

NB-IoT Band 26 5M					
Modulation	RB Size	RB Offset	Measurement Conducted Power (dBm)		
			CH 26715	CH 26740	CH 26765
			816.5 MHz	819 MHz	821.5 MHz
3.75k BPSK	1	0	23.55	23.47	23.53
	1	47	23.58	23.53	23.59
3.75k QPSK	1	0	23.6	23.49	23.57
	1	47	23.58	23.53	23.68
15k BPSK	1	0	23.43	23.54	23.45
	1	11	23.61	23.54	23.54
15k QPSK	1	0	23.4	23.6	23.59
	1	11	23.52	23.49	23.59
	6	0	22.9	23.06	23.07
	6	6	23.06	23.18	23.18
	12	0	22.33	22.23	22.38

Output Power					
Modulation	Minimum Cond. Power (dBm)	Maximum Cond. Power (dBm)	Minimum ERP (dBm)	Maximum ERP (dBm)	ERP Limit (dBm)
3.75k BPSK	23.47	23.59	23.95	24.07	50.00
3.75k QPSK	23.49	23.68	23.97	24.16	50.00
15k BPSK	23.43	23.61	23.91	24.09	50.00
15k QPSK	22.23	23.6	22.71	24.08	50.00

Note: EIRP (dBm) = Cond. Power (dBm) + Antenna Gain (dBi) + Array Gain (if applicable)

ERP (dBm) = EIRP (dBm) - 2.15

NB-IoT Band 26 10M			
Modulation	RB Size	RB Offset	Measurement Conducted Power (dBm)
			CH 26740
			819 MHz
3.75k BPSK	1	0	23.47
	1	47	23.58
3.75k QPSK	1	0	23.57
	1	47	23.59
15k BPSK	1	0	23.61
	1	11	23.43
15k QPSK	1	0	23.65
	1	11	23.56
	6	0	23.04
	6	6	23.15
	12	0	22.12

Output Power					
Modulation	Minimum Cond. Power (dBm)	Maximum Cond. Power (dBm)	Minimum ERP (dBm)	Maximum ERP (dBm)	ERP Limit (dBm)
3.75k BPSK	23.47	23.58	23.95	24.06	50.00
3.75k QPSK	23.57	23.59	24.05	24.07	50.00
15k BPSK	23.43	23.61	23.91	24.09	50.00
15k QPSK	22.12	23.65	22.6	24.13	50.00

Note: EIRP (dBm) = Cond. Power (dBm) + Antenna Gain (dBi) + Array Gain (if applicable)
ERP (dBm) = EIRP (dBm) - 2.15

7.1.12 NB-IoT Band 66

Stand-alone

NB-IoT Band 66					
Modulation	RB Size	RB Offset	Measurement Conducted Power (dBm)		
			CH 131974	CH 132322	CH 132670
			1710.2 MHz	1745 MHz	1779.5 MHz
3.75k BPSK	1	0	23.03	22.92	23.15
	1	47	23.09	23	23.18
3.75k QPSK	1	0	23.02	22.97	23.22
	1	47	23.07	22.94	23.22
15k BPSK	1	0	23.54	23.44	23.74
	1	11	23.51	23.47	23.75
15k QPSK	1	0	23.6	23.44	23.72
	1	11	23.57	23.4	23.7
	6	0	23.11	23.07	23.17
	6	6	23.25	23.24	23.37
	12	0	22.66	22.4	22.78

Output Power					
Modulation	Minimum Cond. Power (dBm)	Maximum Cond. Power (dBm)	Minimum EIRP (dBm)	Maximum EIRP (dBm)	EIRP Limit (dBm)
3.75k BPSK	22.92	23.18	24.95	25.21	30.00
3.75k QPSK	22.94	23.22	24.97	25.25	30.00
15k BPSK	23.44	23.75	25.47	25.78	30.00
15k QPSK	22.4	23.72	24.43	25.75	30.00

Note: EIRP (dBm) = Cond. Power (dBm) + Antenna Gain (dBi) + Array Gain (if applicable)

In-Band

NB-IoT Band 66 3M					
Modulation	RB Size	RB Offset	Measurement Conducted Power (dBm)		
			CH 131987	CH 132322	CH 132657
			1711.5 MHz	1745 MHz	1778.5 MHz
3.75k BPSK	1	0	22.96	22.8	23.01
	1	47	22.96	22.91	23.09
3.75k QPSK	1	0	22.86	22.78	23.11
	1	47	22.99	22.82	23.02
15k BPSK	1	0	23.45	23.27	23.66
	1	11	23.36	23.37	23.6
15k QPSK	1	0	23.41	23.28	23.57
	1	11	23.5	23.31	23.57
	6	0	22.95	22.91	23.04
	6	6	23.1	23.04	23.32
	12	0	22.56	22.3	22.72

Output Power					
Modulation	Minimum Cond. Power (dBm)	Maximum Cond. Power (dBm)	Minimum EIRP (dBm)	Maximum EIRP (dBm)	EIRP Limit (dBm)
3.75k BPSK	22.8	23.09	24.83	25.12	30.00
3.75k QPSK	22.78	23.11	24.81	25.14	30.00
15k BPSK	23.27	23.66	25.3	25.69	30.00
15k QPSK	22.3	23.57	24.33	25.6	30.00

Note: EIRP (dBm) = Cond. Power (dBm) + Antenna Gain (dBi) + Array Gain (if applicable)

NB-IoT Band 66 5M					
Modulation	RB Size	RB Offset	Measurement Conducted Power (dBm)		
			CH 131997	CH 132322	CH 132647
			1712.5 MHz	1745 MHz	1777.5 MHz
3.75k BPSK	1	0	22.96	22.84	23
	1	47	22.94	22.88	23.1
3.75k QPSK	1	0	22.95	22.78	23.16
	1	47	23.01	22.87	23.09
15k BPSK	1	0	23.39	23.33	23.62
	1	11	23.32	23.34	23.7
15k QPSK	1	0	23.45	23.39	23.65
	1	11	23.42	23.24	23.65
	6	0	23.03	22.88	22.98
	6	6	23.11	23.13	23.3
	12	0	22.57	22.23	22.66

Output Power					
Modulation	Minimum Cond. Power (dBm)	Maximum Cond. Power (dBm)	Minimum EIRP (dBm)	Maximum EIRP (dBm)	EIRP Limit (dBm)
3.75k BPSK	22.84	23.1	24.87	25.13	30.00
3.75k QPSK	22.78	23.16	24.81	25.19	30.00
15k BPSK	23.32	23.7	25.35	25.73	30.00
15k QPSK	22.23	23.65	24.26	25.68	30.00

Note: EIRP (dBm) = Cond. Power (dBm) + Antenna Gain (dBi) + Array Gain (if applicable)

NB-IoT Band 66 10M					
Modulation	RB Size	RB Offset	Measurement Conducted Power (dBm)		
			CH 132022	CH 132322	CH 132622
			1715 MHz	1745 MHz	1775 MHz
3.75k BPSK	1	0	22.92	22.77	23.1
	1	47	22.99	22.81	23
3.75k QPSK	1	0	22.9	22.78	23.07
	1	47	23.02	22.75	23.03
15k BPSK	1	0	23.34	23.37	23.69
	1	11	23.43	23.35	23.66
15k QPSK	1	0	23.45	23.38	23.54
	1	11	23.45	23.27	23.51
	6	0	22.92	22.98	23.05
	6	6	23.11	23.07	23.25
	12	0	22.5	22.33	22.61

Output Power					
Modulation	Minimum Cond. Power (dBm)	Maximum Cond. Power (dBm)	Minimum EIRP (dBm)	Maximum EIRP (dBm)	EIRP Limit (dBm)
3.75k BPSK	22.77	23.1	24.8	25.13	30.00
3.75k QPSK	22.75	23.07	24.78	25.1	30.00
15k BPSK	23.34	23.69	25.37	25.72	30.00
15k QPSK	22.33	23.54	24.36	25.57	30.00

Note: EIRP (dBm) = Cond. Power (dBm) + Antenna Gain (dBi) + Array Gain (if applicable)

NB-IoT Band 66 15M					
Modulation	RB Size	RB Offset	Measurement Conducted Power (dBm)		
			CH 132047	CH 132322	CH 132597
			1717.5 MHz	1745 MHz	1772.5 MHz
3.75k BPSK	1	0	22.91	22.82	22.95
	1	47	22.93	22.89	23.03
3.75k QPSK	1	0	22.82	22.79	23.14
	1	47	22.99	22.88	23.06
15k BPSK	1	0	23.37	23.27	23.58
	1	11	23.33	23.36	23.56
15k QPSK	1	0	23.46	23.39	23.66
	1	11	23.43	23.28	23.52
	6	0	22.96	23.01	23.04
	6	6	23.12	23.12	23.24
	12	0	22.57	22.32	22.65

Output Power					
Modulation	Minimum Cond. Power (dBm)	Maximum Cond. Power (dBm)	Minimum EIRP (dBm)	Maximum EIRP (dBm)	EIRP Limit (dBm)
3.75k BPSK	22.82	23.03	24.85	25.06	30.00
3.75k QPSK	22.79	23.14	24.82	25.17	30.00
15k BPSK	23.27	23.58	25.3	25.61	30.00
15k QPSK	22.32	23.66	24.35	25.69	30.00

Note: EIRP (dBm) = Cond. Power (dBm) + Antenna Gain (dBi) + Array Gain (if applicable)

NB-IoT Band 66 20M					
Modulation	RB Size	RB Offset	Measurement Conducted Power (dBm)		
			CH 132072	CH 132322	CH 132572
			1720 MHz	1745 MHz	1770 MHz
3.75k BPSK	1	0	22.86	22.79	22.97
	1	47	22.9	22.87	23.02
3.75k QPSK	1	0	22.9	22.81	23.04
	1	47	22.94	22.83	23.04
15k BPSK	1	0	23.36	23.37	23.65
	1	11	23.41	23.41	23.66
15k QPSK	1	0	23.55	23.27	23.67
	1	11	23.38	23.26	23.65
	6	0	22.93	23	23.12
	6	6	23.19	23.17	23.17
	12	0	22.49	22.24	22.7

Output Power					
Modulation	Minimum Cond. Power (dBm)	Maximum Cond. Power (dBm)	Minimum EIRP (dBm)	Maximum EIRP (dBm)	EIRP Limit (dBm)
3.75k BPSK	22.79	23.02	24.82	25.05	30.00
3.75k QPSK	22.81	23.04	24.84	25.07	30.00
15k BPSK	23.36	23.66	25.39	25.69	30.00
15k QPSK	22.24	23.67	24.27	25.7	30.00

Note: EIRP (dBm) = Cond. Power (dBm) + Antenna Gain (dBi) + Array Gain (if applicable)

Guard-Band

NB-IoT Band 66 3M					
Modulation	RB Size	RB Offset	Measurement Conducted Power (dBm)		
			CH 131987	CH 132322	CH 132657
			1711.5 MHz	1745 MHz	1778.5 MHz
3.75k BPSK	1	0	22.95	22.86	23.02
	1	47	22.98	22.81	23.12
3.75k QPSK	1	0	22.88	22.8	23.09
	1	47	22.98	22.84	23.02
15k BPSK	1	0	23.49	23.37	23.68
	1	11	23.39	23.37	23.63
15k QPSK	1	0	23.4	23.28	23.63
	1	11	23.37	23.35	23.57
	6	0	22.95	22.98	23.06
	6	6	23.18	23.07	23.28
	12	0	22.6	22.32	22.73

Output Power					
Modulation	Minimum Cond. Power (dBm)	Maximum Cond. Power (dBm)	Minimum EIRP (dBm)	Maximum EIRP (dBm)	EIRP Limit (dBm)
3.75k BPSK	22.81	23.12	24.84	25.15	30.00
3.75k QPSK	22.8	23.09	24.83	25.12	30.00
15k BPSK	23.37	23.68	25.4	25.71	30.00
15k QPSK	22.32	23.63	24.35	25.66	30.00

Note: EIRP (dBm) = Cond. Power (dBm) + Antenna Gain (dBi) + Array Gain (if applicable)

NB-IoT Band 66 5M					
Modulation	RB Size	RB Offset	Measurement Conducted Power (dBm)		
			CH 131997	CH 132322	CH 132647
			1712.5 MHz	1745 MHz	1777.5 MHz
3.75k BPSK	1	0	22.88	22.85	23.1
	1	47	22.99	22.85	23.1
3.75k QPSK	1	0	22.82	22.79	23.15
	1	47	22.88	22.86	23.04
15k BPSK	1	0	23.38	23.33	23.57
	1	11	23.43	23.27	23.66
15k QPSK	1	0	23.52	23.29	23.62
	1	11	23.52	23.25	23.51
	6	0	23.06	22.97	23.04
	6	6	23.05	23.19	23.17
	12	0	22.5	22.28	22.58

Output Power					
Modulation	Minimum Cond. Power (dBm)	Maximum Cond. Power (dBm)	Minimum EIRP (dBm)	Maximum EIRP (dBm)	EIRP Limit (dBm)
3.75k BPSK	22.85	23.1	24.88	25.13	30.00
3.75k QPSK	22.79	23.15	24.82	25.18	30.00
15k BPSK	23.27	23.66	25.3	25.69	30.00
15k QPSK	22.28	23.62	24.31	25.65	30.00

Note: EIRP (dBm) = Cond. Power (dBm) + Antenna Gain (dBi) + Array Gain (if applicable)

NB-IoT Band 66 10M					
Modulation	RB Size	RB Offset	Measurement Conducted Power (dBm)		
			CH 132022	CH 132322	CH 132622
			1715 MHz	1745 MHz	1775 MHz
3.75k BPSK	1	0	22.86	22.75	22.95
	1	47	22.89	22.89	23.1
3.75k QPSK	1	0	22.91	22.82	23.11
	1	47	22.91	22.81	23.13
15k BPSK	1	0	23.49	23.31	23.64
	1	11	23.45	23.38	23.64
15k QPSK	1	0	23.43	23.29	23.65
	1	11	23.47	23.3	23.53
	6	0	22.94	22.93	22.97
	6	6	23.09	23.07	23.19
	12	0	22.46	22.33	22.59

Output Power					
Modulation	Minimum Cond. Power (dBm)	Maximum Cond. Power (dBm)	Minimum EIRP (dBm)	Maximum EIRP (dBm)	EIRP Limit (dBm)
3.75k BPSK	22.75	23.1	24.78	25.13	30.00
3.75k QPSK	22.81	23.13	24.84	25.16	30.00
15k BPSK	23.31	23.64	25.34	25.67	30.00
15k QPSK	22.33	23.65	24.36	25.68	30.00

Note: EIRP (dBm) = Cond. Power (dBm) + Antenna Gain (dBi) + Array Gain (if applicable)

NB-IoT Band 66 15M					
Modulation	RB Size	RB Offset	Measurement Conducted Power (dBm)		
			CH 132047	CH 132322	CH 132597
			1717.5 MHz	1745 MHz	1772.5 MHz
3.75k BPSK	1	0	22.97	22.86	22.96
	1	47	22.91	22.86	23.03
3.75k QPSK	1	0	22.93	22.84	23.02
	1	47	23	22.75	23.1
15k BPSK	1	0	23.46	23.26	23.65
	1	11	23.39	23.37	23.7
15k QPSK	1	0	23.48	23.33	23.56
	1	11	23.38	23.24	23.65
	6	0	22.98	22.94	23.07
	6	6	23.12	23.19	23.23
	12	0	22.53	22.24	22.58

Output Power					
Modulation	Minimum Cond. Power (dBm)	Maximum Cond. Power (dBm)	Minimum EIRP (dBm)	Maximum EIRP (dBm)	EIRP Limit (dBm)
3.75k BPSK	22.86	23.03	24.89	25.06	30.00
3.75k QPSK	22.75	23.1	24.78	25.13	30.00
15k BPSK	23.26	23.7	25.29	25.73	30.00
15k QPSK	22.24	23.65	24.27	25.68	30.00

Note: EIRP (dBm) = Cond. Power (dBm) + Antenna Gain (dBi) + Array Gain (if applicable)

NB-IoT Band 66 20M					
Modulation	RB Size	RB Offset	Measurement Conducted Power (dBm)		
			CH 132072	CH 132322	CH 132572
			1720 MHz	1745 MHz	1770 MHz
3.75k BPSK	1	0	22.89	22.85	23.04
	1	47	22.94	22.89	23.04
3.75k QPSK	1	0	22.97	22.79	23.06
	1	47	22.96	22.84	23.12
15k BPSK	1	0	23.44	23.25	23.66
	1	11	23.38	23.41	23.65
15k QPSK	1	0	23.51	23.33	23.63
	1	11	23.38	23.32	23.59
	6	0	23	22.96	23.12
	6	6	23.15	23.17	23.24
	12	0	22.47	22.24	22.7

Output Power					
Modulation	Minimum Cond. Power (dBm)	Maximum Cond. Power (dBm)	Minimum EIRP (dBm)	Maximum EIRP (dBm)	EIRP Limit (dBm)
3.75k BPSK	22.85	23.04	24.88	25.07	30.00
3.75k QPSK	22.79	23.12	24.82	25.15	30.00
15k BPSK	23.25	23.66	25.28	25.69	30.00
15k QPSK	22.24	23.63	24.27	25.66	30.00

Note: EIRP (dBm) = Cond. Power (dBm) + Antenna Gain (dBi) + Array Gain (if applicable)

7.1.13 NB-IoT Band 85

Stand-alone

NB-IoT Band 85					
Modulation	RB Size	RB Offset	Measurement Conducted Power (dBm)		
			CH 134004	CH 134092	CH 134180
			698.2 MHz	707 MHz	715.8 MHz
3.75k BPSK	1	0	23.17	23.03	23.55
	1	47	23.25	23.02	23.58
3.75k QPSK	1	0	23.19	22.97	23.66
	1	47	23.08	22.96	23.44
15k BPSK	1	0	23.75	23.61	23.69
	1	11	23.64	23.64	23.56
15k QPSK	1	0	23.62	23.58	23.63
	1	11	23.55	23.58	23.62
	6	0	23.08	23.08	23.13
	6	6	23.24	23.17	23.21
	12	0	22.59	22.41	22.51

Output Power					
Modulation	Minimum Cond. Power (dBm)	Maximum Cond. Power (dBm)	Minimum ERP (dBm)	Maximum ERP (dBm)	ERP Limit (dBm)
3.75k BPSK	23.02	23.58	22.5	23.06	44.77
3.75k QPSK	22.96	23.66	22.44	23.14	44.77
15k BPSK	23.56	23.75	23.04	23.23	44.77
15k QPSK	22.41	23.63	21.89	23.11	44.77

Note: EIRP (dBm) = Cond. Power (dBm) + Antenna Gain (dBi) + Array Gain (if applicable)

ERP (dBm) = EIRP (dBm) - 2.15

In-Band

NB-IoT Band 85 5M					
Modulation	RB Size	RB Offset	Measurement Conducted Power (dBm)		
			CH 134027	CH 134092	CH 134157
			700.5 MHz	707 MHz	713.5 MHz
3.75k BPSK	1	0	23.02	22.88	23.35
	1	47	23.17	22.87	23.4
3.75k QPSK	1	0	23.14	22.88	23.53
	1	47	22.96	22.85	23.24
15k BPSK	1	0	23.6	23.41	23.49
	1	11	23.46	23.44	23.39
15k QPSK	1	0	23.42	23.52	23.43
	1	11	23.4	23.52	23.45
	6	0	22.88	22.96	23
	6	6	23.13	22.97	23.01
	12	0	22.5	22.28	22.34

Output Power					
Modulation	Minimum Cond. Power (dBm)	Maximum Cond. Power (dBm)	Minimum ERP (dBm)	Maximum ERP (dBm)	ERP Limit (dBm)
3.75k BPSK	22.87	23.4	22.35	22.88	44.77
3.75k QPSK	22.85	23.53	22.33	23.01	44.77
15k BPSK	23.39	23.6	22.87	23.08	44.77
15k QPSK	22.28	23.52	21.76	23	44.77

Note: EIRP (dBm) = Cond. Power (dBm) + Antenna Gain (dBi) + Array Gain (if applicable)

ERP (dBm) = EIRP (dBm) - 2.15

NB-IoT Band 85 10M					
Modulation	RB Size	RB Offset	Measurement Conducted Power (dBm)		
			CH 134052	CH 134092	CH 134132
			703MHz	707 MHz	711MHz
3.75k BPSK	1	0	22.98	22.85	23.42
	1	47	23.13	22.89	23.38
3.75k QPSK	1	0	23.11	22.92	23.57
	1	47	22.97	22.77	23.37
15k BPSK	1	0	23.7	23.49	23.5
	1	11	23.46	23.56	23.43
15k QPSK	1	0	23.48	23.53	23.46
	1	11	23.48	23.52	23.51
	6	0	23.01	23	22.95
	6	6	23.09	23.06	23.09
	12	0	22.51	22.27	22.38

Output Power					
Modulation	Minimum Cond. Power (dBm)	Maximum Cond. Power (dBm)	Minimum ERP (dBm)	Maximum ERP (dBm)	ERP Limit (dBm)
3.75k BPSK	22.85	23.42	22.33	22.9	44.77
3.75k QPSK	22.77	23.57	22.25	23.05	44.77
15k BPSK	23.43	23.7	22.91	23.18	44.77
15k QPSK	22.27	23.53	21.75	23.01	44.77

Note: EIRP (dBm) = Cond. Power (dBm) + Antenna Gain (dBi) + Array Gain (if applicable)

ERP (dBm) = EIRP (dBm) - 2.15

Guard-Band

NB-IoT Band 85 5M					
Modulation	RB Size	RB Offset	Measurement Conducted Power (dBm)		
			CH 134027	CH 134092	CH 134157
			700.5 MHz	707 MHz	713.5 MHz
3.75k BPSK	1	0	22.99	22.85	23.37
	1	47	23.06	22.94	23.48
3.75k QPSK	1	0	23.1	22.81	23.5
	1	47	22.9	22.77	23.27
15k BPSK	1	0	23.58	23.47	23.58
	1	11	23.47	23.58	23.44
15k QPSK	1	0	23.57	23.45	23.49
	1	11	23.42	23.53	23.43
	6	0	22.92	22.93	22.94
	6	6	23.09	23.11	23.05
	12	0	22.46	22.27	22.32

Output Power					
Modulation	Minimum Cond. Power (dBm)	Maximum Cond. Power (dBm)	Minimum ERP (dBm)	Maximum ERP (dBm)	ERP Limit (dBm)
3.75k BPSK	22.85	23.48	22.33	22.96	44.77
3.75k QPSK	22.77	23.5	22.25	22.98	44.77
15k BPSK	23.44	23.58	22.92	23.06	44.77
15k QPSK	22.27	23.57	21.75	23.05	44.77

Note: EIRP (dBm) = Cond. Power (dBm) + Antenna Gain (dBi) + Array Gain (if applicable)

ERP (dBm) = EIRP (dBm) - 2.15

NB-IoT Band 85 10M					
Modulation	RB Size	RB Offset	Measurement Conducted Power (dBm)		
			CH 134052	CH 134092	CH 134132
			703MHz	707 MHz	711MHz
3.75k BPSK	1	0	23.07	22.84	23.36
	1	47	23.06	22.94	23.43
3.75k QPSK	1	0	23.1	22.88	23.57
	1	47	22.89	22.85	23.3
15k BPSK	1	0	23.6	23.45	23.5
	1	11	23.55	23.48	23.41
15k QPSK	1	0	23.5	23.48	23.56
	1	11	23.39	23.52	23.56
	6	0	22.93	22.99	23.07
	6	6	23.09	23.02	23.16
	12	0	22.47	22.26	22.31

Output Power					
Modulation	Minimum Cond. Power (dBm)	Maximum Cond. Power (dBm)	Minimum ERP (dBm)	Maximum ERP (dBm)	ERP Limit (dBm)
3.75k BPSK	22.84	23.43	22.32	22.91	44.77
3.75k QPSK	22.85	23.57	22.33	23.05	44.77
15k BPSK	23.41	23.6	22.89	23.08	44.77
15k QPSK	22.26	23.56	21.74	23.04	44.77

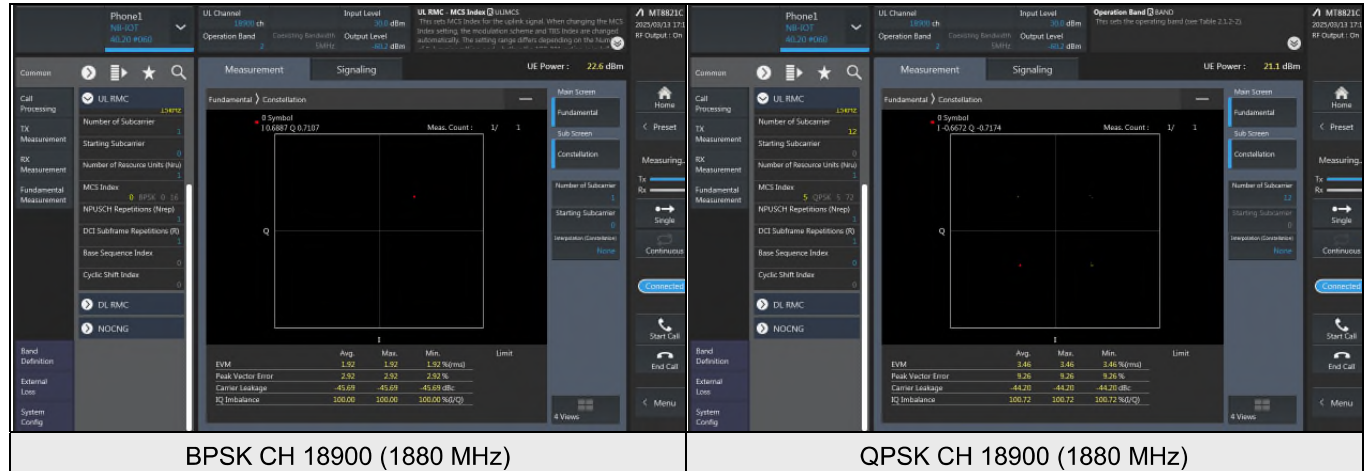
Note: EIRP (dBm) = Cond. Power (dBm) + Antenna Gain (dBi) + Array Gain (if applicable)

ERP (dBm) = EIRP (dBm) - 2.15

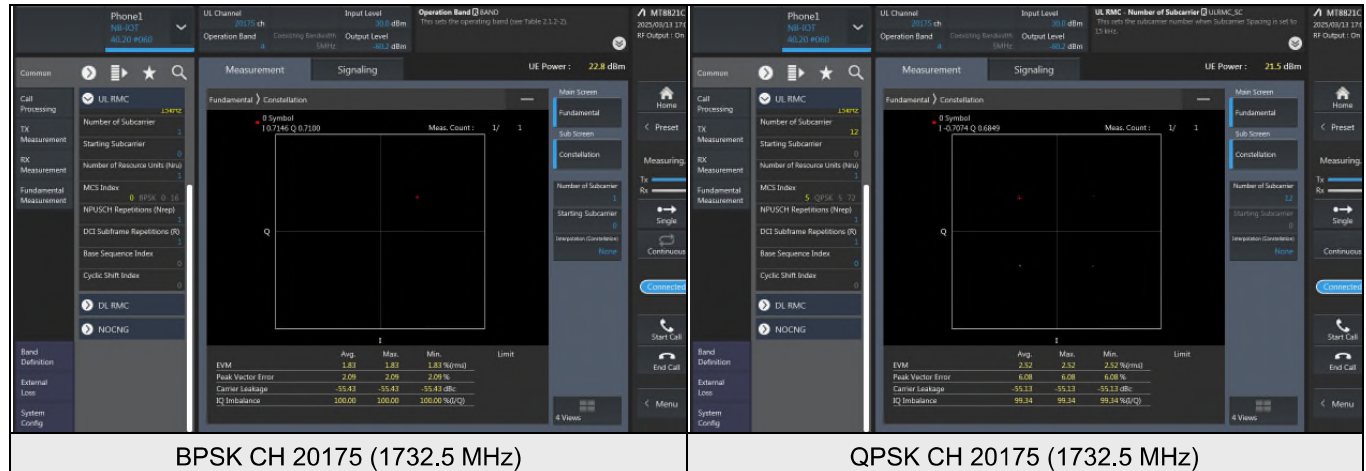
7.2 Modulation Characteristics

Input Power:	3.8 Vdc	Environmental Conditions:	22°C, 75% RH	Tested By:	Match Tsui
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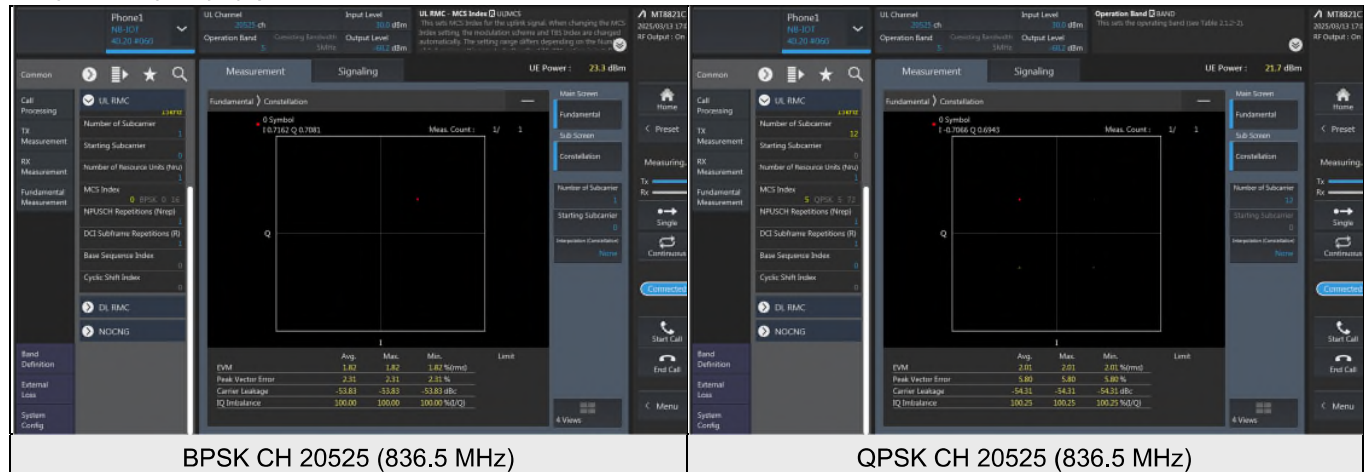
7.2.1 NB-IoT Band 2



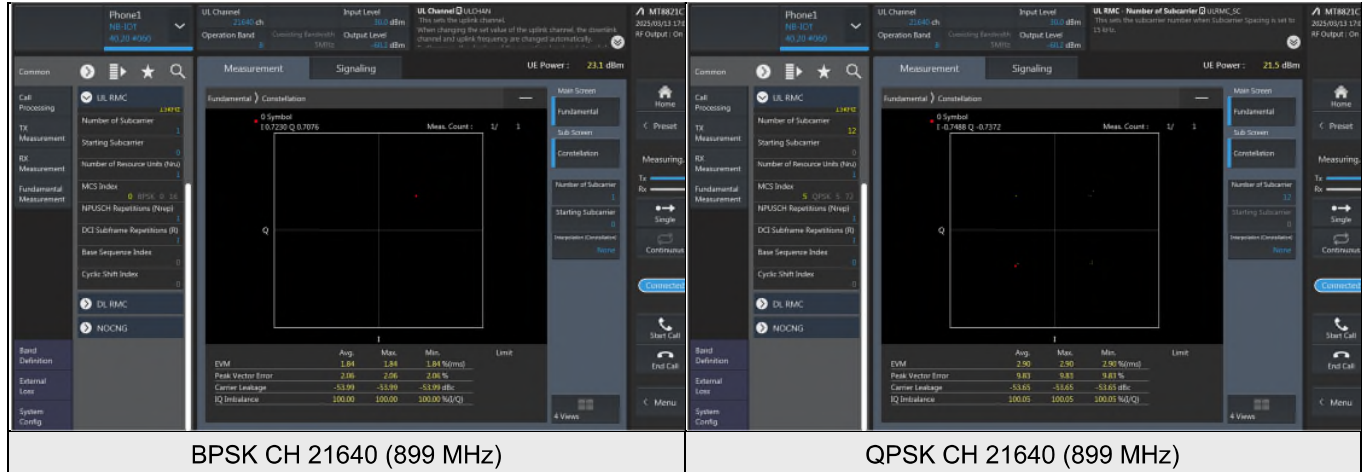
7.2.2 NB-IoT Band 4



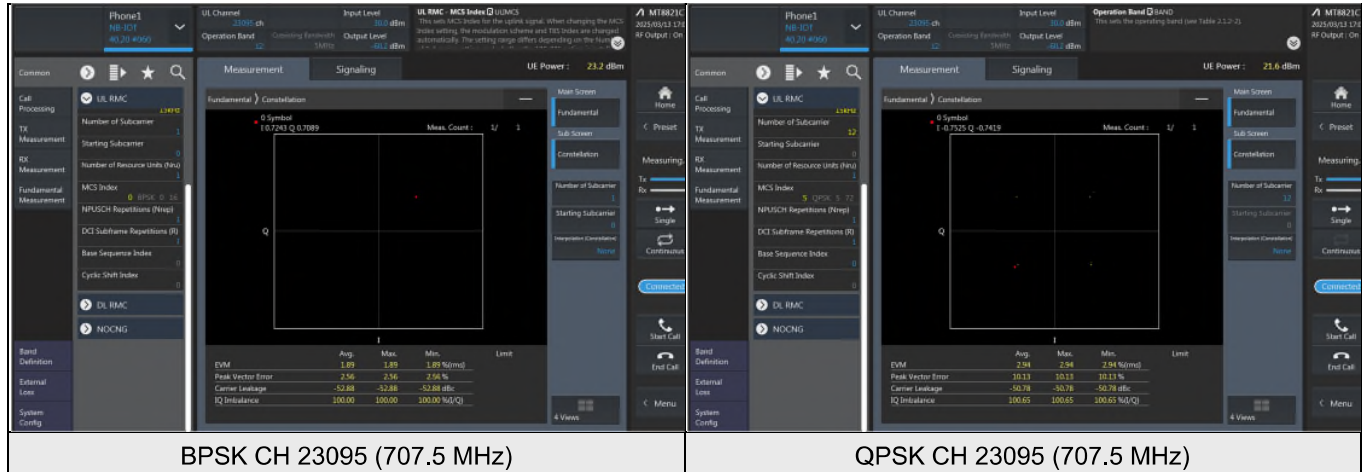
7.2.3 NB-IoT Band 5



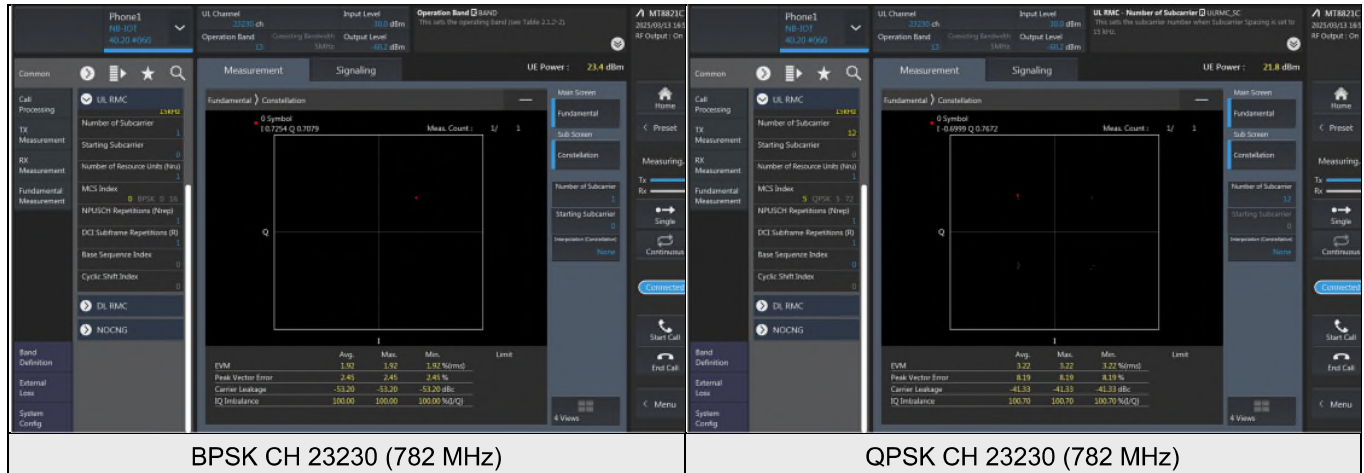
7.2.4 NB-IoT Band 8



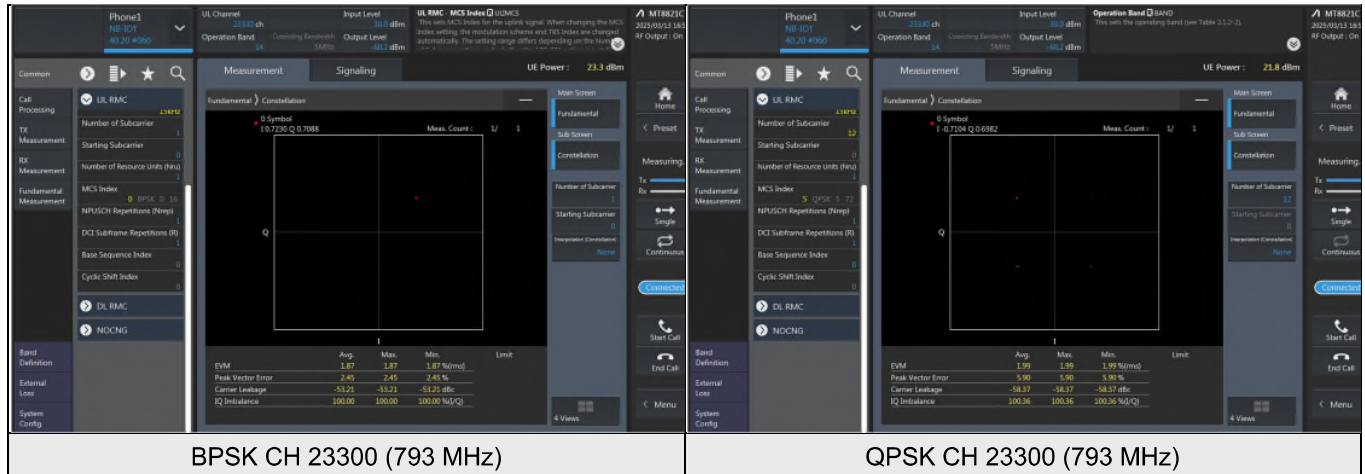
7.2.5 NB-IoT Band 12



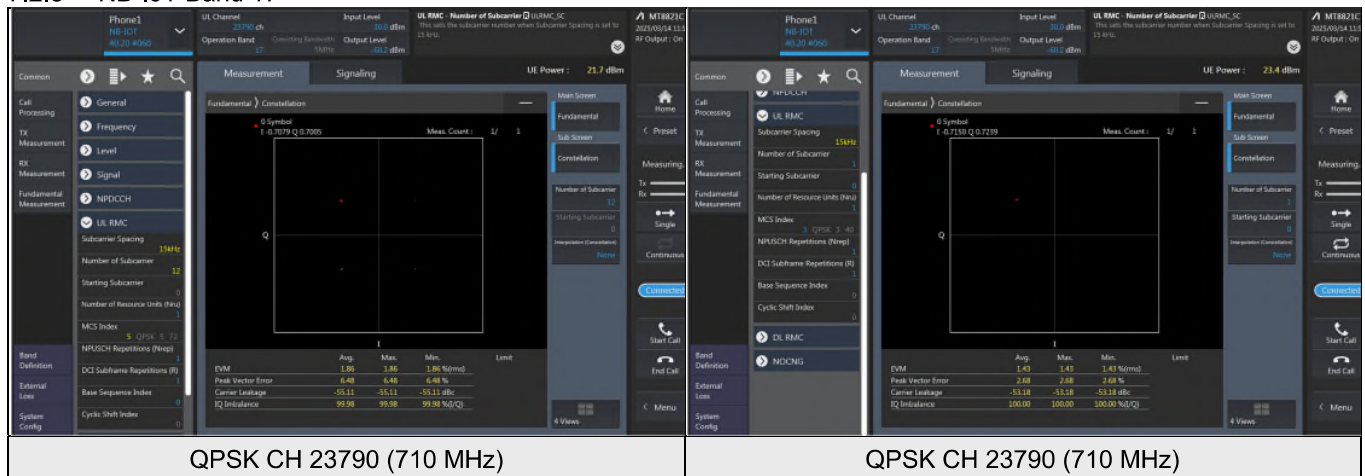
7.2.6 NB-IoT Band 13



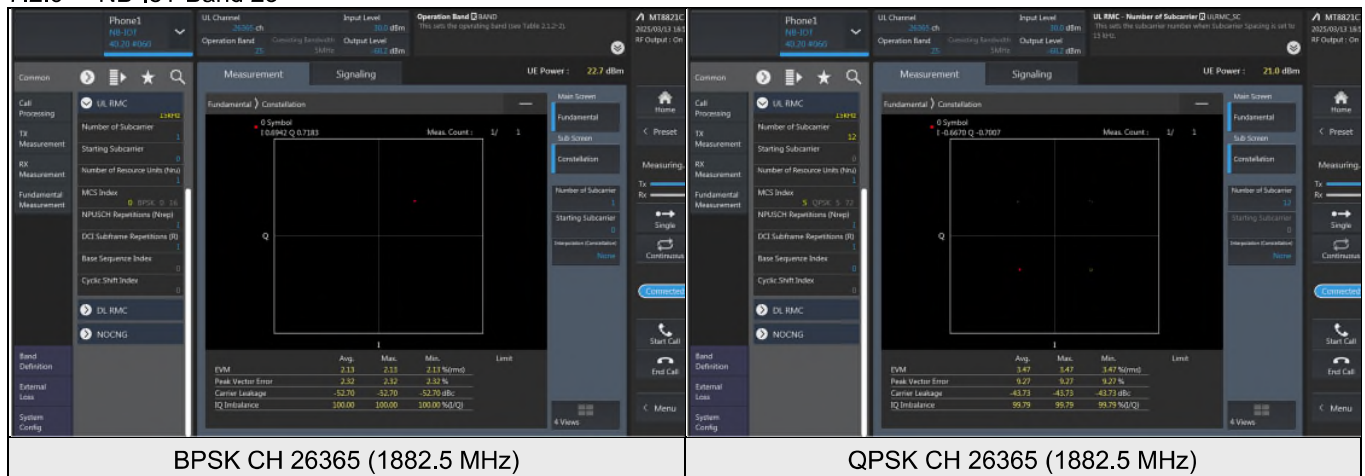
7.2.7 NB-IoT Band 14



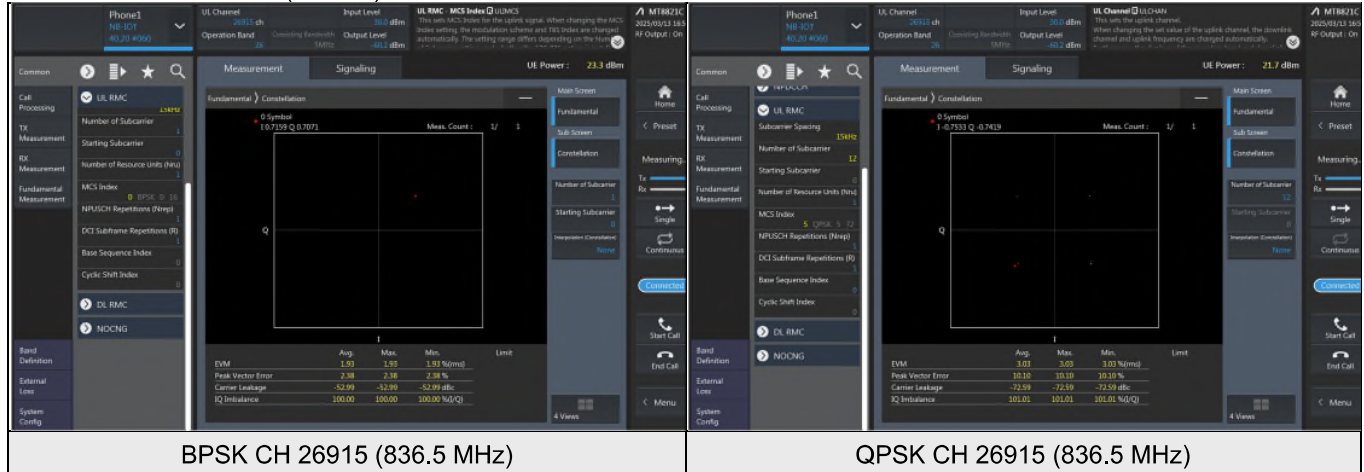
7.2.8 NB-IoT Band 17



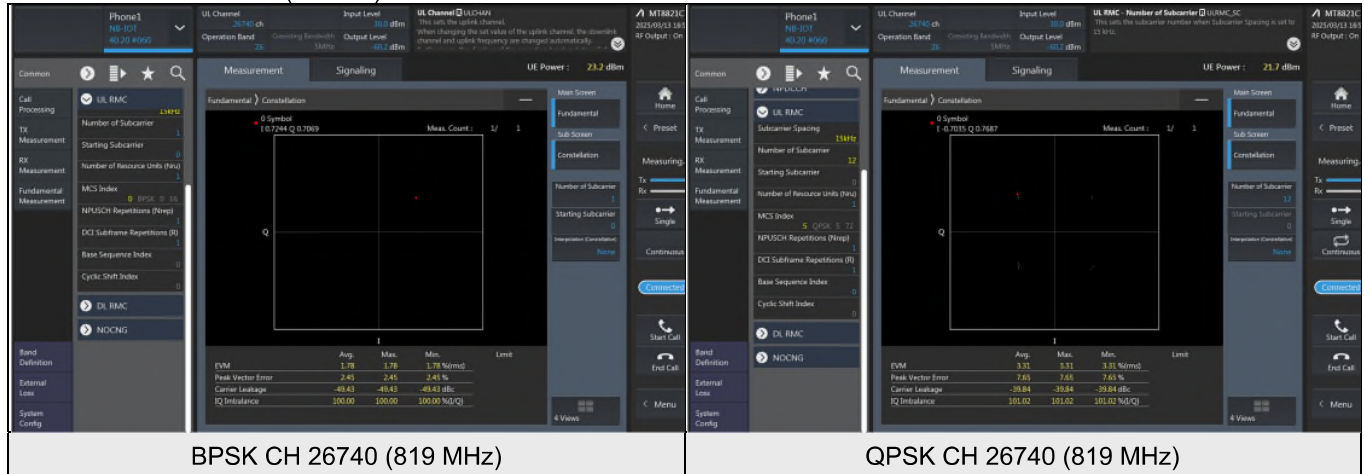
7.2.9 NB-IoT Band 25



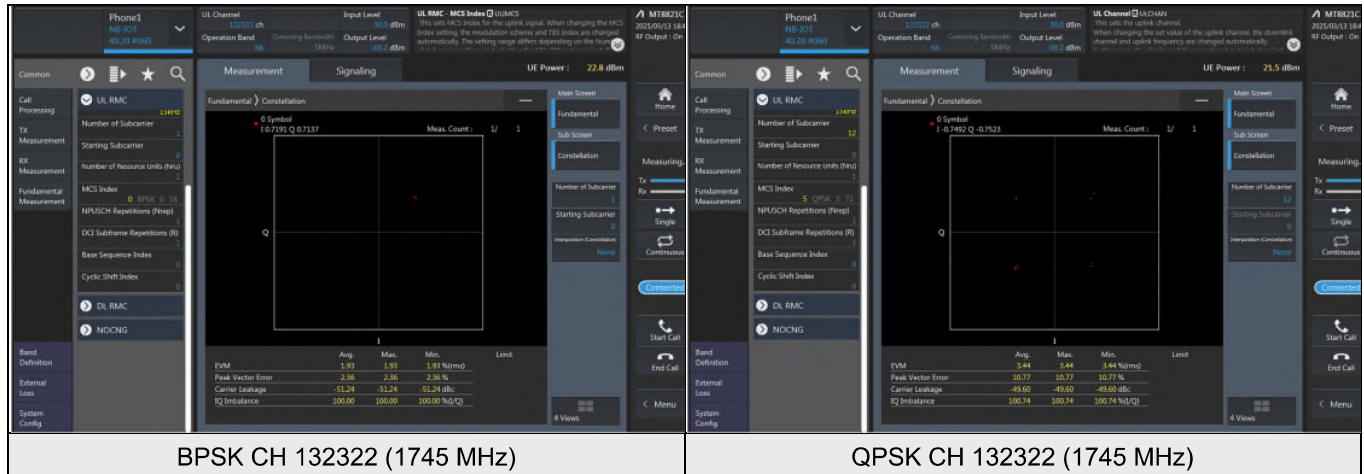
7.2.10 NB-IoT Band 26 (Part 22)



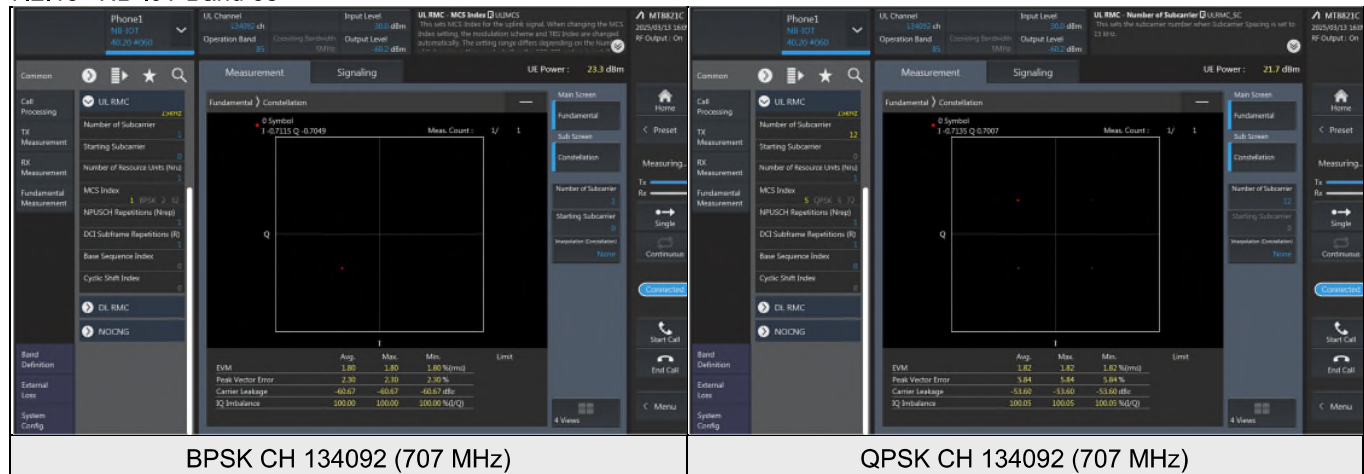
7.2.11 NB-IoT Band 26 (Part 90)



7.2.12 NB-IoT Band 66



7.2.13 NB-IoT Band 85

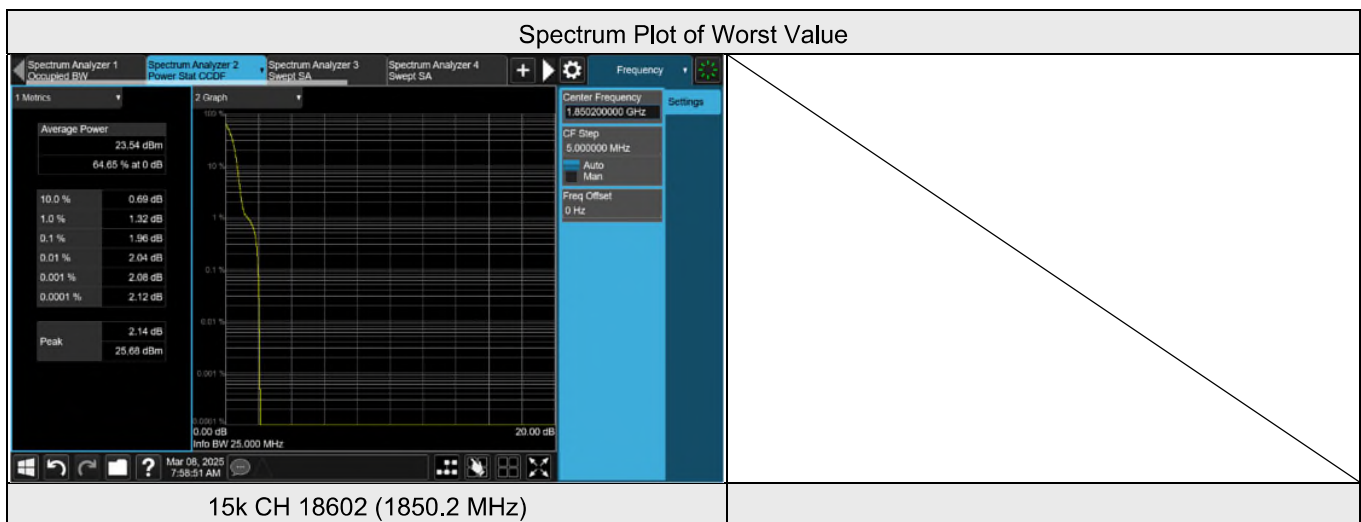


7.3 Peak to Average Ratio

Input Power:	3.8 Vdc	Environmental Conditions:	22°C, 75% RH	Tested By:	Match Tsui
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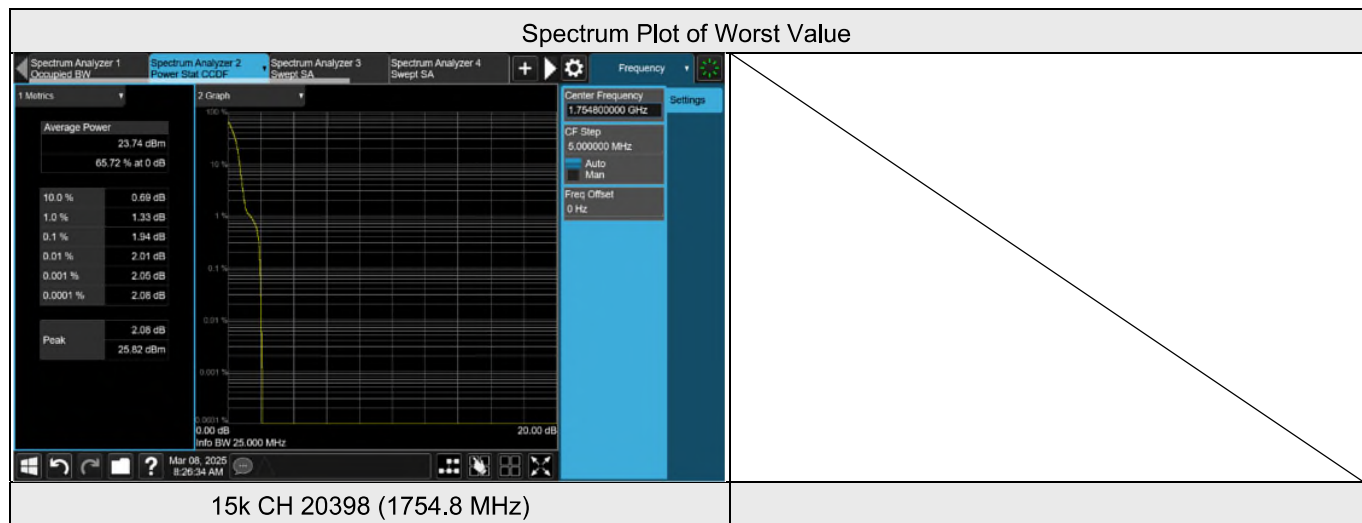
7.3.1 NB-IoT Band 2

NB-IoT Band 2					
Sub-carrier	Channel	Frequency (MHz)	Measurement Value(dB)	Limit (dB)	Result
3.75k	18602	1850.2	1.78	13	PASS
3.75k	18900	1880	1.75	13	PASS
3.75k	19198	1909.8	1.64	13	PASS
15k	18602	1850.2	1.96	13	PASS
15k	18900	1880	1.92	13	PASS
15k	19198	1909.8	1.93	13	PASS



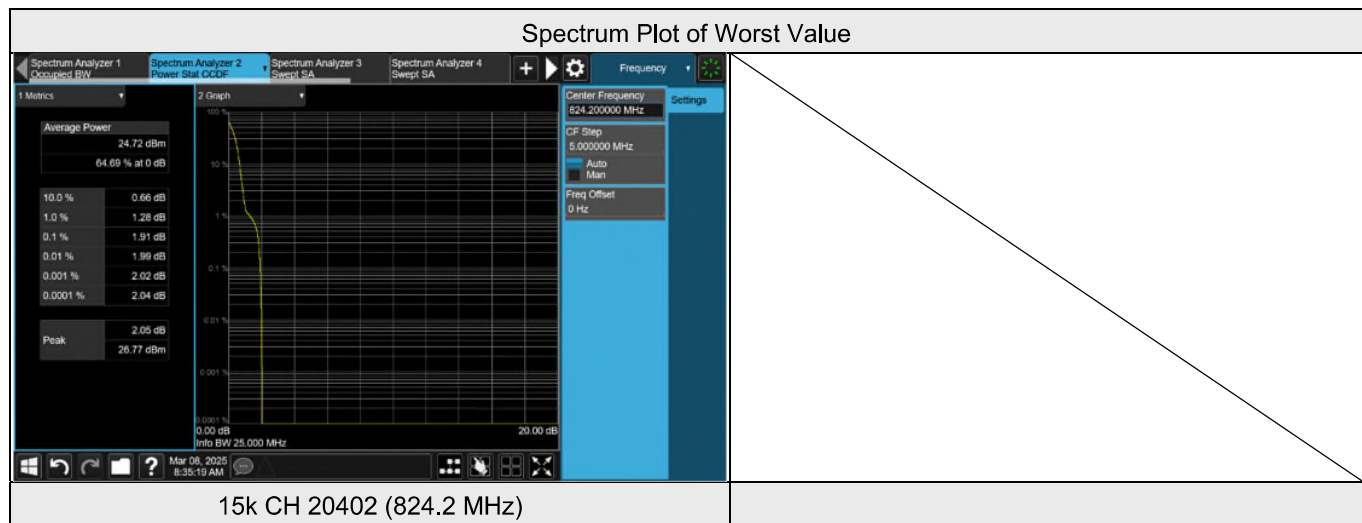
7.3.2 NB-IoT Band 4

NB-IoT Band 4					
Sub-carrier	Channel	Frequency (MHz)	Measurement Value(dB)	Limit (dB)	Result
3.75k	19952	1710.2	1.75	13	PASS
3.75k	20175	1732.5	1.63	13	PASS
3.75k	20398	1754.8	1.69	13	PASS
15k	19952	1710.2	1.9	13	PASS
15k	20175	1732.5	1.91	13	PASS
15k	20398	1754.8	1.94	13	PASS



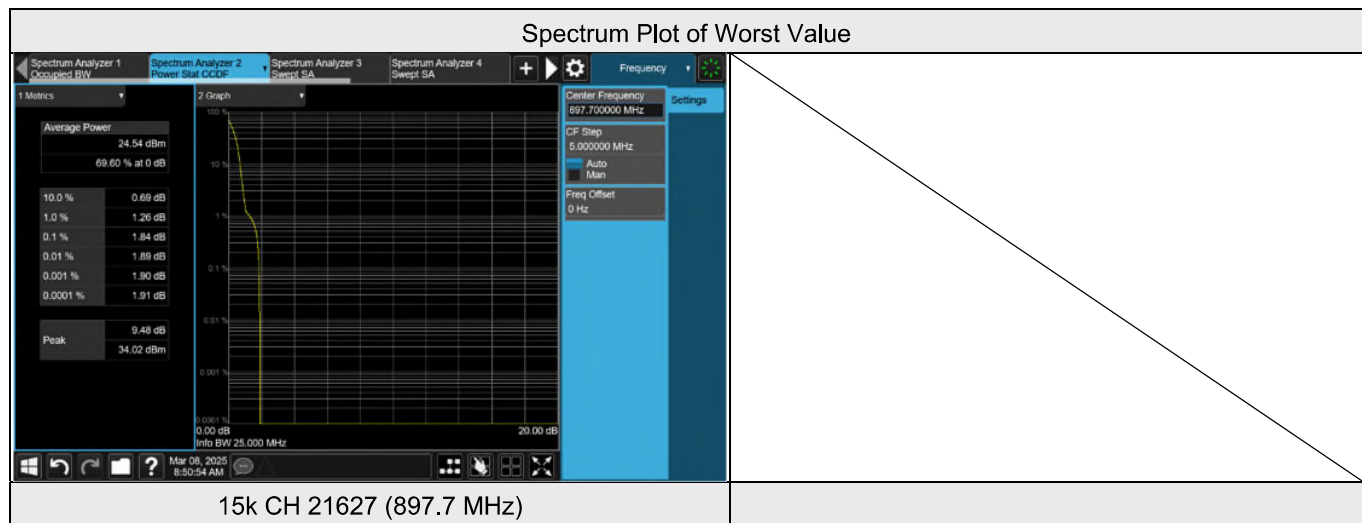
7.3.3 NB-IoT Band 5

NB-IoT Band 5					
Sub-carrier	Channel	Frequency (MHz)	Measurement Value(dB)	Limit (dB)	Result
3.75k	20402	824.2	1.61	13	PASS
3.75k	20525	836.5	1.6	13	PASS
3.75k	20648	848.8	1.6	13	PASS
15k	20402	824.2	1.91	13	PASS
15k	20525	836.5	1.89	13	PASS
15k	20648	848.8	1.88	13	PASS



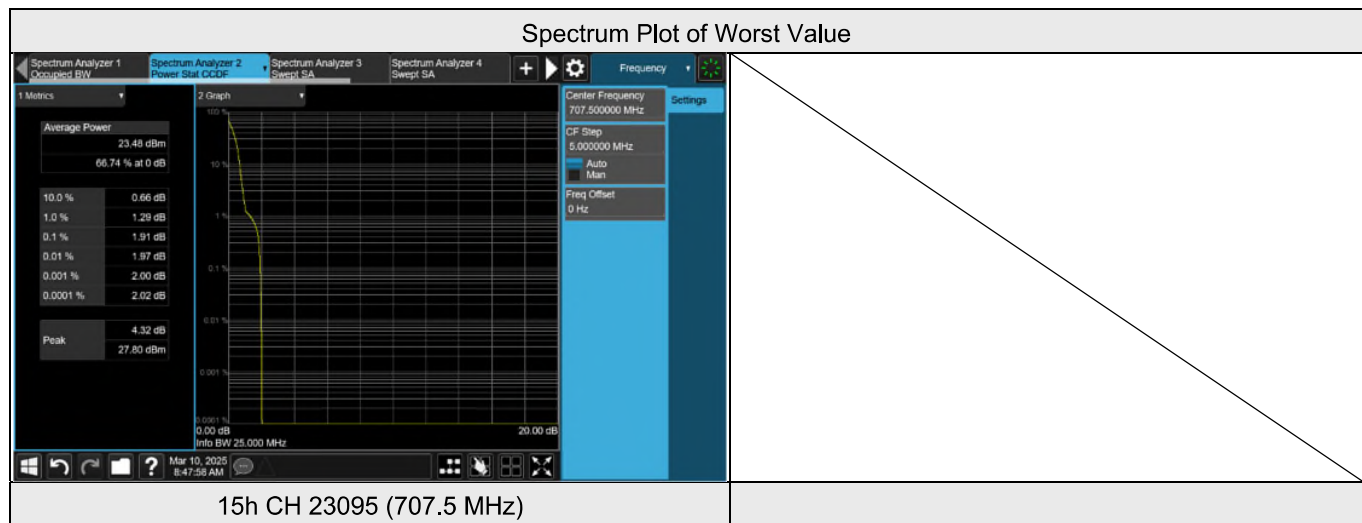
7.3.4 NB-IoT Band 8

NB-IoT Band 8					
Sub-carrier	Channel	Frequency (MHz)	Measurement Value(dB)	Limit (dB)	Result
3.75k	21627	897.7	1.62	13	PASS
3.75k	21640	899	1.56	13	PASS
3.75k	21653	900.3	1.53	13	PASS
15k	21627	897.7	1.84	13	PASS
15k	21640	899	1.78	13	PASS
15k	21653	900.3	1.76	13	PASS



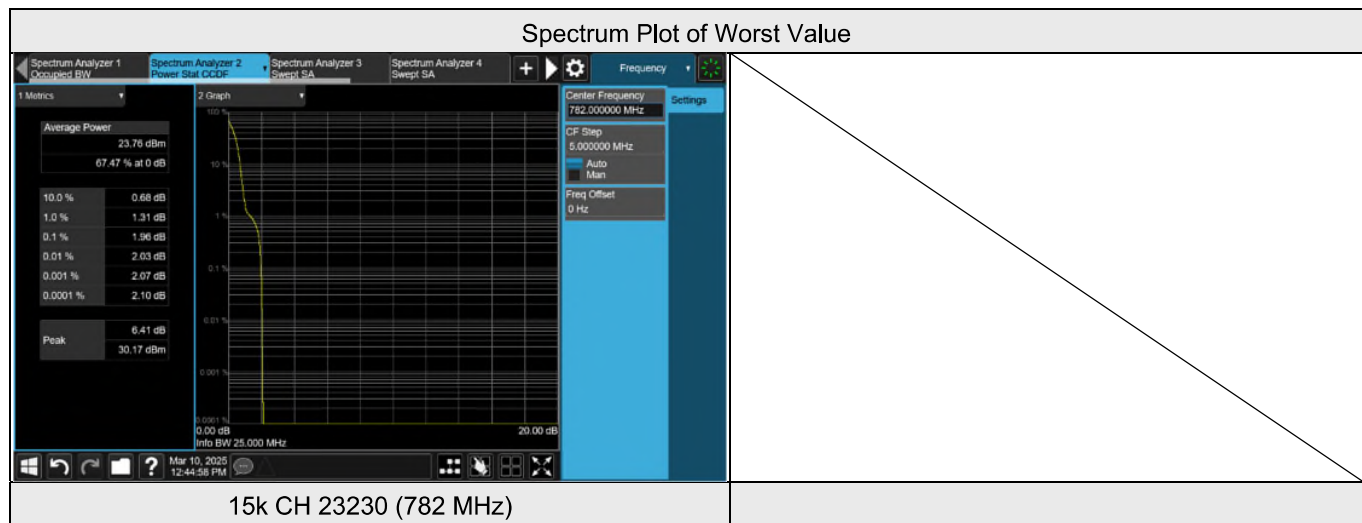
7.3.5 NB-IoT Band 12

NB-IoT Band 12					
Sub-carrier	Channel	Frequency (MHz)	Measurement Value(dB)	Limit (dB)	Result
3.75k	23012	699.2	1.52	13	PASS
3.75k	23095	707.5	1.64	13	PASS
3.75k	23178	715.8	1.61	13	PASS
15k	23012	699.2	1.89	13	PASS
15k	23095	707.5	1.91	13	PASS
15k	23178	715.8	1.9	13	PASS



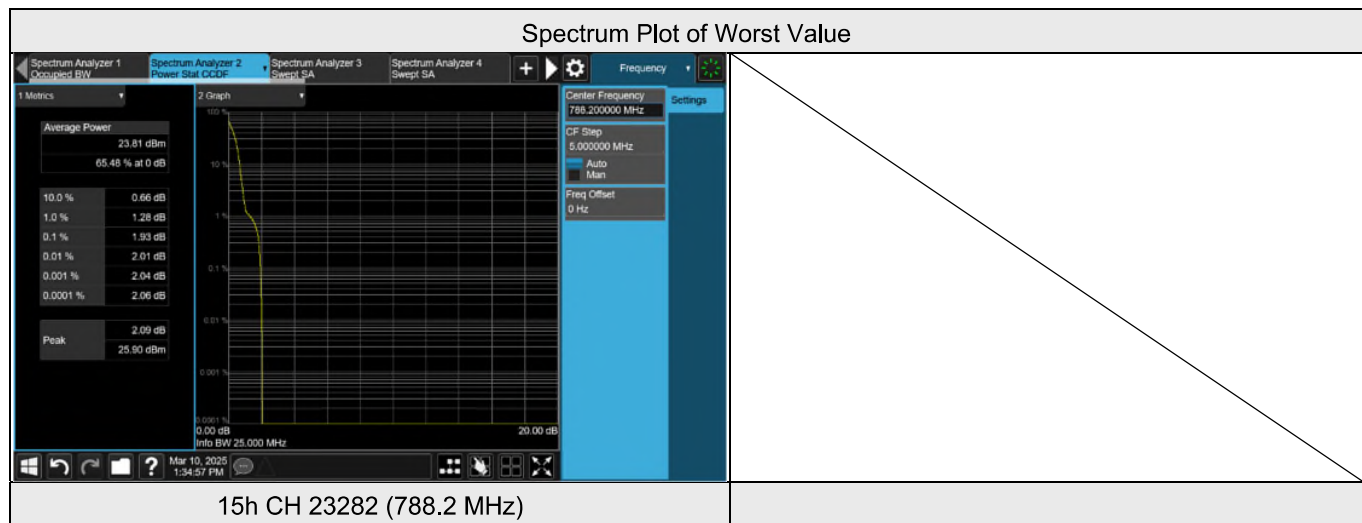
7.3.6 NB-IoT Band 13

NB-IoT Band 13					
Sub-carrier	Channel	Frequency (MHz)	Measurement Value(dB)	Limit (dB)	Result
3.75k	23182	777.2	1.73	13	PASS
3.75k	23230	782	1.62	13	PASS
3.75k	23278	786.8	1.59	13	PASS
15k	23182	777.2	1.92	13	PASS
15k	23230	782	1.96	13	PASS
15k	23278	786.8	1.96	13	PASS



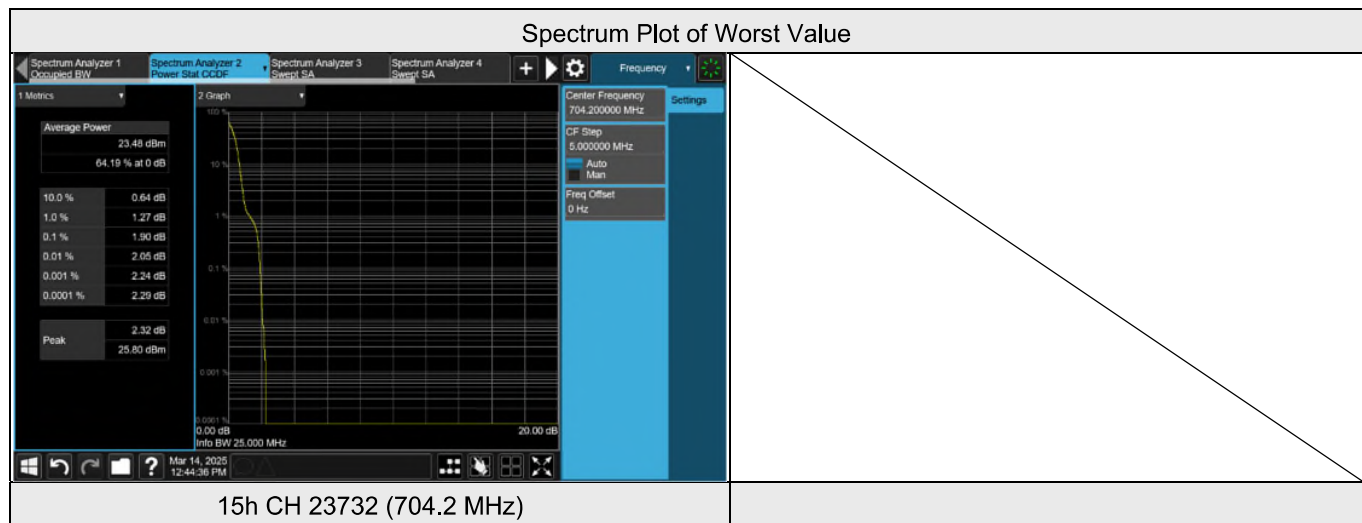
7.3.7 NB-IoT Band 14

NB-IoT Band 14					
Sub-carrier	Channel	Frequency (MHz)	Measurement Value(dB)	Limit (dB)	Result
3.75k	23282	788.2	1.59	13	PASS
3.75k	23300	793	1.64	13	PASS
3.75k	23378	797.8	1.6	13	PASS
15k	23282	788.2	1.93	13	PASS
15k	23300	793	1.92	13	PASS
15k	23378	797.8	1.93	13	PASS



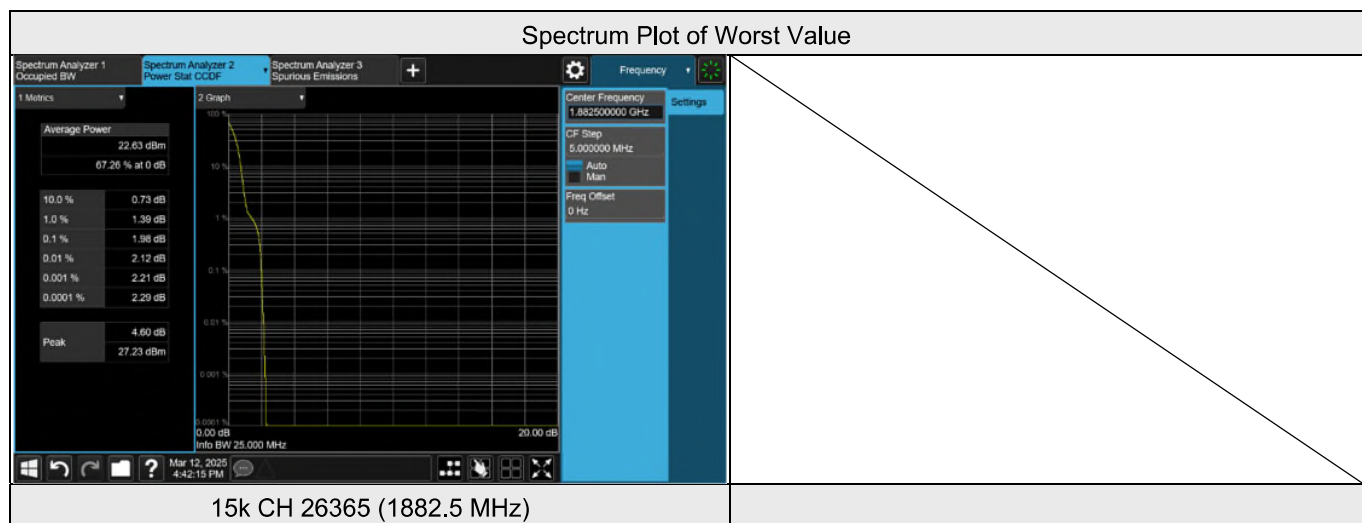
7.3.8 NB-IoT Band 17

NB-IoT Band 17					
Sub-carrier	Channel	Frequency (MHz)	Measurement Value(dB)	Limit (dB)	Result
3.75k	23732	704.2	1.61	13	PASS
3.75k	23790	710	1.67	13	PASS
3.75k	23848	715.8	1.65	13	PASS
15k	23732	704.2	1.9	13	PASS
15k	23790	710	1.9	13	PASS
15k	23848	715.8	1.89	13	PASS



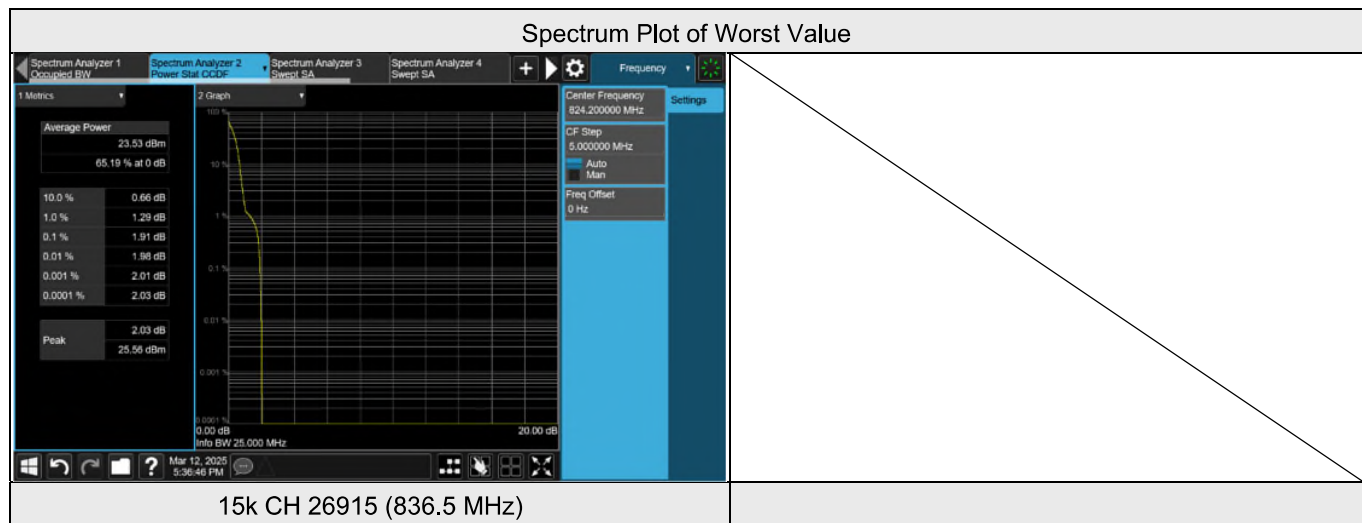
7.3.9 NB-IoT Band 25

NB-IoT Band 25					
Sub-carrier	Channel	Frequency (MHz)	Measurement Value(dB)	Limit (dB)	Result
3.75k	26042	1850.2	1.64	13	PASS
3.75k	26365	1882.5	1.73	13	PASS
3.75k	26688	1914.8	1.74	13	PASS
15k	26042	1850.2	1.95	13	PASS
15k	26365	1882.5	1.98	13	PASS
15k	26688	1914.8	1.92	13	PASS



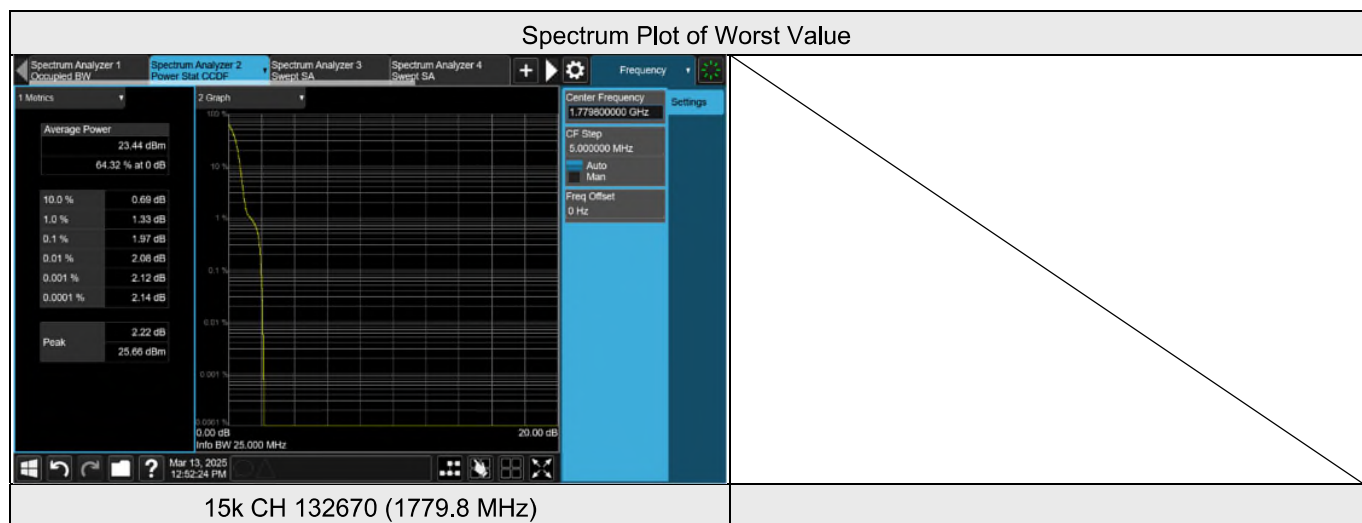
7.3.10 NB-IoT Band 26 (Part 22)

NB-IoT Band 26					
Sub-carrier	Channel	Frequency (MHz)	Measurement Value(dB)	Limit (dB)	Result
3.75k	26792	824.2	1.66	13	PASS
3.75k	26915	836.5	1.56	13	PASS
3.75k	27038	848.8	1.61	13	PASS
15k	26792	824.2	1.91	13	PASS
15k	26915	836.5	1.9	13	PASS
15k	27038	848.8	1.88	13	PASS



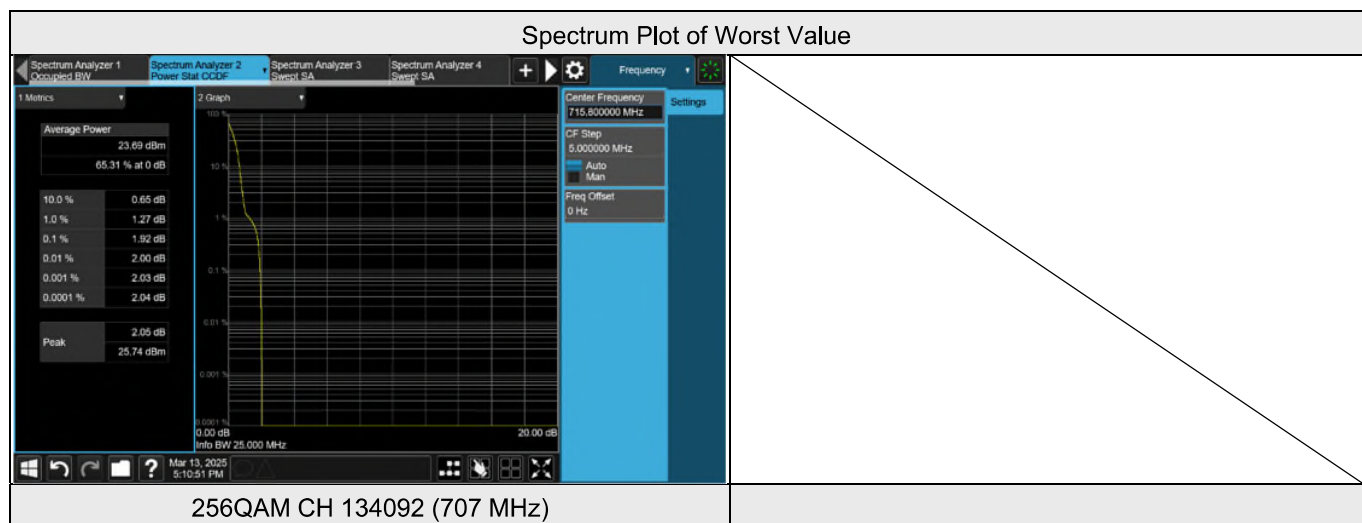
7.3.11 NB-IoT Band 66

NB-IoT Band 66					
Sub-carrier	Channel	Frequency (MHz)	Measurement Value(dB)	Limit (dB)	Result
3.75k	131974	1710.2	1.7	13	PASS
3.75k	132322	1745	1.7	13	PASS
3.75k	132670	1779.8	1.74	13	PASS
15k	131974	1710.2	1.9	13	PASS
15k	132322	1745	1.93	13	PASS
15k	132670	1779.8	1.97	13	PASS



7.3.12 NB-IoT Band 85

NB-IoT Band 85					
Sub-carrier	Channel	Frequency (MHz)	Measurement Value(dB)	Limit (dB)	Result
3.75k	134004	698.2	1.56	13	PASS
3.75k	134092	707	1.55	13	PASS
3.75k	134180	715.8	1.47	13	PASS
15k	134004	698.2	1.88	13	PASS
15k	134092	707	1.9	13	PASS
15k	134180	715.8	1.92	13	PASS

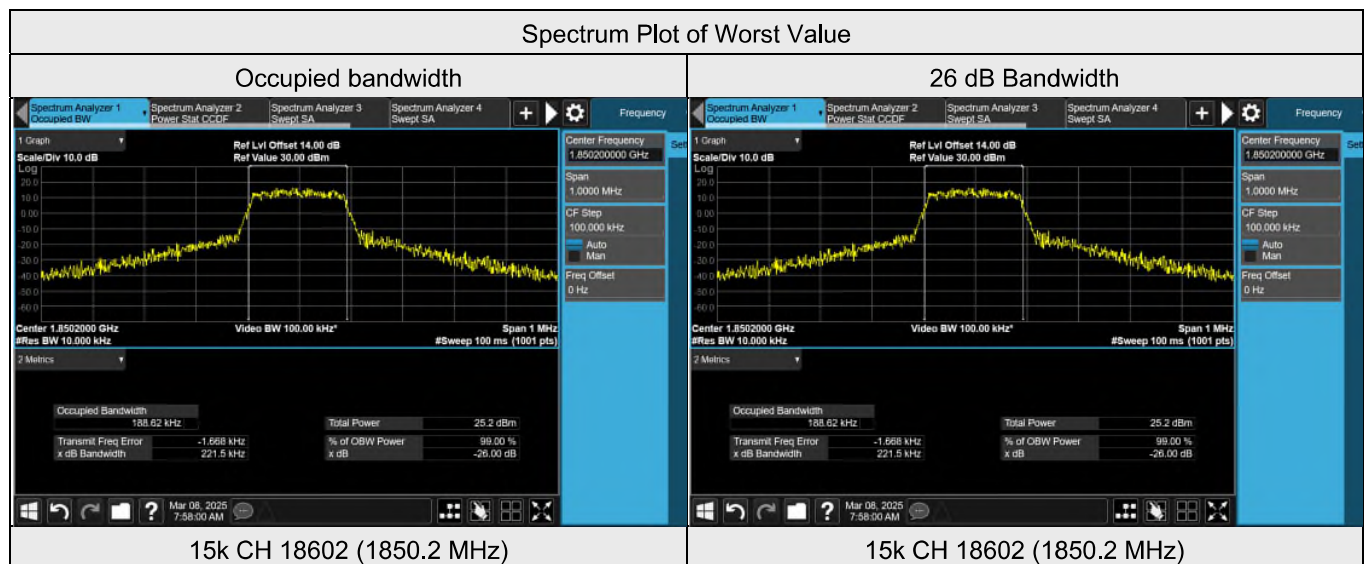


7.4 Bandwidth

Input Power:	3.8 Vdc	Environmental Conditions:	22°C, 75% RH	Tested By:	Match Tsui
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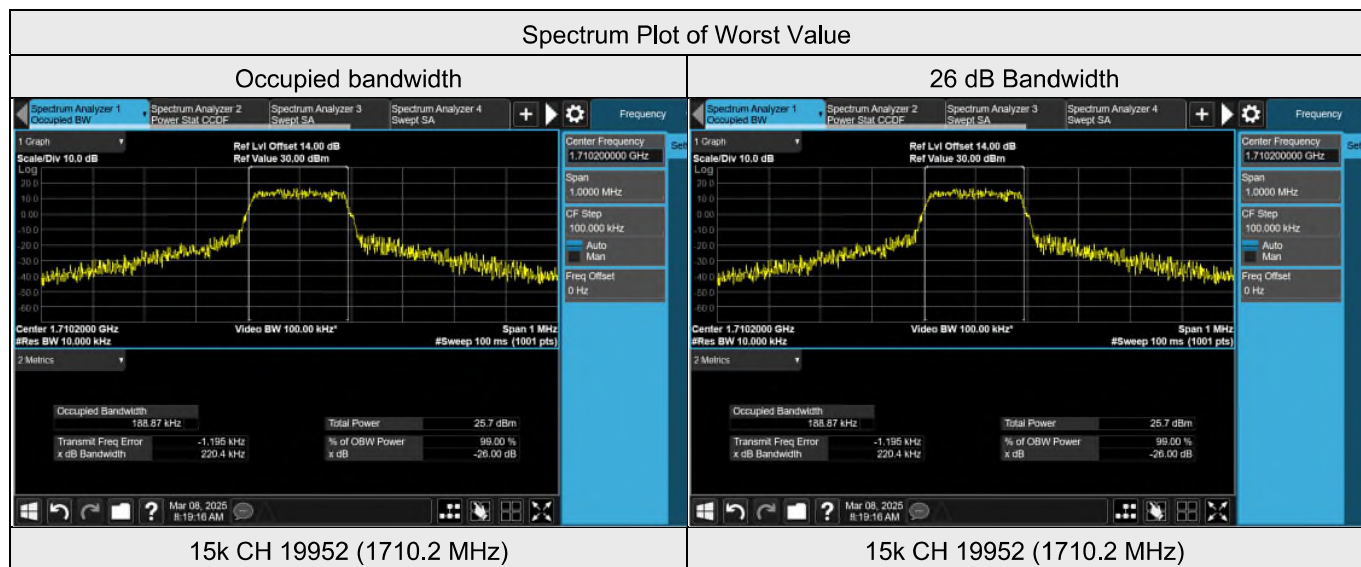
7.4.1 NB-IoT Band 2

NB-IoT Band 2				
Sub-carrier	Channel	Frequency (MHz)	Occupied Bandwidth (kHz)	26 dB Bandwidth (kHz)
3.75k	18602	1850.2	108.75	84.23
3.75k	18900	1880	108.26	90.36
3.75k	19198	1909.8	107.3	84.64
15k	18602	1850.2	188.62	221.5
15k	18900	1880	188.36	218.4
15k	19198	1909.8	187.44	221.4



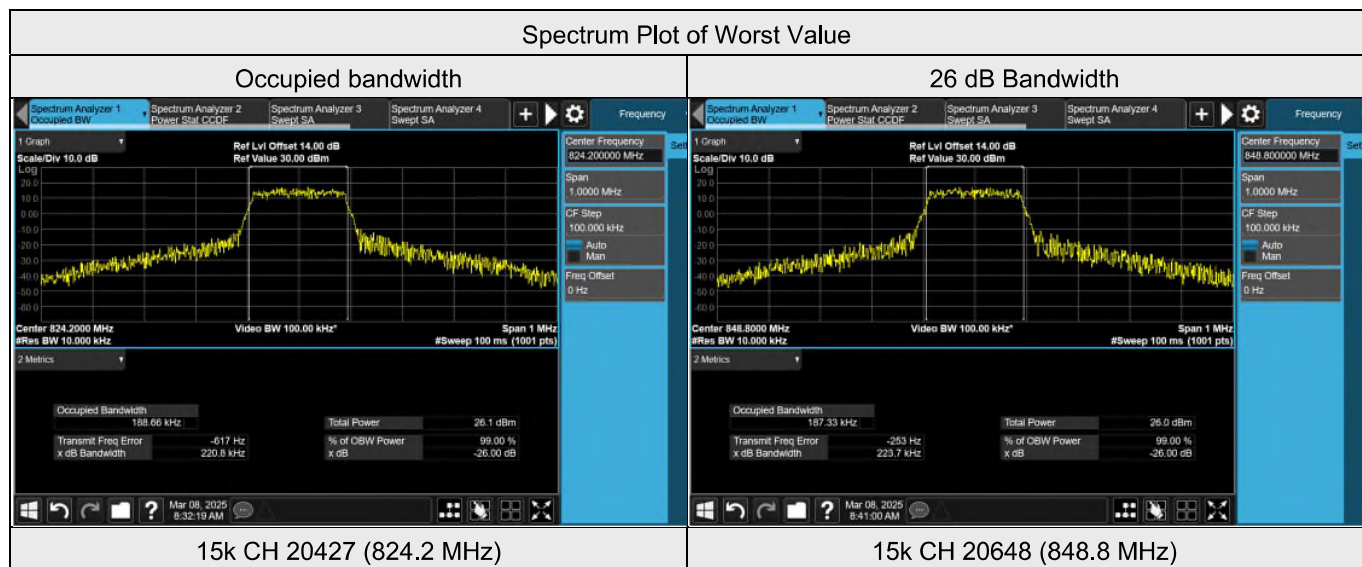
7.4.2 NB-IoT Band 4

NB-IoT Band 4				
Sub-carrier	Channel	Frequency (MHz)	Occupied Bandwidth (kHz)	26 dB Bandwidth (kHz)
3.75k	19952	1710.2	106.61	88.93
3.75k	20175	1732.5	106.57	85.17
3.75k	20398	1754.8	106.28	87.17
15k	19952	1710.2	188.87	220.4
15k	20175	1732.5	188.56	218.8
15k	20398	1754.8	187.89	219.4



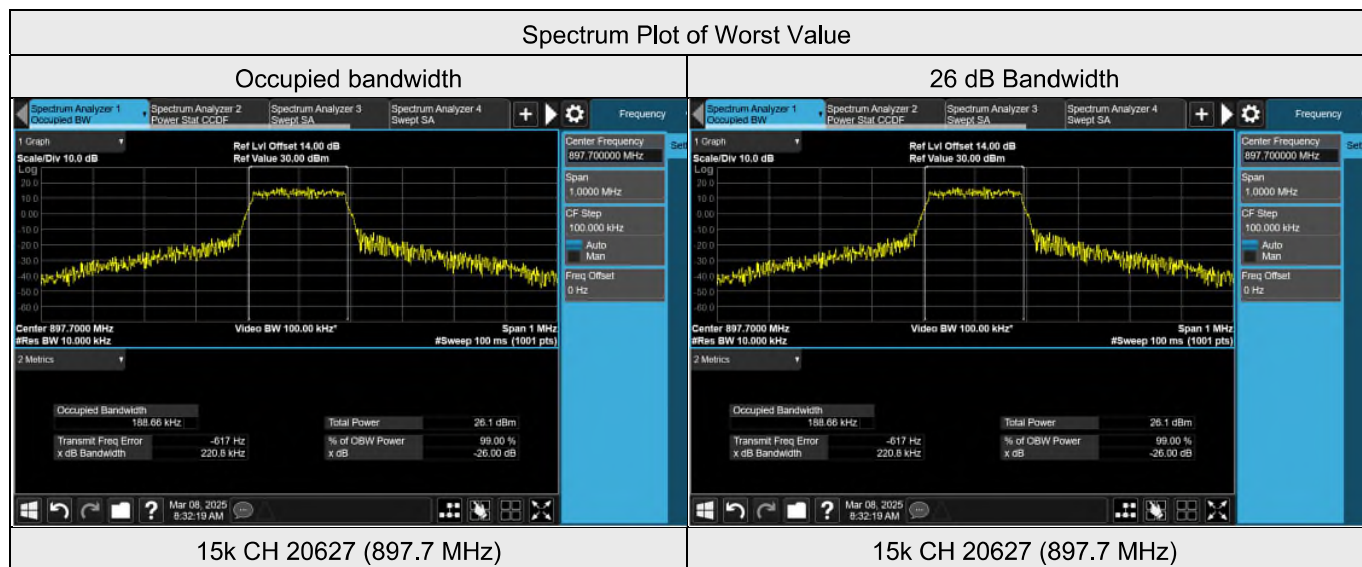
7.4.3 NB-IoT Band 5

NB-IoT Band 5				
Sub-carrier	Channel	Frequency (MHz)	Occupied Bandwidth (kHz)	26 dB Bandwidth (kHz)
3.75k	20402	824.2	104.14	86.16
3.75k	20525	836.5	102.92	86.04
3.75k	20648	848.8	104.83	84.75
15k	20402	824.2	188.66	220.8
15k	20525	836.5	187.35	221.1
15k	20648	848.8	187.33	223.7



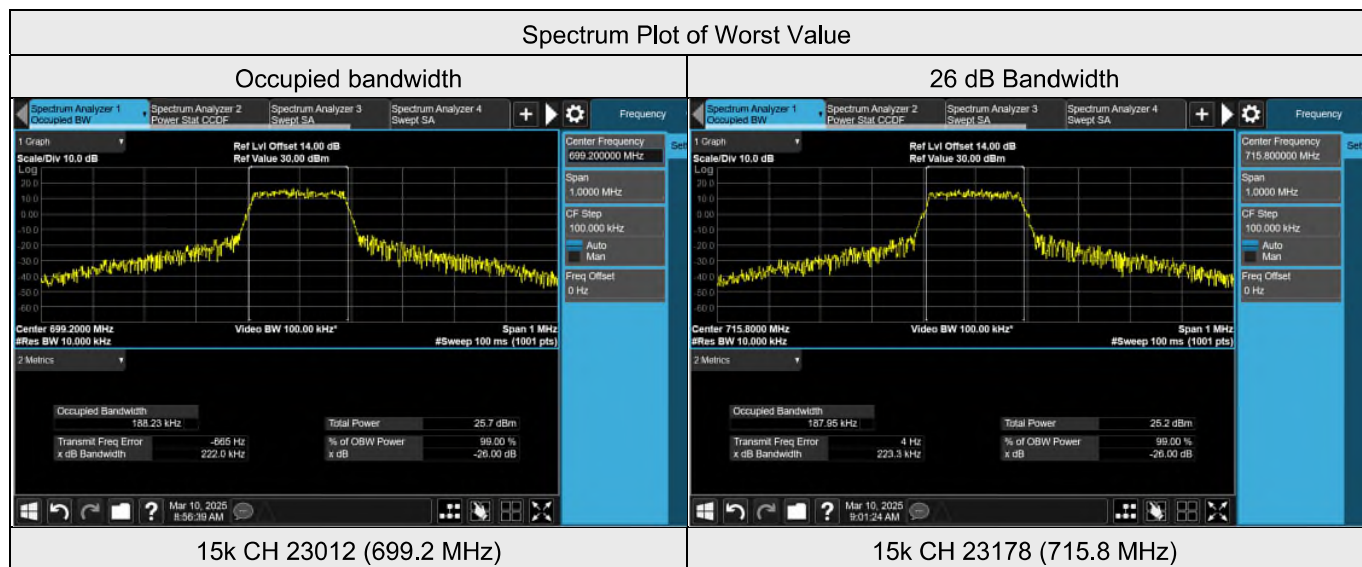
7.4.4 NB-IoT Band 8

NB-IoT Band 8				
Sub-carrier	Channel	Frequency (MHz)	Occupied Bandwidth (kHz)	26 dB Bandwidth (kHz)
3.75k	21627	897.7	105.98	83.84
3.75k	21640	899	105.11	86.89
3.75k	21653	900.3	105.03	86.96
15k	21627	897.7	188.66	220.8
15k	21640	899	187.66	220.1
15k	21653	900.3	187.07	219.4



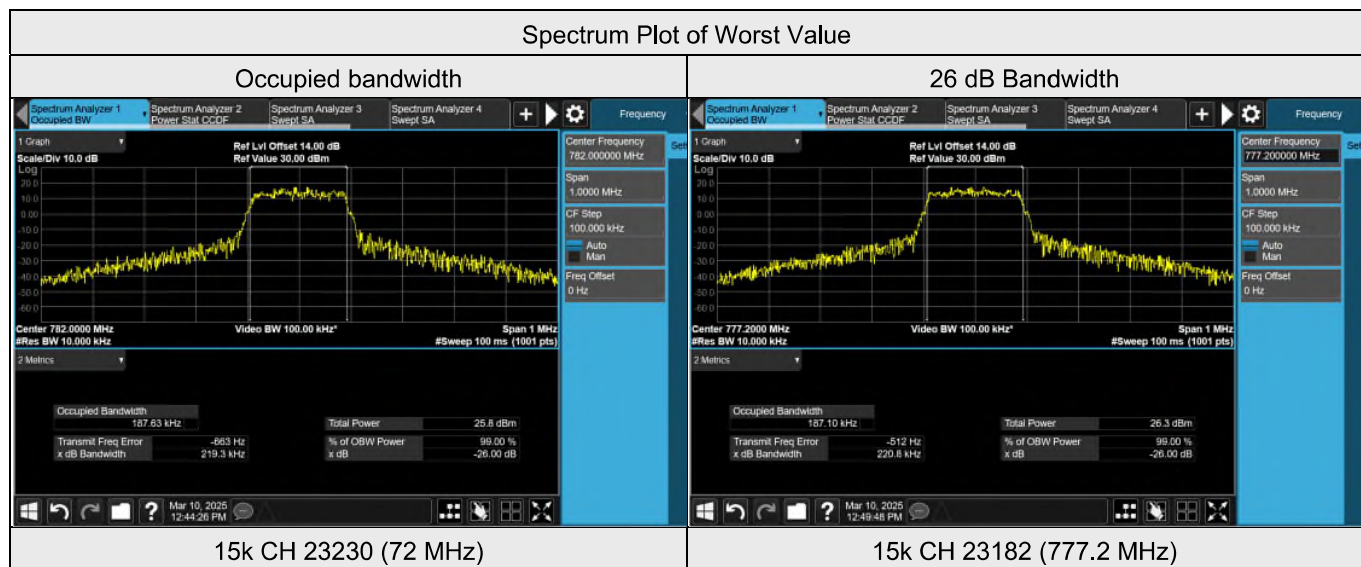
7.4.5 NB-IoT Band 12

NB-IoT Band 12				
Sub-carrier	Channel	Frequency (MHz)	Occupied Bandwidth (kHz)	26 dB Bandwidth (kHz)
3.75k	23012	699.2	104.51	84.81
3.75k	23095	707.5	105.01	89.5
3.75k	23178	715.8	105.42	86.34
15k	23012	699.2	188.23	222
15k	23095	707.5	187.68	220.2
15k	23178	715.8	187.95	223.3



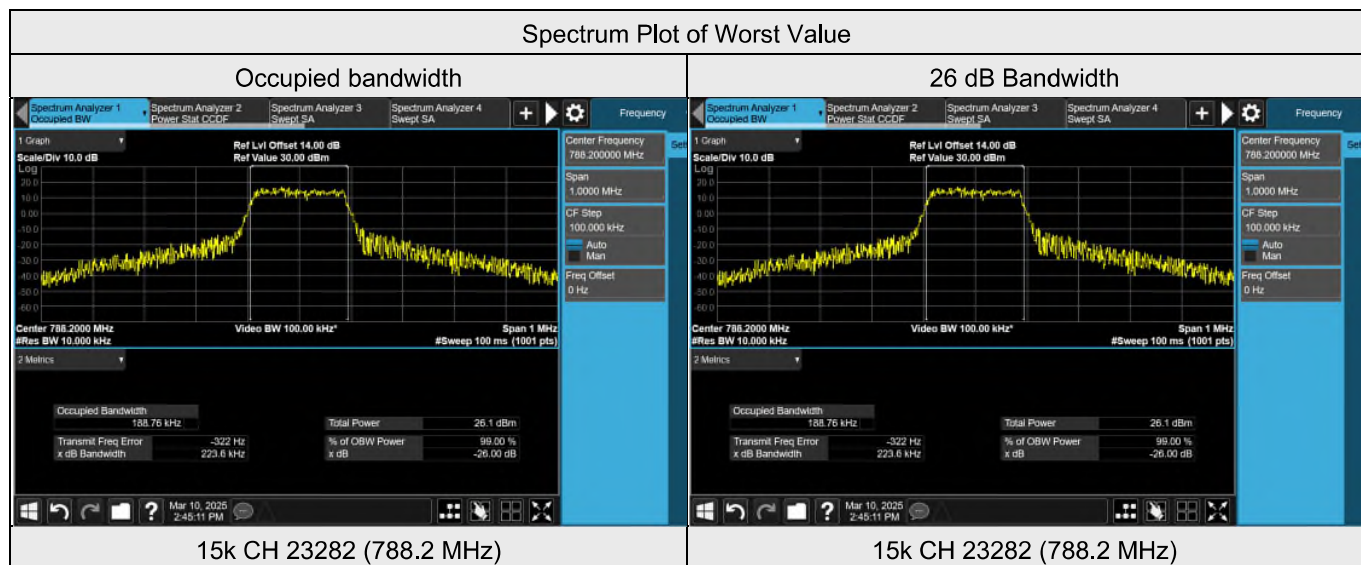
7.4.6 NB-IoT Band 13

NB-IoT Band 13				
Sub-carrier	Channel	Frequency (MHz)	Occupied Bandwidth (kHz)	26 dB Bandwidth (kHz)
3.75k	23182	777.2	106	84.48
3.75k	23230	782	104.86	84.82
3.75k	23278	786.8	104.89	85.26
15k	23182	777.2	187.1	220.8
15k	23230	782	187.63	219.3
15k	23278	786.8	187.58	218.4



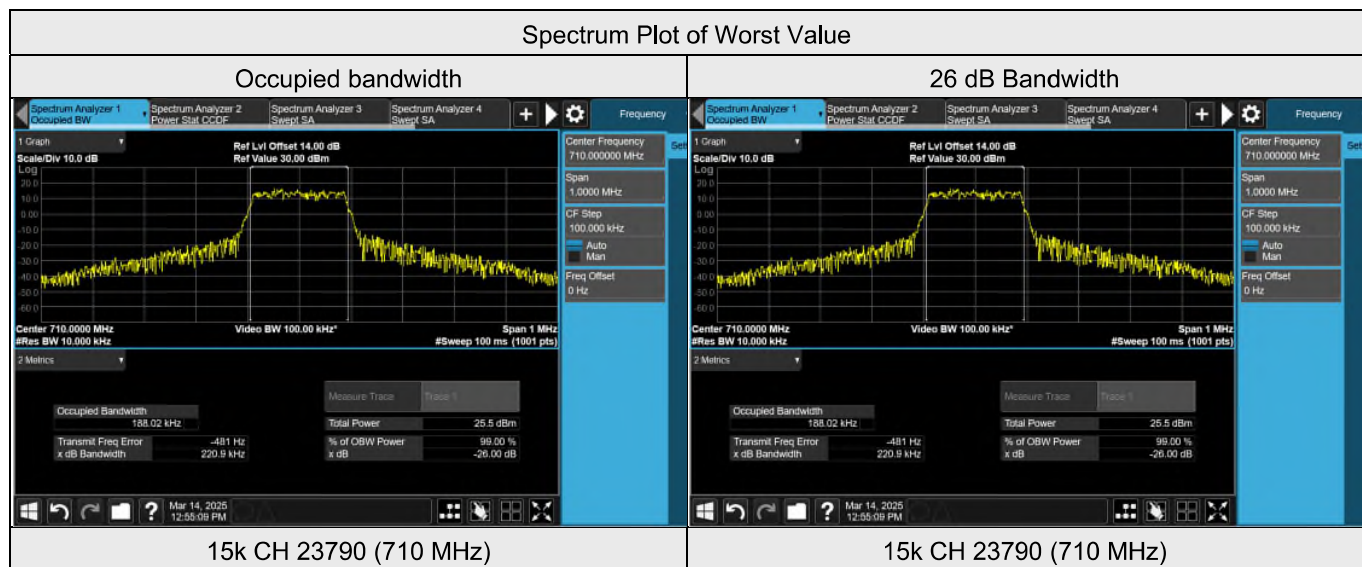
7.4.7 NB-IoT Band 14

NB-IoT Band 14				
Sub-carrier	Channel	Frequency (MHz)	Occupied Bandwidth (kHz)	26 dB Bandwidth (kHz)
3.75k	23282	788.2	104.74	84.8
3.75k	23300	793	105.45	83.89
3.75k	23378	797.8	104.87	85.97
15k	23282	788.2	188.76	223.6
15k	23300	793	187.6	222
15k	23378	797.8	188.03	217.7



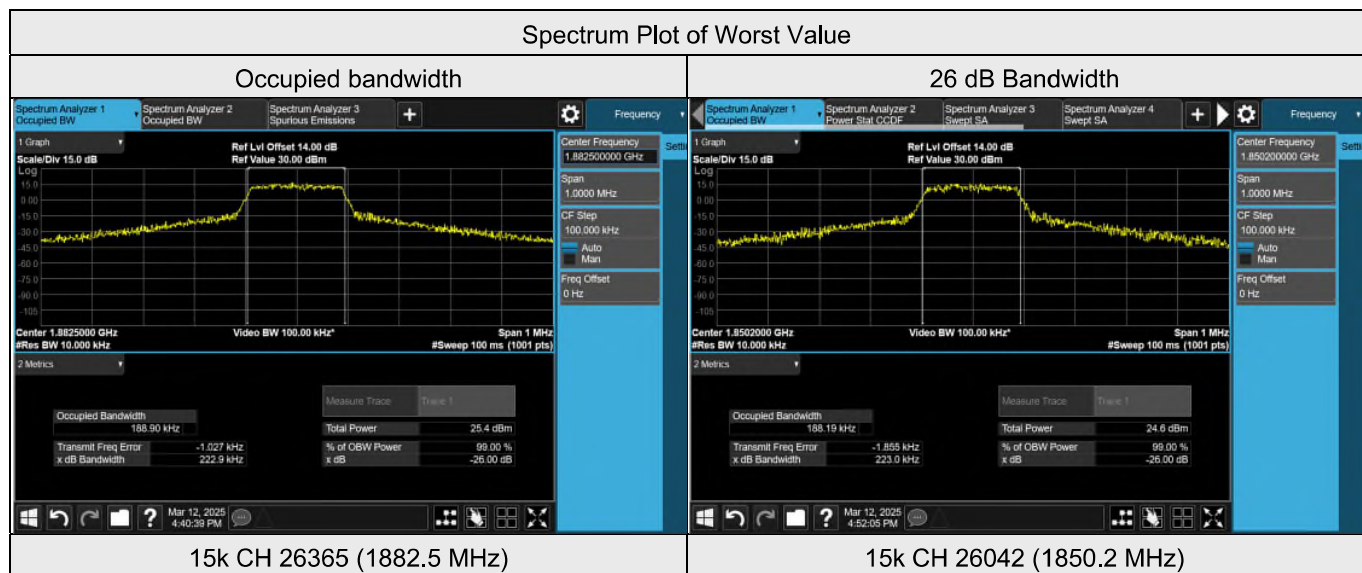
7.4.8 NB-IoT Band 17

NB-IoT Band 17				
Sub-carrier	Channel	Frequency (MHz)	Occupied Bandwidth (kHz)	26 dB Bandwidth (kHz)
3.75k	23732	704.2	104.53	83.74
3.75k	23790	710	105.47	85.88
3.75k	23848	715.8	103.21	82.19
15k	23732	704.2	187.68	220.2
15k	23790	710	188.02	220.9
15k	23848	715.8	187.41	220.3



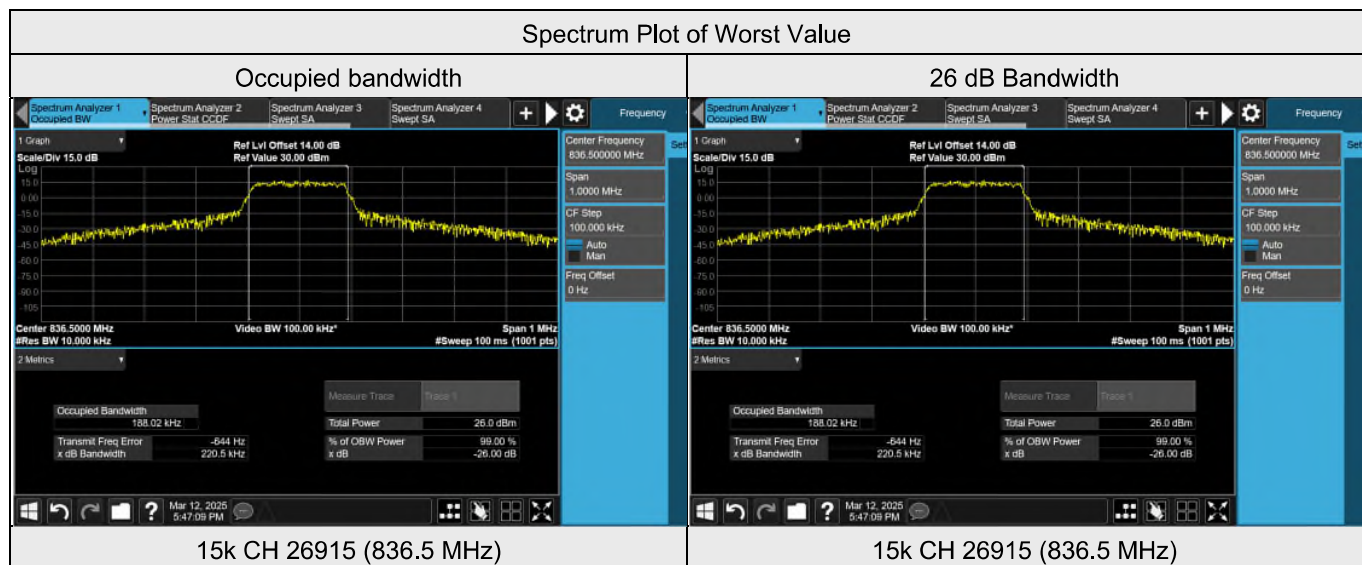
7.4.9 NB-IoT Band 25

NB-IoT Band 25				
Sub-carrier	Channel	Frequency (MHz)	Occupied Bandwidth (kHz)	26 dB Bandwidth (kHz)
3.75k	26042	1850.2	105.98	87.02
3.75k	26365	1882.5	108.47	82.36
3.75k	26688	1914.8	107.21	84.51
15k	26042	1850.2	188.19	223
15k	26365	1882.5	188.9	222.9
15k	26688	1914.8	188.62	219.8



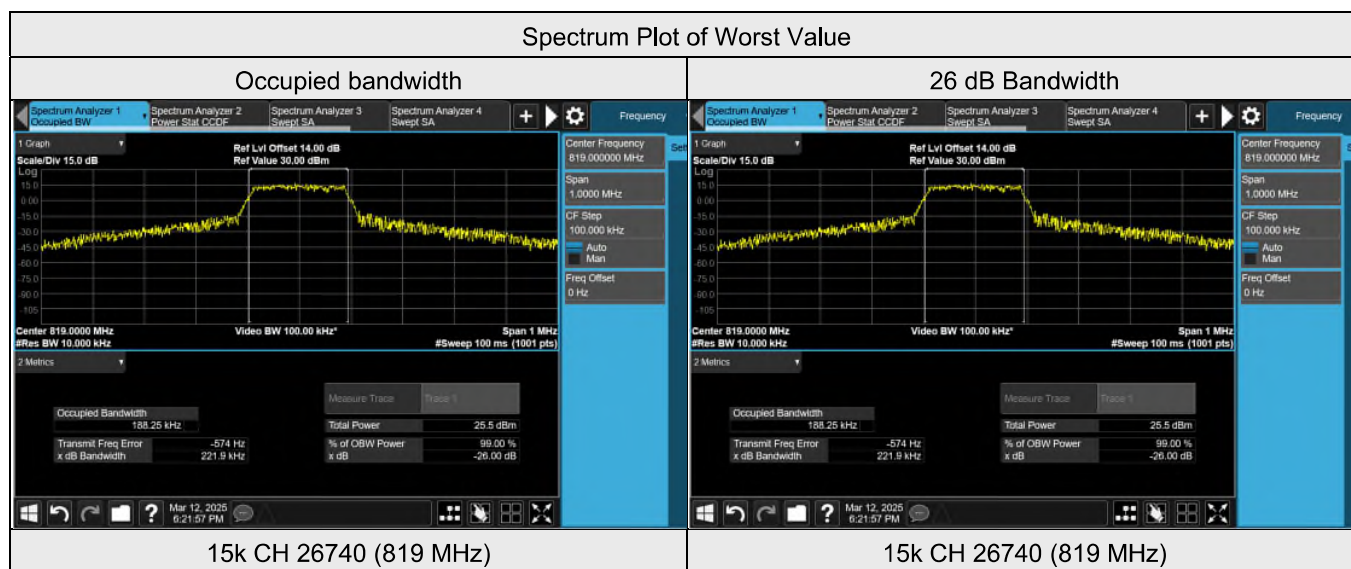
7.4.10 NB-IoT Band 26 (Part 22)

NB-IoT Band 26 (824-849 MHz)				
Sub-carrier	Channel	Frequency (MHz)	Occupied Bandwidth (kHz)	26 dB Bandwidth (kHz)
3.75k	26792	824.2	105.93	84.83
3.75k	26915	836.5	104.14	85.15
3.75k	27038	848.8	104.49	81.89
15k	26792	824.2	188	219.1
15k	26915	836.5	188.02	220.5
15k	27038	848.8	187.69	219.1



7.4.11 NB-IoT Band 26 (Part 90)

NB-IoT Band 26 (824-849 MHz)				
Sub-carrier	Channel	Frequency (MHz)	Occupied Bandwidth (kHz)	26 dB Bandwidth (kHz)
3.75k	26692	814.2	105.54	85.21
3.75k	26740	819	105.03	86.75
3.75k	26788	823.8	104.97	84.15
15k	26692	814.2	187.49	221.1
15k	26740	819	188.25	221.9
15k	26788	823.8	188.01	221



7.4.12 NB-IoT Band 66

NB-IoT Band 66				
Sub-carrier	Channel	Frequency (MHz)	Occupied Bandwidth (kHz)	26 dB Bandwidth (kHz)
3.75k	131974	1710.2	105.77	84.26
3.75k	132322	1745	107.84	86.71
3.75k	132670	1779.8	109.4	84.71
15k	131974	1710.2	188.58	220.8
15k	132322	1745	188.21	221.1
15k	132670	1779.8	189.88	223.3

