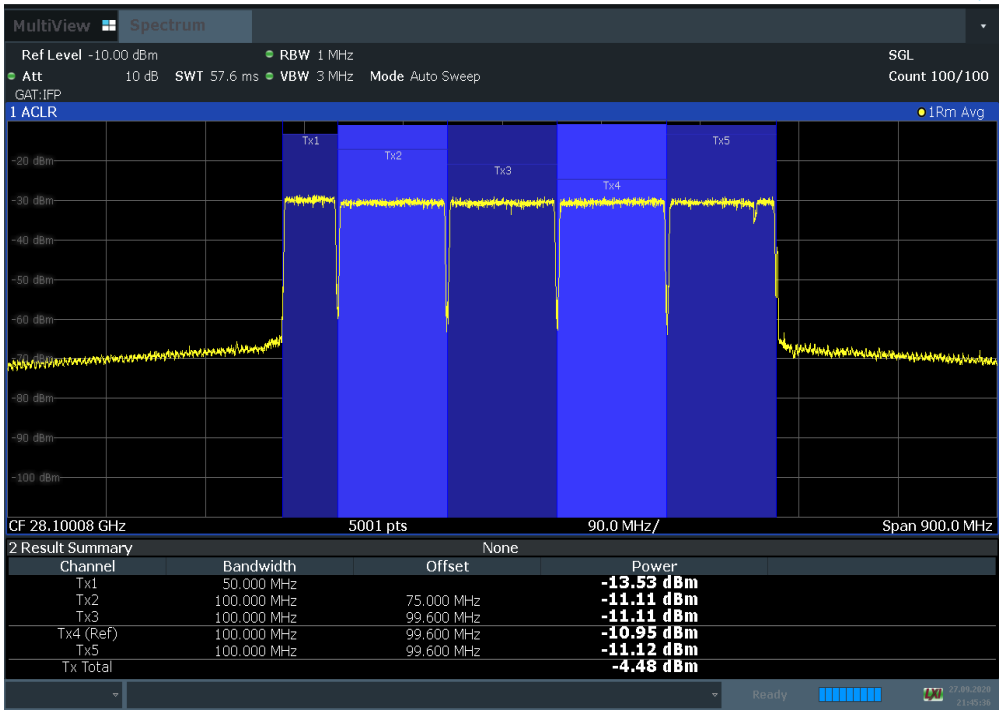
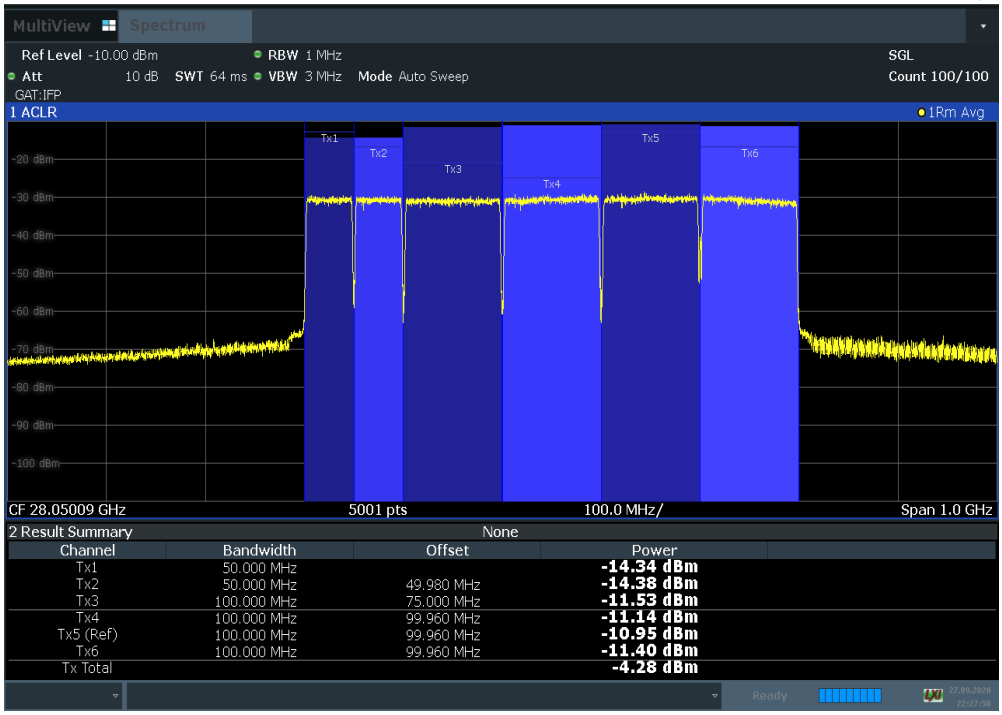
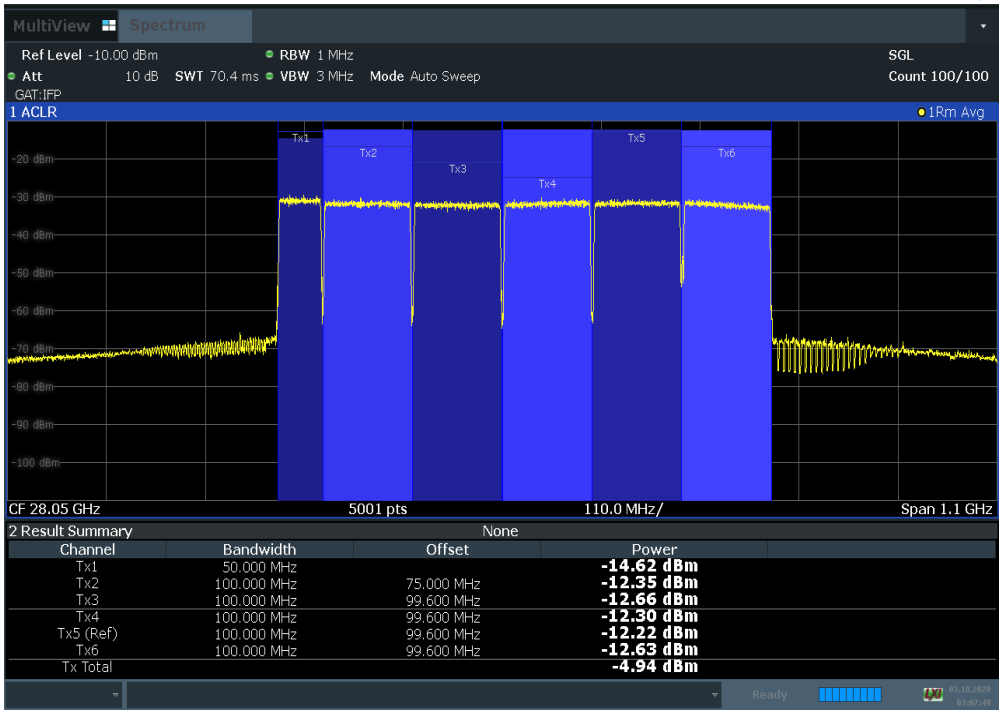


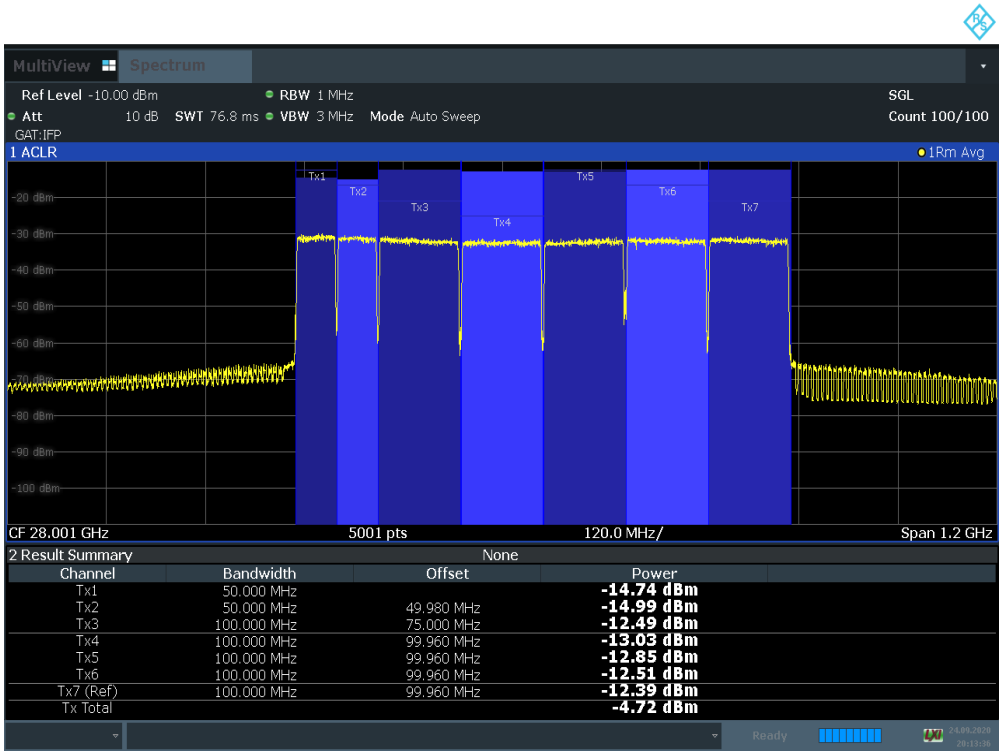
Plot 7-259. EIRP Density (Ant D 50 MHz 1CC + 100 MHz BW 4CC QPSK High)



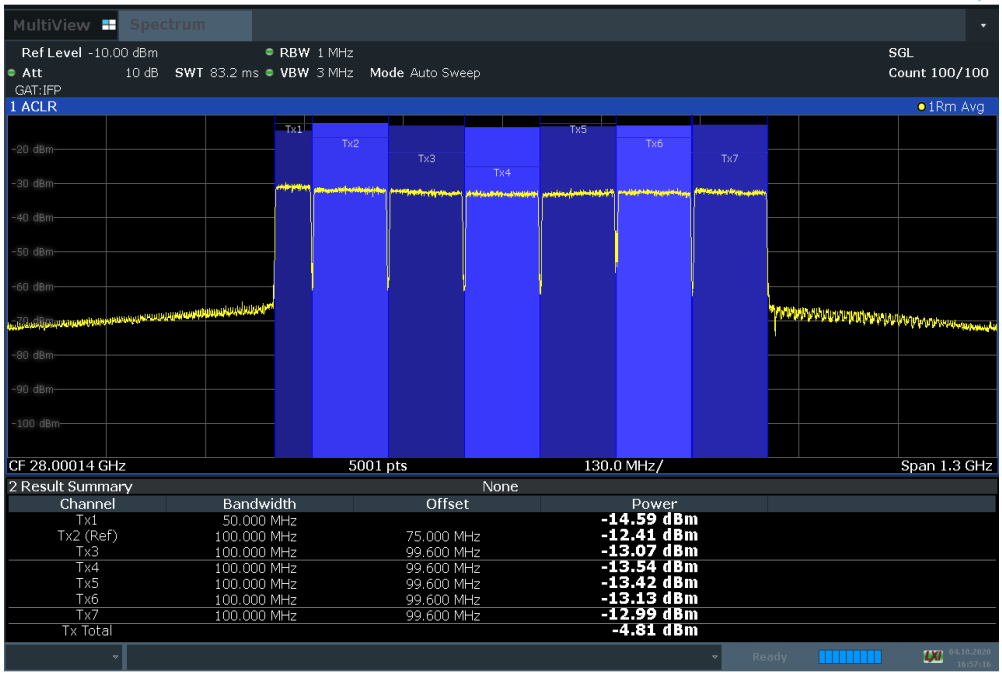
Plot 7-260. EIRP Density (Ant D 50 MHz 2CC + 100 MHz BW 4CC QPSK High)



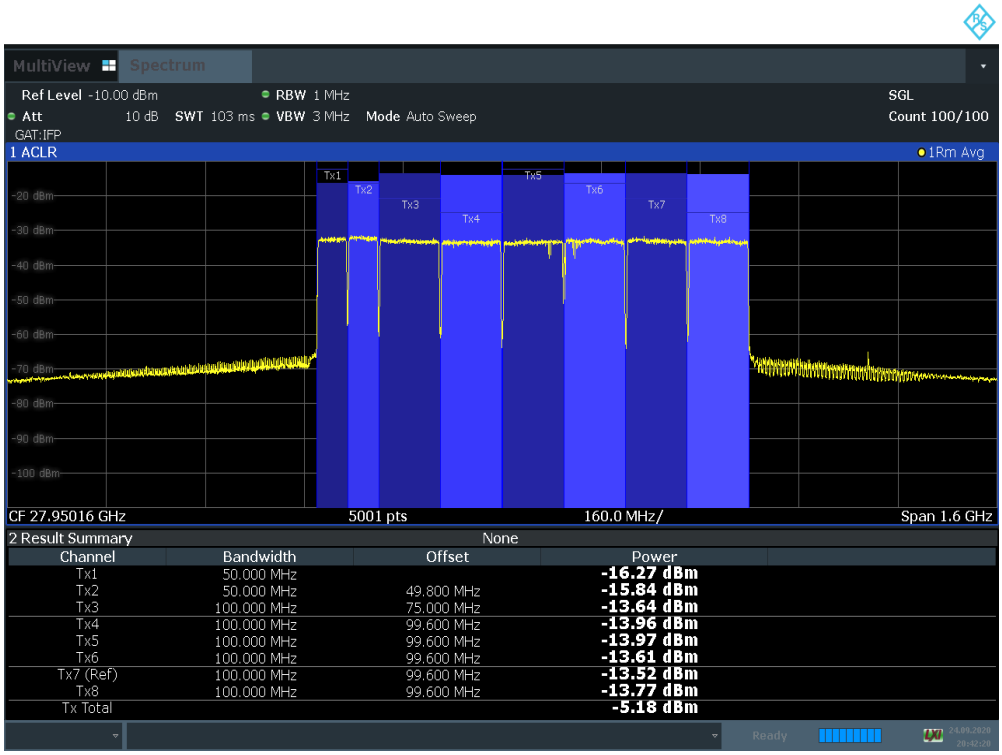
Plot 7-261. EIRP Density (Ant D 50 MHz 1CC + 100 MHz BW 5CC QPSK High)



Plot 7-262. EIRP Density (Ant D 50 MHz 2CC + 100 MHz BW 5CC QPSK High)



Plot 7-263. EIRP Density (Ant D 50 MHz 1CC + 100 MHz BW 6CC QPSK High)



Plot 7-264. EIRP Density (Ant D 50 MHz 2CC + 100 MHz BW 6CC QPSK High)

7.3.5 MIMO EIRP Density

Antenna	Bandwidth	Configuration	Channel	CCs active	Modulation	Average e.i.r.p. PSD [dBm/100MHz]	PSD Limit [dBm/100MHz]	Margin [dB]
A + C	50 MHz	1CC	Low	0	QPSK	50.53	75.00	24.47
		1CC	Low	0	16QAM	50.44	75.00	24.56
		1CC	Low	0	64QAM	50.52	75.00	24.48
		2CC	Low	0-1	QPSK	50.62	75.00	24.38
		2CC	Low	0-1	16QAM	50.61	75.00	24.39
		2CC	Low	0-1	64QAM	50.60	75.00	24.40
		1CC	Mid	4	QPSK	50.47	75.00	24.53
		1CC	Mid	4	16QAM	50.35	75.00	24.65
		1CC	Mid	4	64QAM	50.47	75.00	24.53
		2CC	Mid	0-1	QPSK	50.51	75.00	24.49
		2CC	Mid	0-1	16QAM	50.56	75.00	24.44
		2CC	Mid	0-1	64QAM	50.58	75.00	24.42
		1CC	High	7	QPSK	51.05	75.00	23.95
		1CC	High	7	16QAM	50.96	75.00	24.04
		1CC	High	7	64QAM	51.01	75.00	23.99
		2CC	High	0-1	QPSK	51.17	75.00	23.83
		2CC	High	0-1	16QAM	51.08	75.00	23.92
		2CC	High	0-1	64QAM	51.09	75.00	23.91
	100 MHz	1CC	Low	0	QPSK	50.64	75.00	24.36
		1CC	Low	0	16QAM	50.58	75.00	24.42
		1CC	Low	0	64QAM	50.63	75.00	24.37
		8CC	Low	0-7	QPSK	48.38	75.00	26.62
		8CC	Low	0-7	16QAM	48.35	75.00	26.65
		8CC	Low	0-7	64QAM	48.36	75.00	26.64
		1CC	Mid	4	QPSK	50.26	75.00	24.74
		1CC	Mid	4	16QAM	50.42	75.00	24.58
		1CC	Mid	4	64QAM	50.49	75.00	24.51
		8CC	Mid	0-7	QPSK	48.45	75.00	26.55
		8CC	Mid	0-7	16QAM	48.33	75.00	26.67
		8CC	Mid	0-7	64QAM	48.37	75.00	26.63
		1CC	High	7	QPSK	50.97	75.00	24.03
		1CC	High	7	16QAM	50.88	75.00	24.12
		1CC	High	7	64QAM	50.92	75.00	24.08
		2CC	High	0-1	QPSK	50.73	75.00	24.27
		3CC	High	0-2	QPSK	51.09	75.00	23.91
		4CC	High	0-3	QPSK	51.24	75.00	23.76
		5CC	High	0-4	QPSK	50.32	75.00	24.68
		6CC	High	0-5	QPSK	49.54	75.00	25.46
		7CC	High	0-6	QPSK	48.88	75.00	26.12
		8CC	High	0-7	QPSK	48.79	75.00	26.21
		8CC	High	0-7	16QAM	48.82	75.00	26.18
		8CC	High	0-7	64QAM	48.80	75.00	26.20

Table 7-11. MIMO EIRP Density Summary Data (Antenna A + Antenna C)

Antenna	Bandwidth	Configuration	Channel	CCs active	Modulation	Average e.i.r.p. PSD [dBm/100MHz]	PSD Limit [dBm/100MHz]	Margin [dB]
B + D	50 MHz	1CC	Low	0	QPSK	50.23	75.00	24.77
		1CC	Low	0	16QAM	50.38	75.00	24.62
		1CC	Low	0	64QAM	50.46	75.00	24.54
		2CC	Low	0-1	QPSK	50.61	75.00	24.39
		2CC	Low	0-1	16QAM	50.58	75.00	24.42
		2CC	Low	0-1	64QAM	50.56	75.00	24.44
		1CC	Mid	4	QPSK	50.66	75.00	24.34
		1CC	Mid	4	16QAM	50.58	75.00	24.42
		1CC	Mid	4	64QAM	50.64	75.00	24.36
		2CC	Mid	0-1	QPSK	50.84	75.00	24.16
		2CC	Mid	0-1	16QAM	50.79	75.00	24.21
		2CC	Mid	0-1	64QAM	50.77	75.00	24.23
		1CC	High	7	QPSK	50.82	75.00	24.18
		1CC	High	7	16QAM	50.63	75.00	24.37
		1CC	High	7	64QAM	50.78	75.00	24.22
		2CC	High	0-1	QPSK	50.94	75.00	24.06
		2CC	High	0-1	16QAM	50.89	75.00	24.11
		2CC	High	0-1	64QAM	50.86	75.00	24.14
	100 MHz	1CC	Low	0	QPSK	50.56	75.00	24.44
		1CC	Low	0	16QAM	50.52	75.00	24.48
		1CC	Low	0	64QAM	50.60	75.00	24.40
		8CC	Low	0-7	QPSK	48.25	75.00	26.75
		8CC	Low	0-7	16QAM	48.15	75.00	26.85
		8CC	Low	0-7	64QAM	48.22	75.00	26.78
		1CC	Mid	4	QPSK	50.44	75.00	24.56
		1CC	Mid	4	16QAM	50.39	75.00	24.61
		1CC	Mid	4	64QAM	50.45	75.00	24.55
		8CC	Mid	0-7	QPSK	48.40	75.00	26.60
		8CC	Mid	0-7	16QAM	48.39	75.00	26.61
		8CC	Mid	0-7	64QAM	48.42	75.00	26.58
		1CC	High	7	QPSK	50.51	75.00	24.49
		1CC	High	7	16QAM	50.39	75.00	24.61
		1CC	High	7	64QAM	50.47	75.00	24.53
		2CC	High	0-1	QPSK	50.79	75.00	24.21
		3CC	High	0-2	QPSK	51.10	75.00	23.90
		4CC	High	0-3	QPSK	51.02	75.00	23.98
		5CC	High	0-4	QPSK	50.26	75.00	24.74
		6CC	High	0-5	QPSK	49.44	75.00	25.56
		7CC	High	0-6	QPSK	48.80	75.00	26.20
		8CC	High	0-7	QPSK	48.54	75.00	26.46
		8CC	High	0-7	16QAM	48.57	75.00	26.43
		8CC	High	0-7	64QAM	48.62	75.00	26.38

Table 7-12. MIMO EIRP Density Summary Data (Antenna B + Antenna D)

Antenna	Bandwidth	Configuration	Channel	CCs active	Modulation	Average e.i.r.p. PSD [dBm/100MHz]	PSD Limit [dBm/100MHz]	Margin [dB]
A + B + C + D	50 MHz	1CC	Low	0	QPSK	53.39	75.00	21.61
		1CC	Low	0	16QAM	53.42	75.00	21.58
		1CC	Low	0	64QAM	53.50	75.00	21.50
		2CC	Low	0-1	QPSK	53.62	75.00	21.38
		2CC	Low	0-1	16QAM	53.60	75.00	21.40
		2CC	Low	0-1	64QAM	53.59	75.00	21.41
		1CC	Mid	4	QPSK	53.58	75.00	21.42
		1CC	Mid	4	16QAM	53.48	75.00	21.52
		1CC	Mid	4	64QAM	53.57	75.00	21.43
		2CC	Mid	0-1	QPSK	53.69	75.00	21.31
		2CC	Mid	0-1	16QAM	53.69	75.00	21.31
		2CC	Mid	0-1	64QAM	53.68	75.00	21.32
		1CC	High	7	QPSK	53.95	75.00	21.05
		1CC	High	7	16QAM	53.81	75.00	21.19
		1CC	High	7	64QAM	53.91	75.00	21.09
		2CC	High	0-1	QPSK	54.07	75.00	20.93
		2CC	High	0-1	16QAM	54.00	75.00	21.00
		2CC	High	0-1	64QAM	53.98	75.00	21.02
	100 MHz	1CC	Low	0	QPSK	53.61	75.00	21.39
		1CC	Low	0	16QAM	53.56	75.00	21.44
		1CC	Low	0	64QAM	53.62	75.00	21.38
		8CC	Low	0-7	QPSK	51.32	75.00	23.68
		8CC	Low	0-7	16QAM	51.26	75.00	23.74
		8CC	Low	0-7	64QAM	51.30	75.00	23.70
		1CC	Mid	4	QPSK	53.36	75.00	21.64
		1CC	Mid	4	16QAM	53.42	75.00	21.58
		1CC	Mid	4	64QAM	53.48	75.00	21.52
		8CC	Mid	0-7	QPSK	51.44	75.00	23.56
		8CC	Mid	0-7	16QAM	51.37	75.00	23.63
		8CC	Mid	0-7	64QAM	51.41	75.00	23.59
		1CC	High	7	QPSK	53.75	75.00	21.25
		1CC	High	7	16QAM	53.65	75.00	21.35
		1CC	High	7	64QAM	53.71	75.00	21.29
		2CC	High	0-1	QPSK	53.77	75.00	21.23
		3CC	High	0-2	QPSK	54.11	75.00	20.89
		4CC	High	0-3	QPSK	54.14	75.00	20.86
		5CC	High	0-4	QPSK	53.30	75.00	21.70
		6CC	High	0-5	QPSK	52.50	75.00	22.50
		7CC	High	0-6	QPSK	51.85	75.00	23.15
		8CC	High	0-7	QPSK	51.67	75.00	23.33
		8CC	High	0-7	16QAM	51.71	75.00	23.29
		8CC	High	0-7	64QAM	51.72	75.00	23.28

Table 7-13. MIMO EIRP Density Summary Data (Antenna A + Antenna B + Antenna C + Antenna D)

7.4 RF Conducted Output Power

§2.1046

Test Overview

RF conducted output power measurements are performed using broadband horn antennas. The conducted power is determined by maximizing the full spectrum EIRP for all component carrier configurations and then subtracting the known antenna gain from the EIRP. All measurements are performed as RMS average measurements while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies.

Test Procedures Used

ANSI C63.26-2015 Section 5.2.4.4.1
ANSI C63.26-2015 Section 6.4

Test Settings

1. Radiated power measurements are performed using the signal analyzer's "channel power" measurement capability for signals with continuous operation.
2. RBW = 1 – 5 % of the expected OBW
3. VBW ≥ 3 x RBW
4. Span = 2x to 3x the OBW
5. No. of sweep points ≥ 2 x span / RBW
6. Detector = RMS
7. The integration bandwidth was roughly set equal to the measured RF Conducted Output Power of the signal for signals with continuous operation. For signals with burst transmission, the "gating" function was enabled to ensure that measurements are performed during times in which the transmitter is operating at its maximum power
8. Trace mode = trace averaging (RMS) over 100 sweeps
9. The trace was allowed to stabilize

Test Notes

1) The EUT was tested while positioned upright and mounted on a mast at 1.5 m height. The worst case emissions are reported with the EUT in this fixed position and with the modulations and active component carriers shown in the tables below.

2) Elements within the same antenna array are correlated to produce beamforming array gain.

3) Measurements were taken in the far field of the mmWave signal based on the formula: R ≥ 2D^2/wavelength.

4) The test case with 1 CC active, "CC0" representing the component carrier with the lowest frequency, was selected for the worst case emission testing as it created the highest EIRP within 50 MHz and 100 MHz bandwidth.

5) The average EIRP reported below is calculated per formula specific in d) of ANSI C63.26-2015 Section 5.2.7:

   EIRP (dBm) = E (dBµV/m) + 20log(D) -104.8; where D is the measurement distance (in the far field region) in m.

   For this section, all EIRP density measurements were performed at a distance of 3.19 m, so the effective correction is:

   EIRP (dBm) = E (dBuV/m) – 94.72 dB

   = Analyzer Level (dBm) + AFCL (dB/m) + 107 dB – 94.72 dB

   = Analyzer Level (dBm) + AFCL (dB/m) + 12.28 dB

6) The conducted average power over the full channel BW is calculated as follows:

   Conducted Average Power (dBm) = Average EIRP (dBm) – Antenna Gain (dBi)

7) Per ANSI C63.26-2015 Section 6.4, individual EIRPs are also summed before compared to the limit.

8) The angle of the horn antenna was rotated to maximize and find the worst case emissions. Worst case EIRP is reported below.

9) 7.3 Equivalent Isotropic Radiated Power (EIRP) Density plots cover for 7.4 Conducted Output Power plot.

10) CCs active 0, 4, 7 = 1 Components Carriers Active, 0-7 = 8 Component Carriers Active. 0-7(NC) = 8 Non-contiguous Component Carriers Active. Each component carrier's bandwidth is either of 50 MHz or 100 MHz Bandwidth.

11) A3LAT1K04-B10 test result is referenced as A3LAT1K04-B00 result which only difference of power type as AC and DC which supply condition no affect to RF specification.

7.4.1 Antenna A Conducted Power

Antenna	Bandwidth	Chan.	CCs active	Modulation	Horn Angle	Horn Height	Turntable Azimuth	Analyzer Level (Total Pwr)	AFCL	EUT Antenna Gain	Average e.i.r.p.	Conducted Average Power
	[MHz]				[degrees]	[cm]	[degrees]	[dBm]	[dB/m]	[dBi]	[dBm]	[dBm]
A	50	Low	0	QPSK	135.0	156	54	-12.99	57.65	28.12	44.66	16.54
		Low	0	16QAM	135.0	156	54	-13.10	57.65	28.12	44.55	16.43
		Low	0	64QAM	135.0	156	54	-12.99	57.65	28.12	44.66	16.54
		Low	0-1	QPSK	135.0	156	54	-12.85	57.65	28.12	44.80	16.68
		Low	0-1	16QAM	135.0	156	54	-12.83	57.65	28.12	44.82	16.70
		Low	0-1	64QAM	135.0	156	54	-12.83	57.65	28.12	44.82	16.70
		Mid	4	QPSK	135.0	156	54	-13.14	57.74	28.18	44.60	16.42
		Mid	4	16QAM	135.0	156	54	-13.31	57.74	28.18	44.43	16.25
		Mid	4	64QAM	135.0	156	54	-13.17	57.74	28.18	44.57	16.39
		Mid	0-1	QPSK	135.0	156	54	-13.12	57.74	28.18	44.62	16.44
		Mid	0-1	16QAM	135.0	156	54	-13.09	57.74	28.18	44.65	16.47
		Mid	0-1	64QAM	135.0	156	54	-13.05	57.74	28.18	44.69	16.51
		High	7	QPSK	135.0	156	54	-12.95	58.09	28.33	45.14	16.81
		High	7	16QAM	135.0	156	54	-13.07	58.09	28.33	45.02	16.69
		High	7	64QAM	135.0	156	54	-12.97	58.09	28.33	45.12	16.79
		High	0-1	QPSK	135.0	156	54	-12.86	58.09	28.33	45.23	16.90
		High	0-1	16QAM	135.0	156	54	-12.95	58.09	28.33	45.14	16.81
		High	0-1	64QAM	135.0	156	54	-12.94	58.09	28.33	45.15	16.82
	100	Low	0	QPSK	135.0	156	54	-9.98	57.65	28.12	47.67	19.55
		Low	0	16QAM	135.0	156	54	-10.05	57.65	28.12	47.60	19.48
		Low	0	64QAM	135.0	156	54	-9.99	57.65	28.12	47.66	19.54
		Low	0-7	QPSK	135.0	156	54	-12.01	57.65	28.12	45.64	17.52
		Low	0-7	16QAM	135.0	156	54	-12.06	57.65	28.12	45.59	17.47
		Low	0-7	64QAM	135.0	156	54	-12.06	57.65	28.12	45.59	17.47
		Mid	4	QPSK	135.0	156	54	-10.50	57.74	28.18	47.24	19.06
		Mid	4	16QAM	135.0	156	54	-10.11	57.74	28.18	47.63	19.45
		Mid	4	64QAM	135.0	156	54	-10.04	57.74	28.18	47.70	19.52
		Mid	0-7	QPSK	135.0	156	54	-11.99	57.74	28.18	45.75	17.57
		Mid	0-7	16QAM	135.0	156	54	-12.24	57.74	28.18	45.50	17.32
		Mid	0-7	64QAM	135.0	156	54	-12.18	57.74	28.18	45.56	17.38
		High	7	QPSK	135.0	156	54	-10.23	58.09	28.33	47.86	19.53
		High	7	16QAM	135.0	156	54	-10.33	58.09	28.33	47.76	19.43
		High	7	64QAM	135.0	156	54	-10.30	58.09	28.33	47.79	19.46
		High	0-1	QPSK	135.0	156	54	-10.21	58.09	28.33	47.88	19.55
		High	0-2	QPSK	135.0	156	54	-9.78	58.09	28.33	48.31	19.98
		High	0-3	QPSK	135.0	156	54	-9.61	58.09	28.33	48.48	20.15
		High	0-4	QPSK	135.0	156	54	-10.45	58.09	28.33	47.64	19.32
		High	0-5	QPSK	135.0	156	54	-11.26	58.09	28.33	46.83	18.51
		High	0-6	QPSK	135.0	156	54	-11.94	58.09	28.33	46.15	17.83
		High	0-7	QPSK	135.0	156	54	-12.79	58.09	28.33	45.30	16.97
		High	0-7	16QAM	135.0	156	54	-12.53	58.09	28.33	45.56	17.23
		High	0-7	64QAM	135.0	156	54	-12.73	58.09	28.33	45.36	17.03

Table 7-14. Antenna A Conducted Power Summary Data

7.4.2 Antenna B Conducted Power

Antenna	Bandwidth	Chan.	CCs active	Modulation	Horn Angle	Horn Height	Turntable Azimuth	Analyzer Level (Total Pwr)	AFCL	EUT Antenna Gain	Average e.i.r.p.	Conducted Average Power
	[MHz]				[degrees]	[cm]	[degrees]	[dBm]	[dB/m]	[dBi]	[dBm]	[dBm]
B	50	Low	0	QPSK	45.0	1.44	52	-13.41	57.65	28.12	44.24	16.12
		Low	0	16QAM	45.0	1.44	52	-13.15	57.65	28.12	44.50	16.38
		Low	0	64QAM	45.0	1.44	52	-13.08	57.65	28.12	44.57	16.45
		Low	0-1	QPSK	45.0	1.44	52	-12.78	57.65	28.12	44.87	16.75
		Low	0-1	16QAM	45.0	1.44	52	-12.82	57.65	28.12	44.83	16.71
		Low	0-1	64QAM	45.0	1.44	52	-12.83	57.65	28.12	44.82	16.70
		Mid	4	QPSK	45.0	1.44	52	-13.19	57.74	28.18	44.55	16.36
		Mid	4	16QAM	45.0	1.44	52	-13.31	57.74	28.18	44.43	16.24
		Mid	4	64QAM	45.0	1.44	52	-13.26	57.74	28.18	44.48	16.30
		Mid	0-1	QPSK	45.0	1.44	52	-12.91	57.74	28.18	44.83	16.65
		Mid	0-1	16QAM	45.0	1.44	52	-12.94	57.74	28.18	44.80	16.62
		Mid	0-1	64QAM	45.0	1.44	52	-12.98	57.74	28.18	44.76	16.58
		High	7	QPSK	45.0	1.44	52	-13.38	58.09	28.33	44.71	16.38
		High	7	16QAM	45.0	1.44	52	-13.49	58.09	28.33	44.60	16.27
		High	7	64QAM	45.0	1.44	52	-13.41	58.09	28.33	44.68	16.35
		High	0-1	QPSK	45.0	1.44	52	-13.20	58.09	28.33	44.89	16.56
		High	0-1	16QAM	45.0	1.44	52	-13.24	58.09	28.33	44.85	16.52
		High	0-1	64QAM	45.0	1.44	52	-13.28	58.09	28.33	44.81	16.49
	100	Low	0	QPSK	45.0	1.44	52	-9.91	57.65	28.12	47.74	19.62
		Low	0	16QAM	45.0	1.44	52	-9.96	57.65	28.12	47.69	19.57
		Low	0	64QAM	45.0	1.44	52	-9.90	57.65	28.12	47.75	19.63
		Low	0-7	QPSK	45.0	1.44	52	-12.45	57.65	28.12	45.20	17.08
		Low	0-7	16QAM	45.0	1.44	52	-12.56	57.65	28.12	45.09	16.97
		Low	0-7	64QAM	45.0	1.44	52	-12.47	57.65	28.12	45.18	17.06
		Mid	4	QPSK	45.0	1.44	52	-10.36	57.74	28.18	47.38	19.20
		Mid	4	16QAM	45.0	1.44	52	-10.39	57.74	28.18	47.35	19.16
		Mid	4	64QAM	45.0	1.44	52	-10.33	57.74	28.18	47.41	19.23
		Mid	0-7	QPSK	45.0	1.44	52	-12.35	57.74	28.18	45.39	17.21
		Mid	0-7	16QAM	45.0	1.44	52	-12.41	57.74	28.18	45.33	17.15
		Mid	0-7	64QAM	45.0	1.44	52	-12.38	57.74	28.18	45.36	17.18
		High	7	QPSK	45.0	1.44	52	-10.55	58.09	28.33	47.54	19.21
		High	7	16QAM	45.0	1.44	52	-10.63	58.09	28.33	47.46	19.13
		High	7	64QAM	45.0	1.44	52	-10.56	58.09	28.33	47.53	19.20
		High	0-1	QPSK	45.0	1.44	52	-10.64	58.09	28.33	47.45	19.12
		High	0-2	QPSK	45.0	1.44	52	-10.25	58.09	28.33	47.84	19.52
		High	0-3	QPSK	45.0	1.44	52	-10.12	58.09	28.33	47.97	19.64
		High	0-4	QPSK	45.0	1.44	52	-11.13	58.09	28.33	46.96	18.63
		High	0-5	QPSK	45.0	1.44	52	-11.92	58.09	28.33	46.17	17.85
		High	0-6	QPSK	45.0	1.44	52	-12.43	58.09	28.33	45.66	17.34
		High	0-7	QPSK	45.0	1.44	52	-12.52	58.09	28.33	45.57	17.24
		High	0-7	16QAM	45.0	1.44	52	-12.52	58.09	28.33	45.57	17.24
		High	0-7	64QAM	45.0	1.44	52	-12.52	58.09	28.33	45.57	17.25

Table 7-15. Antenna B Conducted Power Summary Data

7.4.3 Antenna C Conducted Power

Antenna	Bandwidth	Chan.	CCs active	Modulation	Horn Angle	Horn Height	Turntable Azimuth	Analyzer Level (Total Pwr)	AFCL	EUT Antenna Gain	Average e.i.r.p.	Conducted Average Power
	[MHz]				[degrees]	[cm]	[degrees]	[dBm]	[dB/m]	[dBi]	[dBm]	[dBm]
C	50	Low	0	QPSK	135.0	156	55	-13.29	57.65	28.12	44.36	16.24
		Low	0	16QAM	135.0	156	55	-13.36	57.65	28.12	44.29	16.17
		Low	0	64QAM	135.0	156	55	-13.32	57.65	28.12	44.33	16.21
		Low	0-1	QPSK	135.0	156	55	-13.25	57.65	28.12	44.40	16.28
		Low	0-1	16QAM	135.0	156	55	-13.30	57.65	28.12	44.35	16.23
		Low	0-1	64QAM	135.0	156	55	-13.32	57.65	28.12	44.33	16.21
		Mid	4	QPSK	135.0	156	55	-13.44	57.74	28.18	44.30	16.12
		Mid	4	16QAM	135.0	156	55	-13.50	57.74	28.18	44.24	16.06
		Mid	4	64QAM	135.0	156	55	-13.41	57.74	28.18	44.33	16.15
		Mid	0-1	QPSK	135.0	156	55	-13.39	57.74	28.18	44.35	16.17
		Mid	0-1	16QAM	135.0	156	55	-13.30	57.74	28.18	44.44	16.26
		Mid	0-1	64QAM	135.0	156	55	-13.32	57.74	28.18	44.42	16.24
		High	7	QPSK	135.0	156	55	-13.16	58.09	28.33	44.93	16.61
		High	7	16QAM	135.0	156	55	-13.23	58.09	28.33	44.86	16.53
		High	7	64QAM	135.0	156	55	-13.23	58.09	28.33	44.86	16.54
		High	0-1	QPSK	135.0	156	55	-13.01	58.09	28.33	45.08	16.76
		High	0-1	16QAM	135.0	156	55	-13.10	58.09	28.33	44.99	16.66
		High	0-1	64QAM	135.0	156	55	-13.20	58.09	28.33	44.89	16.56
	100	Low	0	QPSK	135.0	156	55	-10.05	57.65	28.12	47.60	19.48
		Low	0	16QAM	135.0	156	55	-10.11	57.65	28.12	47.54	19.42
		Low	0	64QAM	135.0	156	55	-10.07	57.65	28.12	47.58	19.46
		Low	0-7	QPSK	135.0	156	55	-12.57	57.65	28.12	45.08	16.96
		Low	0-7	16QAM	135.0	156	55	-12.58	57.65	28.12	45.07	16.95
		Low	0-7	64QAM	135.0	156	55	-12.55	57.65	28.12	45.10	16.98
		Mid	4	QPSK	135.0	156	55	-10.47	57.74	28.18	47.27	19.09
		Mid	4	16QAM	135.0	156	55	-10.56	57.74	28.18	47.18	19.00
		Mid	4	64QAM	135.0	156	55	-10.49	57.74	28.18	47.25	19.07
		Mid	0-7	QPSK	135.0	156	55	-12.63	57.74	28.18	45.11	16.93
		Mid	0-7	16QAM	135.0	156	55	-12.60	57.74	28.18	45.14	16.96
		Mid	0-7	64QAM	135.0	156	55	-12.58	57.74	28.18	45.16	16.98
		High	7	QPSK	135.0	156	55	-10.03	58.09	28.33	48.06	19.74
		High	7	16QAM	135.0	156	55	-10.11	58.09	28.33	47.98	19.65
		High	7	64QAM	135.0	156	55	-10.05	58.09	28.33	48.04	19.71
		High	0-1	QPSK	135.0	156	55	-10.53	58.09	28.33	47.56	19.23
		High	0-2	QPSK	135.0	156	55	-10.24	58.09	28.33	47.85	19.52
		High	0-3	QPSK	135.0	156	55	-10.13	58.09	28.33	47.96	19.63
		High	0-4	QPSK	135.0	156	55	-11.14	58.09	28.33	46.95	18.62
		High	0-5	QPSK	135.0	156	55	-11.87	58.09	28.33	46.22	17.89
		High	0-6	QPSK	135.0	156	55	-12.51	58.09	28.33	45.58	17.25
		High	0-7	QPSK	135.0	156	55	-12.48	58.09	28.33	45.61	17.28
		High	0-7	16QAM	135.0	156	55	-12.49	58.09	28.33	45.60	17.27
		High	0-7	64QAM	135.0	156	55	-12.56	58.09	28.33	45.53	17.21

Table 7-16. Antenna C Conducted Power Summary Data

7.4.4 Antenna D Conducted Power

Antenna	Bandwidth	Chan.	CCs active	Modulation	Horn Angle	Horn Height	Turntable Azimuth	Analyzer Level (Total Pwr)	AFCL	EUT Antenna Gain	Average e.i.r.p.	Conducted Average Power
	[MHz]				[degrees]	[cm]	[degrees]	[dBm]	[dB/m]	[dBi]	[dBm]	[dBm]
D	50	Low	0	QPSK	45.0	1.44	51	-13.47	57.65	28.12	44.18	16.06
		Low	0	16QAM	45.0	1.44	51	-13.42	57.65	28.12	44.23	16.11
		Low	0	64QAM	45.0	1.44	51	-13.34	57.65	28.12	44.31	16.19
		Low	0-1	QPSK	45.0	1.44	51	-13.36	57.65	28.12	44.29	16.17
		Low	0-1	16QAM	45.0	1.44	51	-13.38	57.65	28.12	44.27	16.15
		Low	0-1	64QAM	45.0	1.44	51	-13.40	57.65	28.12	44.25	16.13
		Mid	4	QPSK	45.0	1.44	51	-13.01	57.74	28.18	44.73	16.55
		Mid	4	16QAM	45.0	1.44	51	-13.04	57.74	28.18	44.70	16.52
		Mid	4	64QAM	45.0	1.44	51	-12.97	57.74	28.18	44.77	16.59
		Mid	0-1	QPSK	45.0	1.44	51	-12.92	57.74	28.18	44.82	16.64
		Mid	0-1	16QAM	45.0	1.44	51	-12.99	57.74	28.18	44.75	16.57
		Mid	0-1	64QAM	45.0	1.44	51	-13.00	57.74	28.18	44.74	16.56
		High	7	QPSK	45.0	1.44	51	-13.19	58.09	28.33	44.90	16.57
		High	7	16QAM	45.0	1.44	51	-13.47	58.09	28.33	44.62	16.30
		High	7	64QAM	45.0	1.44	51	-13.25	58.09	28.33	44.84	16.51
		High	0-1	QPSK	45.0	1.44	51	-13.14	58.09	28.33	44.95	16.62
		High	0-1	16QAM	45.0	1.44	51	-13.20	58.09	28.33	44.89	16.56
		High	0-1	64QAM	45.0	1.44	51	-13.22	58.09	28.33	44.87	16.54
	100	Low	0	QPSK	45.0	1.44	51	-10.29	57.65	28.12	47.36	19.24
		Low	0	16QAM	45.0	1.44	51	-10.32	57.65	28.12	47.33	19.21
		Low	0	64QAM	45.0	1.44	51	-10.22	57.65	28.12	47.43	19.31
		Low	0-7	QPSK	45.0	1.44	51	-12.37	57.65	28.12	45.28	17.16
		Low	0-7	16QAM	45.0	1.44	51	-12.46	57.65	28.12	45.19	17.07
		Low	0-7	64QAM	45.0	1.44	51	-12.41	57.65	28.12	45.24	17.12
		Mid	4	QPSK	45.0	1.44	51	-10.26	57.74	28.18	47.48	19.30
		Mid	4	16QAM	45.0	1.44	51	-10.32	57.74	28.18	47.42	19.24
		Mid	4	64QAM	45.0	1.44	51	-10.27	57.74	28.18	47.47	19.29
		Mid	0-7	QPSK	45.0	1.44	51	-12.34	57.74	28.18	45.40	17.22
		Mid	0-7	16QAM	45.0	1.44	51	-12.30	57.74	28.18	45.44	17.26
		Mid	0-7	64QAM	45.0	1.44	51	-12.28	57.74	28.18	45.46	17.27
		High	7	QPSK	45.0	1.44	51	-10.63	58.09	28.33	47.46	19.13
		High	7	16QAM	45.0	1.44	51	-10.78	58.09	28.33	47.31	18.98
		High	7	64QAM	45.0	1.44	51	-10.69	58.09	28.33	47.40	19.07
		High	0-1	QPSK	45.0	1.44	51	-10.00	58.09	28.33	48.09	19.76
		High	0-2	QPSK	45.0	1.44	51	-9.75	58.09	28.33	48.34	20.01
		High	0-3	QPSK	45.0	1.44	51	-10.04	58.09	28.33	48.05	19.72
		High	0-4	QPSK	45.0	1.44	51	-10.57	58.09	28.33	47.52	19.20
		High	0-5	QPSK	45.0	1.44	51	-11.40	58.09	28.33	46.69	18.36
		High	0-6	QPSK	45.0	1.44	51	-12.17	58.09	28.33	45.92	17.59
		High	0-7	QPSK	45.0	1.44	51	-12.60	58.09	28.33	45.49	17.16
		High	0-7	16QAM	45.0	1.44	51	-12.53	58.09	28.33	45.56	17.23
		High	0-7	64QAM	45.0	1.44	51	-12.44	58.09	28.33	45.65	17.32

Table 7-17. Antenna D Conducted Power Summary Data

7.4.5 Conducted Total Power (Summed Across All Antennas)

Antenna	Bandwidth	Chan.	CCs active	Modulation	Ant A	Ant B	Ant C	Ant D	Average e.i.r.p.	Conducted Average Power
	[MHz]				[dBm]	[dBm]	[dBm]	[dBm]	[dBm]	[dBm]
A + B + C + D	50	Low	0	QPSK	16.54	16.12	16.24	16.06	50.38	22.25
		Low	0	16QAM	16.43	16.38	16.17	16.11	50.42	22.28
		Low	0	64QAM	16.54	16.45	16.21	16.19	50.49	22.38
		Low	0-1	QPSK	16.68	16.75	16.28	16.17	50.62	22.48
		Low	0-1	16QAM	16.70	16.71	16.23	16.15	50.60	22.48
		Low	0-1	64QAM	16.70	16.70	16.21	16.13	50.58	22.48
		Mid	4	QPSK	16.42	16.36	16.12	16.55	50.57	22.38
		Mid	4	16QAM	16.25	16.24	16.06	16.52	50.47	22.28
		Mid	4	64QAM	16.39	16.30	16.15	16.59	50.56	22.41
		Mid	0-1	QPSK	16.44	16.65	16.17	16.64	50.68	22.48
		Mid	0-1	16QAM	16.47	16.62	16.26	16.57	50.68	22.48
		Mid	0-1	64QAM	16.51	16.58	16.24	16.56	50.68	22.48
		High	7	QPSK	16.81	16.38	16.61	16.57	50.94	22.60
		High	7	16QAM	16.69	16.27	16.53	16.30	50.80	22.48
		High	7	64QAM	16.79	16.35	16.54	16.51	50.90	22.58
		High	0-1	QPSK	16.90	16.56	16.76	16.62	51.06	22.72
		High	0-1	16QAM	16.81	16.52	16.66	16.56	50.99	22.65
		High	0-1	64QAM	16.82	16.49	16.56	16.54	50.95	22.62
	100	Low	0	QPSK	19.55	19.62	19.48	19.24	53.62	25.50
		Low	0	16QAM	19.48	19.57	19.42	19.21	53.56	25.44
		Low	0	64QAM	19.54	19.63	19.46	19.31	53.63	25.50
		Low	0-7	QPSK	17.52	17.08	16.96	17.16	51.33	23.20
		Low	0-7	16QAM	17.47	16.97	16.95	17.07	51.26	23.16
		Low	0-7	64QAM	17.47	17.06	16.98	17.12	51.30	23.20
		Mid	4	QPSK	19.06	19.20	19.09	19.30	53.36	25.19
		Mid	4	16QAM	19.45	19.16	19.00	19.24	53.42	25.22
		Mid	4	64QAM	19.52	19.23	19.07	19.29	53.48	25.31
		Mid	0-7	QPSK	17.57	17.21	16.93	17.22	51.44	23.26
		Mid	0-7	16QAM	17.32	17.15	16.96	17.26	51.38	23.20
		Mid	0-7	64QAM	17.38	17.18	16.98	17.27	51.41	23.23
		High	7	QPSK	19.53	19.21	19.74	19.13	53.76	25.43
		High	7	16QAM	19.43	19.13	19.65	18.98	53.66	25.33
		High	7	64QAM	19.46	19.20	19.71	19.07	53.72	25.39
		High	0-1	QPSK	19.55	19.12	19.23	19.76	53.77	25.44
		High	0-2	QPSK	19.98	19.52	19.52	20.01	54.11	25.78
		High	0-3	QPSK	20.15	19.64	19.63	19.72	54.14	25.81
		High	0-4	QPSK	19.32	18.63	18.62	19.20	53.30	24.97
		High	0-5	QPSK	18.51	17.85	17.89	18.36	52.51	24.18
		High	0-6	QPSK	17.83	17.34	17.25	17.59	51.85	23.53
		High	0-7	QPSK	16.97	17.24	17.28	17.16	51.51	23.18
		High	0-7	16QAM	17.23	17.24	17.27	17.23	51.59	23.26
		High	0-7	64QAM	17.03	17.25	17.21	17.32	51.55	23.22

Table 7-18. Conducted Total Power Summary Data

7.5 Radiated Spurious and Harmonic Emissions

§2.1051 §30.203

Test Overview

All out of band emissions were scanned from 30 MHz to 100 GHz for n261. Emissions are measured in a radiated test setup while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies. All modulations were investigated to determine the worst case configuration. All modes of operation were investigated and the worst case configuration results are reported in this section.

The conductive power or total radiated power of any emissions outside a licensee's frequency block shall be -13 dBm / 1 MHz.

Test Procedure Used

ANSI C63.26-2015 Section 5.7.4
ANSI C63.26-2015 Section 6.4
KDB 842590 D01 v01r01 Section 4.4.2 and Section 4.4.3

Test Settings

1. Start frequency was set to 30 MHz and stop frequency was set to 100 GHz. Several plots are used to show investigations in this entire span.
2. Detector = RMS
3. Trace mode = trace average
4. Sweep time = auto couple
5. Number of sweep points ≥ 2 x Span/RBW
6. The trace was allowed to stabilize
7. RBW = 1 MHz, VBW = 1 MHz

Test Notes

1) The EUT was tested while positioned upright and mounted on a mast 1.5 m height. The worst case emissions are reported with the EUT in this fixed position and with the modulations and active component carriers shown in the tables below.

2) Emissions below 18 GHz were measured at a 3 meter test distance, while emissions above 18 GHz were measured at the appropriate far field distance. See Table 3-1 for distances used for measurements based on theoretical far field distance.

3) All appropriate Antenna Factors, Cable Losses, and Mixer Conversion Losses have been applied as an offset in the spectrum analyzer for each measurement.

4) 1CC = 1 Components Carriers Active, 2CC = 2 Component Carriers Active. 2CC NC = 2 Non-contiguous Component Carriers Active. Each component carrier's bandwidth is 50 MHz.

5) 1CC = 1 Components Carriers Active, 8CC = 8 Component Carriers Active. 8CC NC = 8 Non-contiguous Component Carriers Active. Each component carrier's bandwidth is 100 MHz.

6) 2CC = 2 Components Carriers Active, 8CC = 8 Component Carriers Active. 8CC NC = 8 Non-contiguous Component Carriers Active. Each component carrier's mixed bandwidth is 50 MHz + 100 MHz.

7) Ch. is stands for Channel, Final is stands for Final measurement.

8) The angle of the horn antenna was rotated to maximize and find the worst case emissions. The worst case is reported in this section.

9) Spurious emissions were measured with all EUT antennas transmitting simultaneously.

10) Some frequency points exceed the limit which requires to investigate with TRP method for this spurious emission evaluation according to 4.4 Unwanted Emission Measurements of KDB 842590 D01.

11) No emissions were found below 1 GHz.

12) Lower and Upper Band Edge range also has been tested for investigation purpose.

13) All radiated spurious emissions were measured as EIRP to compare with the §30.203 TRP limits.

14) The plots from 1-100 GHz show corrected average EIRP levels. The average EIRP reported below is calculated per section 5.2.7 of ANSI C63.26-2015 which states; EIRP (dBm) = E (dB μV/m) + 20log(D) – 104.8; where D is the measurement distance (in the far field region) in m. The field strength E is calculated E (dB μV/m) = Spectrum Analyzer Level (dBm) + Antenna Factor (dB/m) + Cable Loss (dB) + Harmonic Mixer Conversion Loss (dB) + 107. All appropriate Antenna Factor and Cable Loss have been applied in the spectrum analyzer for each measurement. For measurements > 40 GHz, Harmonic Mixer Conversion Loss was also applied to the spectrum analyzer.

15) Emission below 18 GHz were measured at a 3 M test distance, while emissions above 18 GHz were measured at the appropriate far field distance. The far field of the mmWave signal is based on formula; R > 2D^2/wavelength, where D is the larger between the dimension of the measurement antenna and the transmitting antenna of the EUT. In this case, D is the largest dimension of the measurement antenna.

16) A3LAT1K04-B10 test result is referenced as A3LAT1K04-B00 result which only difference of power type as AC and DC which supply condition no affect to RF specification.

Frequency Range [GHz]	Wavelength [cm]	Far Field Distance [m]	Measurements Distance [m]
18 to 40	0.749	3.19	3.19
40 to 60	0.500	1.39	3.19
60 to 90	0.333	0.91	3.19
90 to 100	0.214	0.58	2.00

Table 7-19. Far-Field Distance & Measurement Distance per Frequency Range

TRP Measurement Procedure

If the recorded EIRP value was close or above the TRP limit, a Two Cut TRP measurement was done according to KDB 842590 D01 v01 Section 4.4.3.3.2

a) Align the EUT with a chosen xy-plane and the xz-plane of the antenna measurement coordinate system.
NOTE 1 For harmonics and spurious emission frequencies which are beamforming as identified in exploratory scan, it may be required to align the orthogonal cuts to include the peak based on exploratory scans.

b) Measure the EUT dimensions, i.e., depth (d), width (w), and height (h); see Figure A.1 in Appendix A.

c) Calculate the spherical and cylindrical diameters (D and Dcyl) using Equations (A.1) and (A.2) (see Appendix A.)

$$D = \sqrt{d^2 + w^2 + h^2} \quad (A.1)$$

$$D_{cyl} = \sqrt{d^2 + w^2} \quad (A.2)$$

d) For the highest frequency (smallest wavelength) of the frequency band measured, calculate the reference angular steps $\Delta\theta\theta$ref and $\Delta\phi\phi$ref using Equations (A.3) and (A.4).

$$\Delta\theta_{ref} = \min(15^\circ, 180^\circ/(\pi D/\lambda)) \quad (A.3)$$

$$\Delta\phi_{ref} = \min(15^\circ, 180^\circ/(\pi D_{cyl}/\lambda)) \quad (A.4)$$

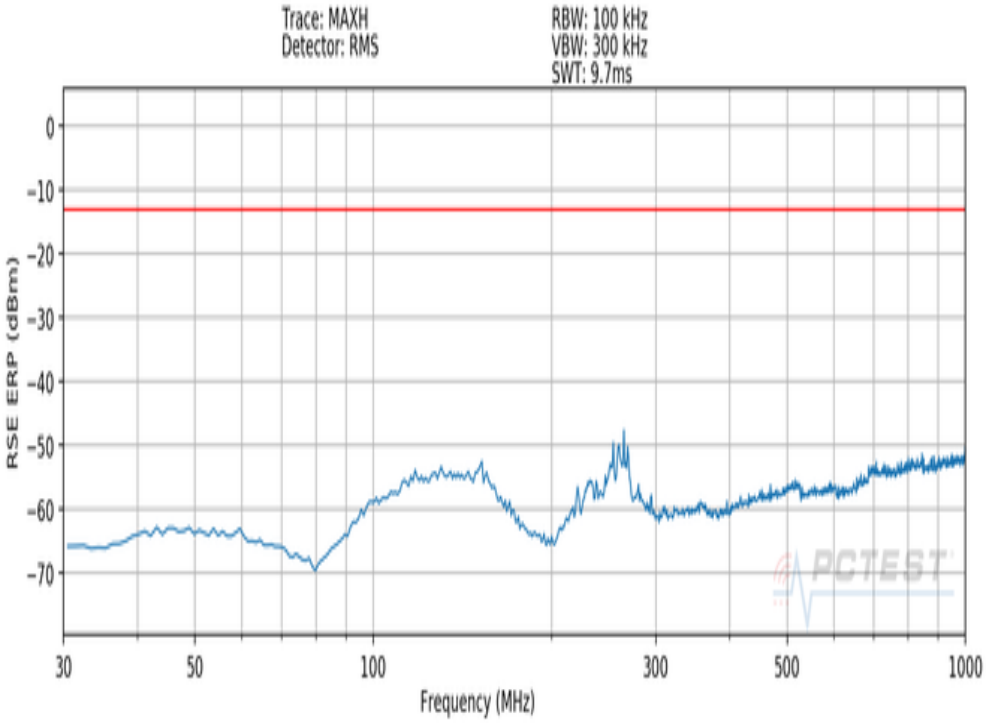
e) Set the grid spatial sampling step $\Delta\theta\theta \leq \Delta\theta\theta$ref for the vertical angle and $\Delta\phi\phi \leq \Delta\phi\phi$ref for the horizontal cut.

f) For each emission frequency, measure the EIRP (as a sum of two orthogonal polarizations) at each spatial sampling step on the selected grid.

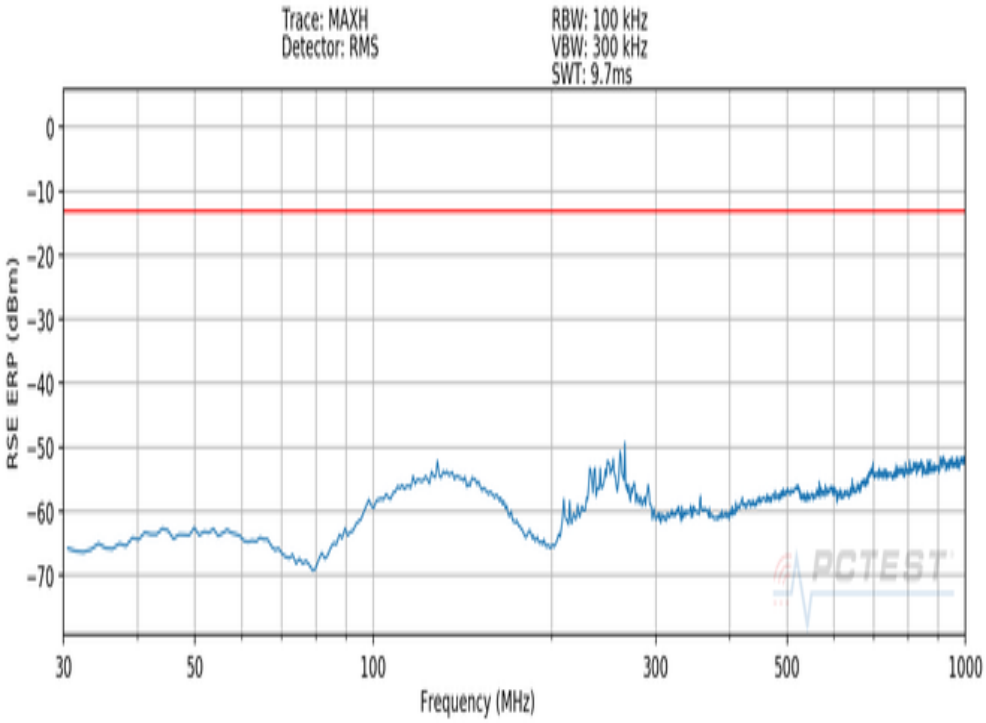
g) For each emission frequency, calculate the average EIRP for both the cuts separately, and then take the average of these two average values.

h) Add 2 dB as a correction factor to the averaged value computed in step g).

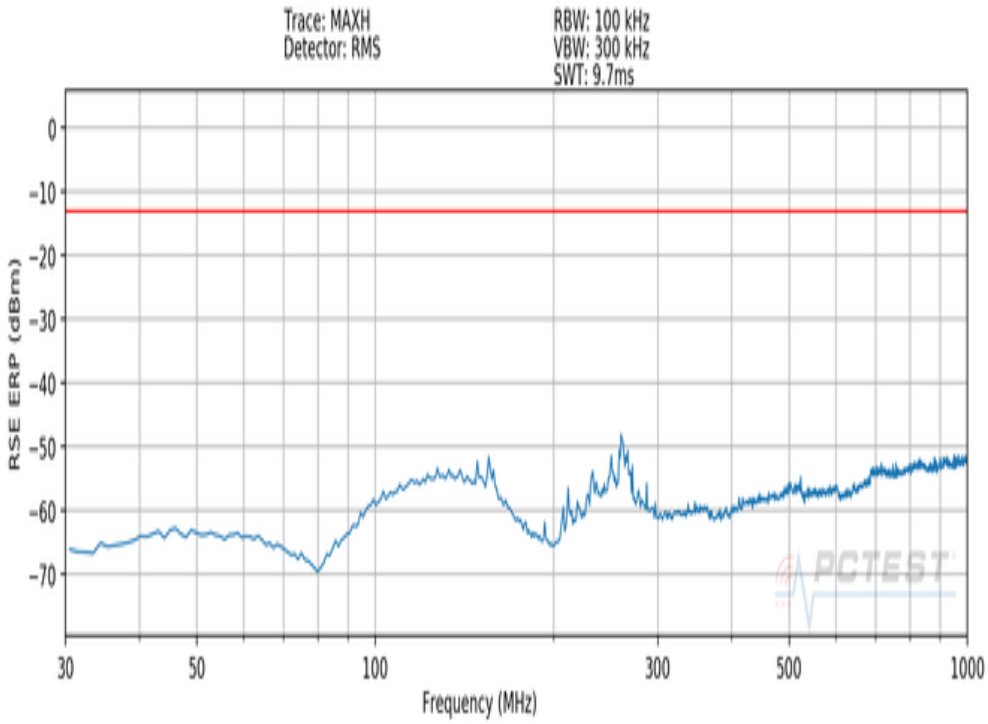
7.5.1 Radiated Spurious Emissions Plots (30 MHz to 1 GHz)



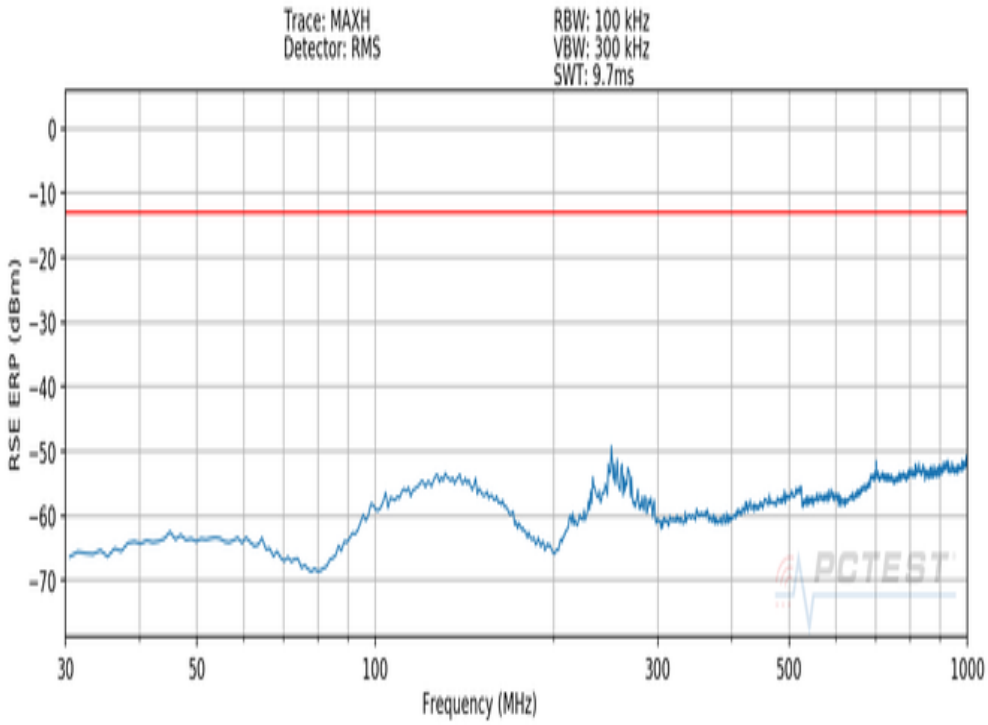
Plot 7-265. RSE 30 MHz – 1 GHz (100 MHz BW 4CC CC QPSK Low Ant. Pol. H)



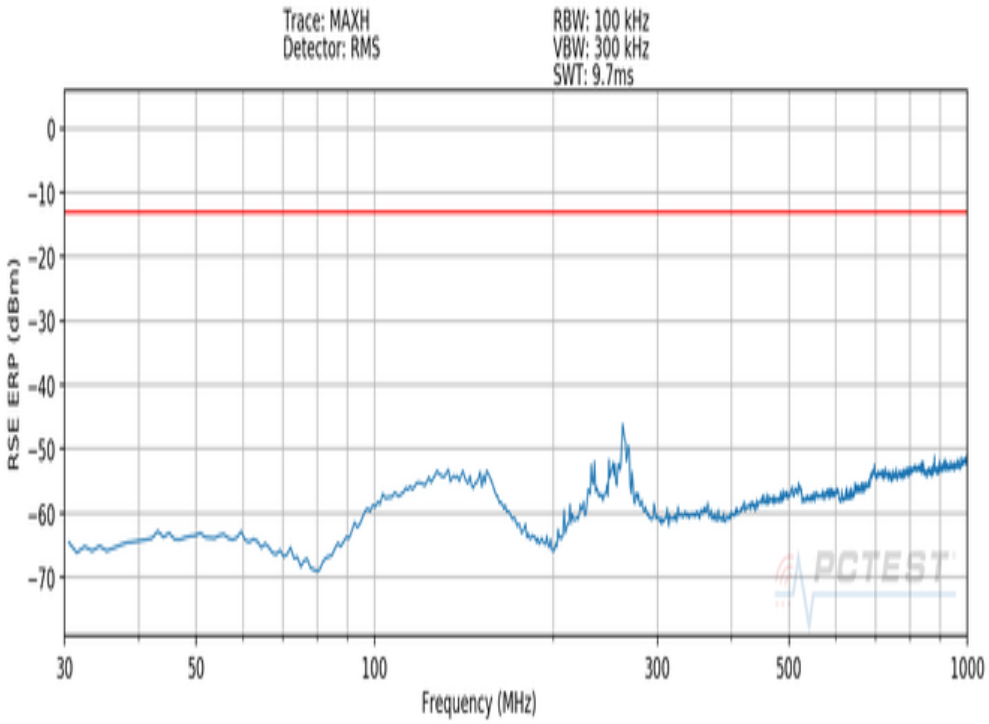
Plot 7-266. RSE 30 MHz – 1 GHz (100 MHz BW 4CC CC QPSK Low Ant. Pol. V)



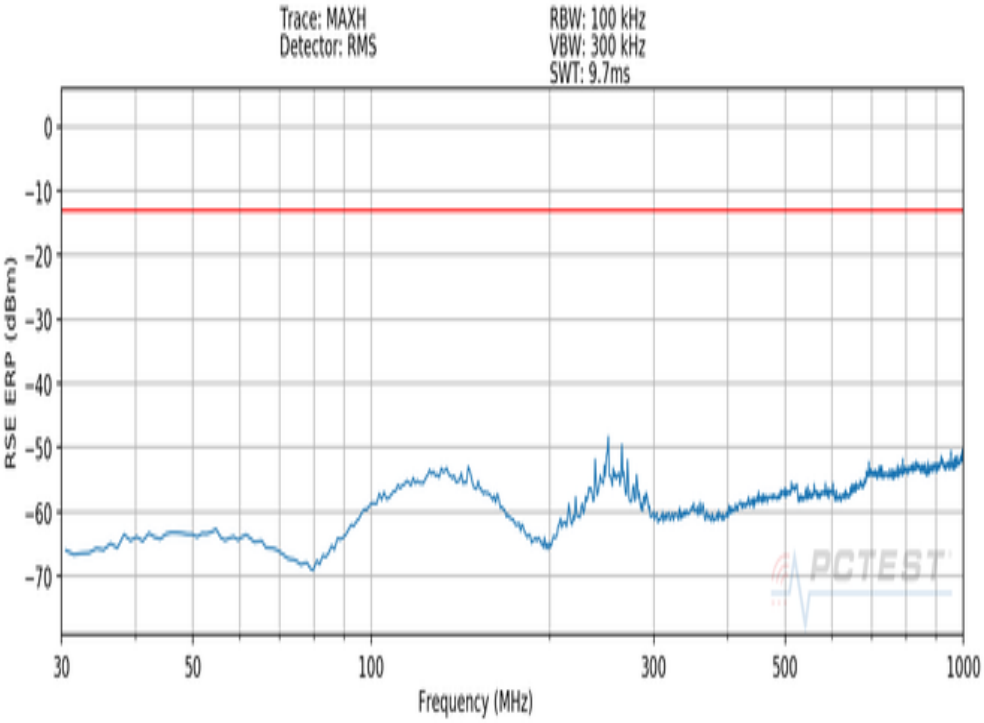
Plot 7-267. RSE 30 MHz – 1 GHz (100 MHz BW 4CC CC QPSK Mid Ant. Pol. H)



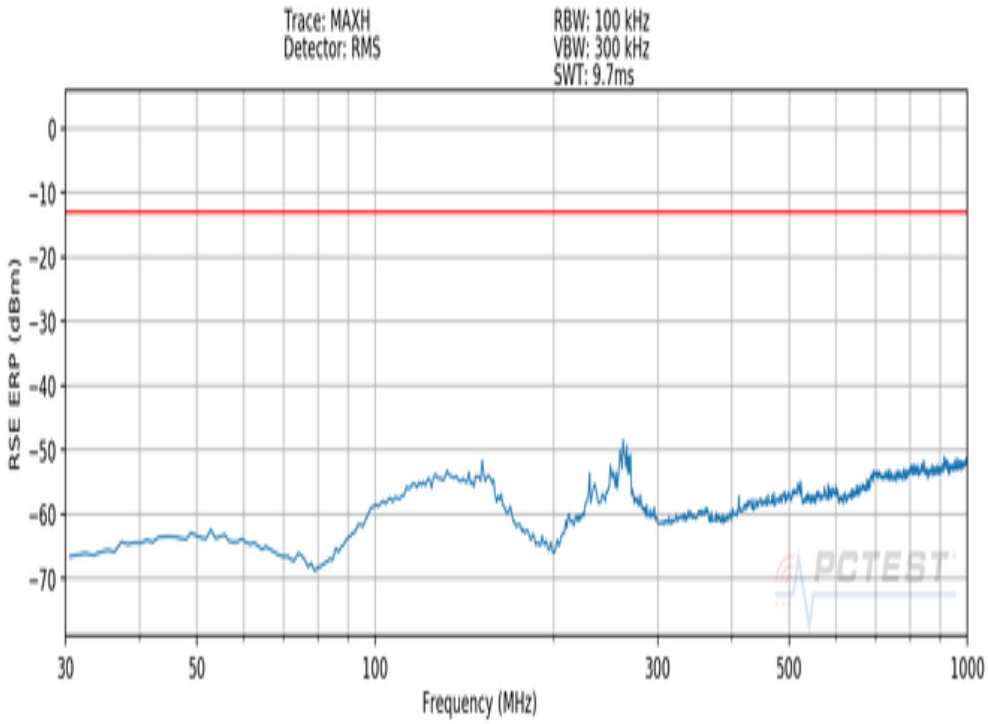
Plot 7-268. RSE 30 MHz – 1 GHz (100 MHz BW 4CC CC QPSK Mid Ant. Pol. V)



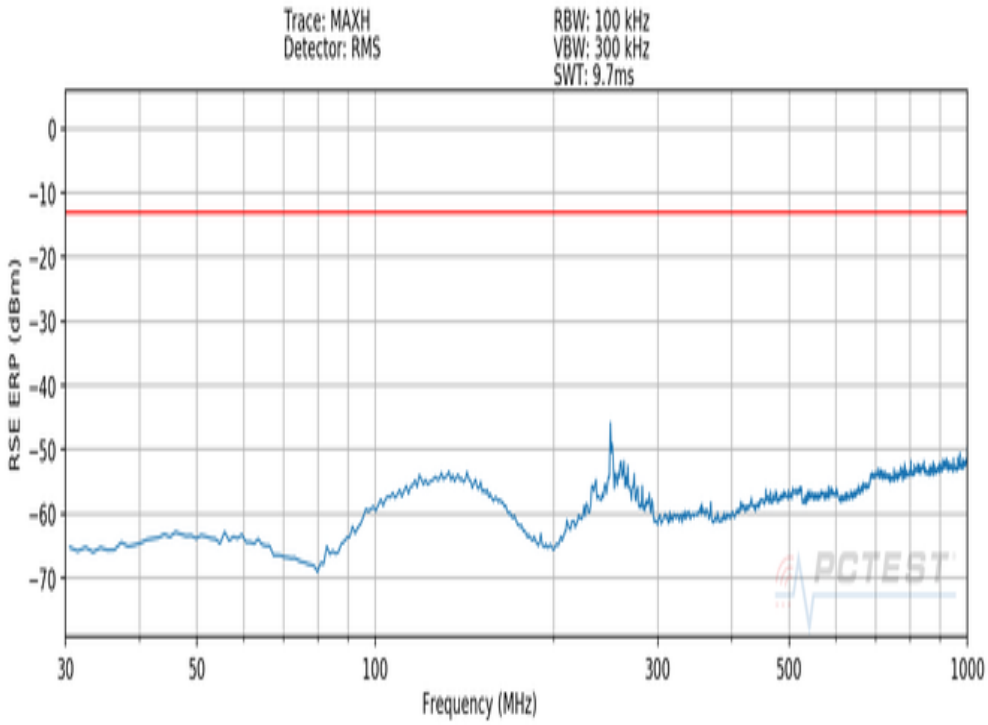
Plot 7-269. RSE 30 MHz – 1 GHz (100 MHz BW 4CC CC QPSK High Ant. Pol. H)



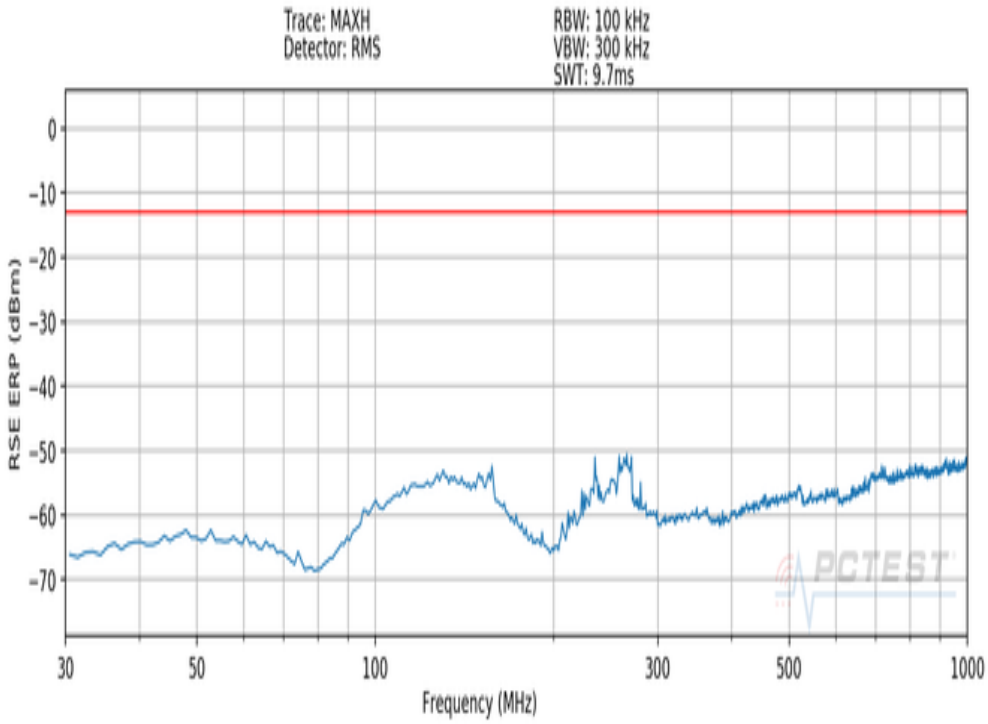
Plot 7-270. RSE 30 MHz – 1 GHz (100 MHz BW 4CC CC QPSK High Ant. Pol. V)



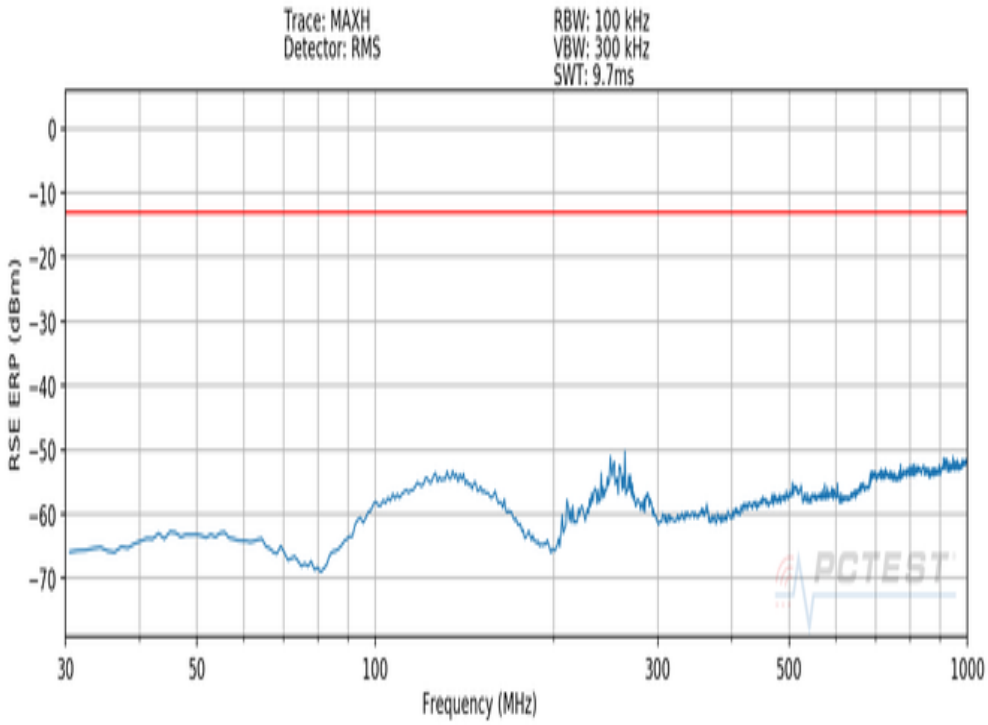
Plot 7-271. RSE 30 MHz – 1 GHz (100 MHz BW 8CC CC QPSK Low Ant. Pol. H)



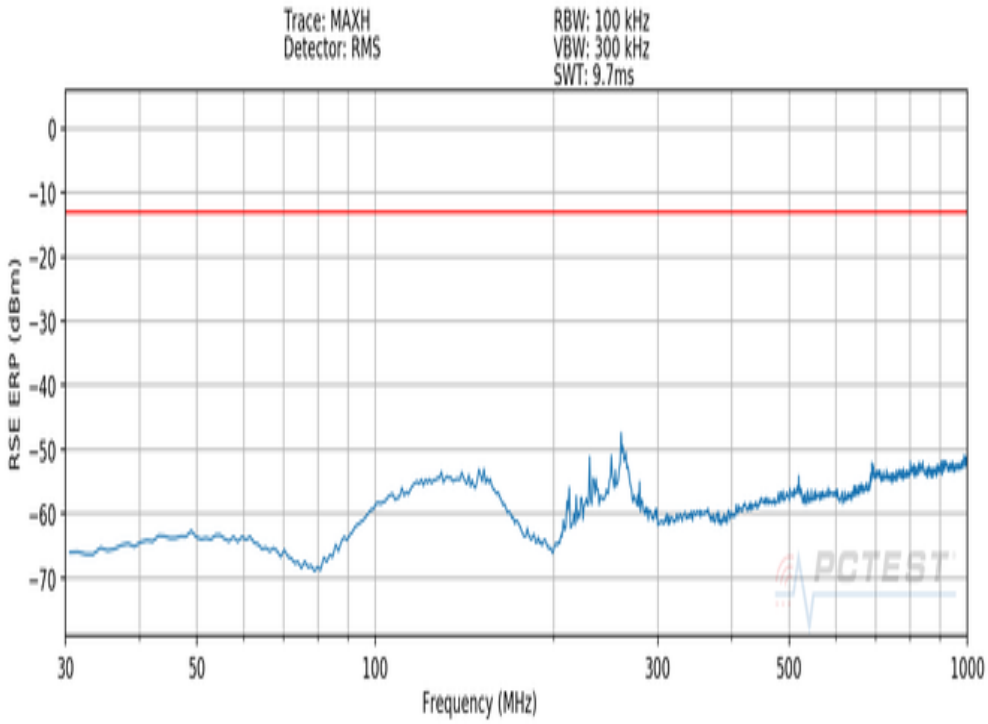
Plot 7-272. RSE 30 MHz – 1 GHz (100 MHz BW 8CC CC QPSK Low Ant. Pol. V)



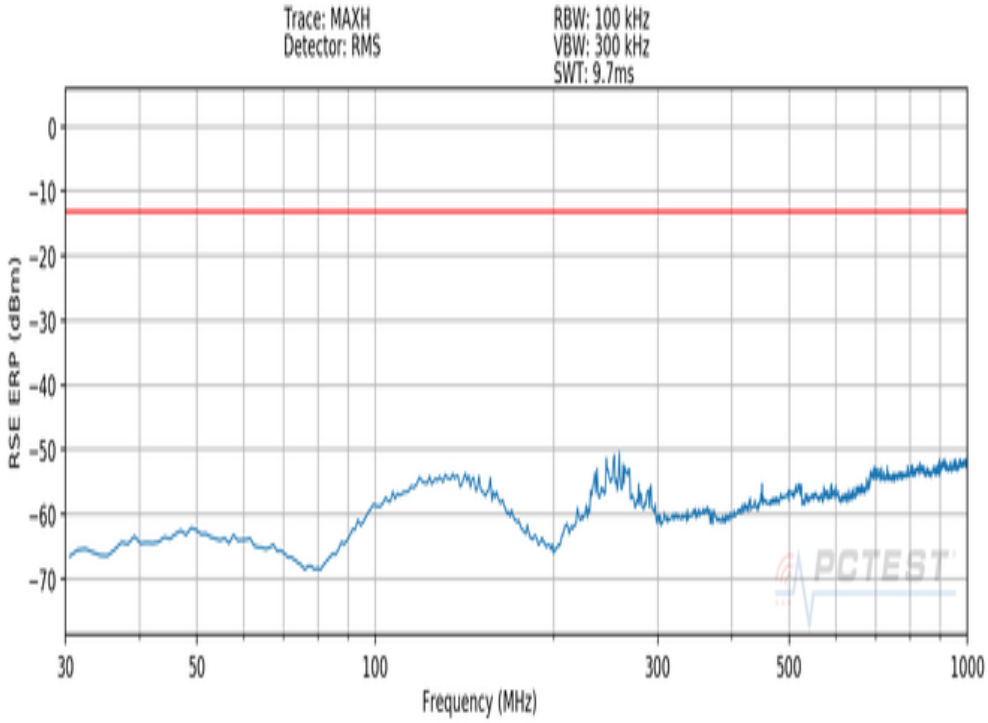
Plot 7-273. RSE 30 MHz – 1 GHz (100 MHz BW 8CC CC QPSK Mid Ant. Pol. H)



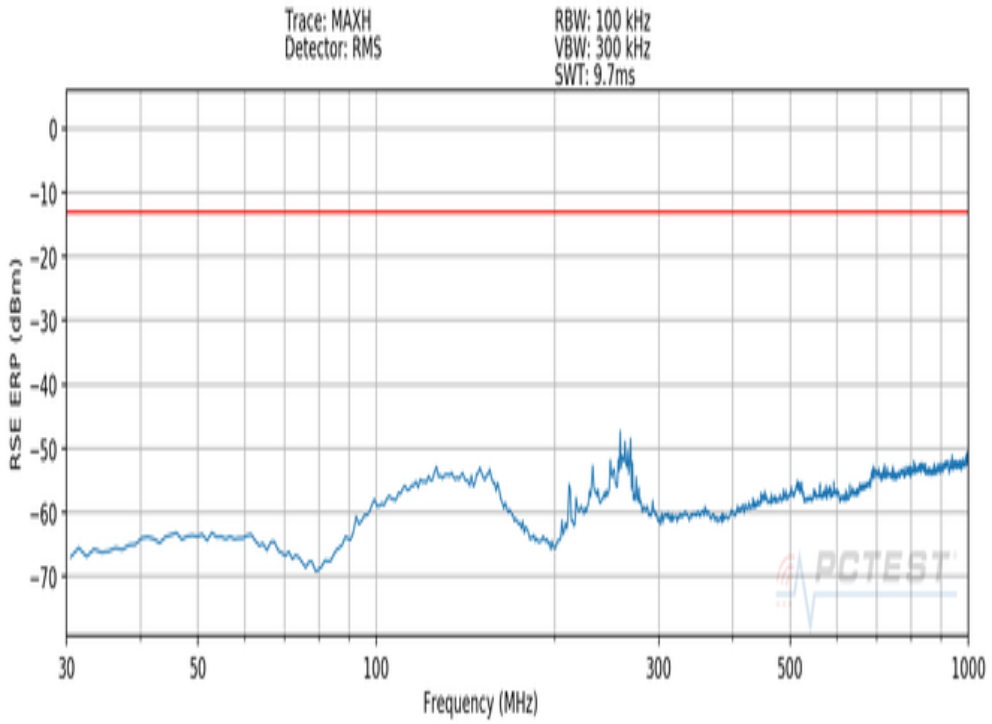
Plot 7-274. RSE 30 MHz – 1 GHz (100 MHz BW 8CC CC QPSK Mid Ant. Pol. V)



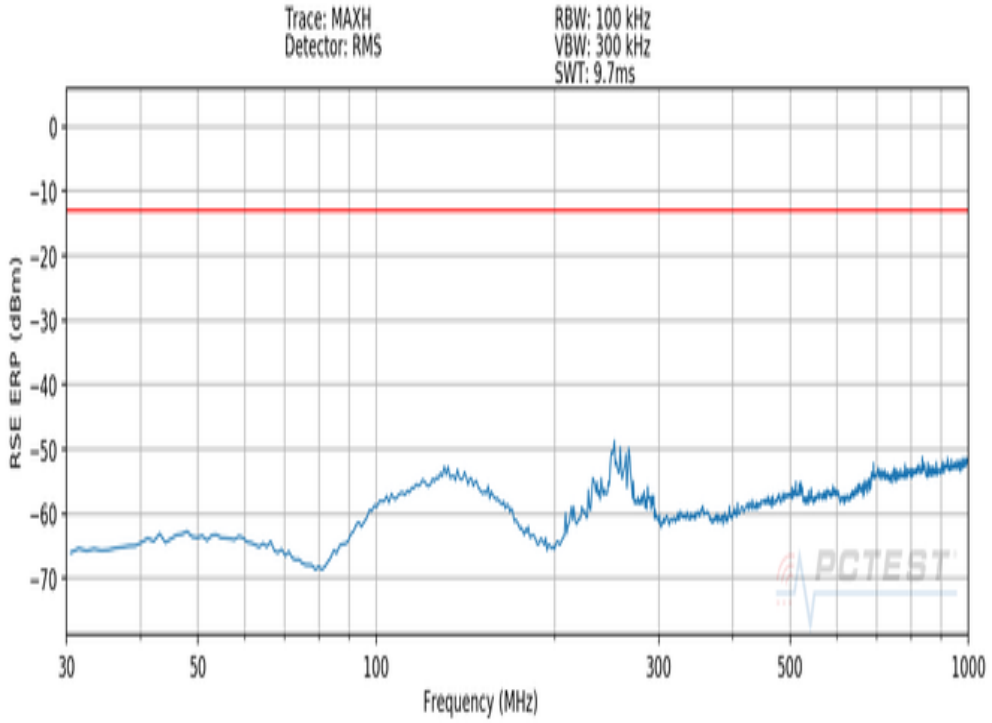
Plot 7-275. RSE 30 MHz – 1 GHz (100 MHz BW 8CC CC QPSK High Ant. Pol. H)



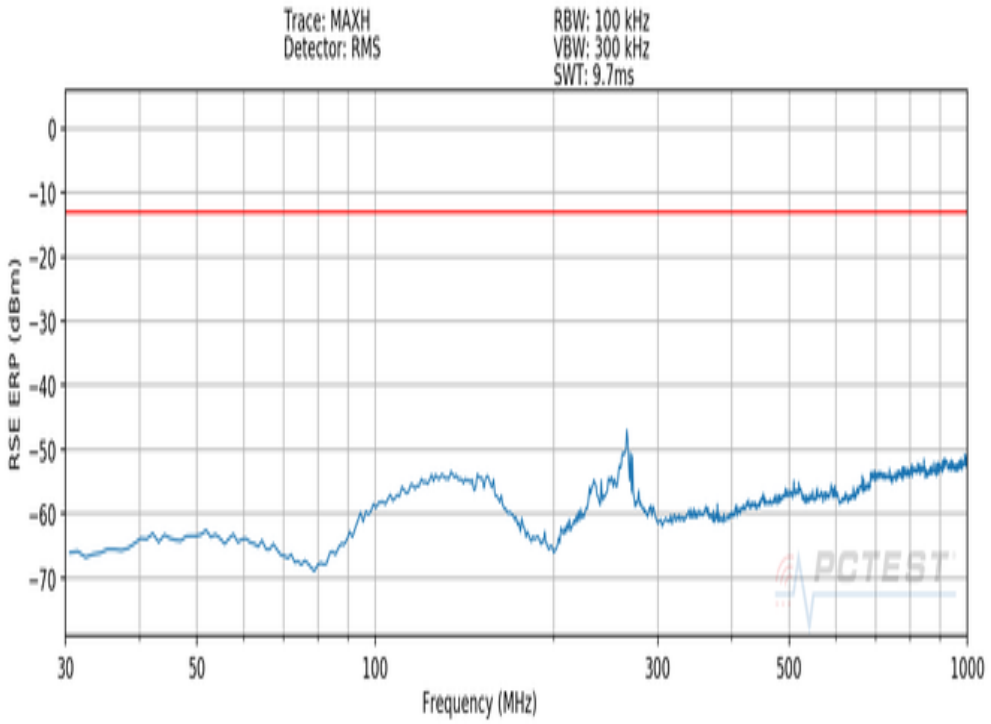
Plot 7-276. RSE 30 MHz – 1 GHz (100 MHz BW 8CC CC QPSK High Ant. Pol. V)



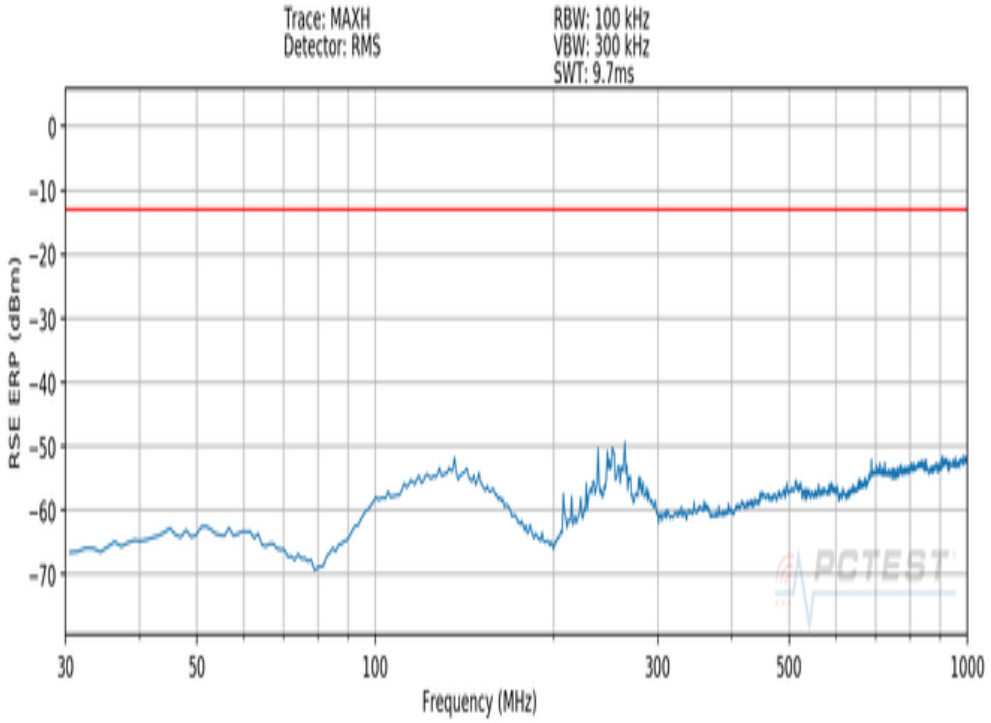
Plot 7-277. RSE 30 MHz – 1 GHz (50 MHz 2CC + 100 MHz BW 3CC CC QPSK Low Ant. Pol. H)



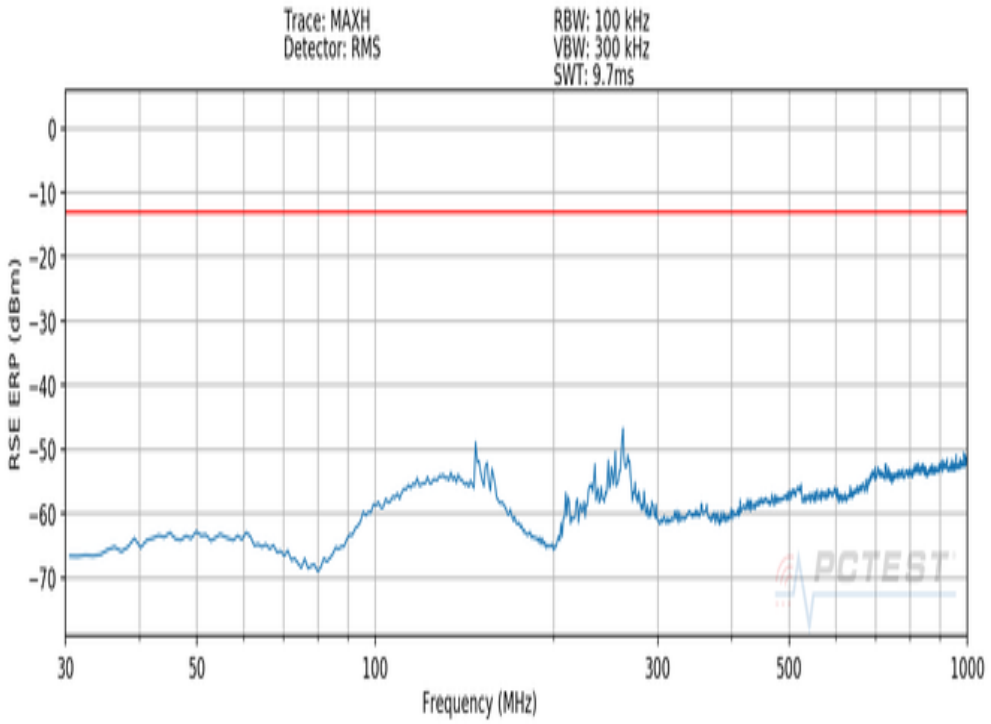
Plot 7-278. RSE 30 MHz – 1 GHz (50 MHz 2CC + 100 MHz BW 3CC CC QPSK Low Ant. Pol. V)



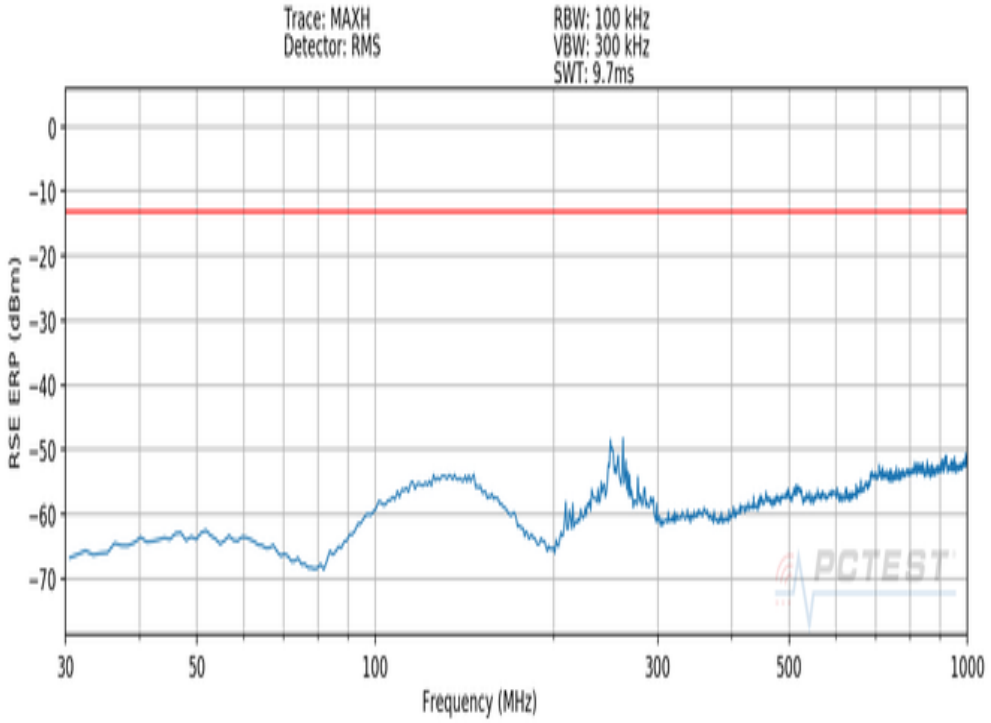
Plot 7-279. RSE 30 MHz – 1 GHz (50 MHz 2CC + 100 MHz BW 3CC CC QPSK Mid Ant. Pol. H)



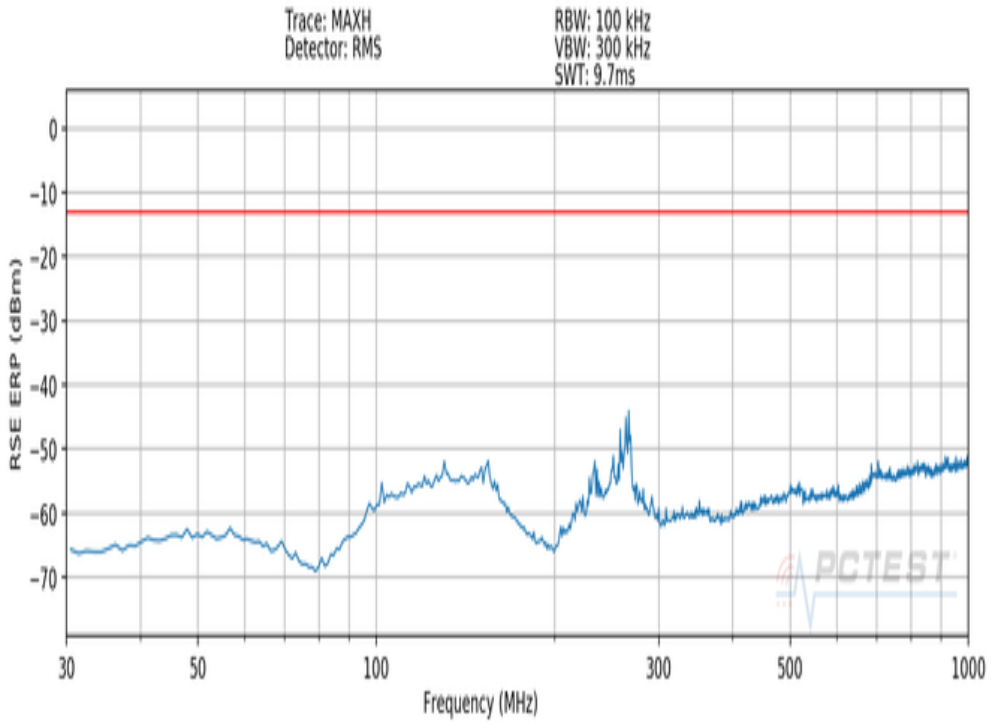
Plot 7-280. RSE 30 MHz – 1 GHz (50 MHz 2CC + 100 MHz BW 3CC CC QPSK Mid Ant. Pol. V)



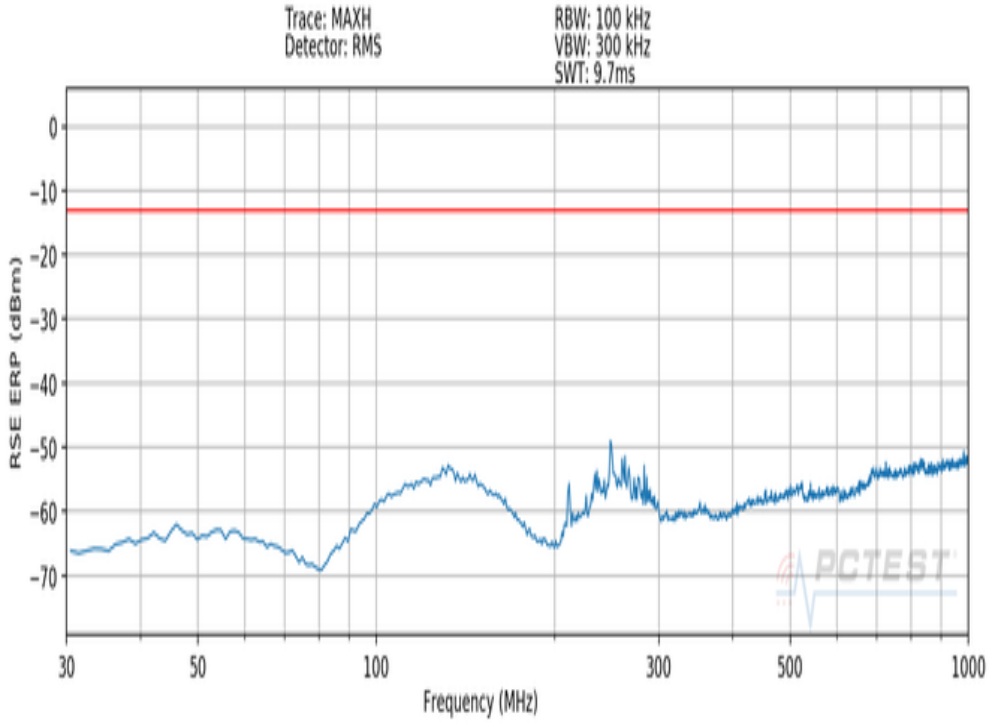
Plot 7-281. RSE 30 MHz – 1 GHz (50 MHz 2CC + 100 MHz BW 3CC CC QPSK High Ant. Pol. H)



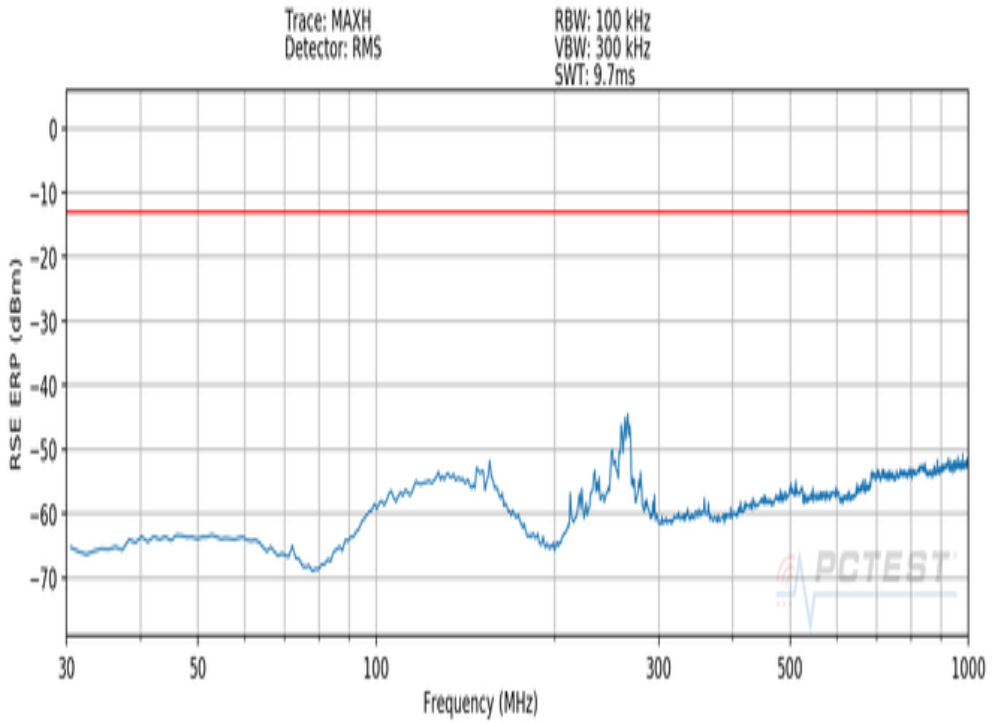
Plot 7-282. RSE 30 MHz – 1 GHz (50 MHz 2CC + 100 MHz BW 3CC CC QPSK High Ant. Pol. V)



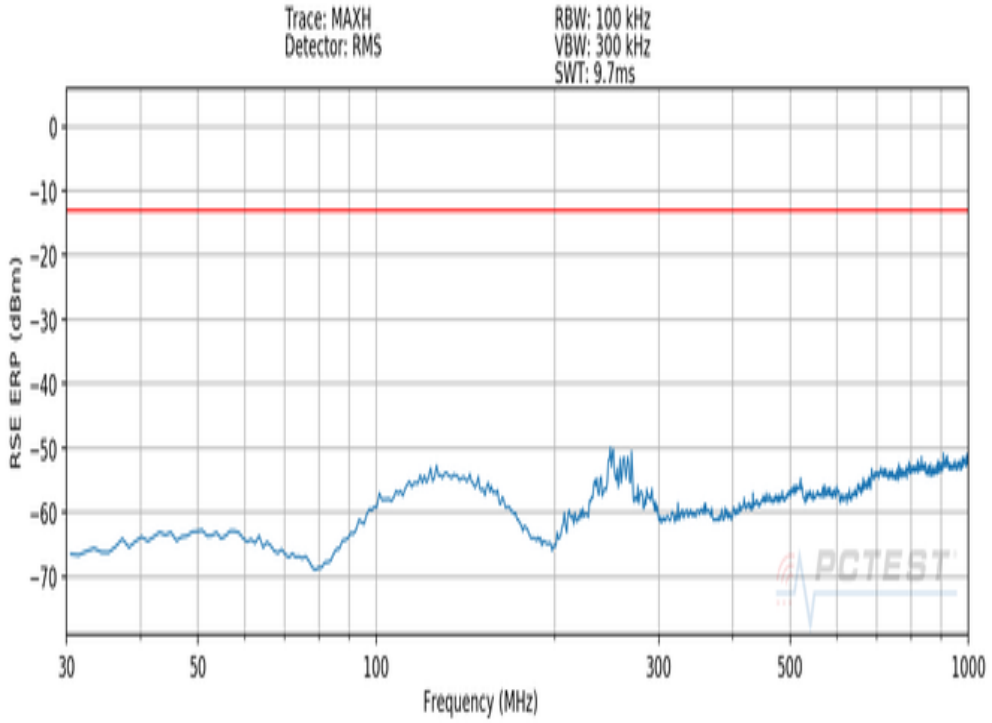
Plot 7-283. RSE 30 MHz – 1 GHz (50 MHz 2CC + 100 MHz BW 6CC CC QPSK Low Ant. Pol. H)



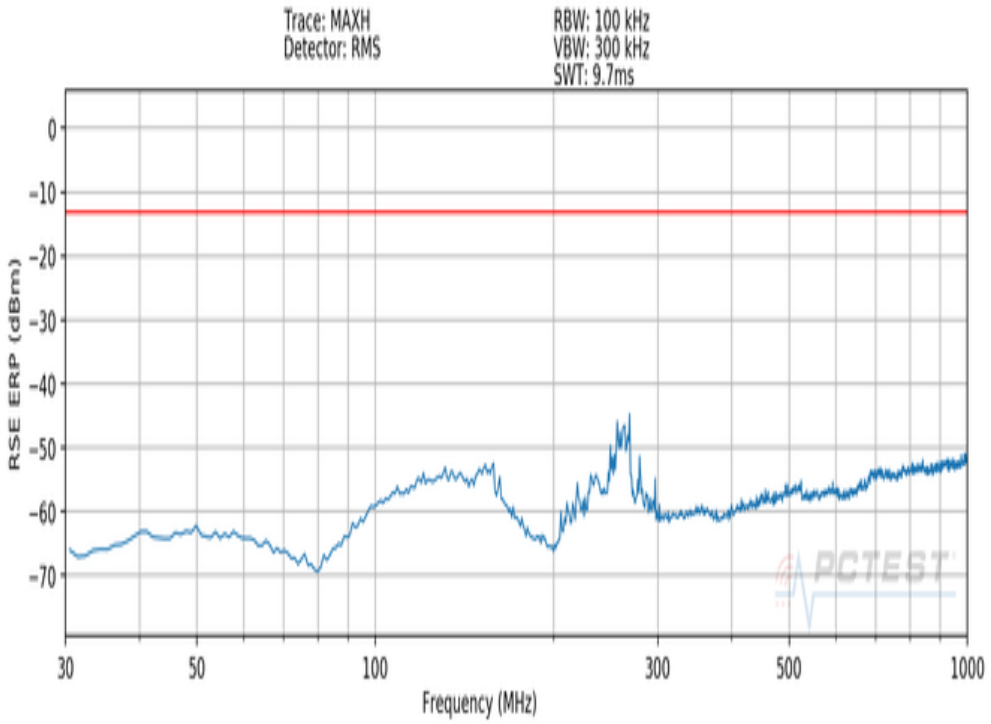
Plot 7-284. RSE 30 MHz – 1 GHz (50 MHz 2CC + 100 MHz BW 6CC CC QPSK Low Ant. Pol. V)



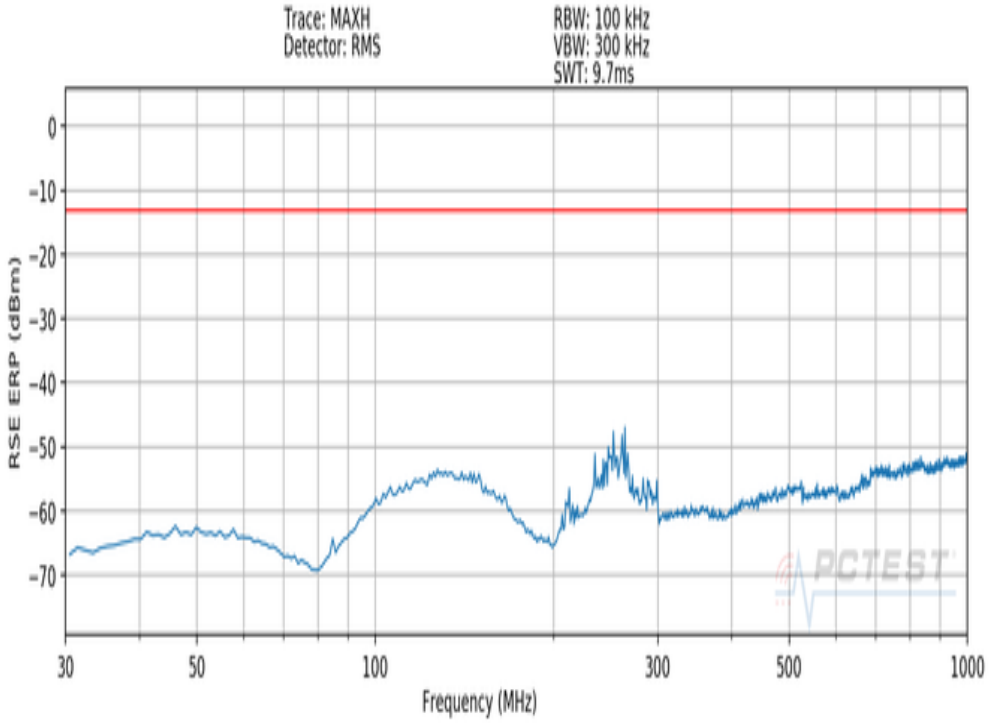
Plot 7-285. RSE 30 MHz – 1 GHz (50 MHz 2CC + 100 MHz BW 6CC CC QPSK Mid Ant. Pol. H)



Plot 7-286. RSE 30 MHz – 1 GHz (50 MHz 2CC + 100 MHz BW 6CC CC QPSK Mid Ant. Pol. V)



Plot 7-287. RSE 30 MHz – 1 GHz (50 MHz 2CC + 100 MHz BW 6CC CC QPSK High Ant. Pol. H)



Plot 7-288. RSE 30 MHz – 1 GHz (50 MHz 2CC + 100 MHz BW 6CC CC QPSK High Ant. Pol. V)

Spurious Emissions EIRP Sample Calculation (n261)

The raw radiated spurious level is converted to field strength in dBµV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 3 meters.

RSE EIRP [dBm] = Analyzer Level [dBm] + AFCL [dB/m] + 107 + 20Log(D_m) – 104.8

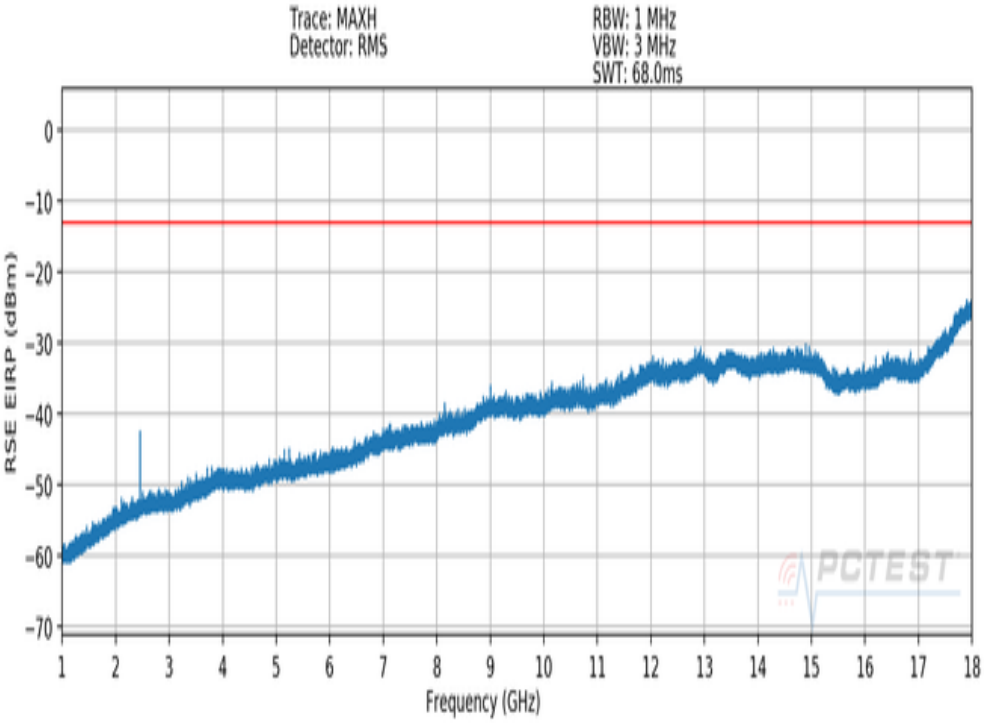
Frequency [MHz]	Channel	CC Active	Mod.	Ant. Pol [H/V]	Antenna Height [cm]	Turn Table Azimuth [degree]	Analyzer Level [dBm]	AFCL [dBm]	Field Strength [dBµV/m]	RSE EIRP [dBm]	Limit [dBm]	Margin [dB]
117.88	Mid	CC0-CC7(C)	QPSK	V	300	160	-83.71	21.52	45.69	-50.45	-13.00	37.45
269.77	Mid	CC0-CC7(C)	QPSK	V	300	160	-74.36	17.71	51.69	-44.91	-13.00	31.91
396.11	Low	CC0-CC7(C)	QPSK	H	300	160	-83.97	16.06	40.73	-56.17	-13.00	43.17
550.25	High	CC0-CC7(C)	QPSK	V	200	340	-83.65	18.50	43.01	-53.41	-13.00	40.41
658.21	High	CC0-CC7(C)	QPSK	H	200	340	-84.00	20.51	46.59	-51.75	-13.00	38.75
910.54	High	CC0-CC7(C)	QPSK	H	200	340	-83.19	22.60	48.63	-48.85	-13.00	35.85

Table 7-20. 2Tx-Spurious Emissions (30 MHz to 1GHz)

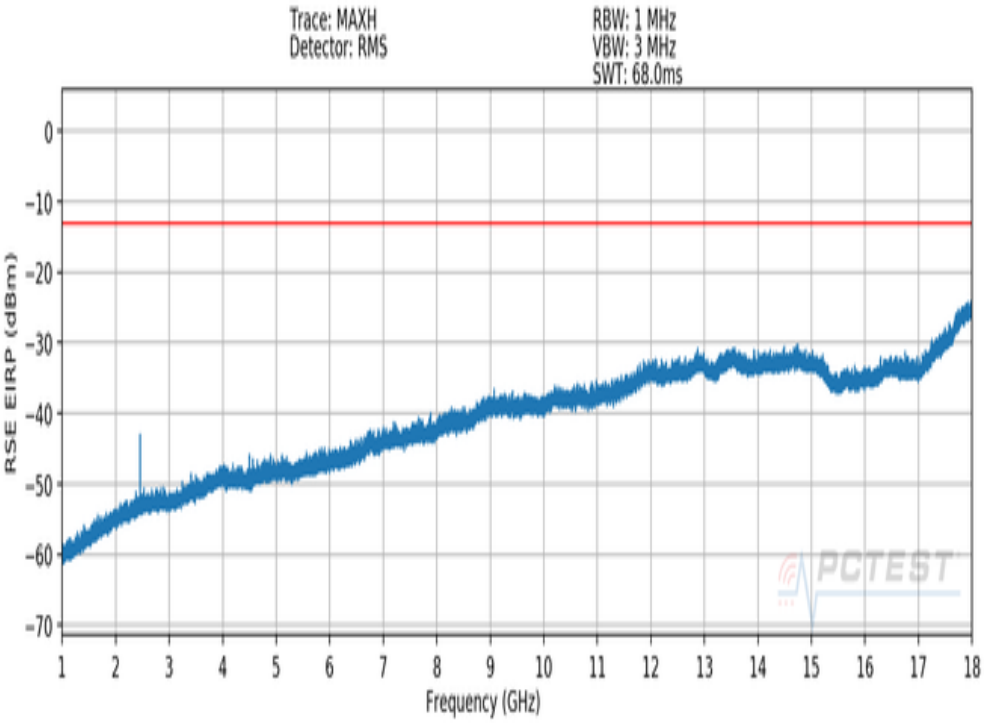
Notes

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, cable losses, and harmonic mixer conversion losses. Measurements were performed at a distance of 3 meter.

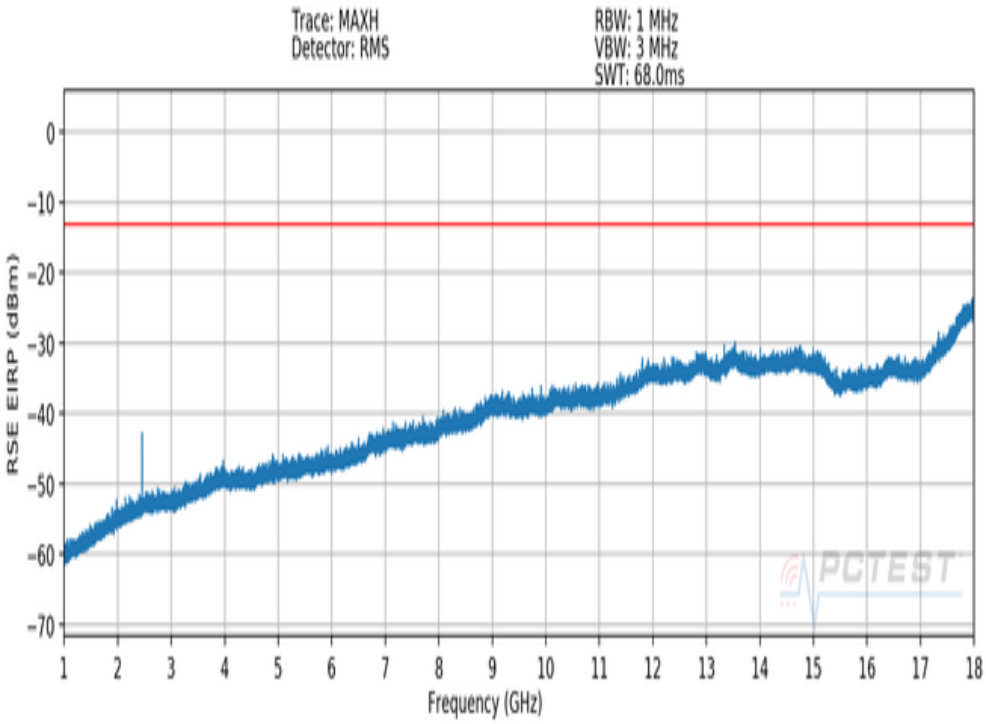
7.5.2 Radiated Spurious Emissions Plots (1 GHz to 18 GHz)



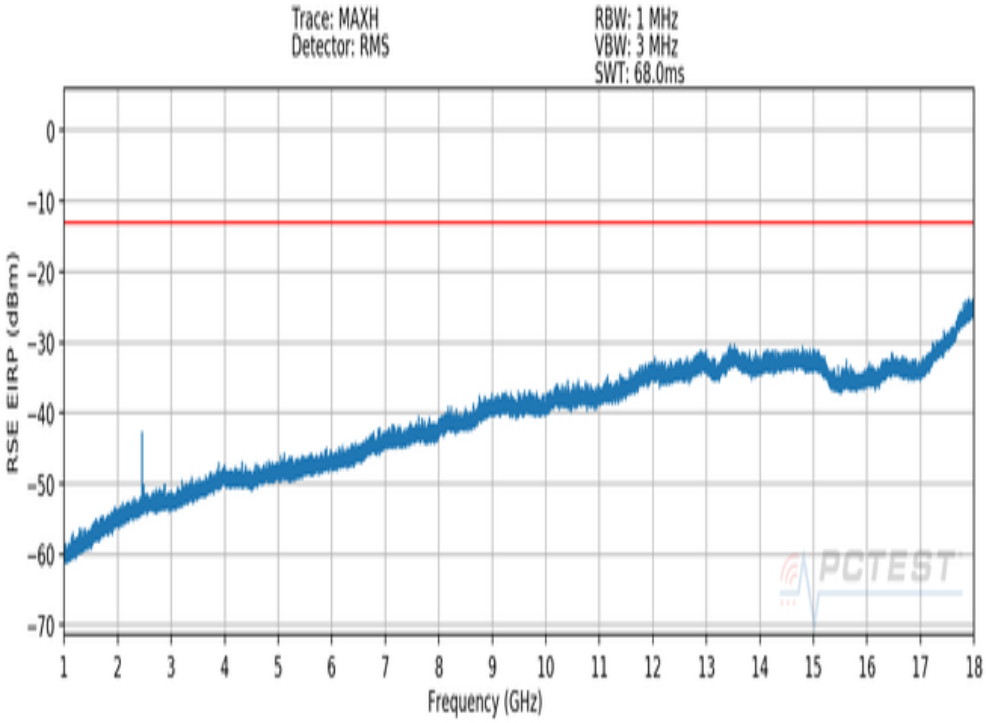
Plot 7-289. RSE 1 GHz – 18 GHz (100 MHz BW 4CC CC QPSK Low Ant. Pol. H)



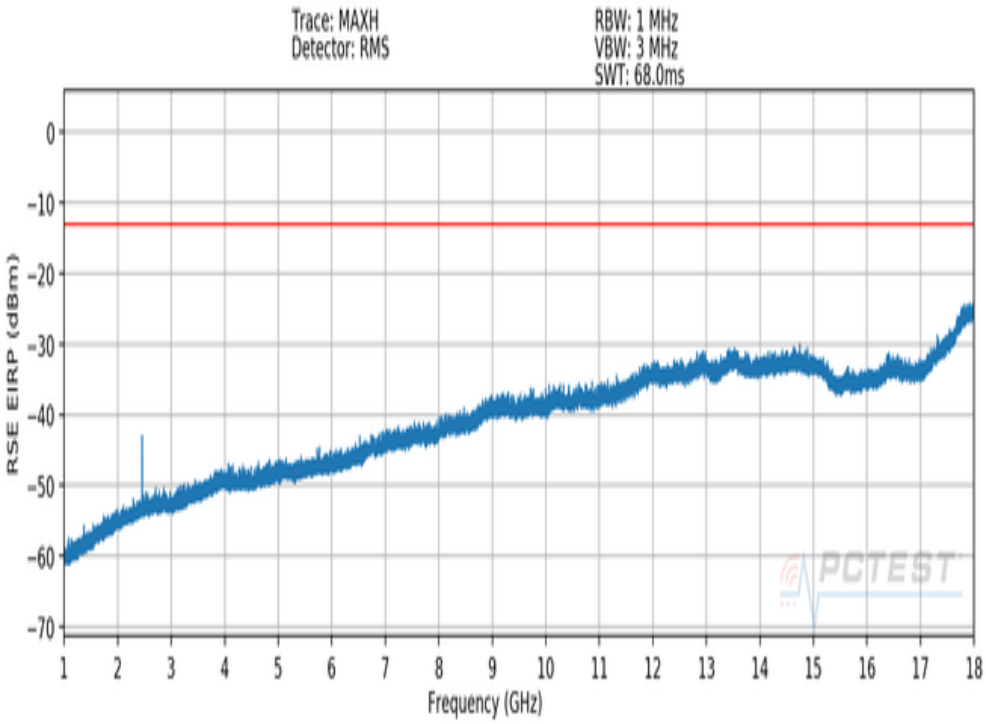
Plot 7-290. RSE 1 GHz – 18 GHz (100 MHz BW 4CC CC QPSK Low Ant. Pol. V)



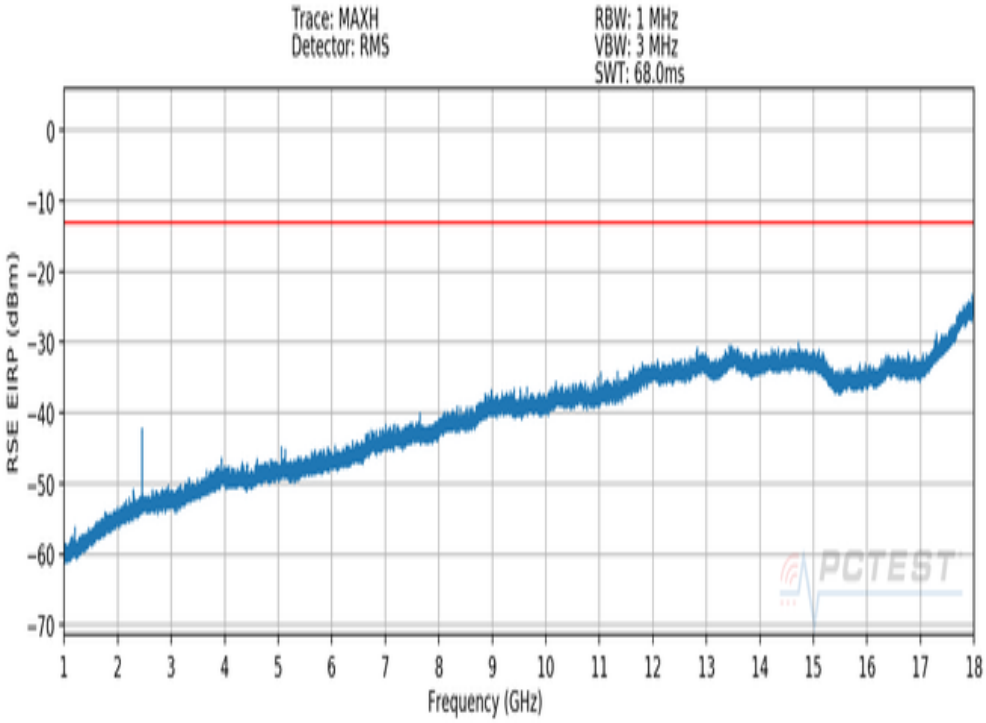
Plot 7-291. RSE 1 GHz – 18 GHz (100 MHz BW 4CC CC QPSK Mid Ant. Pol. H)



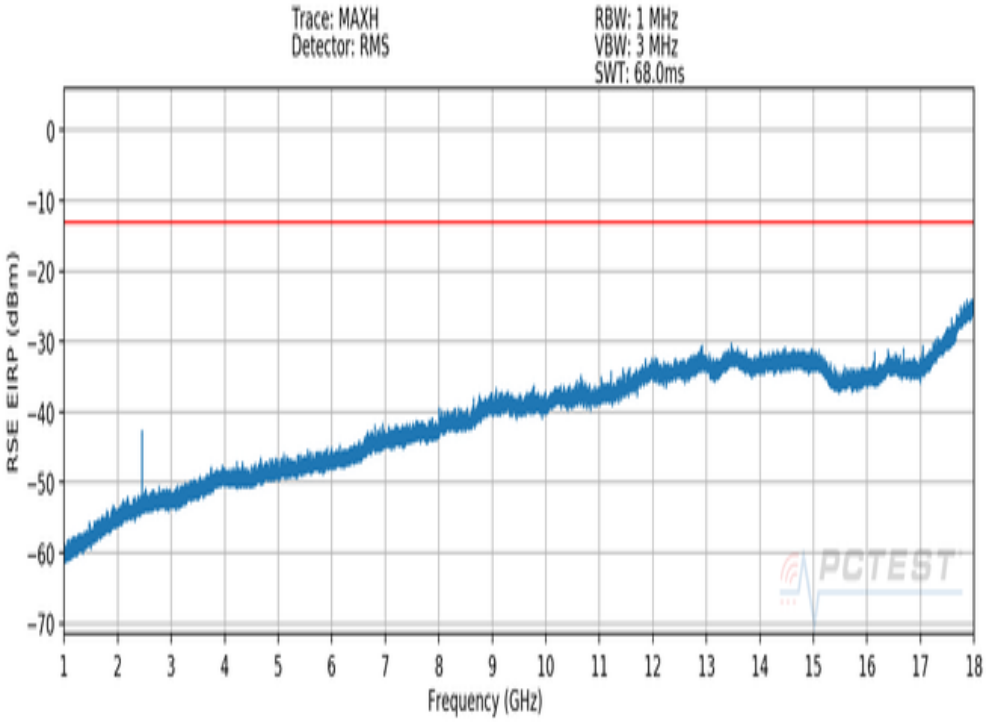
Plot 7-292. RSE 1 GHz – 18 GHz (100 MHz BW 4CC CC QPSK Mid Ant. Pol. V)



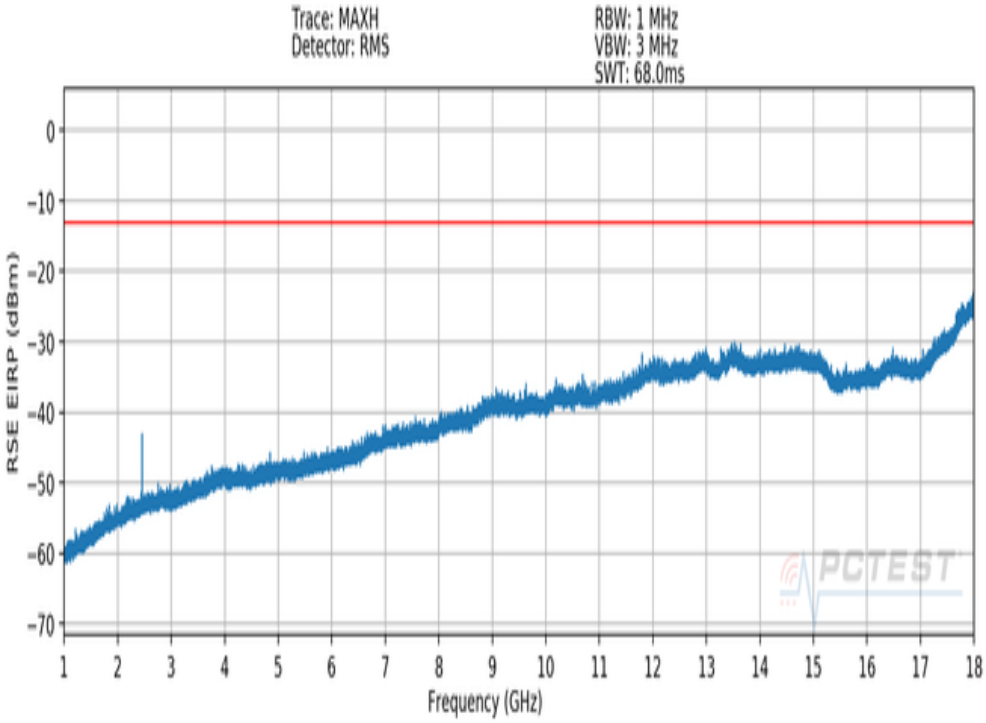
Plot 7-293. RSE 1 GHz – 18 GHz (100 MHz BW 4CC CC QPSK High Ant. Pol. H)



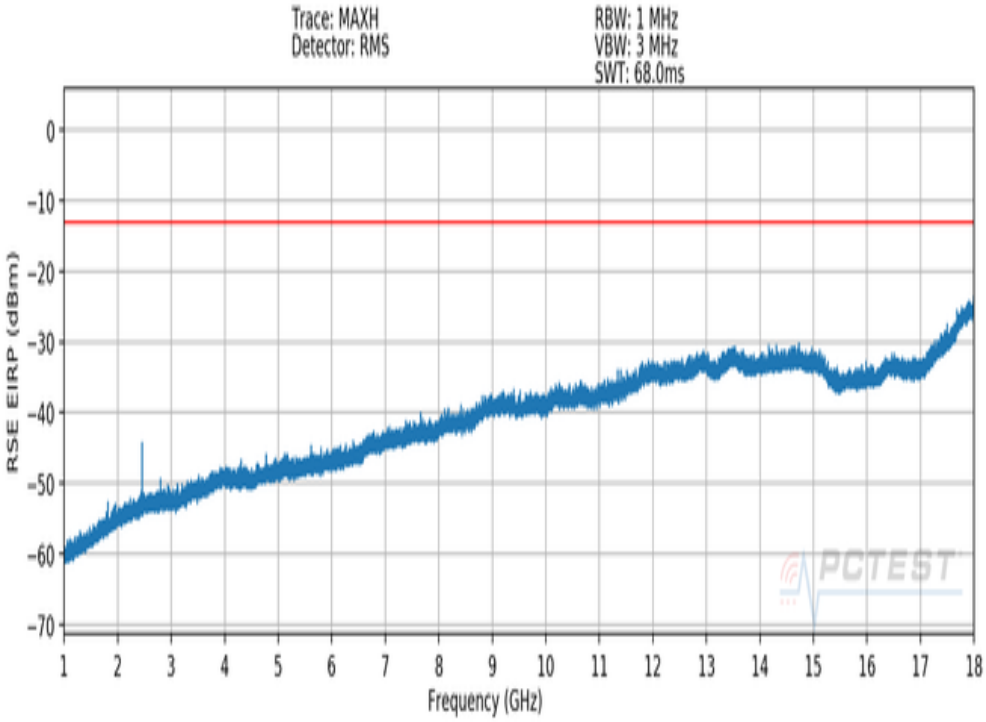
Plot 7-294. RSE 1 GHz – 18 GHz (100 MHz BW 4CC CC QPSK High Ant. Pol. V)



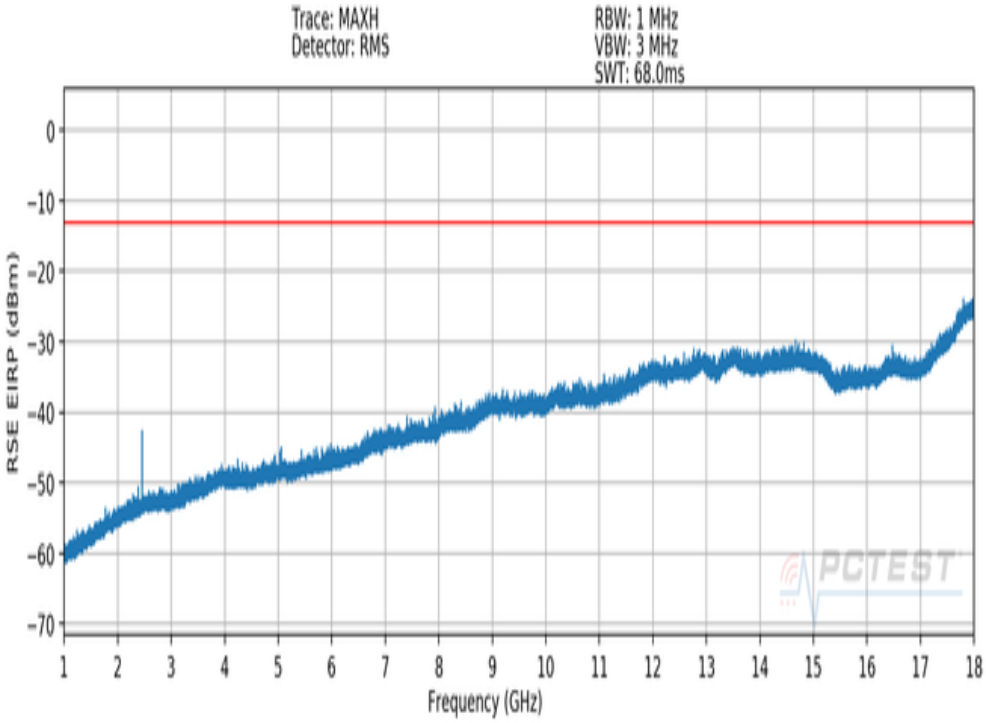
Plot 7-295. RSE 1 GHz – 18 GHz (100 MHz BW 8CC CC QPSK Low Ant. Pol. H)



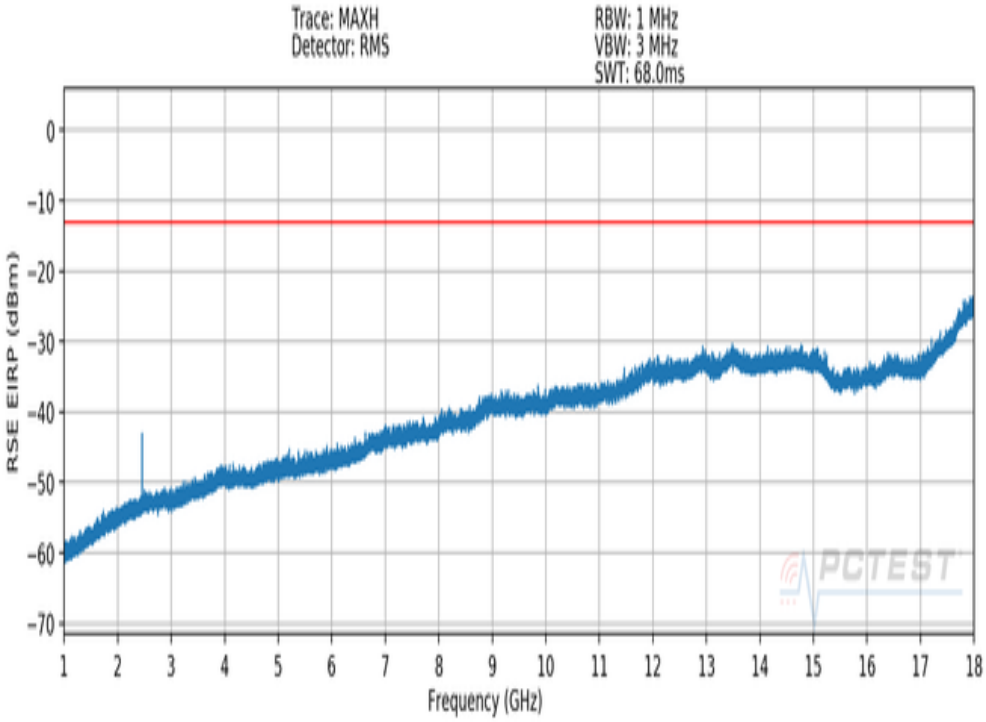
Plot 7-296. RSE 1 GHz – 18 GHz (100 MHz BW 8CC CC QPSK Low Ant. Pol. V)



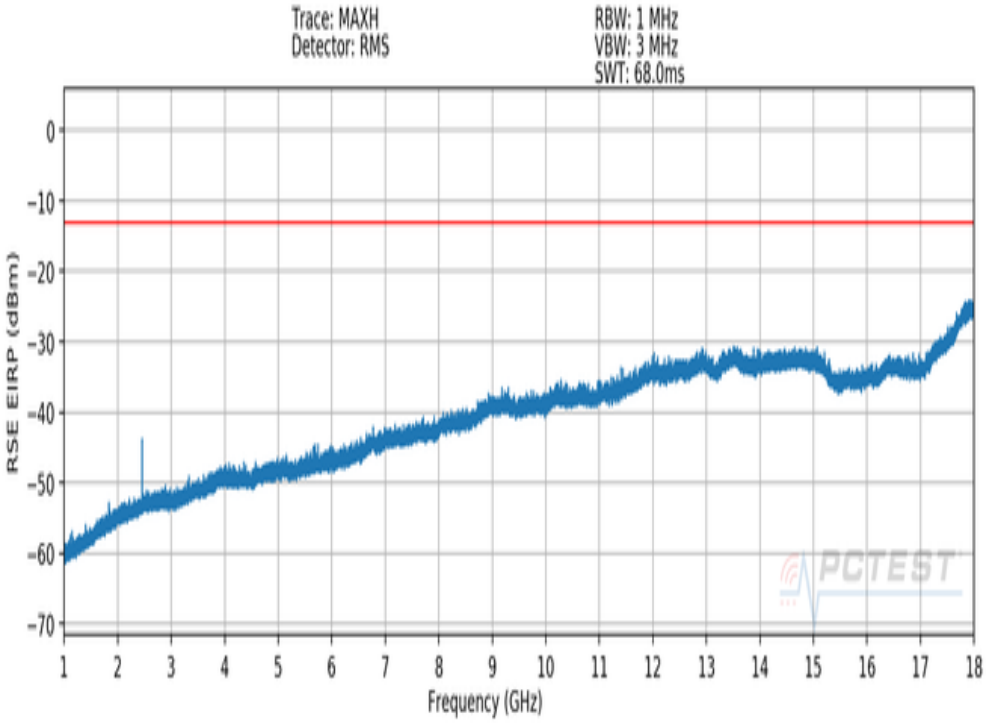
Plot 7-297. RSE 1 GHz – 18 GHz (100 MHz BW 8CC CC QPSK Mid Ant. Pol. H)



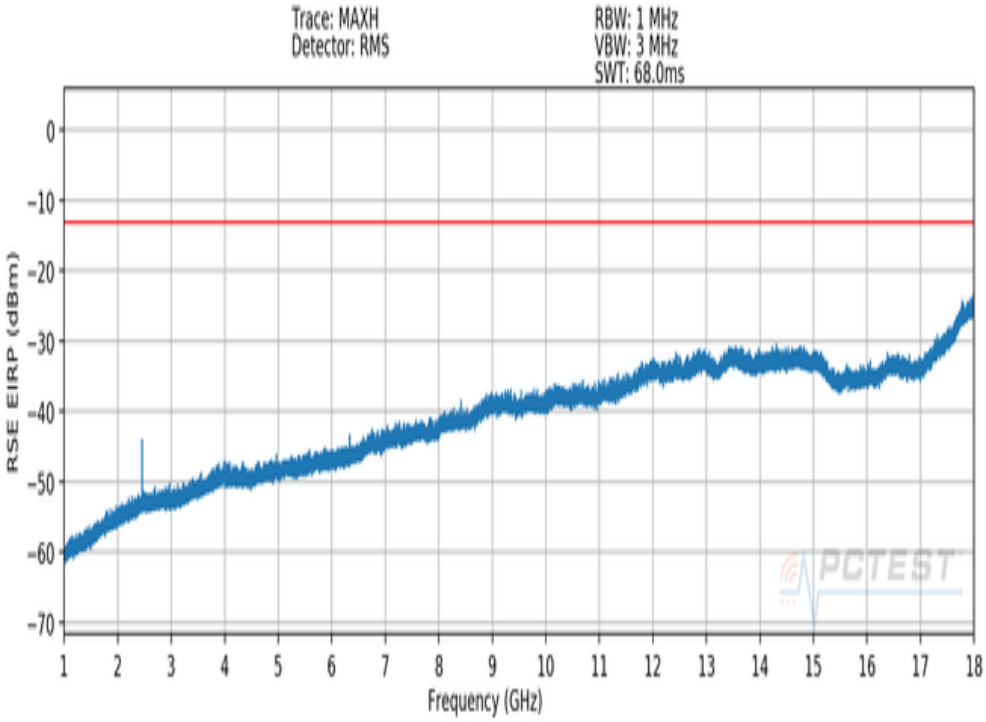
Plot 7-298. RSE 1 GHz – 18 GHz (100 MHz BW 8CC CC QPSK Mid Ant. Pol. V)



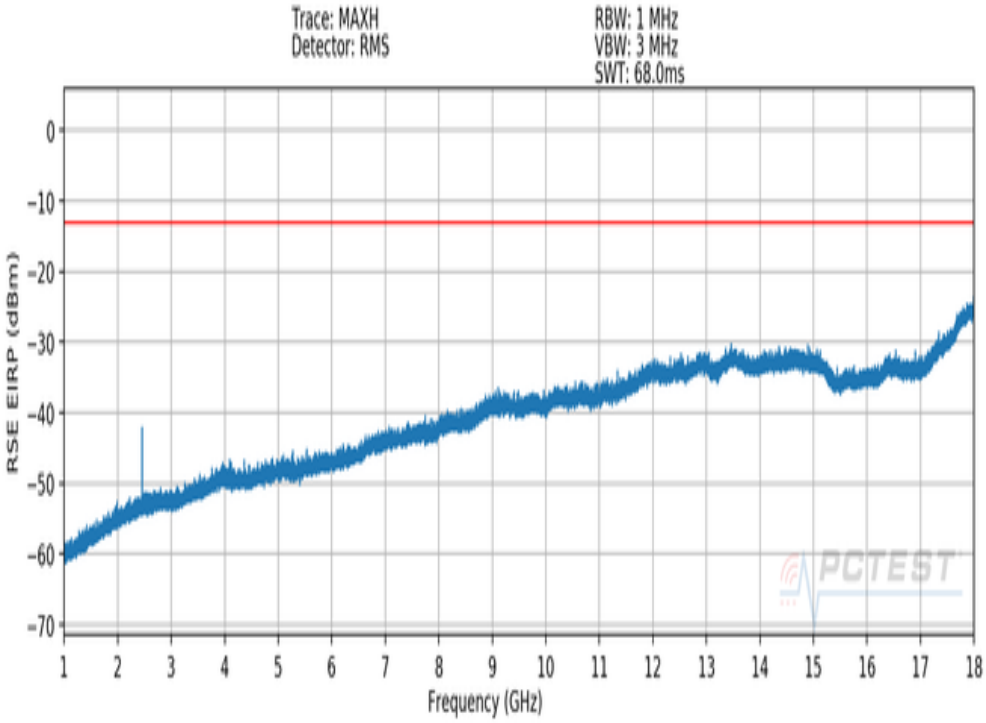
Plot 7-299. RSE 1 GHz – 18 GHz (100 MHz BW 8CC CC QPSK High Ant. Pol. H)



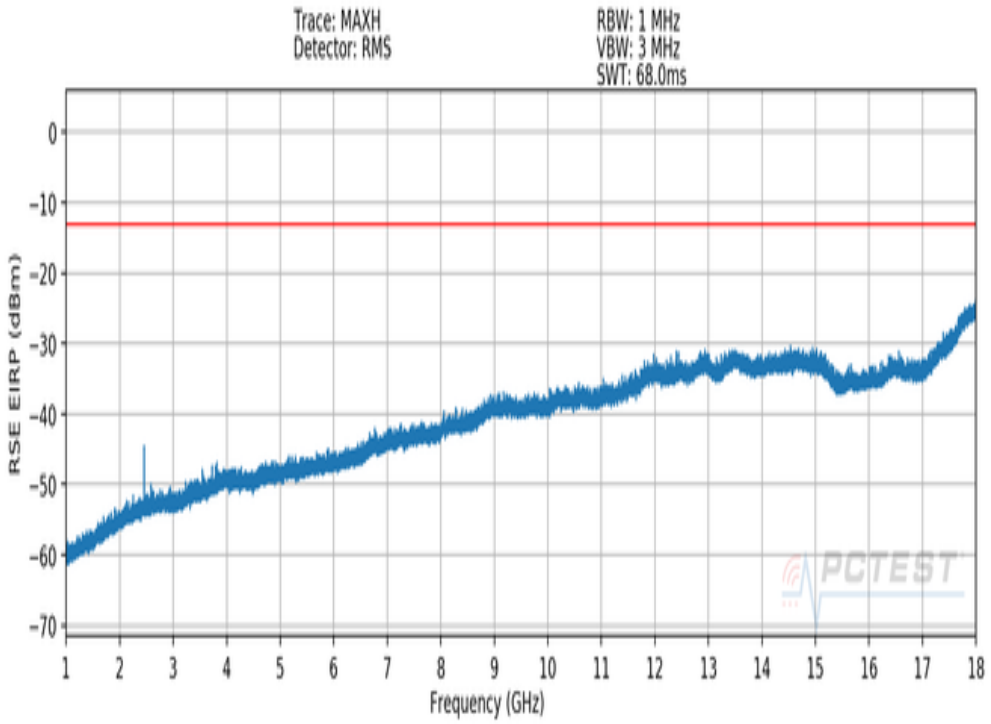
Plot 7-300. RSE 1 GHz – 18 GHz (100 MHz BW 8CC CC QPSK High Ant. Pol. V)



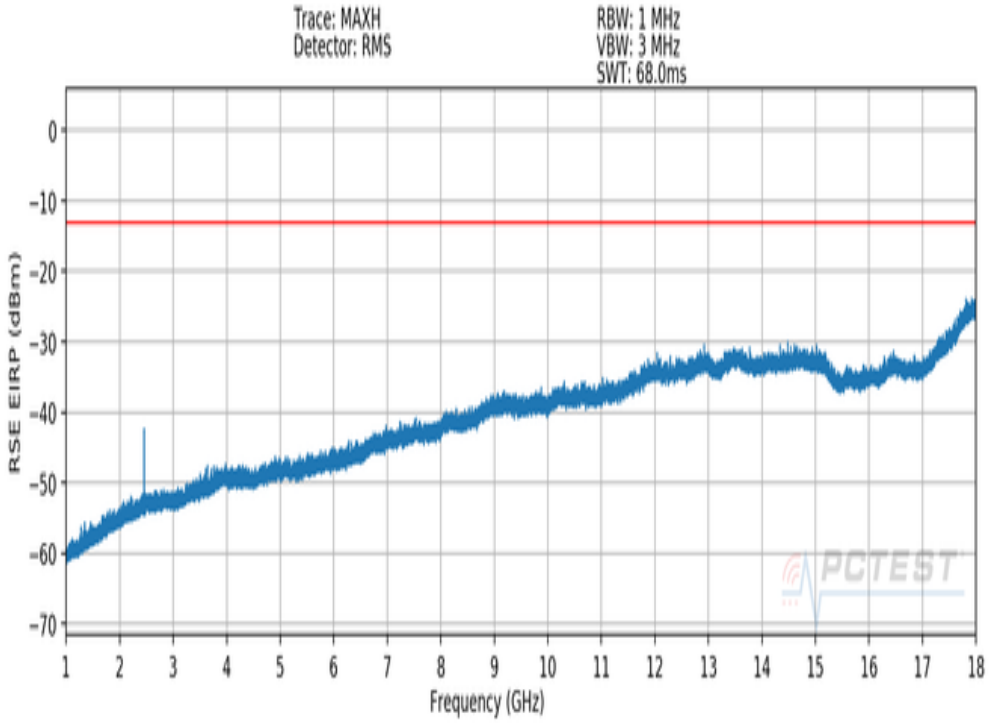
Plot 7-301. RSE 1 GHz – 18 GHz (50 MHz 2CC + 100 MHz BW 3CC CC QPSK Low Ant. Pol. H)



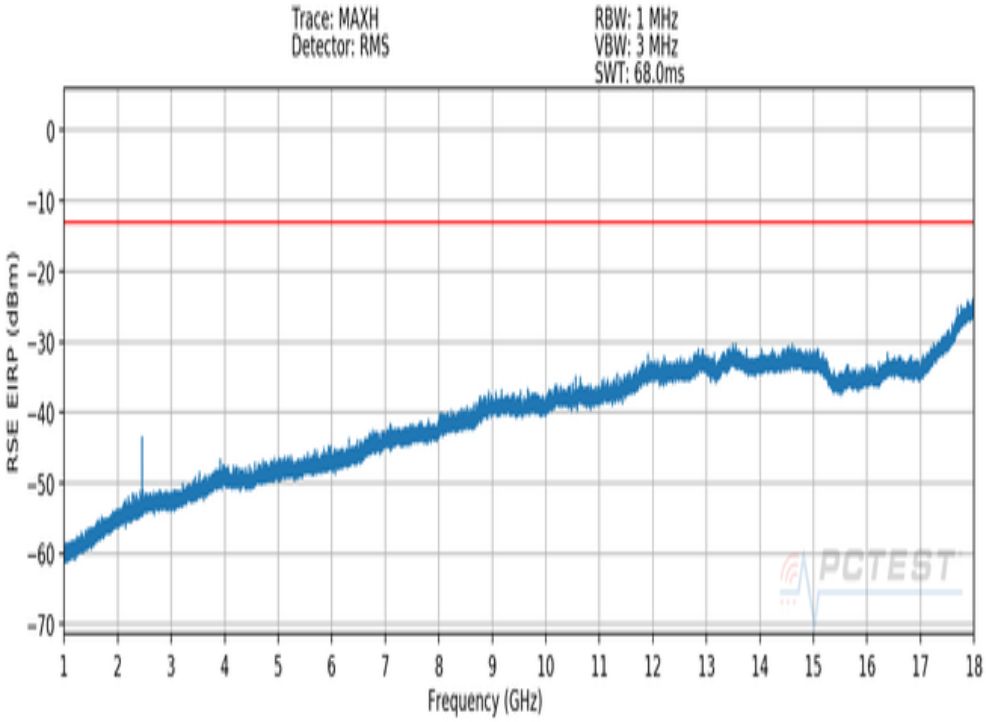
Plot 7-302. RSE 1 GHz – 18 GHz (50 MHz 2CC + 100 MHz BW 3CC CC QPSK Low Ant. Pol. V)



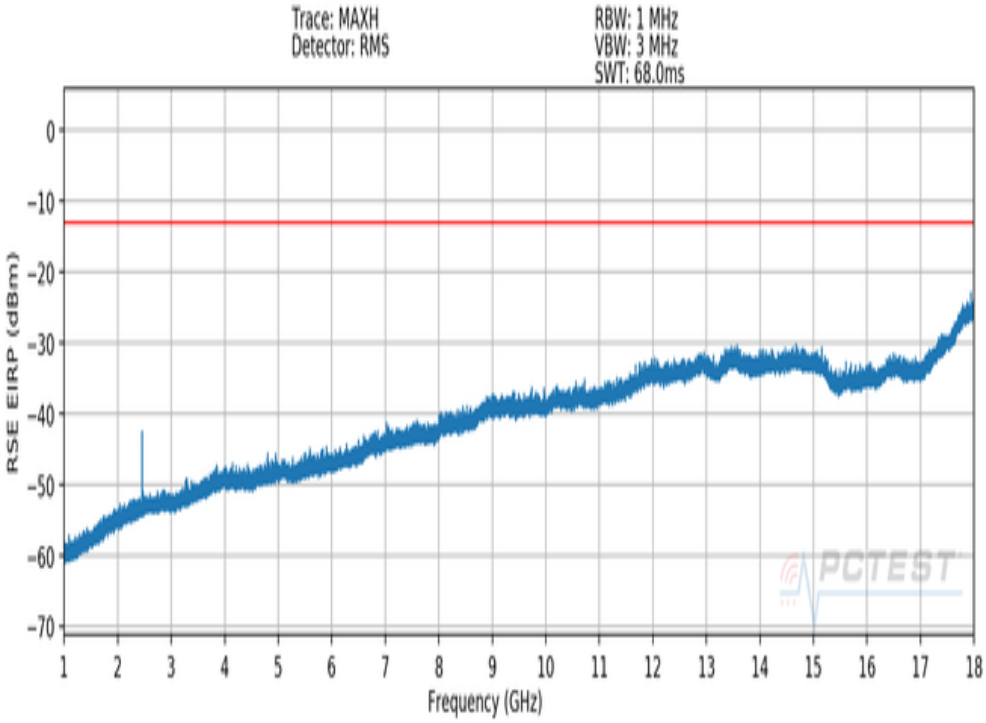
Plot 7-303. RSE 1 GHz – 18 GHz (50 MHz 2CC + 100 MHz BW 3CC CC QPSK Mid Ant. Pol. H)



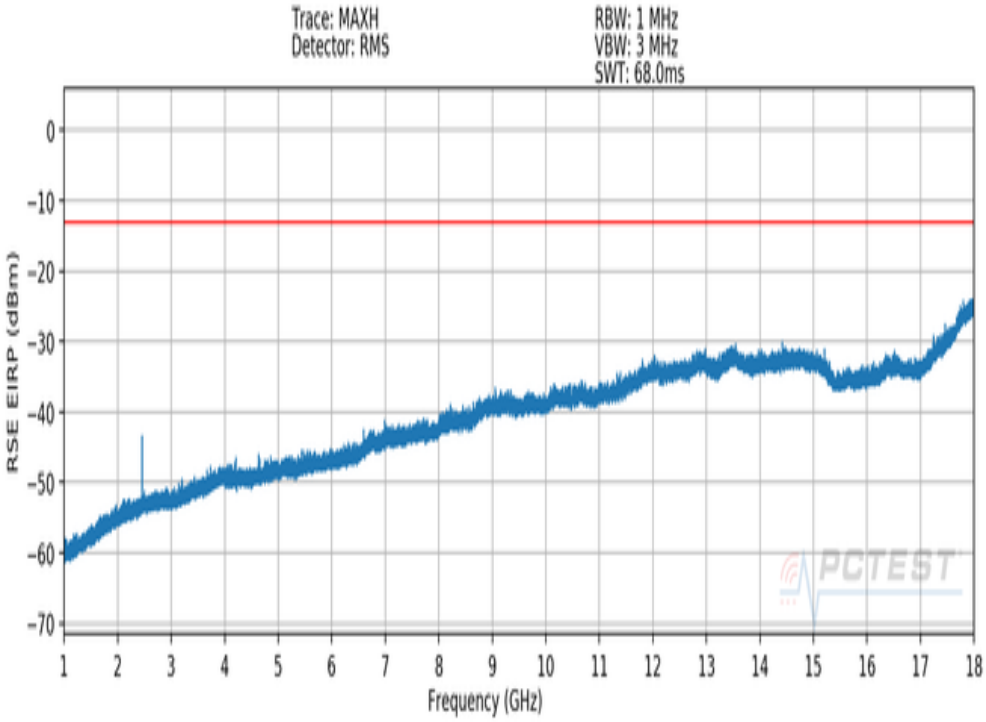
Plot 7-304. RSE 1 GHz – 18 GHz (50 MHz 2CC + 100 MHz BW 3CC CC QPSK Mid Ant. Pol. V)



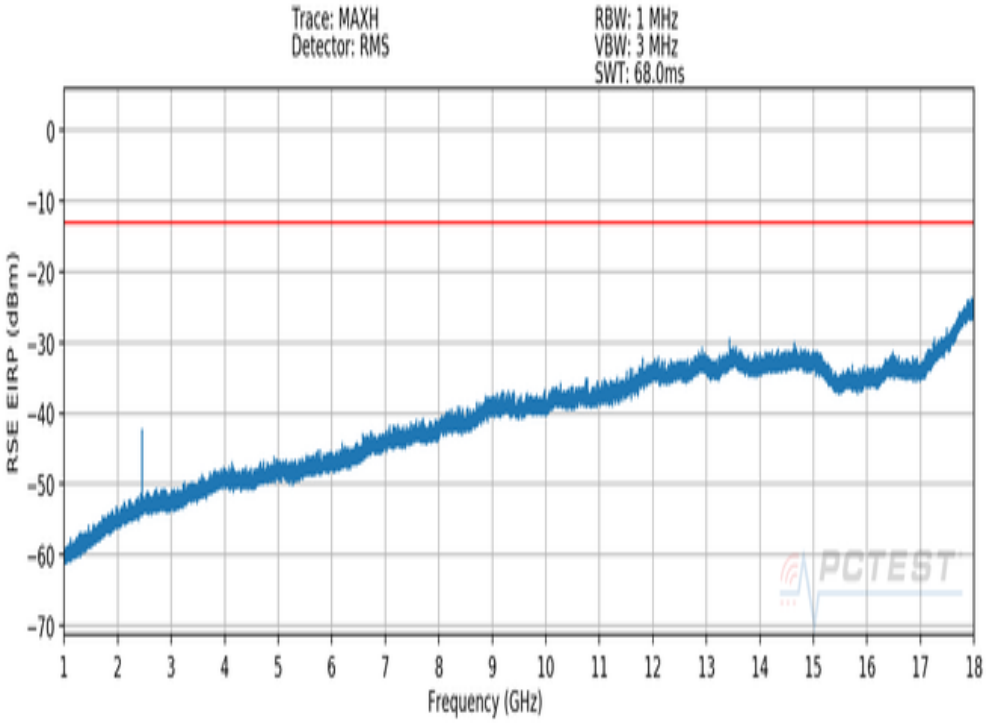
Plot 7-305. RSE 1 GHz – 18 GHz (50 MHz 2CC + 100 MHz BW 3CC CC QPSK High Ant. Pol. H)



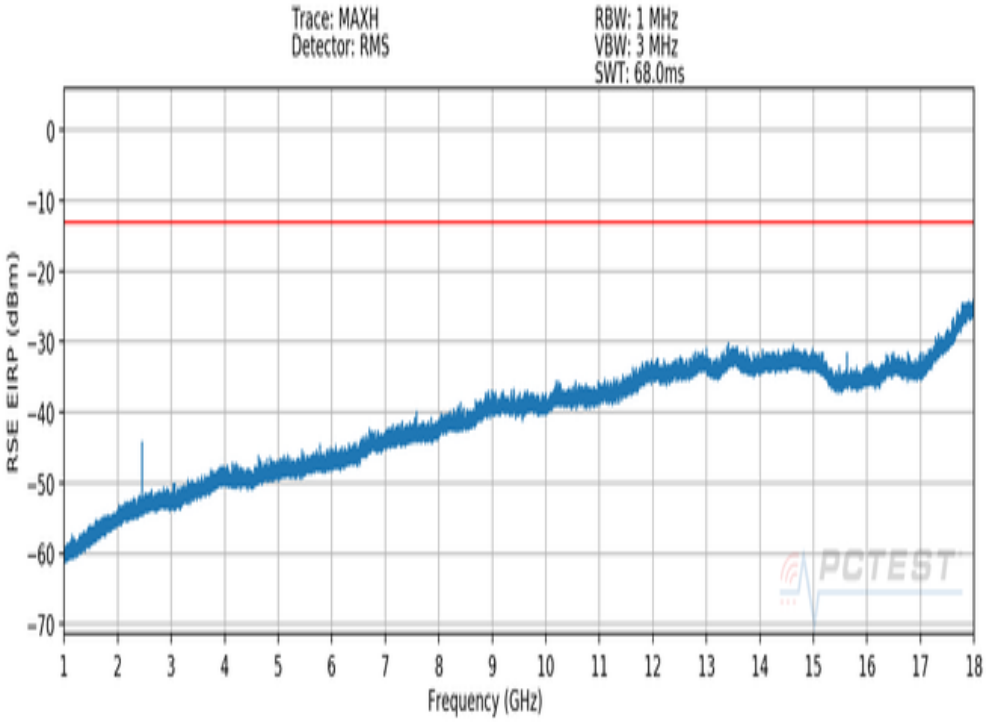
Plot 7-306. RSE 1 GHz – 18 GHz (50 MHz 2CC + 100 MHz BW 3CC CC QPSK High Ant. Pol. V)



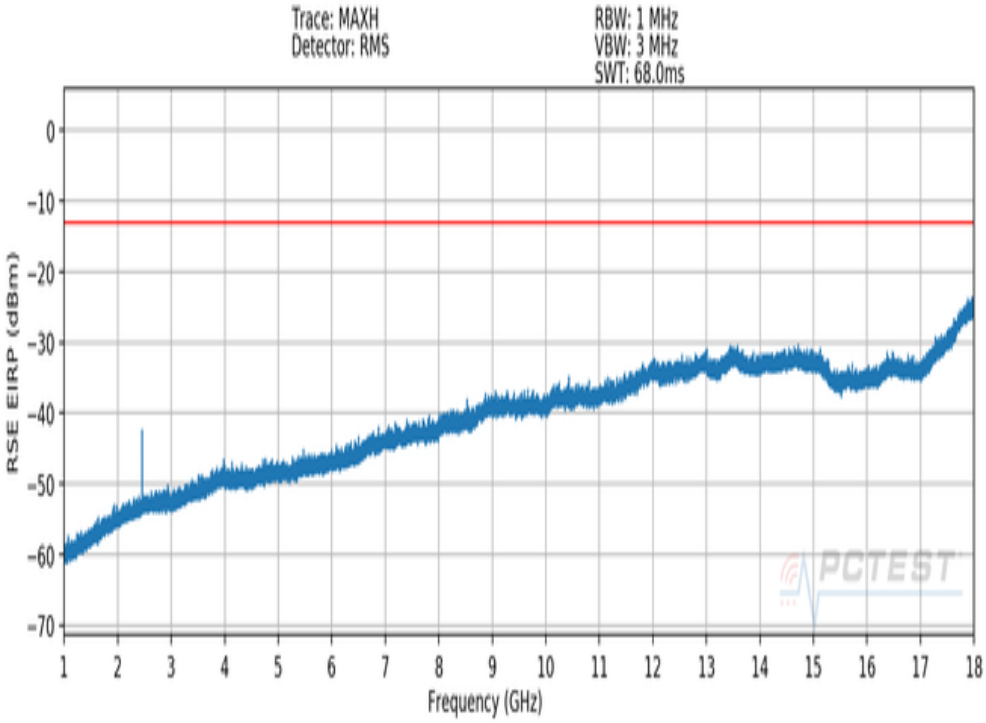
Plot 7-307. RSE 1 GHz – 18 GHz (50 MHz 2CC + 100 MHz BW 6CC CC QPSK Low Ant. Pol. H)



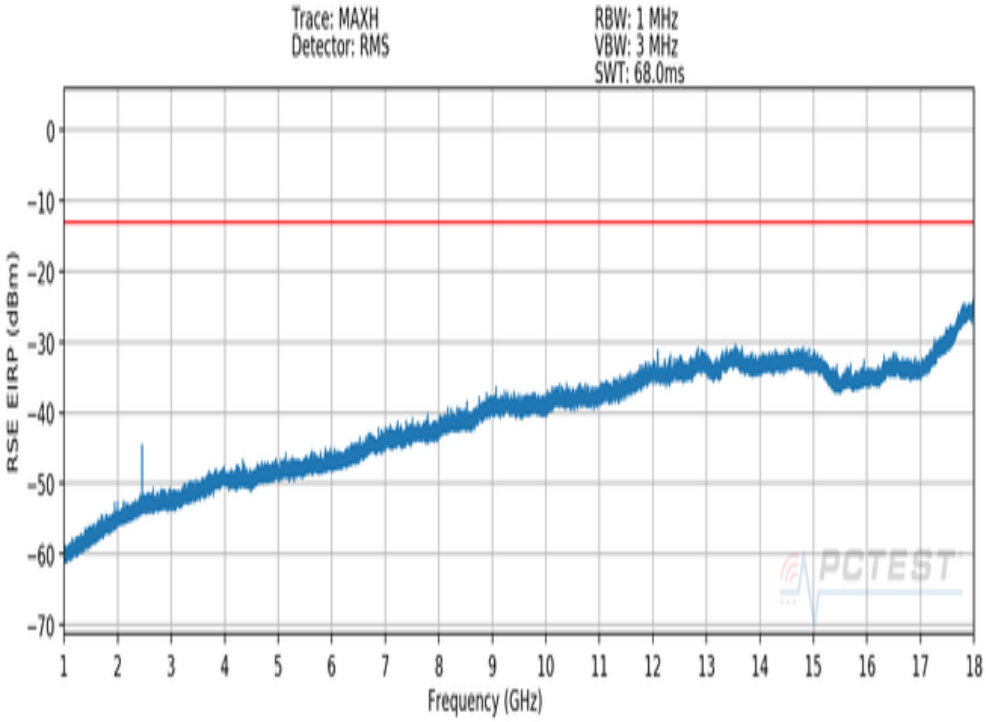
Plot 7-308. RSE 1 GHz – 18 GHz (50 MHz 2CC + 100 MHz BW 6CC CC QPSK Low Ant. Pol. V)



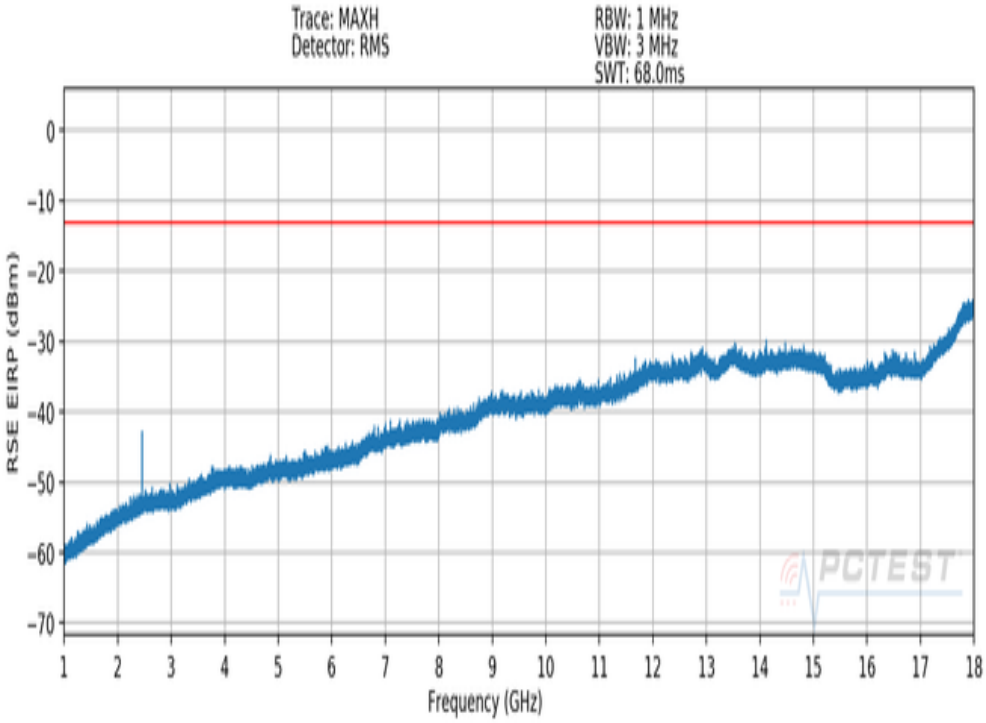
Plot 7-309. RSE 1 GHz – 18 GHz (50 MHz 2CC + 100 MHz BW 6CC CC QPSK Mid Ant. Pol. H)



Plot 7-310. RSE 1 GHz – 18 GHz (50 MHz 2CC + 100 MHz BW 6CC CC QPSK Mid Ant. Pol. V)



Plot 7-311. RSE 1 GHz – 18 GHz (50 MHz 2CC + 100 MHz BW 6CC CC QPSK High Ant. Pol. H)



Plot 7-312. RSE 1 GHz – 18 GHz (50 MHz 2CC + 100 MHz BW 6CC CC QPSK High Ant. Pol. V)

Spurious Emissions EIRP Sample Calculation (n261)

The raw radiated spurious level is converted to field strength in dBµV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 3 meters.

RSE EIRP [dBm] = Analyzer Level [dBm] + AFCL [dB/m] + 107 + 20Log(D_m) – 104.8

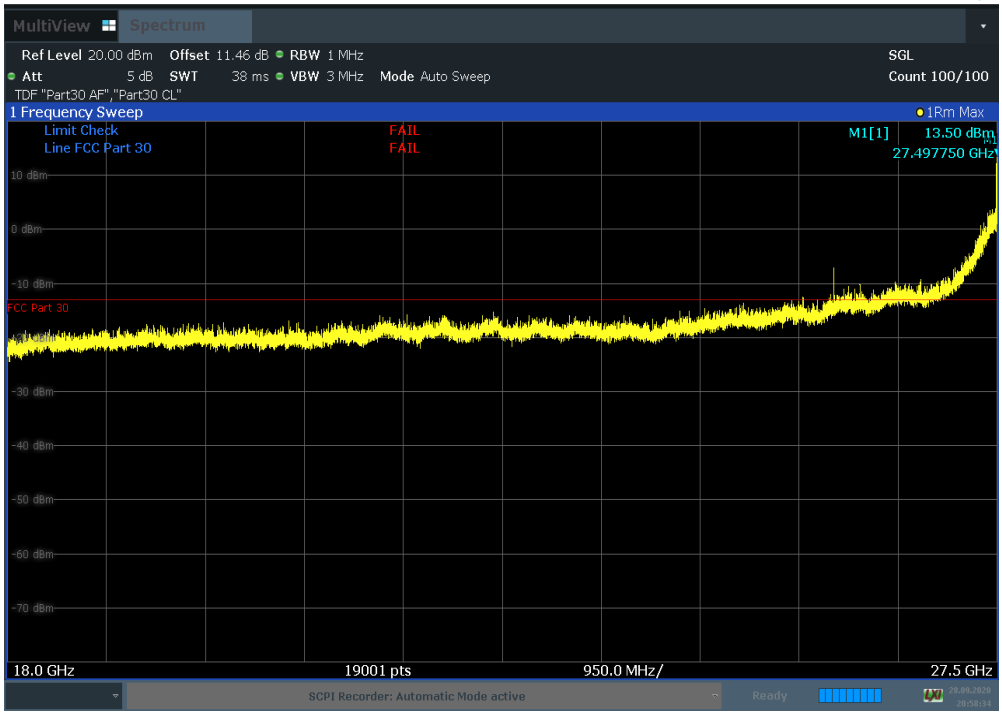
Frequency [MHz]	Channel	CC Active	Mod.	Ant. Pol [H/V]	Antenna Height [cm]	Turn Table Azimuth [degree]	Analyzer Level [dBm]	AFCL [dBm]	Field Strength [dBµV/m]	RSE EIRP [dBm]	Limit [dBm]	Margin [dB]
12870.73	High	CC0-CC7(C)	QPSK	V	150	100	-76.89	26.83	56.90	-38.30	-13.00	-25.30
14971.21	High	CC0-CC7(C)	QPSK	V	150	100	-74.89	27.74	59.90	-35.40	-13.00	-22.40
16805.23	High	CC0-CC7(C)	QPSK	V	150	100	-72.71	25.62	59.90	-35.30	-13.00	-22.30
17161.68	High	CC0-CC7(C)	QPSK	V	150	260	-73.88	26.76	59.90	-35.30	-13.00	-22.30
17624.12	High	CC0-CC7(C)	QPSK	V	150	260	-74.15	30.80	63.60	-31.60	-13.00	-18.60
17967.41	High	CC0-CC7(C)	QPSK	H	150	300	-75.11	34.14	69.00	-29.20	-13.00	-16.20

Table 7-21. 2Tx-Spurious Emissions (1 GHz to 18 GHz)

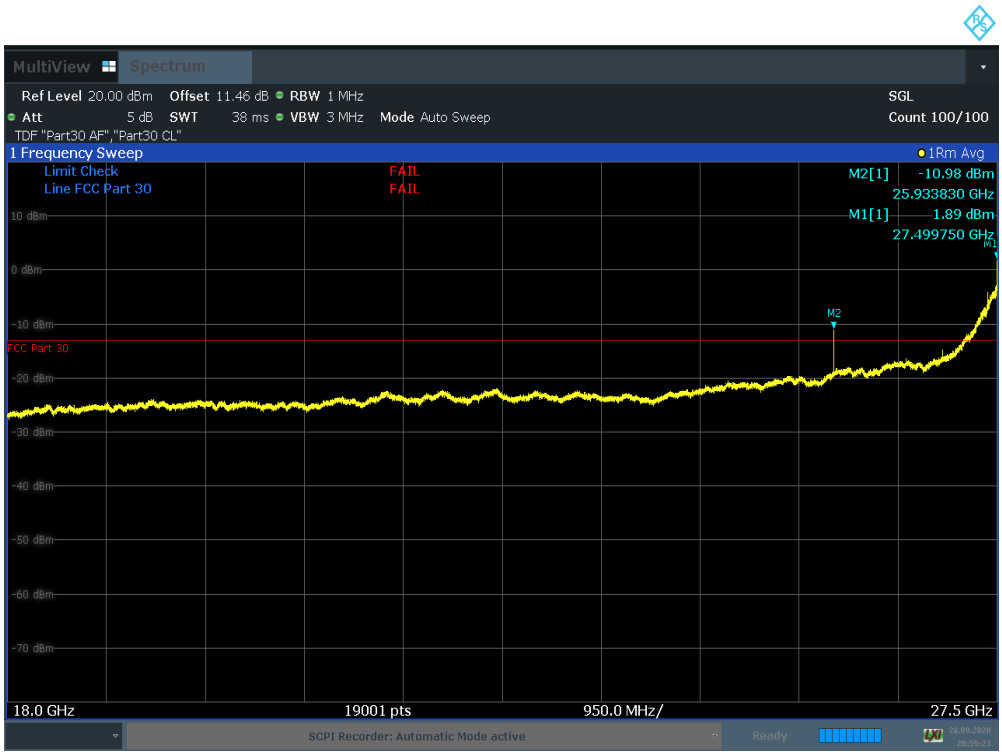
Notes

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, cable losses, and harmonic mixer conversion losses. Measurements were performed at a distance of 3 meter.

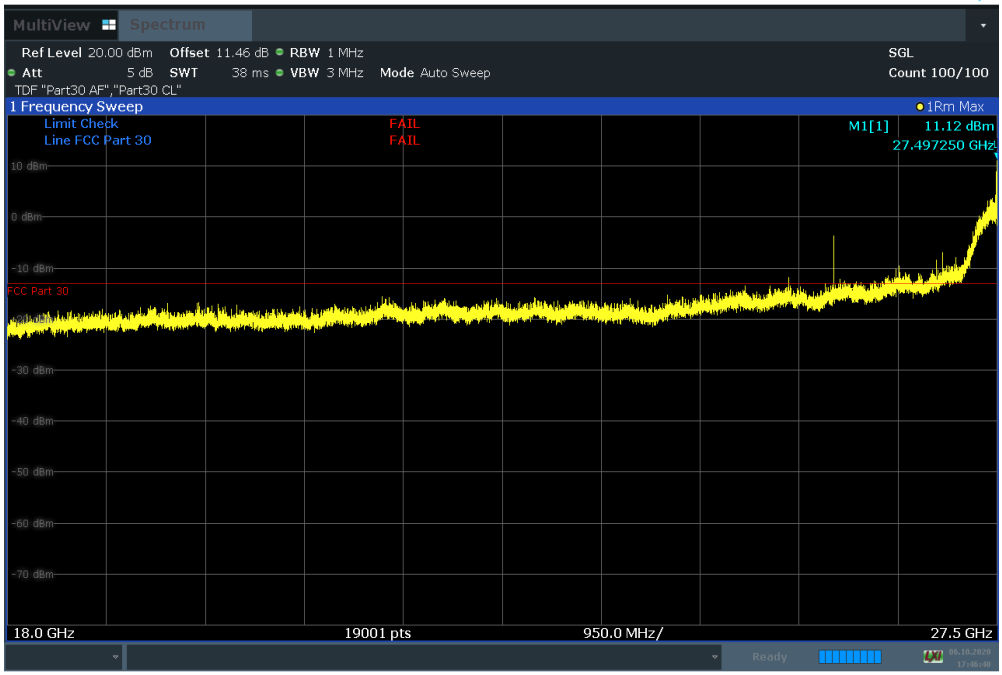
7.5.3 Radiated Spurious Emissions Plots (18 GHz to 27.5 GHz)



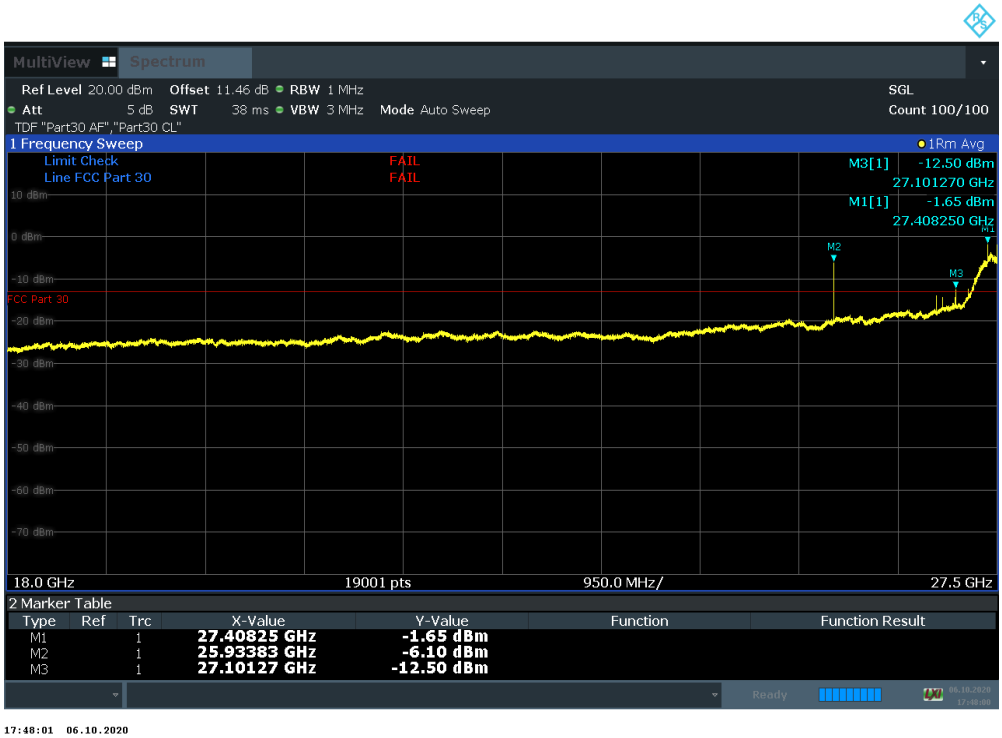
Plot 7-313. RSE 18 GHz – 27.5 GHz (100 MHz BW 4CC CC QPSK Low Ant. Angle 45)



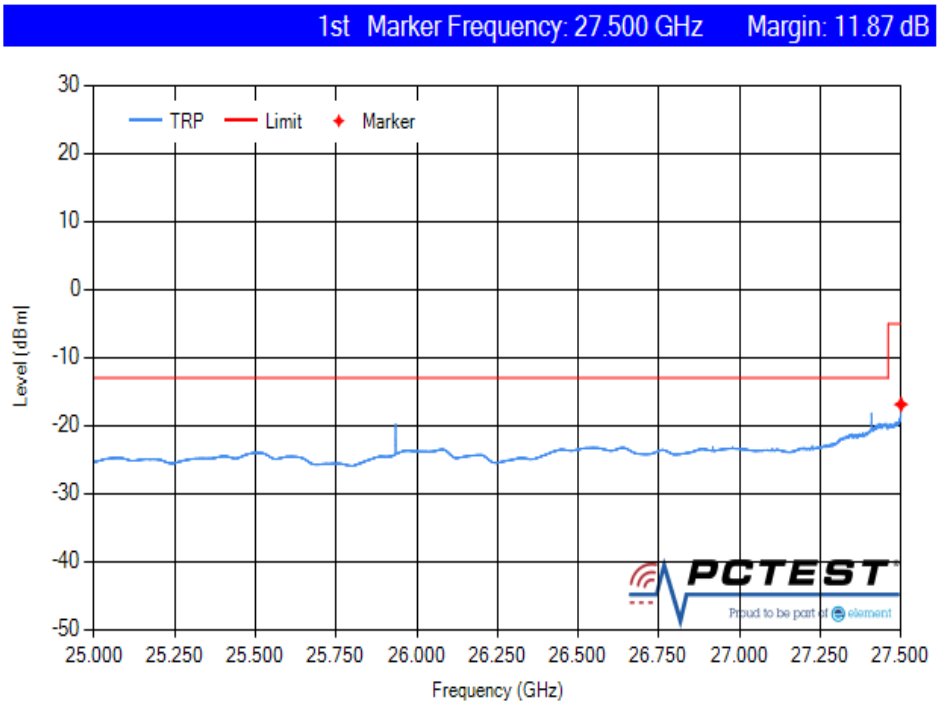
Plot 7-314. RSE 18 GHz – 27.5 GHz (100 MHz BW 4CC CC QPSK Low Ant. Angle 45, Final)



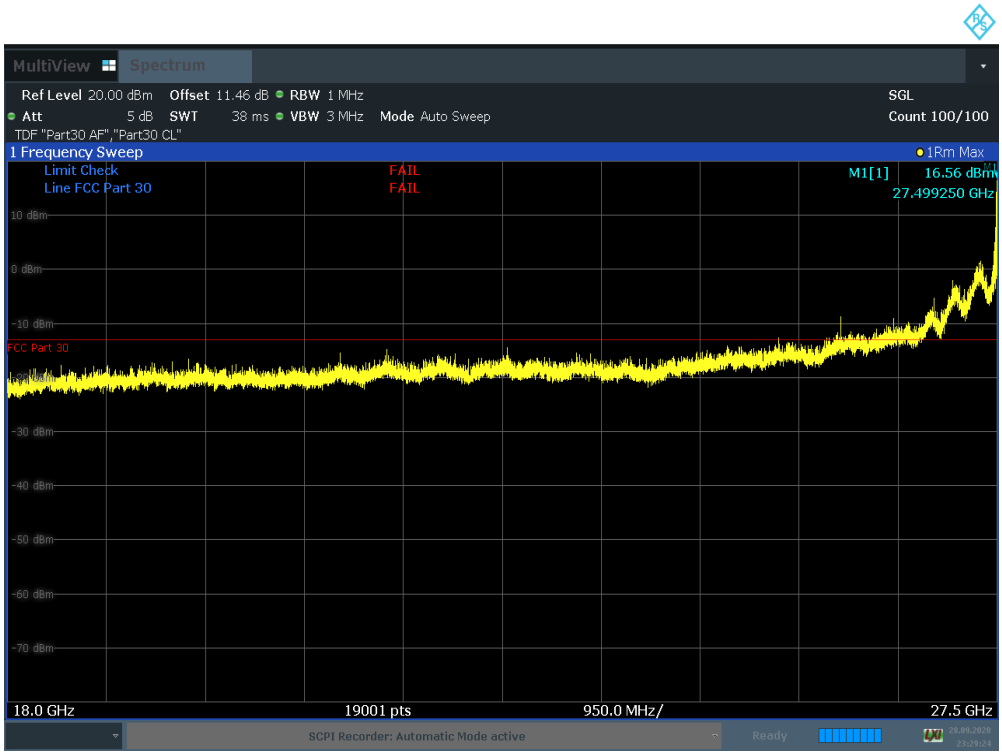
Plot 7-315. RSE 18 GHz – 27.5 GHz (100 MHz BW 4CC CC QPSK Low Ant. Angle 135)



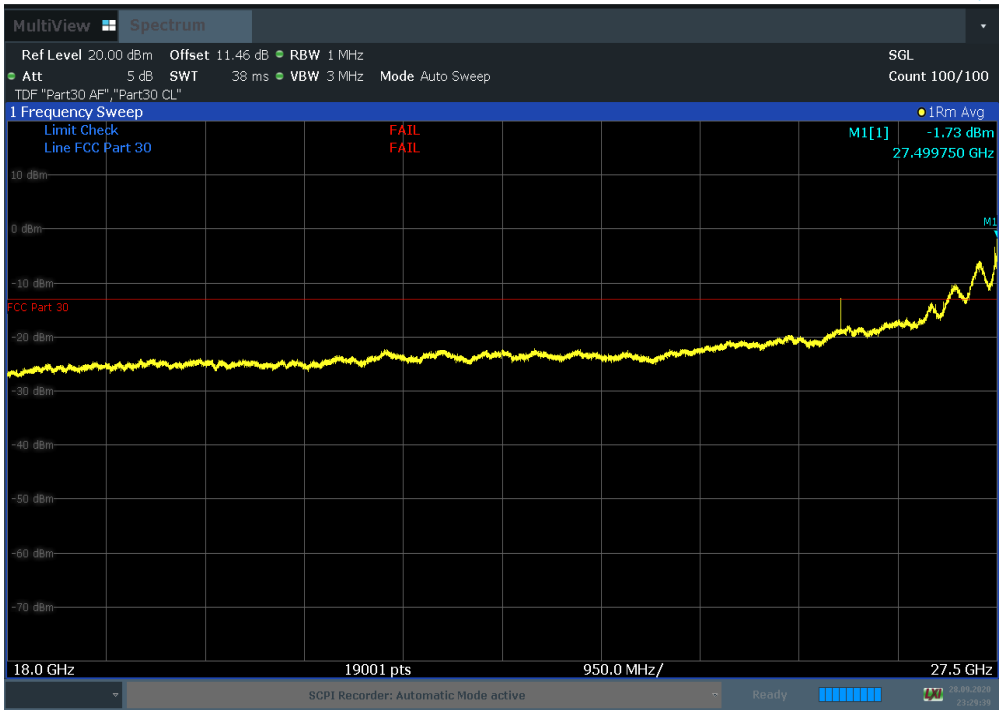
Plot 7-316. RSE 18 GHz – 27.5 GHz (100 MHz BW 4CC CC QPSK Low Ant. Angle 135, Final)



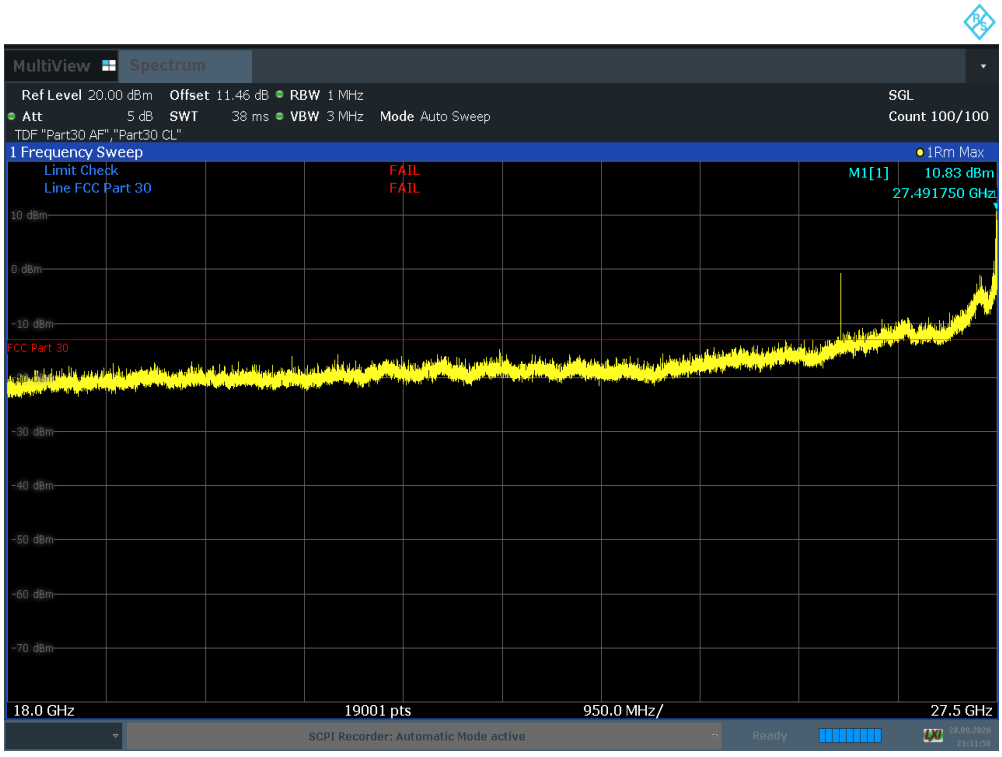
Plot 7-317. RSE 2.5 GHz – 27.5 GHz (100 MHz BW 4CC CC QPSK Low TRP)



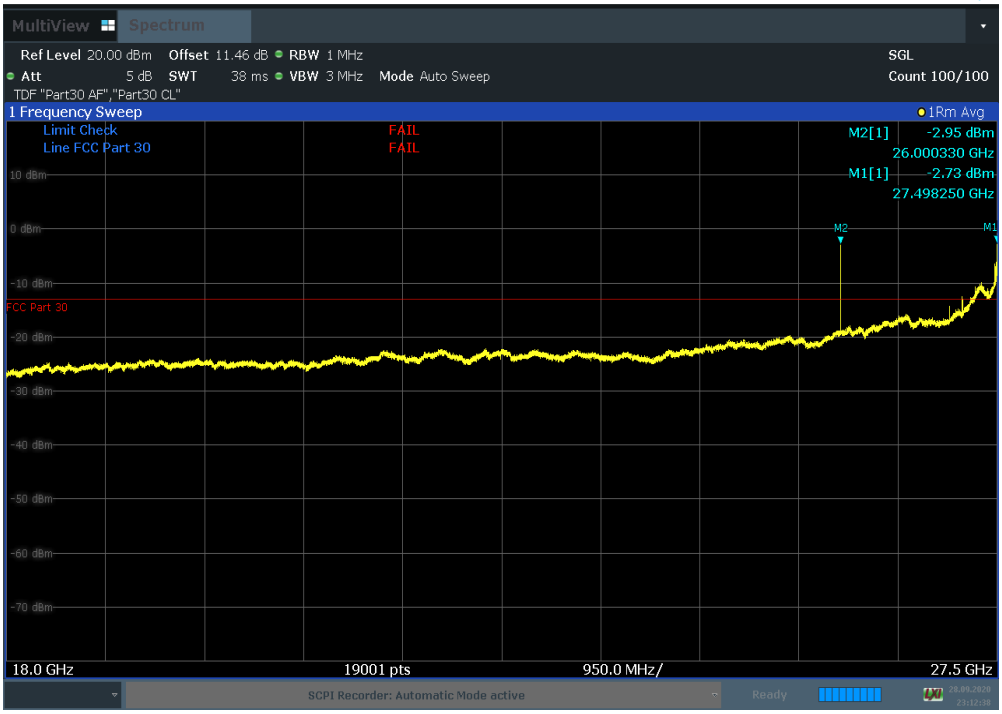
Plot 7-318. RSE 18 GHz – 27.5 GHz (100 MHz BW 4CC NC QPSK Low Ant. Angle 45)



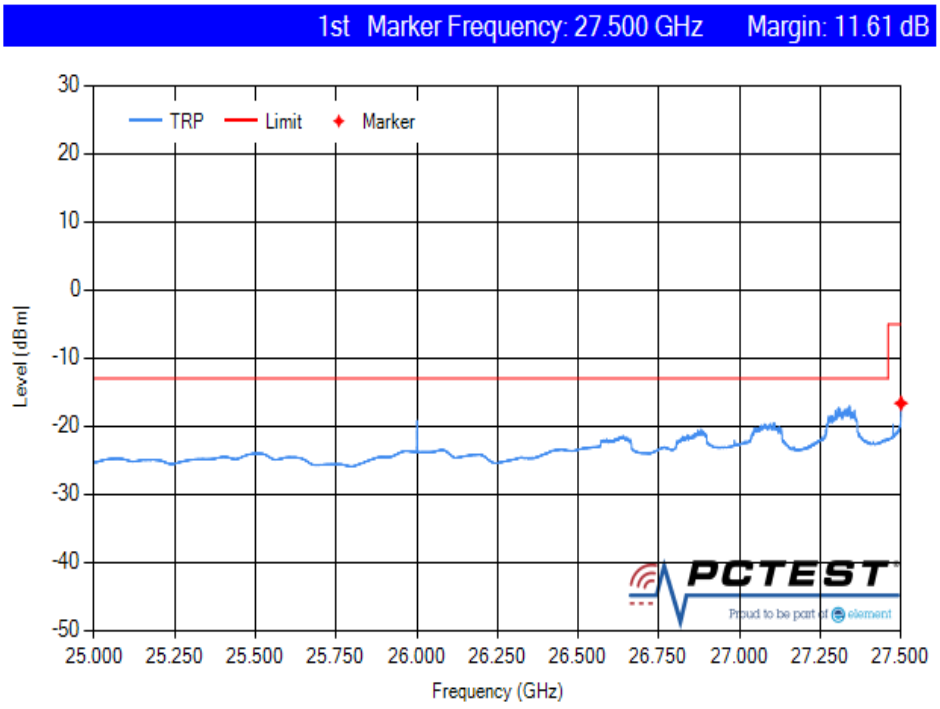
Plot 7-319. RSE 18 GHz – 27.5 GHz (100 MHz BW 4CC NC QPSK Low Ant. Angle 45, Final)



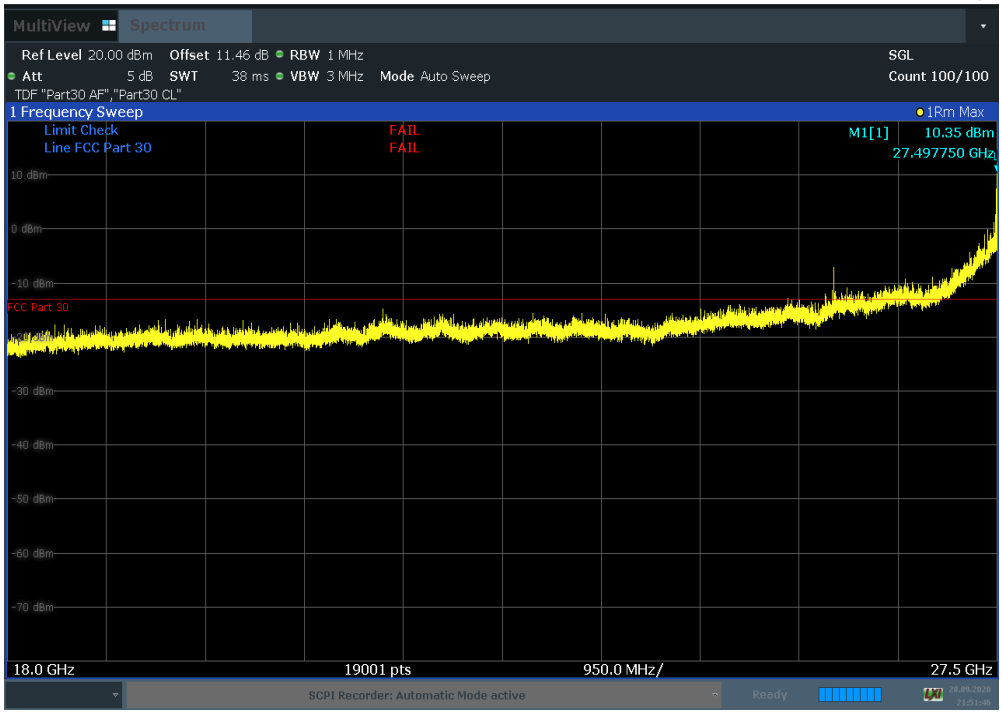
Plot 7-320. RSE 18 GHz – 27.5 GHz (100 MHz BW 4CC NC QPSK Low Ant. Angle 135)



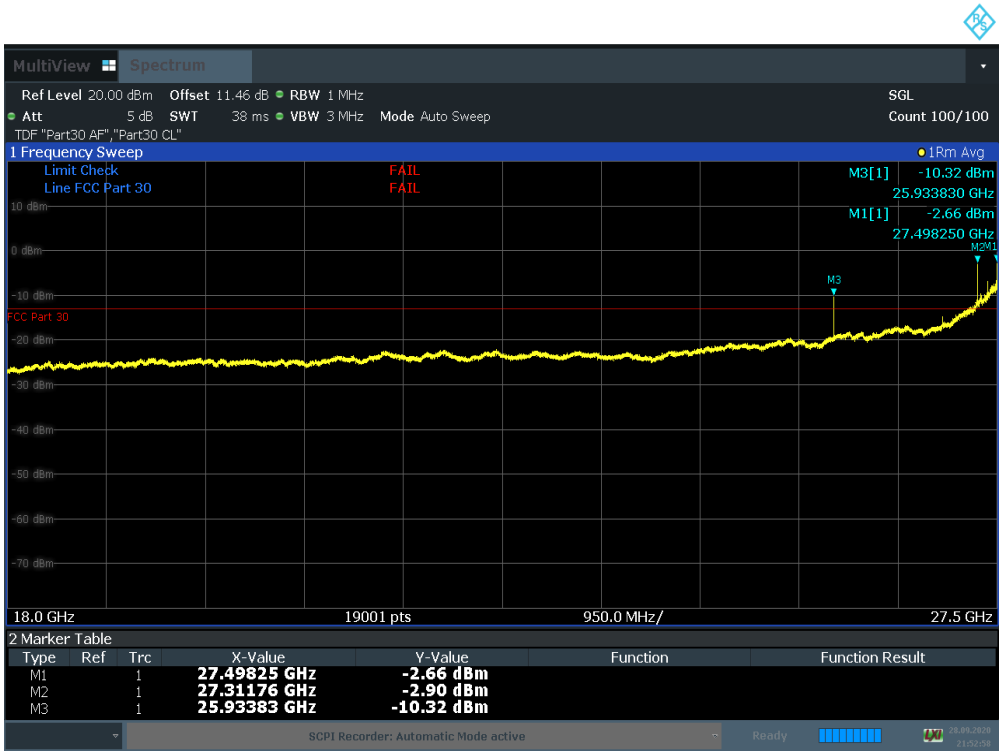
Plot 7-321. RSE 18 GHz – 27.5 GHz (100 MHz BW 4CC NC QPSK Low Ant. Angle 135, Final)



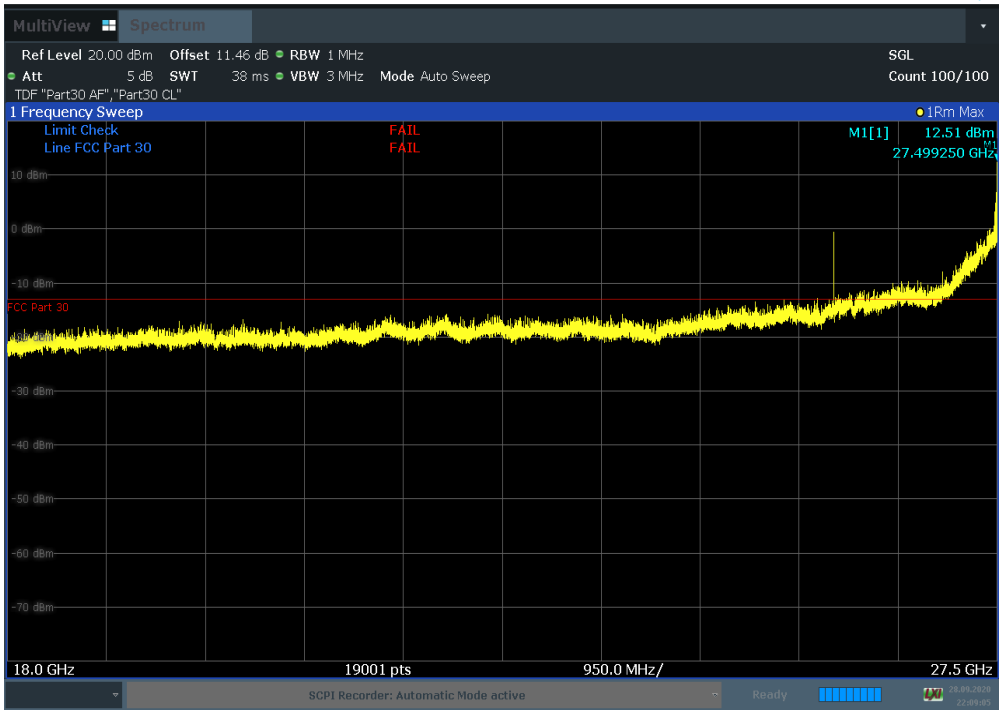
Plot 7-322. RSE 2.5 GHz – 27.5 GHz (100 MHz BW 4CC NC QPSK Low TRP)



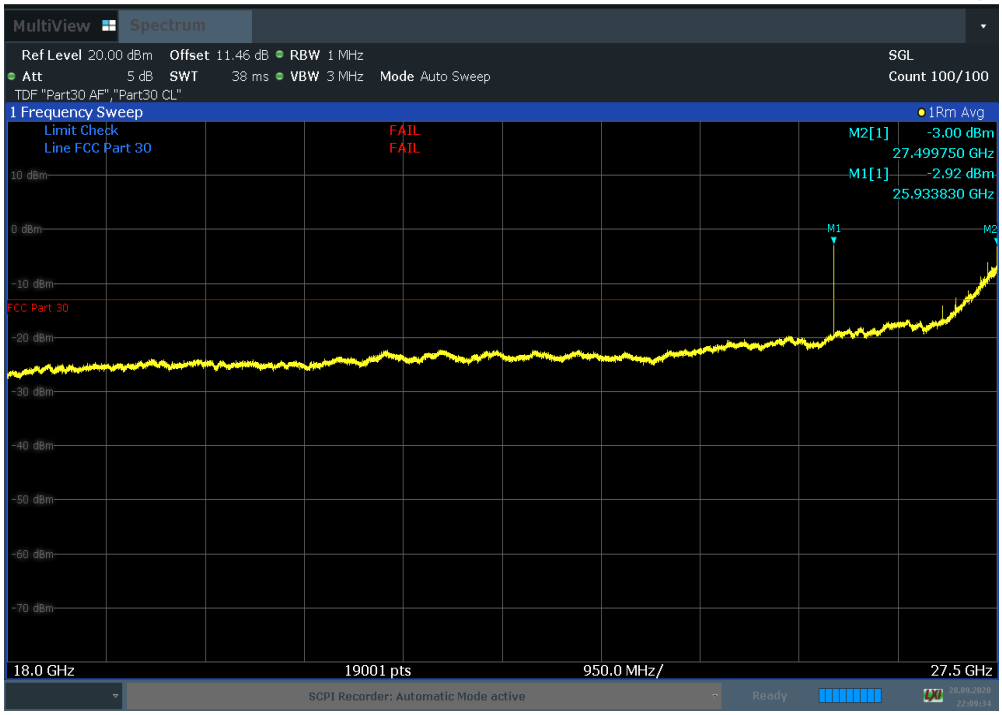
Plot 7-323. RSE 18 GHz – 27.5 GHz (100 MHz BW 8CC CC QPSK Low Ant. Angle 45)



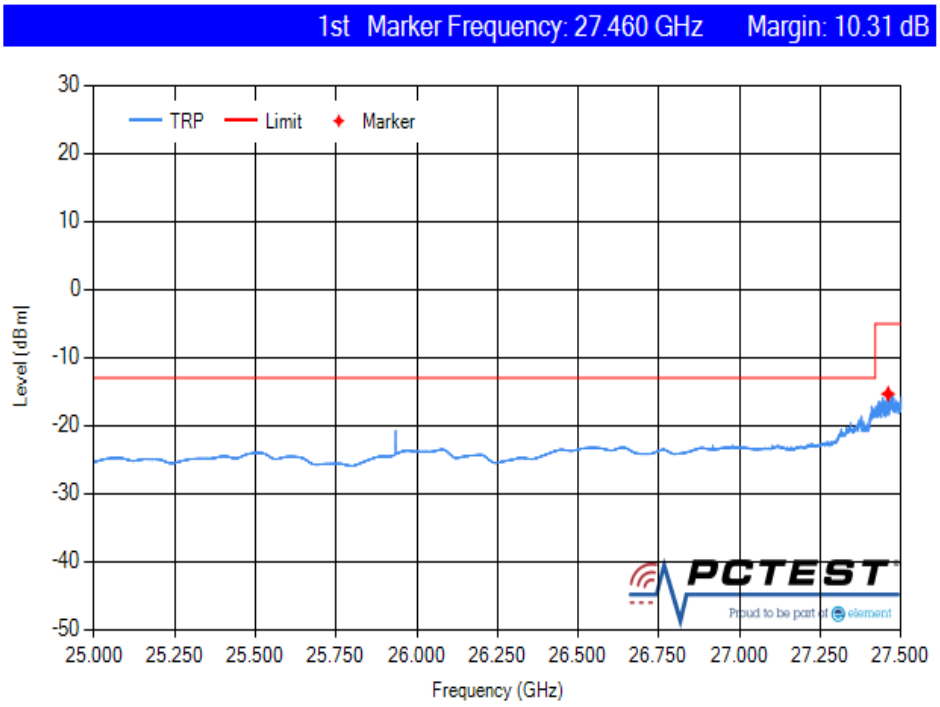
Plot 7-324. RSE 18 GHz – 27.5 GHz (100 MHz BW 8CC CC QPSK Low Ant. Angle 45, Final)



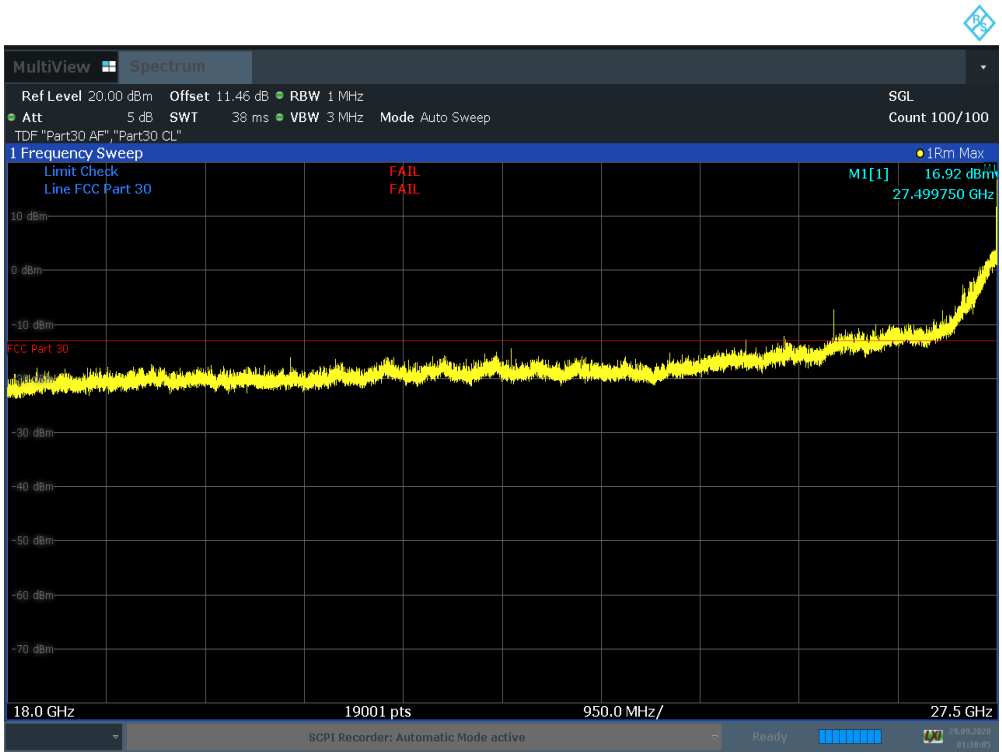
Plot 7-325. RSE 18 GHz – 27.5 GHz (100 MHz BW 8CC CC QPSK Low Ant. Angle 135)



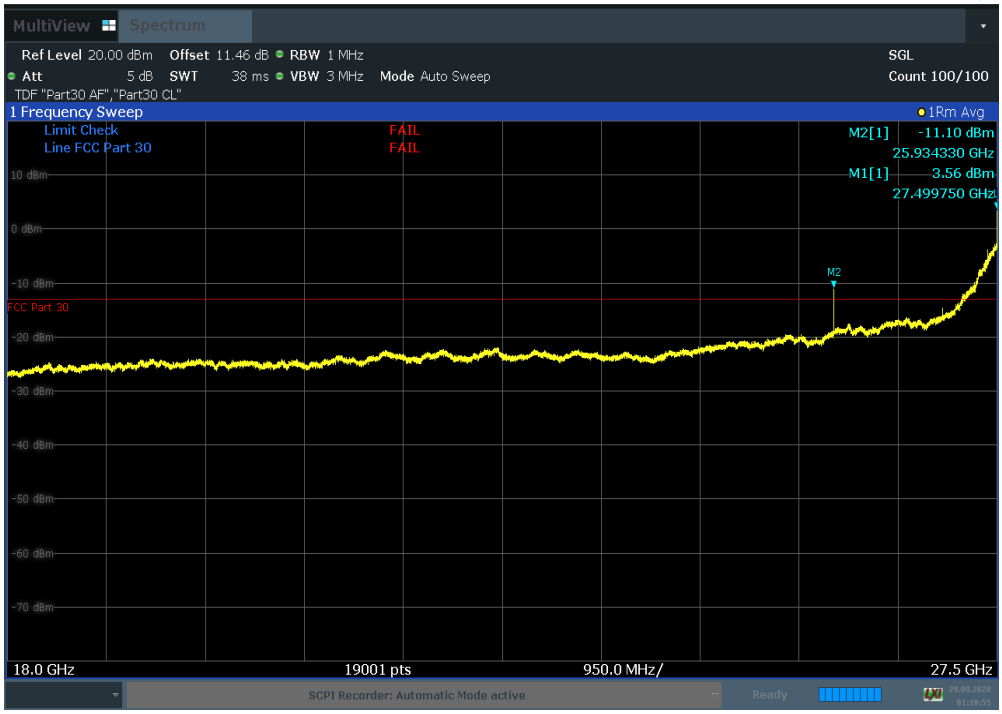
Plot 7-326. RSE 18 GHz – 27.5 GHz (100 MHz BW 8CC CC QPSK Low Ant. Angle 135, Final)



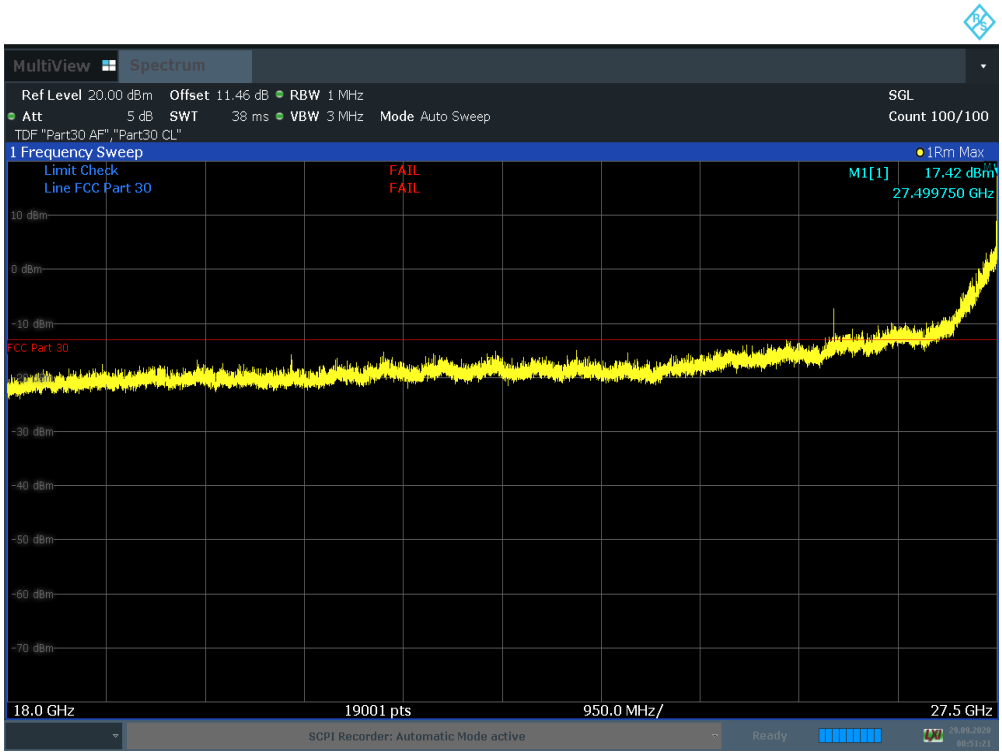
Plot 7-327. RSE 18 GHz – 27.5 GHz (100 MHz BW 8CC CC QPSK Low TRP)



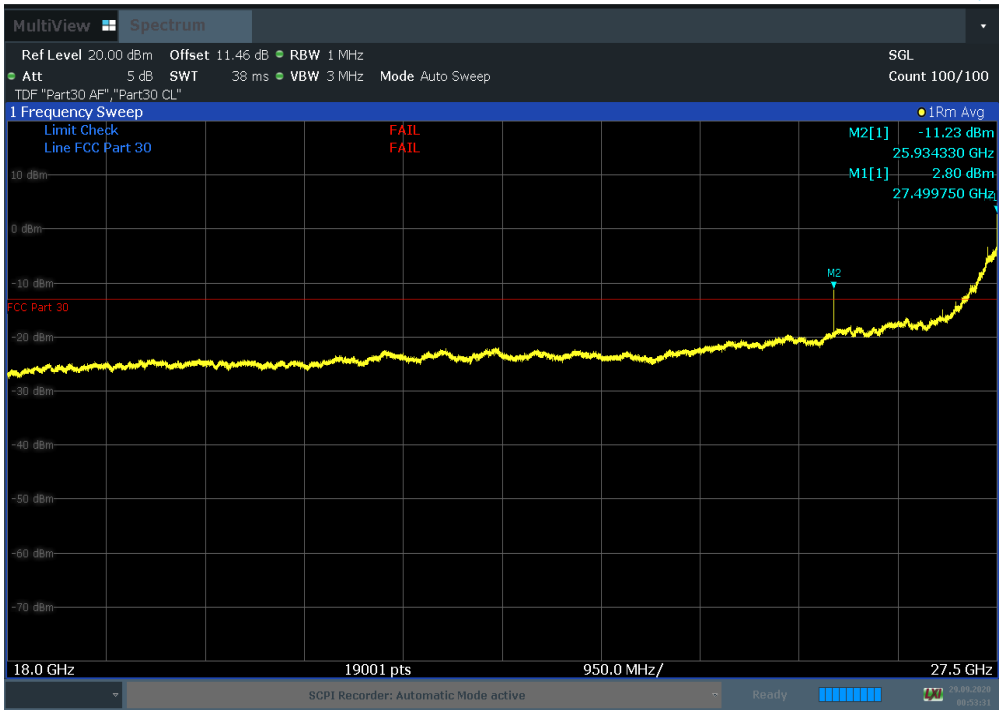
Plot 7-328. RSE 18 GHz – 27.5 GHz (50 MHz BW 2CC + 100 MHz BW 3CC CC QPSK Low Ant. Angle 45)



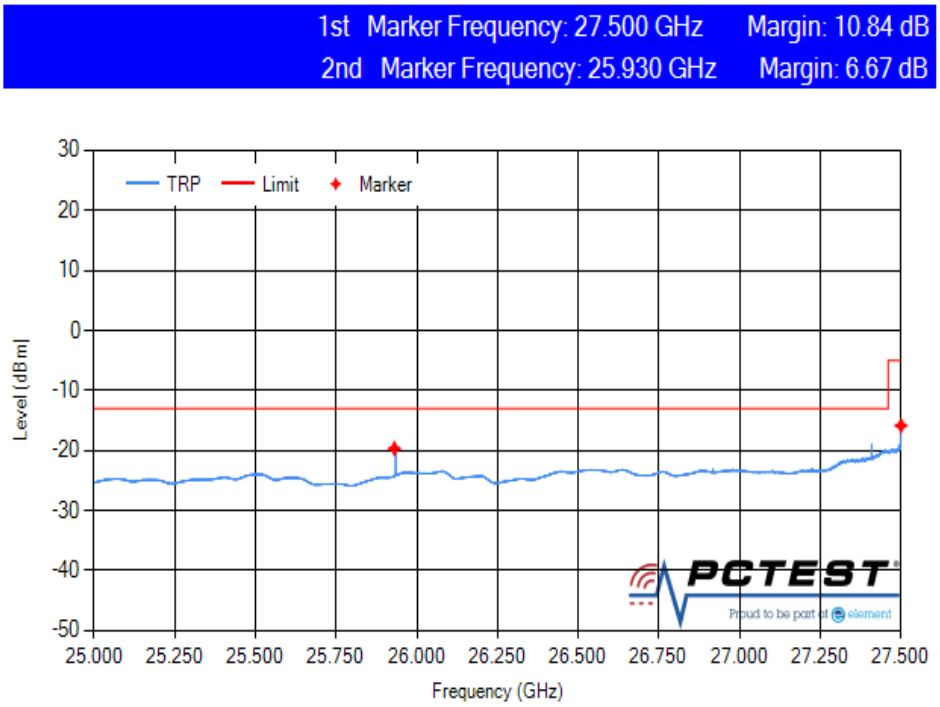
Plot 7-329. RSE 18 GHz – 27.5 GHz (50 MHz BW 2CC + 100 MHz BW 3CC CC QPSK Low Ant. Angle 45, Final)



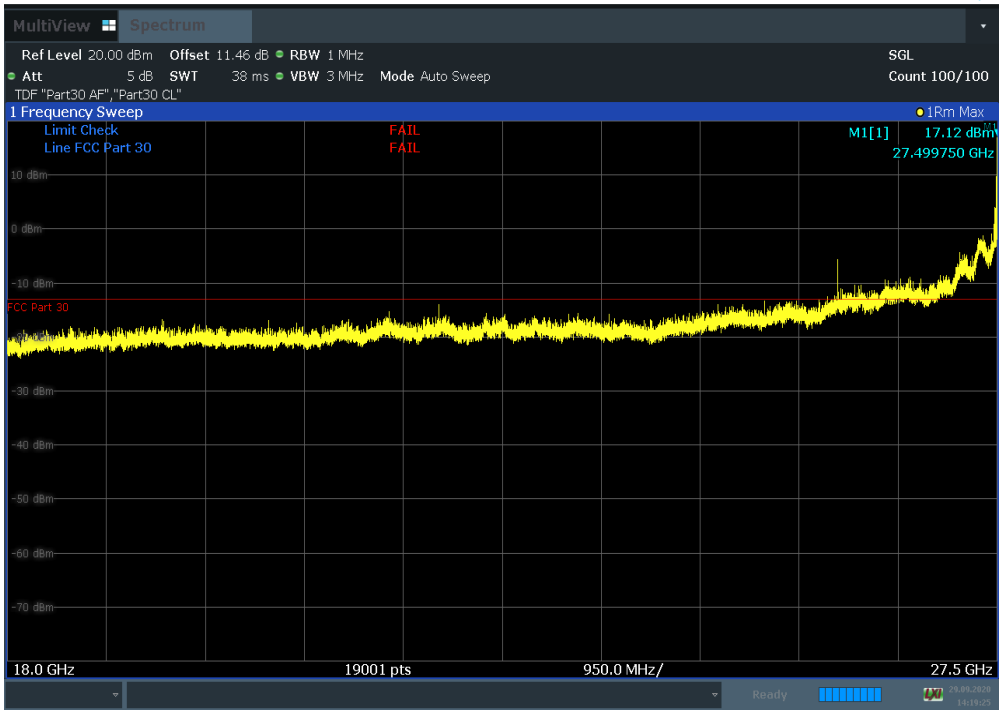
Plot 7-330. RSE 18 GHz – 27.5 GHz (50 MHz BW 2CC + 100 MHz BW 3CC CC QPSK Low Ant. Angle 135)



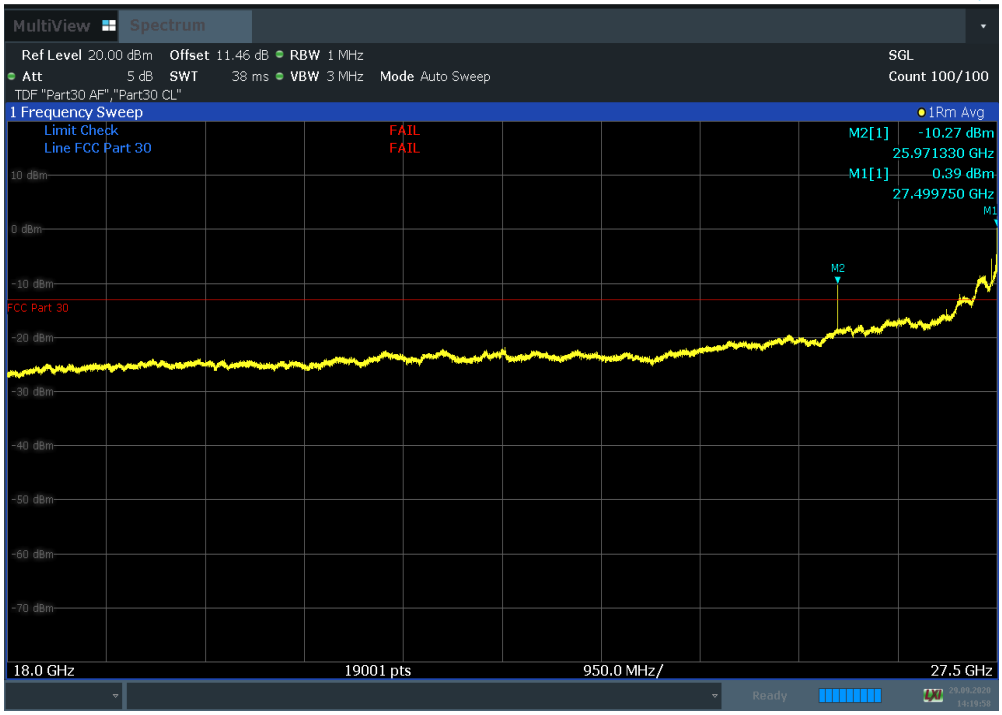
Plot 7-331. RSE 18 GHz – 27.5 GHz (50 MHz BW 2CC + 100 MHz BW 3CC CC QPSK Low Ant. Angle 135, Final)



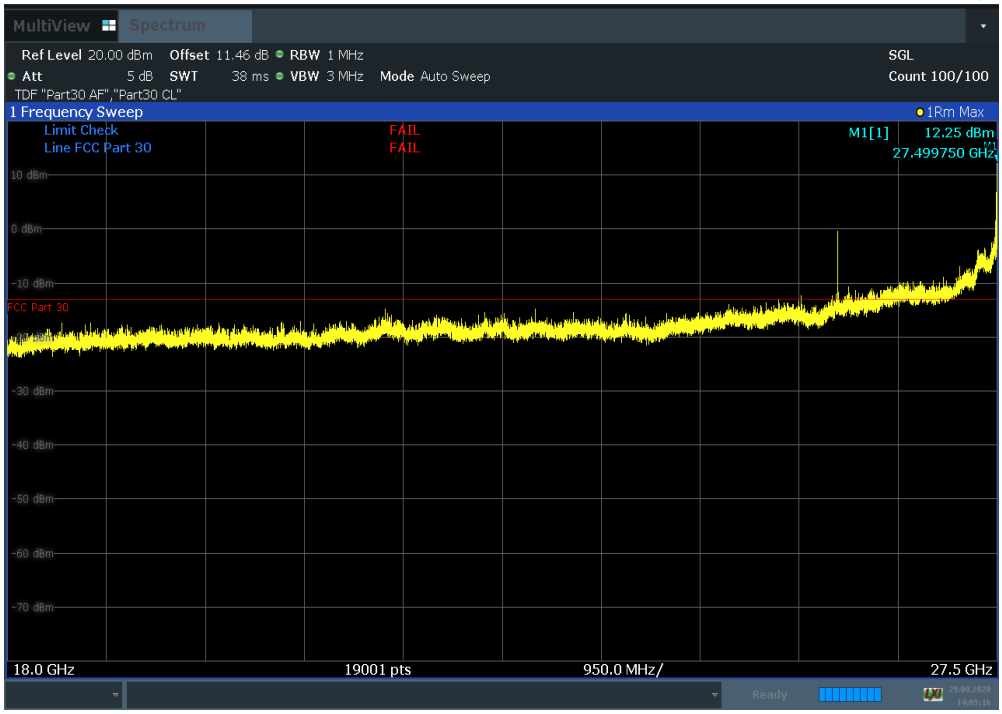
Plot 7-332. RSE 25 GHz – 27.5 GHz (50 MHz BW 2CC + 100 MHz BW 3CC CC QPSK Low TRP)



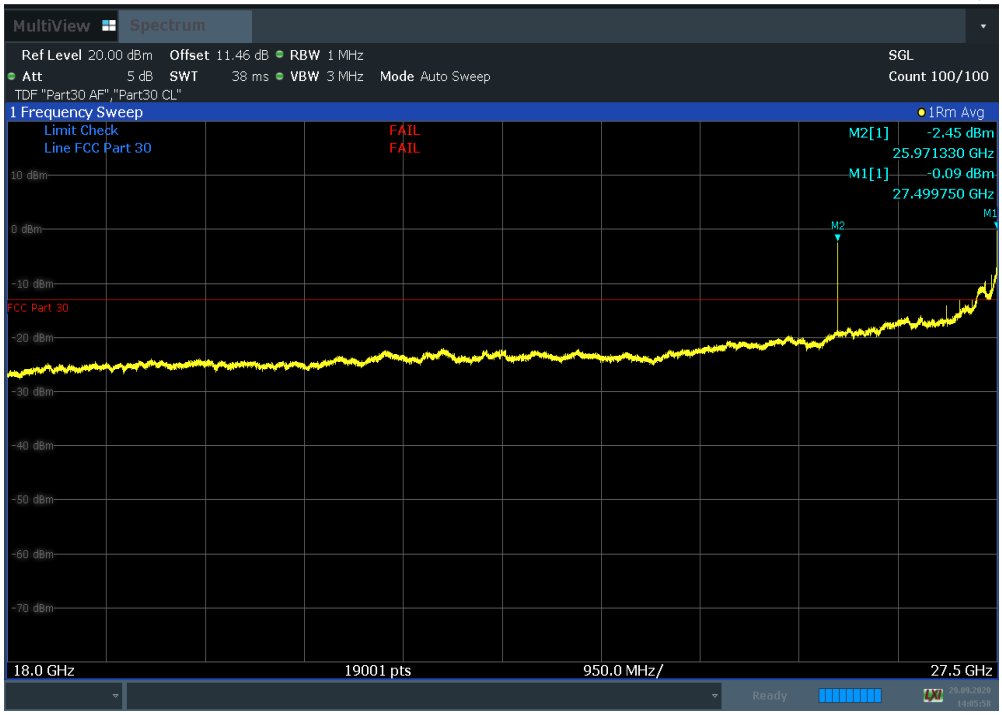
Plot 7-333. RSE 18 GHz – 27.5 GHz (50 MHz BW 2CC + 100 MHz BW 3CC NC QPSK Low Ant. Angle 45)



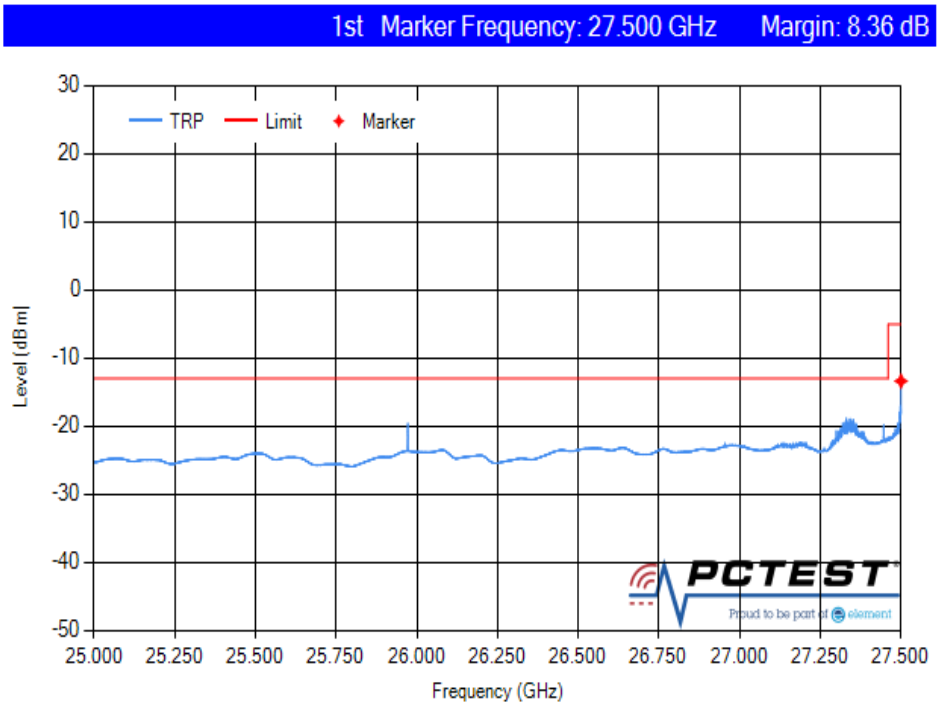
Plot 7-334. RSE 18 GHz – 27.5 GHz (50 MHz BW 2CC + 100 MHz BW 3CC NC QPSK Low Ant. Angle 45, Final)



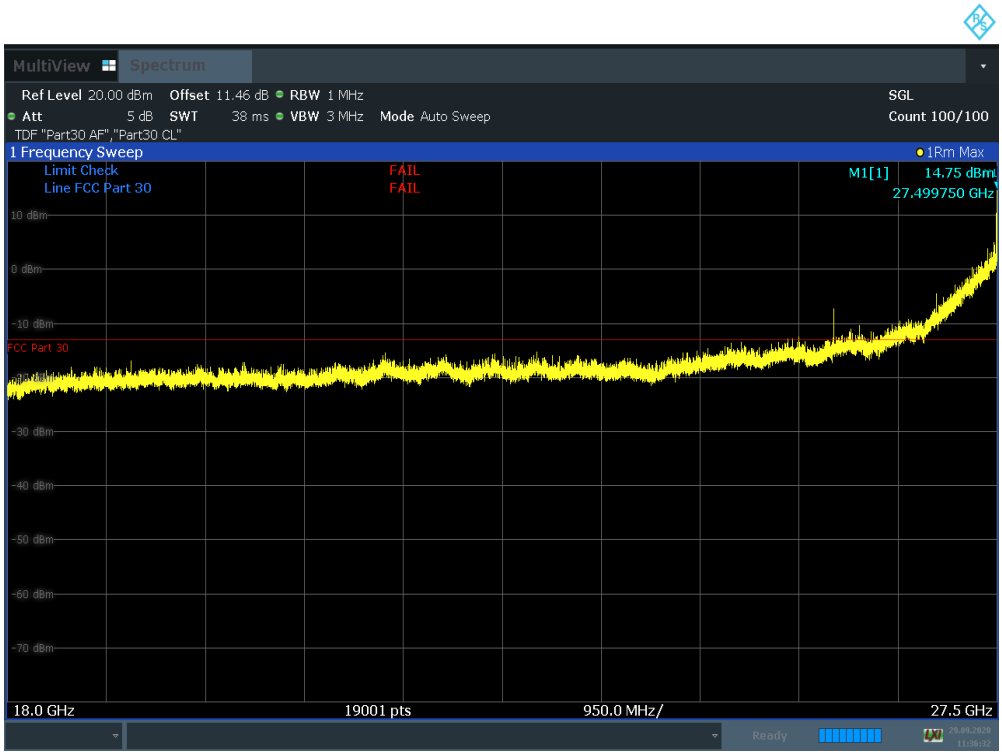
Plot 7-335. RSE 18 GHz – 27.5 GHz (50 MHz BW 2CC + 100 MHz BW 3CC NC QPSK Low Ant. Angle 135)



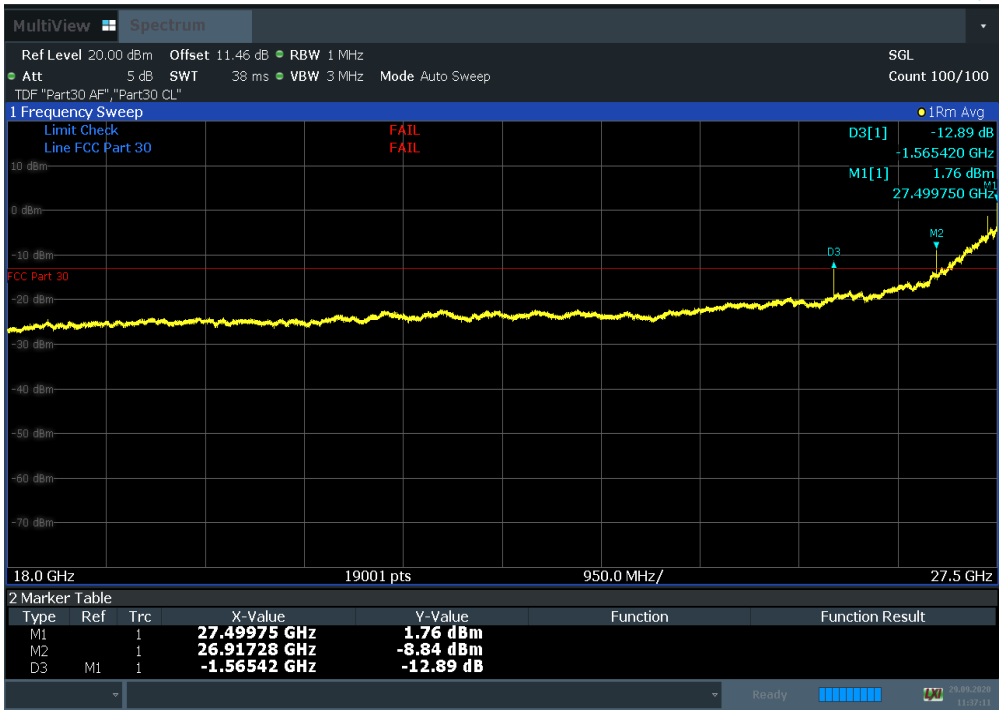
Plot 7-336. RSE 18 GHz – 27.5 GHz (50 MHz BW 2CC + 100 MHz BW 3CC NC QPSK Low Ant. Angle 135, Final)



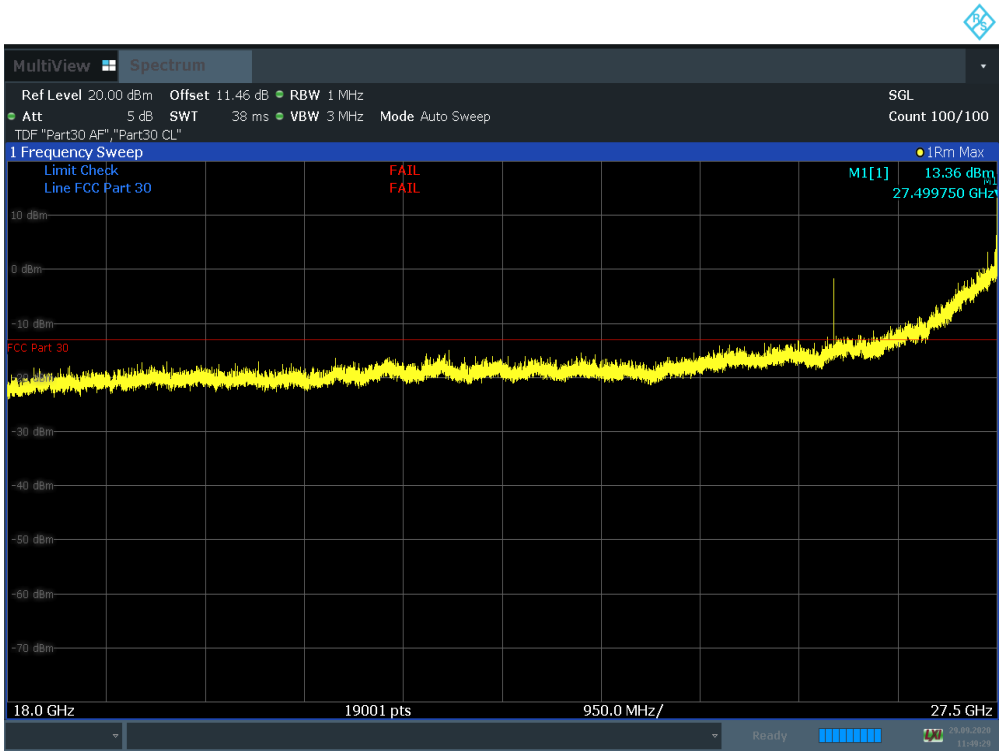
Plot 7-337. RSE 25 GHz – 27.5 GHz (50 MHz BW 2CC + 100 MHz BW 3CC NC QPSK Low TRP)



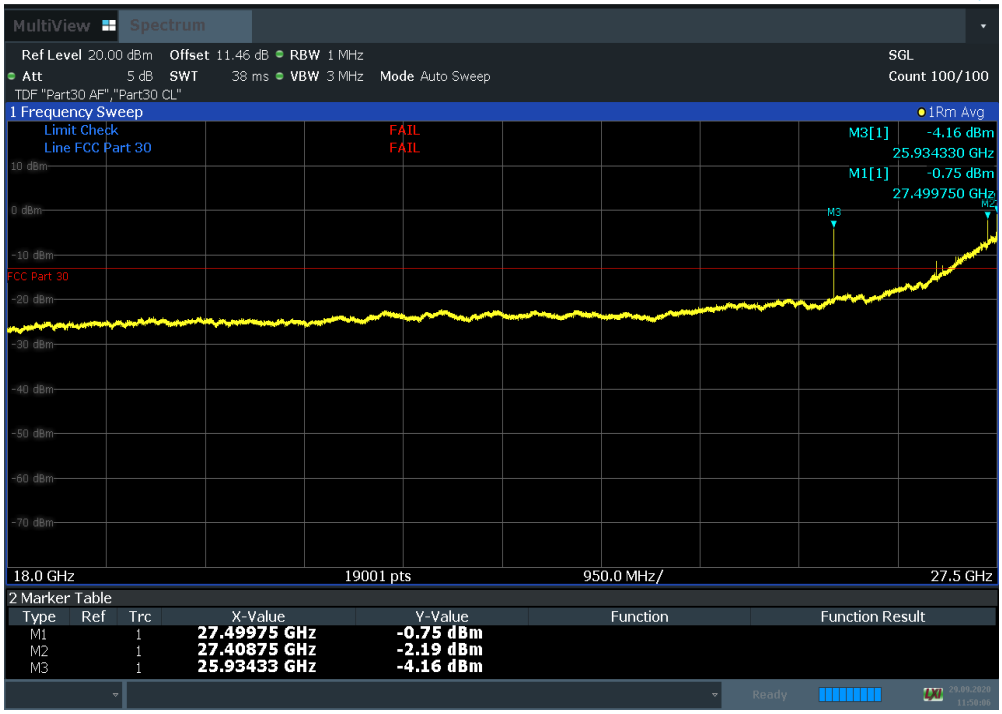
Plot 7-338. RSE 18 GHz – 27.5 GHz (50 MHz BW 2CC + 100 MHz BW 6CC CC QPSK Low Ant. Angle 45)



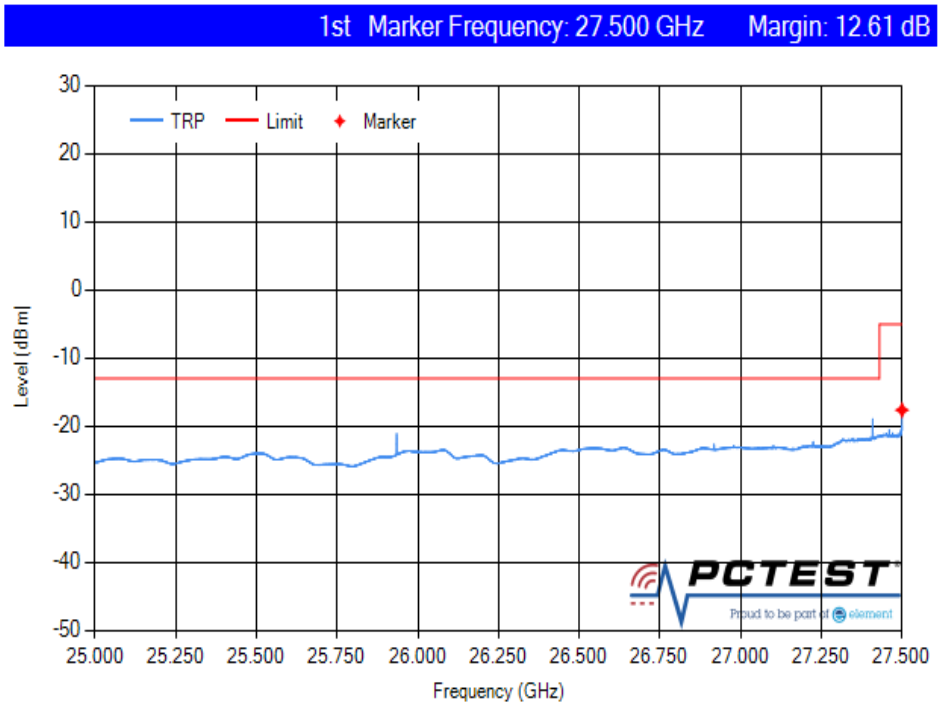
Plot 7-339. RSE 18 GHz – 27.5 GHz (50 MHz BW 2CC + 100 MHz BW 6CC CC QPSK Low Ant. Angle 45, Final)



Plot 7-340. RSE 18 GHz – 27.5 GHz (50 MHz BW 2CC + 100 MHz BW 6CC CC QPSK Low Ant. Angle 135)



Plot 7-341. RSE 18 GHz – 27.5 GHz (50 MHz BW 2CC + 100 MHz BW 6CC CC QPSK Low Ant. Angle 135, Final)



Plot 7-342. RSE 25 GHz – 27.5 GHz (50 MHz BW 2CC + 100 MHz BW 6CC CC QPSK Low TRP)