

Antenna D / 1cc / 64QAM / High



Antenna D / 8cc / QPSK / Low



Antenna D / 8cc / 16QAM / Low



Antenna D / 8cc / 64QAM / Low



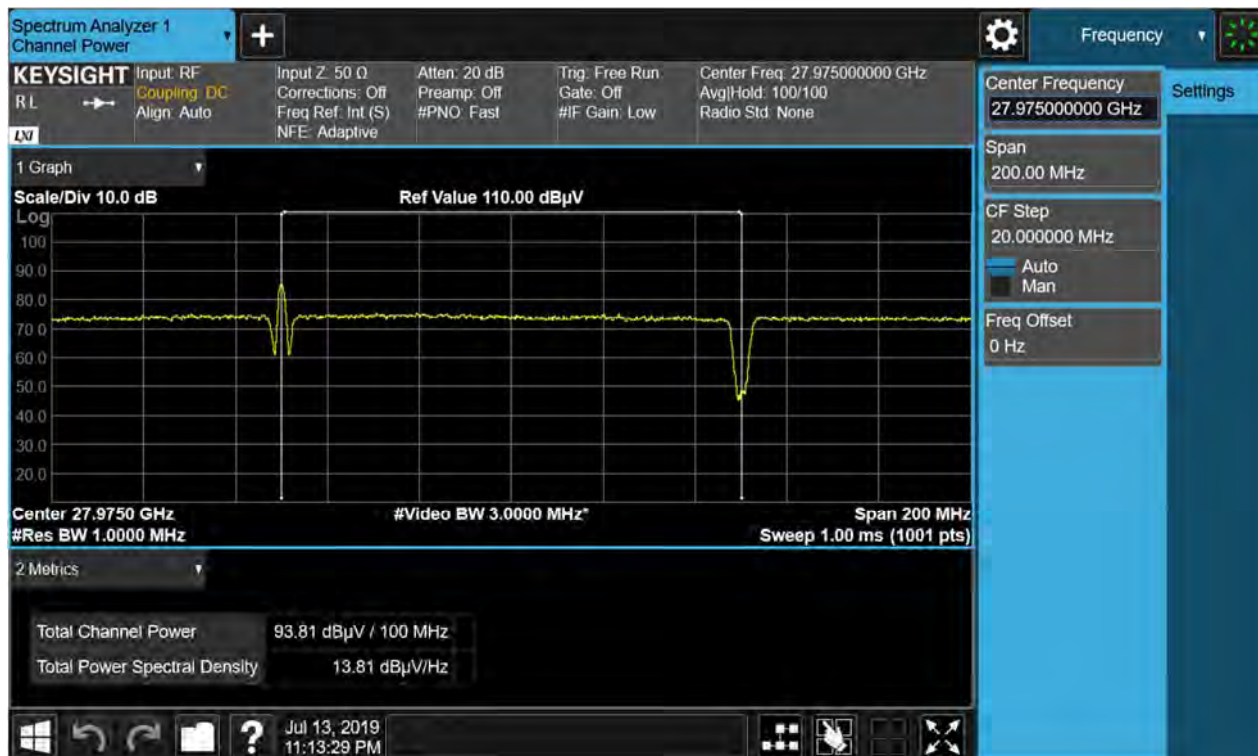
Antenna D / 8cc / QPSK / Middle



Antenna D / 8cc / 16QAM / Middle



Antenna D / 8cc / 64QAM / Middle



Antenna D / 8cc / QPSK / High



Antenna D / 8cc / 16QAM / High



Antenna D / 8cc / 64QAM / High



5.3. CONDUCTED OUTPUT POWER

FCC Rules

Test Requirements:

§ 2.1046 Measurements required: RF power output.

(a) For transmitters other than single sideband, independent sideband and controlled carrier radiotelephone, power output shall be measured at the RF output terminals when the transmitter is adjusted in accordance with the tune-up procedure to give the values of current and voltage on the circuit elements specified in § 2.1033(c)(8). The electrical characteristics of the radio frequency load attached to the output terminals when this test is made shall be stated.

(b) For single sideband, independent sideband, and single channel, controlled carrier radiotelephone transmitters the procedure specified in paragraph (a) of this section shall be employed and, in addition, the transmitter shall be modulated during the test as specified and applicable in § 2.1046 (b) (1-5). In all tests, the input level of the modulating signal shall be such as to develop rated peak envelope power or carrier power, as appropriate, for the transmitter.

(c) For measurements conducted pursuant to paragraphs (a) and (b) of this section, all calculations and methods used by the applicant for determining carrier power or peak envelope power, as appropriate, on the basis of measured power in the radio frequency load attached to the transmitter output terminals shall be shown. Under the test conditions specified, no components of the emission spectrum shall exceed the limits specified in the applicable rule parts as necessary for meeting occupied bandwidth or emission limitations.

Test Procedures:

The measurement is performed in accordance with Section 5.2.4.4.2 of ANSI C63.26.

- a) Set span to $2 \times$ to $3 \times$ the OBW.
- b) Set RBW = 1% to 5% of the OBW.
- c) Set VBW $\geq 3 \times$ RBW.
- d) Set number of measurement points in sweep $\geq 2 \times$ span / RBW.
- e) Sweep time:
 - 1) Set = auto-couple, or
 - 2) Set $\geq [10 \times (\text{number of points in sweep}) \times (\text{transmission symbol period})]$ for single sweep (automation-compatible) measurement.
- f) Detector = power averaging (rms).
- g) Set sweep trigger to "free run."
- h) Trace average at least 100 traces in power averaging (rms) mode if sweep is set to auto-couple. To accurately determine the average power over the on and off time of the transmitter, it can be necessary to increase the number of traces to be averaged above 100, or if using a manually configured sweep time, increase the sweep time.
- i) Compute power by integrating the spectrum across the OBW of the signal using the instrument's band or channel power measurement function with band/channel limits set equal to the OBW band edges. If the instrument does not have a band or channel power function, sum the spectrum levels (in linear power units) at intervals equal to the RBW extending across the entire OBW of the spectrum.

j) Add $10 \log (1/\text{duty cycle})$ to the measured power level to compute the average power during continuous transmission.

Note:

- 1) Basic test conditions are same as EIRP test on page 29.
- 2) Same 800 MHz bandwidth applies for 1cc and 8 cc.
- 3) Final conducted power is calculated as follows

$$\text{Conducted Power (dBm)} = \text{EIRP (dBm)} - \text{Antenna Gain (dBi)}$$

- 4) Antenna Gain of the above formula was applied from actual measurement data of the radiation pattern document.
- 5) Sample calculation

Antenna A, 1cc, Low, QPSK:

$$\begin{aligned} &96.45 \text{ dB}\mu\text{V (measured)} + 10.88 \text{ (distance)} - 104.77 + 45.44 \text{ (AFCL)} + 0.975 \text{ (Duty)} - 28.142 \text{ (Ant.gain)} \\ &= 20.84 \text{ dBm (Final conducted output power)} \end{aligned}$$

Total Output Power (1cc, Low, QPKS):

Conversion dBm to mW (Antenna A)

$$10^{(20.84 \text{ dBm} / 10)} = 121.34 \text{ mW}$$

Sum each antenna power

$$\begin{aligned} &121.34 \text{ mW (Ant.A)} + 94.62 \text{ mW (Ant.B)} + 103.99 \text{ mW (Ant.C)} + 88.72 \text{ mW (Ant.D)} \\ &= 408.67 \text{ mW} \end{aligned}$$

Conversion mW to dBm

$$10 \log (408.67 \text{ mW}) = 26.11 \text{ dBm}$$

Test Results:
Tabular Data of Conducted Output Power

Ant.	Ant.	CC	Channel	Frequency (GHz)	Mod.	Measured Level (dBuV)	EIRP (dBm)	Ant. Gain (dBi)	Result (dBm)
	Angle								
A	135°	1	Low	27.55	QPSK	96.45	48.98	28.142	20.84
					16QAM	95.90	48.43		20.29
					64QAM	96.16	48.69		20.55
			Middle	27.925	QPSK	96.36	48.89	28.181	20.71
					16QAM	96.40	48.93		20.75
					64QAM	95.91	48.44		20.26
			High	28.3	QPSK	95.84	48.37	28.321	20.05
					16QAM	96.02	48.56		20.23
					64QAM	95.93	48.46		20.14
		8	Low	27.9	QPSK	101.2	53.77	28.181	25.59
					16QAM	101.4	53.95		25.77
					64QAM	101.2	53.76		25.58
			Middle	27.925	QPSK	100.6	53.09	28.181	24.91
					16QAM	101.1	53.66		25.48
					64QAM	101.1	53.61		25.43
			High	27.95	QPSK	100.8	53.31	28.21	25.10
					16QAM	101.0	53.55		25.34
					64QAM	101.1	53.67		25.46
B	45°	1	Low	27.55	QPSK	95.38	47.91	28.142	19.76
					16QAM	96.49	49.02		20.88
					64QAM	96.52	49.06		20.91
			Middle	27.925	QPSK	95.53	48.06	28.181	19.88
					16QAM	95.61	48.14		19.96
					64QAM	96.90	49.43		21.25
			High	28.3	QPSK	95.19	47.72	28.321	19.40
					16QAM	95.93	48.46		20.14
					64QAM	95.92	48.45		20.13
		8	Low	27.9	QPSK	101.19	53.72	28.181	25.54
					16QAM	101.15	53.68		25.50
					64QAM	101.29	53.82		25.64
			Middle	27.925	QPSK	101.25	53.78	28.181	25.60
					16QAM	101.27	53.80		25.62
					64QAM	101.02	53.56		25.38
			High	27.95	QPSK	100.86	53.39	28.21	25.18
					16QAM	101.01	53.54		25.33
					64QAM	101.63	54.16		25.95

Ant.	Ant.	CC	Channel	Frequency (GHz)	Mod.	Measured Level (dBuV)	EIRP (dBm)	Ant. Gain (dBi)	Result (dBm)
	Angle								
C	135°	1	Low	27.55	QPSK	95.78	48.31	28.142	20.17
					16QAM	95.17	47.70		19.56
					64QAM	95.49	48.02		19.88
			Middle	27.925	QPSK	95.85	48.38	28.181	20.20
					16QAM	95.14	47.67		19.49
					64QAM	95.91	48.44		20.26
			High	28.3	QPSK	95.14	47.67	28.321	19.35
					16QAM	95.08	47.61		19.29
					64QAM	95.17	47.70		19.38
		8	Low	27.9	QPSK	101.33	53.86	28.181	25.68
					16QAM	100.47	53.00		24.82
					64QAM	100.50	53.03		24.85
			Middle	27.925	QPSK	101.02	53.55	28.181	25.37
					16QAM	101.45	53.98		25.80
					64QAM	101.14	53.67		25.49
			High	27.95	QPSK	100.51	53.04	28.21	24.83
					16QAM	101.06	53.59		25.38
					64QAM	101.32	53.85		25.64
D	45°	1	Low	27.55	QPSK	95.09	47.62	28.142	19.48
					16QAM	95.28	47.81		19.67
					64QAM	94.88	47.41		19.27
			Middle	27.925	QPSK	95.61	48.14	28.181	19.96
					16QAM	95.85	48.38		20.20
					64QAM	95.07	47.60		19.42
			High	28.3	QPSK	94.87	47.40	28.321	19.08
					16QAM	94.78	47.31		18.99
					64QAM	95.06	47.59		19.27
		8	Low	27.9	QPSK	101.1	53.65	28.181	25.46
					16QAM	100.6	53.09		24.90
					64QAM	100.6	53.09		24.91
			Middle	27.925	QPSK	101.1	53.68	28.181	25.50
					16QAM	101.2	53.70		25.51
					64QAM	101.5	54.04		25.86
			High	27.95	QPSK	100.8	53.34	28.21	25.13
					16QAM	100.9	53.42		25.21
					64QAM	100.9	53.39		25.18

Tabular Data of Conducted Output Power

Antenna	CC	Channel	Mod.	Ant. A (dBm)	Ant. B (dBm)	Ant. C (dBm)	Ant. D (dBm)	Result (dBm)
A+B+C+D	1	Low	QPSK	20.84	19.76	20.17	19.48	26.11
			16QAM	20.29	20.88	19.56	19.67	26.15
			64QAM	20.55	20.91	19.88	19.27	26.22
		Middle	QPSK	20.71	19.88	20.20	19.96	26.22
			16QAM	20.75	19.96	19.49	20.20	26.14
			64QAM	20.26	21.25	20.26	19.42	26.37
		High	QPSK	20.05	19.40	19.35	19.08	25.51
			16QAM	20.23	20.14	19.29	18.99	25.72
			64QAM	20.14	20.13	19.38	19.27	25.77
	8	Low	QPSK	25.59	25.54	25.68	25.46	31.59
			16QAM	25.77	25.50	24.82	24.90	31.29
			64QAM	25.58	25.64	24.85	24.91	31.28
		Middle	QPSK	24.91	25.60	25.37	25.50	31.37
			16QAM	25.48	25.62	25.80	25.51	31.62
			64QAM	25.43	25.38	25.49	25.86	31.56
		High	QPSK	25.10	25.18	24.83	25.13	31.08
			16QAM	25.34	25.33	25.38	25.21	31.34
			64QAM	25.46	25.95	25.64	25.18	31.59

Plot Data of Conducted Output Power

Antenna A / 1cc / QPSK / Low



Antenna A / 1cc / 16QAM / Low



Antenna A / 1cc / 64QAM / Low



Antenna A / 1cc / QPSK / Middle



Antenna A / 1cc / 16QAM / Middle



Antenna A / 1cc / 64QAM / Middle



Antenna A / 1cc / QPSK / High



Antenna A / 1cc / 16QAM / High



Antenna A / 1cc / 64QAM / High



Antenna A / 8cc / QPSK / Low



Antenna A / 8cc / 16QAM / Low



Antenna A / 8cc / 64QAM / Low



Antenna A / 8cc / QPSK / Middle



Antenna A / 8cc / 16QAM / Middle



Antenna A / 8cc / 64QAM / Middle



Antenna A / 8cc / QPSK / High



Antenna A / 8cc / 16QAM / High



Antenna A / 8cc / 64QAM / High



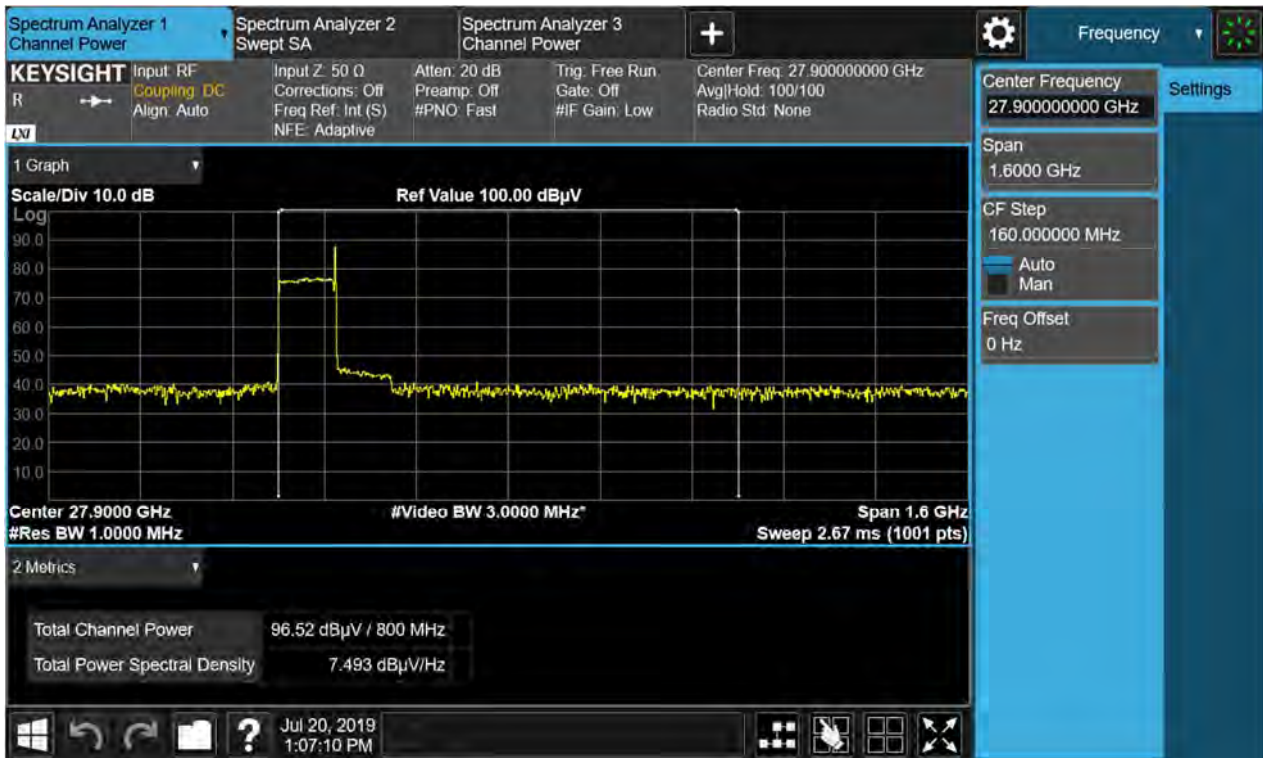
Antenna B / 1cc / QPSK / Low



Antenna B / 1cc / 16QAM / Low



Antenna B / 1cc / 64QAM / Low



Antenna B / 1cc / QPSK / Middle



Antenna B / 1cc / 16QAM / Middle



Antenna B / 1cc / 64QAM / Middle



Antenna B / 1cc / QPSK / High



Antenna B / 1cc / 16QAM / High



Antenna B / 1cc / 64QAM / High



Antenna B / 8cc / QPSK / Low



Antenna B / 8cc / 16QAM / Low



Antenna B / 8cc / 64QAM / Low



Antenna B / 8cc / QPSK / Middle



Antenna B / 8cc / 16QAM / Middle



Antenna B / 8cc / 64QAM / Middle



Antenna B / 8cc / QPSK / High



Antenna B / 8cc / 16QAM / High



Antenna B / 8cc / 64QAM / High



Antenna C / 1cc / QPSK / Low



Antenna C / 1cc / 16QAM / Low



Antenna C / 1cc / 64QAM / Low



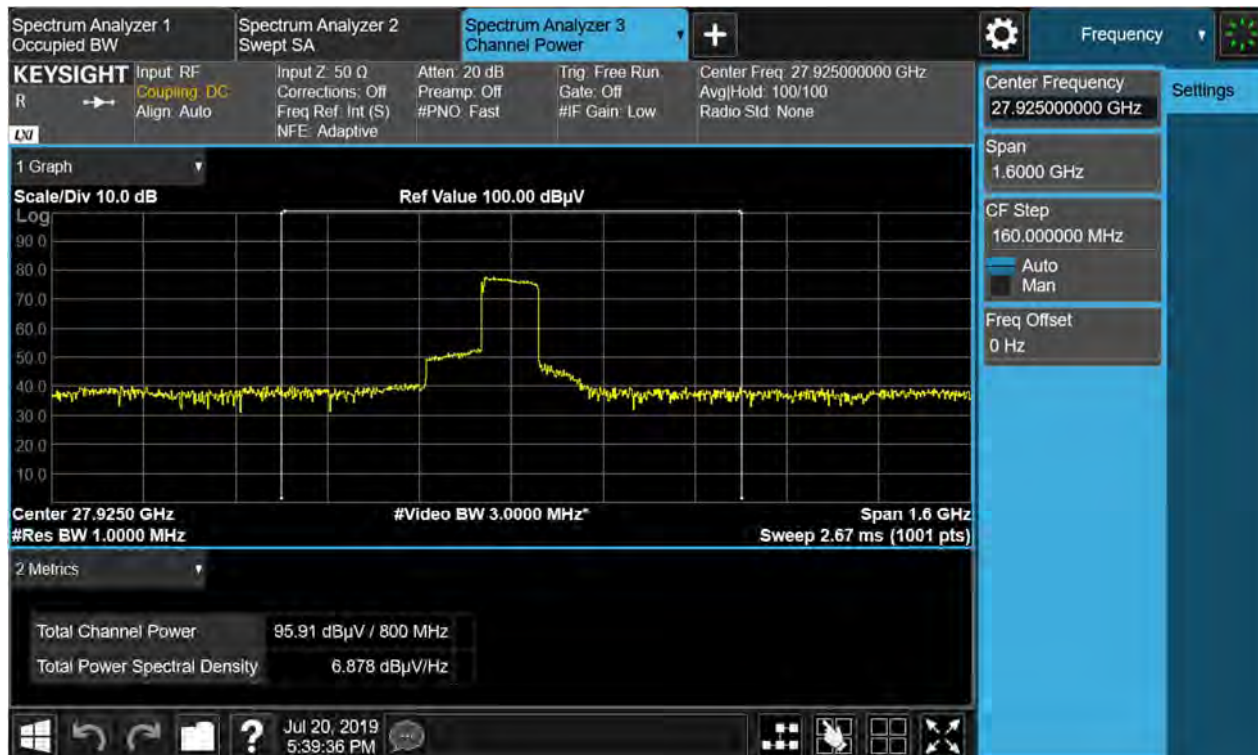
Antenna C / 1cc / QPSK / Middle



Antenna C / 1cc / 16QAM / Middle



Antenna C / 1cc / 64QAM / Middle



Antenna C / 1cc / QPSK / High



Antenna C / 1cc / 16QAM / High



Antenna C / 1cc / 64QAM / High



Antenna C / 8cc / QPSK / Low



Antenna C / 8cc / 16QAM / Low



Antenna C / 8cc / 64QAM / Low



Antenna C / 8cc / QPSK / Middle



Antenna C / 8cc / 16QAM / Middle



Antenna C / 8cc / 64QAM / Middle



Antenna C / 8cc / QPSK / High



Antenna C / 8cc / 16QAM / High



Antenna C / 8cc / 64QAM / High



Antenna D / 1cc / QPSK / Low



Antenna D / 1cc / 16QAM / Low



Antenna D / 1cc / 64QAM / Low



Antenna D / 1cc / QPSK / Middle



Antenna D / 1cc / 16QAM / Middle



Antenna D / 1cc / 64QAM / Middle



Antenna D / 1cc / QPSK / High



Antenna D / 1cc / 16QAM / High



Antenna D / 1cc / 64QAM / High



Antenna D / 8cc / QPSK / Low



Antenna D / 8cc / 16QAM / Low



Antenna D / 8cc / 64QAM / Low



Antenna D / 8cc / QPSK / Middle



Antenna D / 8cc / 16QAM / Middle



Antenna D / 8cc / 64QAM / Middle



Antenna D / 8cc / QPSK / High



Antenna D / 8cc / 16QAM / High



Antenna D / 8cc / 64QAM / High



5.4. BAND EDGE

FCC Rules

Test Requirements:

§ 2.1051 Measurements required: Spurious emissions at antenna terminals.

The radio frequency voltage or powers generated within the equipment and appearing on a spurious frequency shall be checked at the equipment output terminals when properly loaded with a suitable artificial antenna. Curves or equivalent data shall show the magnitude of each harmonic and other spurious emission that can be detected when the equipment is operated under the conditions specified in § 2.1049 as appropriate. The magnitude of spurious emissions which are attenuated more than 20 dB below the permissible value need not be specified.

§ 30.203 Emission limits.

- (a) 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 percent of the channel bandwidth, the conductive power or the total radiated power of any emission shall be -5 dBm/MHz or lower.
- (b)(1) Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 1 megahertz or greater.
- (2) When measuring the emission limits, the nominal carrier frequency shall be adjusted as close to the licensee's frequency block edges as the design permits.
- (3) The measurements of emission power can be expressed in peak or average values.

Test Procedures:

The measurement is performed in accordance with Section 5.7.3 of ANSI C63.26.

5.7.3 Out-of-band unwanted emissions measurements

- a) Set the spectrum analyzer center frequency to the block, band, or channel edge frequency.
- b) Set the span wide enough to capture the fundamental emission closest to the authorized block or band edge, and to include all modulation products that spill into the immediately adjacent frequency band. In some cases, it may be possible to set the center frequency and span so as to encompass the fundamental emission and the unwanted out-of-band (band-edge) emissions on either side of the authorized block, band, or channel. This can be accomplished with a single (slow) sweep, if adequate overload protection and sufficient dynamic range can be maintained.
- c) Set the number of points in sweep $\geq 2 \times \text{span} / \text{RBW}$.
- d) Sweep time should be auto for peak detection. For rms detection the sweep time should be set as follows:
 - 1), 2) Omitted
 - 3) If the device cannot be configured to transmit continuously (duty cycle $< 98\%$) and a free running sweep must be used, set the sweep time so that the averaging is performed over multiple on/off cycles by setting the sweep time $> (\text{number of points in sweep}) \times (\text{transmitter period})$ (i.e., the transmit on-time + the off-time). The spectrum analyzer readings shall subsequently be corrected by $[10 \log (1/\text{duty cycle})]$. This assumes that the transmission period and duty cycle is relatively

constant (duty cycle variation $\leq \pm 2\%$).

4) Omitted

e) The test report shall include the plots of the measuring instrument display and the measured data.

f) See Annex I for example emission mask plots.

Note:

- 1) Basic test conditions are same as EIRP test on page 30.
- 2) In the band edge test of antenna A, path A, B, C and D are individually operated and measured at the maximum emission position of antenna A, and the respective measurement results are summed.
- 3) For measurement of antenna B, C and D repeat 2) at the maximum emission position of antenna B.
- 4) Band edge value is calculated as follows.

$$\text{Band Edge} = \text{Sum of each position's edge (Measured Value} + 20\log(D) - 104.77 + \text{AFCL} + \text{Duty}) - \text{Ant. Gain}$$

- 5) Antenna Gain of the above formula was applied from actual measurement data of the radiation pattern document.
- 6) Sample calculation

Maximum Antenna A, 1cc, Low, QPSK:

Antenna A

$$\begin{aligned} &35.783 \text{ dB}\mu\text{V (measured)} + 10.88 \text{ (distance)} - 104.77 + 45.44(\text{AFCL}) + 0.98 \text{ (Duty)} \\ &= -11.686 \text{ dBm (Antenna A Edge)} \end{aligned}$$

Total edge result

Conversion and sum

$$0.0678 \text{ mW (Ant.A)} + 0.0891 \text{ mW (Ant.B)} + 0.0773 \text{ mW (Ant.C)} + 0.0837 \text{ mW (Ant.D)} = 0.3179 \text{ mW}$$

Conversion mW to dBm

$$10\text{LOG}(0.3179 \text{ mW}) - 28.142 \text{ (Antenna gain)} = -33.12 \text{ dBm}$$

Sum each antenna power

$$\begin{aligned} &-33.12 \text{ dBm(Ant.A)} + (-30.82 \text{ dBm}) \text{ (Ant.B)} + (-31.52 \text{ dBm}) \text{ (Ant.C)} + (-34.37 \text{ dBm}) \text{ (Ant.D)} \\ &= -26.22 \text{ dBm} \end{aligned}$$

Test Results:

Tabular Data of Band Edge

Pos.	Ant. Angle	Distance (m)	cc	Edge	Mod.	Ant	Measured Level (dBuV)	EIRP (dBm)	Ant Gain (dB)	Result (dBm)
MAX Ant. A	135°	3.5	1	Low	QPSK	A	35.783	-11.686	28.142	-39.828
						B	36.970	-10.499		-38.641
						C	36.349	-11.120		-39.262
						D	36.696	-10.773		-38.915
					16QAM	A	37.613	-9.856		-37.998
						B	35.844	-11.625		-39.767
						C	35.725	-11.744		-39.886
						D	36.950	-10.519		-38.661
					64QAM	A	37.195	-10.274		-38.416
						B	35.870	-11.599		-39.741
						C	37.108	-10.361		-38.503
						D	36.248	-11.221		-39.363
				High	QPSK	A	41.778	-5.691	28.321	-34.012
						B	36.418	-11.051		-39.372
						C	44.903	-2.566		-30.887
						D	35.119	-12.350		-40.671
					16QAM	A	42.993	-4.476		-32.797
						B	36.026	-11.443		-39.764
						C	43.665	-3.804		-32.125
						D	36.202	-11.267		-39.588
					64QAM	A	41.908	-5.561		-33.882
						B	37.059	-10.410		-38.731
						C	42.953	-4.516		-32.837
						D	35.729	-11.740		-40.061
			8	Low	QPSK	A	47.711	0.242	28.181	-27.939
						B	42.679	-4.790		-32.971
						C	46.404	-1.065		-29.246
						D	43.032	-4.437		-32.618
					16QAM	A	48.617	1.148		-27.033
						B	42.554	-4.915		-33.096
						C	47.062	-0.407		-28.588
						D	42.718	-4.751		-32.932
					64QAM	A	47.025	-0.444		-28.625
						B	42.762	-4.707		-32.888
						C	46.037	-1.432		-29.613
						D	42.465	-5.004		-33.185
				High	QPSK	A	46.903	-0.566	28.21	-28.776
						B	34.326	-13.143		-41.353
						C	44.263	-3.206		-31.416
						D	34.034	-13.435		-41.645
					16QAM	A	45.411	-2.058		-30.268
						B	33.925	-13.544		-41.754
						C	44.851	-2.618		-30.828
						D	33.476	-13.993		-42.203
					64QAM	A	46.373	-1.096		-29.306
						B	35.027	-12.442		-40.652
						C	44.419	-3.050		-31.260
						D	34.366	-13.103		-41.313

Pos.	Ant. Angle	Distance (m)	cc	Edge	Mod.	Ant	Measured Level (dBuV)	EIRP (dBm)	Ant Gain (dB)	Result (dBm)
MAX Ant. B	45°	3.5	1	Low	QPSK	A	39.436	-8.033	28.142	-36.175
						B	37.677	-9.792		-37.934
						C	38.787	-8.682		-36.824
						D	39.010	-8.459		-36.601
					16QAM	A	39.273	-8.196		-36.338
						B	38.827	-8.642		-36.784
						C	38.998	-8.471		-36.613
						D	39.569	-7.900		-36.042
				High	64QAM	A	38.617	-8.852	28.321	-36.994
						B	38.073	-9.396		-37.538
						C	39.650	-7.819		-35.961
						D	39.839	-7.630		-35.772
					QPSK	A	33.717	-13.752		-42.073
						B	45.491	-1.978		-30.299
						C	33.786	-13.683		-42.004
						D	42.138	-5.331		-33.652
					16QAM	A	33.307	-14.162		-42.483
						B	43.665	-3.804		-32.125
						C	33.143	-14.326		-42.647
						D	41.363	-6.106		-34.427
					64QAM	A	33.360	-14.109		-42.430
						B	44.081	-3.388		-31.709
						C	34.167	-13.302		-41.623
						D	42.794	-4.675		-32.996
			8	Low	QPKS	A	38.777	-8.692	28.181	-36.873
						B	45.213	-2.256		-30.437
						C	39.201	-8.268		-36.449
						D	45.119	-2.350		-30.531
					16QAM	A	38.232	-9.237		-37.418
						B	44.750	-2.719		-30.900
						C	38.786	-8.683		-36.864
						D	45.037	-2.432		-30.613
					64QAM	A	38.560	-8.909		-37.090
						B	44.795	-2.674		-30.855
						C	38.591	-8.878		-37.059
						D	43.591	-3.878		-32.059
				High	QPKS	A	33.228	-14.241	28.21	-42.451
						B	47.104	-0.365		-28.575
						C	34.905	-12.564		-40.774
						D	48.780	1.311		-26.899
					16QAM	A	32.898	-14.571		-42.781
						B	45.705	-1.764		-29.974
						C	34.891	-12.578		-40.788
						D	45.504	-1.965		-30.175
					64QAM	A	33.012	-14.457		-42.667
						B	48.636	1.167		-27.043
						C	34.727	-12.742		-40.952
						D	43.687	-3.782		-31.992

Pos.	Ant.	Distance	cc	Edge	Mod.	Ant	Measured Level (dBuV)	EIRP (dBm)	Ant Gain (dB)	Result (dBm)
	Angle	(m)								
MAX Ant. C	135°	3.5	1	Low	QPSK	A	38.263	-9.206	28.142	-37.348
						B	37.810	-9.659		-37.801
						C	37.833	-9.636		-37.778
						D	38.341	-9.128		-37.270
					16QAM	A	38.998	-8.471		-36.613
						B	37.611	-9.858		-38.000
						C	36.113	-11.356		-39.498
						D	38.398	-9.071		-37.213
					64QAM	A	37.902	-9.567		-37.709
						B	38.153	-9.316		-37.458
						C	36.880	-10.589		-38.731
						D	38.808	-8.661		-36.803
				High	QPSK	A	36.835	-10.634	28.321	-38.955
						B	37.999	-9.470		-37.791
						C	35.499	-11.970		-40.291
						D	36.787	-10.682		-39.003
					16QAM	A	38.191	-9.278		-37.599
						B	37.487	-9.982		-38.303
						C	35.695	-11.774		-40.095
						D	37.395	-10.074		-38.395
					64QAM	A	37.584	-9.885		-38.206
						B	37.528	-9.941		-38.262
						C	36.090	-11.379		-39.700
						D	37.202	-10.267		-38.588
			8	Low	QPSK	A	42.548	-4.921	28.181	-33.102
						B	35.426	-12.043		-40.224
						C	45.920	-1.549		-29.730
						D	36.808	-10.661		-38.842
					16QAM	A	42.879	-4.590		-32.771
						B	34.845	-12.624		-40.805
						C	45.377	-2.092		-30.273
						D	34.740	-12.729		-40.910
					64QAM	A	41.690	-5.779		-33.960
						B	34.465	-13.004		-41.185
						C	43.908	-3.561		-31.742
						D	35.248	-12.221		-40.402
				High	QPSK	A	42.335	-5.134	28.21	-33.344
						B	35.147	-12.322		-40.532
						C	47.042	-0.427		-28.637
						D	34.398	-13.071		-41.281
					16QAM	A	39.401	-8.068		-36.278
						B	33.925	-13.544		-41.754
						C	45.507	-1.962		-30.172
						D	33.645	-13.824		-42.034
					64QAM	A	39.897	-7.572		-35.782
						B	33.851	-13.618		-41.828
						C	45.069	-2.400		-30.610
						D	33.682	-13.787		-41.997

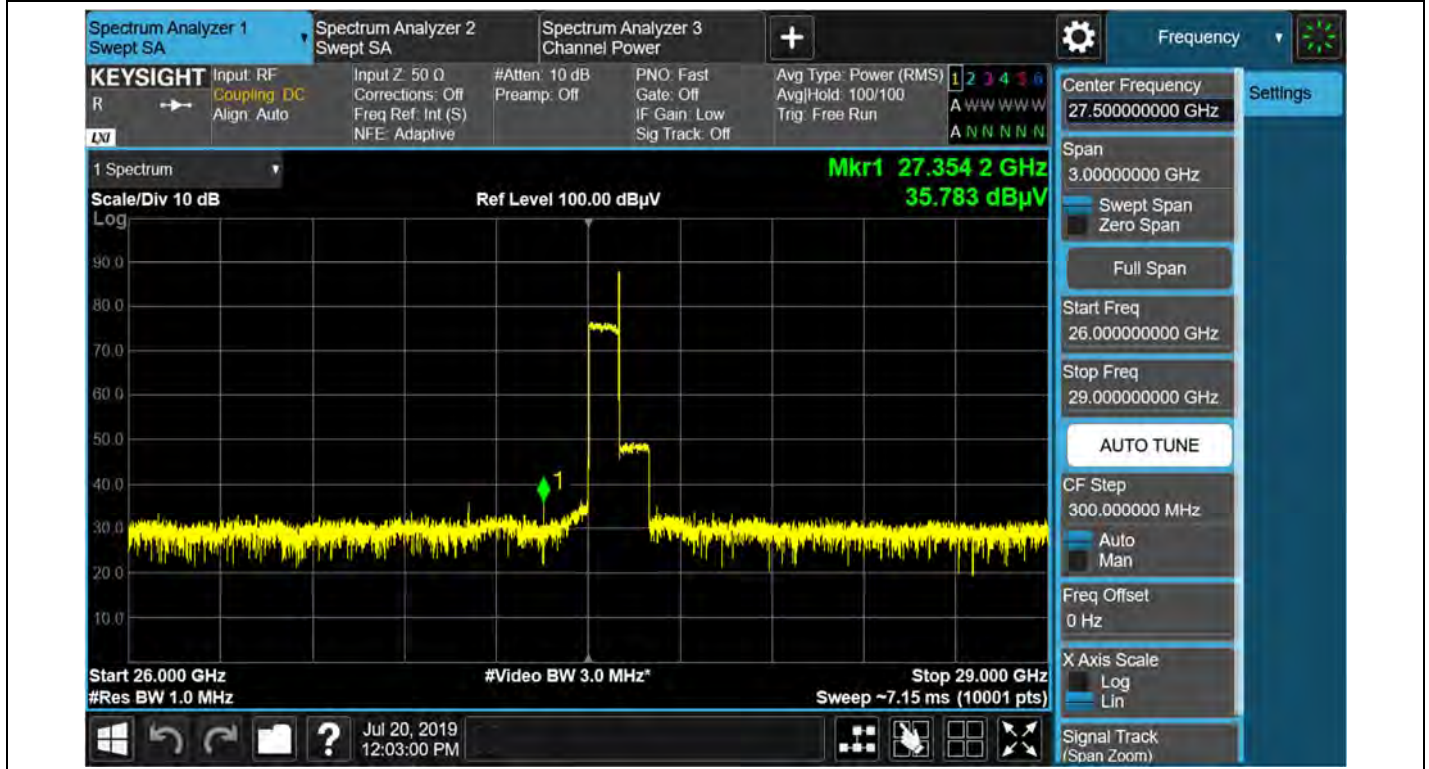
Pos.	Ant.	Distance	cc	Edge	Mod.	Ant	Measured Level (dBuV)	EIRP (dBm)	Ant Gain (dB)	Result (dBm)
	Angle	(m)								
MAX Ant. D	45°	3.5	1	Low	QPSK	A	35.887	-11.582	28.142	-39.724
						B	34.288	-13.181		-41.323
						C	36.142	-11.327		-39.469
						D	34.211	-13.258		-41.400
					16QAM	A	38.917	-8.552		-36.694
						B	39.761	-7.708		-35.850
						C	40.033	-7.436		-35.578
						D	39.522	-7.947		-36.089
					64QAM	A	34.545	-12.924		-41.066
						B	34.027	-13.442		-41.584
						C	35.446	-12.023		-40.165
						D	33.023	-14.446		-42.588
				High	QPSK	A	36.306	-11.163	28.321	-39.484
						B	36.243	-11.226		-39.547
						C	36.293	-11.176		-39.497
						D	35.182	-12.287		-40.608
					16QAM	A	36.372	-11.097		-39.418
						B	35.803	-11.666		-39.987
						C	35.975	-11.494		-39.815
						D	35.634	-11.835		-40.156
					64QAM	A	37.222	-10.247		-38.568
						B	36.855	-10.614		-38.935
						C	35.894	-11.575		-39.896
						D	34.493	-12.976		-41.297
			8	Low	QPKS	A	32.932	-14.537	28.181	-42.718
						B	40.803	-6.666		-34.847
						C	33.984	-13.485		-41.666
						D	49.104	1.635		-26.546
					16QAM	A	38.128	-9.341		-37.522
						B	46.500	-0.969		-29.150
						C	39.865	-7.604		-35.785
						D	45.856	-1.613		-29.794
					64QAM	A	37.404	-10.065		-38.246
						B	43.482	-3.987		-32.168
						C	38.863	-8.606		-36.787
						D	44.422	-3.047		-31.228
				High	QPKS	A	33.499	-13.970	28.21	-42.180
						B	47.099	-0.370		-28.580
						C	33.300	-14.169		-42.379
						D	43.125	-4.344		-32.554
					16QAM	A	33.031	-14.438		-42.648
						B	43.211	-4.258		-32.468
						C	33.716	-13.753		-41.963
						D	44.054	-3.415		-31.625
					64QAM	A	32.959	-14.510		-42.720
						B	42.402	-5.067		-33.277
						C	33.109	-14.360		-42.570
						D	44.553	-2.916		-31.126

MIMO Data of Band Edge

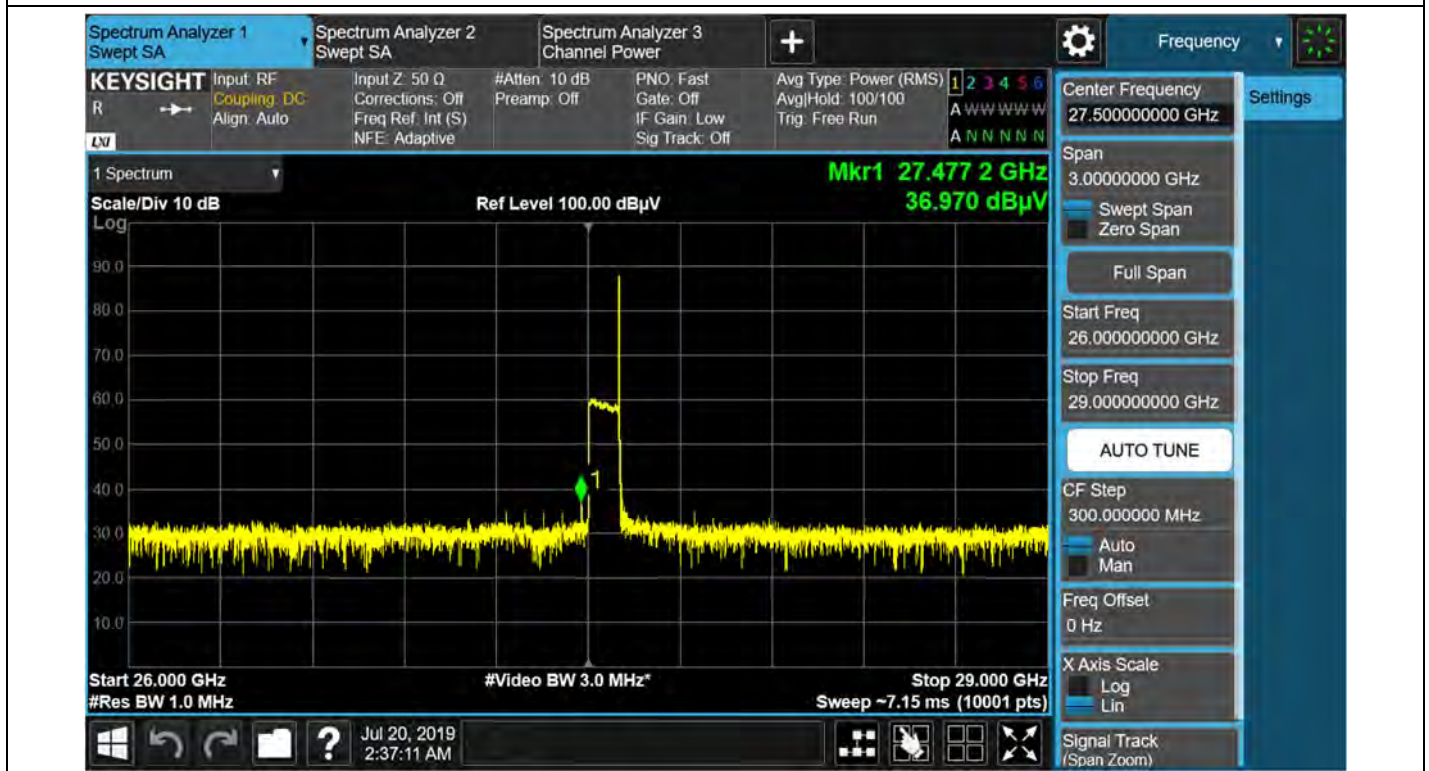
Antenna	cc	Edge	Modulation	Result (dBm)
A+B+C+D	1	Low	QPSK	-26.22
			16QAM	-25.10
			64QAM	-26.21
		High	QPSK	-24.16
			16QAM	-24.66
			64QAM	-24.62
	8	Low	QPSK	-19.78
			16QAM	-19.68
			64QAM	-20.83
		High	QPSK	-20.08
			16QAM	-21.74
			64QAM	-21.29

Plot data of Band Edge

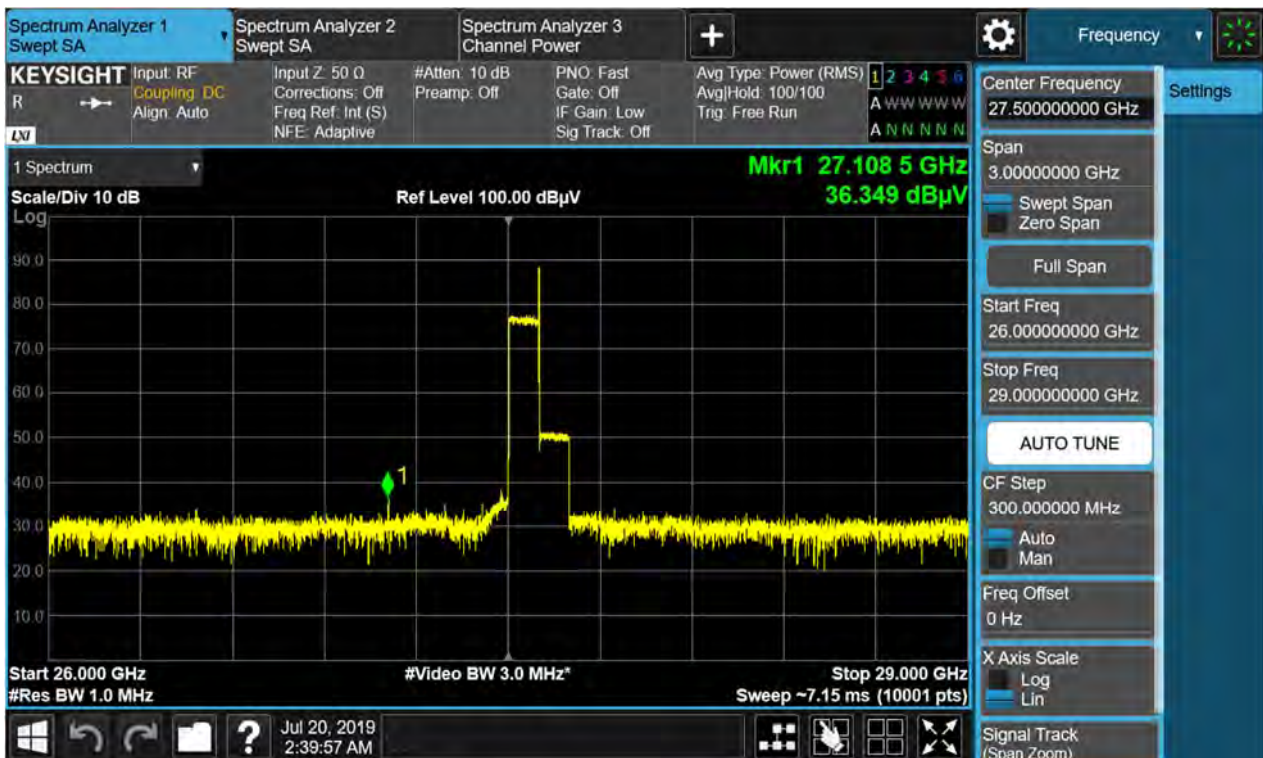
MAX Ant. A Position / 1cc / Low / QPSK / Ant. A



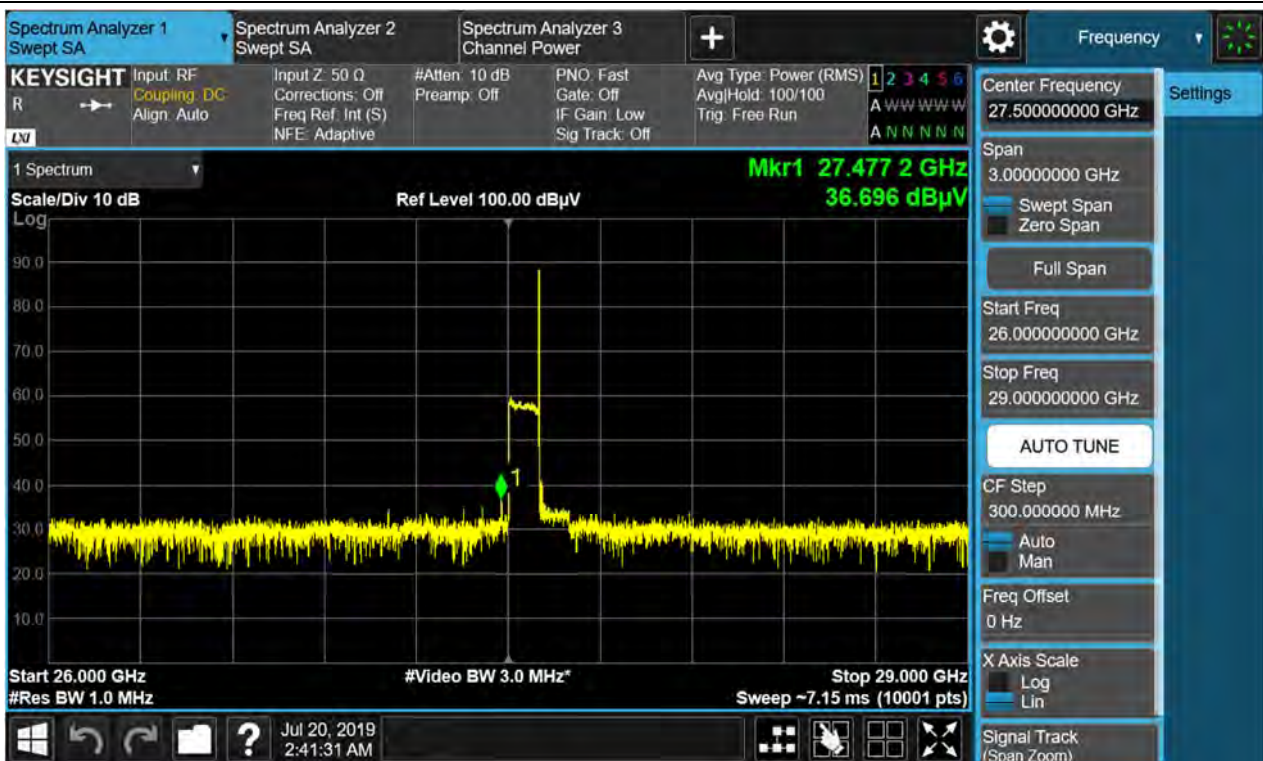
MAX Ant. A Position / 1cc / Low / QPSK / Ant. B



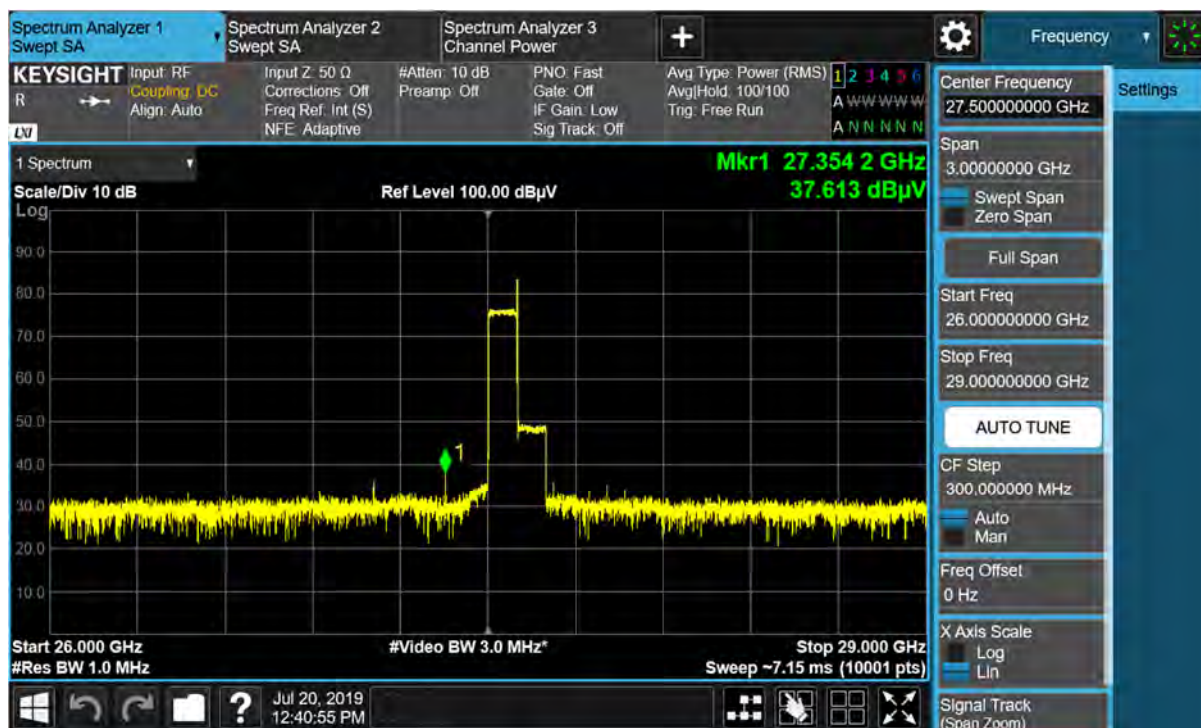
MAX Ant. A Position / 1cc / Low / QPSK / Ant. C



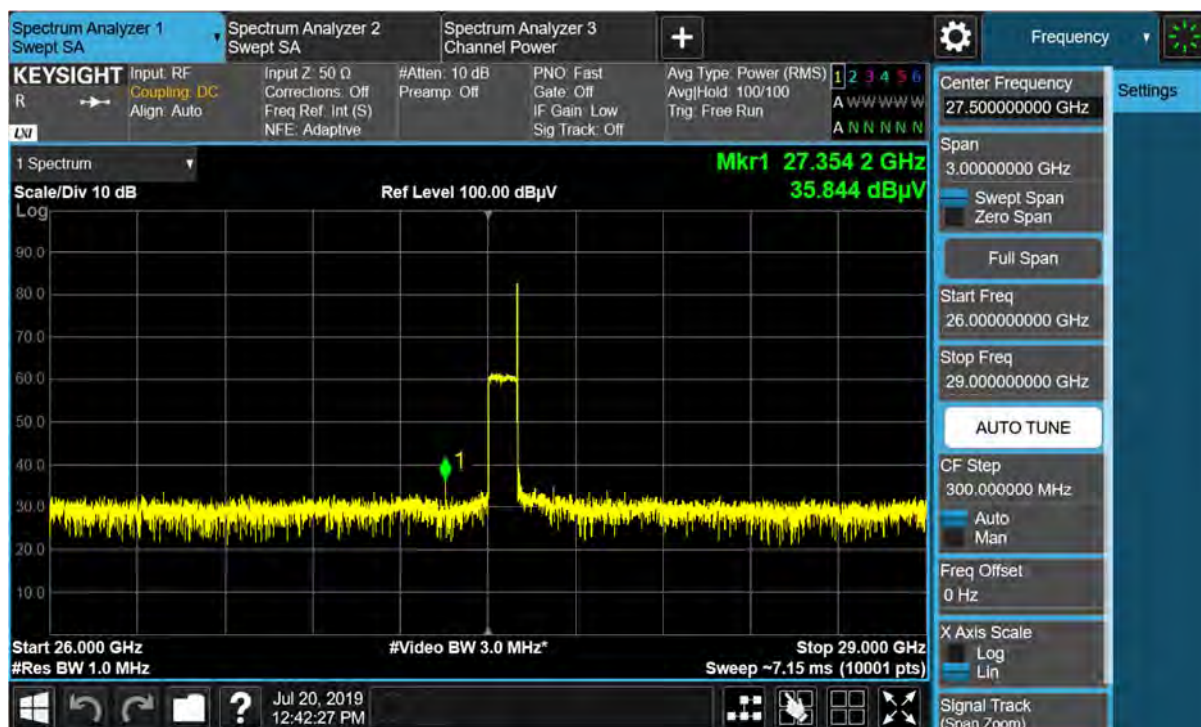
MAX Ant. A Position / 1cc / Low / QPSK / Ant. D



MAX Ant. A Position / 1cc / Low / 16QAM / Ant. A



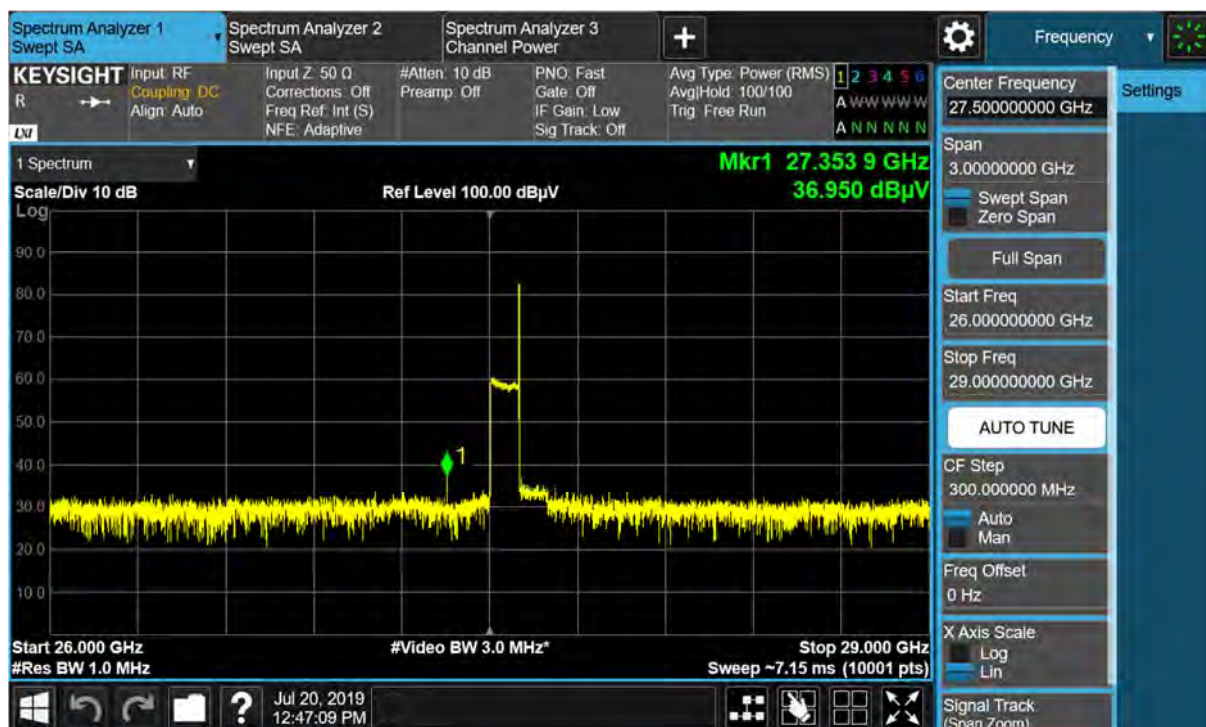
MAX Ant. A Position / 1cc / Low / 16QAM / Ant. B



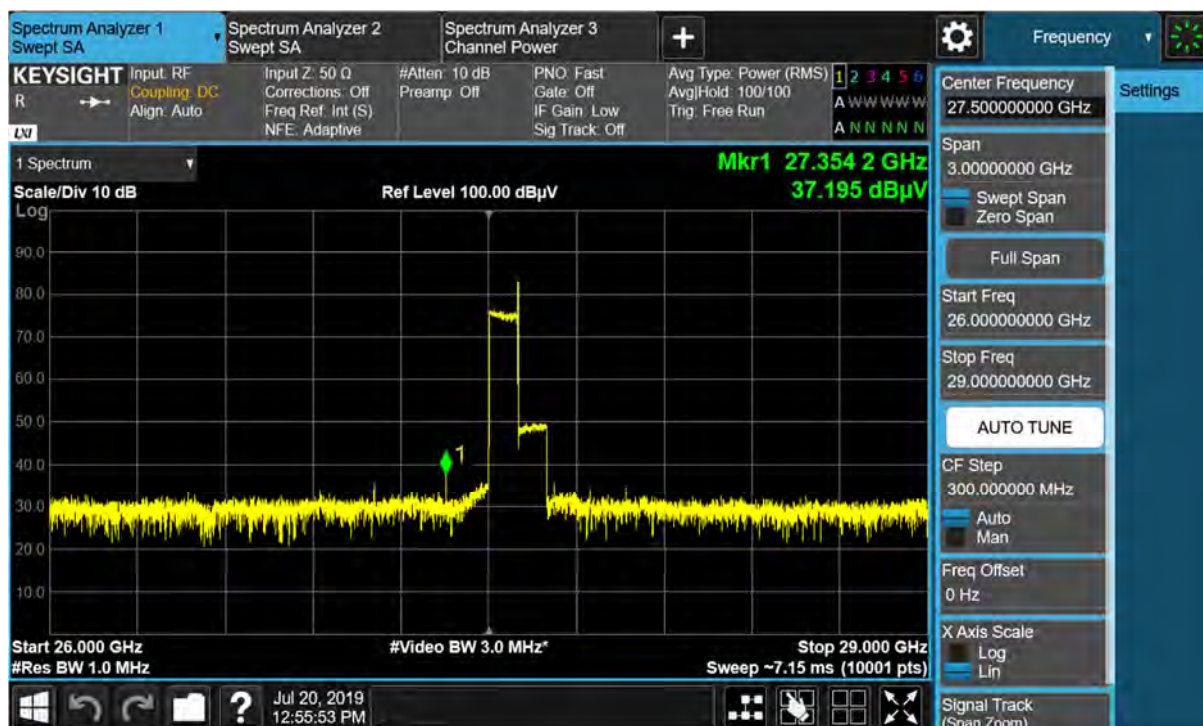
MAX Ant. A Position / 1cc / Low / 16QAM / Ant. C



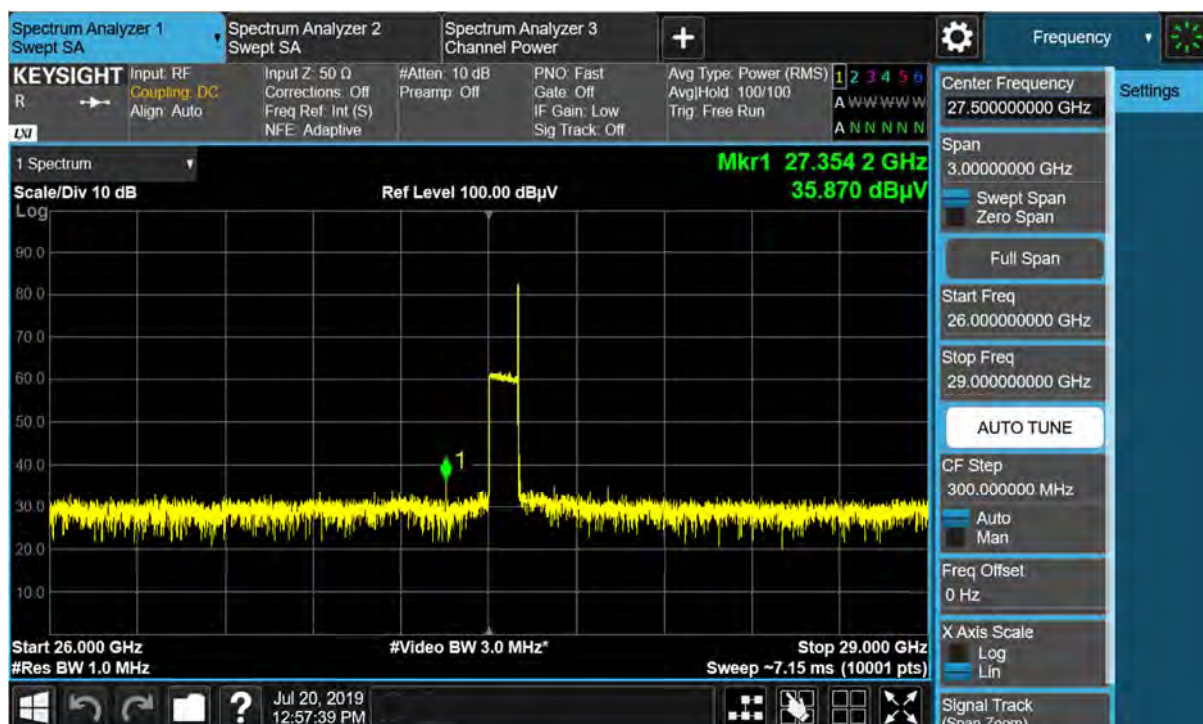
MAX Ant. A Position / 1cc / Low / 16QAM / Ant. D



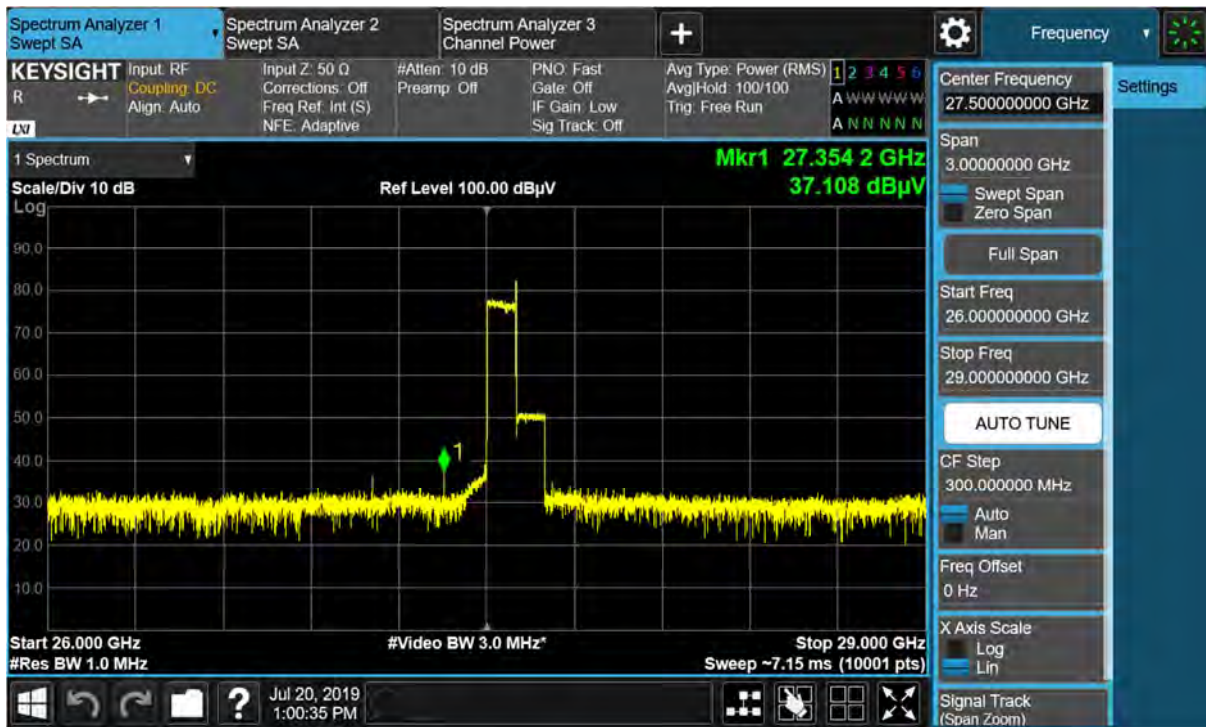
MAX Ant. A Position / 1cc / Low / 64QAM / Ant. A



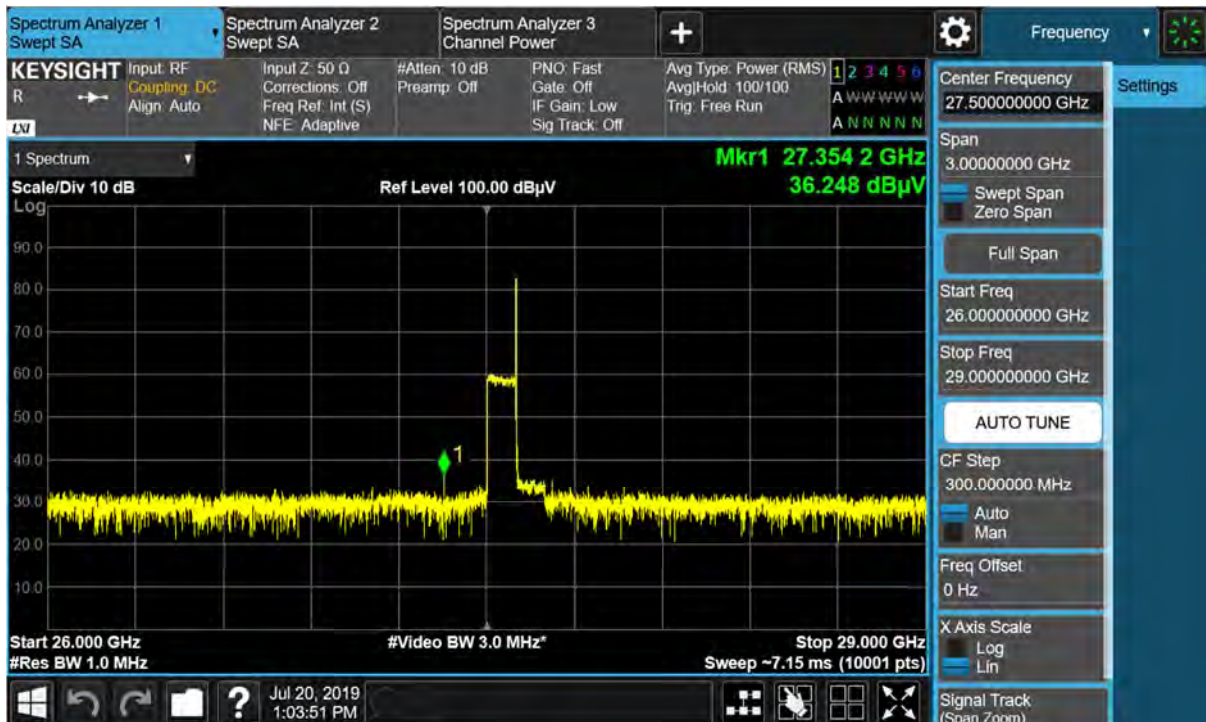
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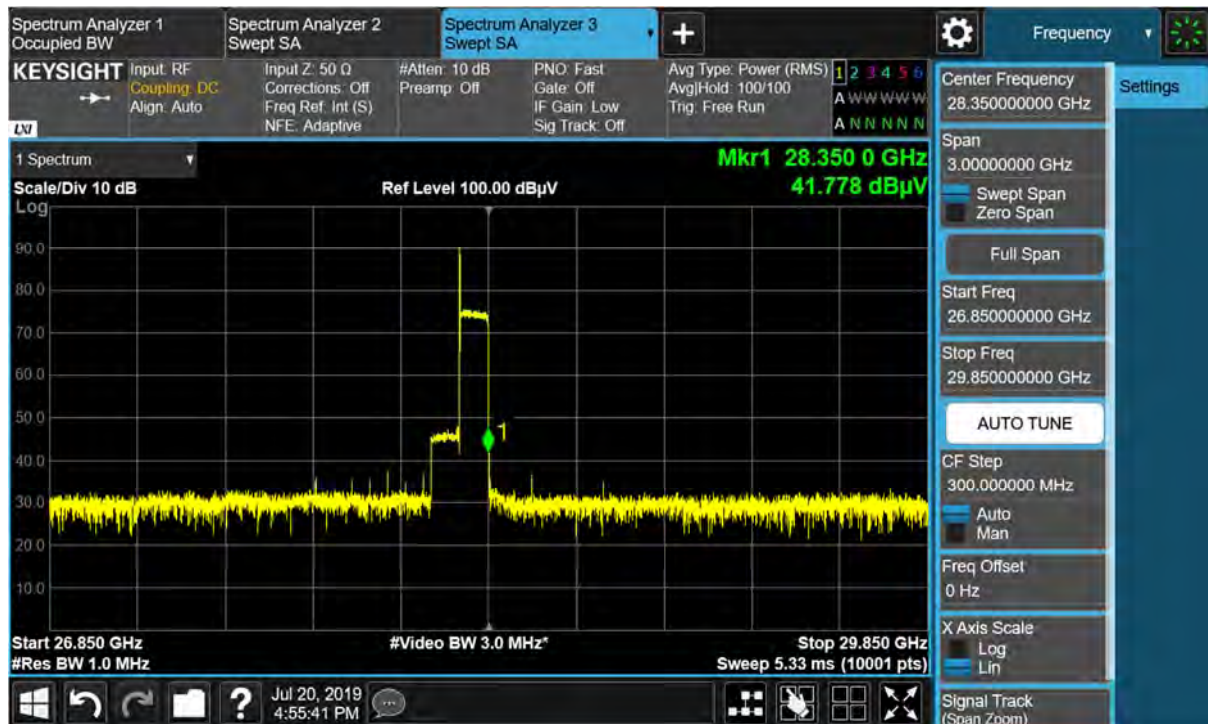
MAX Ant. A Position / 1cc / Low / 64QAM / Ant. C



MAX Ant. A Position / 1cc / Low / 64QAM / Ant. D



MAX Ant. A Position / 1cc / High / QPSK / Ant. A



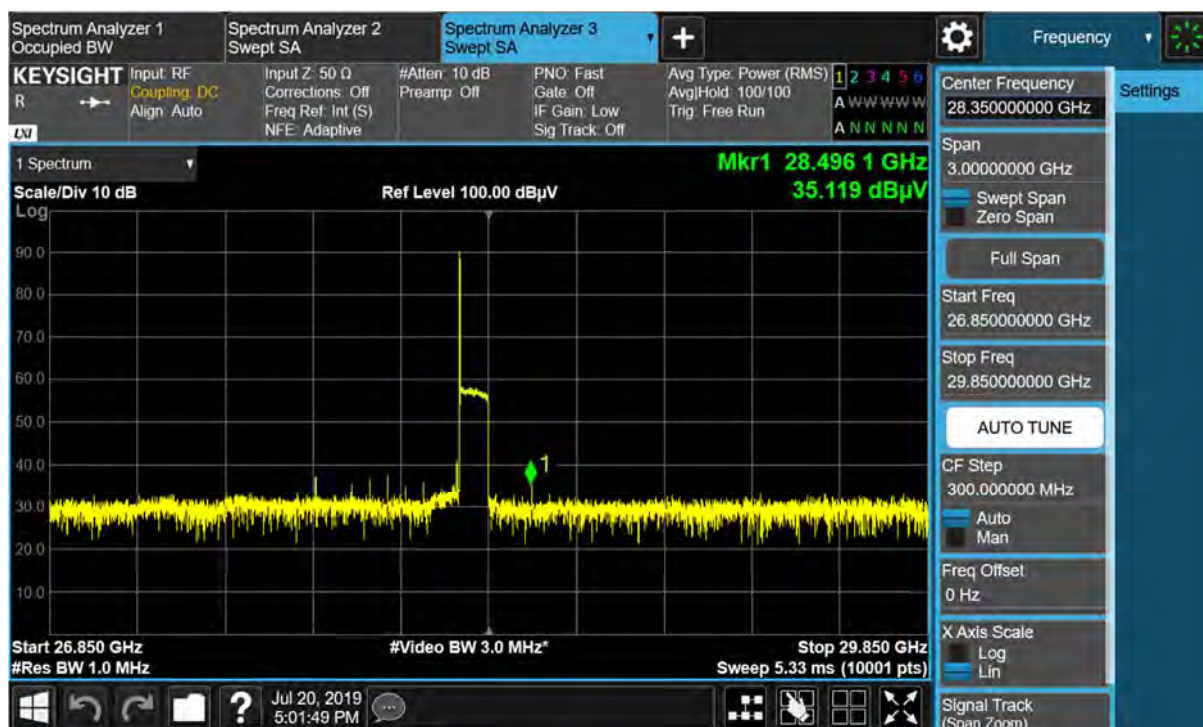
MAX Ant. A Position / 1cc / High / QPSK / Ant. B



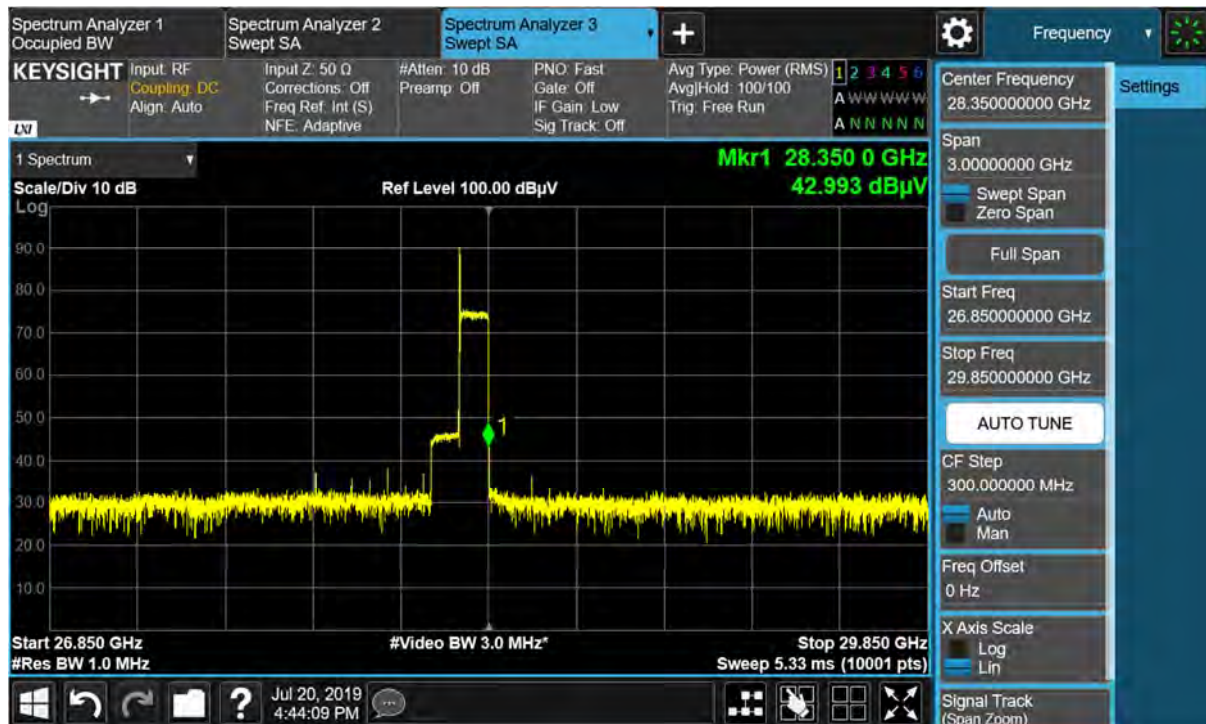
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MAX Ant. A Position / 1cc / High / QPSK / Ant. D



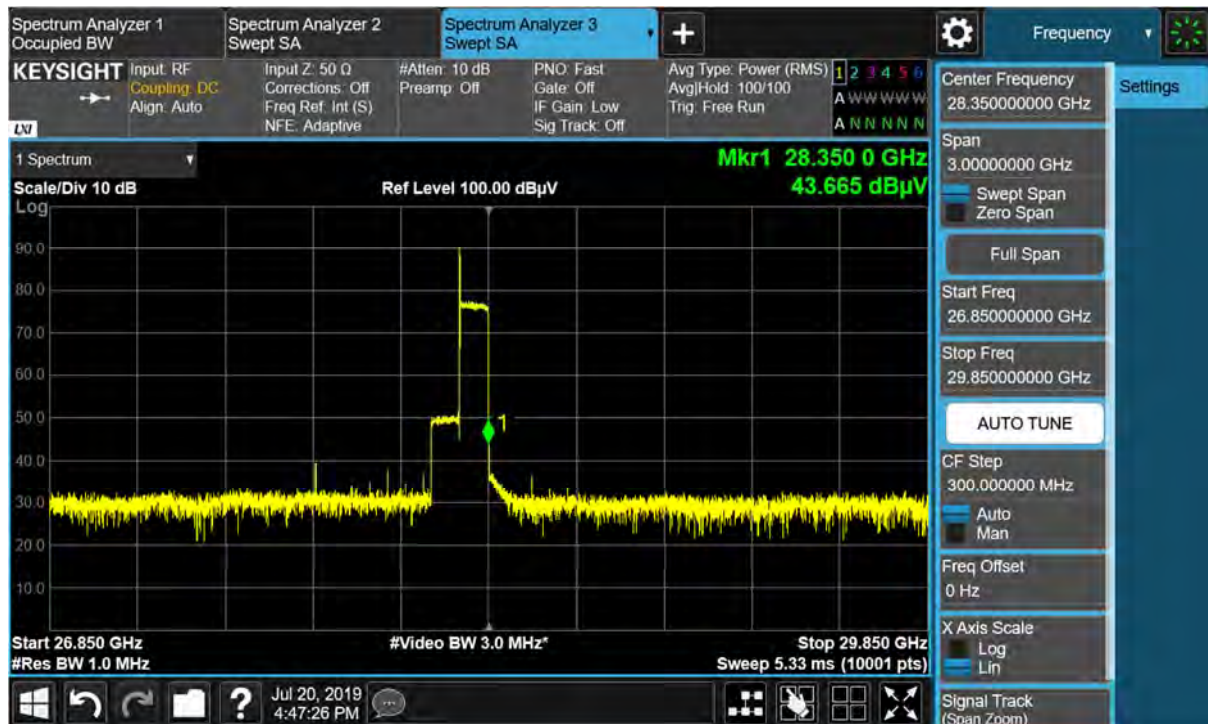
MAX Ant. A Position / 1cc / High / 16QAM / Ant. A



MAX Ant. A Position / 1cc / High / 16QAM / Ant. B



MAX Ant. A Position / 1cc / High / 16QAM / Ant. C



MAX Ant. A Position / 1cc / High / 16QAM / Ant. D



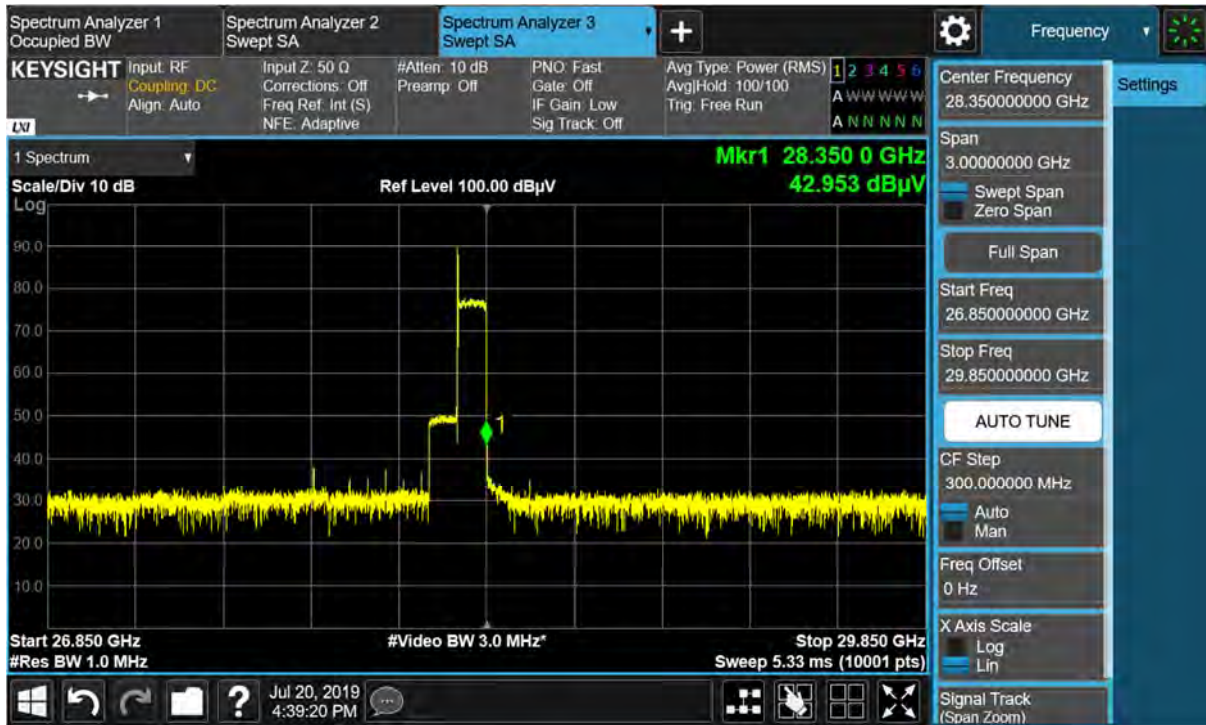
MAX Ant. A Position / 1cc / High / 64QAM / Ant. A



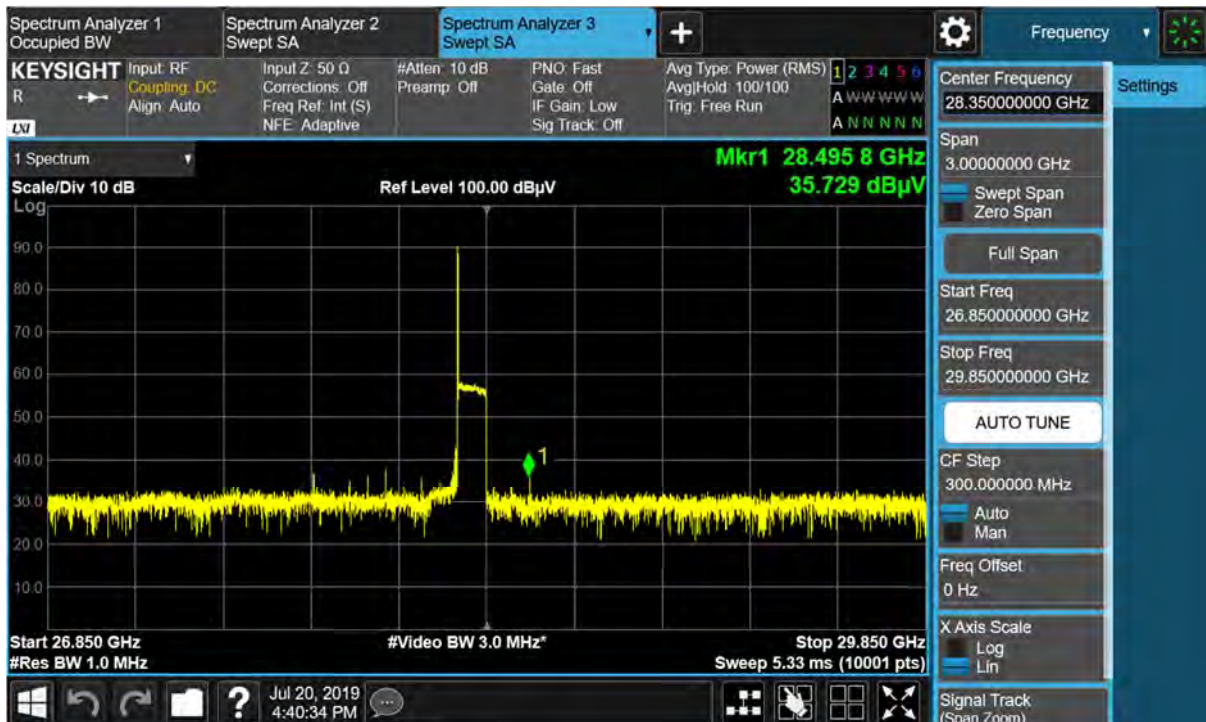
MAX Ant. A Position / 1cc / High / 64QAM / Ant. B



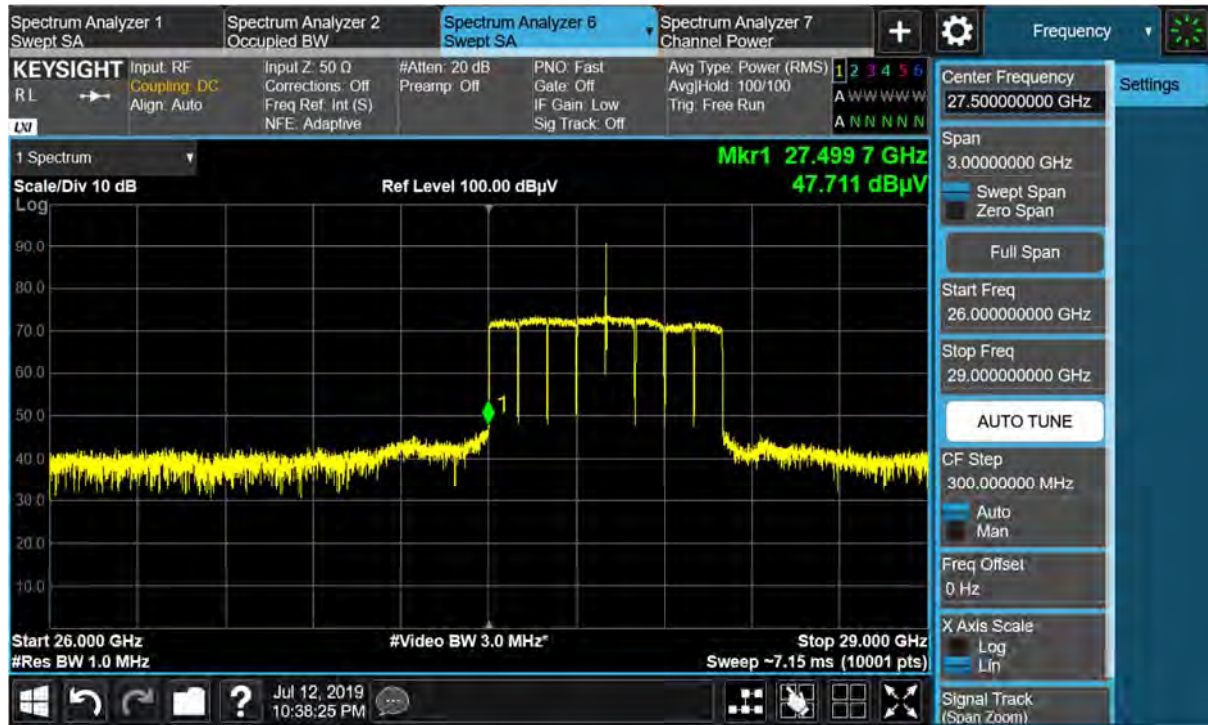
MAX Ant. A Position / 1cc / High / 64QAM / Ant. C



MAX Ant. A Position / 1cc / High / 64QAM / Ant. D



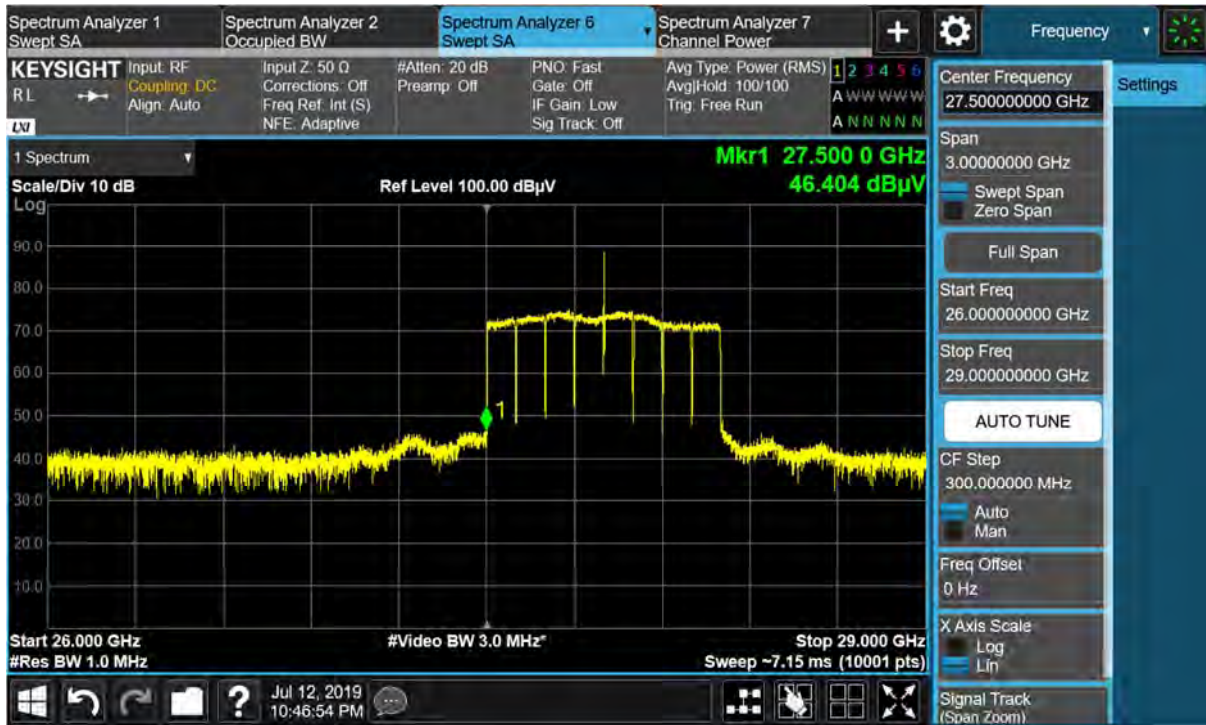
MAX Ant. A Position / 8cc / Low / QPSK / Ant. A



MAX Ant. A Position / 8cc / Low / QPSK / Ant. B



MAX Ant. A Position / 8cc / Low / QPSK / Ant. C



MAX Ant. A Position / 8cc / Low / QPSK / Ant. D

