

### 3.3 Measurement result

LTE-1C 20W with Filter Unit

Antenna Port	Modulation	Carrier Bandwidth (MHz)	Output power / Peak-to-Average Ratio (PAR)								
			Channel position B			Channel position M			Channel position T		
			Power (dBm)	Power (dBm /MHz)	PAR (dB)	Power (dBm)	Power (dBm /MHz)	PAR (dB)	Power (dBm)	Power (dBm /MHz)	PAR (dB)
A	64QAM	1.4	-	-	-	43.59	42.69	8.51	-	-	-
B	64QAM	1.4	-	-	-	43.91	42.98	8.26	-	-	-
Total			-	-	-	46.76	45.85	-	-	-	-

LTE-1C 60W with Filter Unit

Antenna Port	Modulation	Carrier Bandwidth (MHz)	Output power / Peak-to-Average Ratio (PAR)								
			Channel position B			Channel position M			Channel position T		
			Power (dBm)	Power (dBm /MHz)	PAR (dB)	Power (dBm)	Power (dBm /MHz)	PAR (dB)	Power (dBm)	Power (dBm /MHz)	PAR (dB)
A	64QAM	3	-	-	-	47.88	43.78	7.48	-	-	-
B	64QAM	3	-	-	-	48.18	44.21	7.52	-	-	-
Total			-	-	-	51.04	47.01	-	-	-	-

NB-IoT-IB-1C 60W with Filter Unit

Antenna Port	Modulation	Carrier Bandwidth (MHz)	Output power / Peak-to-Average Ratio (PAR)								
			Channel position B			Channel position M			Channel position T		
			Power (dBm)	Power (dBm /MHz)	PAR (dB)	Power (dBm)	Power (dBm /MHz)	PAR (dB)	Power (dBm)	Power (dBm /MHz)	PAR (dB)
A	QPSK	3	-	-	-	46.91	42.96	8.10	-	-	-
B	QPSK	3	-	-	-	46.91	42.92	8.20	-	-	-
Total			-	-	-	49.92	45.95	-	-	-	-

NB-IoT-SA-1C 20W with Filter Unit

Antenna Port	Modulation	Carrier Bandwidth (MHz)	Output power / Peak-to-Average Ratio (PAR)								
			Channel position B			Channel position M			Channel position T		
			Power (dBm)	Power (dBm /MHz)	PAR (dB)	Power (dBm)	Power (dBm /MHz)	PAR (dB)	Power (dBm)	Power (dBm /MHz)	PAR (dB)
A	QPSK	0.2	42.70	43.08	6.31	43.01	43.53	6.33	42.60	43.15	6.34
B	QPSK	0.2	42.87	43.26	6.28	43.05	43.56	6.28	42.67	43.14	6.31
Total			45.80	46.18	-	46.04	46.56	-	45.65	46.16	-

LTE-1C 20W without Filter Unit

Antenna Port	Modulation	Carrier Bandwidth (MHz)	Output power / Peak-to-Average Ratio (PAR)								
			Channel position B			Channel position M			Channel position T		
			Power (dBm)	Power (dBm /MHz)	PAR (dB)	Power (dBm)	Power (dBm /MHz)	PAR (dB)	Power (dBm)	Power (dBm /MHz)	PAR (dB)
A	64QAM	1.4	-	-	-	43.02	42.08	8.53	-	-	-
B	64QAM	1.4	-	-	-	43.01	42.20	8.26	-	-	-
Total			-	-	-	46.03	45.15	-	-	-	-

LTE-1C 40W without Filter Unit

Antenna Port	Modulation	Carrier Bandwidth (MHz)	Output power / Peak-to-Average Ratio (PAR)								
			Channel position B			Channel position M			Channel position T		
			Power (dBm)	Power (dBm /MHz)	PAR (dB)	Power (dBm)	Power (dBm /MHz)	PAR (dB)	Power (dBm)	Power (dBm /MHz)	PAR (dB)
A	64QAM	3	-	-	-	46.90	42.13	8.63	-	-	-
B	64QAM	3	-	-	-	46.02	42.04	8.15	-	-	-
Total			-	-	-	49.49	45.10	-	-	-	-

NB-IoT-IB-1C 40W without Filter Unit

Antenna Port	Modulation	Carrier Bandwidth (MHz)	Output power / Peak-to-Average Ratio (PAR)								
			Channel position B			Channel position M			Channel position T		
			Power (dBm)	Power (dBm /MHz)	PAR (dB)	Power (dBm)	Power (dBm /MHz)	PAR (dB)	Power (dBm)	Power (dBm /MHz)	PAR (dB)
A	QPSK	3	-	-	-	45.11	41.07	8.91	-	-	-
B	QPSK	3	-	-	-	45.10	41.08	8.56	-	-	-
Total			-	-	-	48.12	44.09	-	-	-	-

NB-IoT-SA-1C 20W without Filter Unit

Antenna Port	Modulation	Carrier Bandwidth (MHz)	Output power / Peak-to-Average Ratio (PAR)								
			Channel position B			Channel position M			Channel position T		
			Power (dBm)	Power (dBm /MHz)	PAR (dB)	Power (dBm)	Power (dBm /MHz)	PAR (dB)	Power (dBm)	Power (dBm /MHz)	PAR (dB)
A	QPSK	0.2	42.25	42.74	6.31	42.44	42.84	5.61	42.40	42.87	5.62
B	QPSK	0.2	42.30	42.83	6.27	42.29	42.86	6.28	42.43	42.96	5.58
Total			45.29	45.80	-	45.38	45.86	-	45.43	45.93	-

Note: EUT is tested without antenna. EIRP compliance is addressed at the time of licensing, as required by the responsible FCC Bureau. Licensee's are required to take into account maximum allowed antenna gain used in combination with above power settings to prevent the radiated output power to exceed the limits.

**TEST REPORT****4 Occupied Bandwidth****Test result: Pass****4.1 Measurement Procedure**

The EUT was set to transmit at maximum power and testing was carried out on bottom, middle and top channels. Using the Occupied Bandwidth measurement function in the spectrum analyzer, the 26dB bandwidth was measured in accordance with FCC KDB 971168 D01 Clause 4.2.

The measurement method is from KDB 971168 4.2:

- a) The spectrum analyzer center frequency is set to the nominal EUT channel center frequency. The frequency span for the spectrum analyzer shall be set wide enough to capture all modulation products including the emission skirts (i.e., two to five times the OBW).
- b) The nominal IF filter bandwidth (3 dB RBW) shall be in the range of 1 to 5 % of the anticipated OBW, and the VBW shall be at least 3 times the RBW.
- c) Set the reference level of the instrument as required to keep the signal from exceeding the maximum input mixer level for linear operation. In general, the peak of the spectral envelope must be at least  $10\log(\text{OBW} / \text{RBW})$  below the reference level.
- d) Set the detection mode to peak, and the trace mode to max hold.
- e) Use the 99 % power bandwidth function of the spectrum analyzer and report the measured bandwidth.

## TEST REPORT

### 4.2 Measurement result

LTE-1C 20W with Filter Unit

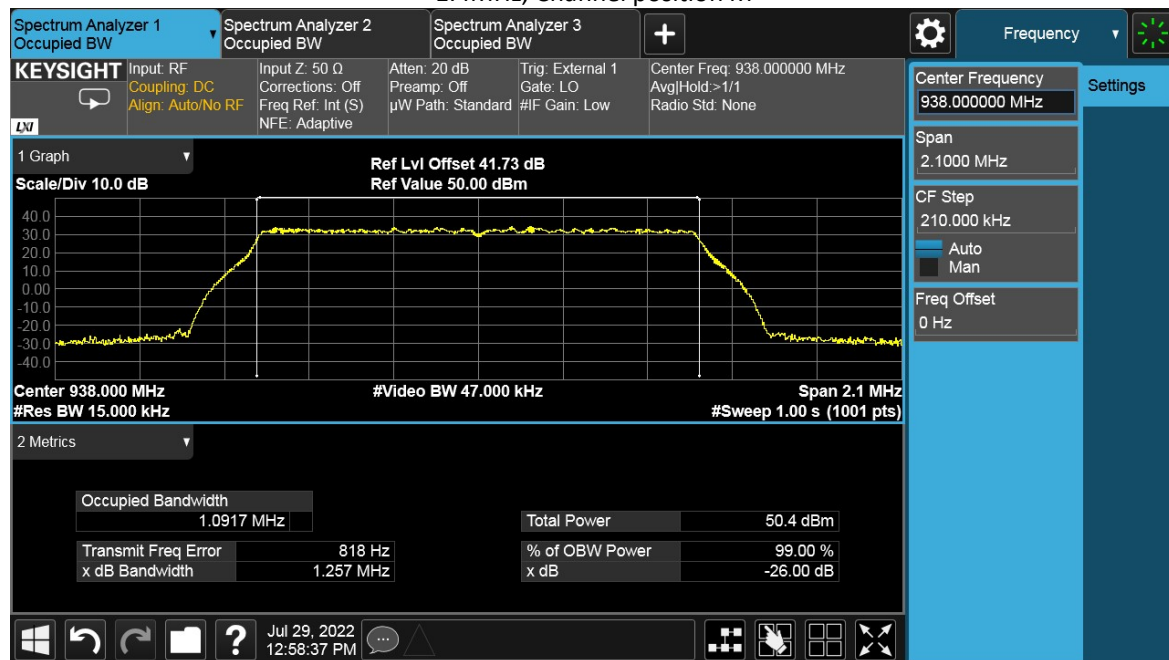
99% Occupied Bandwidth

Antenna Port	Modulation	Bandwidth	Occupied Bandwidth (MHz)		
			Channel Position B	Channel Position M	Channel Position T
B	64QAM	1.4MHz	-	1.0917	-

-26dBc Occupied Bandwidth

Antenna Port	Modulation	Bandwidth	Occupied Bandwidth (MHz)		
			Channel Position B	Channel Position M	Channel Position T
B	64QAM	1.4MHz	-	1.257	-

1.4MHz, Channel position M



## TEST REPORT

LTE-1C 60W with Filter Unit

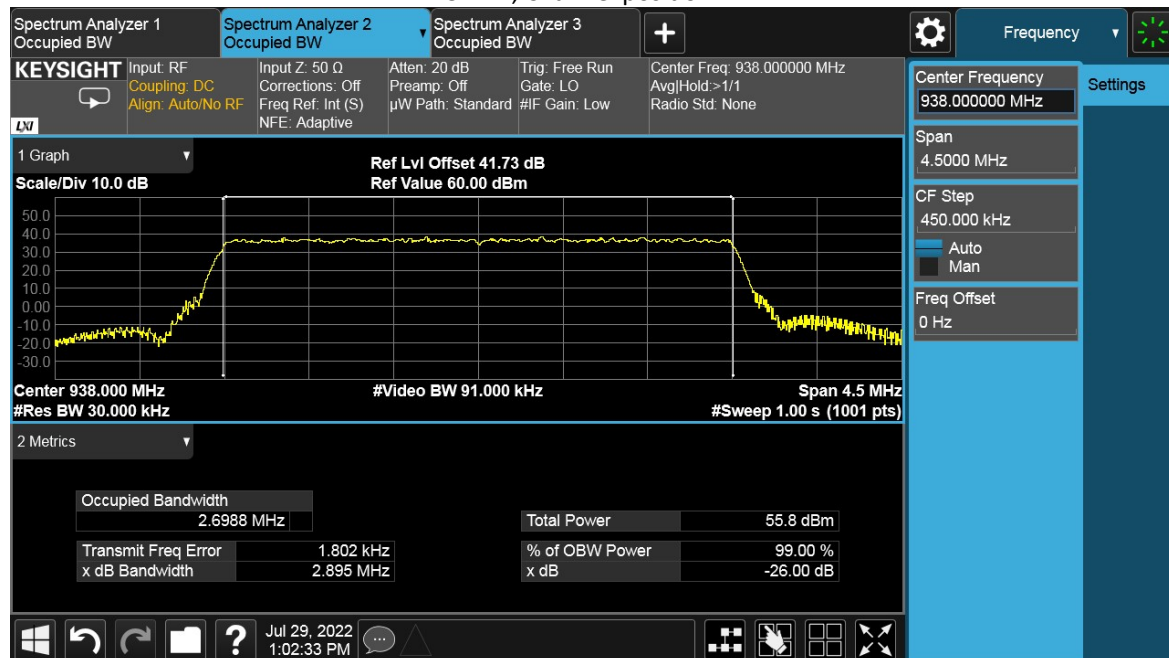
### 99% Occupied Bandwidth

Antenna Port	Modulation	Bandwidth	Occupied Bandwidth (MHz)		
			Channel Position B	Channel Position M	Channel Position T
B	64QAM	3MHz	-	2.6988	-

### -26dBc Occupied Bandwidth

Antenna Port	Modulation	Bandwidth	Occupied Bandwidth (MHz)		
			Channel Position B	Channel Position M	Channel Position T
B	64QAM	3MHz	-	2.895	-

### 3MHz, Channel position M



## TEST REPORT

NB-IoT-IB-1C 60W with Filter Unit

### 99% Occupied Bandwidth

Antenna Port	Modulation	Bandwidth	Occupied Bandwidth (MHz)		
			Channel Position B	Channel Position M	Channel Position T
B	QPSK	3MHz	-	2.6978	-

### -26dBc Occupied Bandwidth

Antenna Port	Modulation	Bandwidth	Occupied Bandwidth (MHz)		
			Channel Position B	Channel Position M	Channel Position T
B	QPSK	3MHz	-	2.895	-

### 3MHz, Channel position M

