

#### 8.4.4 Test data

**Table 8.4-1: Occupied bandwidth results for single carrier operation**

Remarks	Frequency, MHz	99% OBW, MHz	26 dB BW, MHz
5 MHz, QPSK, low channel	1932.5	4.87	4.49
5 MHz, 16QAM, low channel	1932.5	4.85	4.50
5 MHz, 64QAM, low channel	1932.5	4.89	4.50
5 MHz, 256QAM, low channel	1932.5	4.85	4.51
5 MHz, QPSK, mid channel	1962.5	4.85	4.50
5 MHz, QPSK, high channel	1992.5	4.83	4.50
10 MHz, QPSK, low channel	1935.0	9.66	8.95
10 MHz, 16QAM, low channel	1935.0	9.51	8.97
10 MHz, 64QAM, low channel	1935.0	9.60	8.98
10 MHz, 256QAM, low channel	1935.0	9.49	8.96
10 MHz, QPSK, mid channel	1962.5	9.61	8.99
10 MHz, QPSK, high channel	1990.0	9.63	8.96
15 MHz, QPSK, low channel	1937.5	14.32	13.42
15 MHz, 16QAM, low channel	1937.5	14.26	13.46
15 MHz, 64QAM, low channel	1937.5	14.27	13.44
15 MHz, 256QAM, low channel	1937.5	14.37	13.44
15 MHz, QPSK, mid channel	1962.5	14.44	13.44
15 MHz, QPSK, high channel	1987.5	14.26	13.42
20 MHz, QPSK, low channel	1940.0	19.08	17.91
20 MHz, 16QAM, low channel	1940.0	18.91	17.87
20 MHz, 64QAM, low channel	1940.0	19.15	17.87
20 MHz, 256QAM, low channel	1940.0	19.05	17.86
20 MHz, QPSK, mid channel	1962.5	18.96	17.88
20 MHz, QPSK, high channel	1985.0	19.31	17.89

**Table 8.4-2: Occupied bandwidth results for single carrier operation with IoT**

Remarks	Frequency, MHz	99% OBW, MHz	26 dB BW, MHz
QPSK, 5 MHz, IB IoT on the bottom	1932.5	4.76	4.49
QPSK, 5 MHz, IB IoT in the middle	1962.5	4.78	4.49
QPSK, 5 MHz, IB IoT on the top	1992.5	4.75	4.49
QPSK, 10 MHz, GB IoT on the bottom	1935.0	9.65	9.21
QPSK, 10 MHz, 2 x GB IoT in the middle	1962.5	9.80	9.40
QPSK, 10 MHz, GB IoT on the top	1990.0	9.70	9.17
QPSK, 15 MHz, GB IoT on the bottom	1937.5	14.37	13.71
QPSK, 15 MHz, 2 x GB IoT in the middle	1962.5	14.56	14.01
QPSK, 15 MHz, GB IoT on the top	1987.5	14.50	13.72
QPSK, 20 MHz, GB IoT on the bottom	1940.0	19.26	18.22
QPSK, 20 MHz, 2 x GB IoT in the middle	1962.5	19.33	18.50
QPSK, 20 MHz, GB IoT on the top	1985.0	19.20	18.21

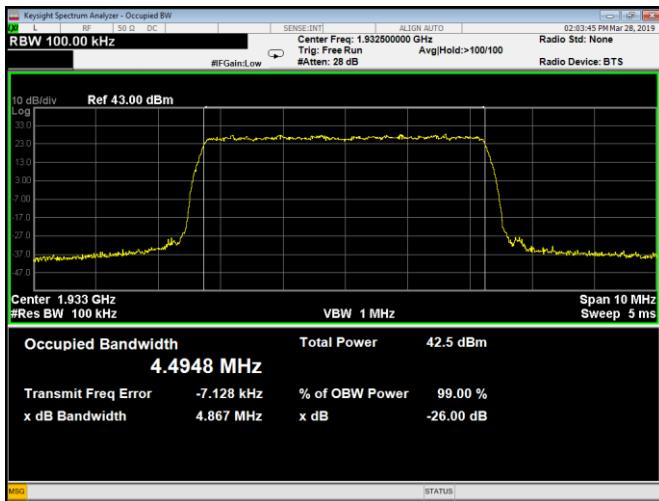


Figure 8.4-1: Occupied bandwidth sample plot, QPSK, single carrier 5 MHz

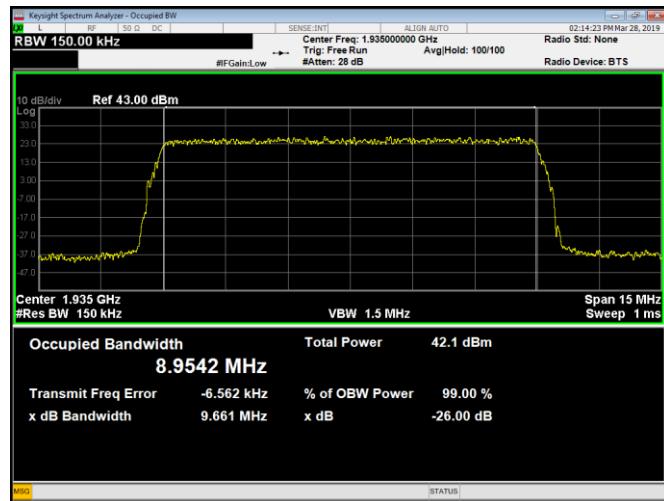


Figure 8.4-2: Occupied bandwidth sample plot, QPSK, single carrier 10 MHz

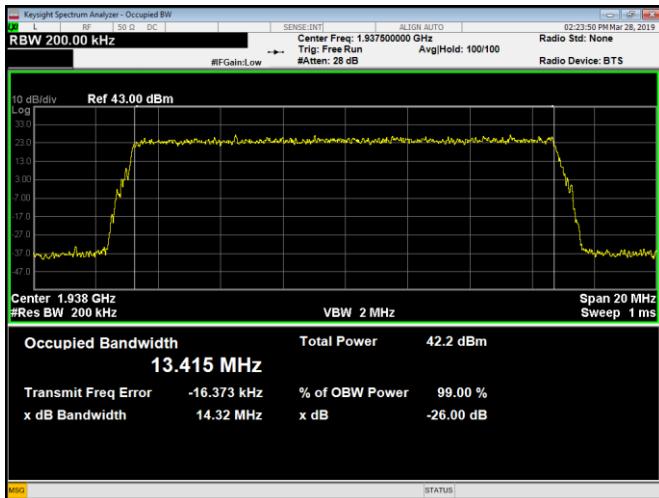


Figure 8.4-3: Occupied bandwidth sample plot, QPSK, single carrier 15 MHz

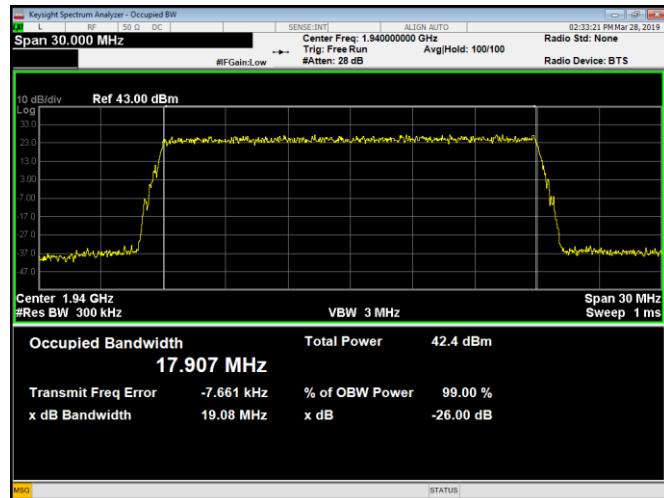


Figure 8.4-4: Occupied bandwidth sample plot, QPSK, single carrier 20 MHz

**Section 8**  
**Test name**  
**Specification**

Testing data  
 FCC Part 2.1049 and RSS-Gen, 6.7 Occupied bandwidth  
 FCC Part 2, RSS-Gen, Issue 5

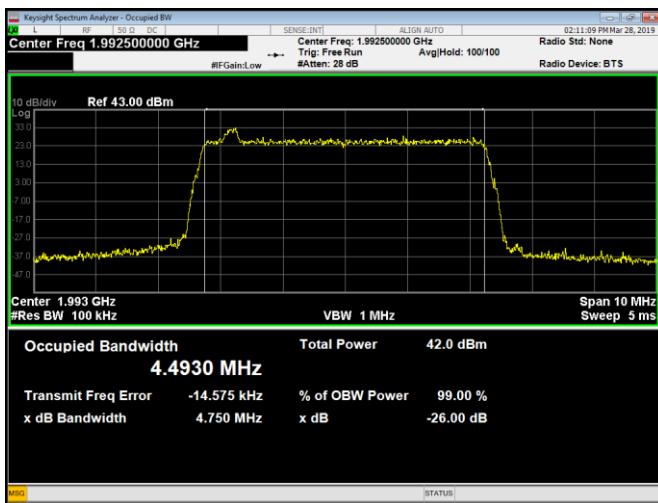


Figure 8.4-5: Occupied bandwidth sample plot, QPSK, single carrier with IoT 5 MHz

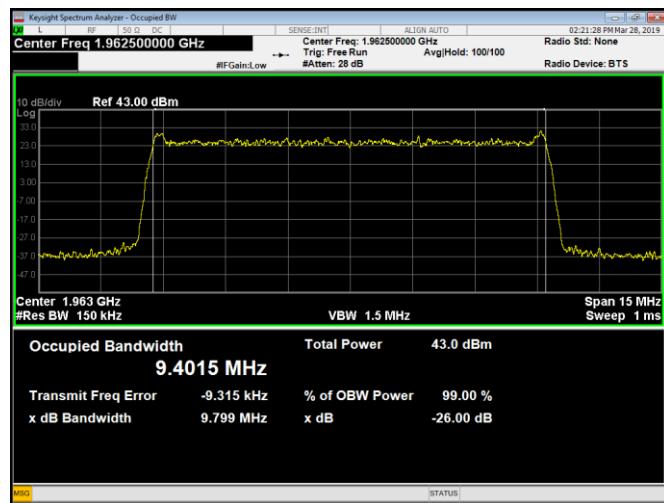


Figure 8.4-6: Occupied bandwidth sample plot, QPSK, single carrier with IoT 10 MHz



Figure 8.4-7: Occupied bandwidth sample plot, QPSK, single carrier with IoT 15 MHz

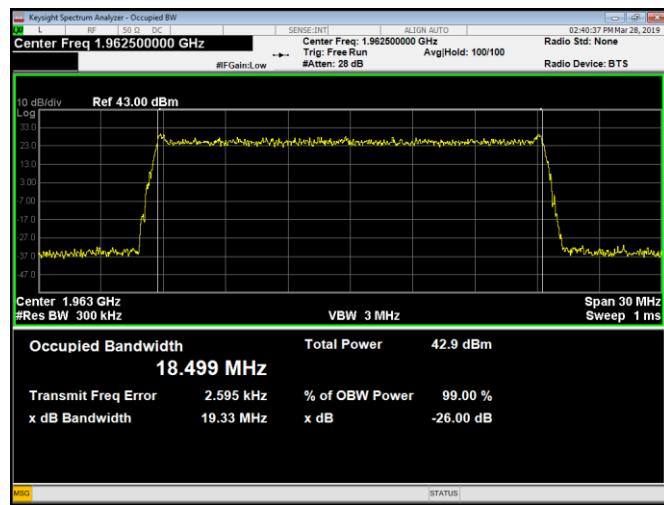


Figure 8.4-8: Occupied bandwidth sample plot, QPSK, single carrier with IoT 20 MHz

## 8.5 RSS-133, 6.6 Receiver Spurious Emissions

### 8.5.1 Definitions and limits

#### RSS-133, Section 6.6:

Receiver spurious emissions shall comply with the limits specified in RSS-Gen.

#### RSS-Gen, Section 7.4:

If the receiver has a detachable antenna of known impedance, an antenna-conducted spurious emissions measurement is permitted as an alternative to radiated measurement. However, the radiated method of section 7.3 is preferred.

The antenna-conducted test shall be performed with the antenna disconnected and with the receiver antenna port connected to a measuring instrument having equal input impedance to that specified for the antenna. The RF cable connecting the receiver under test to the measuring instrument shall also have the same impedance to that specified for the receiver's antenna.

The spurious emissions from the receiver at any discrete frequency, measured at the antenna port by the antenna-conducted method, shall not exceed 2 nW in the frequency range 30–1000 MHz and 5 nW above 1 GHz.

### 8.5.2 Test summary

Test date	March 29, 2019
Test engineer	Andrey Adelberg

### 8.5.3 Observations, settings and special notes

The spectrum was searched from 30 MHz to the 10th harmonic.

All measurements were performed using an average (RMS) detector.

### 8.5.4 Test data

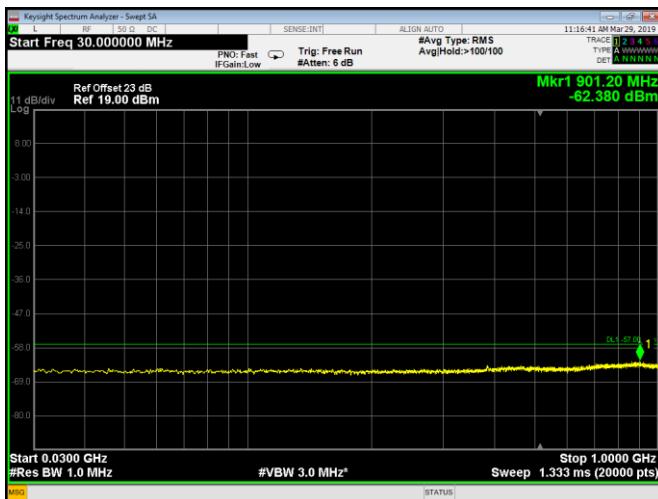


Figure 8.5-1: Receiver spurious emissions below 1 GHz

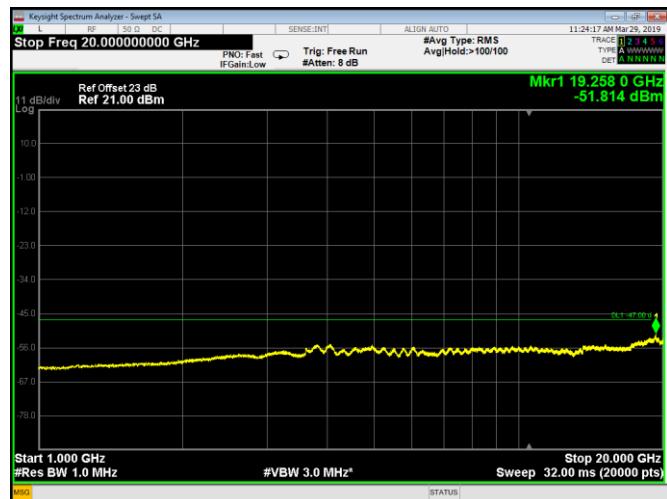
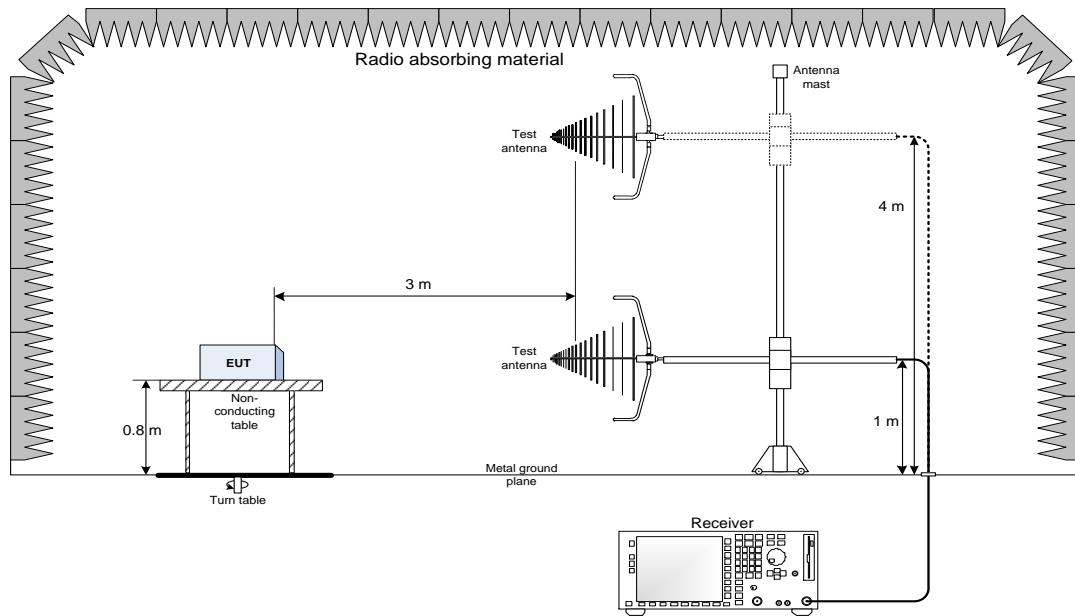


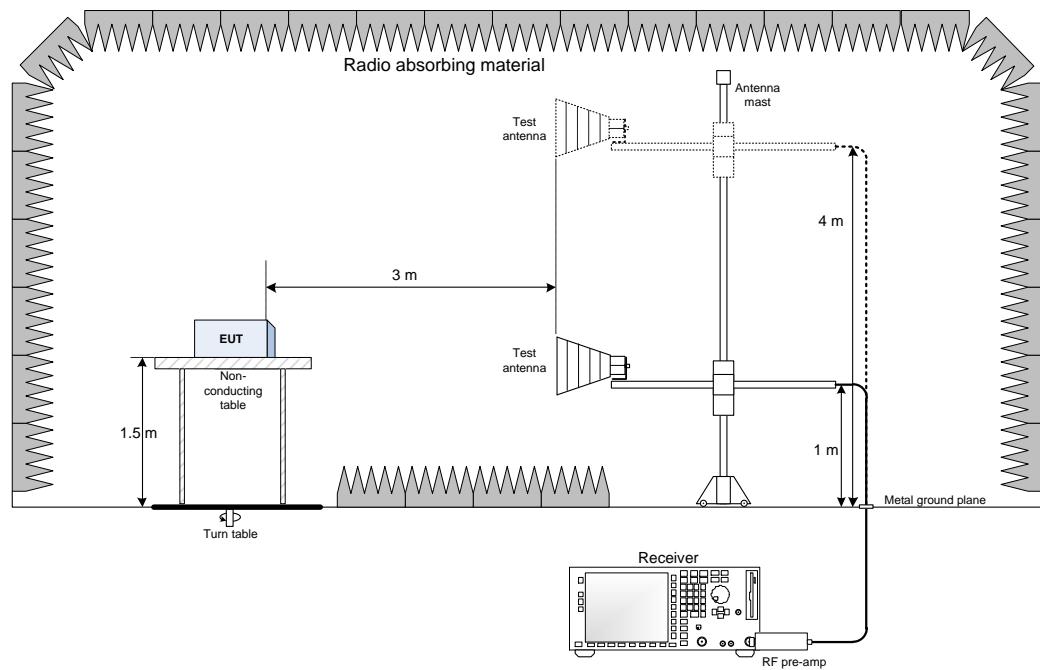
Figure 8.5-2: Receiver spurious emissions above 1 GHz

## Section 9. Block diagrams of test set-ups

### 9.1 Radiated emissions set-up for frequencies below 1 GHz



### 9.2 Radiated emissions set-up for frequencies above 1 GHz



### 9.3 Conducted emissions set-up

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