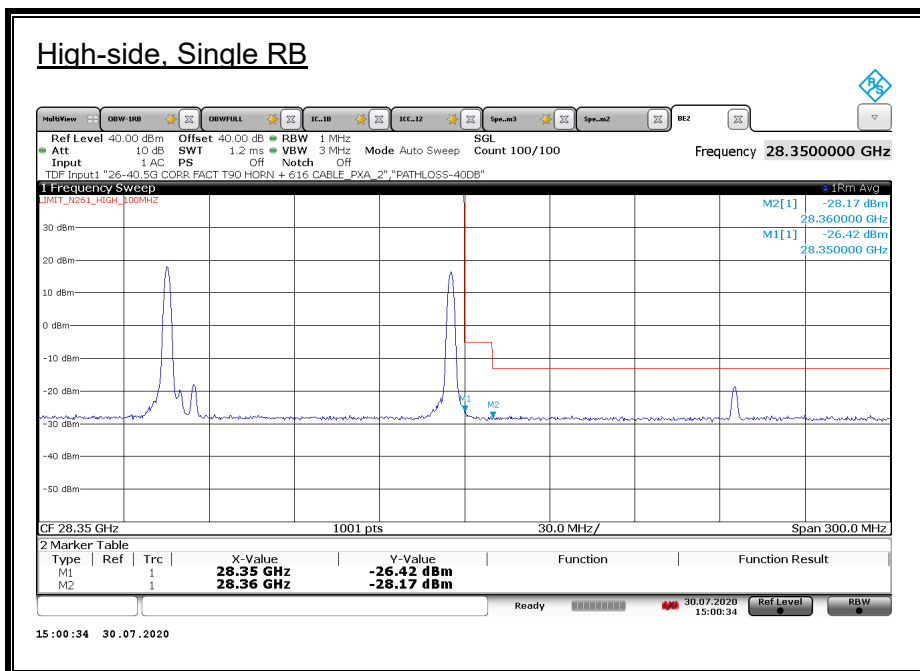
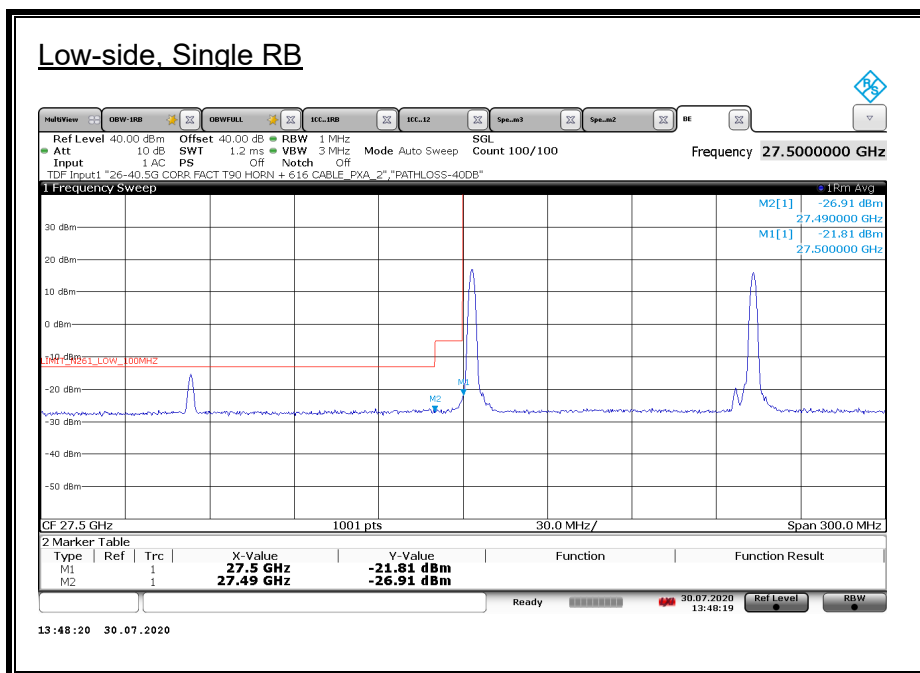
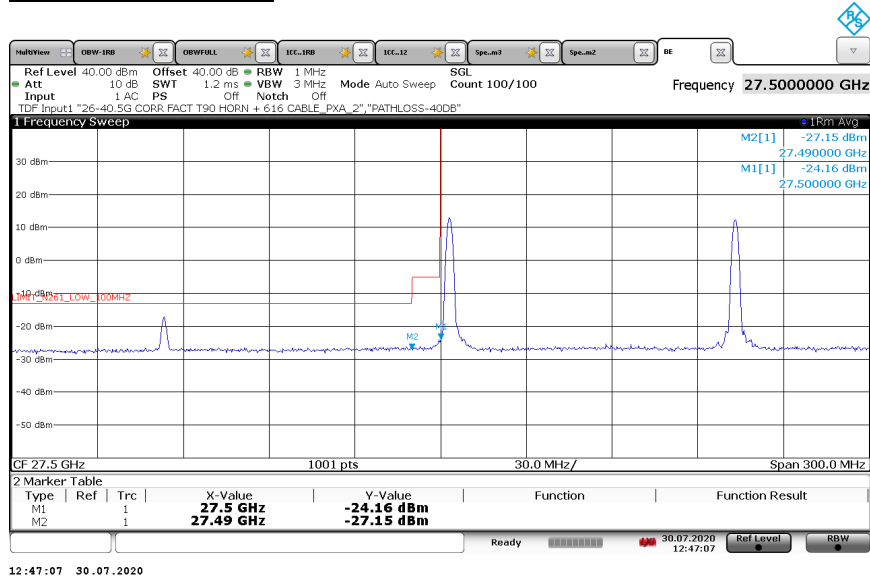


ANT M1, 100 MHz, SISO-DUAL, 2CC, QPSK

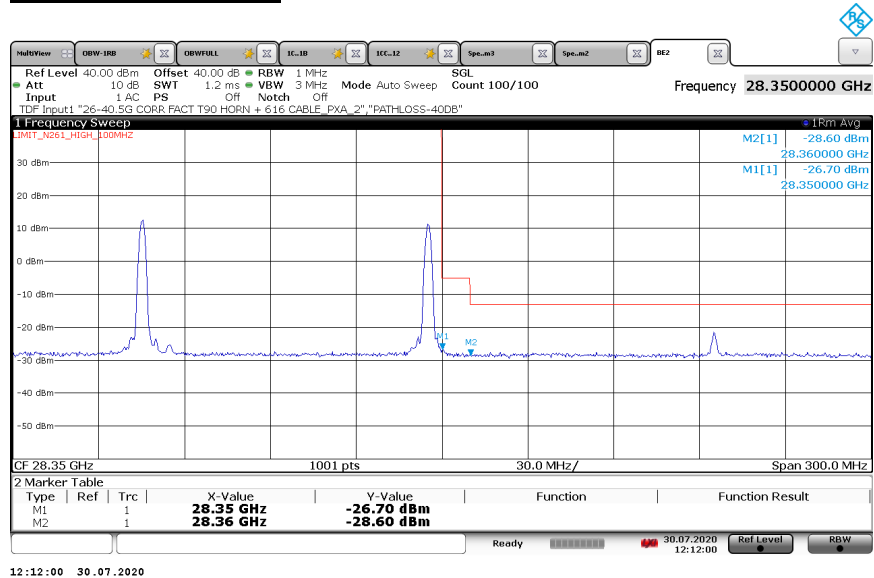


ANT M2, 100 MHz, SISO-DUAL, 2CC, QPSK

Low-side, Single RB



High-side, Single RB



ANT M1 & M2, 100 MHz, SISO-DUAL, 2CC, QPSK

Antenna	BW	Channel	RB	Freq.	Avg EIRP	Avg TRP Limit	Margin
	(MHz)		(Size Offset)	(GHz)	(dBm)	(dBm)	(dB)
M1	100	L	1/0	27.5	-21.81	-5	-16.81
M1	100	L	1/0	27.49	-26.91	-13	-13.91
M2	100	L	1/0	27.5	-24.16	-5	-19.16
M2	100	L	1/0	27.49	-27.15	-13	-14.15
M1	100	H	1/64	28.35	-26.42	-5	-21.42
M1	100	H	1/64	28.36	-28.17	-13	-15.17
M2	100	H	1/64	28.35	-26.70	-5	-21.70
M2	100	H	1/64	28.36	-28.60	-13	-15.60

ANT M1 & M2, 100 MHz, SISO-DUAL, 2CC, BPSK

Antenna	BW	Channel	RB	Freq.	Avg EIRP	Avg TRP Limit	Margin
	(MHz)		(Size Offset)	(GHz)	(dBm)	(dBm)	(dB)
M1	100	L	1/0	27.5	-23.41	-5	-18.41
M1	100	L	1/0	27.49	-28.46	-13	-15.46
M2	100	L	1/0	27.5	-23.80	-5	-18.80
M2	100	L	1/0	27.49	-28.45	-13	-15.45
M1	100	H	1/64	28.35	-26.01	-5	-21.01
M1	100	H	1/64	28.36	-28.65	-13	-15.65
M2	100	H	1/64	28.35	-27.58	-5	-22.58
M2	100	H	1/64	28.36	-23.37	-13	-10.37

ANT M1 & M2, 100 MHz, SISO-DUAL, 2CC, 16QAM

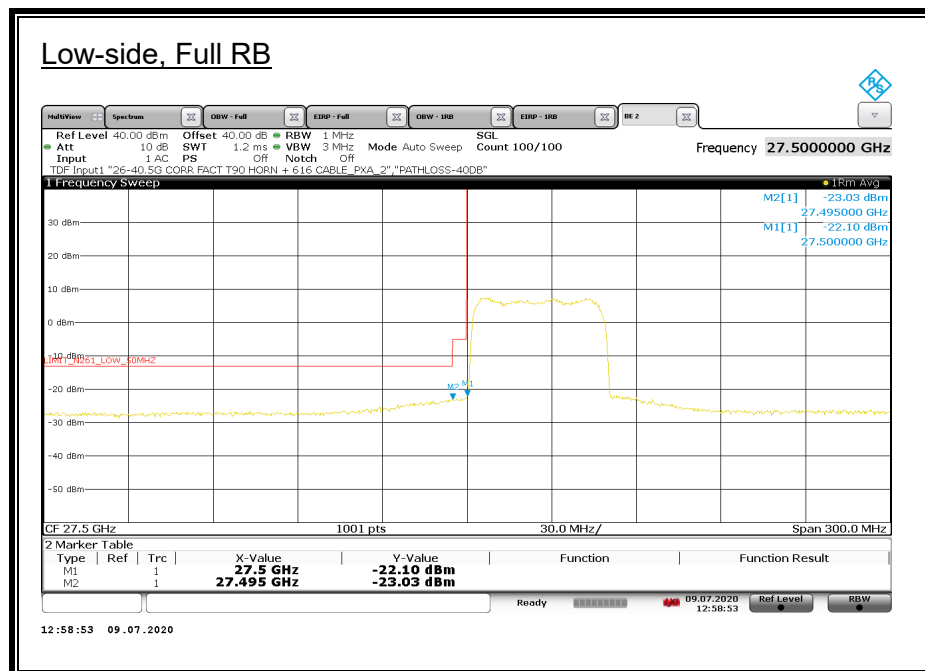
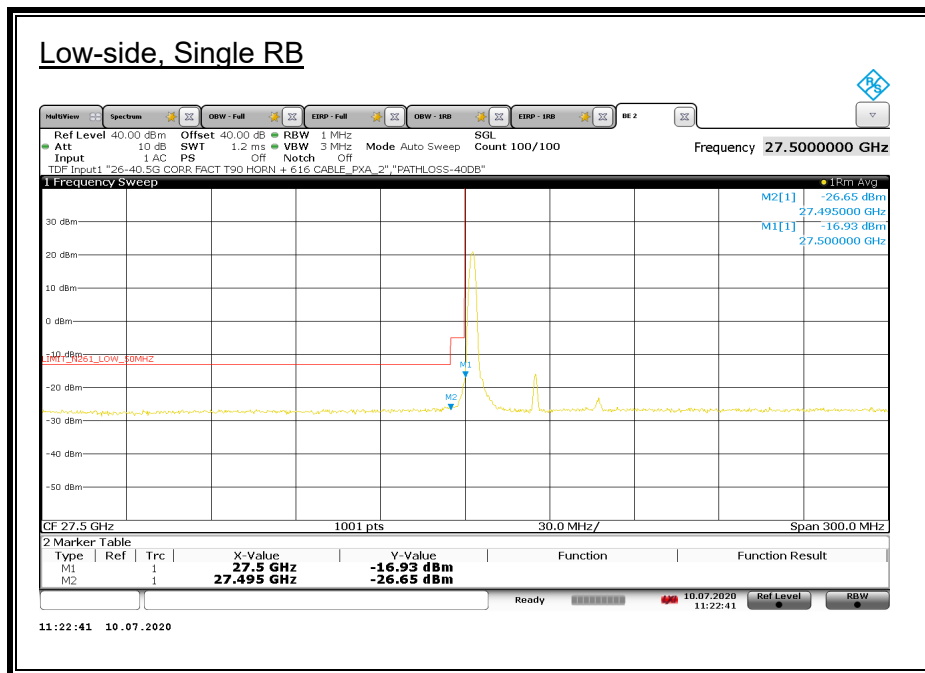
Antenna	BW	Channel	RB	Freq.	Avg EIRP	Avg TRP Limit	Margin
	(MHz)		(Size Offset)	(GHz)	(dBm)	(dBm)	(dB)
M1	100	L	1/0	27.5	-22.50	-5	-17.50
M1	100	L	1/0	27.49	-26.68	-13	-13.68
M2	100	L	1/0	27.5	-25.12	-5	-20.12
M2	100	L	1/0	27.49	-26.72	-13	-13.72
M1	100	H	1/64	28.35	-26.31	-5	-21.31
M1	100	H	1/64	28.36	-27.94	-13	-14.94
M2	100	H	1/64	28.35	-27.36	-5	-22.36
M2	100	H	1/64	28.36	-28.97	-13	-15.97

ANT M1 & M2, 100 MHz, SISO-DUAL, 2CC, 64QAM

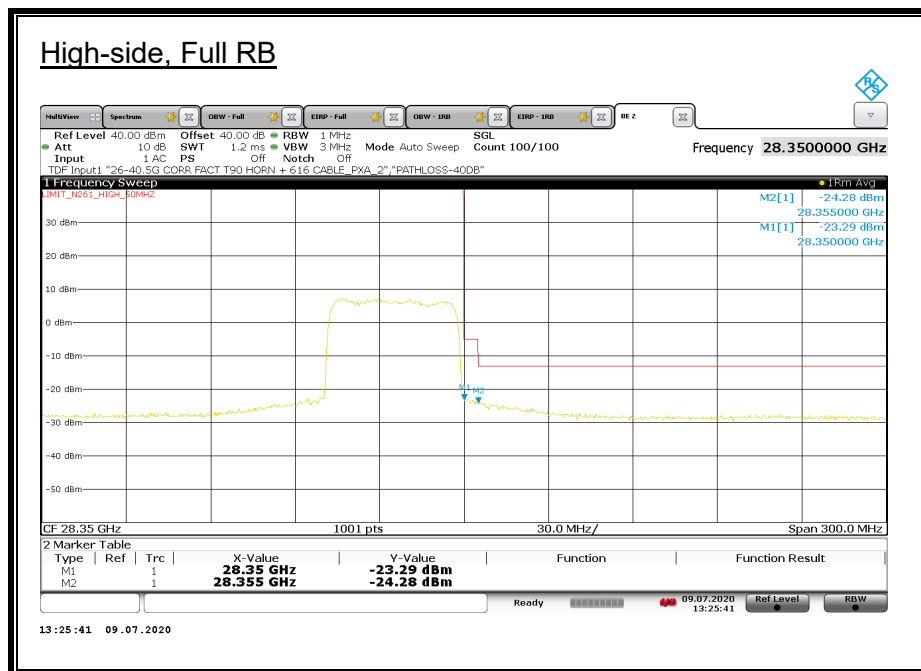
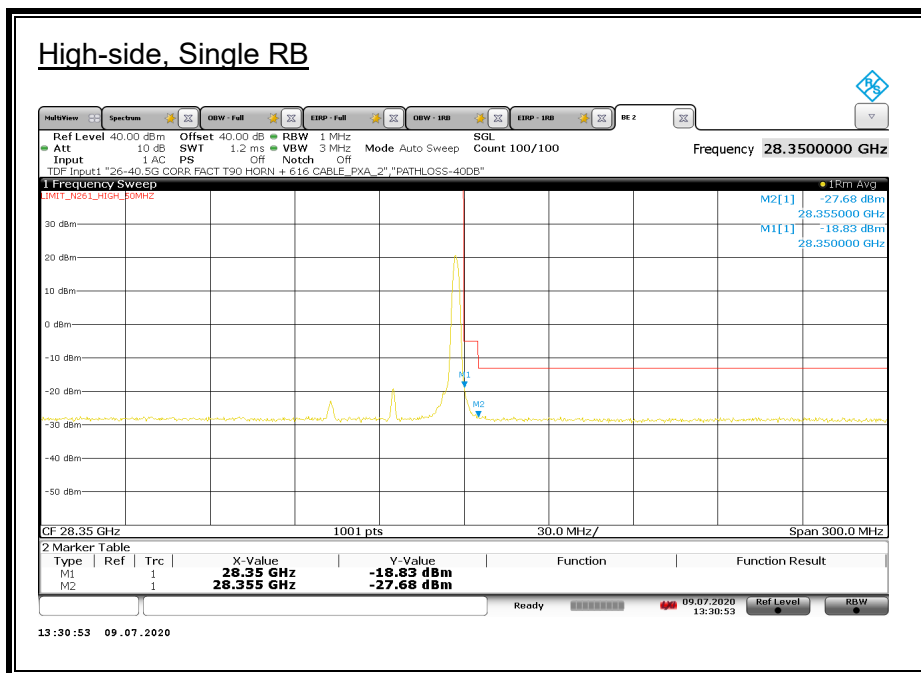
Antenna	BW	Channel	RB	Freq.	Avg EIRP	Avg TRP Limit	Margin
	(MHz)		(Size Offset)	(GHz)	(dBm)	(dBm)	(dB)
M1	100	L	1/0	27.5	-25.34	-5	-20.34
M1	100	L	1/0	27.49	-26.68	-13	-13.68
M2	100	L	1/0	27.5	-25.29	-5	-20.29
M2	100	L	1/0	27.49	-26.57	-13	-13.57
M1	100	H	1/64	28.35	-27.24	-5	-22.24
M1	100	H	1/64	28.36	-28.07	-13	-15.07
M2	100	H	1/64	28.35	-28.02	-5	-23.02
M2	100	H	1/64	28.36	-28.98	-13	-15.98

8.3.7. BAND EDGE RESULTS n261 MIMO 1CC

ANT M1, 50 MHz, MIMO, 1CC, QPSK

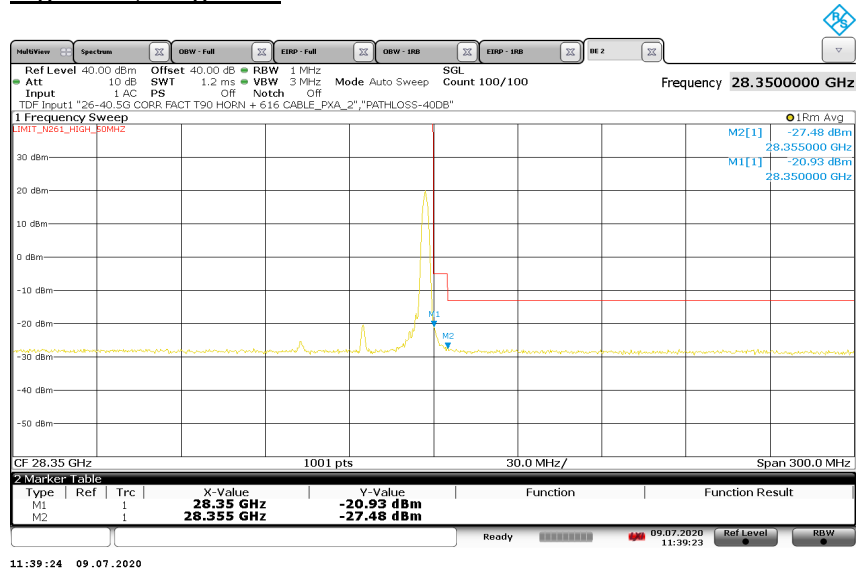


ANT M1, 50 MHz, MIMO, 1CC, QPSK

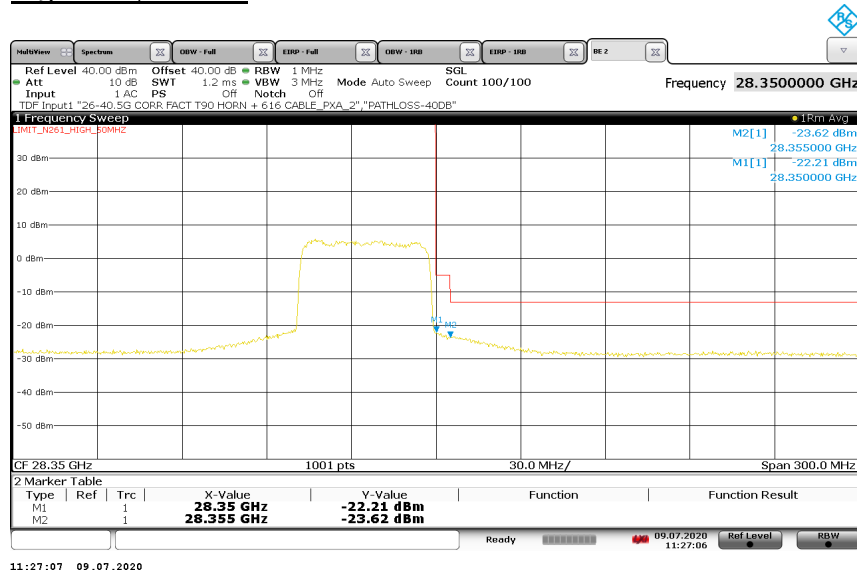


ANT M2, 50 MHz, MIMO, 1CC, QPSK

High-side, Single RB



High-side, Full RB



ANT M1 & M2, 50 MHz, MIMO, 1CC, QPSK

Antenna	BW	Channel	RB	Freq.	Avg EIRP	Avg TRP Limit	Margin
	(MHz)		(Size Offset)	(GHz)	(dBm)	(dBm)	(dB)
M1	50	L	1/0	27.5	-16.93	-5	-11.93
M1	50	L	1/0	27.495	-26.65	-13	-13.65
M2	50	L	1/0	27.5	-16.60	-5	-11.60
M2	50	L	1/0	27.495	-26.36	-13	-13.36
M1	50	L	32/0	27.5	-22.10	-5	-17.10
M1	50	L	32/0	27.495	-23.03	-13	-10.03
M2	50	L	32/0	27.5	-20.62	-5	-15.62
M2	50	L	32/0	27.495	-21.93	-13	-8.93
M1	50	H	1/32	28.35	-18.83	-5	-13.83
M1	50	H	1/32	28.355	-27.68	-13	-14.68
M2	50	H	1/32	28.35	-20.93	-5	-15.93
M2	50	H	1/32	28.355	-27.48	-13	-14.48
M1	50	H	32/0	28.35	-23.29	-5	-18.29
M1	50	H	32/0	28.355	-24.28	-13	-11.28
M2	50	H	32/0	28.35	-22.21	-5	-17.21
M2	50	H	32/0	28.355	-23.62	-13	-10.62

ANT M1 & M2, 50 MHz, MIMO, 1CC, BPSK

Antenna	BW	Channel	RB	Freq.	Avg EIRP	Avg TRP Limit	Margin
	(MHz)		(Size Offset)	(GHz)	(dBm)	(dBm)	(dB)
M1	50	L	1/0	27.5	-17.51	-5	-12.51
M1	50	L	1/0	27.495	-27.07	-13	-14.07
M2	50	L	1/0	27.5	-19.05	-5	-14.05
M2	50	L	1/0	27.495	-26.32	-13	-13.32
M1	50	L	32/0	27.5	-25.48	-5	-20.48
M1	50	L	32/0	27.495	-26.20	-13	-13.20
M2	50	L	32/0	27.5	-25.87	-5	-20.87
M2	50	L	32/0	27.495	-26.17	-13	-13.17
M1	50	H	1/32	28.35	-20.60	-5	-15.60
M1	50	H	1/32	28.355	-27.68	-13	-14.68
M2	50	H	1/32	28.35	-22.61	-5	-17.61
M2	50	H	1/32	28.355	-27.46	-13	-14.46
M1	50	H	32/0	28.35	-26.30	-5	-21.30
M1	50	H	32/0	28.355	-25.30	-13	-12.30
M2	50	H	32/0	28.35	-26.78	-5	-21.78
M2	50	H	32/0	28.355	-27.17	-13	-14.17

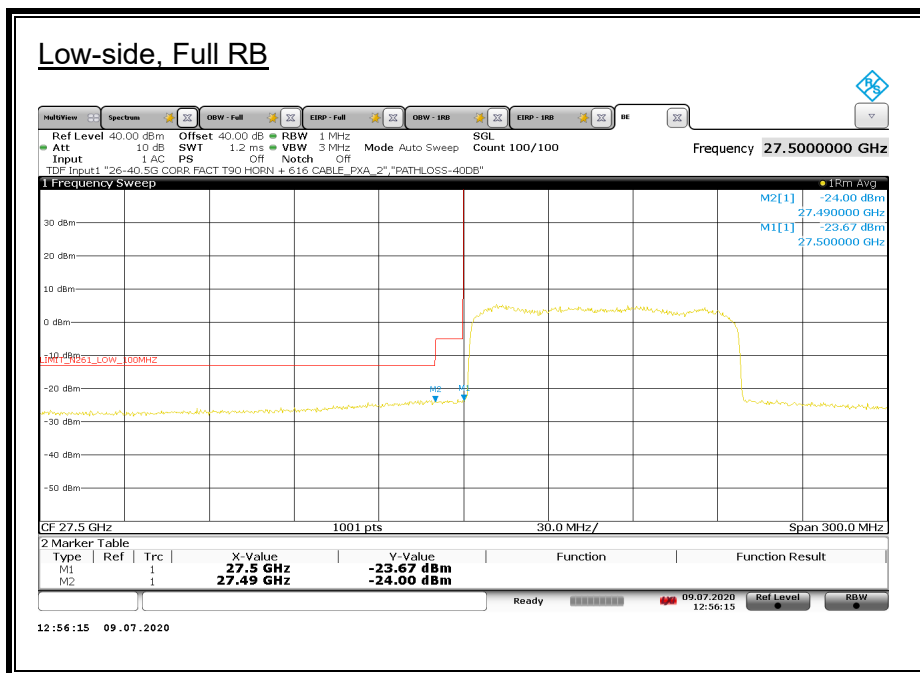
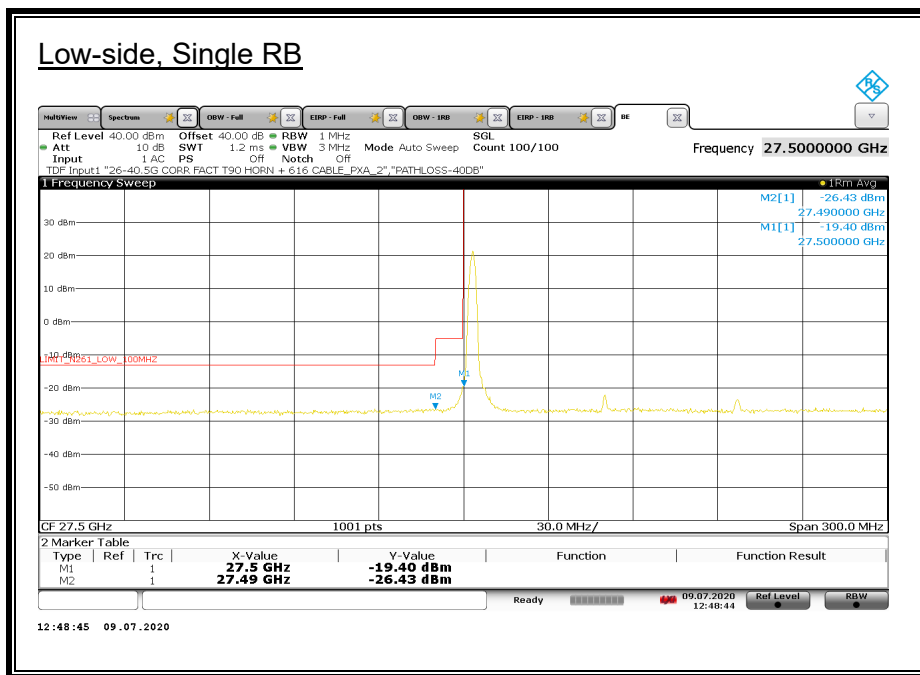
ANT M1 & M2, 50 MHz, MIMO, 1CC, 16QAM

Antenna	BW	Channel	RB	Freq.	Avg EIRP	Avg TRP Limit	Margin
	(MHz)		(Size Offset)	(GHz)	(dBm)	(dBm)	(dB)
M1	50	L	1/0	27.5	-17.79	-5	-12.79
M1	50	L	1/0	27.495	-26.58	-13	-13.58
M2	50	L	1/0	27.5	-18.87	-5	-13.87
M2	50	L	1/0	27.495	-26.89	-13	-13.89
M1	50	L	32/0	27.5	-23.24	-5	-18.24
M1	50	L	32/0	27.495	-23.67	-13	-10.67
M2	50	L	32/0	27.5	-22.22	-5	-17.22
M2	50	L	32/0	27.495	-23.97	-13	-10.97
M1	50	H	1/32	28.35	-19.72	-5	-14.72
M1	50	H	1/32	28.355	-27.84	-13	-14.84
M2	50	H	1/32	28.35	-20.26	-5	-15.26
M2	50	H	1/32	28.355	-27.94	-13	-14.94
M1	50	H	32/0	28.35	-25.04	-5	-20.04
M1	50	H	32/0	28.355	-25.56	-13	-12.56
M2	50	H	32/0	28.35	-23.58	-5	-18.58
M2	50	H	32/0	28.355	-25.27	-13	-12.27

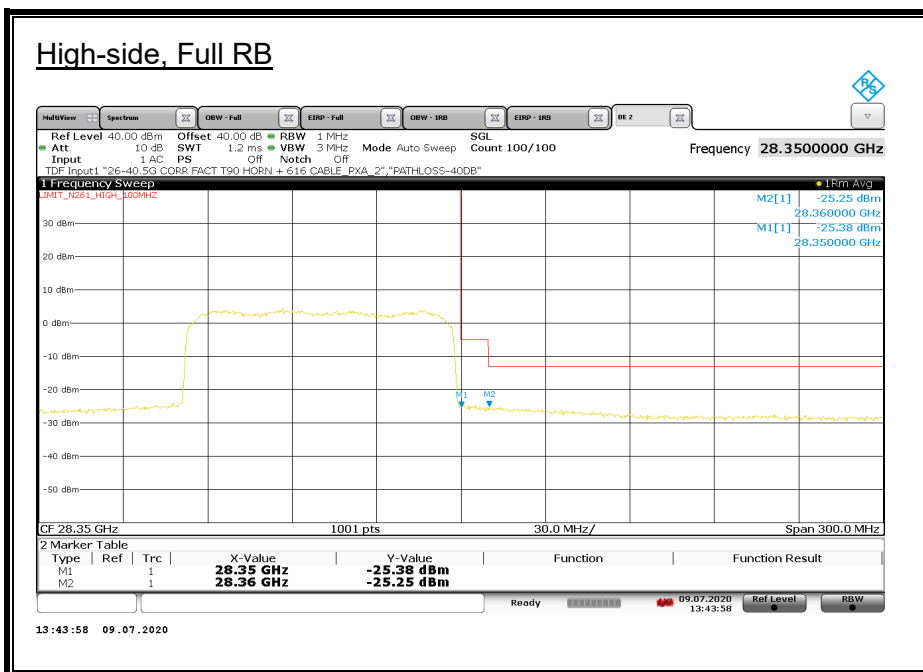
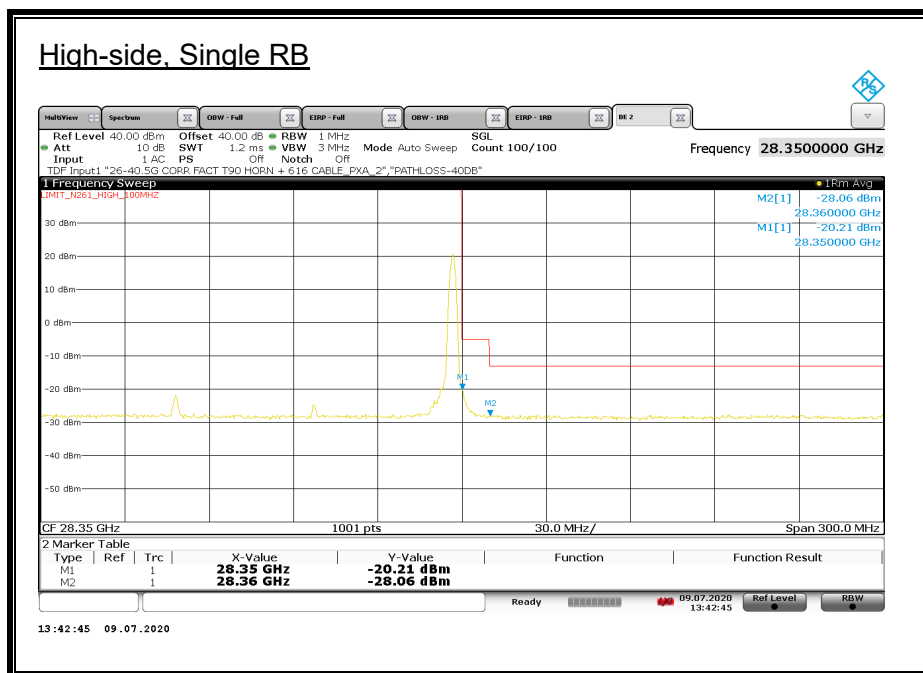
ANT M1 & M2, 50 MHz, MIMO, 1CC, 64QAM

Antenna	BW	Channel	RB	Freq.	Avg EIRP	Avg TRP Limit	Margin
	(MHz)		(Size Offset)	(GHz)	(dBm)	(dBm)	(dB)
M1	50	L	1/0	27.5	-20.48	-5	-15.48
M1	50	L	1/0	27.495	-26.55	-13	-13.55
M2	50	L	1/0	27.5	-20.17	-5	-15.17
M2	50	L	1/0	27.495	-26.29	-13	-13.29
M1	50	L	32/0	27.5	-25.07	-5	-20.07
M1	50	L	32/0	27.495	-25.20	-13	-12.20
M2	50	L	32/0	27.5	-24.34	-5	-19.34
M2	50	L	32/0	27.495	-25.82	-13	-12.82
M1	50	H	1/32	28.35	-22.09	-5	-17.09
M1	50	H	1/32	28.355	-28.08	-13	-15.08
M2	50	H	1/32	28.35	-23.51	-5	-18.51
M2	50	H	1/32	28.355	-28.33	-13	-15.33
M1	50	H	32/0	28.35	-26.23	-5	-21.23
M1	50	H	32/0	28.355	-27.02	-13	-14.02
M2	50	H	32/0	28.35	-25.53	-5	-20.53
M2	50	H	32/0	28.355	-26.02	-13	-13.02

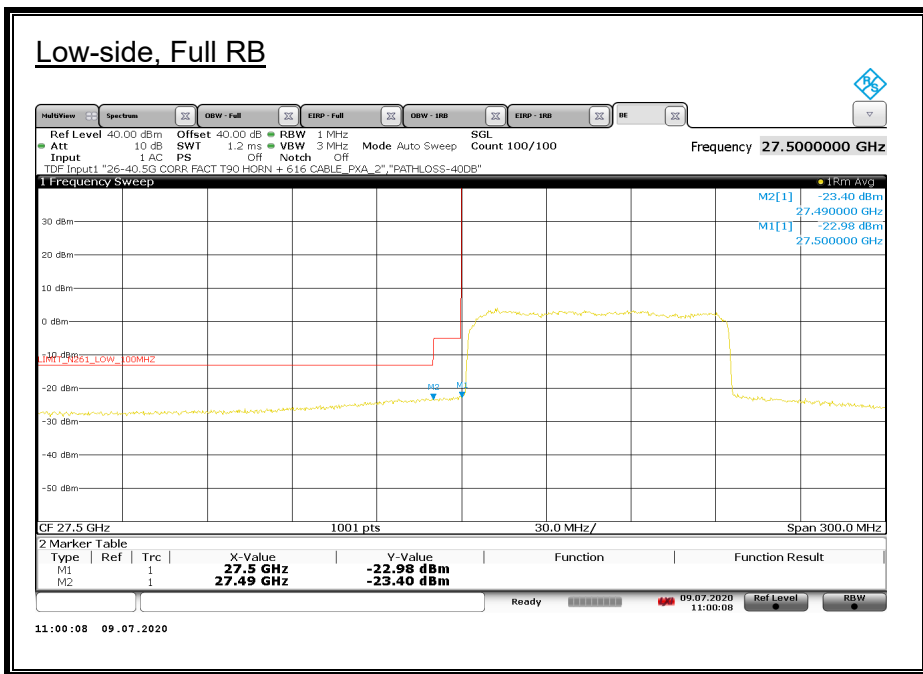
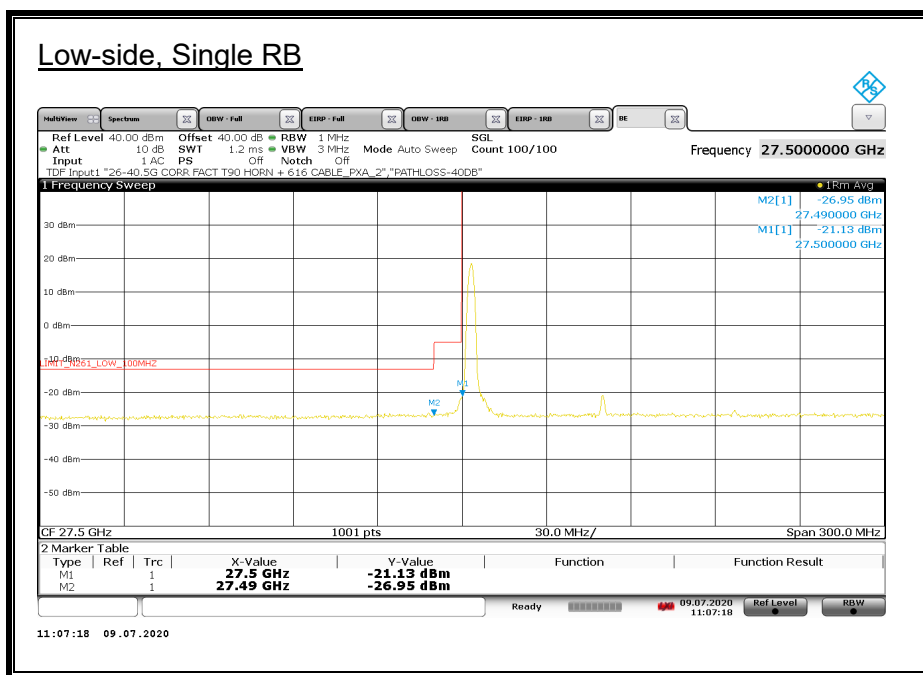
ANT M1, 100 MHz, MIMO, 1CC, QPSK



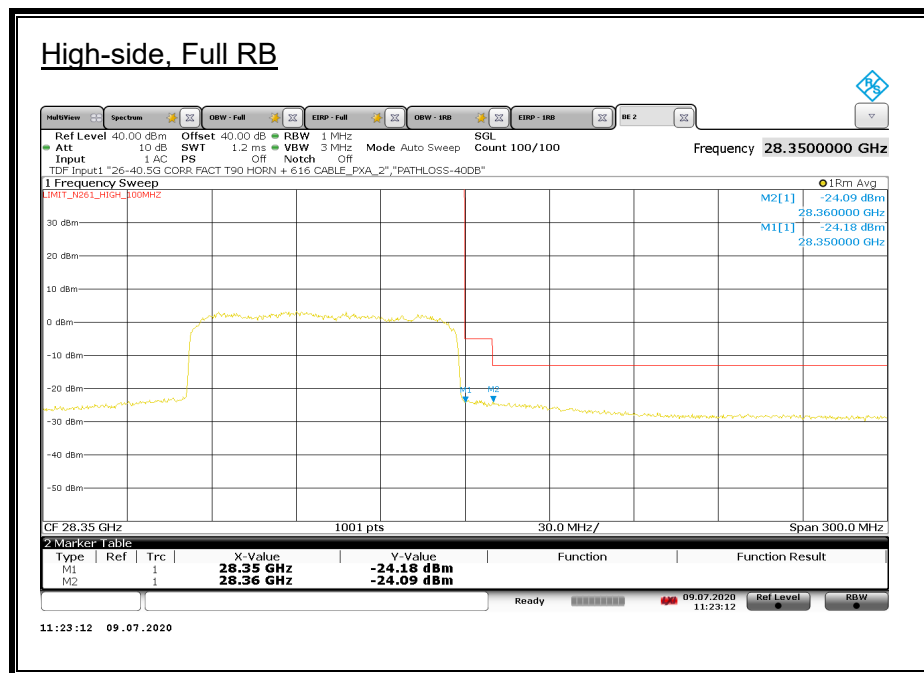
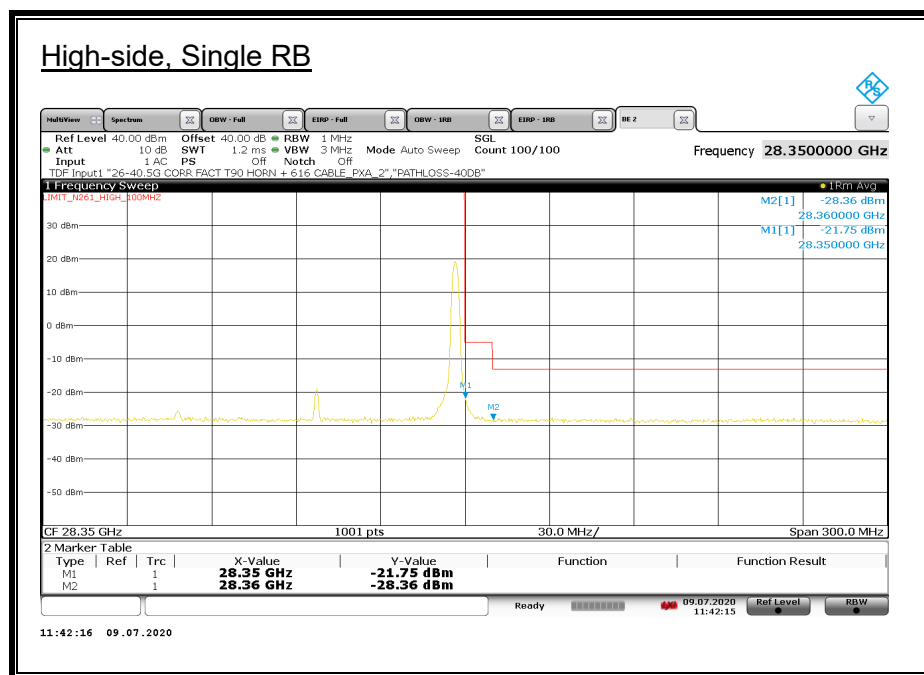
ANT M1, 100 MHz, MIMO, 1CC, QPSK



ANT M2, 100 MHz, MIMO, 1CC, QPSK



ANT M2, 100 MHz, MIMO, 1CC, QPSK



ANT M1 & M2, 100 MHz, MIMO, 1CC, QPSK

Antenna	BW	Channel	RB	Freq.	Avg EIRP	Avg TRP Limit	Margin
	(MHz)		(Size Offset)	(GHz)	(dBm)	(dBm)	(dB)
M1	100	L	1/0	27.5	-19.40	-5	-14.40
M1	100	L	1/0	27.49	-26.43	-13	-13.43
M2	100	L	1/0	27.5	-21.13	-5	-16.13
M2	100	L	1/0	27.49	-26.95	-13	-13.95
M1	100	L	66/0	27.5	-23.67	-5	-18.67
M1	100	L	66/0	27.49	-24.00	-13	-11.00
M2	100	L	66/0	27.5	-22.98	-5	-17.98
M2	100	L	66/0	27.49	-23.40	-13	-10.40
M1	100	H	1/66	28.35	-20.21	-5	-15.21
M1	100	H	1/66	28.36	-28.06	-13	-15.06
M2	100	H	1/66	28.35	-21.75	-5	-16.75
M2	100	H	1/66	28.36	-28.36	-13	-15.36
M1	100	H	66/0	28.35	-25.38	-5	-20.38
M1	100	H	66/0	28.36	-25.25	-13	-12.25
M2	100	H	66/0	28.35	-24.18	-5	-19.18
M2	100	H	66/0	28.36	-24.09	-13	-11.09

ANT M1 & M2, 100 MHz, MIMO, 1CC, BPSK

Antenna	BW	Channel	RB	Freq.	Avg EIRP	Avg TRP Limit	Margin
	(MHz)		(Size Offset)	(GHz)	(dBm)	(dBm)	(dB)
M1	100	L	1/0	27.5	-19.71	-5	-14.71
M1	100	L	1/0	27.49	-26.85	-13	-13.85
M2	100	L	1/0	27.5	-20.85	-5	-15.85
M2	100	L	1/0	27.49	-26.96	-13	-13.96
M1	100	L	66/0	27.5	-25.99	-5	-20.99
M1	100	L	66/0	27.49	-25.95	-13	-12.95
M2	100	L	66/0	27.5	-27.01	-5	-22.01
M2	100	L	66/0	27.49	-27.07	-13	-14.07
M1	100	H	1/66	28.35	-23.06	-5	-18.06
M1	100	H	1/66	28.36	-27.18	-13	-14.18
M2	100	H	1/66	28.35	-23.52	-5	-18.52
M2	100	H	1/66	28.36	-27.73	-13	-14.73
M1	100	H	66/0	28.35	-26.57	-5	-21.57
M1	100	H	66/0	28.36	-26.89	-13	-13.89
M2	100	H	66/0	28.35	-27.30	-5	-22.30
M2	100	H	66/0	28.36	-27.65	-13	-14.65

ANT M1 & M2, 100 MHz, MIMO, 1CC, 16QAM

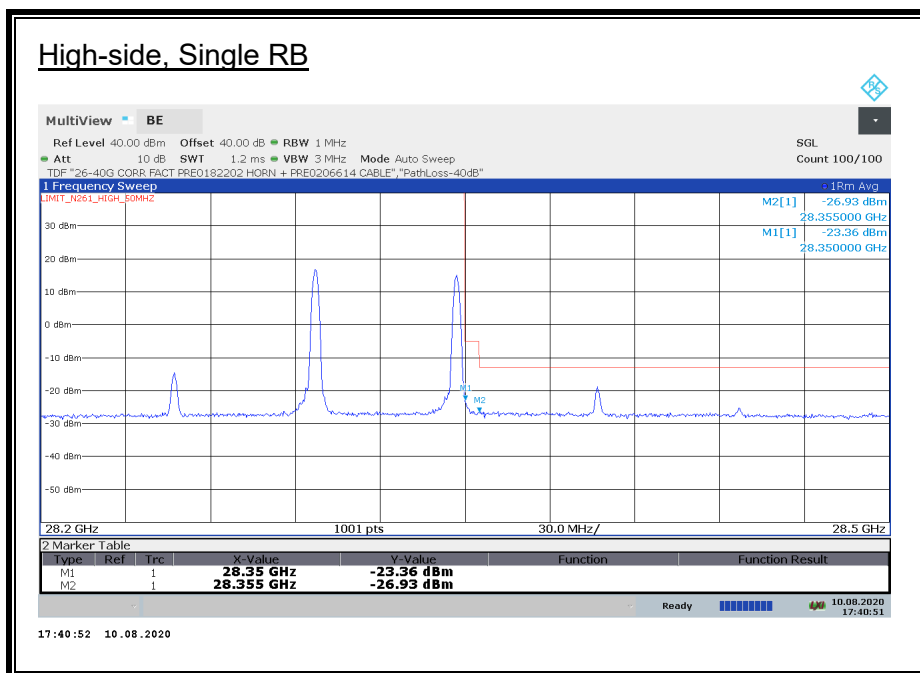
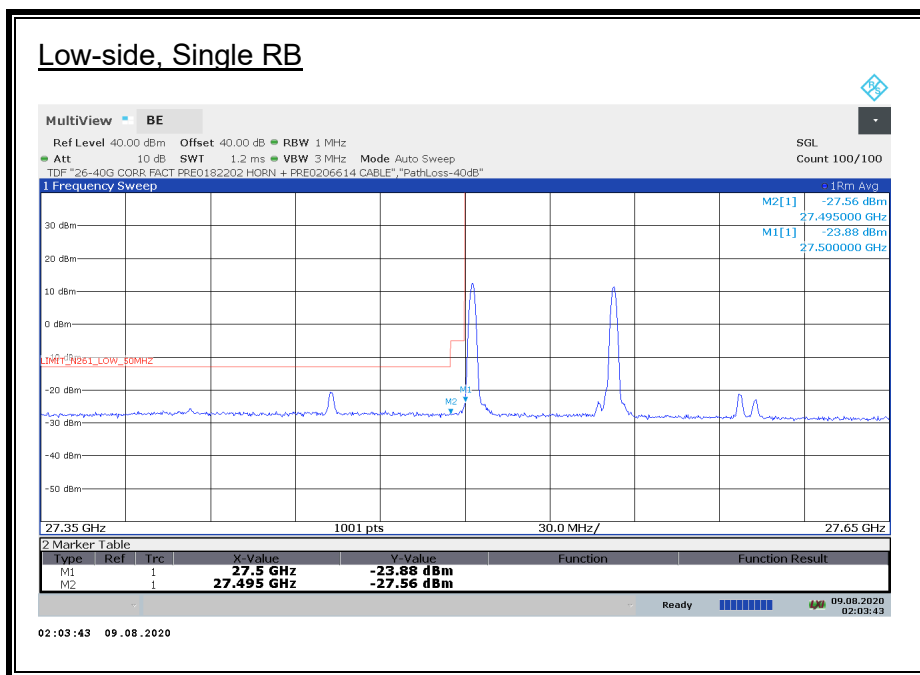
Antenna	BW	Channel	RB	Freq.	Avg EIRP	Avg TRP Limit	Margin
	(MHz)		(Size Offset)	(GHz)	(dBm)	(dBm)	(dB)
M1	100	L	1/0	27.5	-19.83	-5	-14.83
M1	100	L	1/0	27.49	-27.19	-13	-14.19
M2	100	L	1/0	27.5	-20.74	-5	-15.74
M2	100	L	1/0	27.49	-26.71	-13	-13.71
M1	100	L	66/0	27.5	-24.21	-5	-19.21
M1	100	L	66/0	27.49	-24.96	-13	-11.96
M2	100	L	66/0	27.5	-23.88	-5	-18.88
M2	100	L	66/0	27.49	-24.95	-13	-11.95
M1	100	H	1/66	28.35	-22.76	-5	-17.76
M1	100	H	1/66	28.36	28.46	-13	41.46
M2	100	H	1/66	28.35	-22.67	-5	-17.67
M2	100	H	1/66	28.36	-28.46	-13	-15.46
M1	100	H	66/0	28.35	-26.02	-5	-21.02
M1	100	H	66/0	28.36	-27.36	-13	-14.36
M2	100	H	66/0	28.35	-25.47	-5	-20.47
M2	100	H	66/0	28.36	-25.55	-13	-12.55

ANT M1 & M2, 100 MHz, MIMO, 1CC, 64QAM

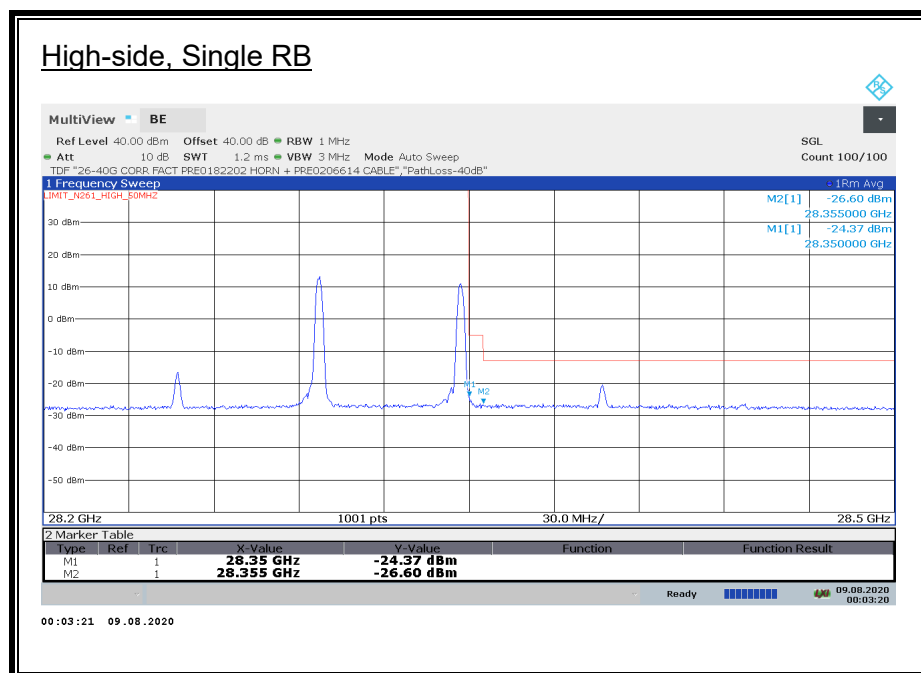
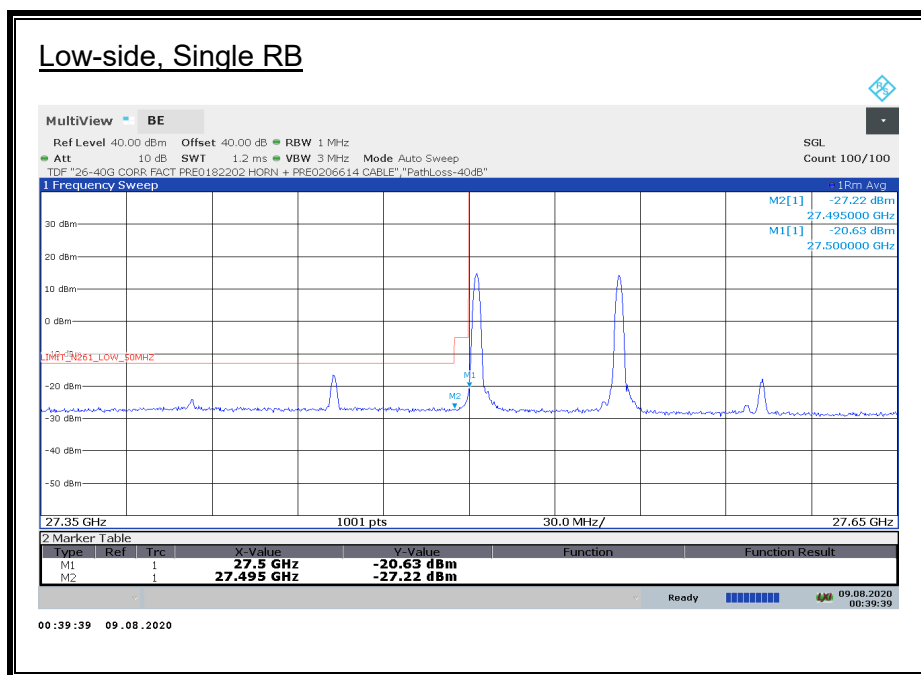
Antenna	BW	Channel	RB	Freq.	Avg EIRP	Avg TRP Limit	Margin
	(MHz)		(Size Offset)	(GHz)	(dBm)	(dBm)	(dB)
M1	100	L	1/0	27.5	-20.52	-5	-15.52
M1	100	L	1/0	27.49	-26.55	-13	-13.55
M2	100	L	1/0	27.5	-22.12	-5	-17.12
M2	100	L	1/0	27.49	-26.92	-13	-13.92
M1	100	L	66/0	27.5	-26.00	-5	-21.00
M1	100	L	66/0	27.49	-25.80	-13	-12.80
M2	100	L	66/0	27.5	-25.49	-5	-20.49
M2	100	L	66/0	27.49	-25.78	-13	-12.78
M1	100	H	1/66	28.35	-22.28	-5	-17.28
M1	100	H	1/66	28.36	-28.41	-13	-15.41
M2	100	H	1/66	28.35	-24.26	-5	-19.26
M2	100	H	1/66	28.36	-28.82	-13	-15.82
M1	100	H	66/0	28.35	-27.92	-5	-22.92
M1	100	H	66/0	28.36	-28.19	-13	-15.19
M2	100	H	66/0	28.35	-27.03	-5	-22.03
M2	100	H	66/0	28.36	-27.09	-13	-14.09

8.3.8. BAND EDGE RESULTS n261 MIMO 2CC

ANT M1, 50 MHz, MIMO, 2CC, QPSK



ANT M2, 50 MHz, MIMO, 2CC, QPSK



ANT M1 & M2, 50 MHz, MIMO, 2CC, QPSK

Antenna	BW	Channel	RB	Freq.	Avg EIRP	Avg TRP Limit	Margin
	(MHz)		(Size Offset)	(GHz)	(dBm)	(dBm)	(dB)
M1	50	L	1/0	27.5	-23.88	-5	-18.88
M1	50	L	1/0	27.495	-27.56	-13	-14.56
M2	50	L	1/0	27.5	-20.63	-5	-15.63
M2	50	L	1/0	27.495	-27.22	-13	-14.22
M1	50	H	1/32	28.35	-23.36	-5	-18.36
M1	50	H	1/32	28.355	-26.93	-13	-13.93
M2	50	H	1/32	28.35	-24.37	-5	-19.37
M2	50	H	1/32	28.355	-26.60	-13	-13.60

ANT M1 & M2, 50 MHz, MIMO, 2CC, BPSK

Antenna	BW	Channel	RB	Freq.	Avg EIRP	Avg TRP Limit	Margin
	(MHz)		(Size Offset)	(GHz)	(dBm)	(dBm)	(dB)
M1	50	L	1/0	27.5	-24.60	-5	-19.60
M1	50	L	1/0	27.495	-27.80	-13	-14.80
M2	50	L	1/0	27.5	-25.41	-5	-20.41
M2	50	L	1/0	27.495	-28.39	-13	-15.39
M1	50	H	1/32	28.35	-26.52	-5	-21.52
M1	50	H	1/32	28.355	-29.07	-13	-16.07
M2	50	H	1/32	28.35	-26.83	-5	-21.83
M2	50	H	1/32	28.355	-28.43	-13	-15.43

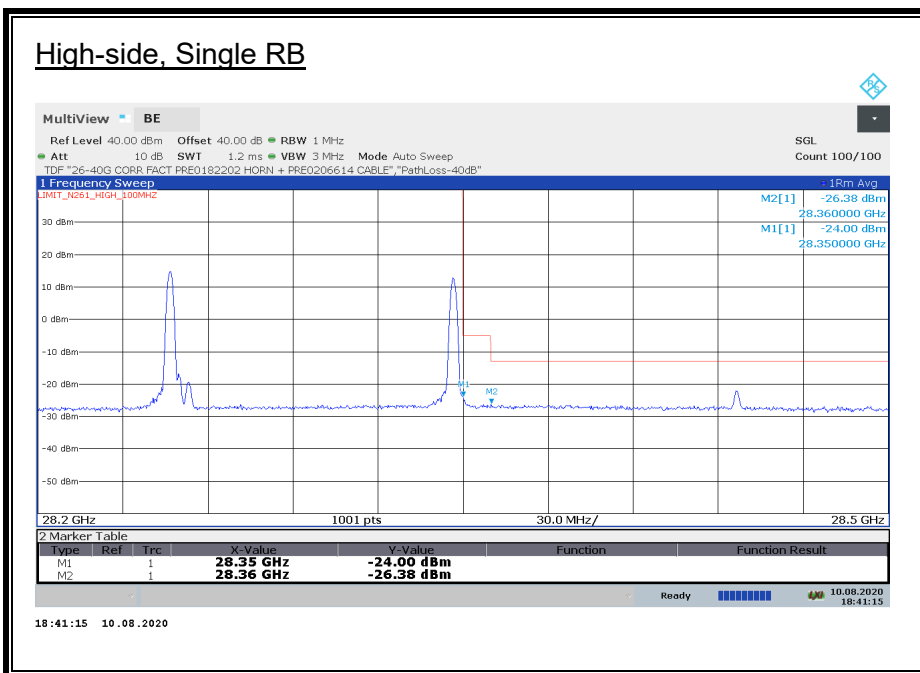
ANT M1 & M2, 50 MHz, MIMO, 2CC, 16QAM

Antenna	BW	Channel	RB	Freq.	Avg EIRP	Avg TRP Limit	Margin
	(MHz)		(Size Offset)	(GHz)	(dBm)	(dBm)	(dB)
M1	50	L	1/0	27.5	-24.24	-5	-19.24
M1	50	L	1/0	27.495	-27.47	-13	-14.47
M2	50	L	1/0	27.5	-22.44	-5	-17.44
M2	50	L	1/0	27.495	-27.48	-13	-14.48
M1	50	H	1/32	28.35	-24.34	-5	-19.34
M1	50	H	1/32	28.355	-27.31	-13	-14.31
M2	50	H	1/32	28.35	-24.28	-5	-19.28
M2	50	H	1/32	28.355	-27.42	-13	-14.42

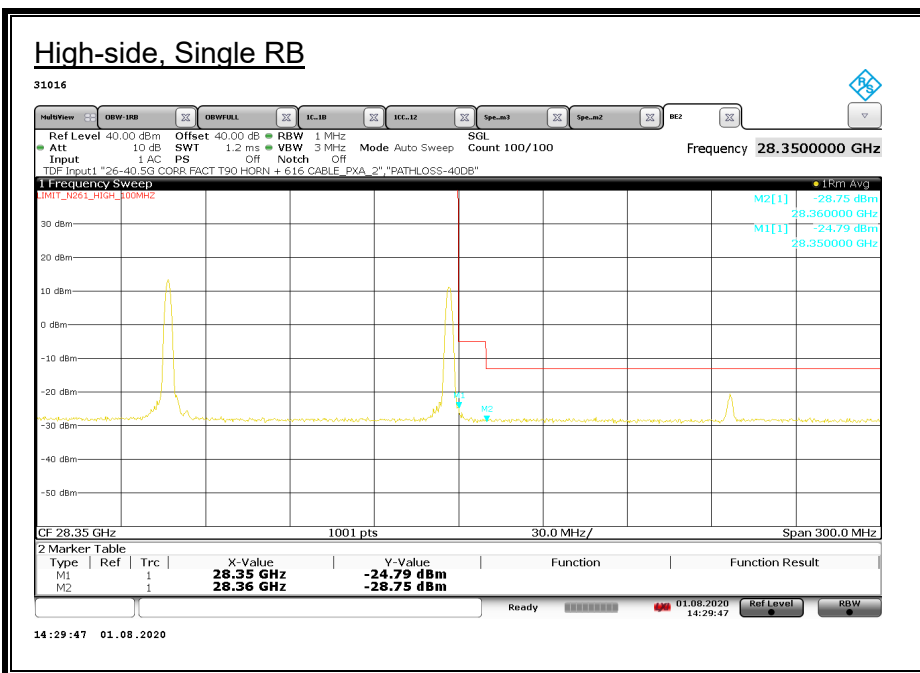
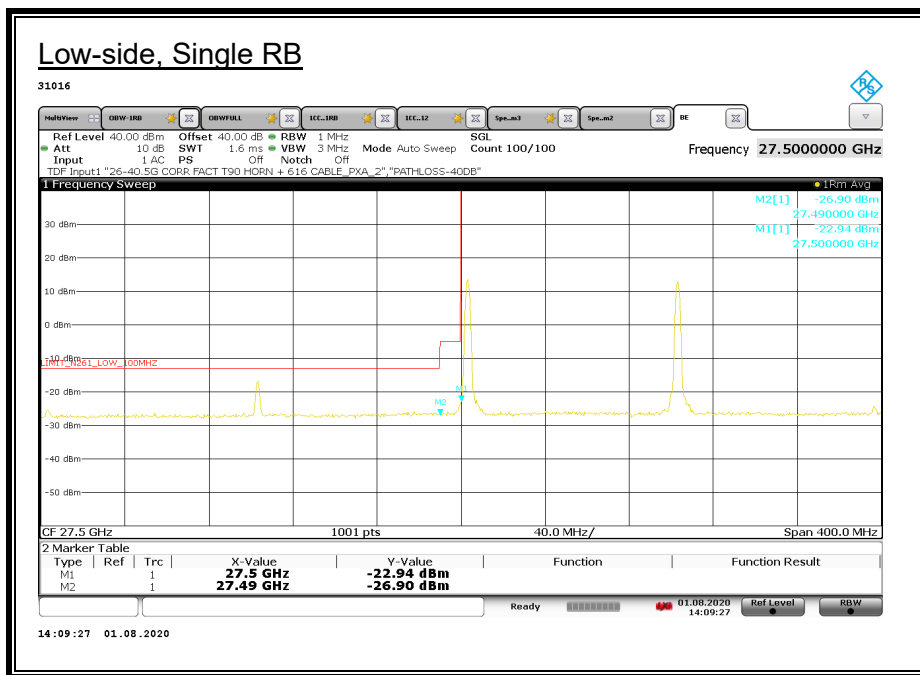
ANT M1 & M2, 50 MHz, MIMO, 2CC, 64QAM

Antenna	BW	Channel	RB	Freq.	Avg EIRP	Avg TRP Limit	Margin
	(MHz)		(Size Offset)	(GHz)	(dBm)	(dBm)	(dB)
M1	50	L	1/0	27.5	-24.16	-5	-19.16
M1	50	L	1/0	27.495	-27.47	-13	-14.47
M2	50	L	1/0	27.5	-23.53	-5	-18.53
M2	50	L	1/0	27.495	-27.23	-13	-14.23
M1	50	H	1/32	28.35	-24.85	-5	-19.85
M1	50	H	1/32	28.355	-26.53	-13	-13.53
M2	50	H	1/32	28.35	-24.75	-5	-19.75
M2	50	H	1/32	28.355	-26.89	-13	-13.89

ANT M1, 100 MHz, MIMO, 2CC, QPSK



ANT M2, 100 MHz, MIMO, 2CC, QPSK



ANT M1 & M2, 100 MHz, MIMO, 2CC, QPSK

Antenna	BW	Channel	RB	Freq.	Avg EIRP	Avg TRP Limit	Margin
	(MHz)		(Size Offset)	(GHz)	(dBm)	(dBm)	(dB)
M1	100	L	1/0	27.5	-22.98	-5	-17.98
M1	100	L	1/0	27.49	-27.37	-13	-14.37
M2	100	L	1/0	27.5	-22.94	-5	-17.94
M2	100	L	1/0	27.49	-26.90	-13	-13.90
M1	100	H	1/66	28.35	-24.00	-5	-19.00
M1	100	H	1/66	28.36	-26.38	-13	-13.38
M2	100	H	1/66	28.35	-24.79	-5	-19.79
M2	100	H	1/66	28.36	-28.75	-13	-15.75

ANT M1 & M2, 100 MHz, MIMO, 2CC, BPSK

Antenna	BW	Channel	RB	Freq.	Avg EIRP	Avg TRP Limit	Margin
	(MHz)		(Size Offset)	(GHz)	(dBm)	(dBm)	(dB)
M1	100	L	1/0	27.5	-22.53	-5	-17.53
M1	100	L	1/0	27.49	-27.88	-13	-14.88
M2	100	L	1/0	27.5	-25.94	-5	-20.94
M2	100	L	1/0	27.49	-28.31	-13	-15.31
M1	100	H	1/66	28.35	-22.62	-5	-17.62
M1	100	H	1/66	28.36	-28.77	-13	-15.77
M2	100	H	1/66	28.35	-27.26	-5	-22.26
M2	100	H	1/66	28.36	-28.51	-13	-15.51

ANT M1 & M2, 100 MHz, MIMO, 2CC, 16QAM

Antenna	BW	Channel	RB	Freq.	Avg EIRP	Avg TRP Limit	Margin
	(MHz)		(Size Offset)	(GHz)	(dBm)	(dBm)	(dB)
M1	100	L	1/0	27.5	-24.07	-5	-19.07
M1	100	L	1/0	27.49	-27.17	-13	-14.17
M2	100	L	1/0	27.5	-23.15	-5	-18.15
M2	100	L	1/0	27.49	-26.57	-13	-13.57
M1	100	H	1/66	28.35	-24.04	-5	-19.04
M1	100	H	1/66	28.36	-26.98	-13	-13.98
M2	100	H	1/66	28.35	-25.17	-5	-20.17
M2	100	H	1/66	28.36	-28.56	-13	-15.56

ANT M1 & M2, 100 MHz, MIMO, 2CC, 64QAM

Antenna	BW	Channel	RB	Freq.	Avg EIRP	Avg TRP Limit	Margin
	(MHz)		(Size Offset)	(GHz)	(dBm)	(dBm)	(dB)
M1	100	L	1/0	27.5	-26.72	-5	-21.72
M1	100	L	1/0	27.49	-27.11	-13	-14.11
M2	100	L	1/0	27.5	-24.00	-5	-19.00
M2	100	L	1/0	27.49	-26.50	-13	-13.50
M1	100	H	1/66	28.35	-25.41	-5	-20.41
M1	100	H	1/66	28.36	-26.46	-13	-13.46
M2	100	H	1/66	28.35	-26.84	-5	-21.84
M2	100	H	1/66	28.36	-28.24	-13	-15.24

8.4. RADIATED SPURIOUS EMISSIONS

RULE PART(S)

FCC: §2.1051, §30.203

LIMIT

30.203 - (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.

TEST PROCEDURE

KDB 842590 D01 Upper Microwave Flexible Use Service v01 Section 4.4.2 and Section 4.4.3. ANSI C63.26-2015 Clause 5.5.4 and Annex C.5.2.

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

RSE was investigated from 30 MHz – 100 GHz on n261 band and 30 MHz – 200 GHz on n260 band.

Plots below 18 GHz are corrected field strength levels, measured at 3 meter test distance. The average EIRP reported below is calculated per section 5.2.7 of ANSI C63.26-2015 which states: $EIRP (dBm) = E (dB\mu V/m) + 20\log(D) - 104.8$; where D is the measurement distance (in the far field region) in m. The field strength E is calculated $E (dB\mu V/m) = \text{Spectrum Analyzer Level (dBm)} + \text{Antenna Factor (dB/m)} + \text{Cable Loss (dB)} + 107$. All appropriate Antenna Factor and Cable Loss have been applied in the spectrum analyzer for each measurement.

RSEs above 18 GHz were measured at the appropriate far field distances listed on Section 5 on this report (FAR-FIELD DISTANCE AND MEASUREMENT DISTANCE). Then, the EIRP of RSE was calculated using the equations on ANSI C63.26-2015 Annex C.5.2, as described on Sections 8.2 and 8.3.

RSEs from 18 – 50 GHz were measured using a spectrum analyzer or EMI receiver with an internal preamplifier when applicable. Emissions above 50 GHz were measured using a harmonic mixer with spectrum analyzer, while an external LNA was used when applicable.

RSEs from 1 – 200 GHz were measured at 1.5 meters height.

All RSEs were measured for the configuration with the highest EIRP (SISO-Dual antenna configuration with QPSK modulation and a single RB) as representing the worst case. Preliminary radiated emissions tests on the low, middle and high channels indicated that the worst case radiated spurious emissions were on the channel with the highest power and so only the test data for that channel is included in this report.

As the single RB with 1CC mode has the highest power and is the same for all channel bandwidths, therefore the single RB with 1CC for the narrowest channel bandwidth was used as the worst case for purposes of RSE measurements.

The following worst case EIRP 1CC modes were used at tests at the pre-determined worst case y-axis (portrait) orientation:

n260 band:

Ant M1: SISO-Dual_QPSK_50 MHz_High CH, RB Offset 1/15 (1RB_M)

Ant M2: SISO-Dual_QPSK_100 MHz_Mid CH, RB Offset 1/32 (1RB_M)

n261 band:

Ant M1: SISO-Dual_QPSK_100 MHz_Low CH, RB Offset 1/32 (1RB_M)

Ant M2: SISO-Dual_QPSK_100 MHz_Low CH, RB Offset 1/32 (1RB_M)

In addition, the 2CC multi-carrier operations were verified for IMD product at the near upper and lower band edge regions. The measurements were made with the single RB active in each channel and plots showing the IMD product are provided. Both (50 MHz + 50 MHz) and (100 MHz + 100 MHz) channel bandwidths are tested and the signal level of the IMD products are similar for both modes. The test data for the worst case IMD emissions are reported.

Where the measured EIRP value is within 2 dB of the limit, a TRP measurement is made, otherwise the EIRP value is compared with the §30.203 TRP limit to demonstrate compliance.

For simultaneous transmission of multiple channels in the UWB, Wi-Fi bands, 5G FR2 bands and BT band, no noticeable new emission was found.

RESULTS

See the following pages.

TESTED BY:

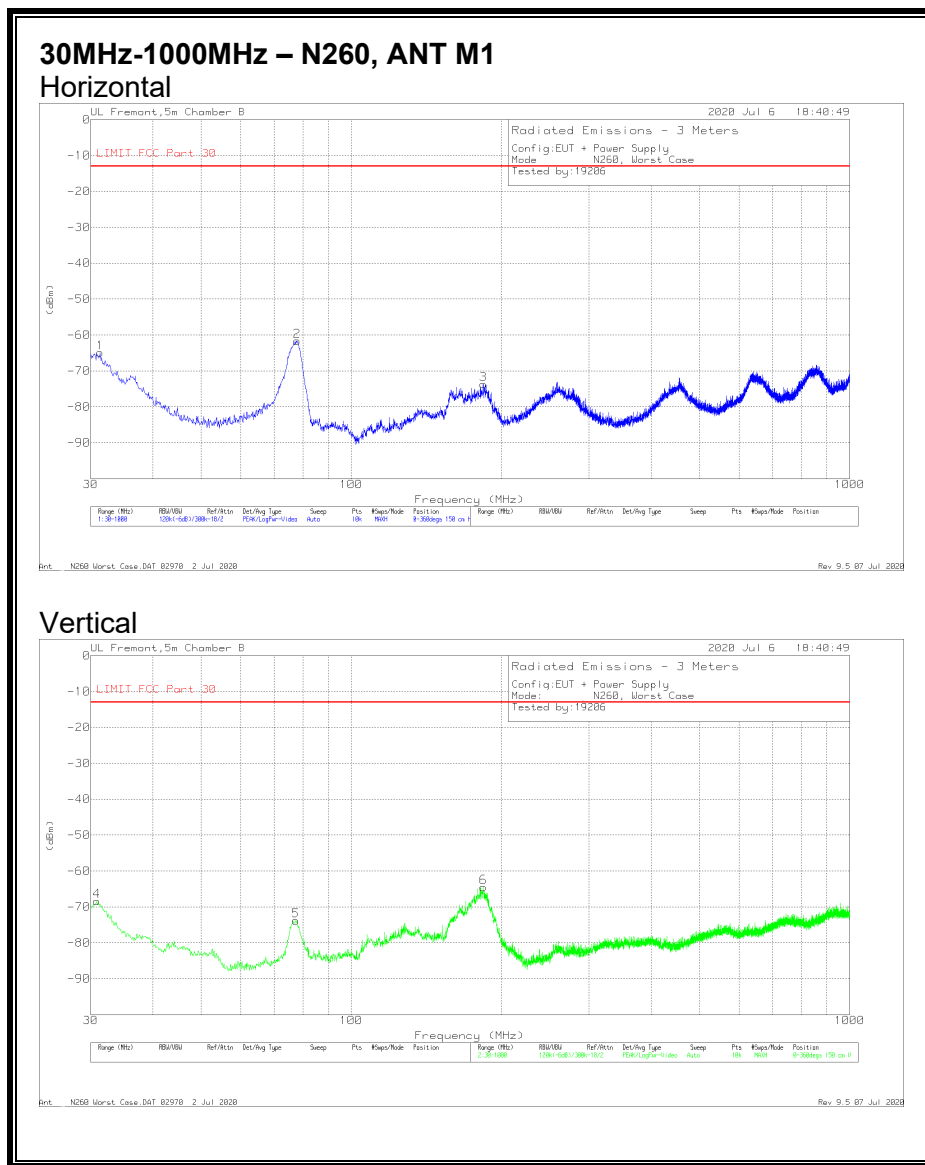
Below 18 GHz Test Site: Chamber B

Above 18 GHz:

Employee IDs: 19296 & 19459, n261 band, Chamber 1

Employee IDs: 19470 & 19437, n260 band, Chamber 2

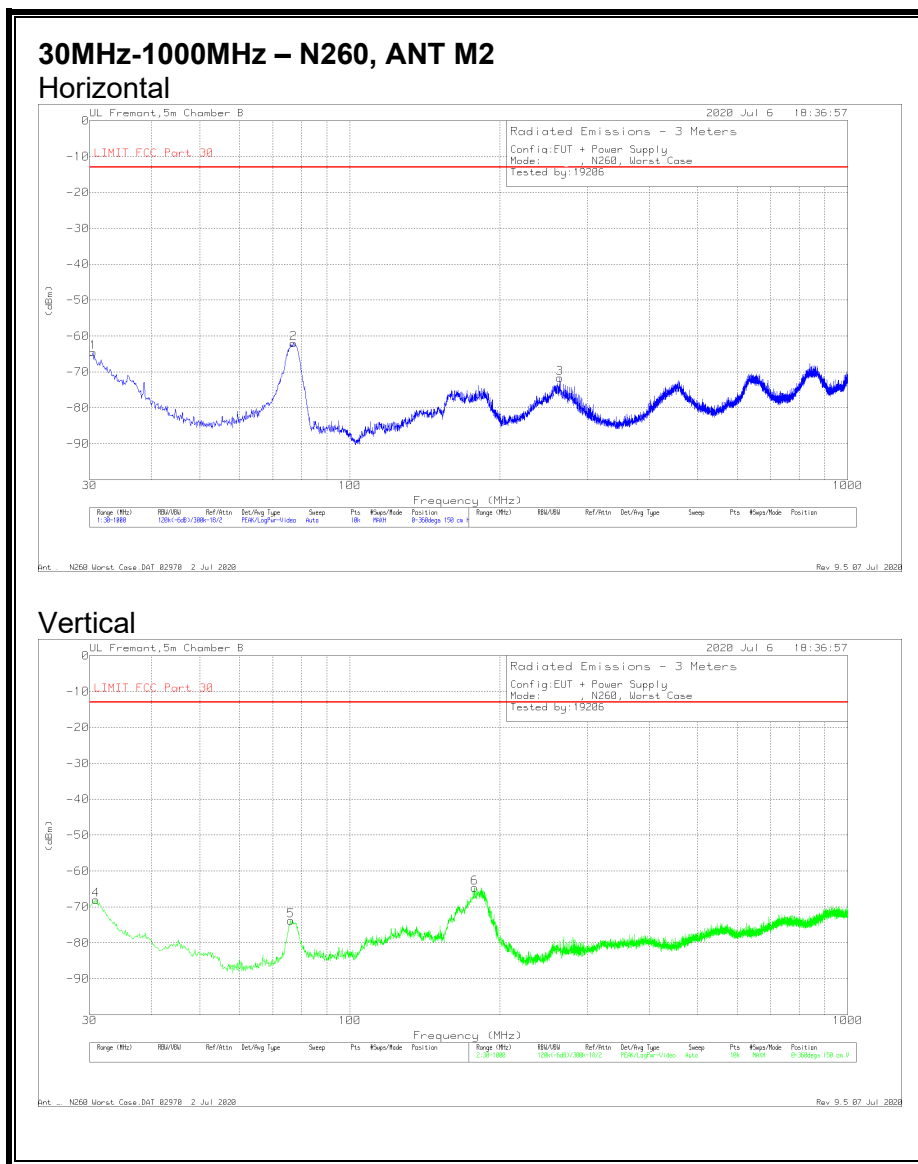
8.4.1. RADIATED EMISSIONS 30 MHz - 1 GHz n260



Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBm)	Det	AF T407 (dB/m)	Amp/Cbl (dB)	Amp/Cbl (dB)	Corrected Reading (dBm)	LIMIT FCC Part 30 (dBm/MHz)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	30.873	-69.15	Pk	26.4	-31.4	5.8	-68.35	-13	-55.35	0-360	150	V
1	31.358	-75.89	Pk	26	-31.4	16.4	-64.89	-13	-51.89	0-360	150	H
5	77.433	-67.99	Pk	13.6	-30.9	11.5	-73.79	-13	-60.79	0-360	150	V
2	77.821	-52.88	Pk	13.6	-30.9	8.5	-61.68	-13	-48.68	0-360	150	H
3	184.036	-68.42	Pk	17	-30.2	7.9	-73.72	-13	-60.72	0-360	150	H
6	184.133	-61.16	Pk	17	-30.2	9.9	-64.46	-13	-51.46	0-360	150	V

Pk - Peak detector
Rev 9.5 06 Mar 2020

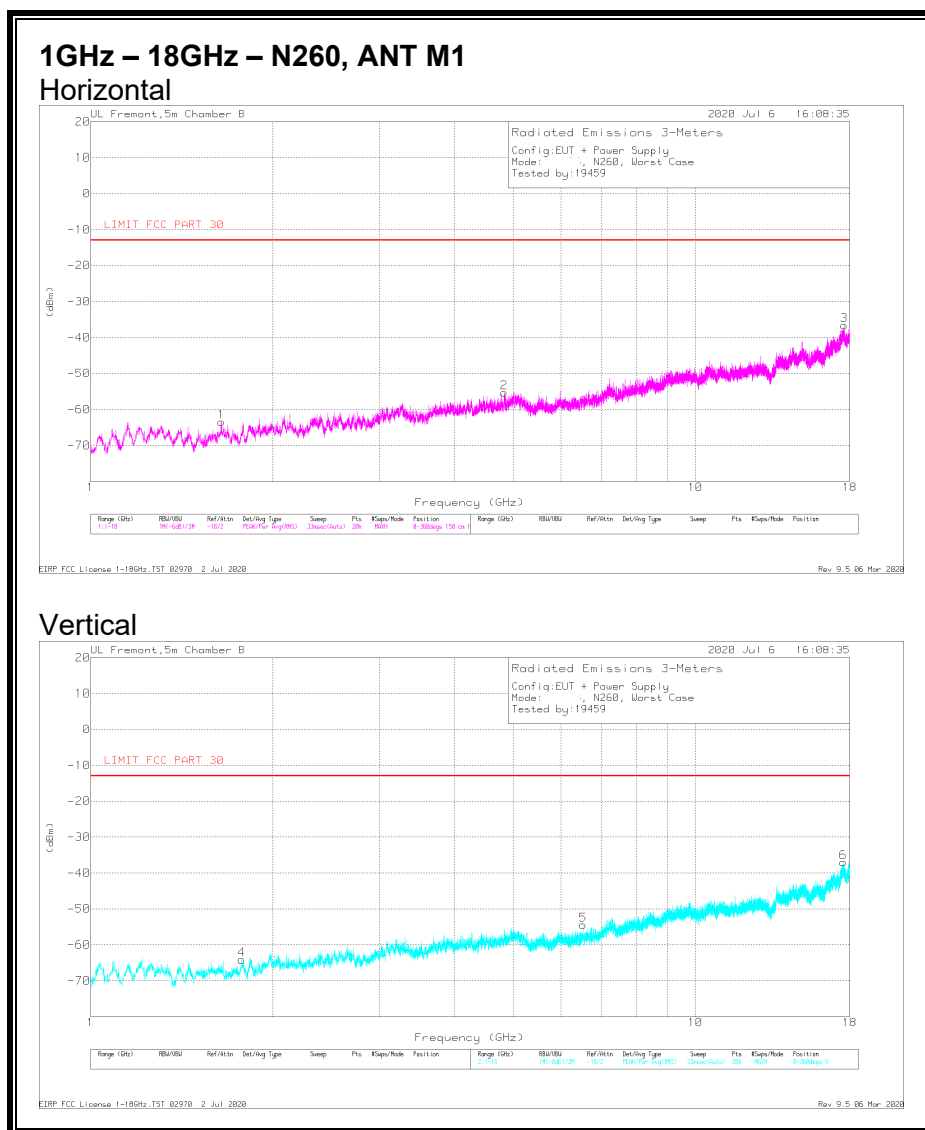


Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBm)	Det	AF T407 (dB/m)	Amp/Cbl (dB)	Amp/Cbl (dB)	Corrected Reading (dBm)	LIMIT FCC Part 30 (dBm/MHz)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	30.485	-76.72	Pk	26.7	-31.4	16.9	-64.52	-13	-51.52	0-360	150	H
4	30.873	-68.79	Pk	26.4	-31.4	5.8	-67.99	-13	-54.99	0-360	150	V
5	76.075	-67.32	Pk	13.7	-30.9	10.7	-73.82	-13	-60.82	0-360	150	V
2	77.142	-53.17	Pk	13.6	-30.9	8.5	-61.97	-13	-48.97	0-360	150	H
6	178.022	-62.04	Pk	17.2	-30.2	10.4	-64.64	-13	-51.64	0-360	150	V
3	263.964	-74.56	Pk	18.6	-29.7	14	-71.66	-13	-58.66	0-360	150	H

Pk - Peak detector
Rev 9.5 06 Mar 2020

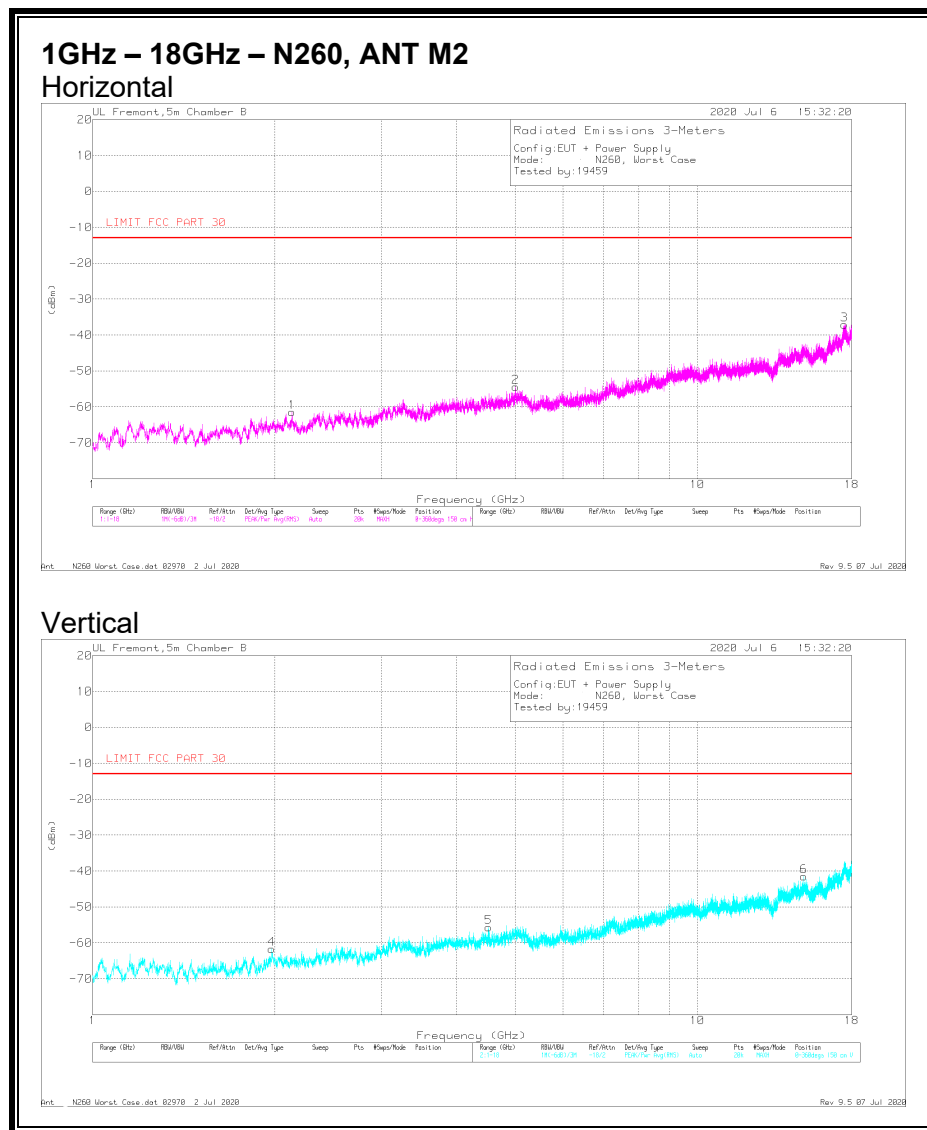
8.4.2. RADIATED EMISSIONS 1-18 GHz n260



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T962 (dB/m)	Amp/Cbl (dB)	Amp/Cbl (dB)	Corrected Reading (dBm)	LIMIT FCC Part 30 (dBm/MHz)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.64433	-69.02	Pk	25	-30.5	11	-63.52	-13	-50.52	0-360	150	H
4	1.77694	-69.87	Pk	25.9	-30.2	10	-64.17	-13	-51.17	0-360	150	V
2	4.82944	-70.56	Pk	33.1	-27	9.1	-55.36	-13	-42.36	0-360	150	H
5	6.52613	-73.09	Pk	35.3	-24.2	7.6	-54.39	-13	-41.39	0-360	150	V
6	17.58434	-75.84	Pk	43	-15.9	11.7	-37.04	-13	-24.04	0-360	150	V
3	17.62089	-73.95	Pk	42.9	-16.9	11.3	-36.65	-13	-23.65	0-360	150	H

Pk - Peak detector
Rev 9.5 06 Mar 2020

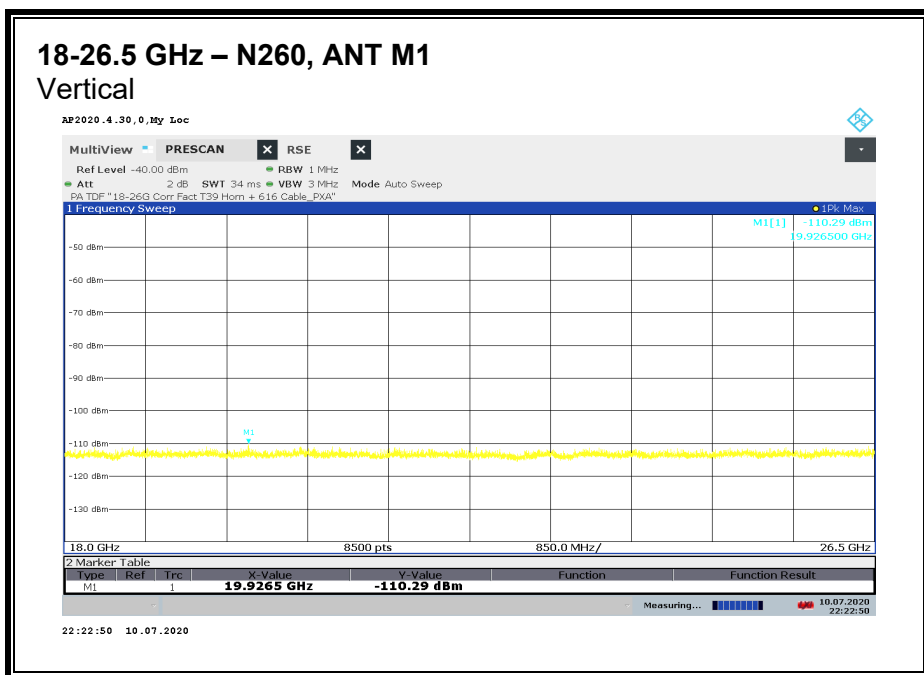
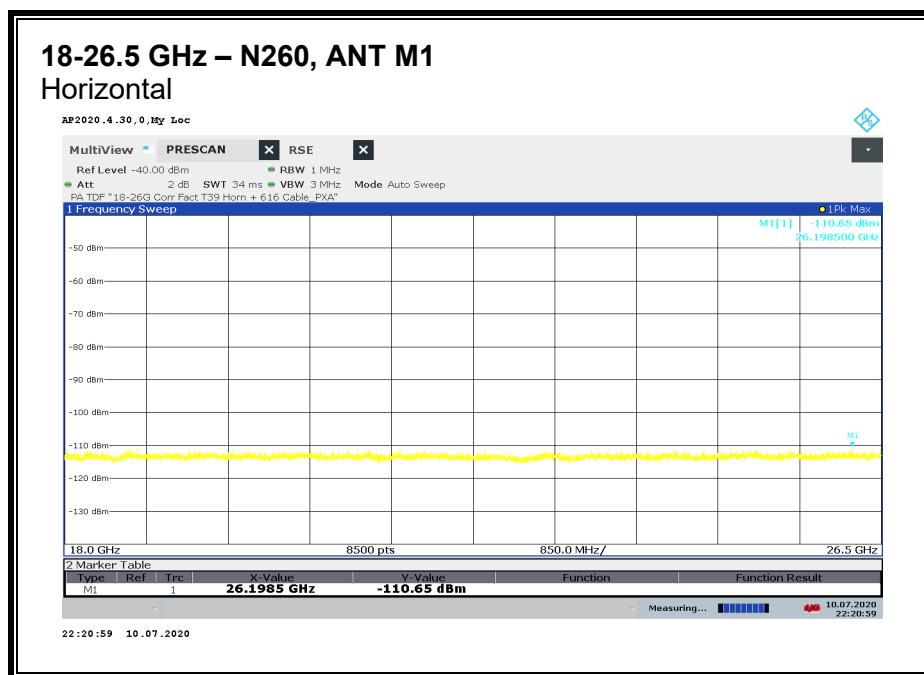


Trace Markers

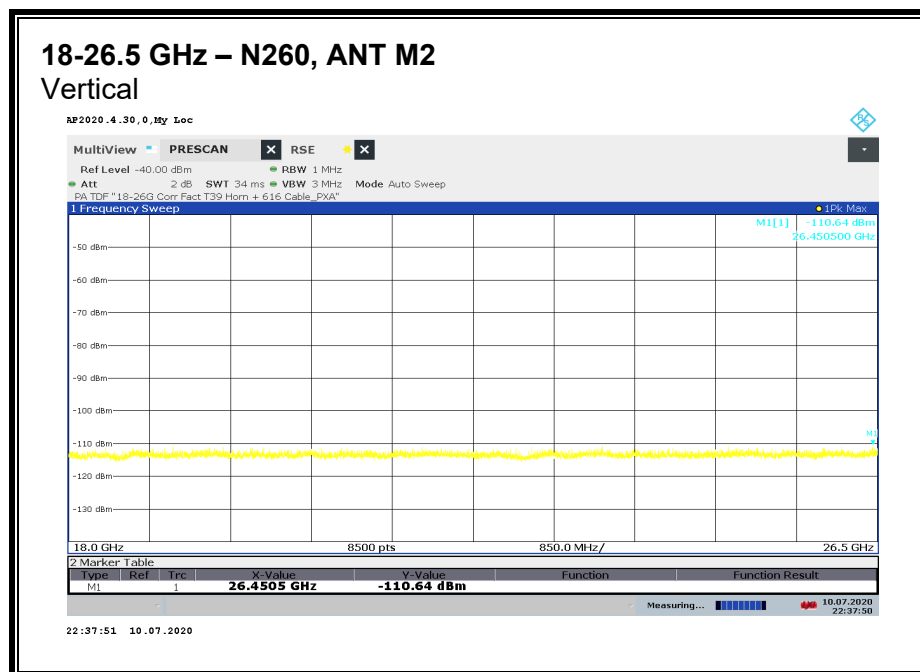
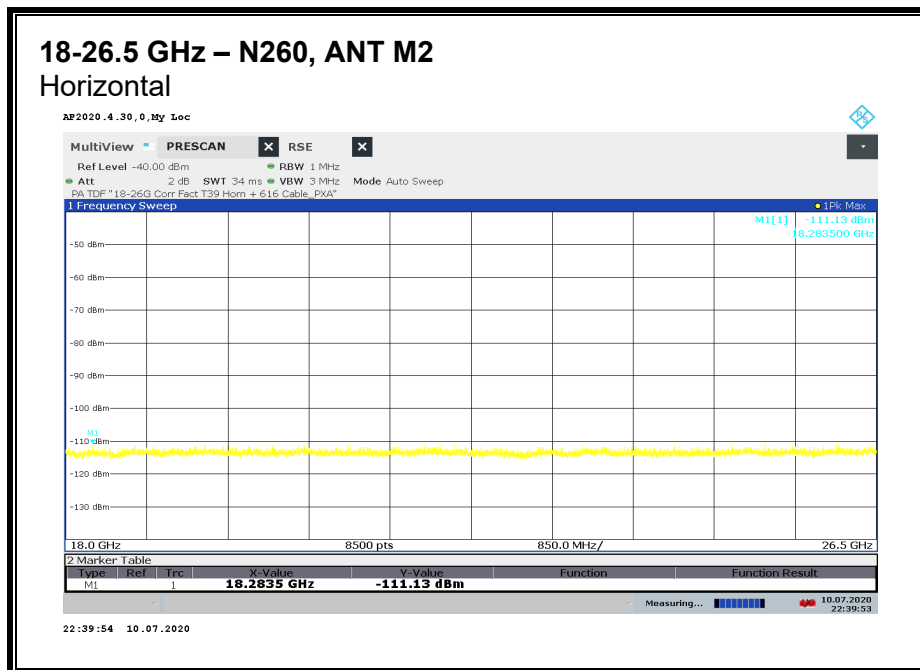
Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T962 (dB/m)	Amp/Cbl (dB)	Amp/Cbl (dB)	Corrected Reading (dBm)	LIMIT FCC Part 30 (dBm/MHz)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	1.97755	-70.07	Pk	27.3	-29.9	11	-61.67	-13	-48.67	0-360	150	V
1	2.13736	-70.32	Pk	26.9	-29.6	11.6	-61.42	-13	-48.42	0-360	150	H
5	4.51918	-71.19	Pk	31.9	-26.8	10.4	-55.69	-13	-42.69	0-360	150	V
2	5.00455	-71.59	Pk	33.7	-25.9	9.4	-54.39	-13	-41.39	0-360	150	H
6	14.99766	-73.66	Pk	42.3	-21.1	11	-41.46	-13	-28.46	0-360	150	V
3	17.51889	-75.84	Pk	42.9	-16.4	12.2	-37.14	-13	-24.14	0-360	150	H

Pk - Peak detector
Rev 9.5 06 Mar 2020

8.4.3. RADIATED EMISSIONS 18-26.5 GHz n260



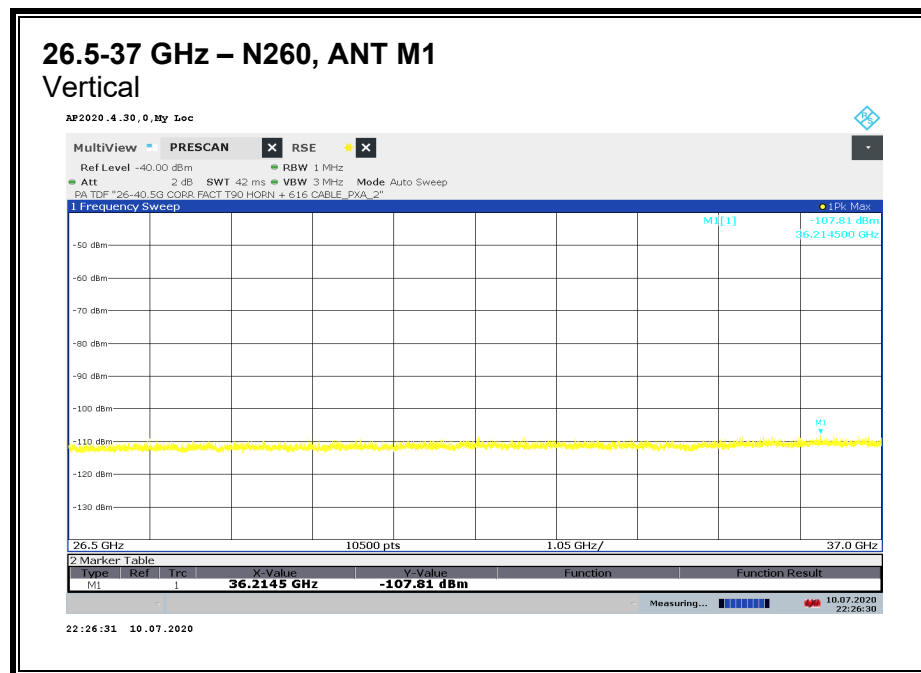
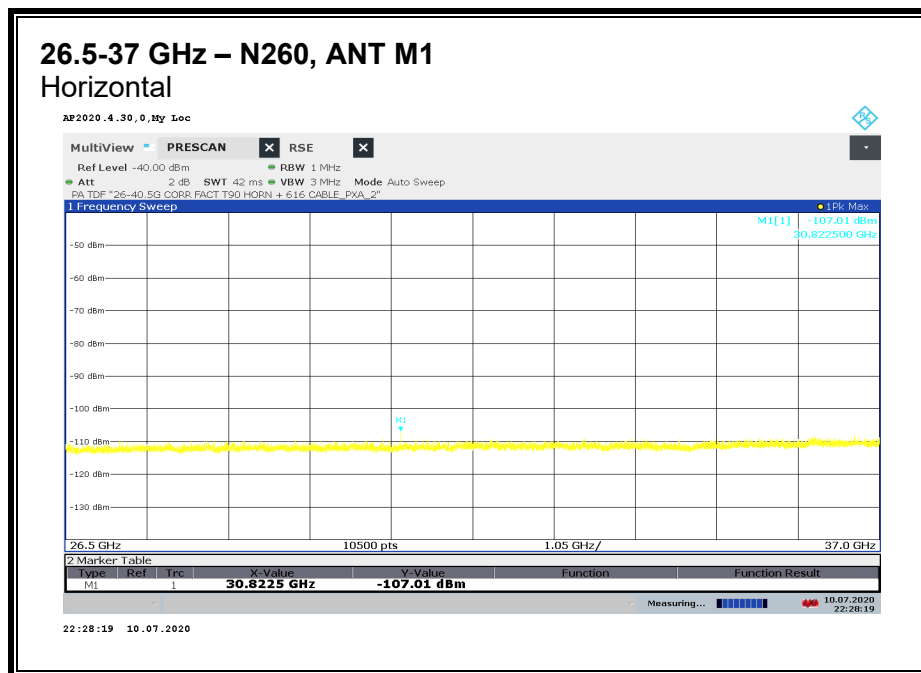
No Emission using Peak Detection.



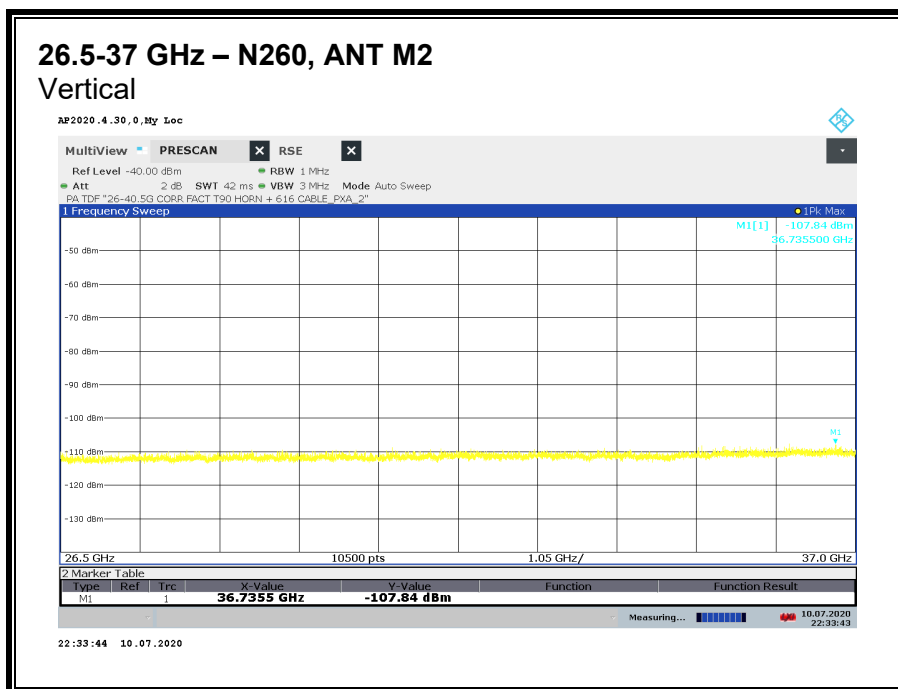
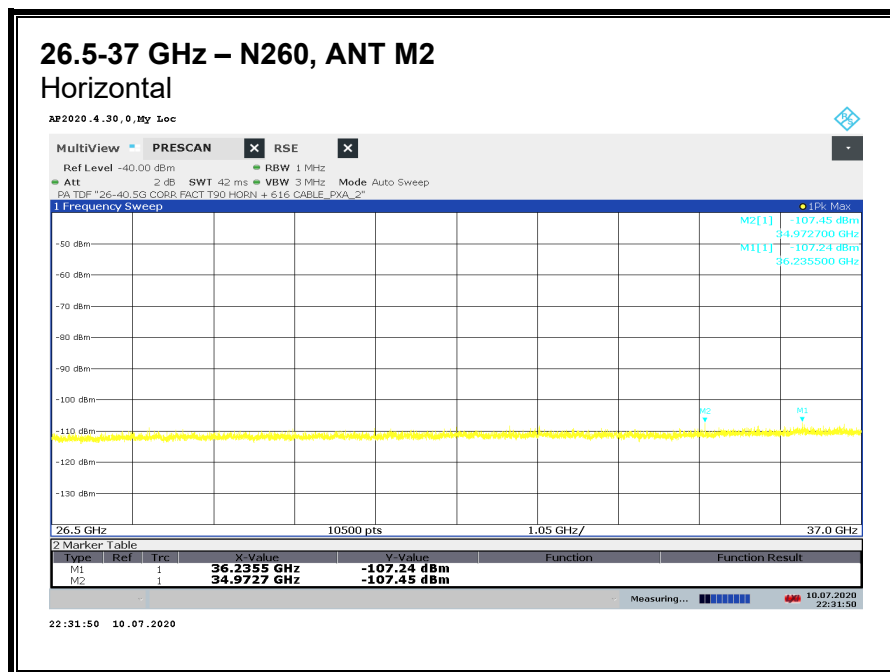
No Emission using Peak Detection.

8.4.4. RADIATED EMISSIONS 26.5-40 GHz n260

Note: 37-40 GHz covered by Fundamental and BE measurements.

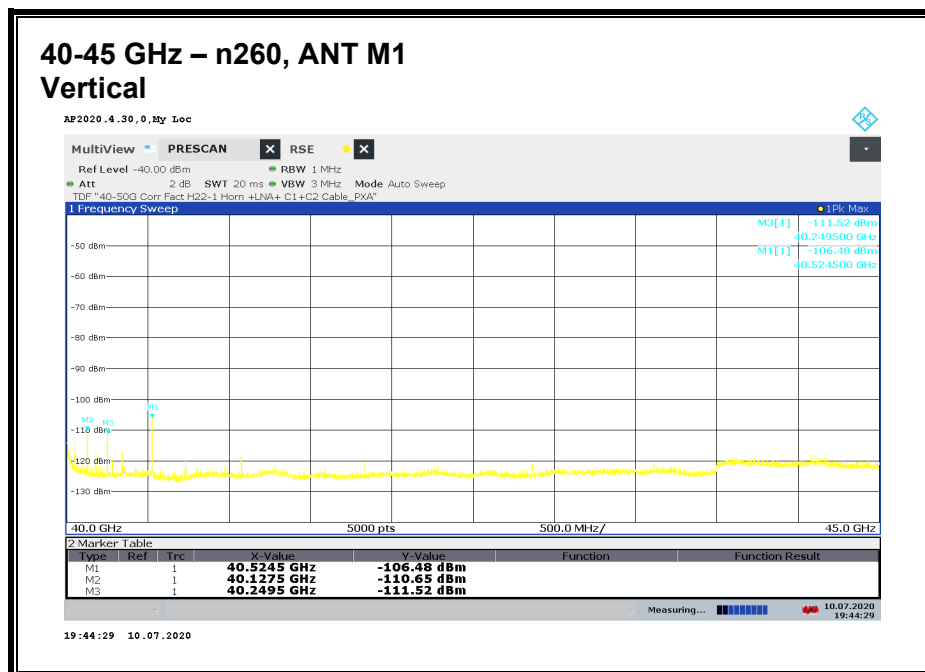
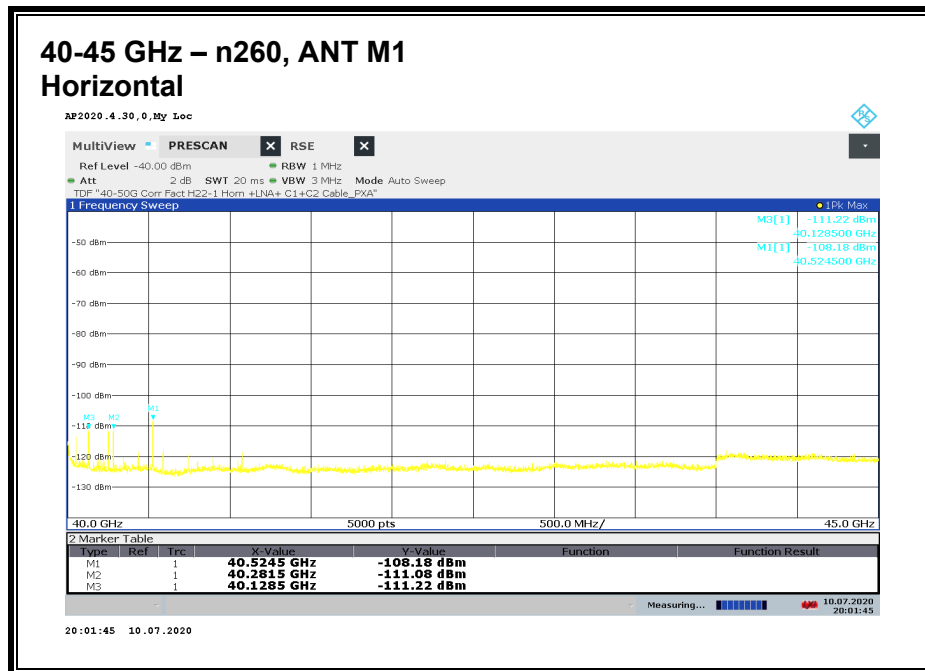


No Emission using Peak Detection.



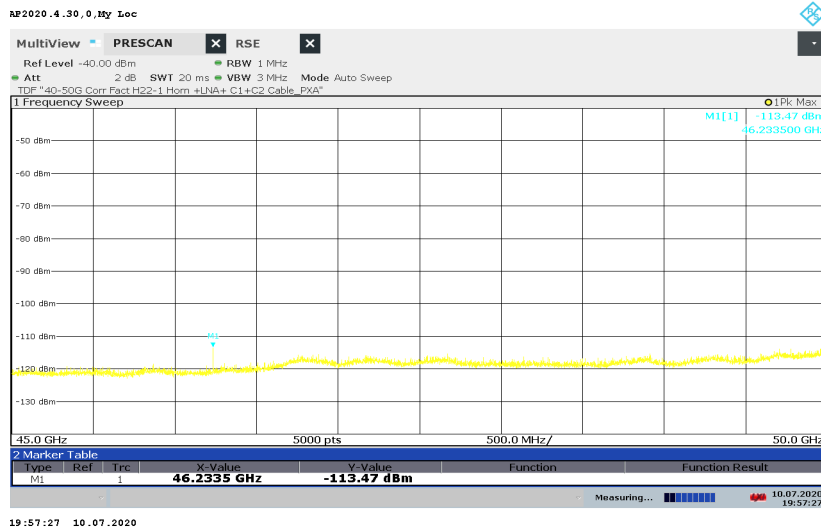
No Emission using Peak Detection.

8.4.5. RADIATED EMISSIONS 40-50 GHz n260



Emissions detected using Peak Detection. Avg EIRP was measured.

45-50 GHz – n260, ANT M1 Horizontal

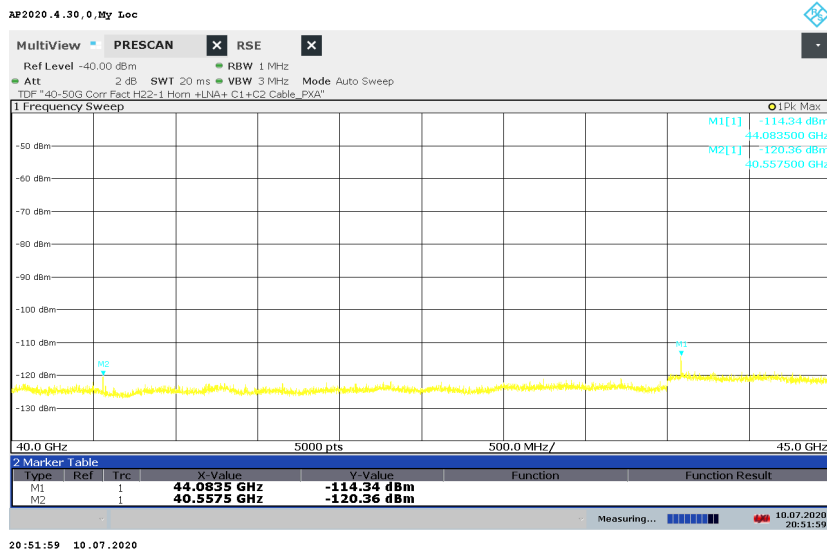


45-50 GHz – n260, ANT M1 Vertical



Emissions detected using Peak Detection. Avg EIRP was measured.

40-45 GHz – n260, ANT M2 Horizontal



40-45 GHz – n260, ANT M2 Vertical



Emissions detected using Peak Detection. Avg EIRP was measured.

45-50 GHz – n260, ANT M2 Horizontal



45-50 GHz – n260, ANT M2 Vertical



No Emission using Peak Detection.

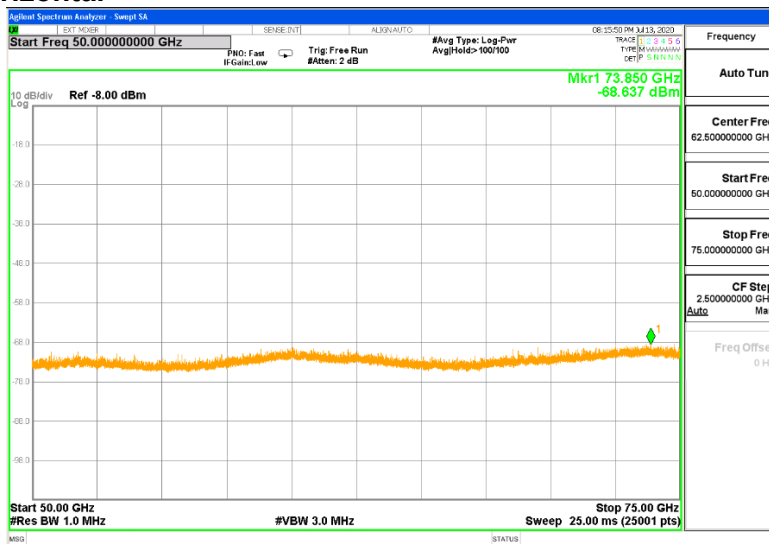
40-50 GHz n260

EIRP Results

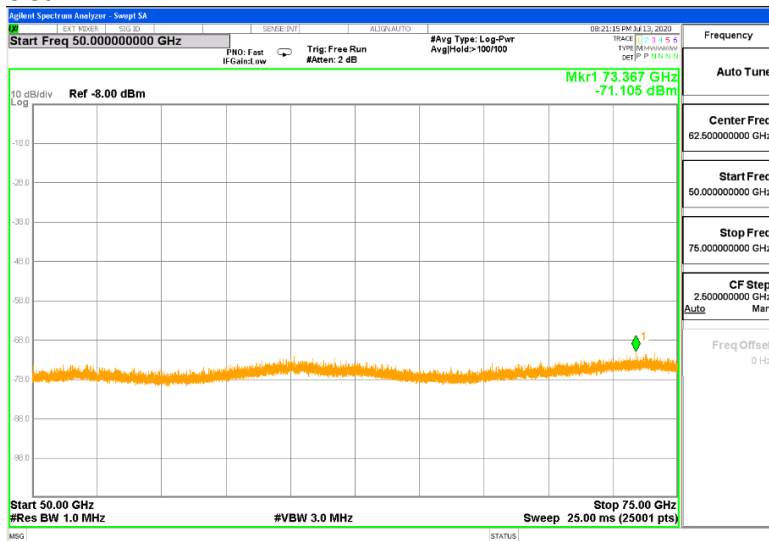
Antenna	Freq.	Meas. Distance	Rx Ant. Polarity	Meas. Power	Corrected Avg EIRP	TRP Limit	Margin
	(GHz)	(m)	H/V	(dBm)	(dBm)	(dBm)	(dB)
M1	40.5244	3	H	-121.01	-46.88	-13	-33.88
M1	40.5244	3	V	-121.82	-47.69	-13	-34.69
M1	40.1275	3	H	-124.57	-50.52	-13	-37.52
M1	40.1275	3	V	-125.45	-51.40	-13	-38.40
M1	40.2812	3	H	-122.57	-48.49	-13	-35.49
M1	40.2492	3	V	-125.33	-51.25	-13	-38.25
M1	46.2335	3	H	-121.59	-46.31	-13	-33.31
M1	46.2335	3	V	-122.05	-46.77	-13	-33.77
M2	44.0835	3	H	-130.39	-55.52	-13	-42.52
M2	44.0835	3	V	-112.13	-37.26	-13	-24.26
M2	40.5575	3	H	-129.01	-54.87	-13	-41.87
M2	40.5575	3	V	-140.58	-66.44	-13	-53.44

8.4.6. RADIATED EMISSIONS 50-75 GHz n260

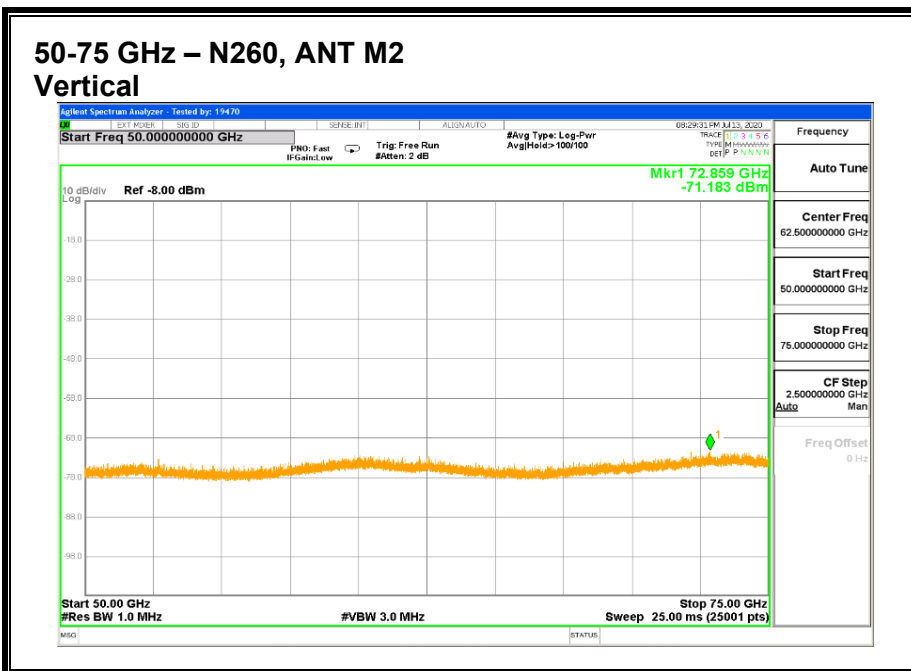
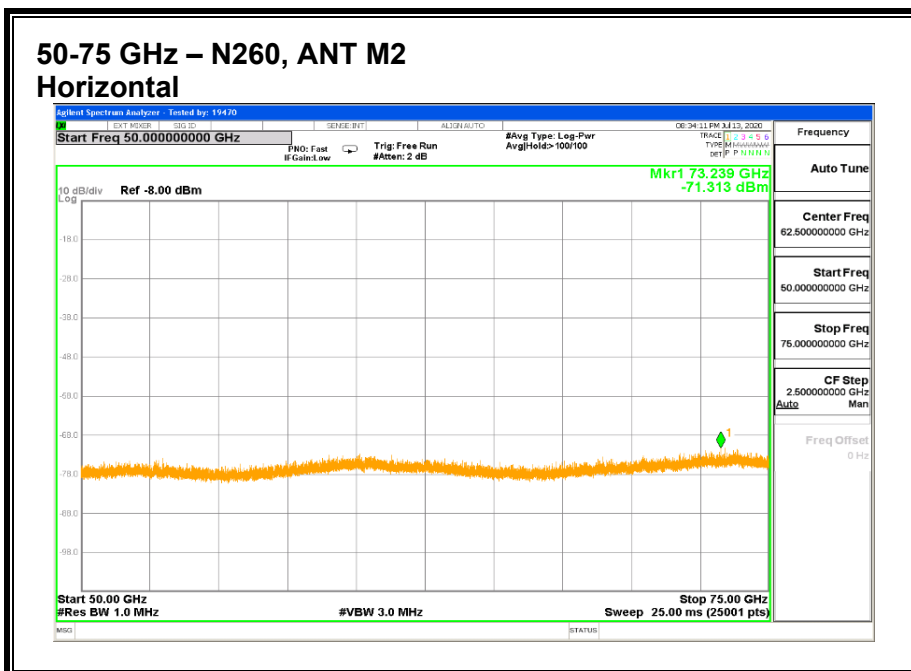
50-75 GHz – N260, ANT M1 Horizontal



50-75 GHz – N260, ANT M1 Vertical



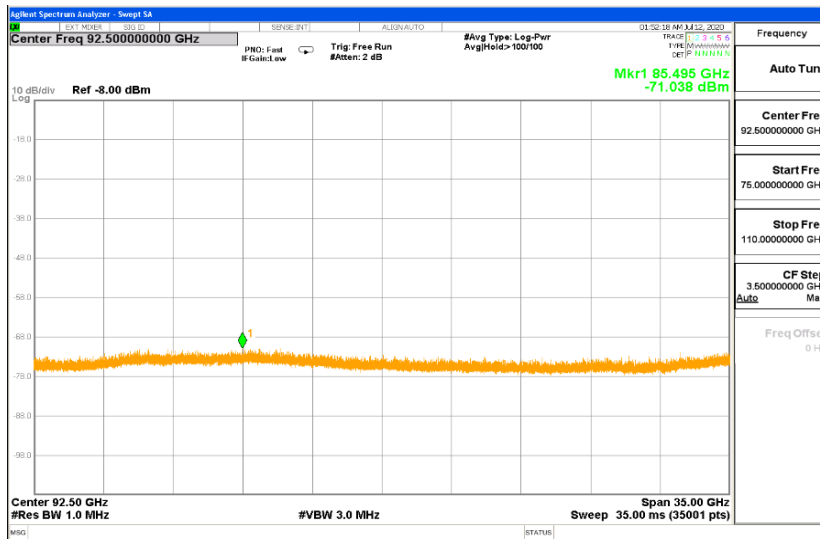
No Emission using Peak Detection.



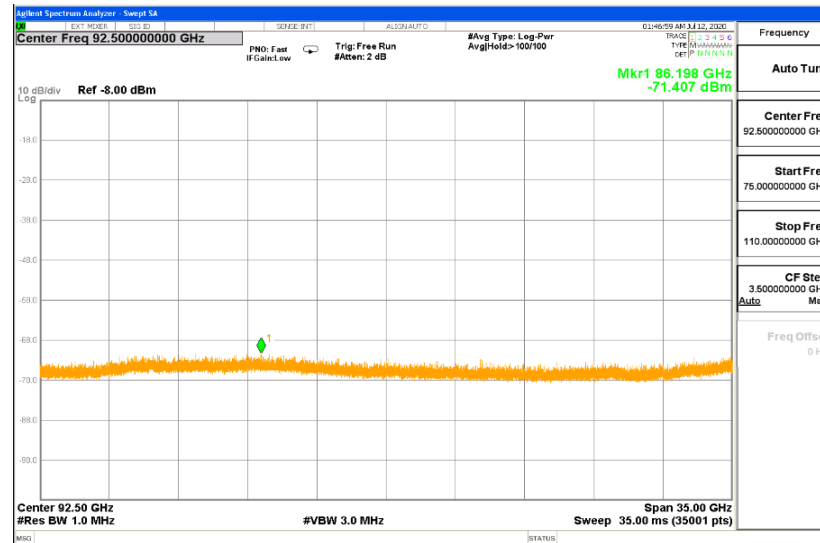
No Emission using Peak Detection.

8.4.7. RADIATED EMISSIONS 75-110 GHz n260

75-110 GHz – N260, ANT M1 Horizontal

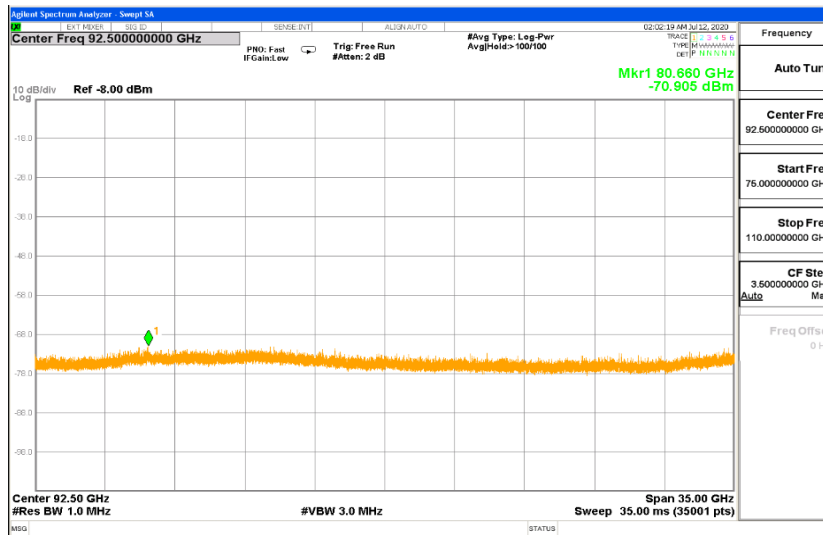


75-110 GHz – N260, ANT M1 Vertical

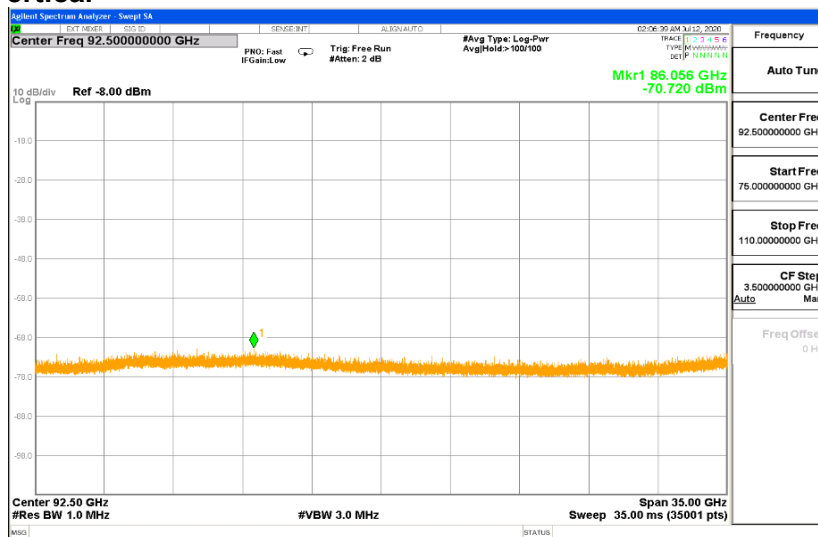


No Emission using Peak Detection.

75-110 GHz – N260, ANT M2 Horizontal

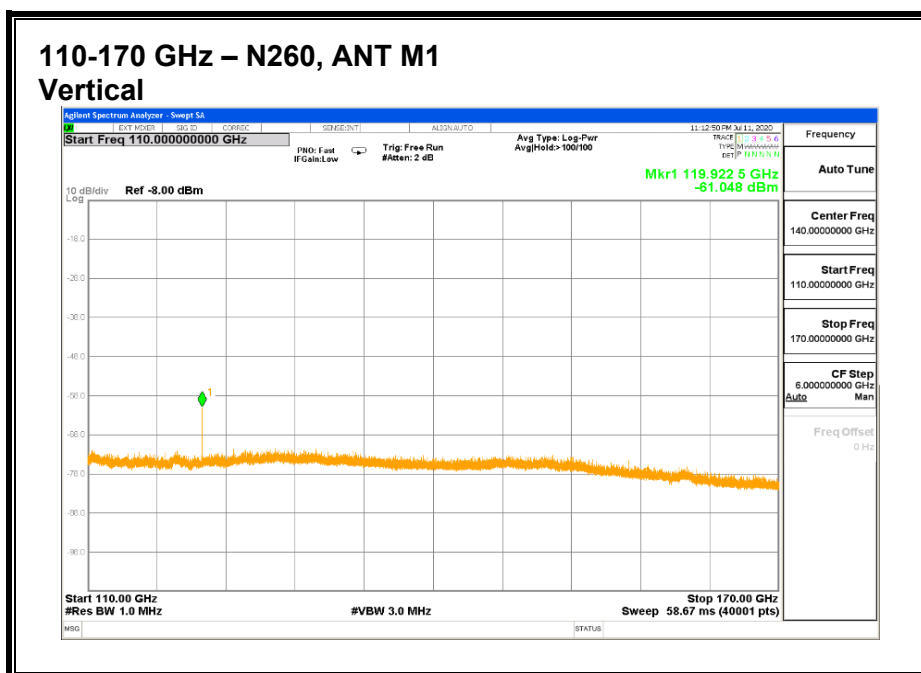
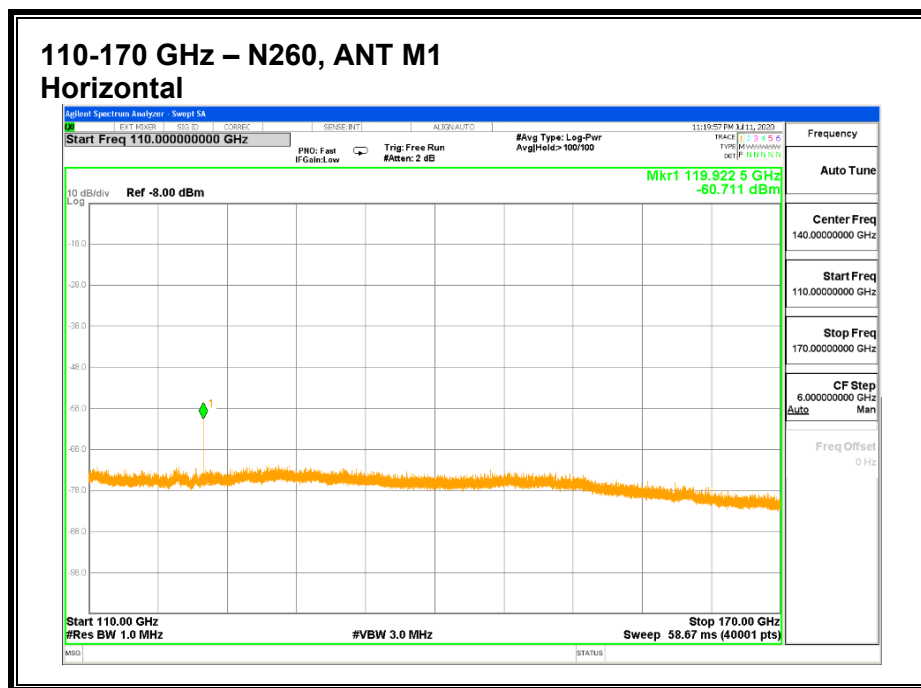


75-110 GHz – N260, ANT M2 Vertical



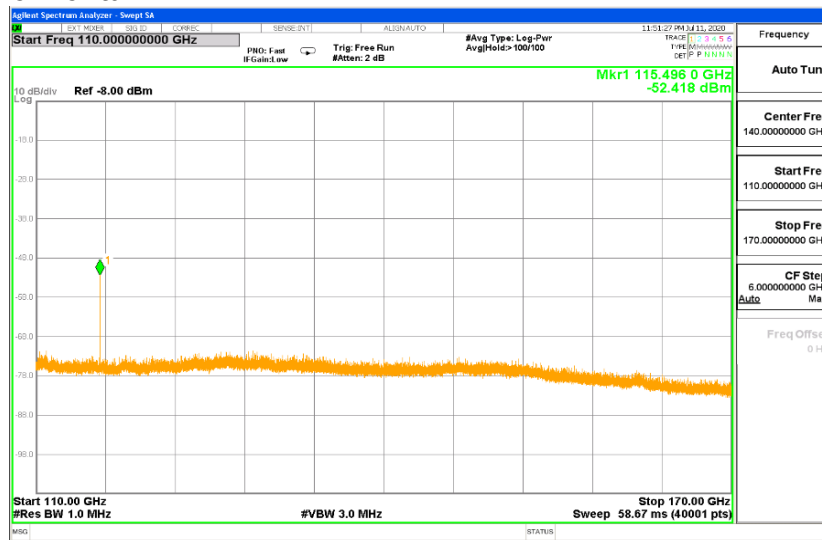
No Emission using Peak Detection.

8.4.8. RADIATED EMISSIONS 110-170 GHz n260

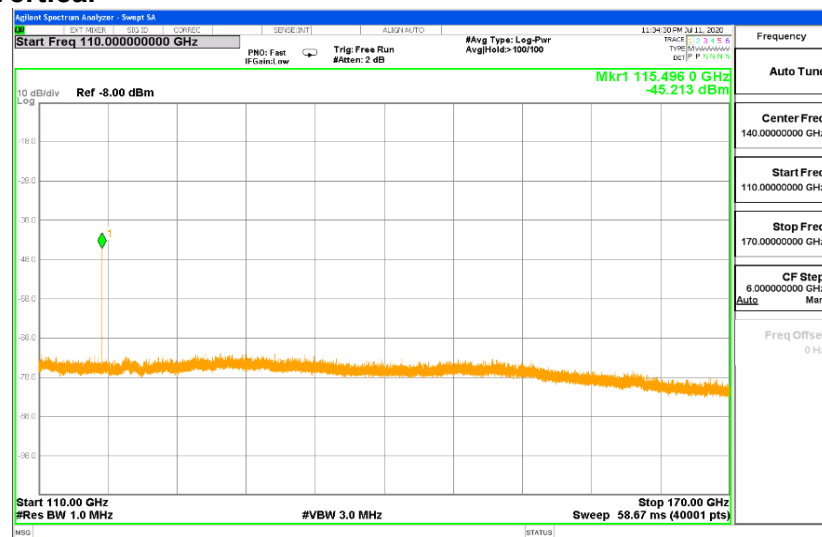


Emissions detected using Peak Detection. Avg EIRP was measured.

110-170 GHz - N260, ANT M2 Horizontal



110-170 GHz - N260, ANT M2 Vertical



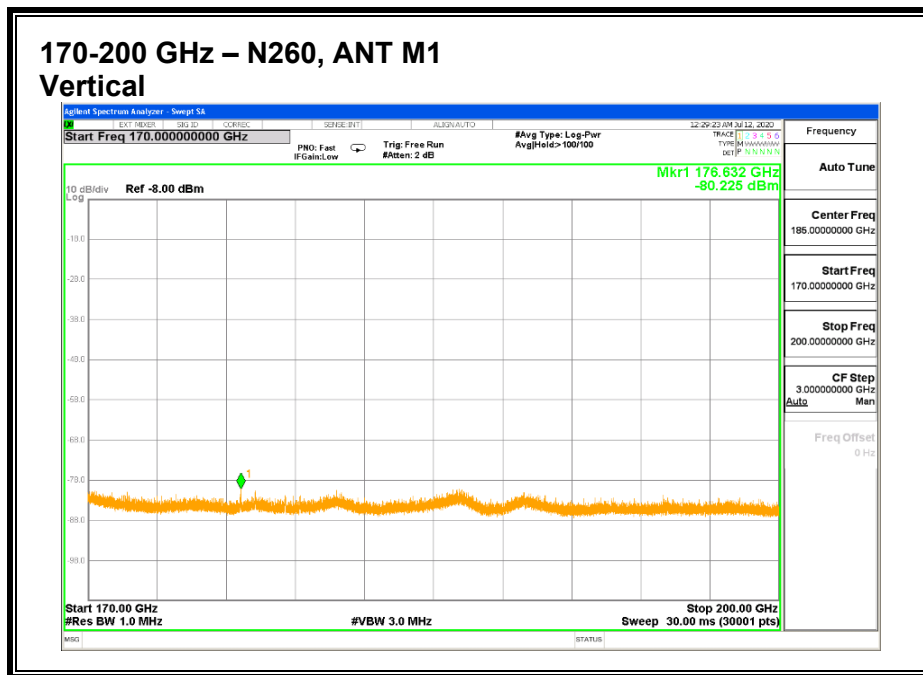
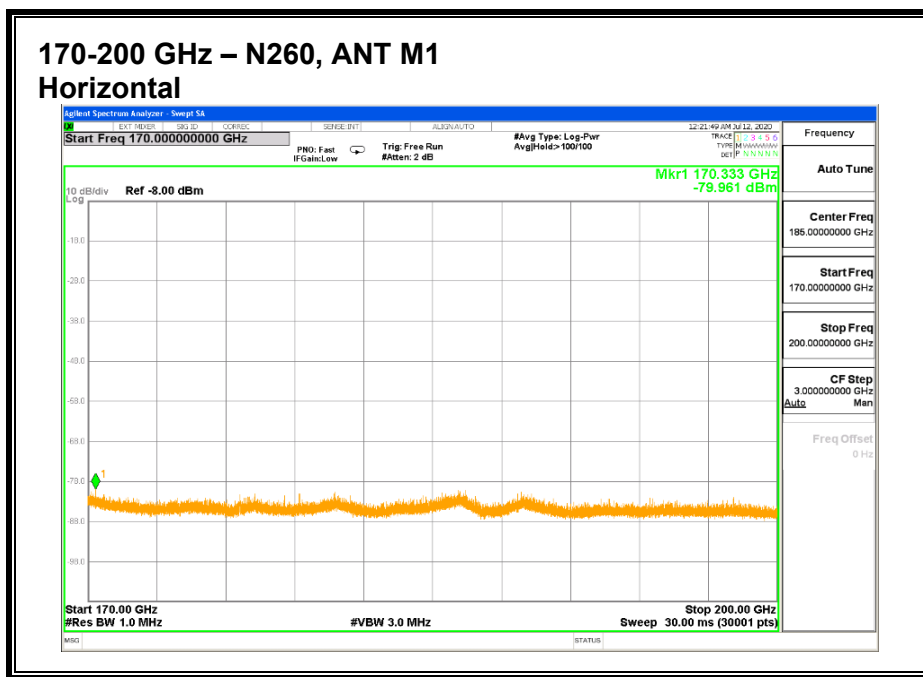
Emissions detected using Peak Detection. Avg EIRP was measured

110-170 GHz n260

EIRP Results

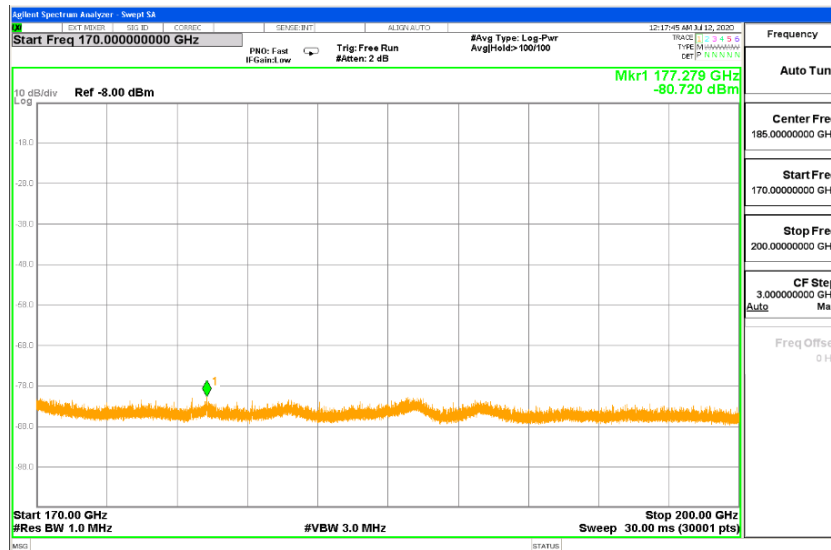
Antenna	Freq.	Meas. Distance	Rx Ant. Polarity	Meas. Power	Corrected Avg EIRP	TRP Limit	Margin
	(GHz)	(m)	H/V	(dBm)	(dBm)	(dBm)	(dB)
M1	119.922	1	H	-59.81	-31.40	-13	-18.40
M1	119.922	1	V	-61.21	-32.80	-13	-19.80
M2	115.497	1	H	-47.77	-19.04	-13	-6.04
M2	115.497	1	V	-45.71	-16.98	-13	-3.98

8.4.9. RADIATED EMISSIONS 170-200 GHz n260

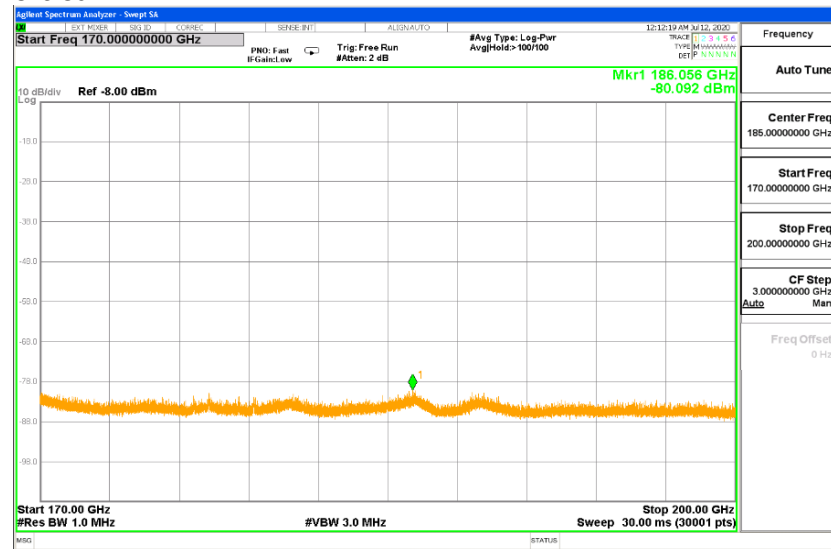


No Emission using Peak Detection.

170-200 GHz – N260, ANT M2 Horizontal

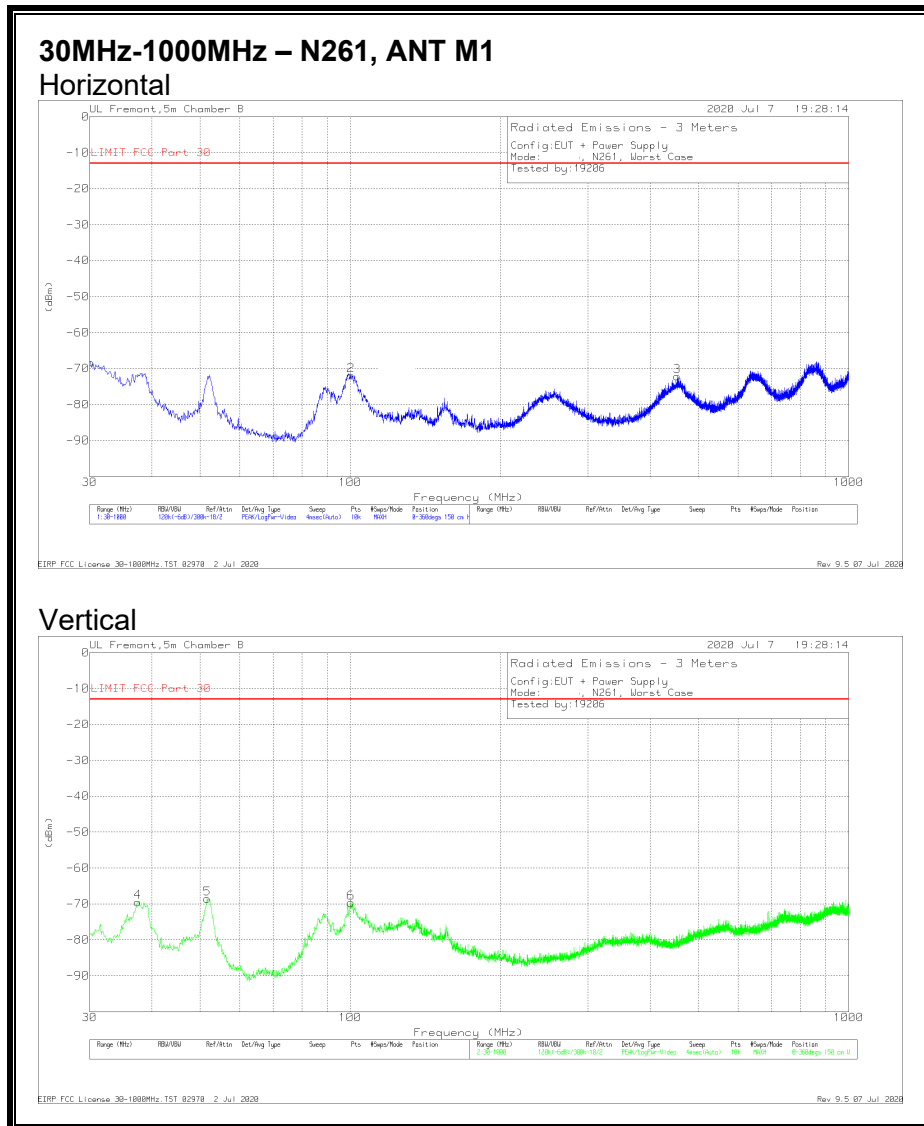


170-200 GHz – N260, ANT M2 Vertical



No Emission using Peak Detection.

8.4.10. RADIATED EMISSIONS 30 MHz - 1 GHz n261

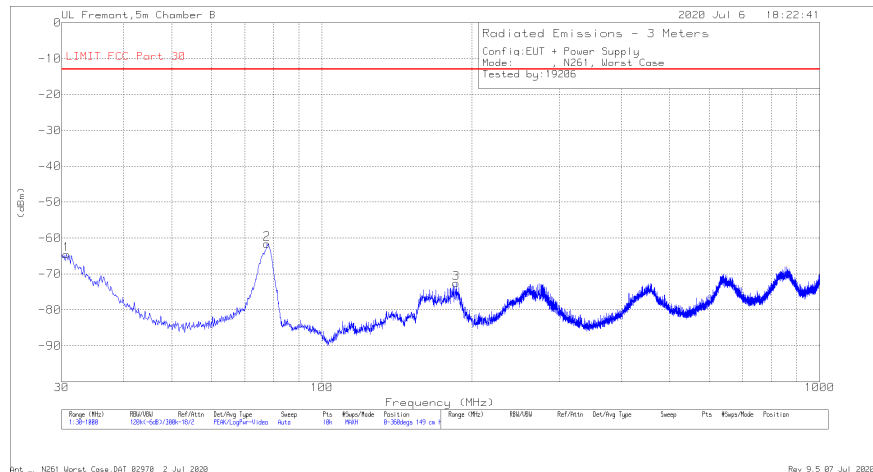


Trace Markers

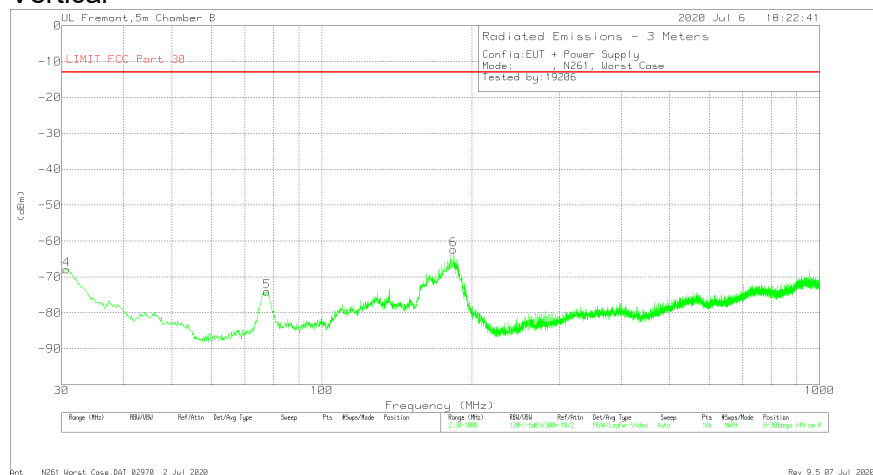
Marker	Frequency (MHz)	Meter Reading (dBm)	Det	AF T407 (dB/m)	Amp/Cbl (dB)	Amp/Cbl (dB)	Corrected Reading (dBm)	LIMIT FCC Part 30 (dBm/MHz)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	30.097	-81.03	Pk	27	-31.4	17.1	-68.33	-13	-55.33	0-360	150	H
4	37.469	-64.98	Pk	21.6	-31.3	5.2	-69.48	-13	-56.48	0-360	150	V
5	51.631	-59.09	Pk	13.3	-31.2	8.5	-68.49	-13	-55.49	0-360	150	V
2	100.325	-63.13	Pk	16.2	-30.7	5.7	-71.93	-13	-58.93	0-360	150	H
6	100.325	-66.52	Pk	16.2	-30.7	11.3	-69.72	-13	-56.72	0-360	150	V
3	452.92	-79	Pk	22.7	-29.2	13.3	-72.2	-13	-59.2	0-360	150	H

Pk - Peak detector
Rev 9.5 06 Mar 2020

30MHz-1000MHz – N261, ANT M2 Horizontal



Vertical

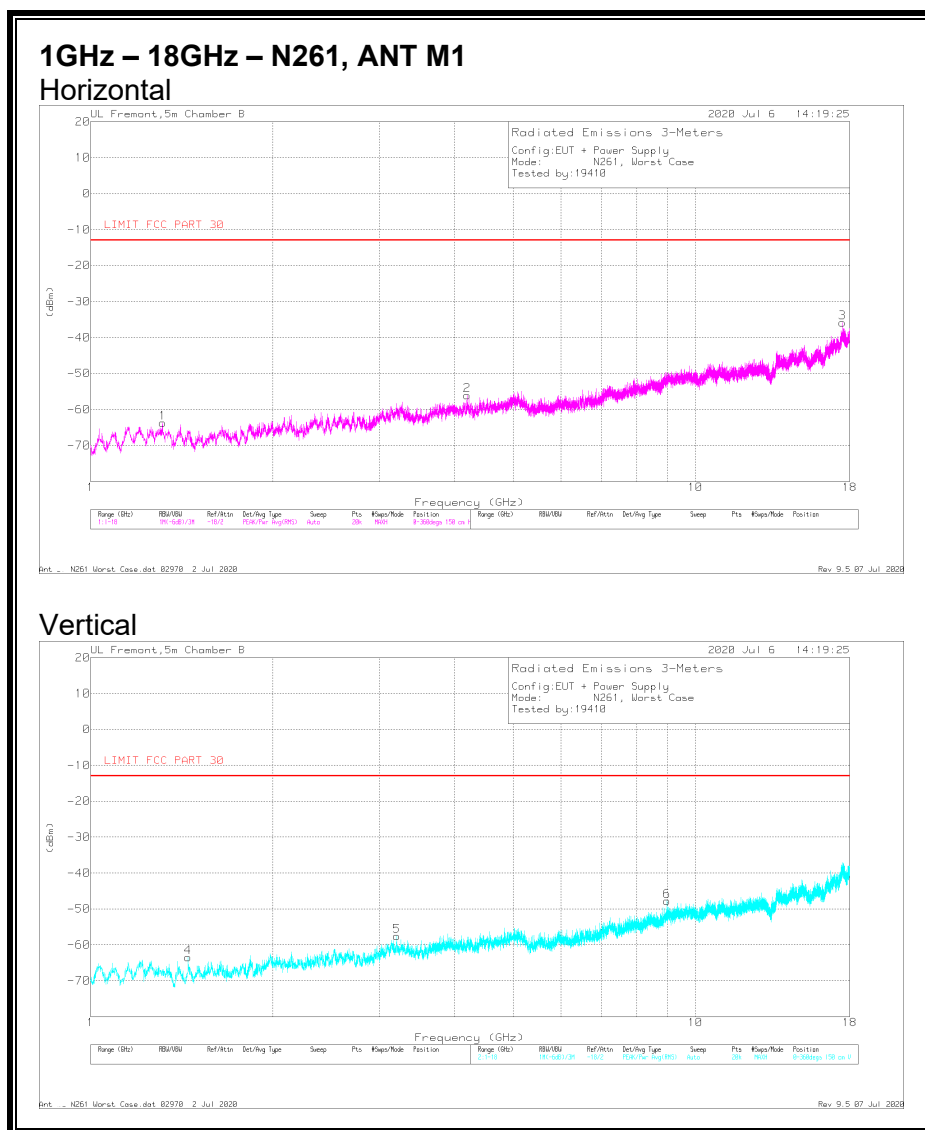


Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBm)	Det	AF T407 (dB/m)	Amp/Cbl (dB)	Amp/Cbl (dB)	Corrected Reading (dBm)	LIMIT FCC Part 30 (dBm/MHz)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	30.679	-76.55	Pk	26.6	-31.4	16.8	-64.55	-13	-51.55	0-360	149	H
4	30.679	-68.76	Pk	26.6	-31.4	5.7	-67.86	-13	-54.86	0-360	149	V
5	77.53	-68.32	Pk	13.6	-30.9	11.5	-74.12	-13	-61.12	0-360	149	V
2	77.627	-52.77	Pk	13.6	-30.9	8.5	-61.57	-13	-48.57	0-360	149	H
6	183.745	-59.23	Pk	17	-30.1	9.9	-62.43	-13	-49.43	0-360	149	V
3	186.073	-67.58	Pk	17	-30.1	8.1	-72.58	-13	-59.58	0-360	149	H

Pk - Peak detector
Rev 9.5 06 Mar 2020

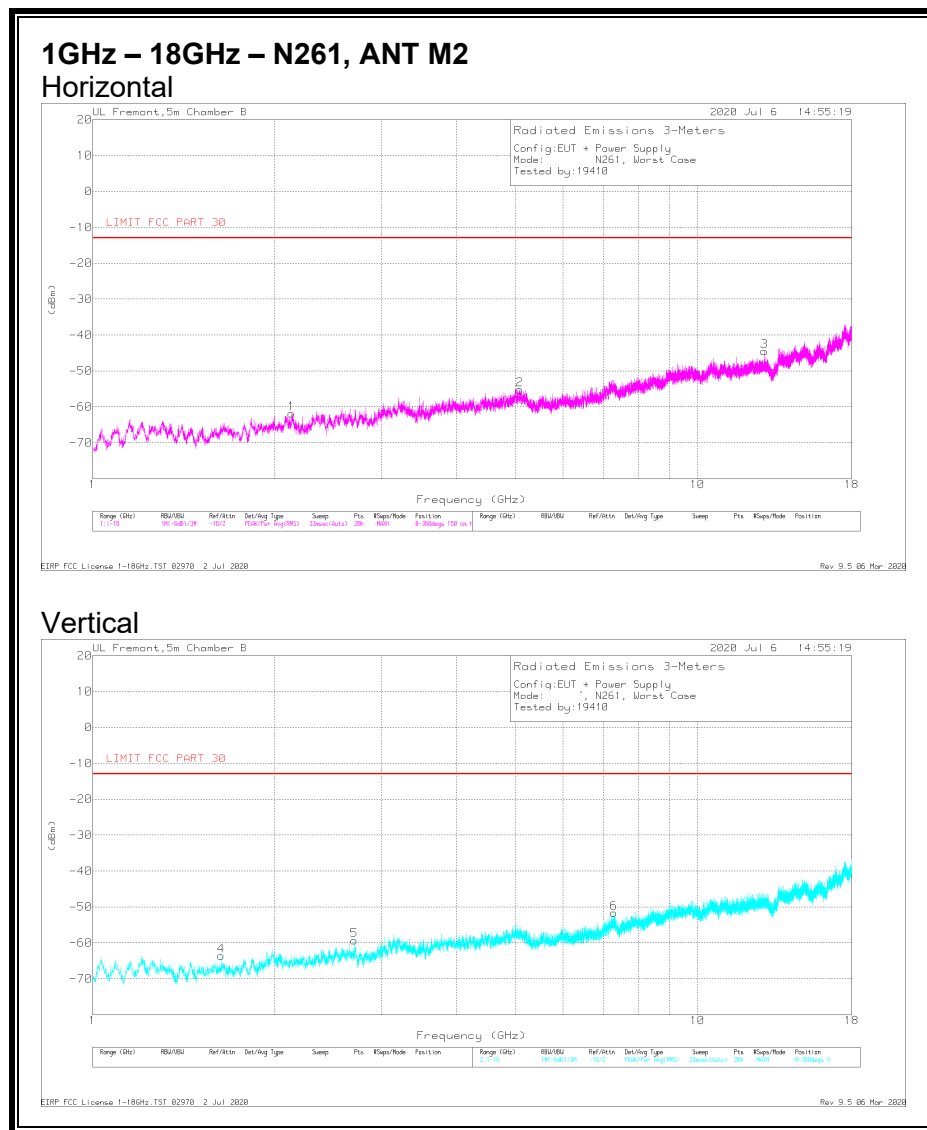
8.4.11. RADIATED EMISSIONS 1-18 GHz n261



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T962 (dB/m)	Amp/Cbl (dB)	Amp/Cbl (dB)	Corrected Reading (dBm)	LIMIT FCC Part 30 (dBm/MHz)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.31537	-69.29	Pk	25.4	-30.9	11	-63.79	-13	-50.79	0-360	150	H
4	1.44967	-67.98	Pk	25.1	-30.7	10.1	-63.48	-13	-50.48	0-360	150	V
5	3.20756	-70.33	Pk	31.3	-28.4	9.9	-57.53	-13	-44.53	0-360	150	V
2	4.19616	-70.4	Pk	31.8	-27.1	9.6	-56.1	-13	-43.1	0-360	150	H
6	8.9785	-72.83	Pk	38.4	-21.4	8	-47.83	-13	-34.83	0-360	150	V
3	17.50954	-74.38	Pk	42.9	-16.3	11.9	-35.88	-13	-22.88	0-360	150	H

Pk - Peak detector
Rev 9.5 06 Mar 2020

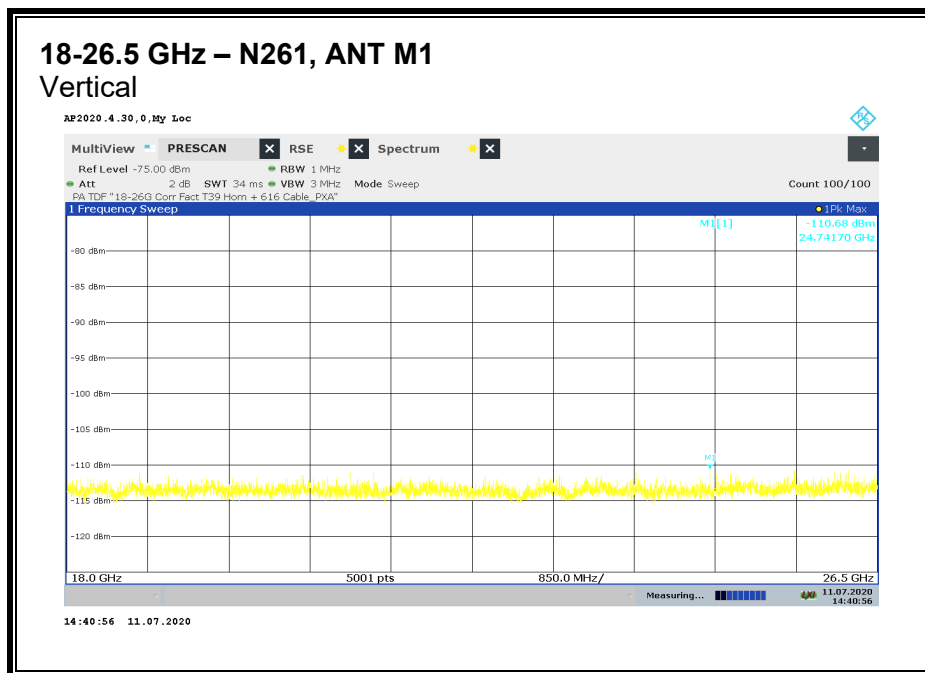
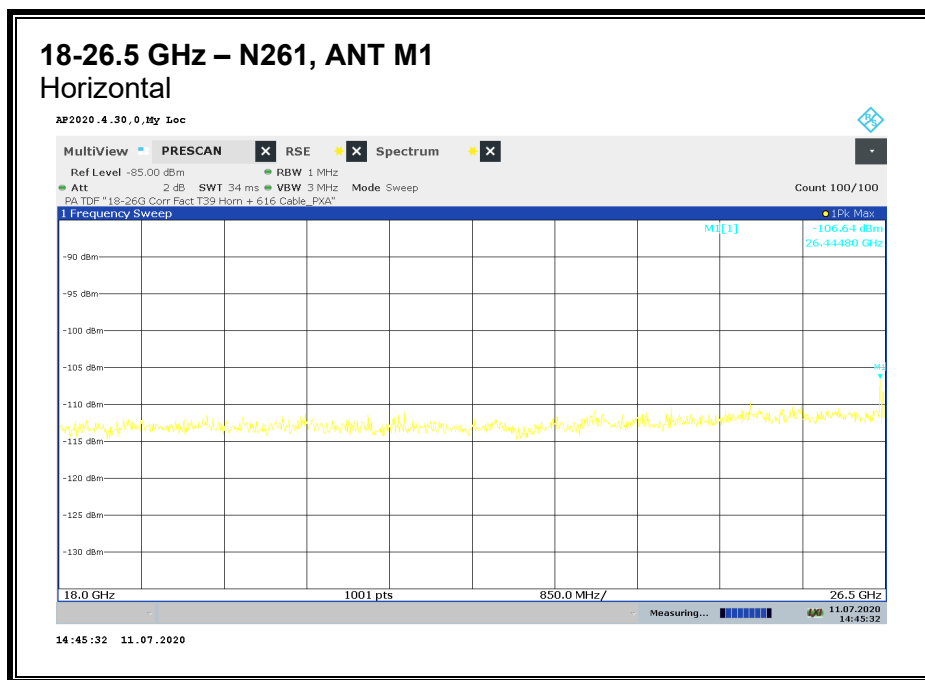


Trace Markers

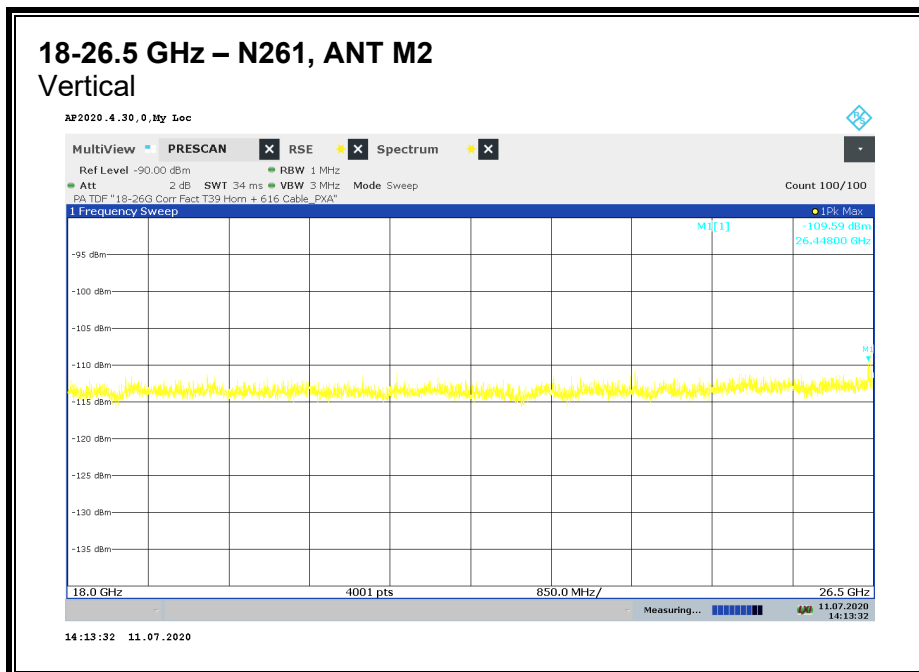
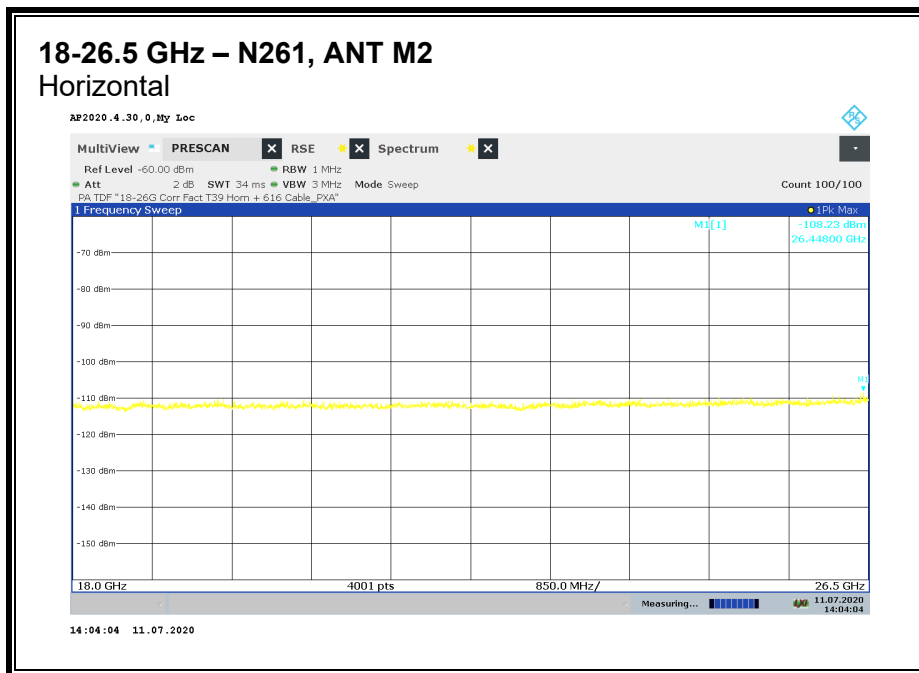
Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T962 (dB/m)	Amp/Cbl (dB)	Amp/Cbl (dB)	Corrected Reading (dBm)	LIMIT FCC Part 30 (dBm/MHz)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	1.63073	-68.49	Pk	25	-30.5	10.4	-63.59	-13	-50.59	0-360	150	V
1	2.13226	-70.3	Pk	26.9	-29.6	11.1	-61.9	-13	-48.9	0-360	150	H
5	2.70774	-68.7	Pk	29.1	-28.9	9.2	-59.3	-13	-46.3	0-360	150	V
2	5.08871	-71.92	Pk	33.8	-26.2	9.1	-55.22	-13	-42.22	0-360	150	H
6	7.28522	-73.08	Pk	37.1	-23.1	7.4	-51.68	-13	-38.68	0-360	150	V
3	12.90995	-74.16	Pk	40.4	-20.4	9.6	-44.56	-13	-31.56	0-360	150	H

Pk - Peak detector
Rev 9.5 06 Mar 2020

8.4.12. RADIATED EMISSIONS 18-26.5 GHz n261



Emission detected using Peak Detection. Avg EIRP was measured.



Emissions detected using Peak Detection. Avg EIRP was measured.

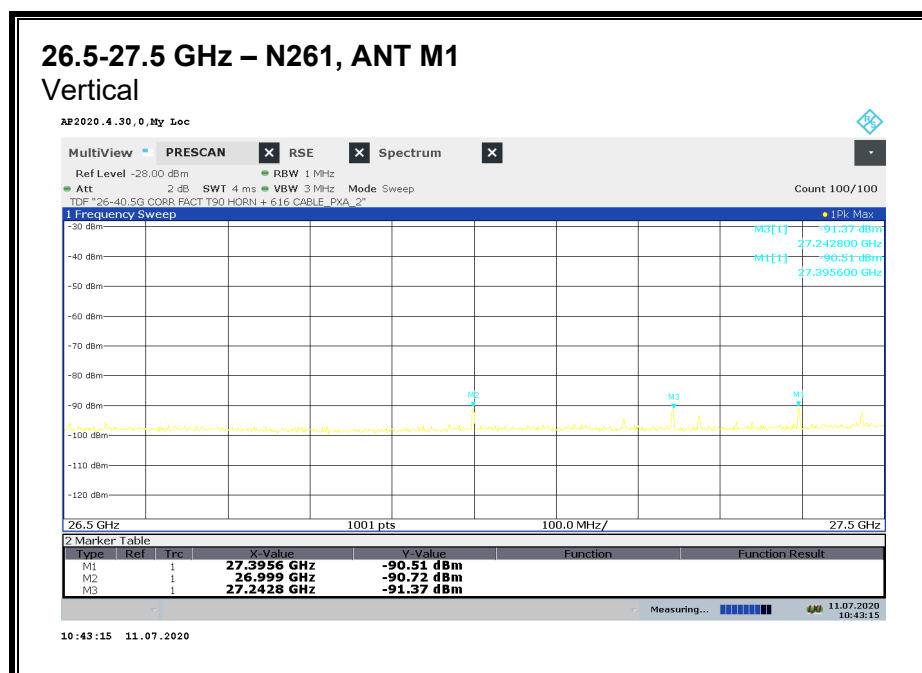
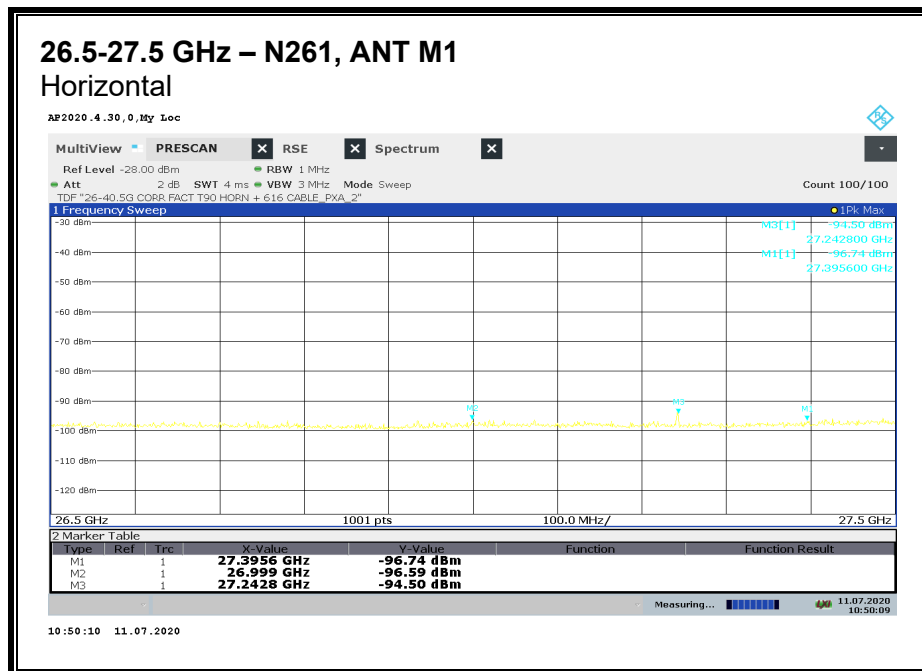
18-26-5 GHz n261

EIRP Results

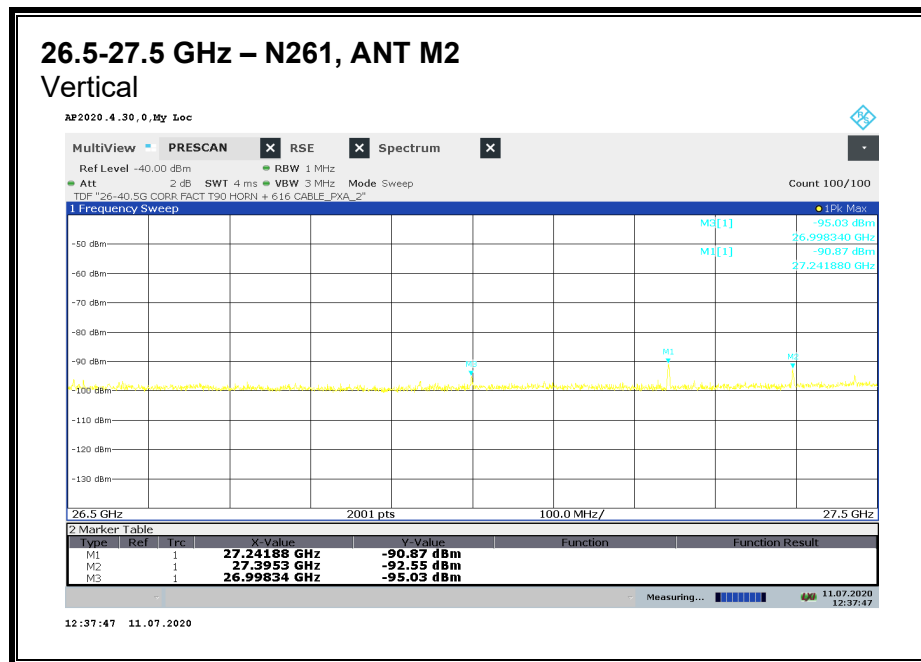
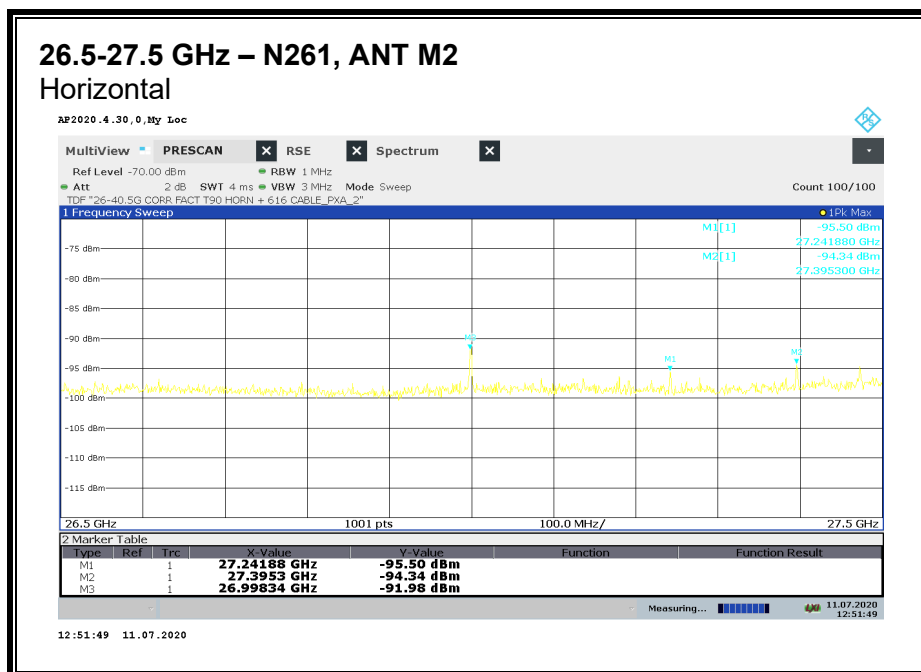
Antenna	Freq.	Meas. Distance	Rx Ant. Polarity	Meas. Power	Corrected Avg EIRP	TRP Limit	Margin
	(GHz)	(m)	H/V	(dBm)	(dBm)	(dBm)	(dB)
M1	26.4480	3	H	-114.14	-43.71	-13	-30.71
M2	26.4480	3	V	-116.41	-45.98	-13	-32.98
M2	26.4480	3	H	-117.51	-47.08	-13	-34.08

8.4.13. RADIATED EMISSIONS 26.5-27.5 GHz n261

Note: 27.5-28.35 GHz covered by Fundamental and BE measurements.



Emissions detected using Peak Detection. Avg EIRP was measured.

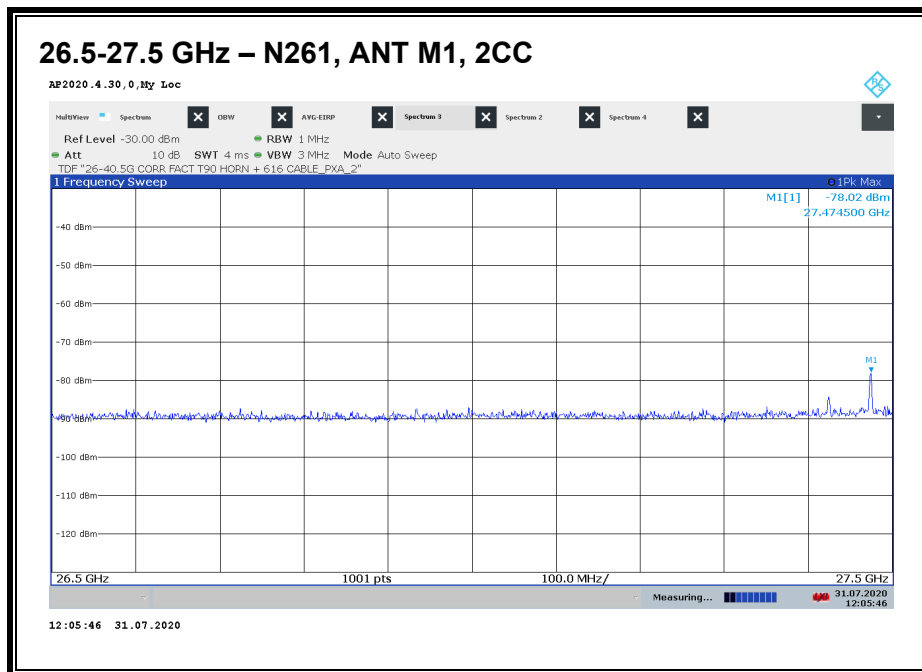


Emissions detected using Peak Detection. Avg EIRP was measured.

26.5-27.5 GHz n261

EIRP RESULTS, 1CC

Antenna	Freq.	Meas. Distance	Rx Ant. Polarity	Meas. Power	Corrected Avg EIRP	TRP Limit	Margin
	(GHz)	(m)	H/V	(dBm)	(dBm)	(dBm)	(dB)
M1	27.396	3	H	-110.66	-39.93	-13	-26.93
M1	27.396	3	V	-98.42	-27.69	-13	-14.69
M1	26.999	3	H	-102.90	-32.29	-13	-19.29
M1	26.999	3	V	-98.50	-27.89	-13	-14.89
M1	27.243	3	H	-100.97	-30.28	-13	-17.28
M1	27.243	3	V	-96.61	-25.92	-13	-12.92
M2	27.395	3	H	-104.46	-33.73	-13	-20.73
M2	27.395	3	V	-100.66	-29.93	-13	-16.93
M2	26.999	3	H	-97.65	-27.04	-13	-14.04
M2	26.999	3	V	-104.47	-33.86	-13	-20.86
M2	27.242	3	H	-103.32	-32.64	-13	-19.64
M2	27.242	3	V	-96.55	-25.87	-13	-12.87



Emissions detected using Peak Detection. Avg EIRP and TRP were measured on highest emission.

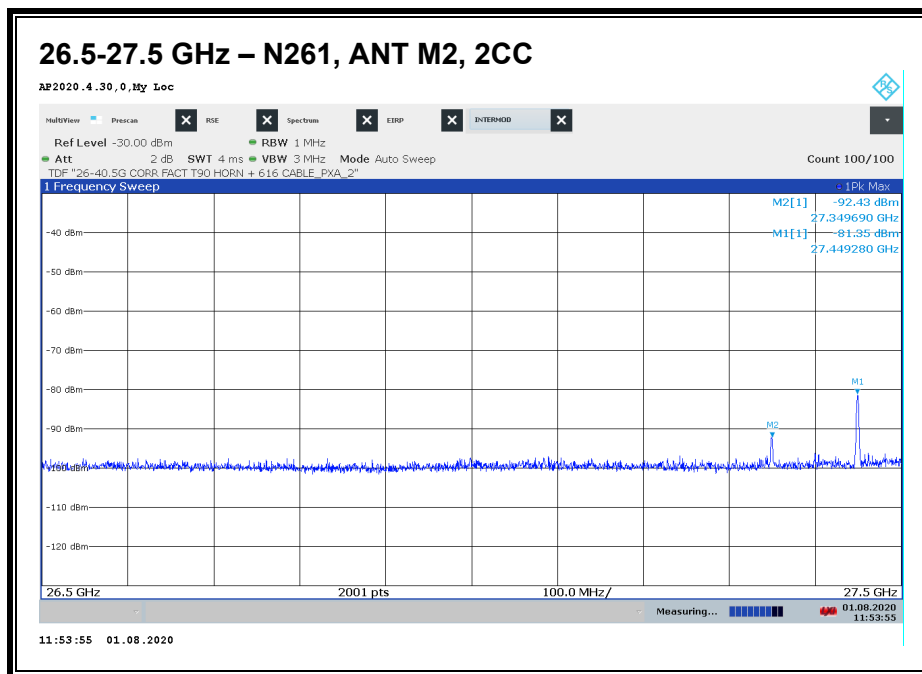
EIRP & TRP RESULTS, 2CC

Worst case configuration:

SISO-DUAL_QPSK_(50 MHz + 50 MHz)_Low CH_RB Offset 1/15 (1RB-M)

Highest emission in this band was investigated.

Antenna	Freq.	Meas. Distance	Rx Ant. Polarity	Meas. Power	Corrected Avg EIRP	Meas. TRP	TRP Limit	Margin
	(GHz)	(m)	H/V	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
M1	27.4743	3	V	-83.42	-12.66	-	-13	0.34
M1	27.4743	3	-	-	-	-19.42	-13	-6.42



Emissions detected using Peak Detection. Avg EIRP was measured on highest emission.

EIRP RESULT, 2CC

Worst case configuration:

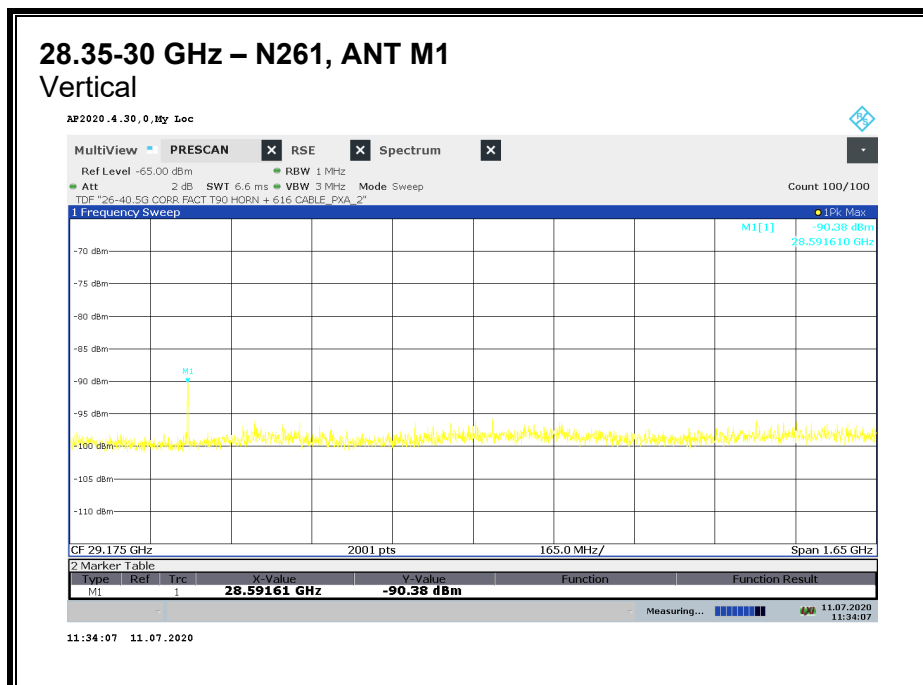
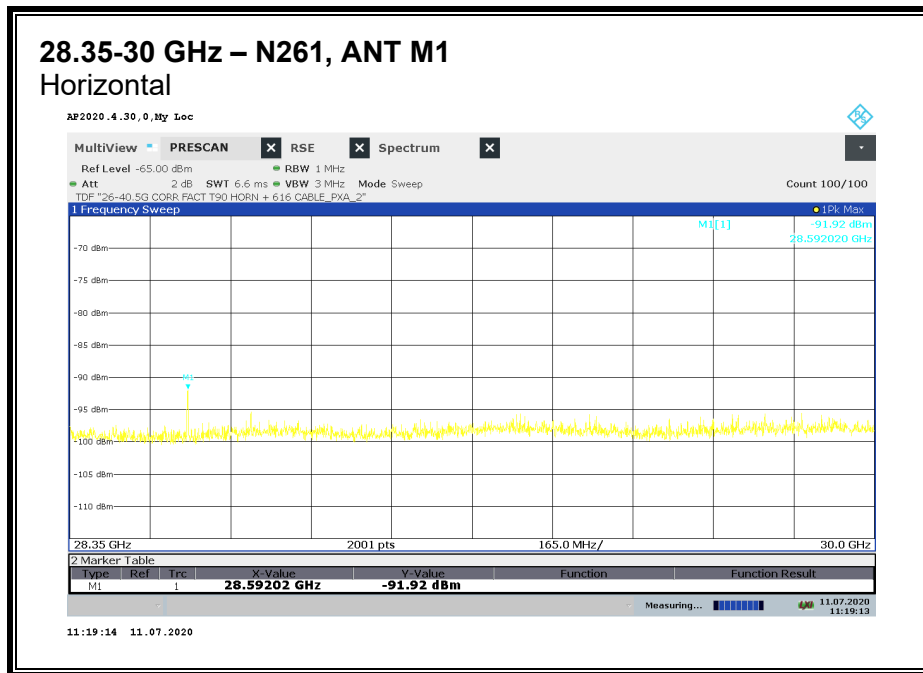
SISO-DUAL_QPSK_(100 MHz + 100 MHz)_Low CH_RB Offset 1/15 (1RB-M)

Highest emission in this band was investigated.

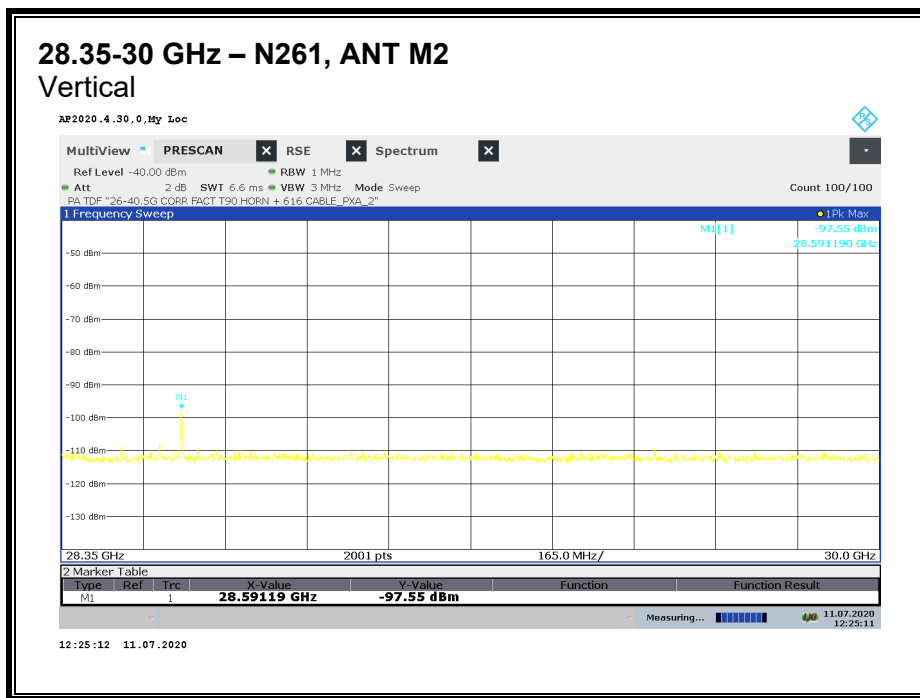
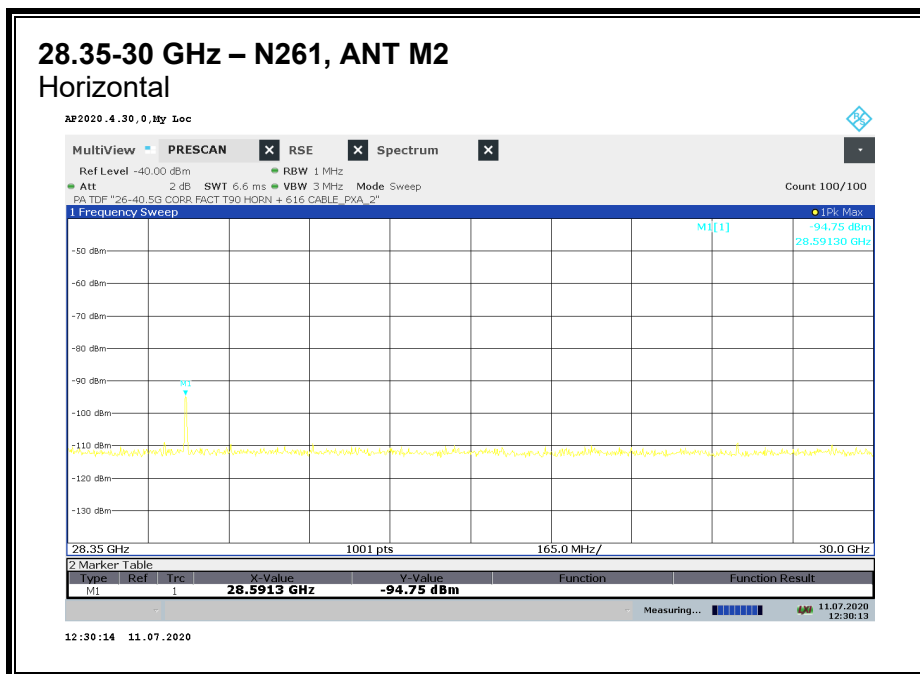
Antenna	Freq.	Meas. Distance	Rx Ant. Polarity	Meas. Power	Corrected Avg EIRP	TRP Limit	Margin
	(GHz)	(m)	H/V	(dBm)	(dBm)	(dBm)	(dB)
M2	27.4491	3	V	-88.01	-17.26	-13	-4.26

8.4.14. RADIATED EMISSIONS 28.35-30 GHz n261

Note: 27.5-28.35 GHz covered by Fundamental and BE measurements.



Emissions detected using Peak Detection. Avg EIRP was measured.



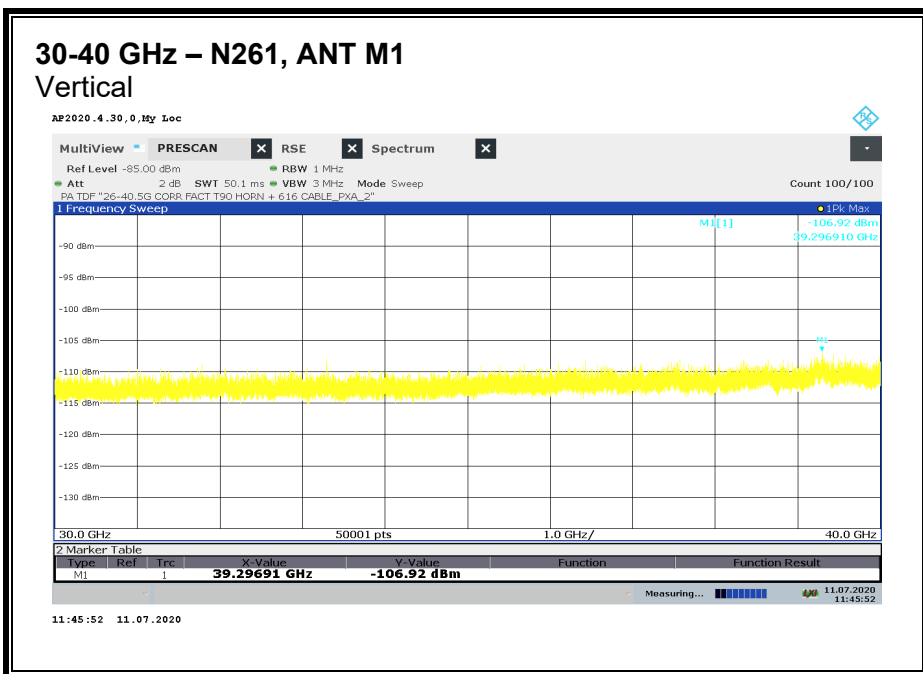
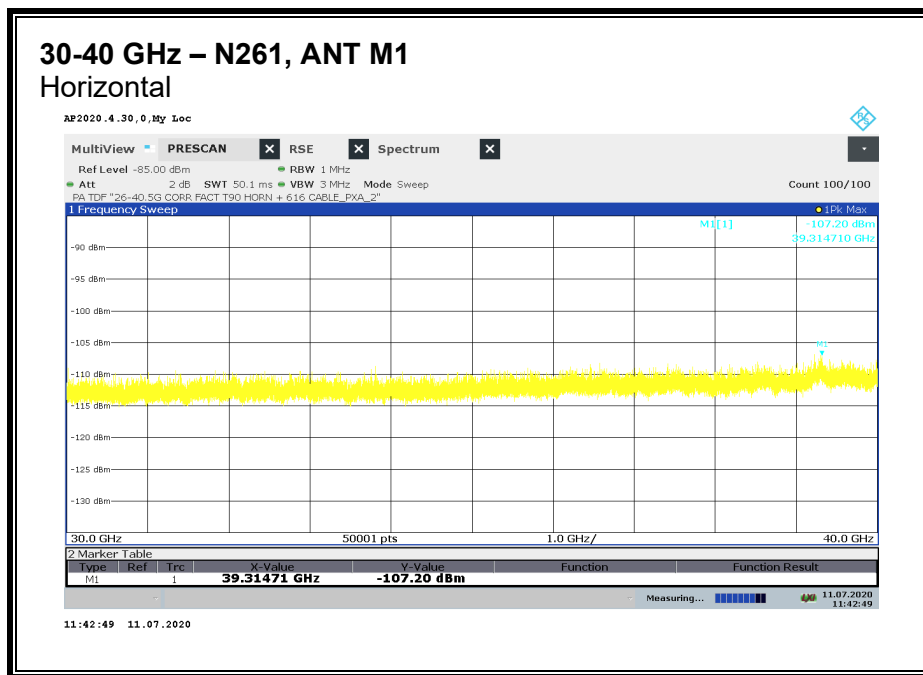
Emissions detected using Peak Detection. Avg EIRP was measured.

28.35-30 GHz n261

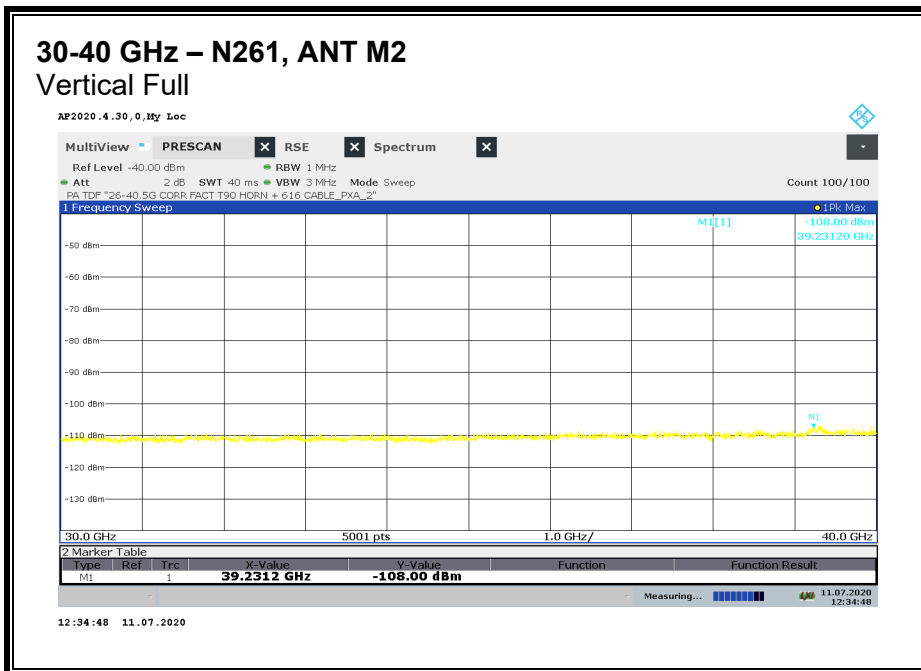
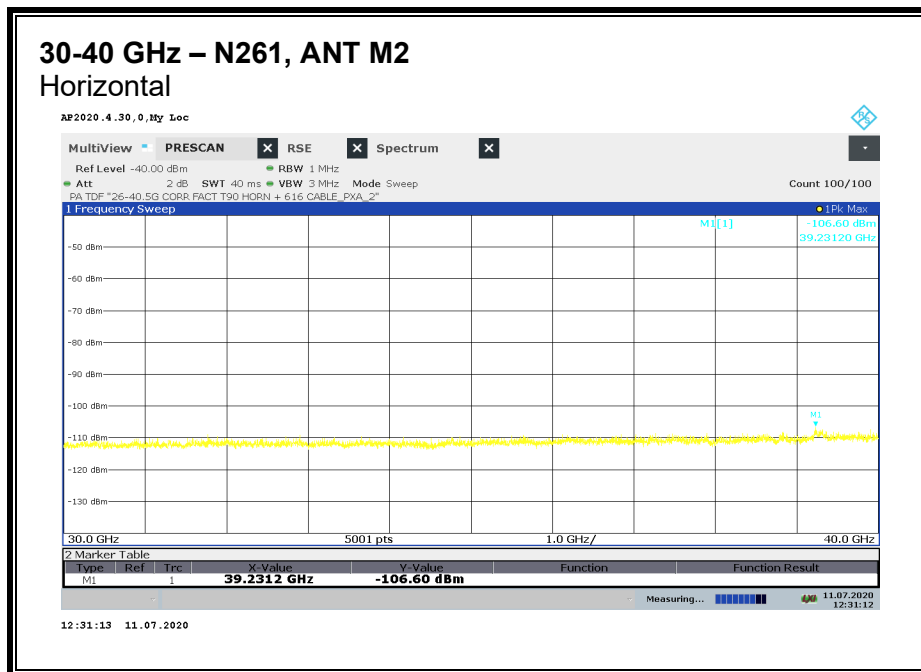
EIRP Results

Antenna	Freq.	Meas. Distance	Rx Ant. Polarity	Meas. Power	Corrected Avg EIRP	TRP Limit	Margin
	(GHz)	(m)	H/V	(dBm)	(dBm)	(dBm)	(dB)
M1	28.591	3	H	-93.29	-22.19	-13	-9.19
M1	28.591	3	V	-94.81	-23.71	-13	-10.71
M2	28.591	3	H	-98.27	-27.17	-13	-14.17
M2	28.591	3	V	-101.23	-30.13	-13	-17.13

8.4.15. RADIATED EMISSIONS 30-40 GHz n261

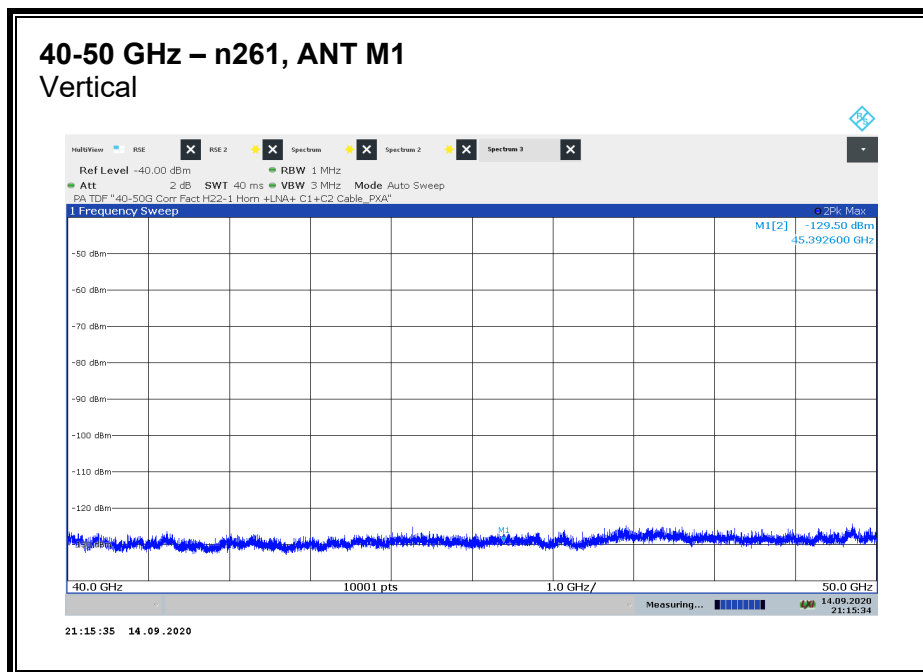
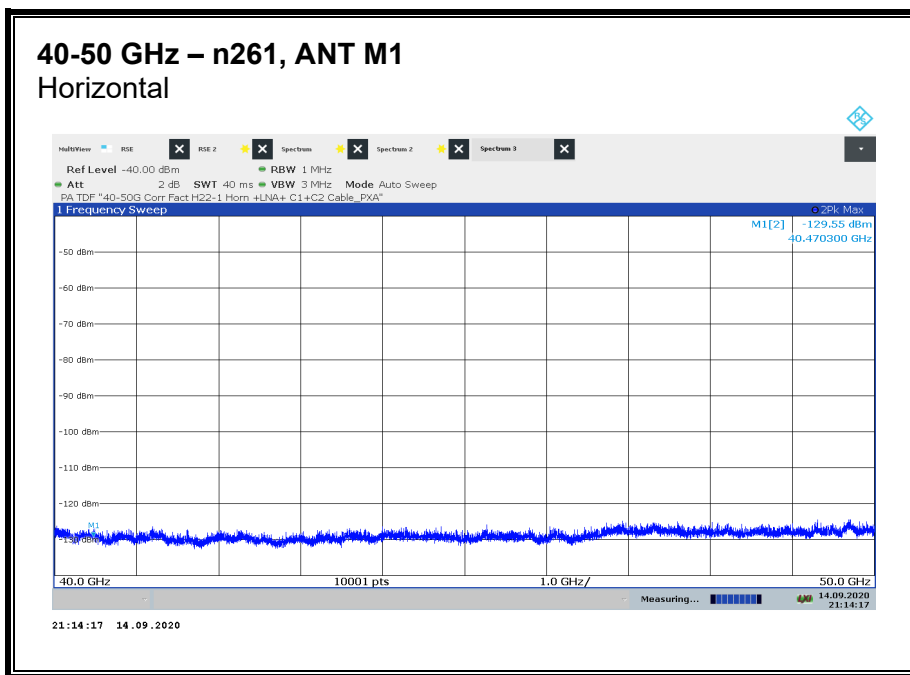


No Emission using Peak Detection.

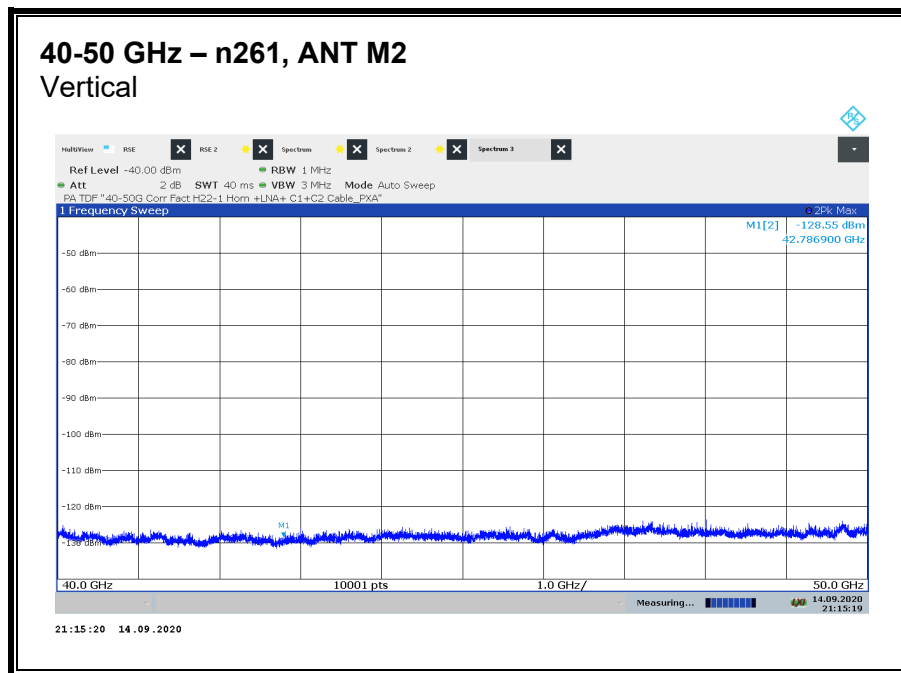
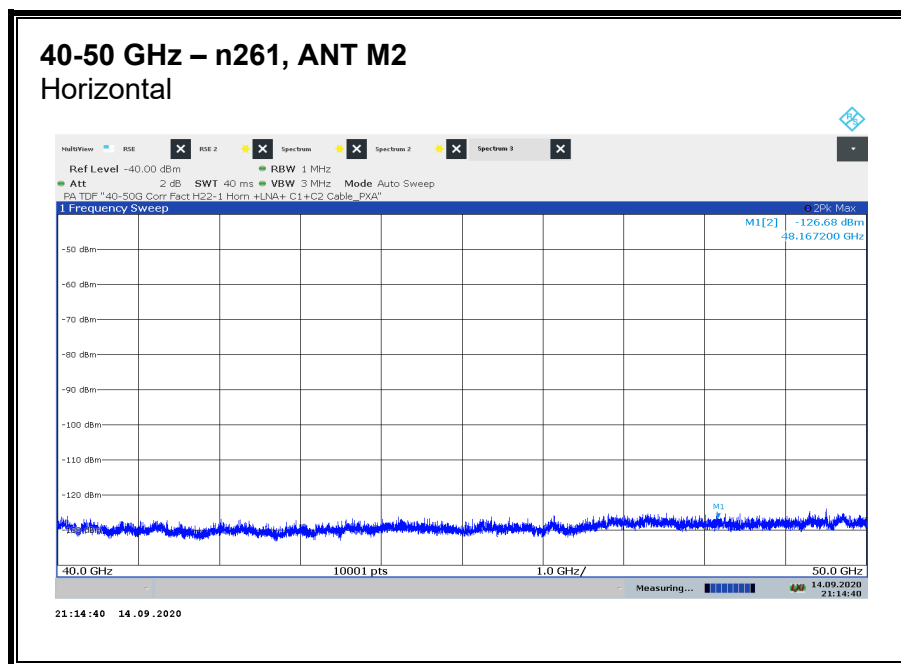


No Emission using Peak Detection.

8.4.16. RADIATED EMISSIONS 40-50 GHz n261

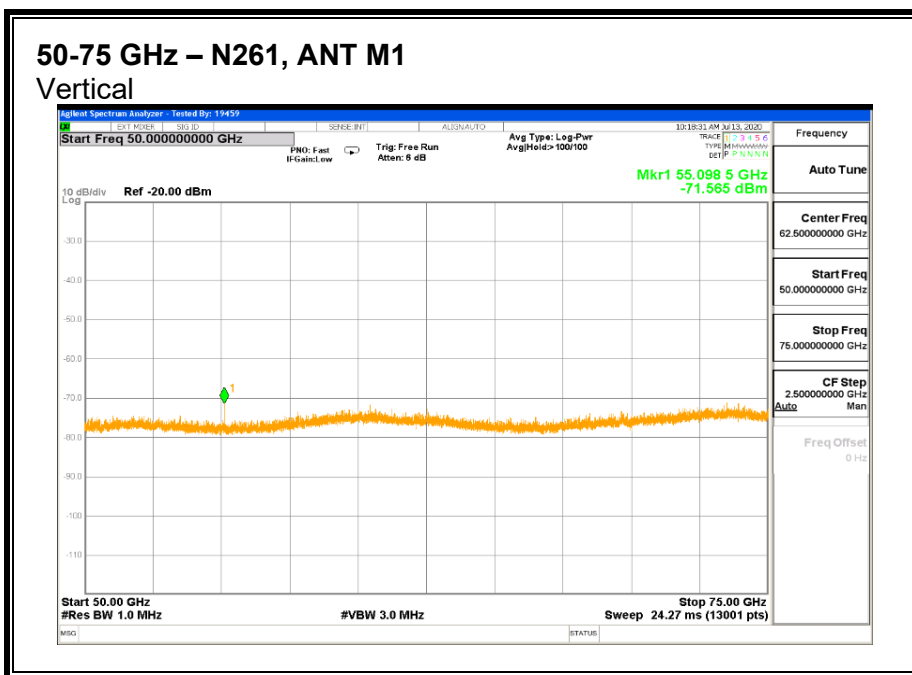
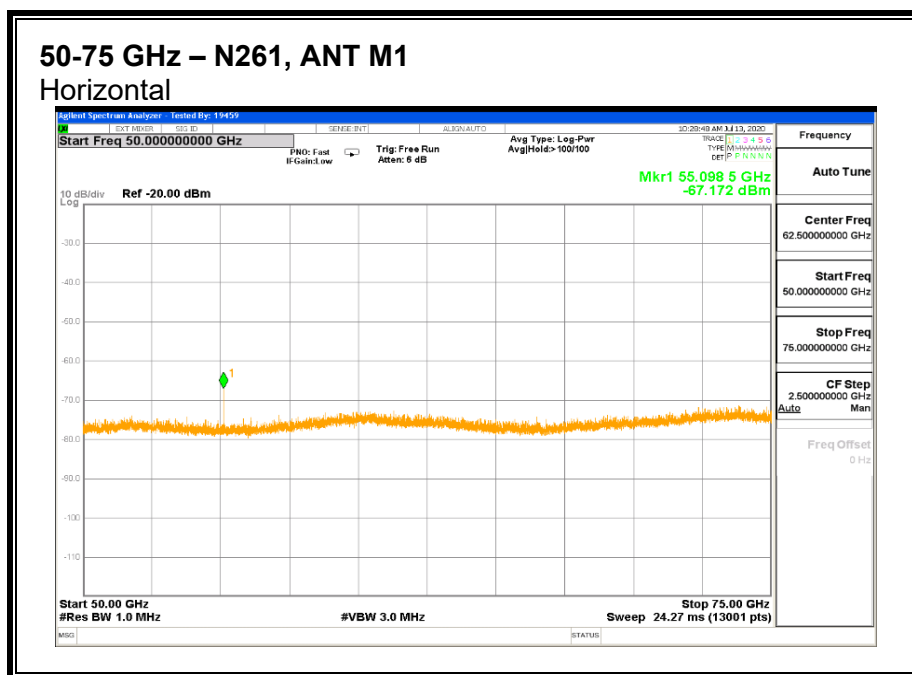


No Emission using Peak Detection.

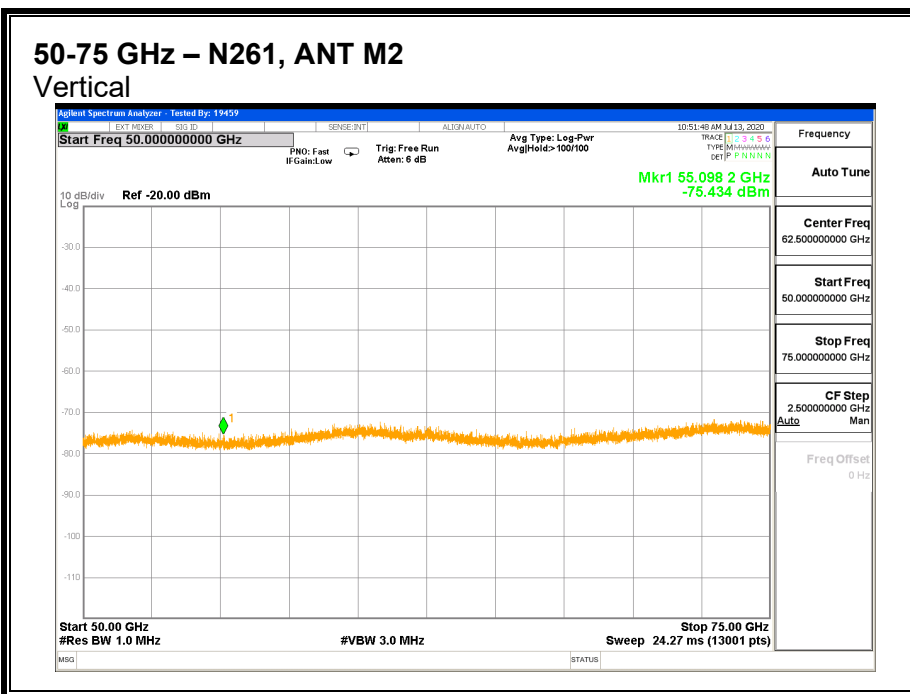
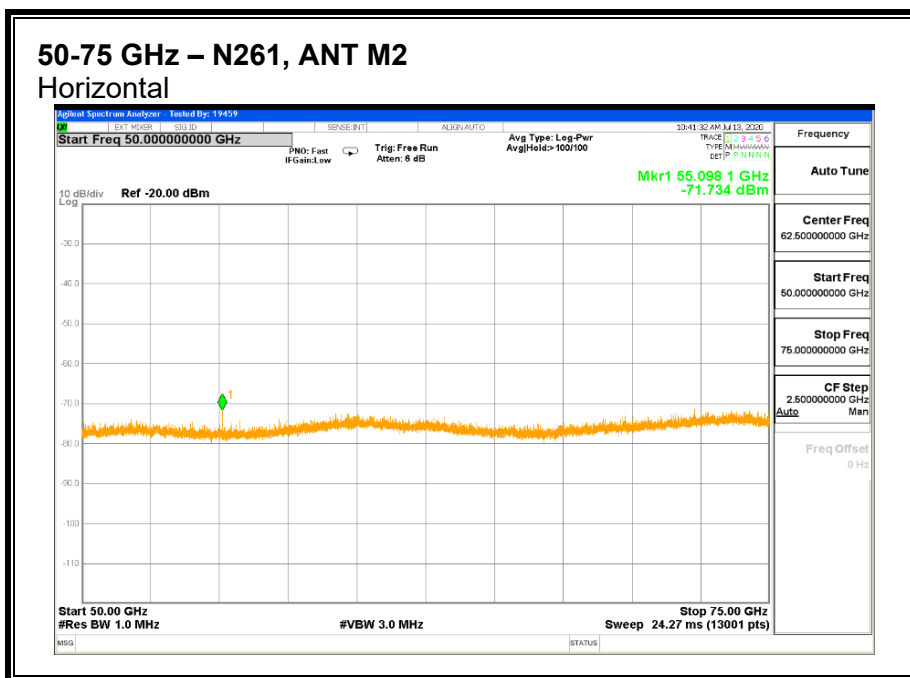


No Emission using Peak Detection.

8.4.17. RADIATED EMISSIONS 50-75 GHz n261



Emissions detected using Peak Detection. Avg EIRP was measured.



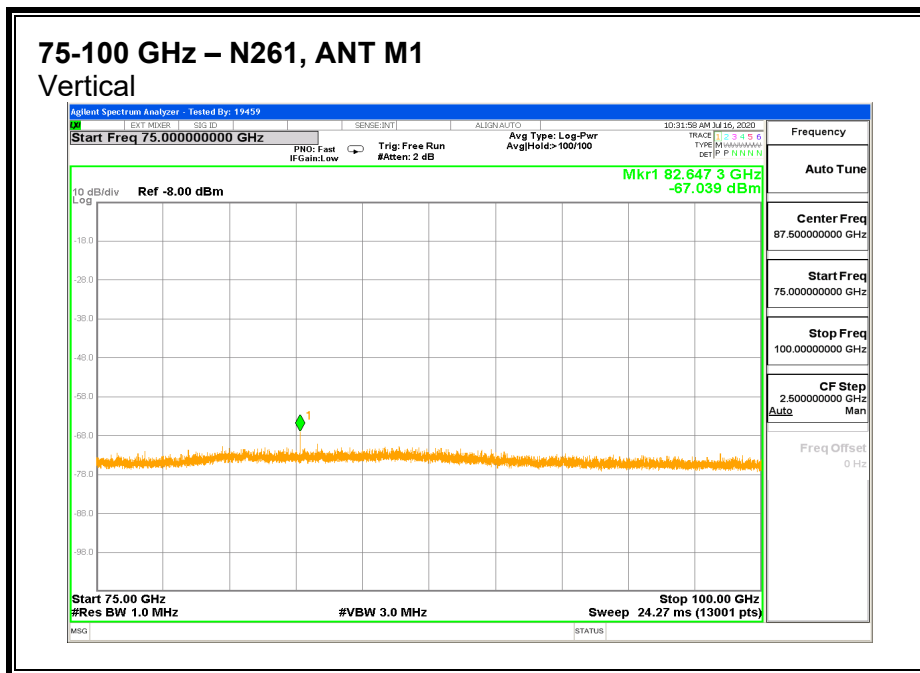
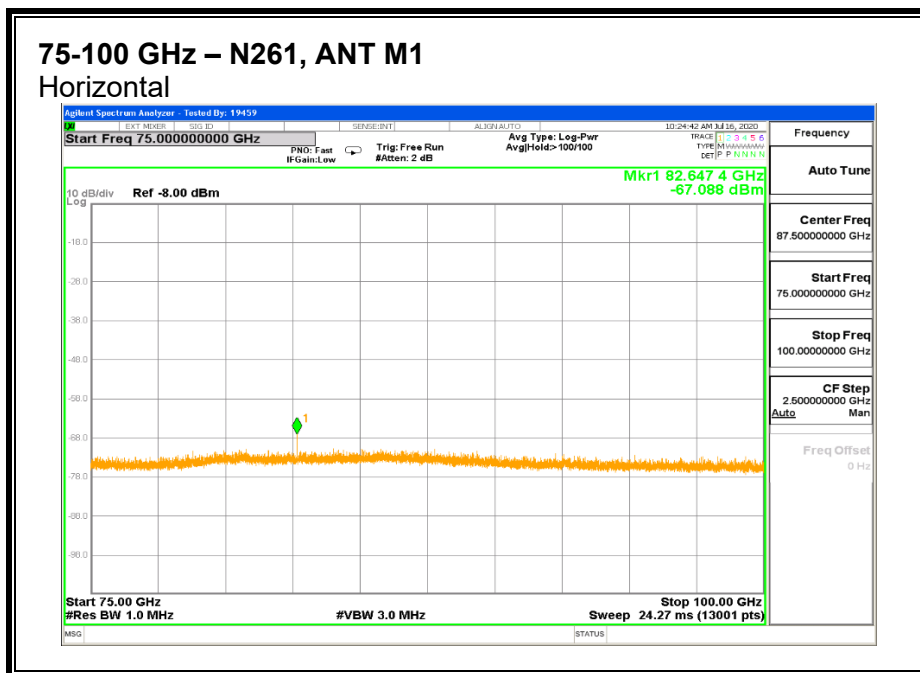
Emissions detected using Peak Detection. Avg EIRP was measured.

50-75 GHz n261

EIRP Results

Antenna	Freq.	Meas. Distance	Rx Ant. Polarity	Meas. Power	Corrected Avg EIRP	TRP Limit	Margin
	(GHz)	(m)	H/V	(dBm)	(dBm)	(dBm)	(dB)
M1	55.099	1.5	H	-73.70	-25.92	-13	-12.92
M1	55.099	1.5	V	-76.86	-29.07	-13	-16.07
M2	55.098	1.5	H	-77.92	-30.13	-13	-17.13
M2	55.098	1.5	V	-82.46	-34.68	-13	-21.68

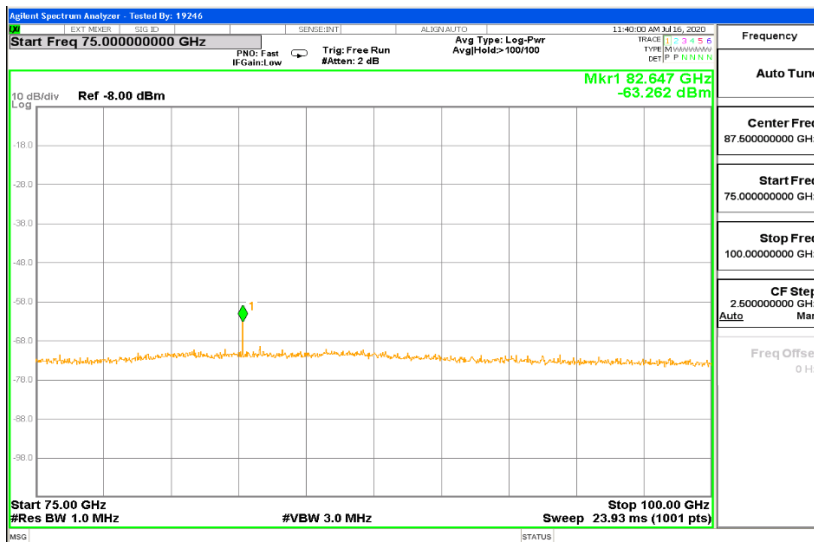
8.4.18. RADIATED EMISSIONS 75-100 GHz n261



Emissions detected using Peak Detection. Avg EIRP was measured

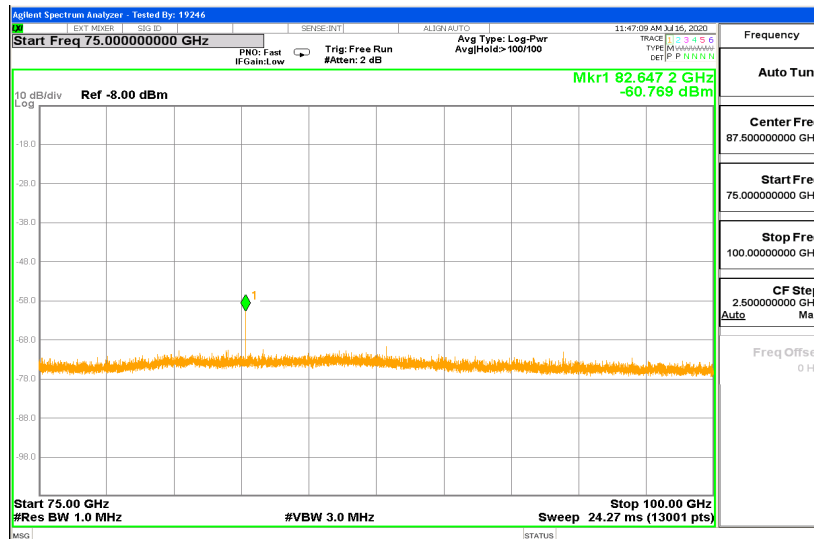
75-100 GHz – N261, ANT M2

Vertical



75-100 GHz – N261, ANT M2

Vertical



Emissions detected using Peak Detection. Avg EIRP was measured

75-100 GHz n261

EIRP Results

Antenna	Freq.	Meas. Distance	Rx Ant. Polarity	Meas. Power	Corrected Avg EIRP	TRP Limit	Margin
	(GHz)	(m)	H/V	(dBm)	(dBm)	(dBm)	(dB)
M1	82.647	1	H	-75.66	-27.88	-13	-14.88
M1	82.647	1	V	-74.15	-26.37	-13	-13.37
M2	82.647	1	H	-70.51	-22.73	-13	-9.73
M2	82.647	1	V	-66.49	-18.71	-13	-5.71

8.5. FREQUENCY STABILITY

RULE PART(S)

FCC: §2.1055

LIMIT

For reporting purposes only

TEST PROCEDURES

KDB 842590 D01 Upper Microwave Flexible Use Service v01 Section 4.5
ANSI C63.26-2015 Section 5.6

Test procedures for temperature variation:

- a. Position the EUT in temperature/humidity chamber with power off.
 - b. Set chamber temperature to -30°C and stabilize the EUT for at least 30 minutes.
 - c. Record maximum change in frequency within one minute after powering the EUT.
 - d. Increase chamber temperature at 10°C intervals from -30°C to 50°C. Record maximum change in frequency at each temperature.
 - e. A period of at least 30 minutes is provided to allow stabilization of the equipment at each temperature level.
- Temp. = -30°C to +50°C

Test procedures for voltage variation:

- a. Position the EUT in temperature/humidity chamber with power off.
 - b. Set chamber temperature to 20°C.
 - c. Record maximum frequency change within one minute after powering the EUT.
 - d. The primary supply voltage is varied from 85% to 115% of the nominal value for hand-carried, battery-powered equipment. primary supply voltage is reduced to the battery operating end point which shall be specified by the manufacturer.
- Voltage = (85% - 115%)
Nominal: 3.8 VDC; Low: 3.23 VDC; High: 4.37 VDC.

The measurements were performed with the CW signal of the center frequency of n260 on antenna M1 and n261 bands on antenna M2, to represent Chipset 1 and Chipset 2 respectively.

RESULTS

See the following page.

TESTED BY:

Employee ID: 19459

RESULTS

			Antenna M1 _N260	
Input Voltage	Environment	Frequency	Frequency	Delta
	Temperature (°C)	(Hz)	(MHz)	(kHz)
Normal	50	38504699657	38504.6996574	-47.986
Normal	40	38504726024	38504.7260240	-21.619
Normal	30	38504692937	38504.6929370	-54.706
Normal	20	38504747643	38504.7476430	Reference
Normal	10	38504873288	38504.8732880	125.645
Normal	0	38504944333	38504.9443330	196.690
Normal	-10	38505060527	38505.0605270	312.884
Normal	-20	38505126066	38505.1260660	378.423
Normal	-30	38505141843	38505.1418430	394.200
115%	20	38504763949	38504.7639490	16.306
85%	20	38504738327	38504.7383270	-9.316

			Antenna M2 _N261	
Input Voltage	Environment	Frequency	Frequency	Delta
	Temperature (°C)	(Hz)	(MHz)	(kHz)
Normal	50	27929798858	27929.7988580	-103.831
Normal	40	27929814494	27929.8144940	-88.195
Normal	30	27929849476	27929.8494760	-53.213
Normal	20	27929902689	27929.9026890	Reference
Normal	10	27929989319	27929.9893190	86.630
Normal	0	27930070857	27930.0708570	168.168
Normal	-10	27930146462	27930.1464620	243.773
Normal	-20	27930159679	27930.1596790	256.990
Normal	-30	27930121130	27930.1211300	218.441
115%	20	27929908925	27929.9089250	6.236
85%	20	27929895937	27929.8959370	-6.752

9. SETUP PHOTOS

Please refer to 13259315-EP20V1.

END OF REPORT

APPENDIX A

1. 50-80 GHz Keysight M1970V



Certificate Of Calibration

Certificate No: M1970V/MY5139083020190820

Manufacturer: Keysight Technologies
Model No: M1970V
Options Installed With Specifications: 002

Description: Waveguide Harmonic Mixer
Serial No: MY51390830

Customer Asset:
Customer:
UL LLC
47173 Benicia St
FREMONT CA 94538-7366
UNITED STATES

Location of Calibration:
Plot 44, Bayan Lepas Industrial Park IV
11900 Penang
Malaysia

Date of Calibration: 20-AUG-2019
Temperature: (23 ± 3)°C
Procedure: MTA-T0254

Received Date: 20-AUG-2019
Humidity: (20 to 70) % RH

This certifies that the equipment has been calibrated using applicable Keysight Technologies procedures in compliance with a quality management system registered to ISO 9001:2015.

As Received Conditions: Initial testing found the equipment to be IN SPECIFICATION at the points tested.

Action Taken: No corrective actions were necessary.

As Shipped Conditions: At the completion of calibration, measured values were IN SPECIFICATION at the parameters tested.

Remarks or special requirements:

Notes:

- This calibration report may refer to equipment manufactured by HP, Agilent and Keysight as being manufactured by Keysight Technologies, Inc.
- The test limits stated in the calibration report correspond to the published specifications of the equipment, at the points tested.
- The documented test results relate to the equipment tested only.
- This calibration report shall not be reproduced, except in full.

Traceability Information: Measurements are traceable to the International System of Units (SI) via national metrology institutes (www.keysight.com/find/NMI) that are signatories to the CIPM Mutual Recognition Arrangement.

Keysight Provider #71456
5963-0476

cert form rev k

Page 1 of 2



Certificate Of Calibration

Certificate No: M1970V/MY5139083020190820

Calibration Equipment Used:
Model Number Model Description

89602A PNA Signal Analyzer
E8257D Signal Source
E4419B EPM Series Power Meter
8257D Signal Source
V9456A Power Sensor
W9456A Power Sensor

Date used: Date equipment used in this Calibration

Equipment ID	Used Date	Cal Due Date
PD7569	20-AUG-2019	26-DEC-2019
PD7574	20-AUG-2019	18-JUN-2020
PD7600	20-AUG-2019	02-OCT-2019
PD7613	20-AUG-2019	24-MAR-2020
DA7754	20-AUG-2019	18-JUL-2020
PD7596	20-AUG-2019	12-SEP-2019

Print Date: 20 Aug 2019

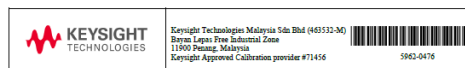
Khairul Razmi Bin Zayzan
Quality Manager
Keysight Calibration Provider #71456

cert form rev k

Page 2 of 2

Equipment used before Calibration due date.

2. 75-110 GHz Keysight M1970W



Certificate Of Calibration

Certificate No: M1970WMY5143078420190820

Manufacturer: Keysight Technologies
Model No: M1970W
Options Installed With Specifications: N/A

Description: Waveguide Harmonic Mixer
Serial No: MYS1430784

Customer Asset:
Customer:
UL LLC
47173 Benicia St
FREMONT CA 94538-7366
UNITED STATES

Location of Calibration:
Plot 44, Bayan Lepas Industrial Park IV
11900 Penang
Malaysia

Date of Calibration: 20-AUG-2019
Temperatures: (23 ± 3)°C
Procedure: MTA-T0264

Received Date: 20-AUG-2019
Humidity: (20 to 70) % RH

This certifies that the equipment has been calibrated using applicable Keysight Technologies procedures in compliance with a quality management system registered to ISO 9001:2015.

As Received Conditions: Initial testing found the equipment to be IN SPECIFICATION at the points tested.

Action Taken: No corrective actions were necessary.

As Shipped Conditions: At the completion of calibration, measured values were IN SPECIFICATION at the parameters tested.

Remarks or special requirements:

Notes:

1. This calibration report may refer to equipment manufactured by HP, Agilent and Keysight as being manufactured by Keysight Technologies, Inc.
2. The test limits stated in the calibration report correspond to the published specifications of the equipment, at the points tested.
3. The documented test results relate to the equipment tested only.
4. This calibration report shall not be reproduced, except in full.

Traceability Information: Measurements are traceable to the International System of Units (SI) via national metrology institutes (www.keysight.com/find/NMI) that are signatories to the CIPM Mutual Recognition Arrangement.



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Certificate Of Calibration

Certificate No: M1970WMY5143078420190820

Calibration Equipment Used:
Model Number Model Description

Date used: Date equipment used in this Calibration
Equipment ID Used Date Cal Due Date

W9020A	PNA Signal Analyzer	PD7869	20-AUG-2019	24-DEC-2019
E6257D	Signal Source	PC7874	20-AUG-2019	18-JUN-2020
E6619B	SPM Series Power Meter	PD7600	20-AUG-2019	02-OCT-2019
E6257D	Signal Source	PD7614	20-AUG-2019	24-MAR-2020
W9666A	Power Sensor	PC7596	20-AUG-2019	12-SEP-2019

Print Date: 21 Aug 2019

Khairul Razmi Bin Zayzan
Quality Manager
Keysight Calibration Provider #71456

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Page 2 of 2

Equipment used before Calibration due date.

3. 110-170 GHz VDI WR6.5SAX



Virginia Diodes, Inc
979 2nd St. SE
Suite 309
Charlottesville, VA 22902
Phone: 434-297-3257
Fax: 434-297-3258

Certificate of Conformance

To: UL LLC
47173 Benicia Street
Fremont, CA 94538
United States

From: Virginia Diodes, Inc
979 2nd St. SE
Suite 309
Charlottesville, VA 22902

Packing List No: 201155
Shipping Date: 04/07/20

Today's Date: 04/07/20
PO Number: 7862016203

Quantity	Unit	Description	Order-Job Number
1	EA	VDIWR6.5SAX WR6.5SAX / SN: SAX 624	20075D-01

The VDI product(s) in this shipment meet(s) the guidelines for performance specifications established in accordance with the corresponding Purchase Order. Data presented in the User Guide, where applicable, has been obtained in accordance with VDI's Quality Management System. All instruments, used to obtain data, which require calibration have been calibrated with equipment traceable to the National Institute of Standards and Technology (NIST) and through NIST to the International System of Units (SI).


Authorized Signature
Virginia Diodes, Inc

Page 1 of 1

4. 170-260 GHz VDI WR4.3SAX



Virginia Diodes, Inc
979 2nd St. SE
Suite 309
Charlottesville, VA 22902
Phone: 434-297-3257
Fax: 434-297-3258

Certificate of Conformance

To: UL LLC
47173 Benicia Street
Fremont, CA 94538
United States

From: Virginia Diodes, Inc
979 2nd St. SE
Suite 309
Charlottesville, VA 22902

Packing List No: 201728
Shipping Date: 05/22/20

Today's Date: 05/28/20
PO Number: 7862016682

Quantity	Shipped	Unit	Description	Order-Job Number
1	EA	VDIWR4.3SAX WR15SAX / SN: SAX 651	20141E-01	

The VDI product(s) in this shipment meet(s) the guidelines for performance specifications established in accordance with the corresponding Purchase Order. Data presented in the User Guide, where applicable, has been obtained in accordance with VDI's Quality Management System. All instruments, used to obtain data, which require calibration have been calibrated with equipment traceable to the National Institute of Standards and Technology (NIST) and through NIST to the International System of Units (SI).

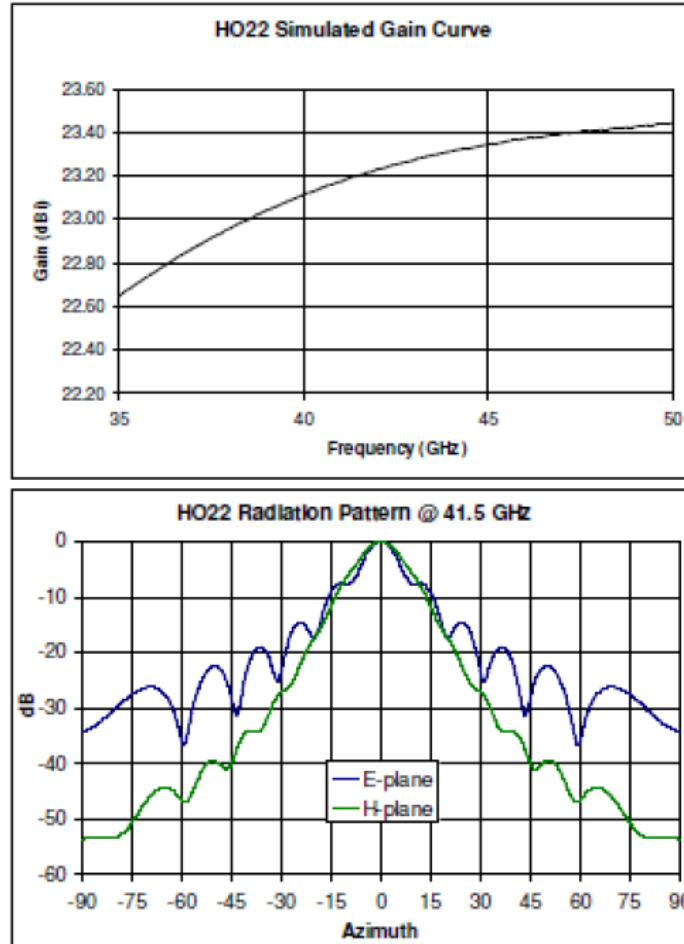

Authorized Signature
Virginia Diodes, Inc

Page 1 of 1

5. 35-50 GHz CMI HO22R HORN ANTENNA



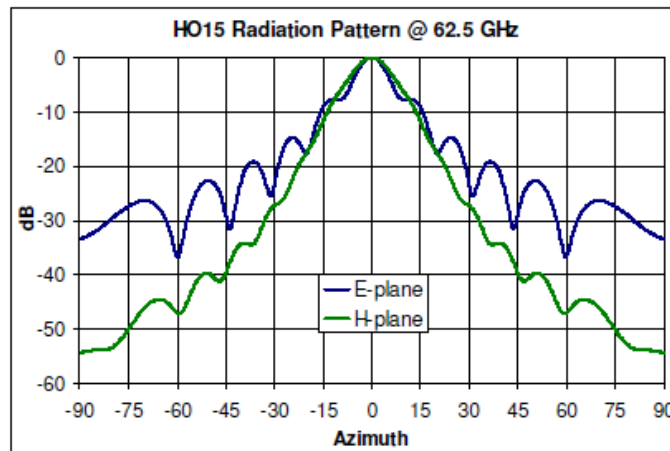
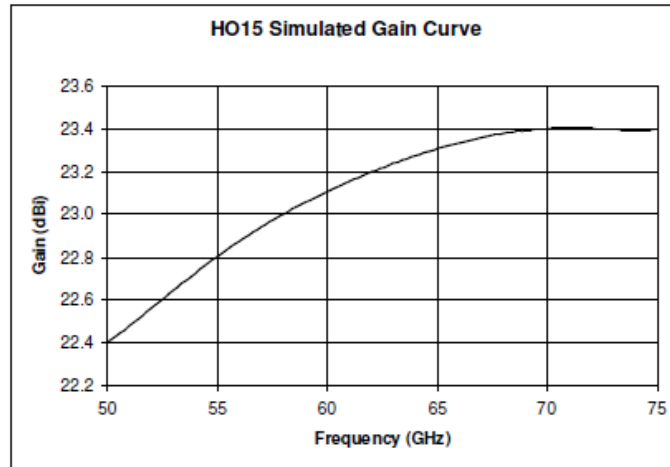
24 Boston Court
Longmont, CO 80501
303 651-0707 (P)
303 651-0706 (F)
www.custommicrowave.com



6. 50-75 GHz CMI HO15R HORN ANTENNA



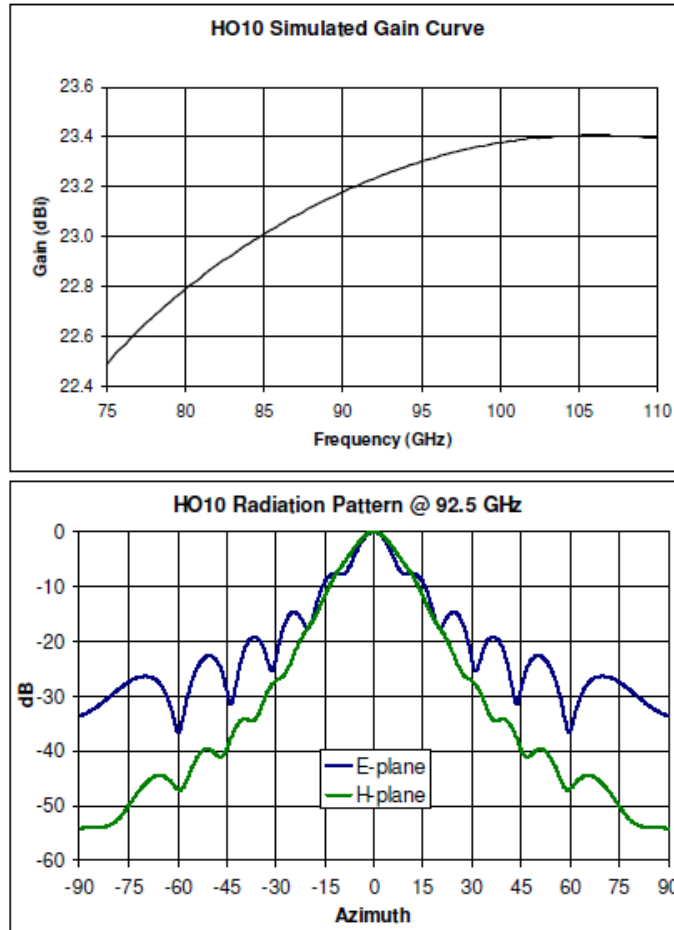
24 Boston Court
Longmont, CO 80501
303 651-0707(P)
303 651-0706(F)
www.custommicrowave.com



7. 75-110 GHz CMI HO10R HORN ANTENNA



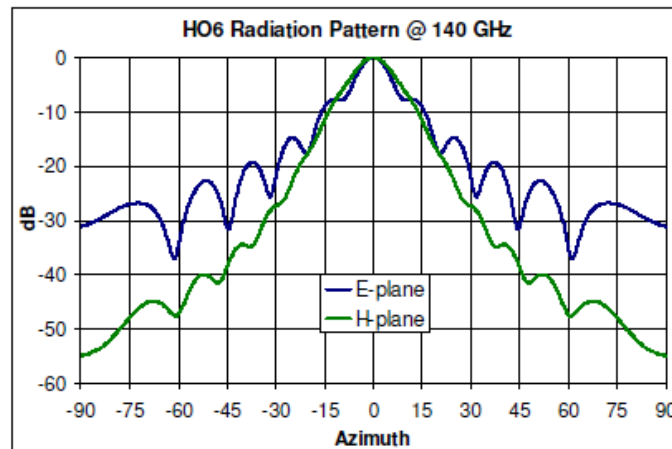
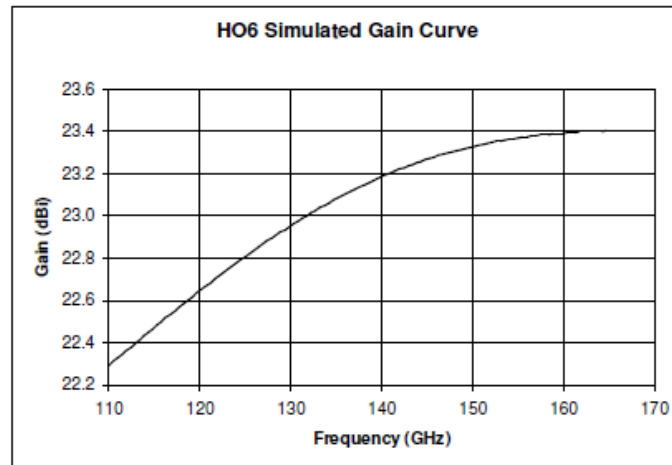
24 Boston Court
Longmont, CO 80501
303 651-0707(P)
303 651-0706(F)
www.custommicrowave.com



8. 110-170 GHz CMI HO6R HORN ANTENNA



24 Boston Court
Longmont, CO 80501
303 651-0707(P)
303 651-0706(F)
www.custommicrowave.com



9. 170-260 GHz CMI HO4R HORN ANTENNA



24 Boston Court
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303 651-0706(F)
www.custommicrowave.com

