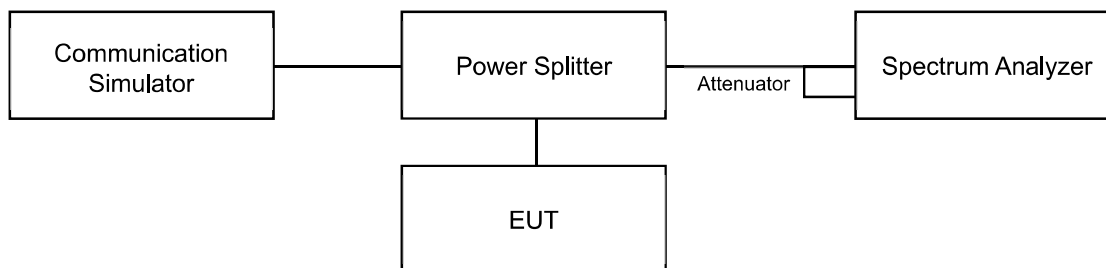


For the occupied bandwidth measurement method, please refer to section 5.4.4 of ANSI C63.26.

- a. The spectrum analyzer center frequency is set to the nominal EUT channel center frequency. The span range for the spectrum analyzer shall be wide enough to see sufficient roll off of the signal to make the measurement.
- b. The nominal RBW shall be in the range of 1% to 5% of the anticipated OBW, and the VBW shall be set $\geq 3 \times$ RBW.
- c. Set the reference level of the instrument as required to prevent the signal amplitude from exceeding the maximum spectrum analyzer input mixer level for linear operation. See guidance provided in 4.2.3.
- d. The dynamic range of the spectrum analyzer at the selected RBW shall be more than 10 dB below the target “-X dB” requirement, i.e., if the requirement calls for measuring the -26 dB OBW, the spectrum analyzer noise floor at the selected RBW shall be at least 36 dB below the reference level.
- e. Set spectrum analyzer detection mode to peak, and the trace mode to max hold.
- f. Determine the reference value by either of the following:
 - g. 1) Set the EUT to transmit a modulated signal. Allow the trace to stabilize. Set the spectrum analyzer marker to the highest level of the displayed trace (this is the reference value).
 - h. 2) Set the EUT to transmit an unmodulated carrier. Set the spectrum analyzer marker to the level of the carrier.
- i. Determine the “-X dB amplitude” as equal to (Reference Value - X). Alternatively, this calculation can be performed on the spectrum analyzer using the delta-marker measurement function.
- j. If the reference value was determined using an unmodulated carrier, turn the EUT modulation on, then either clear the existing trace or start a new trace on the spectrum analyzer and allow the new trace to stabilize. Otherwise the trace from step f) shall be used for step i).
- k. Place two markers, one at the lowest and the other at the highest frequency of the envelope of the spectral display such that each marker is at or slightly below the “-X dB amplitude” determined in step f). If a marker is below this “-X dB amplitude” value it should be as close as possible to this value. The OBW is the positive frequency difference between the two markers. The spectral envelope can cross the “-X dB amplitude” at multiple points. The lowest or highest frequency shall be selected as the frequencies that are the farthest away from the center frequency at which the spectral envelope crosses the “-X dB amplitude.”
- l. The OBW shall be reported by providing plot(s) of the measuring instrument display, to include markers depicting the relevant frequency and amplitude information (e.g., marker table). The frequency and amplitude axis and scale shall be clearly labeled. Tabular data may be reported in addition to the plot(s).

6.5 Conducted Spurious Emissions

6.5.1 Test Setup



6.5.2 Test Procedure

- Measurement refer to ANSI C63.26 section 5.7.
- All measurements were done at 3 channels: low, middle and high operational frequency range.
- Measuring frequency range is from 9 kHz up to the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower. 20 dB attenuation pad is connected with spectrum.
- The fundamental frequency above 1 GHz, the spectrum set RBW = 1 MHz, VBW = 3 MHz, Detector = Average.
- The fundamental frequency below 1 GHz, the spectrum set RBW $\geq$ 100 kHz, VBW $\geq$ 3 x RBW, Detector = Average.
- Measuring frequency band edge, narrow RBW (no less than 1% of the OBW) is used for conducted emission measurement.

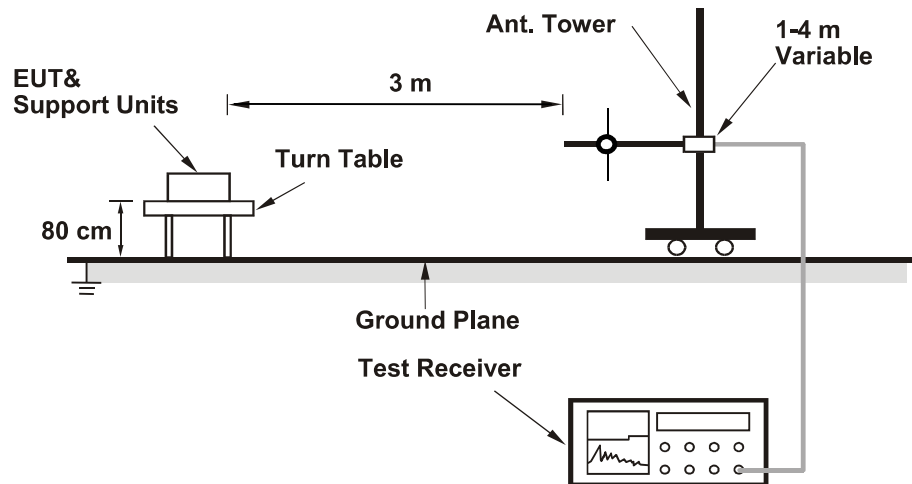
For Emission Mask:

- Measurement refer to ANSI C63.26 section 5.7.
- All measurements were done at 2 channels: low and high operational frequency range.
- According to FCC 47 CFR part 90.691(a), the spectrum set RBW = 300 Hz for offset less than 37.5 kHz from channel edge and RBW = 100 kHz for offsets greater than 37.5 kHz is allowed.
- Record the maximum power value test plot.

6.6 Radiated Spurious Emissions below 1GHz

6.6.1 Test Setup

For radiated emission 30 MHz to 1 GHz



For the actual test configuration, please refer to the attached file (Test Setup Photo).

6.6.2 Test Procedure

The EUT is configured by emulator to set data modulation and maximum power using WWAN technology.

- In the semi-anechoic chamber, EUT placed on the 0.8 m (below or equal 1 GHz) height of turn table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1 m to 4 m to find the maximum polar radiated power. The "Read Value" is the spectrum reading the maximum power value.
- The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- Perform a field strength measurement and record the worse read value, is the field strength value via a spectrum reading obtained corrected for antenna factor, cable loss and pre-amplifier factor and then mathematically convert the measured field strength level to EIRP/ERP level.
- Following C63.26 section 5.5 and 5.2.7
- $EIRP \text{ (dBm)} = E \text{ (dB}\mu\text{V/m)} + 20\log(D) - 104.8$; where D is the measurement distance (in the far field region) in m.
- $ERP \text{ (dBm)} = E \text{ (dB}\mu\text{V/m)} + 20\log(D) - 104.8 - 2.15$; where D is the measurement distance (in the far field region) in m.

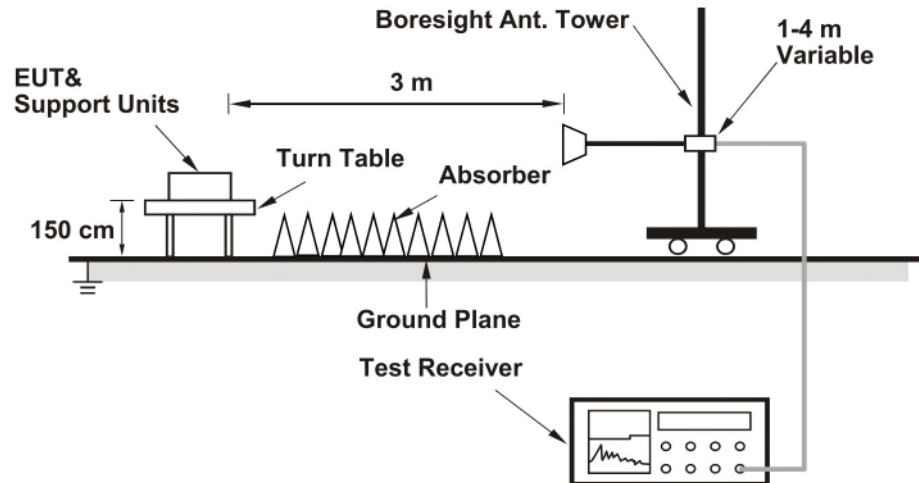
Note:

- The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1 MHz/3 MHz.
- The emission levels were against the limit of frequency range 9 kHz ~ 30 MHz:
The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.

6.7 Radiated Spurious Emissions above 1GHz

6.7.1 Test Setup

For radiated emission above 1 GHz



For the actual test configuration, please refer to the attached file (Test Setup Photo).

6.7.2 Test Procedure

The EUT is configured by emulator to set data modulation and maximum power using WWAN technology.

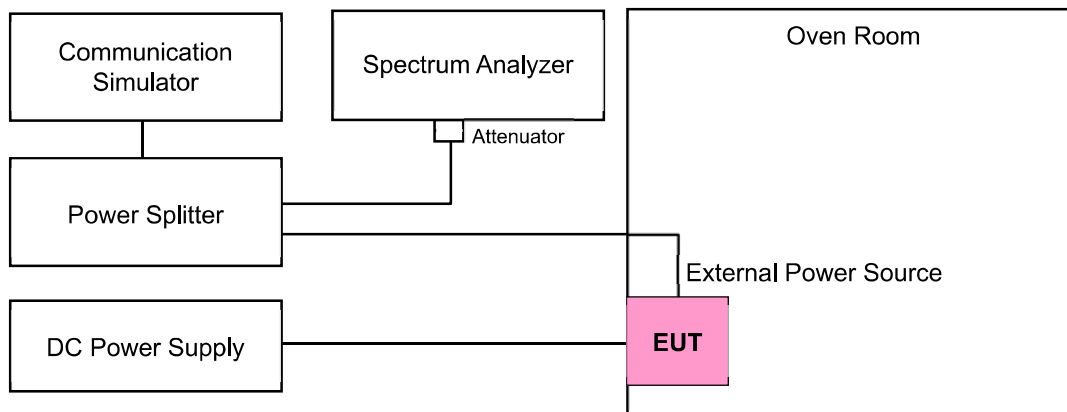
- In the semi-anechoic chamber, EUT placed on the 1.5 m height of turn table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1 m to 4 m to find the maximum polar radiated power. The "Read Value" is the spectrum reading the maximum power value.
- The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- Perform a field strength measurement and record the worse read value, is the field strength value via a spectrum reading obtained corrected for antenna factor, cable loss and pre-amplifier factor and then mathematically convert the measured field strength level to EIRP/ERP level.
- Following C63.26 section 5.5 and 5.2.7
- $EIRP \text{ (dBm)} = E \text{ (dB}\mu\text{V/m)} + 20\log(D) - 104.8$; where D is the measurement distance (in the far field region) in m.
- $ERP \text{ (dBm)} = E \text{ (dB}\mu\text{V/m)} + 20\log(D) - 104.8 - 2.15$; where D is the measurement distance (in the far field region) in m.

Note:

- The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1 MHz/3 MHz. Set detector = average.

6.8 Frequency Stability

6.8.1 Test Setup



6.8.2 Test Procedure

The EUT is configured by emulator to set data modulation and maximum power using WWAN technology.

- Device is placed at the oven room. The oven room could control the temperatures and humidity. Power warm up is at least 15 min and power applied should perform before recording frequency error.
- EUT is connected the external power supply to control the DC input power. The test voltage range is from minimum to maximum working voltage. Each step shall be record the frequency error rate.
- The temperature range step is 10 degrees in this test items. All temperature levels shall be hold the $\pm 0.5^{\circ}\text{C}$ during the measurement testing. The each temperature step shall be at least 0.5 hours, consider the EUT could be test under the stability condition.

Note: The frequency error was recorded frequency error from the communication simulator.

7 Test Results of Test Item

7.1 Effective Radiated Power and Equivalent Isotropically Radiated Power

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

NB-IoT Band 2					
Modulation	RB Size	RB Offset	Measurement Conducted Power (dBm)		
			CH 18602	CH 18900	CH 19198
			1850.2 MHz	1880 MHz	1909.8 MHz
3.75k BPSK	1	0	23.55	23.01	23.1
	1	47	23.52	23.03	23.16
3.75k QPSK	1	0	23.42	22.97	23.05
	1	47	23.36	22.93	23.06
15k BPSK	1	0	23.52	23.47	23.64
	1	11	23.48	23.49	23.63
15k QPSK	1	0	23.5	23.45	23.6
	1	11	23.51	23.54	23.62
	6	0	22.93	22.94	23.14
	6	6	23.08	23.1	23.22
	12	0	22.53	22.44	22.68

Output Power					
Modulation	Minimum Cond. Power (dBm)	Maximum Cond. Power (dBm)	Minimum EIRP (dBm)	Maximum EIRP (dBm)	EIRP Limit (dBm)
3.75k BPSK	23.01	23.55	25.04	25.58	33.01
3.75k QPSK	22.93	23.42	24.96	25.45	33.01
15k BPSK	23.47	23.64	25.5	25.67	33.01
15k QPSK	22.44	23.62	24.47	25.65	33.01

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

In-Band

NB-IoT Band 2 3M					
Modulation	RB Size	RB Offset	Measurement Conducted Power (dBm)		
			CH 18615	CH 18900	CH 19185
			1851.5 MHz	1880 MHz	1908.5 MHz
3.75k BPSK	1	0	23.38	22.81	22.93
	1	47	23.46	22.93	22.99
3.75k QPSK	1	0	23.25	22.91	22.91
	1	47	23.16	22.82	23.01
15k BPSK	1	0	23.42	23.39	23.52
	1	11	23.38	23.3	23.52
15k QPSK	1	0	23.35	23.37	23.4
	1	11	23.33	23.38	23.46
	6	0	22.86	22.81	23
	6	6	22.93	22.97	23.08
	12	0	22.41	22.31	22.48

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	23.46	24.84	25.49	33.01
3.75k QPSK	22.82	23.25	24.85	25.28	33.01
15k BPSK	23.3	23.52	25.33	25.55	33.01
15k QPSK	22.31	23.46	24.34	25.49	33.01

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

NB-IoT Band 2 5M					
Modulation	RB Size	RB Offset	Measurement Conducted Power (dBm)		
			CH 18625	CH 18900	CH 19175
			1852.5 MHz	1880 MHz	1907.5 MHz
3.75k BPSK	1	0	23.42	22.81	22.94
	1	47	23.45	22.84	23
3.75k QPSK	1	0	23.32	22.83	22.98
	1	47	23.17	22.78	22.88
15k BPSK	1	0	23.46	23.31	23.47
	1	11	23.32	23.42	23.46
15k QPSK	1	0	23.31	23.38	23.41
	1	11	23.37	23.48	23.43
	6	0	22.75	22.86	22.94
	6	6	22.99	22.95	23.06
	12	0	22.39	22.35	22.54

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	23.45	24.84	25.48	33.01
3.75k QPSK	22.78	23.32	24.81	25.35	33.01
15k BPSK	23.31	23.47	25.34	25.50	33.01
15k QPSK	22.35	23.48	24.38	25.51	33.01

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

NB-IoT Band 2 10M					
Modulation	RB Size	RB Offset	Measurement Conducted Power (dBm)		
			CH 18650	CH 18900	CH 19150
			1855 MHz	1880 MHz	1905 MHz
3.75k BPSK	1	0	23.35	22.85	22.94
	1	47	23.33	22.95	23.05
3.75k QPSK	1	0	23.31	22.85	22.85
	1	47	23.2	22.75	23.01
15k BPSK	1	0	23.38	23.29	23.57
	1	11	23.36	23.29	23.58
15k QPSK	1	0	23.36	23.3	23.43
	1	11	23.37	23.35	23.53
	6	0	22.86	22.79	22.96
	6	6	22.99	23	23.16
	12	0	22.39	22.33	22.62

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	23.35	24.88	25.38	33.01
3.75k QPSK	22.75	23.31	24.78	25.34	33.01
15k BPSK	23.29	23.58	25.32	25.61	33.01
15k QPSK	22.33	23.53	24.36	25.56	33.01

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

NB-IoT Band 2 15M					
Modulation	RB Size	RB Offset	Measurement Conducted Power (dBm)		
			CH 18675	CH 18900	CH 19125
			1857.5 MHz	1880 MHz	1902.5 MHz
3.75k BPSK	1	0	23.47	22.91	22.94
	1	47	23.32	22.85	23.1
3.75k QPSK	1	0	23.26	22.83	22.88
	1	47	23.2	22.82	22.87
15k BPSK	1	0	23.41	23.34	23.45
	1	11	23.33	23.36	23.55
15k QPSK	1	0	23.42	23.28	23.41
	1	11	23.42	23.38	23.48
	6	0	22.75	22.8	23
	6	6	22.99	22.9	23.02
	12	0	22.38	22.34	22.6

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	23.47	24.88	25.5	33.01
3.75k QPSK	22.82	23.26	24.85	25.29	33.01
15k BPSK	23.33	23.55	25.36	25.58	33.01
15k QPSK	22.34	23.48	24.37	25.51	33.01

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

NB-IoT Band 2 20M					
Modulation	RB Size	RB Offset	Measurement Conducted Power (dBm)		
			CH 18700	CH 18900	CH 19100
			1860 MHz	1880 MHz	1900 MHz
3.75k BPSK	1	0	23.49	22.84	22.91
	1	47	23.36	22.95	23.08
3.75k QPSK	1	0	23.31	22.8	22.95
	1	47	23.21	22.88	22.87
15k BPSK	1	0	23.47	23.37	23.57
	1	11	23.42	23.38	23.53
15k QPSK	1	0	23.34	23.26	23.54
	1	11	23.41	23.46	23.42
	6	0	22.88	22.74	22.95
	6	6	22.91	22.96	23.15
	12	0	22.37	22.27	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	22.84	23.49	24.87	25.52	33.01
3.75k QPSK	22.8	23.31	24.83	25.34	33.01
15k BPSK	23.37	23.57	25.4	25.6	33.01
15k QPSK	22.27	23.54	24.3	25.57	33.01

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

Guard-Band

NB-IoT Band 2 3M					
Modulation	RB Size	RB Offset	Measurement Conducted Power (dBm)		
			CH 18615	CH 18900	CH 19185
			1851.5 MHz	1880 MHz	1908.5 MHz
3.75k BPSK	1	0	23.36	22.95	22.93
	1	47	23.34	22.93	23.01
3.75k QPSK	1	0	23.36	22.82	22.99
	1	47	23.31	22.83	22.98
15k BPSK	1	0	23.42	23.33	23.46
	1	11	23.29	23.35	23.49
15k QPSK	1	0	23.35	23.25	23.41
	1	11	23.35	23.35	23.5
	6	0	22.79	22.83	23.07
	6	6	22.9	23.05	23.09
	12	0	22.41	22.35	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	22.93	23.36	24.96	25.39	33.01
3.75k QPSK	22.82	23.36	24.85	25.39	33.01
15k BPSK	23.29	23.49	25.32	25.52	33.01
15k QPSK	22.35	23.5	24.38	25.53	33.01

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

NB-IoT Band 2 5M					
Modulation	RB Size	RB Offset	Measurement Conducted Power (dBm)		
			CH 18625	CH 18900	CH 19175
			1852.5 MHz	1880 MHz	1907.5 MHz
3.75k BPSK	1	0	23.47	22.89	23
	1	47	23.36	22.93	22.97
3.75k QPSK	1	0	23.23	22.78	22.87
	1	47	23.27	22.8	22.99
15k BPSK	1	0	23.33	23.35	23.51
	1	11	23.37	23.34	23.54
15k QPSK	1	0	23.34	23.4	23.49
	1	11	23.46	23.45	23.47
	6	0	22.73	22.86	23.06
	6	6	22.97	22.99	23.12
	12	0	22.45	22.24	22.55

Output Power					
Modulation	Minimum Cond. Power (dBm)	Maximum Cond. Power (dBm)	Minimum EIRP (dBm)	Maximum EIRP (dBm)	EIRP Limit (dBm)
3.75k BPSK	22.89	23.47	24.92	25.5	33.01
3.75k QPSK	22.78	23.27	24.81	25.3	33.01
15k BPSK	23.33	23.54	25.36	25.57	33.01
15k QPSK	22.24	23.49	24.27	25.52	33.01

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

NB-IoT Band 2 10M					
Modulation	RB Size	RB Offset	Measurement Conducted Power (dBm)		
			CH 18650	CH 18900	CH 19150
			1855 MHz	1880 MHz	1905 MHz
3.75k BPSK	1	0	23.48	22.88	23
	1	47	23.45	22.97	22.99
3.75k QPSK	1	0	23.29	22.85	22.97
	1	47	23.24	22.83	22.9
15k BPSK	1	0	23.34	23.3	23.45
	1	11	23.4	23.32	23.49
15k QPSK	1	0	23.35	23.3	23.46
	1	11	23.42	23.38	23.49
	6	0	22.77	22.84	23.07
	6	6	22.96	22.9	23.05
	12	0	22.45	22.27	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	22.88	23.48	24.91	25.51	33.01
3.75k QPSK	22.83	23.29	24.86	25.32	33.01
15k BPSK	23.3	23.49	25.33	25.52	33.01
15k QPSK	22.27	23.49	24.3	25.52	33.01

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

NB-IoT Band 2 15M					
Modulation	RB Size	RB Offset	Measurement Conducted Power (dBm)		
			CH 18675	CH 18900	CH 19125
			1857.5 MHz	1880 MHz	1902.5 MHz
3.75k BPSK	1	0	23.49	22.95	22.95
	1	47	23.43	22.94	23.07
3.75k QPSK	1	0	23.3	22.86	22.97
	1	47	23.23	22.87	22.99
15k BPSK	1	0	23.39	23.3	23.56
	1	11	23.33	23.33	23.49
15k QPSK	1	0	23.42	23.38	23.41
	1	11	23.44	23.43	23.46
	6	0	22.74	22.8	23.05
	6	6	22.94	23.02	23.05
	12	0	22.34	22.36	22.57

Output Power					
Modulation	Minimum Cond. Power (dBm)	Maximum Cond. Power (dBm)	Minimum EIRP (dBm)	Maximum EIRP (dBm)	EIRP Limit (dBm)
3.75k BPSK	22.94	23.49	24.97	25.52	33.01
3.75k QPSK	22.86	23.3	24.89	25.33	33.01
15k BPSK	23.3	23.56	25.33	25.59	33.01
15k QPSK	22.34	23.46	24.37	25.49	33.01

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

NB-IoT Band 2 20M					
Modulation	RB Size	RB Offset	Measurement Conducted Power (dBm)		
			CH 18700	CH 18900	CH 19100
			1860 MHz	1880 MHz	1900 MHz
3.75k BPSK	1	0	23.46	22.83	22.96
	1	47	23.44	22.94	23.11
3.75k QPSK	1	0	23.35	22.8	22.93
	1	47	23.27	22.86	22.95
15k BPSK	1	0	23.43	23.3	23.59
	1	11	23.35	23.31	23.48
15k QPSK	1	0	23.31	23.31	23.45
	1	11	23.44	23.39	23.42
	6	0	22.78	22.84	23.07
	6	6	23	22.9	23.06
	12	0	22.43	22.36	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	22.83	23.46	24.86	25.49	33.01
3.75k QPSK	22.8	23.35	24.83	25.38	33.01
15k BPSK	23.3	23.59	25.33	25.62	33.01
15k QPSK	22.36	23.45	24.39	25.48	33.01

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

7.1.2 NB-IoT Band 4

Stand-alone

NB-IoT Band 4					
Modulation	RB Size	RB Offset	Measurement Conducted Power (dBm)		
			CH 19952	CH 20175	CH 20398
			1710.2 MHz	1732.5 MHz	1754.8 MHz
3.75k BPSK	1	0	22.98	22.89	23.01
	1	47	22.94	22.92	22.94
3.75k QPSK	1	0	22.98	22.96	22.91
	1	47	23.01	22.85	22.89
15k BPSK	1	0	23.45	23.45	23.57
	1	11	23.6	23.48	23.47
15k QPSK	1	0	23.54	23.48	23.5
	1	11	23.49	23.49	23.54
	6	0	23.11	23.07	23.08
	6	6	23.26	23.15	23.12
	12	0	22.53	22.33	22.39

Output Power					
Modulation	Minimum Cond. Power (dBm)	Maximum Cond. Power (dBm)	Minimum EIRP (dBm)	Maximum EIRP (dBm)	EIRP Limit (dBm)
3.75k BPSK	22.89	23.01	24.92	25.04	30.00
3.75k QPSK	22.85	23.01	24.88	25.04	30.00
15k BPSK	23.45	23.6	25.48	25.63	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)

In-Band

NB-IoT Band 4 3M					
Modulation	RB Size	RB Offset	Measurement Conducted Power (dBm)		
			CH 19965	CH 20175	CH 20385
			1711.5 MHz	1732.5 MHz	1753.5 MHz
3.75k BPSK	1	0	22.8	22.8	22.86
	1	47	22.75	22.85	22.86
3.75k QPSK	1	0	22.8	22.79	22.85
	1	47	22.82	22.8	22.81
15k BPSK	1	0	23.26	23.35	23.44
	1	11	23.48	23.41	23.29
15k QPSK	1	0	23.46	23.38	23.45
	1	11	23.29	23.41	23.36
	6	0	22.99	22.91	22.92
	6	6	23.1	22.97	23.05
	12	0	22.37	22.27	22.27

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	22.86	24.78	24.89	30.00
3.75k QPSK	22.79	22.85	24.82	24.88	30.00
15k BPSK	23.26	23.48	25.29	25.51	30.00
15k QPSK	22.27	23.46	24.3	25.49	30.00

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

NB-IoT Band 4 5M					
Modulation	RB Size	RB Offset	Measurement Conducted Power (dBm)		
			CH 19975	CH 20175	CH 20375
			1712.5 MHz	1732.5 MHz	1752.5 MHz
3.75k BPSK	1	0	22.87	22.72	22.95
	1	47	22.83	22.87	22.81
3.75k QPSK	1	0	22.85	22.9	22.77
	1	47	22.88	22.74	22.83
15k BPSK	1	0	23.26	23.37	23.39
	1	11	23.45	23.35	23.3
15k QPSK	1	0	23.39	23.35	23.44
	1	11	23.31	23.29	23.36
	6	0	22.91	22.9	22.88
	6	6	23.06	23.07	23.02
	12	0	22.45	22.16	22.34

Output Power					
Modulation	Minimum Cond. Power (dBm)	Maximum Cond. Power (dBm)	Minimum EIRP (dBm)	Maximum EIRP (dBm)	EIRP Limit (dBm)
3.75k BPSK	22.72	22.95	24.75	24.98	30.00
3.75k QPSK	22.74	22.9	24.77	24.93	30.00
15k BPSK	23.26	23.45	25.29	25.48	30.00
15k QPSK	22.16	23.44	24.19	25.47	30.00

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

NB-IoT Band 4 10M					
Modulation	RB Size	RB Offset	Measurement Conducted Power (dBm)		
			CH 20000	CH 20175	CH 20350
			1715 MHz	1732.5 MHz	1750 MHz
3.75k BPSK	1	0	22.83	22.82	22.92
	1	47	22.88	22.73	22.74
3.75k QPSK	1	0	22.78	22.84	22.84
	1	47	22.9	22.79	22.73
15k BPSK	1	0	23.29	23.37	23.47
	1	11	23.51	23.43	23.42
15k QPSK	1	0	23.49	23.38	23.41
	1	11	23.31	23.35	23.43
	6	0	22.93	22.88	23.02
	6	6	23.19	22.99	23
	12	0	22.46	22.28	22.23

Output Power					
Modulation	Minimum Cond. Power (dBm)	Maximum Cond. Power (dBm)	Minimum EIRP (dBm)	Maximum EIRP (dBm)	EIRP Limit (dBm)
3.75k BPSK	22.73	22.92	24.76	24.95	30.00
3.75k QPSK	22.73	22.9	24.76	24.93	30.00
15k BPSK	23.29	23.51	25.32	25.54	30.00
15k QPSK	22.23	23.49	24.26	25.52	30.00

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

NB-IoT Band 4 15M					
Modulation	RB Size	RB Offset	Measurement Conducted Power (dBm)		
			CH 20025	CH 20175	CH 20325
			1717.5 MHz	1732.5 MHz	1747.5 MHz
3.75k BPSK	1	0	22.82	22.81	22.9
	1	47	22.79	22.79	22.77
3.75k QPSK	1	0	22.88	22.83	22.82
	1	47	22.87	22.7	22.83
15k BPSK	1	0	23.25	23.34	23.43
	1	11	23.51	23.29	23.27
15k QPSK	1	0	23.35	23.31	23.42
	1	11	23.34	23.31	23.34
	6	0	22.94	22.87	22.89
	6	6	23.17	23.05	23.05
	12	0	22.48	22.13	22.19

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	22.9	24.8	24.93	30.00
3.75k QPSK	22.7	22.88	24.73	24.91	30.00
15k BPSK	23.25	23.51	25.28	25.54	30.00
15k QPSK	22.13	23.42	24.16	25.45	30.00

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

NB-IoT Band 4 20M					
Modulation	RB Size	RB Offset	Measurement Conducted Power (dBm)		
			CH 20050	CH 20175	CH 20300
			1720 MHz	1732.5 MHz	1745 MHz
3.75k BPSK	1	0	22.92	22.75	22.9
	1	47	22.78	22.87	22.74
3.75k QPSK	1	0	22.91	22.91	22.79
	1	47	22.93	22.65	22.8
15k BPSK	1	0	23.38	23.32	23.39
	1	11	23.45	23.28	23.27
15k QPSK	1	0	23.41	23.43	23.37
	1	11	23.35	23.31	23.36
	6	0	23.01	22.88	22.98
	6	6	23.18	23.08	23.03
	12	0	22.42	22.18	22.34

Output Power					
Modulation	Minimum Cond. Power (dBm)	Maximum Cond. Power (dBm)	Minimum EIRP (dBm)	Maximum EIRP (dBm)	EIRP Limit (dBm)
3.75k BPSK	22.74	22.92	24.77	24.95	30.00
3.75k QPSK	22.65	22.93	24.68	24.96	30.00
15k BPSK	23.27	23.45	25.3	25.48	30.00
15k QPSK	22.18	23.43	24.21	25.46	30.00

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

Guard-Band

NB-IoT Band 4 3M					
Modulation	RB Size	RB Offset	Measurement Conducted Power (dBm)		
			CH 19965	CH 20175	CH 20385
			1711.5 MHz	1732.5 MHz	1753.5 MHz
3.75k BPSK	1	0	22.8	22.78	22.94
	1	47	22.88	22.87	22.77
3.75k QPSK	1	0	22.8	22.84	22.86
	1	47	22.82	22.72	22.82
15k BPSK	1	0	23.36	23.4	23.41
	1	11	23.44	23.35	23.4
15k QPSK	1	0	23.43	23.31	23.35
	1	11	23.42	23.3	23.4
	6	0	22.98	22.87	22.97
	6	6	23.12	23.06	23.04
	12	0	22.4	22.13	22.31

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	22.94	24.8	24.97	30.00
3.75k QPSK	22.72	22.86	24.75	24.89	30.00
15k BPSK	23.35	23.44	25.38	25.47	30.00
15k QPSK	22.13	23.43	24.16	25.46	30.00

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

NB-IoT Band 4 5M					
Modulation	RB Size	RB Offset	Measurement Conducted Power (dBm)		
			CH 19975	CH 20175	CH 20375
			1712.5 MHz	1732.5 MHz	1752.5 MHz
3.75k BPSK	1	0	22.79	22.7	22.83
	1	47	22.88	22.8	22.76
3.75k QPSK	1	0	22.83	22.9	22.84
	1	47	22.91	22.67	22.7
15k BPSK	1	0	23.25	23.26	23.37
	1	11	23.55	23.4	23.35
15k QPSK	1	0	23.47	23.34	23.41
	1	11	23.39	23.34	23.37
	6	0	23.02	22.91	22.98
	6	6	23.1	23.04	22.93
	12	0	22.33	22.14	22.24

Output Power					
Modulation	Minimum Cond. Power (dBm)	Maximum Cond. Power (dBm)	Minimum EIRP (dBm)	Maximum EIRP (dBm)	EIRP Limit (dBm)
3.75k BPSK	22.7	22.88	24.73	24.91	30.00
3.75k QPSK	22.67	22.91	24.7	24.94	30.00
15k BPSK	23.25	23.55	25.28	25.58	30.00
15k QPSK	22.14	23.47	24.17	25.5	30.00

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

NB-IoT Band 4 10M					
Modulation	RB Size	RB Offset	Measurement Conducted Power (dBm)		
			CH 20000	CH 20175	CH 20350
			1715 MHz	1732.5 MHz	1750 MHz
3.75k BPSK	1	0	22.79	22.71	22.91
	1	47	22.89	22.79	22.86
3.75k QPSK	1	0	22.91	22.86	22.77
	1	47	22.82	22.75	22.83
15k BPSK	1	0	23.34	23.32	23.42
	1	11	23.46	23.39	23.33
15k QPSK	1	0	23.47	23.35	23.3
	1	11	23.42	23.44	23.42
	6	0	23.03	22.94	22.92
	6	6	23.18	23	22.97
	12	0	22.33	22.17	22.31

Output Power					
Modulation	Minimum Cond. Power (dBm)	Maximum Cond. Power (dBm)	Minimum EIRP (dBm)	Maximum EIRP (dBm)	EIRP Limit (dBm)
3.75k BPSK	22.71	22.91	24.74	24.94	30.00
3.75k QPSK	22.75	22.91	24.78	24.94	30.00
15k BPSK	23.32	23.46	25.35	25.49	30.00
15k QPSK	22.17	23.47	24.2	25.5	30.00

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

NB-IoT Band 4 15M					
Modulation	RB Size	RB Offset	Measurement Conducted Power (dBm)		
			CH 20025	CH 20175	CH 20325
			1717.5 MHz	1732.5 MHz	1747.5 MHz
3.75k BPSK	1	0	22.86	22.74	22.93
	1	47	22.87	22.79	22.76
3.75k QPSK	1	0	22.79	22.76	22.85
	1	47	22.81	22.79	22.8
15k BPSK	1	0	23.28	23.26	23.48
	1	11	23.55	23.39	23.36
15k QPSK	1	0	23.36	23.32	23.4
	1	11	23.38	23.43	23.45
	6	0	23.06	22.95	23.03
	6	6	23.08	23.02	22.95
	12	0	22.4	22.21	22.26

Output Power					
Modulation	Minimum Cond. Power (dBm)	Maximum Cond. Power (dBm)	Minimum EIRP (dBm)	Maximum EIRP (dBm)	EIRP Limit (dBm)
3.75k BPSK	22.74	22.93	24.77	24.96	30.00
3.75k QPSK	22.76	22.85	24.79	24.88	30.00
15k BPSK	23.26	23.55	25.29	25.58	30.00
15k QPSK	22.21	23.45	24.24	25.48	30.00

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

NB-IoT Band 4 20M					
Modulation	RB Size	RB Offset	Measurement Conducted Power (dBm)		
			CH 20050	CH 20175	CH 20300
			1720 MHz	1732.5 MHz	1745 MHz
3.75k BPSK	1	0	22.92	22.76	22.81
	1	47	22.88	22.86	22.74
3.75k QPSK	1	0	22.78	22.9	22.71
	1	47	22.92	22.68	22.81
15k BPSK	1	0	23.26	23.31	23.42
	1	11	23.45	23.32	23.35
15k QPSK	1	0	23.45	23.3	23.39
	1	11	23.43	23.31	23.45
	6	0	22.95	23.02	23.02
	6	6	23.07	23.09	23.04
	12	0	22.45	22.27	22.27

Output Power					
Modulation	Minimum Cond. Power (dBm)	Maximum Cond. Power (dBm)	Minimum EIRP (dBm)	Maximum EIRP (dBm)	EIRP Limit (dBm)
3.75k BPSK	22.74	22.92	24.77	24.95	30.00
3.75k QPSK	22.68	22.92	24.71	24.95	30.00
15k BPSK	23.26	23.45	25.29	25.48	30.00
15k QPSK	22.27	23.45	24.3	25.48	30.00

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

7.1.3 NB-IoT Band 5

Stand-alone

NB-IoT Band 5					
Modulation	RB Size	RB Offset	Measurement Conducted Power (dBm)		
			CH 20402	CH 20525	CH 20648
			824.2 MHz	836.5 MHz	848.8 MHz
3.75k BPSK	1	0	23.61	23.12	23.59
	1	47	23.64	23.13	23.64
3.75k QPSK	1	0	23.57	23.12	23.53
	1	47	23.54	23.64	23.61
15k BPSK	1	0	23.57	23.49	23.55
	1	11	23.5	23.65	23.56
15k QPSK	1	0	23.6	23.61	23.53
	1	11	23.59	23.57	23.57
	6	0	23.07	23.05	23.01
	6	6	23.12	23.2	23.15
	12	0	22.41	22.41	22.52

Output Power					
Modulation	Minimum Cond. Power (dBm)	Maximum Cond. Power (dBm)	Minimum ERP (dBm)	Maximum ERP (dBm)	ERP Limit (dBm)
3.75k BPSK	23.12	23.64	23.6	24.12	38.45
3.75k QPSK	23.12	23.64	23.6	24.12	38.45
15k BPSK	23.49	23.65	23.97	24.13	38.45
15k QPSK	22.41	23.61	22.89	24.09	38.45

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

In-Band

NB-IoT Band 5 3M					
Modulation	RB Size	RB Offset	Measurement Conducted Power (dBm)		
			CH 20415	CH 20525	CH 20635
			825.5 MHz	836.5 MHz	847.5 MHz
3.75k BPSK	1	0	23.43	23.05	23.4
	1	47	23.5	22.96	23.53
3.75k QPSK	1	0	23.38	23.01	23.45
	1	47	23.46	23.51	23.43
15k BPSK	1	0	23.39	23.41	23.48
	1	11	23.34	23.48	23.48
15k QPSK	1	0	23.53	23.53	23.4
	1	11	23.52	23.47	23.46
	6	0	22.87	22.95	22.92
	6	6	22.92	23.02	23.07
	12	0	22.24	22.31	22.42

Output Power					
Modulation	Minimum Cond. Power (dBm)	Maximum Cond. Power (dBm)	Minimum ERP (dBm)	Maximum ERP (dBm)	ERP Limit (dBm)
3.75k BPSK	22.96	23.53	23.44	24.01	38.45
3.75k QPSK	23.01	23.51	23.49	23.99	38.45
15k BPSK	23.34	23.48	23.82	23.96	38.45
15k QPSK	22.24	23.53	22.72	24.01	38.45

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

ERP (dBm) = EIRP (dBm) - 2.15

NB-IoT Band 5 5M					
Modulation	RB Size	RB Offset	Measurement Conducted Power (dBm)		
			CH 20425	CH 20525	CH 20625
			826.5 MHz	836.5 MHz	846.5 MHz
3.75k BPSK	1	0	23.45	23.04	23.51
	1	47	23.44	22.93	23.45
3.75k QPSK	1	0	23.43	23.07	23.41
	1	47	23.44	23.59	23.51
15k BPSK	1	0	23.39	23.35	23.37
	1	11	23.37	23.49	23.49
15k QPSK	1	0	23.54	23.42	23.36
	1	11	23.51	23.45	23.48
	6	0	22.88	22.89	22.83
	6	6	23.02	23.09	23.06
	12	0	22.33	22.29	22.36

Output Power					
Modulation	Minimum Cond. Power (dBm)	Maximum Cond. Power (dBm)	Minimum ERP (dBm)	Maximum ERP (dBm)	ERP Limit (dBm)
3.75k BPSK	22.93	23.51	23.41	23.99	38.45
3.75k QPSK	23.07	23.59	23.55	24.07	38.45
15k BPSK	23.35	23.49	23.83	23.97	38.45
15k QPSK	22.29	23.54	22.77	24.02	38.45

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

ERP (dBm) = EIRP (dBm) - 2.15

NB-IoT Band 5 10M					
Modulation	RB Size	RB Offset	Measurement Conducted Power (dBm)		
			CH 20450	CH 20525	CH 20600
			829 MHz	836.5 MHz	844 MHz
3.75k BPSK	1	0	23.41	22.95	23.5
	1	47	23.49	23.02	23.44
3.75k QPSK	1	0	23.38	23.07	23.45
	1	47	23.44	23.51	23.53
15k BPSK	1	0	23.48	23.39	23.37
	1	11	23.31	23.59	23.48
15k QPSK	1	0	23.49	23.56	23.4
	1	11	23.48	23.42	23.39
	6	0	22.91	22.94	22.9
	6	6	23.01	23.09	22.95
	12	0	22.32	22.32	22.37

Output Power					
Modulation	Minimum Cond. Power (dBm)	Maximum Cond. Power (dBm)	Minimum ERP (dBm)	Maximum ERP (dBm)	ERP Limit (dBm)
3.75k BPSK	22.95	23.5	23.43	23.98	38.45
3.75k QPSK	23.07	23.53	23.55	24.01	38.45
15k BPSK	23.31	23.59	23.79	24.07	38.45
15k QPSK	22.32	23.56	22.8	24.04	38.45

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

Guard-Band

NB-IoT Band 5 3M					
Modulation	RB Size	RB Offset	Measurement Conducted Power (dBm)		
			CH 20415	CH 20525	CH 20635
			825.5 MHz	836.5 MHz	847.5 MHz
3.75k BPSK	1	0	23.51	23.03	23.46
	1	47	23.58	23.01	23.46
3.75k QPSK	1	0	23.47	23.05	23.34
	1	47	23.38	23.57	23.41
15k BPSK	1	0	23.45	23.33	23.4
	1	11	23.37	23.59	23.44
15k QPSK	1	0	23.55	23.56	23.33
	1	11	23.43	23.45	23.42
	6	0	22.91	22.86	22.85
	6	6	23.01	23.04	22.98
	12	0	22.36	22.27	22.46

Output Power					
Modulation	Minimum Cond. Power (dBm)	Maximum Cond. Power (dBm)	Minimum ERP (dBm)	Maximum ERP (dBm)	ERP Limit (dBm)
3.75k BPSK	23.01	23.58	23.49	24.06	38.45
3.75k QPSK	23.05	23.57	23.53	24.05	38.45
15k BPSK	23.33	23.59	23.81	24.07	38.45
15k QPSK	22.27	23.56	22.75	24.04	38.45

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

ERP (dBm) = EIRP (dBm) - 2.15

NB-IoT Band 5 5M					
Modulation	RB Size	RB Offset	Measurement Conducted Power (dBm)		
			CH 20425	CH 20525	CH 20625
			826.5 MHz	836.5 MHz	846.5 MHz
3.75k BPSK	1	0	23.43	22.92	23.44
	1	47	23.54	23.04	23.5
3.75k QPSK	1	0	23.39	23.01	23.46
	1	47	23.47	23.49	23.45
15k BPSK	1	0	23.51	23.3	23.36
	1	11	23.42	23.53	23.42
15k QPSK	1	0	23.46	23.5	23.46
	1	11	23.53	23.52	23.5
	6	0	23	22.97	22.85
	6	6	23.01	23.1	23.01
	12	0	22.35	22.34	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	22.92	23.54	23.4	24.02	38.45
3.75k QPSK	23.01	23.49	23.49	23.97	38.45
15k BPSK	23.3	23.53	23.78	24.01	38.45
15k QPSK	22.34	23.53	22.82	24.01	38.45

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

NB-IoT Band 5 10M					
Modulation	RB Size	RB Offset	Measurement Conducted Power (dBm)		
			CH 20450	CH 20525	CH 20600
			829 MHz	836.5 MHz	844 MHz
3.75k BPSK	1	0	23.41	23.04	23.42
	1	47	23.59	22.93	23.55
3.75k QPSK	1	0	23.52	23.05	23.46
	1	47	23.34	23.48	23.5
15k BPSK	1	0	23.4	23.41	23.39
	1	11	23.3	23.53	23.44
15k QPSK	1	0	23.42	23.44	23.36
	1	11	23.54	23.47	23.41
	6	0	23.02	22.87	22.88
	6	6	22.93	23.02	23.04
	12	0	22.35	22.27	22.35

Output Power					
Modulation	Minimum Cond. Power (dBm)	Maximum Cond. Power (dBm)	Minimum ERP (dBm)	Maximum ERP (dBm)	ERP Limit (dBm)
3.75k BPSK	22.93	23.59	23.41	24.07	38.45
3.75k QPSK	23.05	23.52	23.53	24	38.45
15k BPSK	23.3	23.53	23.78	24.01	38.45
15k QPSK	22.27	23.54	22.75	24.02	38.45

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

ERP (dBm) = EIRP (dBm) - 2.15

7.1.4 NB-IoT Band 8

Stand-alone

NB-IoT Band 8					
Modulation	RB Size	RB Offset	Measurement Conducted Power (dBm)		
			CH 21627	CH 21640	CH 21653
			897.7 MHz	899 MHz	900.3 MHz
3.75k BPSK	1	0	22.93	22.84	23.47
	1	47	22.98	22.96	23.41
3.75k QPSK	1	0	22.86	22.87	23.4
	1	47	22.9	22.9	23.33
15k BPSK	1	0	23.45	23.41	23.42
	1	11	23.49	23.44	23.47
15k QPSK	1	0	23.48	23.35	23.43
	1	11	23.4	23.35	23.42
	6	0	22.82	22.76	22.81
	6	6	22.93	22.91	22.95
	12	0	22.31	22.19	22.41

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	23.47	23.32	23.95	40.00
3.75k QPSK	22.86	23.4	23.34	23.88	40.00
15k BPSK	23.41	23.49	23.89	23.97	40.00
15k QPSK	22.19	23.48	22.67	23.96	40.00

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

ERP (dBm) = EIRP (dBm) - 2.15

In-Band

NB-IoT Band 8 3M			
Modulation	RB Size	RB Offset	Measurement Conducted Power (dBm)
			CH 21640
			899MHz
3.75k BPSK	1	0	22.65
	1	47	22.9
3.75k QPSK	1	0	22.77
	1	47	22.78
15k BPSK	1	0	23.34
	1	11	23.26
15k QPSK	1	0	23.28
	1	11	23.24
	6	0	22.7
	6	6	22.71
	12	0	22.03

Output Power					
Modulation	Minimum Cond. Power (dBm)	Maximum Cond. Power (dBm)	Minimum ERP (dBm)	Maximum ERP (dBm)	ERP Limit (dBm)
3.75k BPSK	22.65	22.9	23.13	23.38	40.00
3.75k QPSK	22.77	22.78	23.25	23.26	40.00
15k BPSK	23.26	23.34	23.74	23.82	40.00
15k QPSK	22.03	23.28	22.51	23.76	40.00

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

ERP (dBm) = EIRP (dBm) - 2.15

Guard-Band

NB-IoT Band 8 3M			
Modulation	RB Size	RB Offset	Measurement Conducted Power (dBm)
			CH 21640
			899MHz
3.75k BPSK	1	0	22.72
	1	24	22.84
3.75k QPSK	1	0	22.7
	1	24	22.8
15k BPSK	1	0	23.22
	1	24	23.36
15k QPSK	1	0	23.29
	1	24	23.18
	1	49	22.67
	25	0	22.78
	25	12	22.13

Output Power					
Modulation	Minimum Cond. Power (dBm)	Maximum Cond. Power (dBm)	Minimum ERP (dBm)	Maximum ERP (dBm)	ERP Limit (dBm)
3.75k BPSK	22.72	22.84	23.2	23.32	40.00
3.75k QPSK	22.7	22.8	23.18	23.28	40.00
15k BPSK	23.22	23.36	23.7	23.84	40.00
15k QPSK	22.13	23.29	22.61	23.77	40.00

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

ERP (dBm) = EIRP (dBm) - 2.15

7.1.5 NB-IoT Band 12

Stand-alone

NB-IoT Band 12					
Modulation	RB Size	RB Offset	Measurement Conducted Power (dBm)		
			CH 23012	CH 23095	CH 23178
			699.2 MHz	707.5 MHz	715.8 MHz
3.75k BPSK	1	0	23.19	23.09	23.15
	1	47	23.19	23.1	23.19
3.75k QPSK	1	0	23.16	23.03	23.12
	1	47	23.21	22.94	23.14
15k BPSK	1	0	23.7	23.59	23.65
	1	11	23.66	23.63	23.63
15k QPSK	1	0	23.65	23.57	23.69
	1	11	23.51	23.55	23.59
	6	0	23.05	23.06	23.14
	6	6	23.24	23.18	23.2
	12	0	22.46	22.51	22.28

Output Power					
Modulation	Minimum Cond. Power (dBm)	Maximum Cond. Power (dBm)	Minimum ERP (dBm)	Maximum ERP (dBm)	ERP Limit (dBm)
3.75k BPSK	23.09	23.19	22.57	22.67	44.77
3.75k QPSK	22.94	23.21	22.42	22.69	44.77
15k BPSK	23.59	23.7	23.07	23.18	44.77
15k QPSK	22.28	23.69	21.76	23.17	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 12 3M					
Modulation	RB Size	RB Offset	Measurement Conducted Power (dBm)		
			CH 23025	CH 23095	CH 23165
			700.5 MHz	707.5 MHz	714.5 MHz
3.75k BPSK	1	0	23.03	22.89	23
	1	47	23.1	23.04	23.05
3.75k QPSK	1	0	23.04	22.9	23.02
	1	47	23.1	22.74	23.08
15k BPSK	1	0	23.62	23.53	23.51
	1	11	23.59	23.48	23.47
15k QPSK	1	0	23.55	23.51	23.53
	1	11	23.32	23.38	23.5
	6	0	22.87	23	23.04
	6	6	23.15	23.07	23.08
	12	0	22.29	22.35	22.16

Output Power					
Modulation	Minimum Cond. Power (dBm)	Maximum Cond. Power (dBm)	Minimum ERP (dBm)	Maximum ERP (dBm)	ERP Limit (dBm)
3.75k BPSK	22.89	23.1	22.37	22.58	44.77
3.75k QPSK	22.74	23.1	22.22	22.58	44.77
15k BPSK	23.47	23.62	22.95	23.1	44.77
15k QPSK	22.16	23.55	21.64	23.03	44.77

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

ERP (dBm) = EIRP (dBm) - 2.15