integration bandwidth of the channel power set equal to the OBW of the signal
9. Trace average at least 100 traces
10. If the EUT can be configured to transmit continuously, then set the trigger to free run.
11. If the EUT cannot be configured to transmit continuously, then use a sweep trigger with the level set to enable triggering only on full power bursts and configure the EUT to transmit at full power for the entire duration of each sweep. Verify that the sweep time is less than or equal to the transmission burst duration. Time gating can also be used under similar constraints (i.e., configured such that measurement data is collected only during active fullpower transmissions).

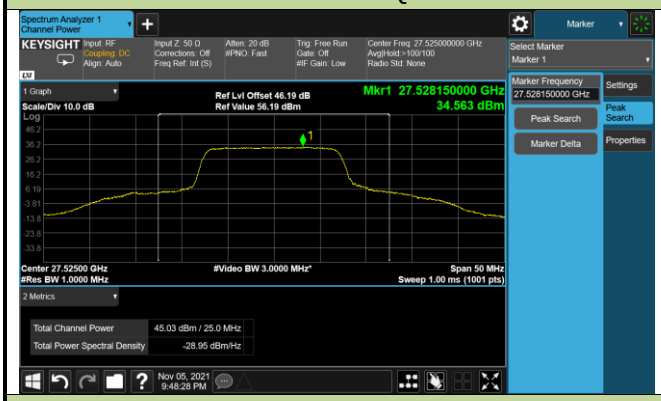
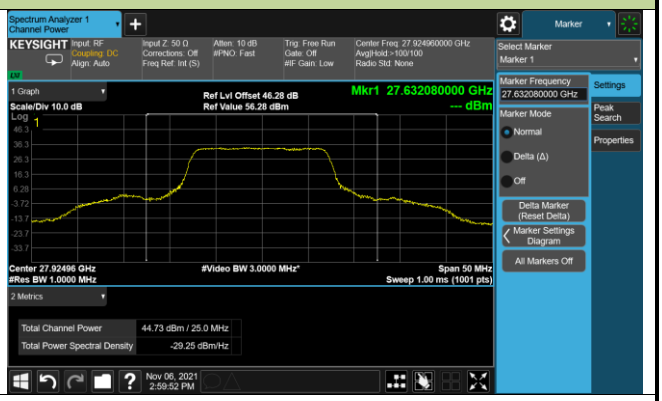
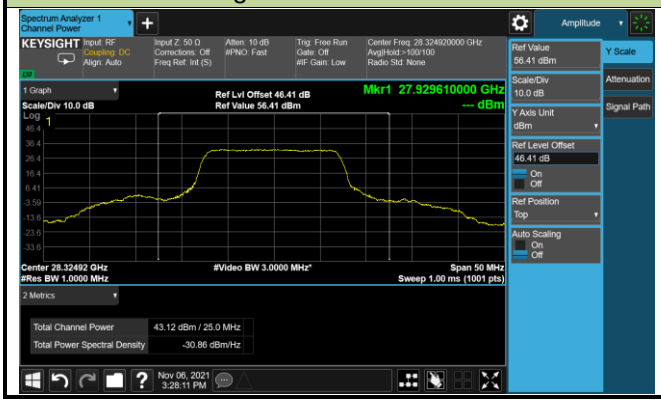
4.4.4.Test Setup



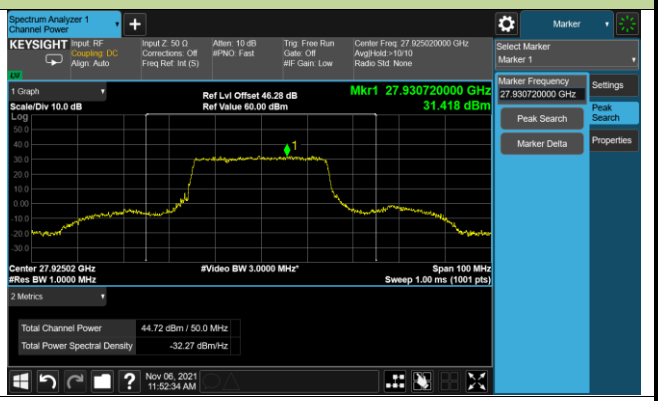
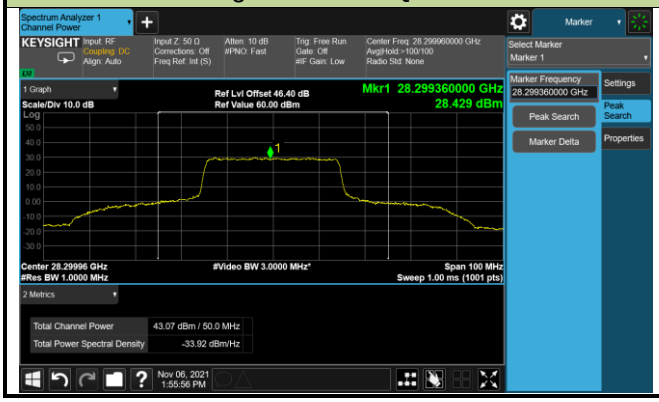
4.4.5. Test Result

Product	5G High Power mmWave Outdoor CPE	Test Site	SIP-AC2
Test Engineer	Allen Zou	Test Date	2021/11/05 ~ 2021/11/06
Test Mode	n261_SISO Mode_Beam ID 63_ Inner_Full		

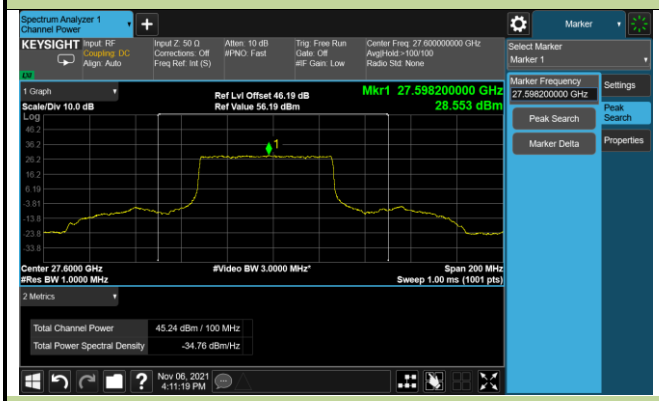
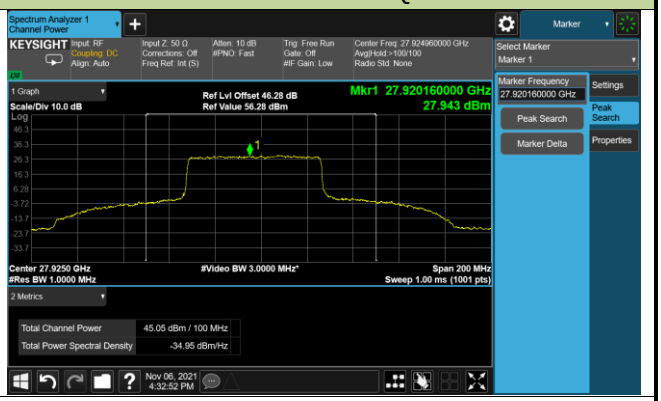
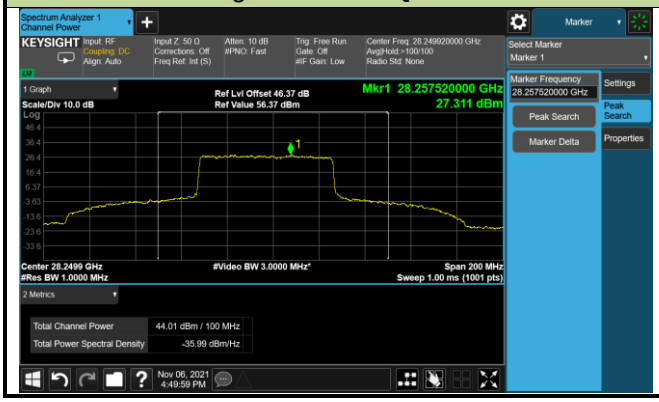
Clannel	BW (MHz)	Waveform	Modulation	Maximum EIRP (dBm)
Low	50	DFT-S	BPSK	44.99
	50	DFT-S	QPSK	**45.03**
	50	DFT-S	16QAM	40.69
	50	DFT-S	64QAM	39.55
	50	DFT-S	256QAM	44.79
	50	CP	QPSK	40.30
	50	CP	16QAM	38.91
	50	CP	64QAM	37.73
	50	CP	256QAM	41.82
Middle	50	DFT-S	BPSK	**44.73**
	50	DFT-S	QPSK	44.62
	50	DFT-S	16QAM	40.38
	50	DFT-S	64QAM	39.26
	50	DFT-S	256QAM	44.11
	50	CP	QPSK	39.89
	50	CP	16QAM	38.90
	50	CP	64QAM	37.23
	50	CP	256QAM	40.86
High	50	DFT-S	BPSK	**43.12**
	50	DFT-S	QPSK	43.03
	50	DFT-S	16QAM	38.78
	50	DFT-S	64QAM	37.61
	50	DFT-S	256QAM	41.04
	50	CP	QPSK	38.32
	50	CP	16QAM	37.28
	50	CP	64QAM	35.75
	50	CP	256QAM	37.66

Max EIRP Plot (Inner_Full)	
Low Channel - QPSK	Middle Channel - BPSK
	
High Channel - BPSK	
	

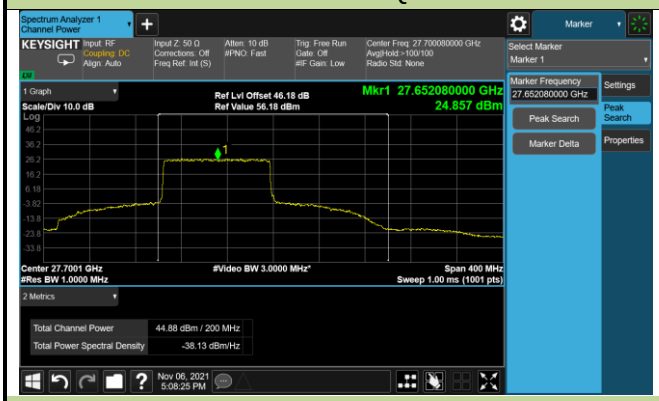
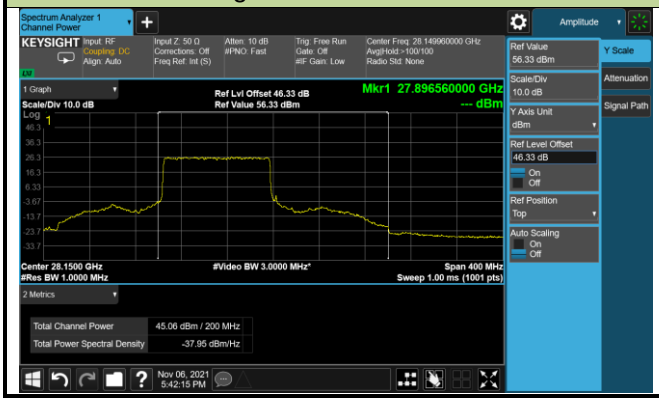
Clannel	BW (MHz)	Waveform	Modulation	Maximum EIRP (dBm)
Low	100	DFT-S	BPSK	**44.96**
	100	DFT-S	QPSK	44.83
	100	DFT-S	16QAM	40.71
	100	DFT-S	64QAM	39.72
	100	DFT-S	256QAM	44.56
	100	CP	QPSK	40.29
	100	CP	16QAM	39.08
	100	CP	64QAM	37.59
	100	CP	256QAM	41.82
Middle	100	DFT-S	BPSK	**44.72**
	100	DFT-S	QPSK	44.60
	100	DFT-S	16QAM	40.46
	100	DFT-S	64QAM	39.41
	100	DFT-S	256QAM	43.94
	100	CP	QPSK	39.87
	100	CP	16QAM	38.60
	100	CP	64QAM	37.25
	100	CP	256QAM	40.78
High	100	DFT-S	BPSK	43.05
	100	DFT-S	QPSK	**43.07**
	100	DFT-S	16QAM	38.98
	100	DFT-S	64QAM	37.92
	100	DFT-S	256QAM	41.25
	100	CP	QPSK	38.38
	100	CP	16QAM	39.88
	100	CP	64QAM	35.81
	100	CP	256QAM	37.86

EIRP Worst Case Plot (Inner_Full)	
Low Channel - BPSK	Middle Channel - BPSK
	
High Channel - QPSK	
	

Clannel	BW (MHz)	Waveform	Modulation	Maximum EIRP (dBm)
Low	200	DFT-S	BPSK	**45.24**
	200	DFT-S	QPSK	45.18
	200	DFT-S	16QAM	40.99
	200	DFT-S	64QAM	39.95
	200	DFT-S	256QAM	44.99
	200	CP	QPSK	40.36
	200	CP	16QAM	39.22
	200	CP	64QAM	37.84
	200	CP	256QAM	41.85
Middle	200	DFT-S	BPSK	45.02
	200	DFT-S	QPSK	**45.05**
	200	DFT-S	16QAM	40.84
	200	DFT-S	64QAM	39.86
	200	DFT-S	256QAM	44.45
	200	CP	QPSK	40.28
	200	CP	16QAM	39.16
	200	CP	64QAM	37.66
	200	CP	256QAM	41.07
High	200	DFT-S	BPSK	43.99
	200	DFT-S	QPSK	**44.01**
	200	DFT-S	16QAM	39.75
	200	DFT-S	64QAM	38.79
	200	DFT-S	256QAM	42.44
	200	CP	QPSK	39.21
	200	CP	16QAM	38.03
	200	CP	64QAM	36.61
	200	CP	256QAM	39.01

Max EIRP Plot (Inner_Full)	
Low Channel - BPSK	Middle Channel - QPSK
	
High Channel - QPSK	
	

Clannel	BW (MHz)	Waveform	Modulation	Maximum EIRP (dBm)
Low	400	DFT-S	BPSK	44.86
	400	DFT-S	QPSK	**44.88**
	400	DFT-S	16QAM	40.12
	400	DFT-S	64QAM	38.79
	400	DFT-S	256QAM	44.25
	400	CP	QPSK	39.58
	400	CP	16QAM	38.59
	400	CP	64QAM	35.94
	400	CP	256QAM	40.88
Middle	400	DFT-S	BPSK	44.93
	400	DFT-S	QPSK	**44.95**
	400	DFT-S	16QAM	40.20
	400	DFT-S	64QAM	38.79
	400	DFT-S	256QAM	44.18
	400	CP	QPSK	39.58
	400	CP	16QAM	38.61
	400	CP	64QAM	36.00
	400	CP	256QAM	40.81
High	400	DFT-S	BPSK	**45.06**
	400	DFT-S	QPSK	45.01
	400	DFT-S	16QAM	40.33
	400	DFT-S	64QAM	38.91
	400	DFT-S	256QAM	44.11
	400	CP	QPSK	39.72
	400	CP	16QAM	38.69
	400	CP	64QAM	36.07
	400	CP	256QAM	40.79

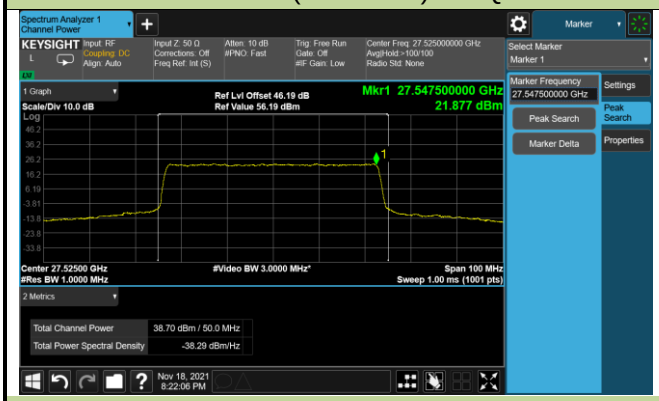
Max EIRP Plot (Inner_Full)	
Low Channel - QPSK	Middle Channel - QPSK
	
High Channel - BPSK	
	

Product	5G High Power mmWave Outdoor CPE	Test Site	SIP-AC2
Test Engineer	Allen Zou	Test Date	2021/11/18 ~ 2021/11/22
Test Mode	n261_MIMO Mode_Beam ID 63+319		

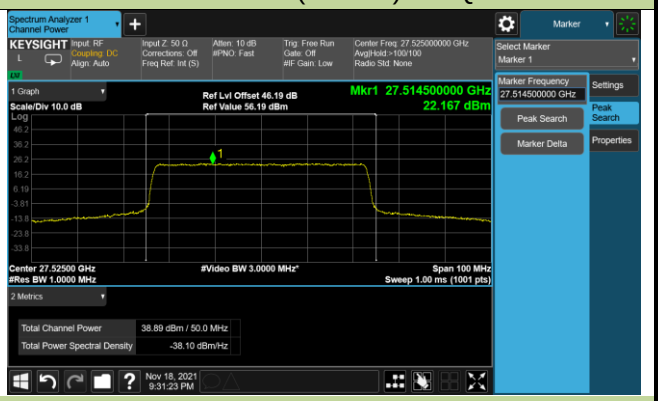
Clannel	BW (MHz)	Waveform	Modulation	Maximum EIRP of RB allocation (dBm)					
				Outer_1RB_Left		Total Power	Outer_1RB_Right		Total Power
				H	V		H	V	
Low	50	CP	QPSK	27.70	31.60	33.08	27.69	31.96	33.34
	50	CP	16QAM	30.87	31.27	34.08	30.88	31.74	34.34
	50	CP	64QAM	31.30	30.93	34.13	31.18	31.17	34.19
	50	CP	256QAM	18.22	17.75	21.00	18.24	18.03	21.15
Middle	50	CP	QPSK	30.83	29.84	33.37	31.65	30.73	34.22
	50	CP	16QAM	30.41	30.18	33.31	31.25	31.00	34.14
	50	CP	64QAM	30.65	28.71	32.80	31.53	29.69	33.72
	50	CP	256QAM	17.83	15.85	19.96	18.62	16.69	20.77
High	50	CP	QPSK	37.32	25.62	37.60	37.33	25.52	37.61
	50	CP	16QAM	31.09	29.56	33.40	31.03	29.36	33.29
	50	CP	64QAM	30.73	30.01	33.40	30.72	29.82	33.30
	50	CP	256QAM	24.40	22.78	26.68	24.27	22.71	26.57
Clannel	BW (MHz)	Waveform	Modulation	Maximum EIRP of RB allocation (dBm)					
				Outer_Full		Total Power	Inner_Full		Total Power
				H	V		H	V	
Low	50	CP	QPSK	38.79	38.72	41.77	**41.30**	**34.76**	**42.17**
	50	CP	16QAM	**38.70**	**38.89**	**41.81**	40.29	34.44	41.29
	50	CP	64QAM	38.91	38.34	41.64	39.08	32.98	40.03
	50	CP	256QAM	36.56	27.56	37.07	40.36	31.59	40.90
Middle	50	CP	QPSK	**38.67**	**37.75**	**41.24**	**41.23**	**33.39**	**41.89**
	50	CP	16QAM	38.60	37.64	41.16	40.36	32.54	41.02
	50	CP	64QAM	38.15	37.18	40.70	39.06	31.00	39.69
	50	CP	256QAM	35.89	26.56	36.37	39.98	29.23	40.33
High	50	CP	QPSK	**38.59**	**37.51**	**41.09**	**40.19**	**31.29**	**40.72**
	50	CP	16QAM	38.55	37.35	41.00	39.10	30.48	39.66
	50	CP	64QAM	38.03	37.08	40.59	37.89	29.15	38.43
	50	CP	256QAM	37.08	32.72	38.44	37.31	25.55	37.59

Max EIRP Plot (Outer_Full)

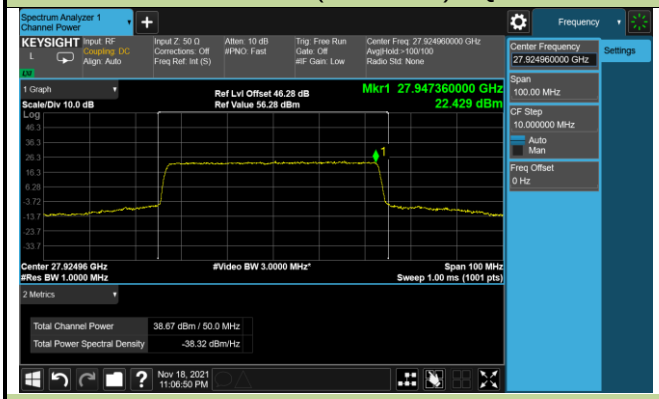
Low Channel (Horizontal) - 16QAM



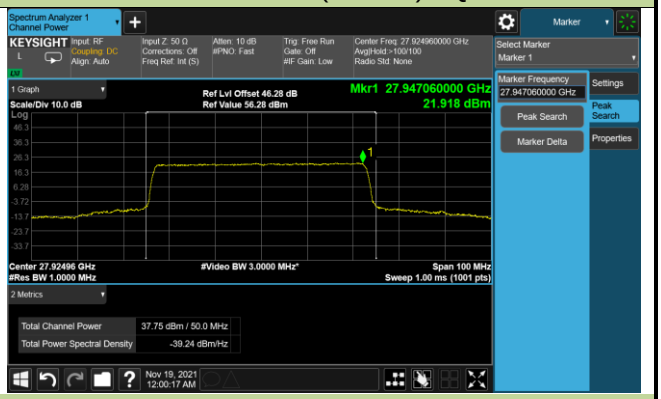
Low Channel (Vertical) - 16QAM



Middle Channel (Horizontal) - QPSK

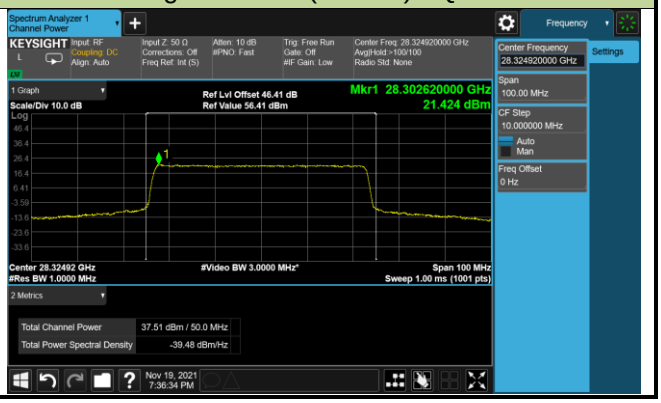


Middle Channel (Vertical) - QPSK



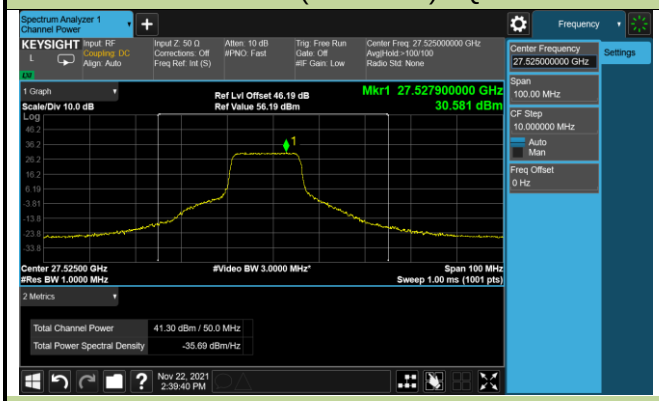
High Channel (Horizontal) - QPSK

High Channel (Vertical) - QPSK

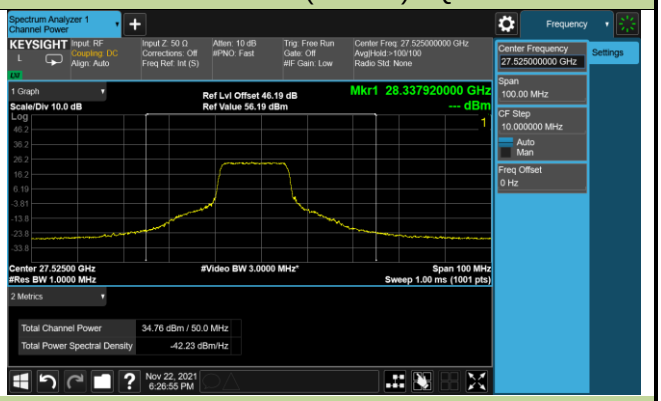


Max EIRP Plot (Inner_Full)

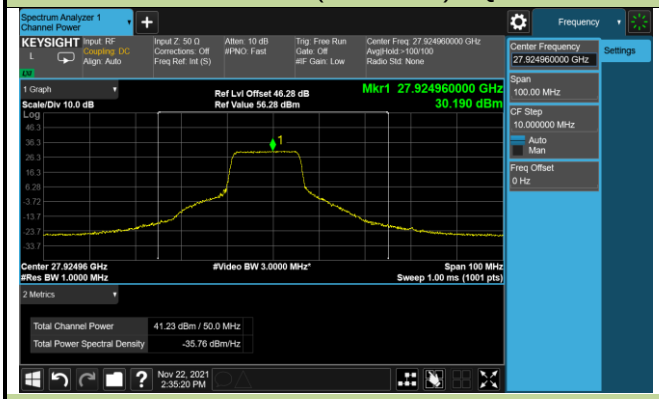
Low Channel (Horizontal) - QPSK



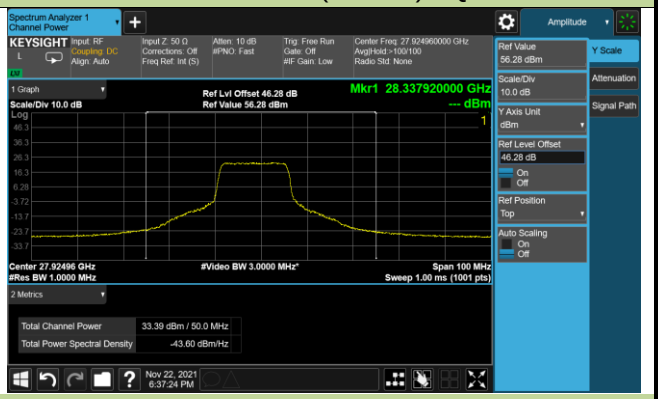
Low Channel (Vertical) - QPSK



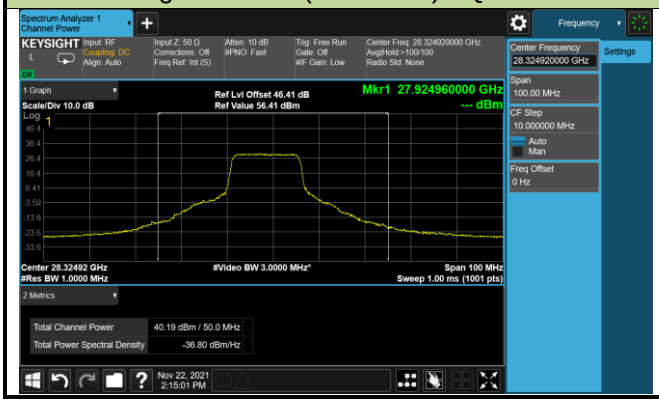
Middle Channel (Horizontal) - QPSK



Middle Channel (Vertical) - QPSK



High Channel (Horizontal) - QPSK

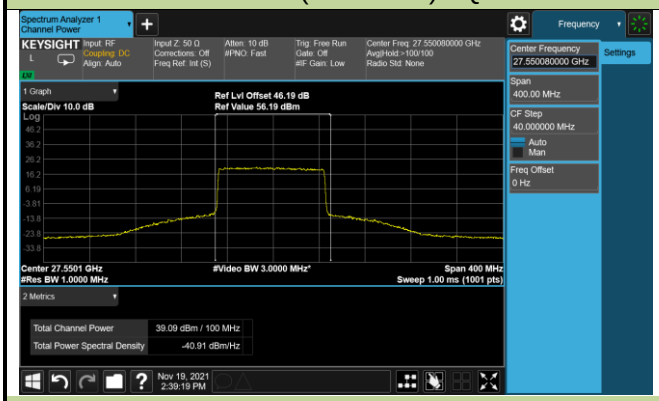


High Channel (Vertical) - QPSK

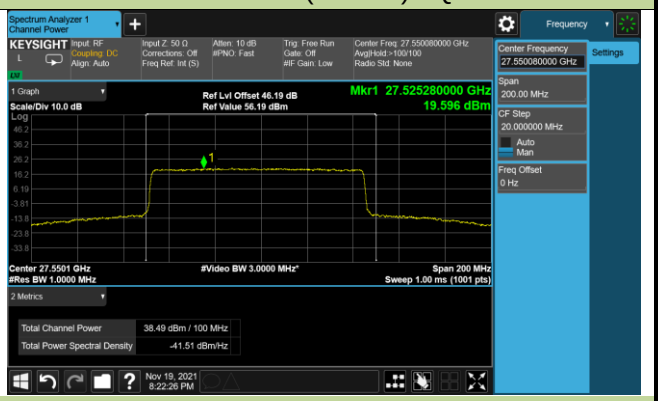
Clannel	BW (MHz)	Waveform	Modulation	Maximum EIRP of RB allocation (dBm)					
				Outer_1RB_Left		Total Power	Outer_1RB_Right		Total Power
				H	V		H	V	
Low	100	CP	QPSK	31.48	30.81	34.17	31.35	31.13	34.25
	100	CP	16QAM	31.30	30.22	33.80	31.25	30.16	33.75
	100	CP	64QAM	31.55	30.73	34.17	30.45	30.97	33.73
	100	CP	256QAM	18.28	25.36	26.14	17.81	25.74	26.39
Middle	100	CP	QPSK	28.03	30.28	32.31	28.68	30.93	32.96
	100	CP	16QAM	30.60	29.73	33.20	31.30	30.47	33.92
	100	CP	64QAM	30.79	30.51	33.66	31.38	30.78	34.10
	100	CP	256QAM	17.30	25.07	25.74	18.07	25.52	26.24
High	100	CP	QPSK	31.19	28.99	33.24	31.35	28.23	33.07
	100	CP	16QAM	31.12	22.28	31.65	31.23	21.76	31.69
	100	CP	64QAM	31.10	21.98	31.60	31.08	21.70	31.55
	100	CP	256QAM	17.90	9.43	18.48	17.95	8.95	18.46
Clannel	BW (MHz)	Waveform	Modulation	Maximum EIRP of RB allocation (dBm)					
				Outer_Full		Total Power	Inner_Full		Total Power
				H	V		H	V	
Low	100	CP	QPSK	**39.09**	**38.49**	**41.81**	**41.76**	**34.56**	**42.52**
	100	CP	16QAM	38.99	38.52	41.77	40.59	34.17	41.48
	100	CP	64QAM	38.57	37.97	41.29	39.31	32.59	40.15
	100	CP	256QAM	39.54	35.88	41.09	40.75	31.39	41.23
Middle	100	CP	QPSK	**39.52**	**38.58**	**42.09**	**41.50**	**33.14**	**42.09**
	100	CP	16QAM	39.50	38.58	42.07	40.60	32.66	41.25
	100	CP	64QAM	38.97	38.19	41.61	38.99	31.10	39.64
	100	CP	256QAM	39.29	35.64	40.85	39.96	28.97	40.29
High	100	CP	QPSK	38.94	30.06	39.47	**40.20**	**31.13**	**40.71**
	100	CP	16QAM	**39.03**	**30.03**	**39.54**	39.29	30.74	39.86
	100	CP	64QAM	38.44	29.49	38.96	38.02	29.10	38.54
	100	CP	256QAM	37.41	25.61	37.69	37.21	25.32	37.48

EIRP Worst Case Plot (Outer_Full)

Low Channel (Horizontal) - QPSK



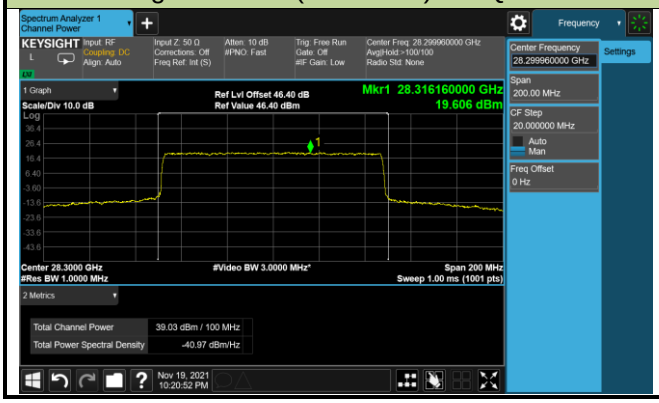
Low Channel (Vertical) - QPSK



Middle Channel (Horizontal) - QPSK

Middle Channel (Vertical) - QPSK

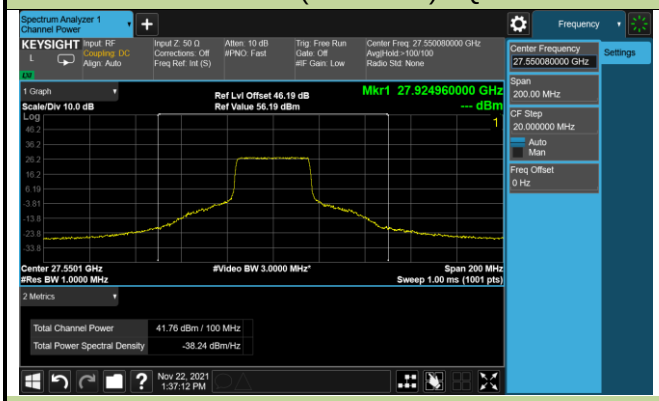
High Channel (Horizontal) - 16QAM



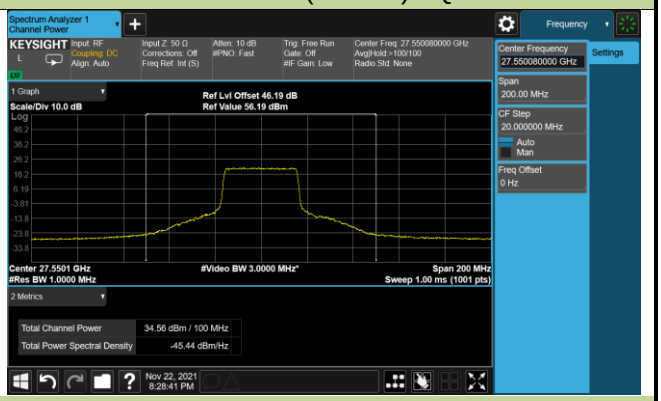
High Channel (Vertical) - 16QAM

EIRP Worst Case Plot (Inner_Full)

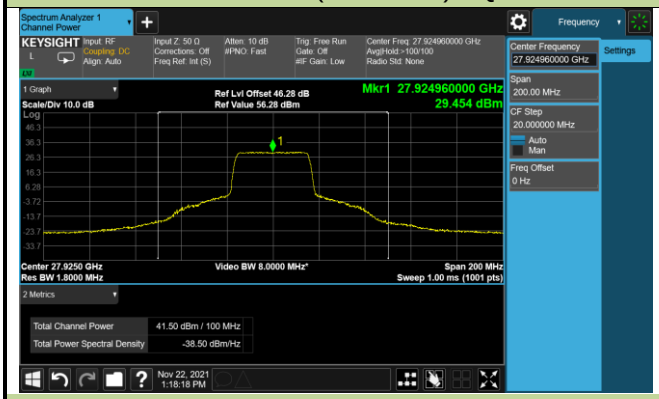
Low Channel (Horizontal) - QPSK



Low Channel (Vertical) - QPSK

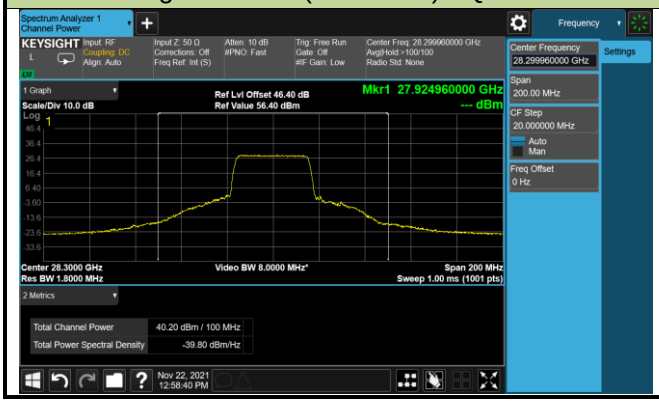


Middle Channel (Horizontal) - QPSK



Middle Channel (Vertical) - QPSK

High Channel (Horizontal) - QPSK



High Channel (Vertical) - QPSK

Product	5G High Power mmWave Outdoor CPE	Test Site	SIP-AC2
Test Engineer	Allen Zou	Test Date	2021/11/20 ~ 2021/12/04
Test Mode	n261_2CC_Beam ID 63		

Clannel	BW (MHz)	Waveform	Modulation	Maximum EIRP of RB allocation (dBm)	
				Outer_Full	Inner_Full
Low	50+50	DFT-S	BPSK	39.56	33.74
	50+50	DFT-S	QPSK	39.17	33.75
	50+50	DFT-S	16QAM	39.19	**34.46**
	50+50	DFT-S	64QAM	36.61	34.35
	50+50	DFT-S	256QAM	**41.44**	28.99
	50+50	CP	QPSK	39.16	34.44
	50+50	CP	16QAM	39.22	34.45
	50+50	CP	64QAM	36.80	34.38
	50+50	CP	256QAM	38.30	25.75
Middle	50+50	DFT-S	BPSK	40.28	34.04
	50+50	DFT-S	QPSK	39.91	34.01
	50+50	DFT-S	16QAM	39.89	34.07
	50+50	DFT-S	64QAM	37.45	**34.15**
	50+50	DFT-S	256QAM	**45.94**	33.92
	50+50	CP	QPSK	39.74	33.94
	50+50	CP	16QAM	39.95	33.98
	50+50	CP	64QAM	37.60	33.72
	50+50	CP	256QAM	42.69	30.54
High	50+50	DFT-S	BPSK	40.54	32.49
	50+50	DFT-S	QPSK	40.20	32.52
	50+50	DFT-S	16QAM	40.22	32.54
	50+50	DFT-S	64QAM	37.56	**32.57**
	50+50	DFT-S	256QAM	**42.08**	27.61
	50+50	CP	QPSK	40.07	32.44
	50+50	CP	16QAM	38.93	32.56
	50+50	CP	64QAM	36.24	32.24
	50+50	CP	256QAM	40.53	28.16

Max EIRP Plot (Outer_Full)

Low Channel - 256QAM

Middle Channel - 256QAM

High Channel - 256QAM

Max EIRP Plot (Inner_Full)

Low Channel - 16QAM

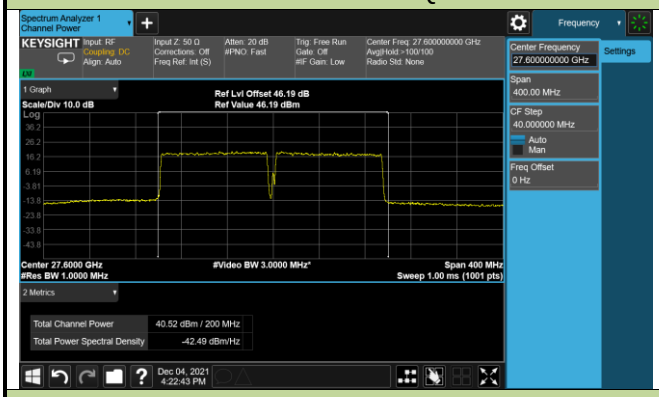
Middle Channel - 64QAM

High Channel - 64QAM

Clannel	BW (MHz)	Waveform	Modulation	Maximum EIRP of RB allocation (dBm)	
				Outer_Full	Inner_Full
Low	100+100	DFT-S	BPSK	39.13	33.17
	100+100	DFT-S	QPSK	38.90	34.04
	100+100	DFT-S	16QAM	38.97	**34.05**
	100+100	DFT-S	64QAM	36.48	33.88
	100+100	DFT-S	256QAM	**40.52**	33.33
	100+100	CP	QPSK	38.85	33.99
	100+100	CP	16QAM	38.90	34.00
	100+100	CP	64QAM	36.40	34.01
	100+100	CP	256QAM	39.65	30.35
Middle	100+100	DFT-S	BPSK	35.27	31.57
	100+100	DFT-S	QPSK	39.38	**35.00**
	100+100	DFT-S	16QAM	39.39	34.95
	100+100	DFT-S	64QAM	36.77	34.77
	100+100	DFT-S	256QAM	**40.64**	33.66
	100+100	CP	QPSK	39.39	34.09
	100+100	CP	16QAM	39.34	34.16
	100+100	CP	64QAM	36.83	34.26
	100+100	CP	256QAM	39.64	30.46
High	100+100	DFT-S	BPSK	**39.49**	33.62
	100+100	DFT-S	QPSK	39.22	33.51
	100+100	DFT-S	16QAM	39.23	**34.07**
	100+100	DFT-S	64QAM	36.54	34.00
	100+100	DFT-S	256QAM	39.06	32.04
	100+100	CP	QPSK	38.91	33.43
	100+100	CP	16QAM	38.93	33.41
	100+100	CP	64QAM	36.24	33.29
	100+100	CP	256QAM	38.11	28.83

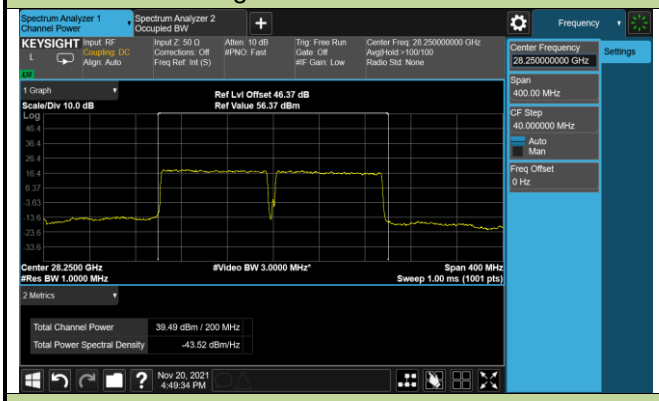
Max EIRP Plot (Outer_Full)

Low Channel - 256QAM



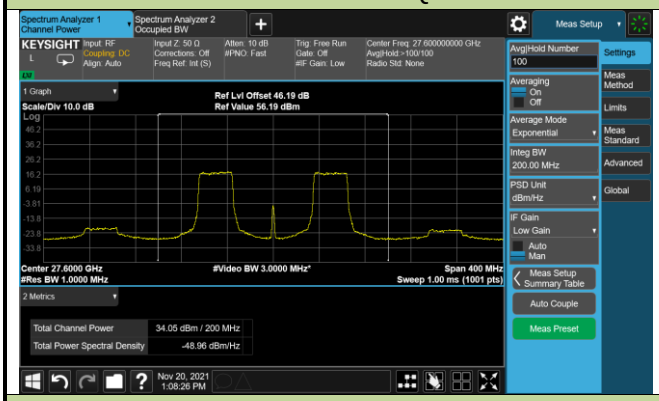
Middle Channel - 256QAM

High Channel - BPSK



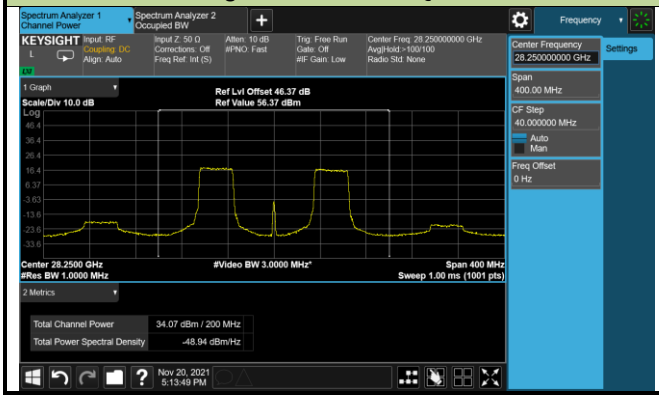
Max EIRP Plot (Inner_Full)

Low Channel - 16QAM



Middle Channel - QPSK

High Channel - 16QAM



4.5. Out-of-Band Emission at the Band Edge Measurements

4.5.1.Test Limit

The conductive power or the total radiated power of any emission outside a licensee's frequency block shall be −13 dBm/MHz or lower. However, in the bands immediately outside and adjacent to the licensee's frequency block, having a bandwidth equal to 10 percentof the channel bandwidth, the conductive power or the total radiated power of any emission shall be −5 dBm/MHz or lower.

4.5.2.Test Procedure Used

ANSI C63.26-2015 - Section 5 and Section 6.4

KDB 842590 D01v01r02 Section 4.4.2.5

4.5.3.Test Setting

EIRP Method

1. RBW = 1MHz
2. VBW ≥ 3*RBW
3. Sweep time ≥ 10 × (number of points in sweep) × (transmission symbol period)
4. Detector = RMS
5. Trace mode = Trace Average
6. The trace was allowed to stabilize

Test Notices

1) The EUT was tested in three orthogonal planes and in all possible test configurations and positioning.

2) Band Edge measurements in this section are shown as equivalent conductive powers for direct comparison to the 30.203 limit. The condutive power at the band edge is calculated by subtracting the gain of the EUT's antenna from the measured EIRP level. Antenna Gain information is shown on the following page.

3) Band Edge emissions were measured at a 1 meter distance.

4) The spectrum analyzer for each measurement shows an offset value that was determined using the measurement antenna factor, cable loss, far field measurement distance, and EUT antenna gain. A sample calculation is shown on the following page.

5) The antenna gains applied to the measurements in the plots shown in this section are accurate for the displayed spectrum.

6) MIMO Band Edge plots shown below are mathematically summed conductive powers between

spectrum analyzer measurements on H Beam and V Beam. This MIMO bandedge plot was produced by summing the following two spectrum analyzer traces: (1) the first trace is maximized while the EUT is transmitting in H-beam and (2) the second trace is maximized while the EUT is transmitting in V-beam.

7) The MIMO Band Edges were calculated by using the “measure and sum the spectra across the outputs” technique specified in Section 6.4.3.2.2 of ANSI C63.26-2015. The spectra were summed linearly and converted to dBm for comparison with the limit.

TRP Method

1. Select the frequency which the EIRP exceed the out-of-band emission limit
2. RBW = 1MHz
3. VBW ≥ 3*RBW
4. Sweep time ≥ 10 × (number of points in sweep) × (transmission symbol period)
5. Detector = RMS
6. Trace mode = Trace Average
7. The trace was allowed to stabilize

Two or Three Cut Method Test Notices

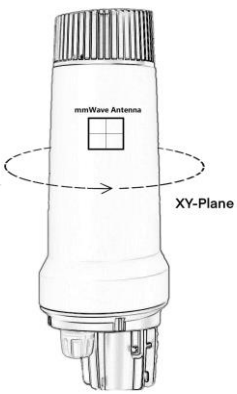
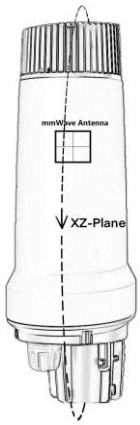
a) Align the EUT with a chosen xy-plane and the xz-plane of the antenna measurement coordinate system.
b) Measure the Antenna dimensions, i.e., depth (d), width (w), and height (h);
c) Calculate the spherical and cylindrical diameters (D and D_{cyl});
d) For the highest frequency (smallest wavelength) of the frequency band measured, calculate the reference angular steps $\Delta\theta_{ref}$ and $\Delta\phi_{ref}$;
e) Set the grid spatial sampling step $\Delta\theta \leq \Delta\theta_{ref}$ for the vertical angle and $\Delta\phi \leq \Delta\phi_{ref}$ for the horizontal cut;
f) For each emission frequency, measure the EIRP (as a sum of two orthogonal polarizations) at each spatial sampling step on the selected grid;
g) For each emission frequency, calculate the average EIRP for both the cuts separately, and then take the average of these two average values;
h) Add 2 dB as a correction factor to the averaged value computed in step g);
i) If the TRP limit is exceeded, a third orthogonal cut in the yz-plane and using the $\Delta\theta$ angular step, can be added. Now, calculate the average values in all three cuts separately, and then take the average value of these three average values;

j) Add 1.5 dB as a correction factor to the averaged value computed in step i).

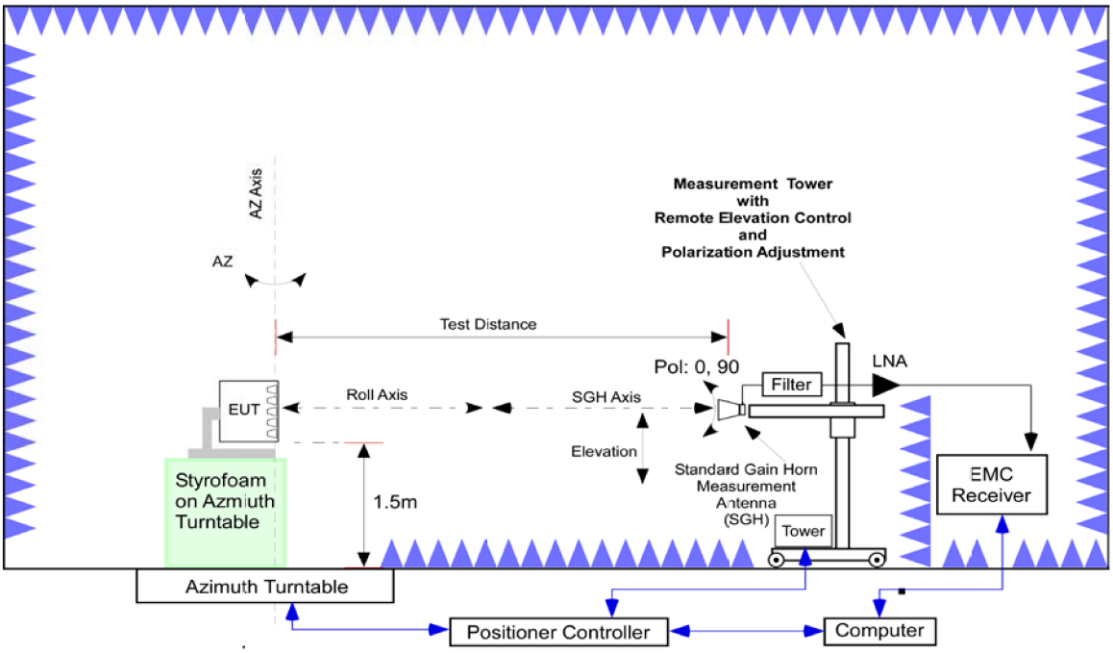
k) Evaluate the pass/fail decision by comparing TRP from step h) or step j) against the applicable TRP limit.

Antenna Dimension	
d (cm)	0.2
w (cm)	4.2
h (cm)	4.2
Highest Spurious Frequency (MHz)	28500
Wavelength (cm)	1.05
Vertical sampling	Horizontal sampling
D = 5.94	Dcyl = 4.2
D/λ = 5.65	Dcyl/λ = 4.0
$\Delta\theta_{ref}$ = 10.14	$\Delta\phi_{ref}$ = 14.33
$\Delta\theta$ = 10	$\Delta\phi$ = 10
Note: Correction Factor = 2dB	

TRP Two Cut Test positioner

XY-Plane	XZ-Plane
	

4.5.4.Test Setup



4.5.5.Test Result

Product	5G High Power mmWave Outdoor CPE	Test Site	SIP-AC2
Test Engineer	Allen Zou	Test Date	2021/11/08 ~ 2022/01/19
Test Mode	n261_SISO Mode_Beam ID 63_Band Edge		

CH	Frequency Range	BW (MHz)	Modulati-on	RB	EIRP (dBm)	Array Gain (dBi)	Conductive Power (dBm)	Limit (dBm)	Result
DFT-s-OFDM									
Low	0 ~ 10% OB	50	BPSK	1RB Left	-7.59	22.00	-29.59	≤ -5.00	Pass
	0 ~ 10% OB		BPSK	Full RB	-9.71	22.00	-31.71	≤ -5.00	Pass
	0 ~ 10% OB		QPSK	1RB Left	-7.56	22.00	-29.56	≤ -5.00	Pass
	0 ~ 10% OB		QPSK	Full RB	-3.67	22.00	-25.67	≤ -5.00	Pass
High	0 ~ 10% OB		BPSK	1RB Right	-10.48	22.00	-32.48	≤ -5.00	Pass
	0 ~ 10% OB		BPSK	Full RB	-8.38	22.00	-30.38	≤ -5.00	Pass
	0 ~ 10% OB		QPSK	1RB Right	-11.36	22.00	-33.36	≤ -5.00	Pass
	0 ~ 10% OB		QPSK	Full RB	-5.68	22.00	-27.68	≤ -5.00	Pass
CP-OFDM									
Low	0 ~ 10% OB	50	QPSK	1RB Left	-7.53	22.00	-29.53	≤ -5.00	Pass
	0 ~ 10% OB		QPSK	Full RB	-9.58	22.00	-31.58	≤ -5.00	Pass
High	0 ~ 10% OB		QPSK	1RB Right	-12.23	22.00	-34.23	≤ -5.00	Pass
	0 ~ 10% OB		QPSK	Full RB	-4.82	22.00	-26.82	≤ -5.00	Pass

Product	5G High Power mmWave Outdoor CPE	Test Site	SIP-AC2
Test Engineer	Allen Zou	Test Date	2022/01/10 ~ 2022/01/30
Test Mode	n261_SISO Mode_Beam ID 63_TRP		

CH	Frequency Range	BW (MHz)	Modulati-on	RB	EIRP (dBm)	TRP (dBm)	Limit (dBm)	Result
DFT-s-OFDM								
Low	> 10% OB	50	BPSK	1RB Left	-26.66	--	≤ -13.00	Pass
	> 10% OB		BPSK	Full RB	-16.77	--	≤ -13.00	Pass
	> 10% OB		QPSK	1RB Left	-26.62	--	≤ -13.00	Pass
	> 10% OB		QPSK	Full RB	-6.58	-18.16	≤ -13.00	Pass
High	> 10% OB		BPSK	1RB Right	-21.70	--	≤ -13.00	Pass
	> 10% OB		BPSK	Full RB	-12.56	-19.58	≤ -13.00	Pass
	> 10% OB		QPSK	1RB Right	-21.62	--	≤ -13.00	Pass
	> 10% OB		QPSK	Full RB	-7.36	-18.86	≤ -13.00	Pass
CP-OFDM								
Low	> 10% OB	50	QPSK	1RB Left	-26.63	--	≤ -13.00	Pass
	> 10% OB		QPSK	Full RB	-13.88	--	≤ -13.00	Pass
High	> 10% OB		QPSK	1RB Right	-21.13	--	≤ -13.00	Pass
	> 10% OB		QPSK	Full RB	-7.98	-20.32	≤ -13.00	Pass

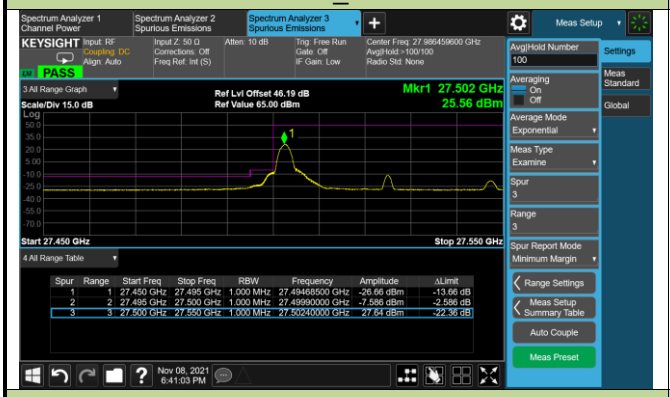
Note: The TRP test results assessed when the EIRP the test exceeds the out-of-band emission limit

SISO Test Worst detail test results										
Frequency (MHz)	Turn Table (degree)	EIRP Test Result								TRP with Correction Factor (dBm)
		Y-Axis				Z-Axis				
		Horizontal		Vertical		Horizontal		Vertical		
		dBm	mW	dBm	mW	dBm	mW	dBm	mW	
27494.685	0	-9.179	0.12081	-23.29	0.00469	-6.58	0.21979	-25.43	0.00286	-18.16
	10	-18.82	0.01312	-26.8	0.00209	-13.25	0.04732	-28.07	0.00156	
	20	-22.31	0.00587	-28.03	0.00157	-21.9	0.00646	-31.69	0.00068	
	30	-28.52	0.00141	-29.15	0.00122	-30.43	0.00091	-34.4	0.00036	
	40	-25.95	0.00254	-28.89	0.00129	-26.92	0.00203	-34.5	0.00035	
	50	-28.59	0.00138	-28.95	0.00127	-23.89	0.00408	-33.78	0.00042	
	60	-28.86	0.00130	-29.3	0.00117	-21.96	0.00637	-33.55	0.00044	
	70	-28.99	0.00126	-29.21	0.00120	-26.78	0.00210	-34.78	0.00033	
	80	-29.2	0.00120	-29.2	0.00120	-31.06	0.00078	-35.6	0.00028	
	90	-29.09	0.00123	-29.16	0.00121	-35.33	0.00029	-36.34	0.00023	
	100	-29.09	0.00123	-29.18	0.00121	-37.62	0.00017	-37.99	0.00016	
	110	-29.09	0.00123	-29.25	0.00119	-39.4	0.00011	-39.87	0.00010	
	120	-29.08	0.00124	-29.01	0.00126	-40.27	0.00009	-40.47	0.00009	
	130	-29.04	0.00125	-29.31	0.00117	-40.27	0.00009	-40.02	0.00010	
	140	-29.28	0.00118	-29.06	0.00124	-40.66	0.00009	-41.11	0.00008	
	150	-29.27	0.00118	-29.28	0.00118	-40.92	0.00008	-41.1	0.00008	
	160	-29.13	0.00122	-29.27	0.00118	-40.79	0.00008	-41.05	0.00008	
	170	-29.13	0.00122	-29.15	0.00122	-40.77	0.00008	-40.93	0.00008	
	180	-29.29	0.00118	-29.06	0.00124	-40.76	0.00008	-40.65	0.00009	
	190	-29.21	0.00120	-29.15	0.00122	-40.66	0.00009	-40.17	0.00010	
	200	-29.2	0.00120	-29.18	0.00121	-40.62	0.00009	-40.12	0.00010	
	210	-29.3	0.00117	-29.29	0.00118	-40.75	0.00008	-40.53	0.00009	
	220	-29.17	0.00121	-29.29	0.00118	-40.68	0.00009	-40.52	0.00009	
	230	-29.07	0.00124	-29.19	0.00121	-40.66	0.00009	-40.56	0.00009	
	240	-29.37	0.00116	-29.45	0.00114	-40.67	0.00009	-40.44	0.00009	
	250	-29.37	0.00116	-29.09	0.00123	-40.55	0.00009	-40.65	0.00009	
	260	-29.19	0.00121	-29.31	0.00117	-39.63	0.00011	-39.99	0.00010	
	270	-29.25	0.00119	-29.22	0.00120	-39.84	0.00010	-39.44	0.00011	
	280	-29.12	0.00122	-29.35	0.00116	-36.39	0.00023	-38.17	0.00015	
	290	-28.64	0.00137	-29.13	0.00122	-33.4	0.00046	-38.66	0.00014	
	300	-28.67	0.00136	-29.2	0.00120	-30.17	0.00096	-38.57	0.00014	
	310	-28.56	0.00139	-29.2	0.00120	-30.02	0.00100	-37.68	0.00017	
	320	-26.03	0.00249	-28.73	0.00134	-29.49	0.00112	-35.29	0.00030	

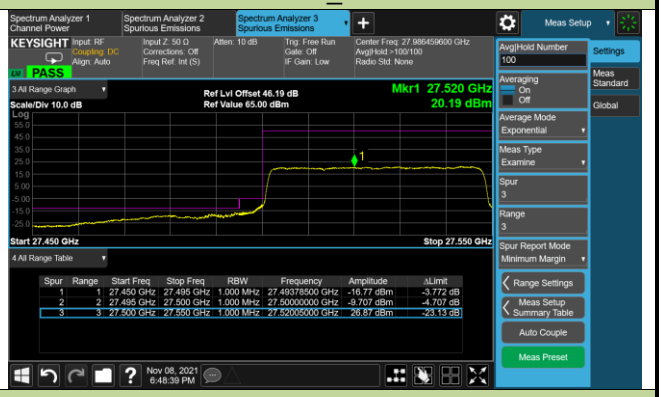
	330	-26.03	0.00249	-28.73	0.00134	-29.51	0.00112	-34.75	0.00033	
	340	-21.29	0.00743	-28.73	0.00134	-15.87	0.02588	-30.28	0.00094	
	350	-17.33	0.01849	-25.37	0.00290	-10.06	0.09863	-26.04	0.00249	

Out-of-Band Emission at the Band Edge (DFT-s-OFDM)

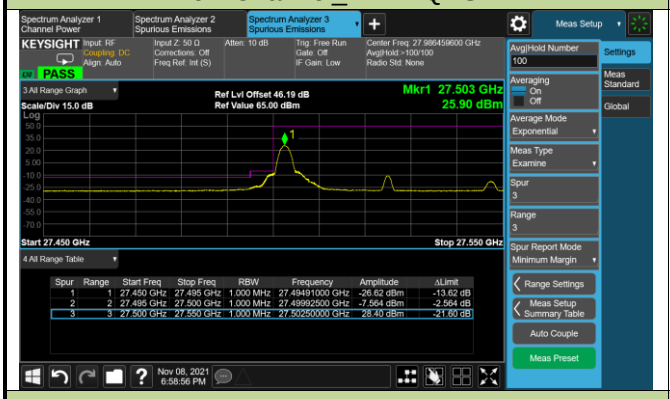
Low Channel_1RB - BPSK



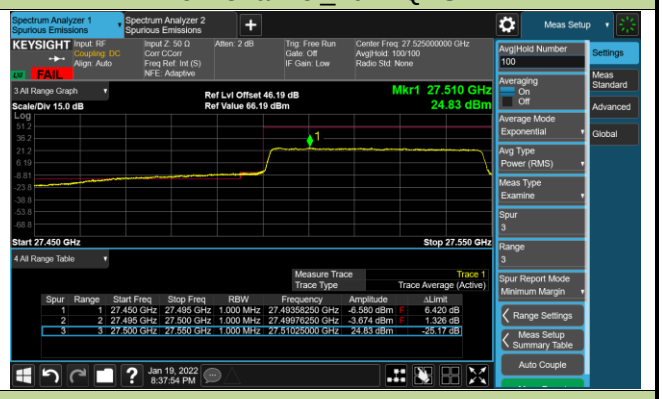
Low Channel_Full - BPSK



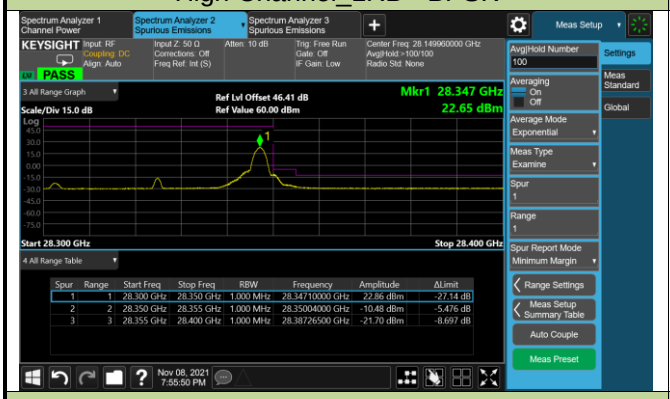
Low Channel_1RB - QPSK



Low Channel_Full - QPSK*

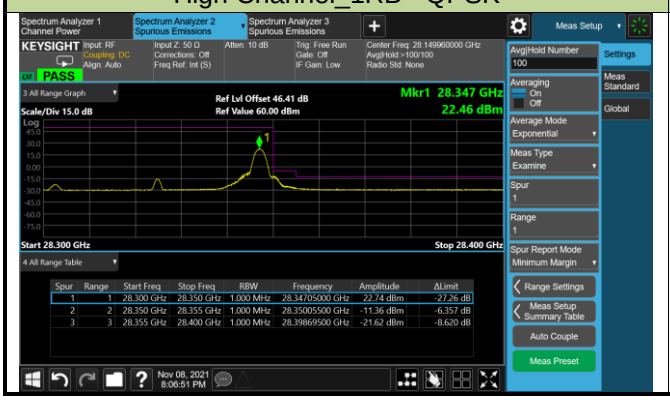


High Channel_1RB - BPSK

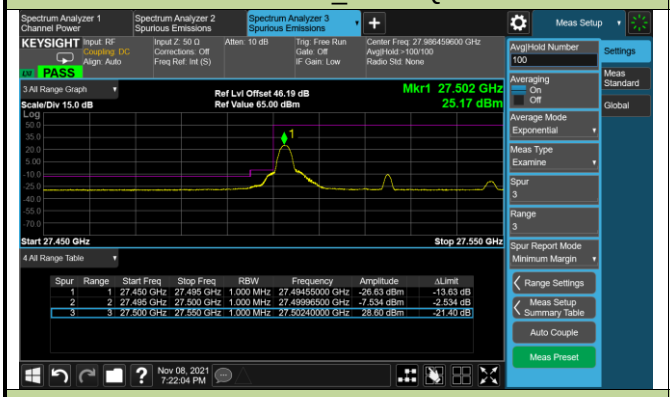
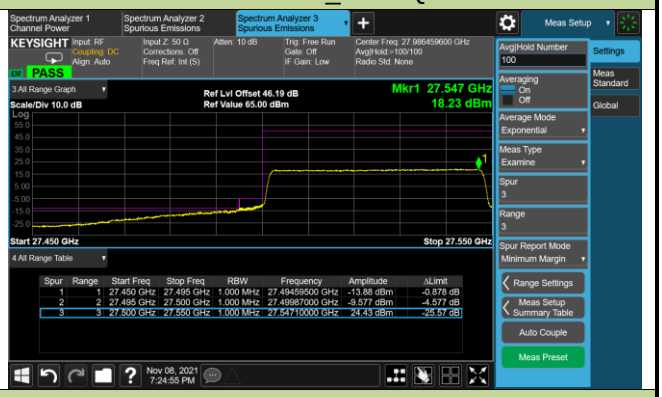
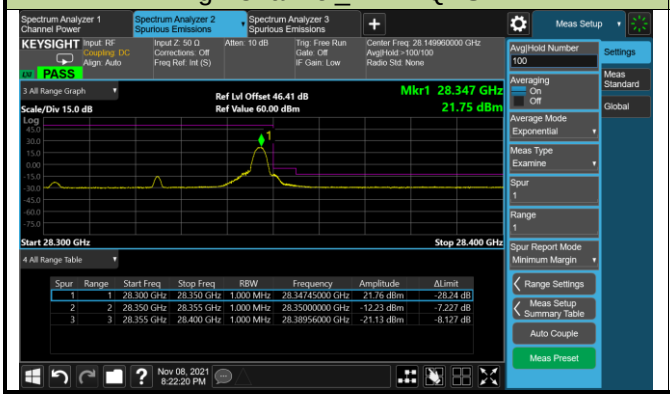


High Channel_Full - BPSK*

High Channel_1RB - QPSK



High Channel_Full - QPSK*

Out-of-Band Emission at the Band Edge (CP-OFDM)	
Low Channel_1RB - QPSK	Low Channel_Full - QPSK
	
High Channel_1RB - QPSK	High Channel_Full - QPSK*
	

Note: “*” means that the failure frequencies evaluated by conductive power or TRP measurement.

Product	5G High Power mmWave Outdoor CPE	Test Site	SIP-AC2
Test Engineer	Allen Zou	Test Date	2021/11/08
Test Mode	n261_SISO Mode_Beam ID 63_Band Edge		

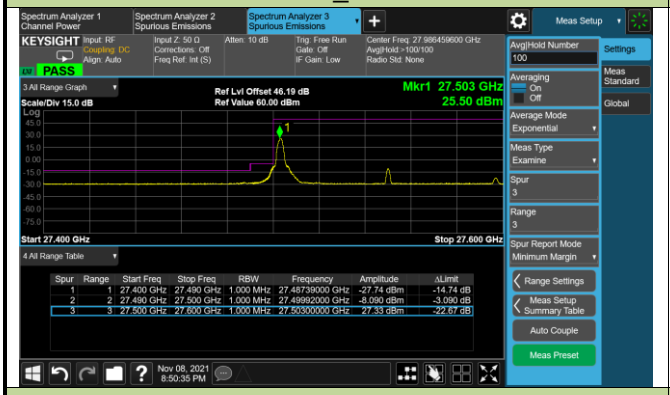
CH	Frequency Range	BW (MHz)	Modulati-on	RB	EIRP (dBm)	Array Gain (dBi)	Conductive Power (dBm)	Limit (dBm)	Result
DFT-s-OFDM									
Low	0 ~ 10% OB	100	BPSK	1RB Left	-8.09	22.00	-30.09	≤ -5.00	Pass
	0 ~ 10% OB		BPSK	Full RB	-22.17	22.00	-44.17	≤ -5.00	Pass
	0 ~ 10% OB		QPSK	1RB Left	-7.53	22.00	-29.53	≤ -5.00	Pass
	0 ~ 10% OB		QPSK	Full RB	-22.17	22.00	-44.17	≤ -5.00	Pass
High	0 ~ 10% OB		BPSK	1RB Right	-12.60	22.00	-34.60	≤ -5.00	Pass
	0 ~ 10% OB		BPSK	Full RB	-22.55	22.00	-44.55	≤ -5.00	Pass
	0 ~ 10% OB		QPSK	1RB Right	-12.99	22.00	-34.99	≤ -5.00	Pass
	0 ~ 10% OB		QPSK	Full RB	-18.62	22.00	-40.62	≤ -5.00	Pass
CP-OFDM									
Low	0 ~ 10% OB	100	QPSK	1RB Left	-9.15	22.00	-31.15	≤ -5.00	Pass
	0 ~ 10% OB		QPSK	Full RB	-13.92	22.00	-35.92	≤ -5.00	Pass
High	0 ~ 10% OB		QPSK	1RB Right	-13.16	22.00	-35.16	≤ -5.00	Pass
	0 ~ 10% OB		QPSK	Full RB	-17.84	22.00	-39.84	≤ -5.00	Pass

Product	5G High Power mmWave Outdoor CPE	Test Site	SIP-AC2
Test Engineer	Allen Zou	Test Date	2021/11/08
Test Mode	n261_SISO Mode_Beam ID 63_TRP		

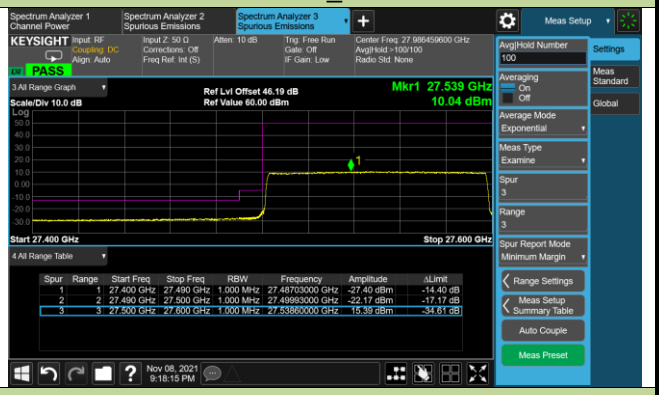
CH	Frequency Range	BW (MHz)	Modulati-on	RB	EIRP (dBm)	TRP (dBm)	Limit (dBm)	Result
DFT-s-OFDM								
Low	> 10% OB	100	BPSK	1RB Left	-27.74	--	≤ -13.00	Pass
	> 10% OB		BPSK	Full RB	-27.40	--	≤ -13.00	Pass
	> 10% OB		QPSK	1RB Left	-27.75	--	≤ -13.00	Pass
	> 10% OB		QPSK	Full RB	-27.40	--	≤ -13.00	Pass
High	> 10% OB		BPSK	1RB Right	-22.50	--	≤ -13.00	Pass
	> 10% OB		BPSK	Full RB	-19.86	--	≤ -13.00	Pass
	> 10% OB		QPSK	1RB Right	-22.47	--	≤ -13.00	Pass
	> 10% OB		QPSK	Full RB	-14.00	--	≤ -13.00	Pass
CP-OFDM								
Low	> 10% OB	100	QPSK	1RB Left	-28.02	--	≤ -13.00	Pass
	> 10% OB		QPSK	Full RB	-17.44	--	≤ -13.00	Pass
High	> 10% OB		QPSK	1RB Right	-22.14	--	≤ -13.00	Pass
	> 10% OB		QPSK	Full RB	-14.53	--	≤ -13.00	Pass

Out-of-Band Emission at the Band Edge (DFT-s-OFDM)

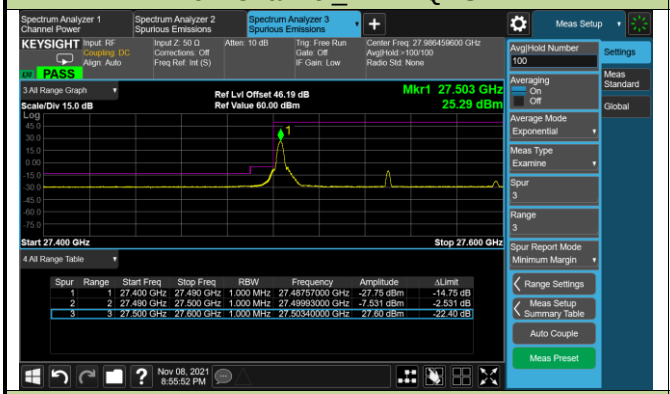
Low Channel_1RB - BPSK



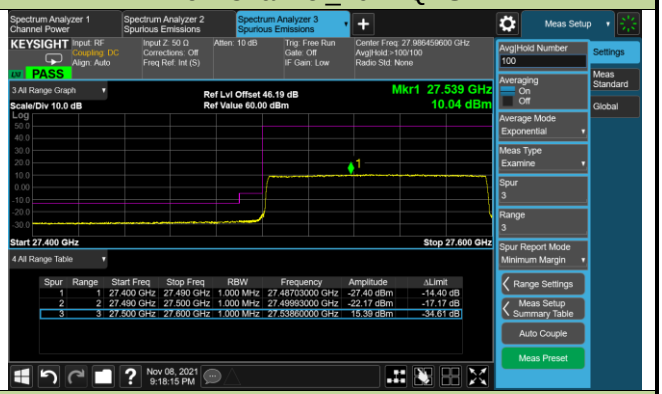
Low Channel_Full - BPSK



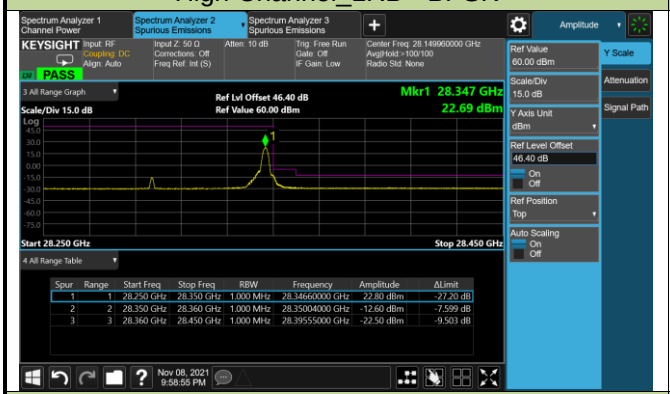
Low Channel_1RB - QPSK



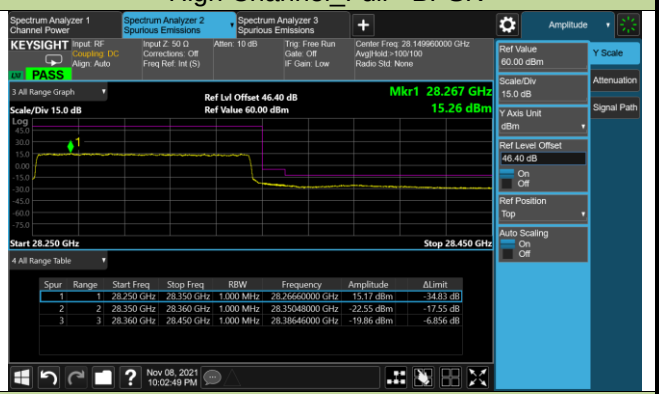
Low Channel_Full - QPSK



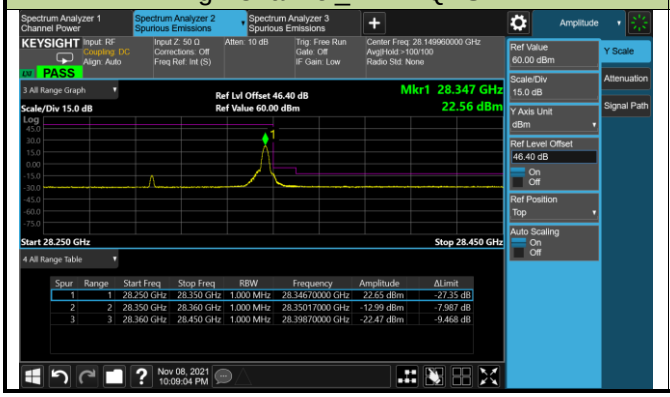
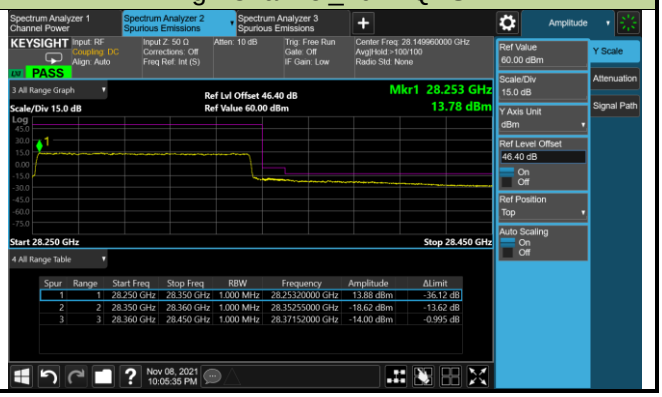
High Channel_1RB - BPSK



High Channel_Full - BPSK



High Channel_1RB - QPSK



High Channel_Full - QPSK