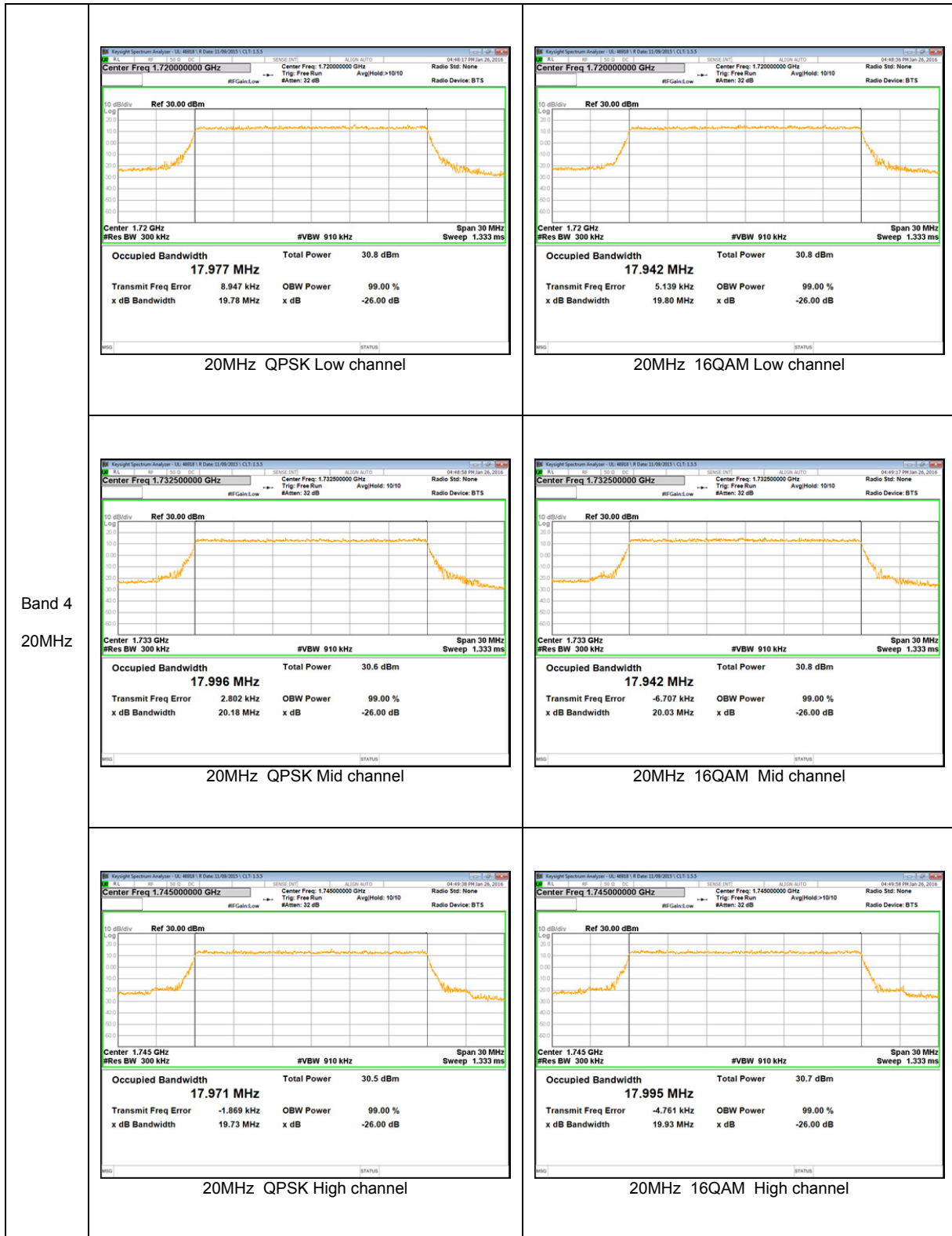
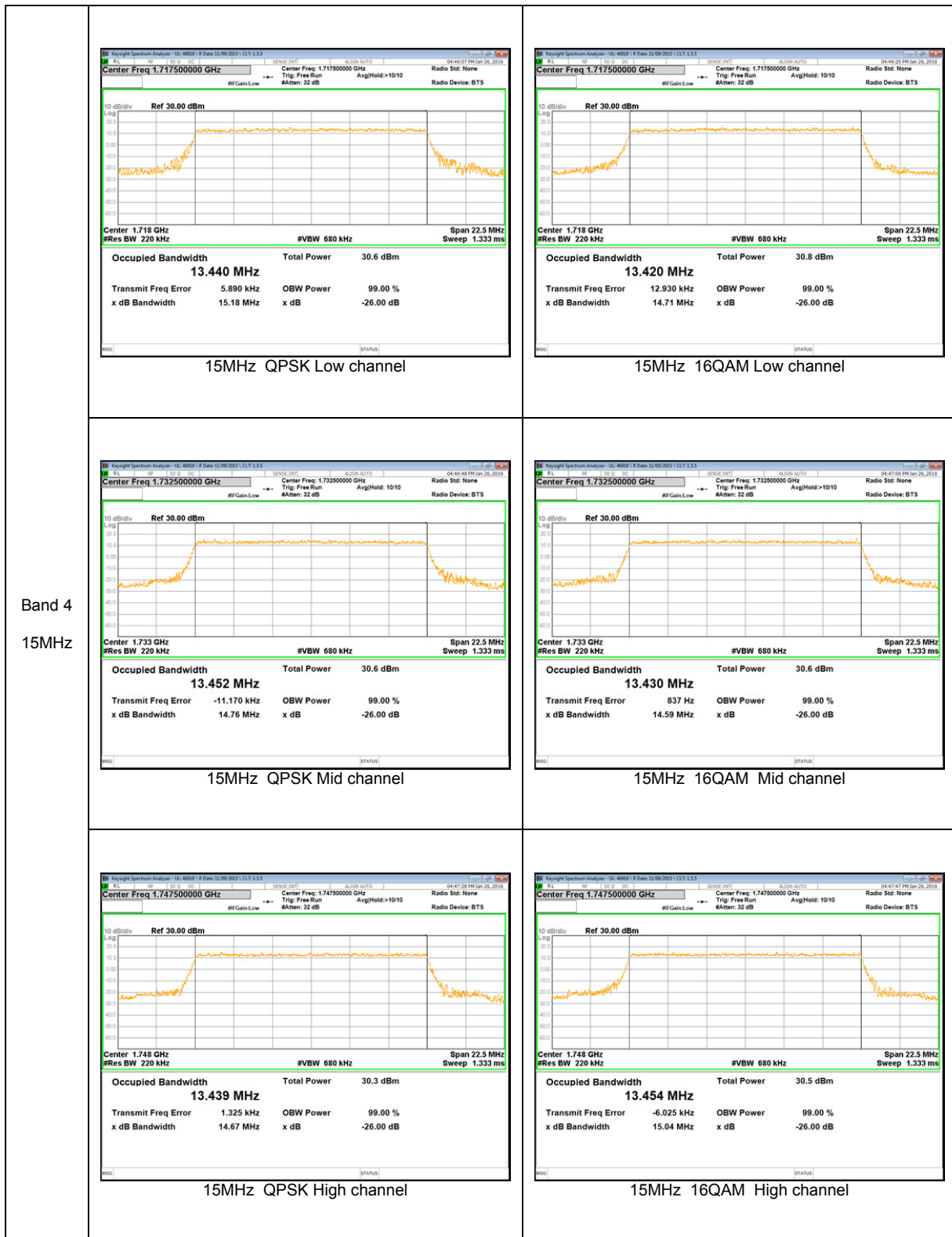
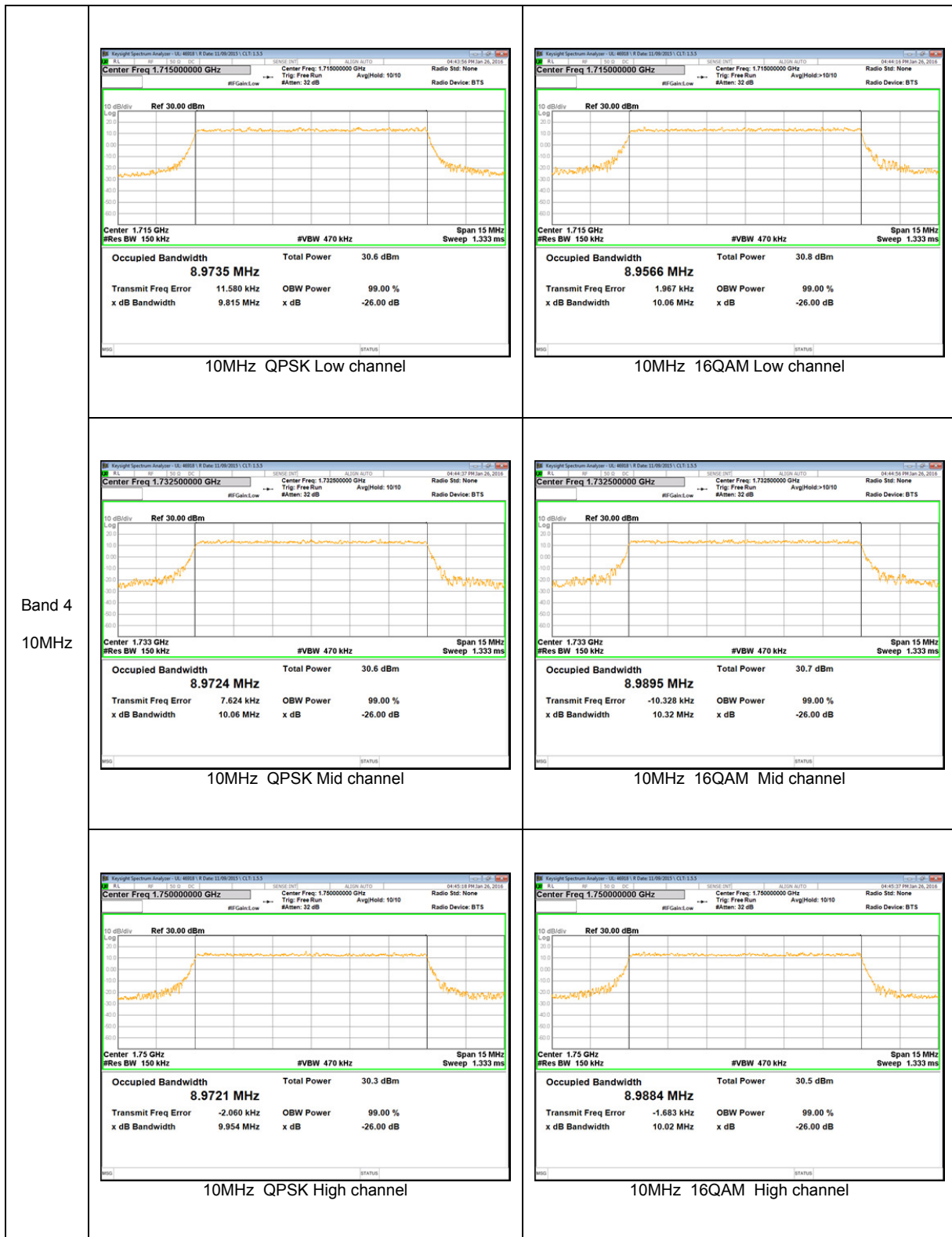
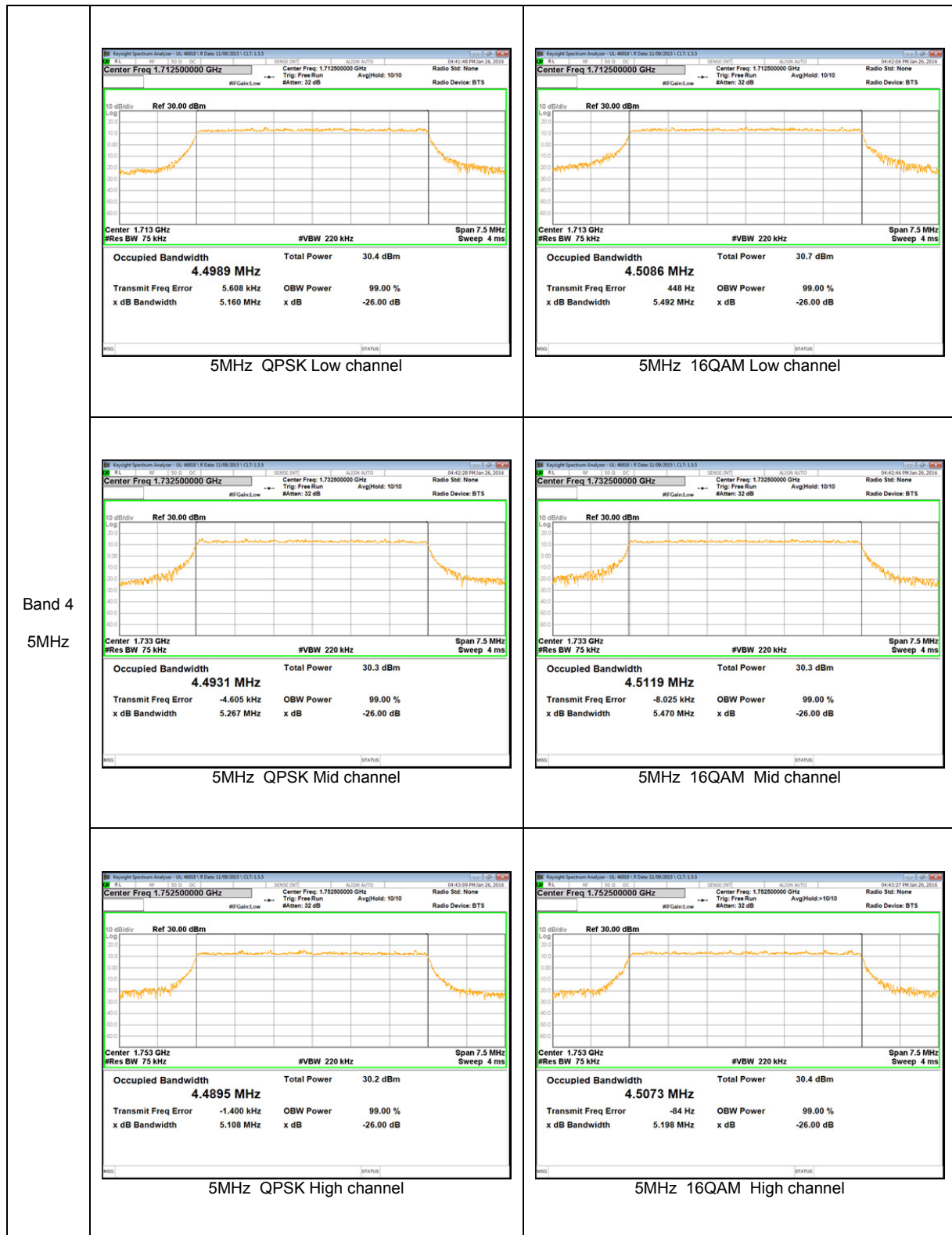


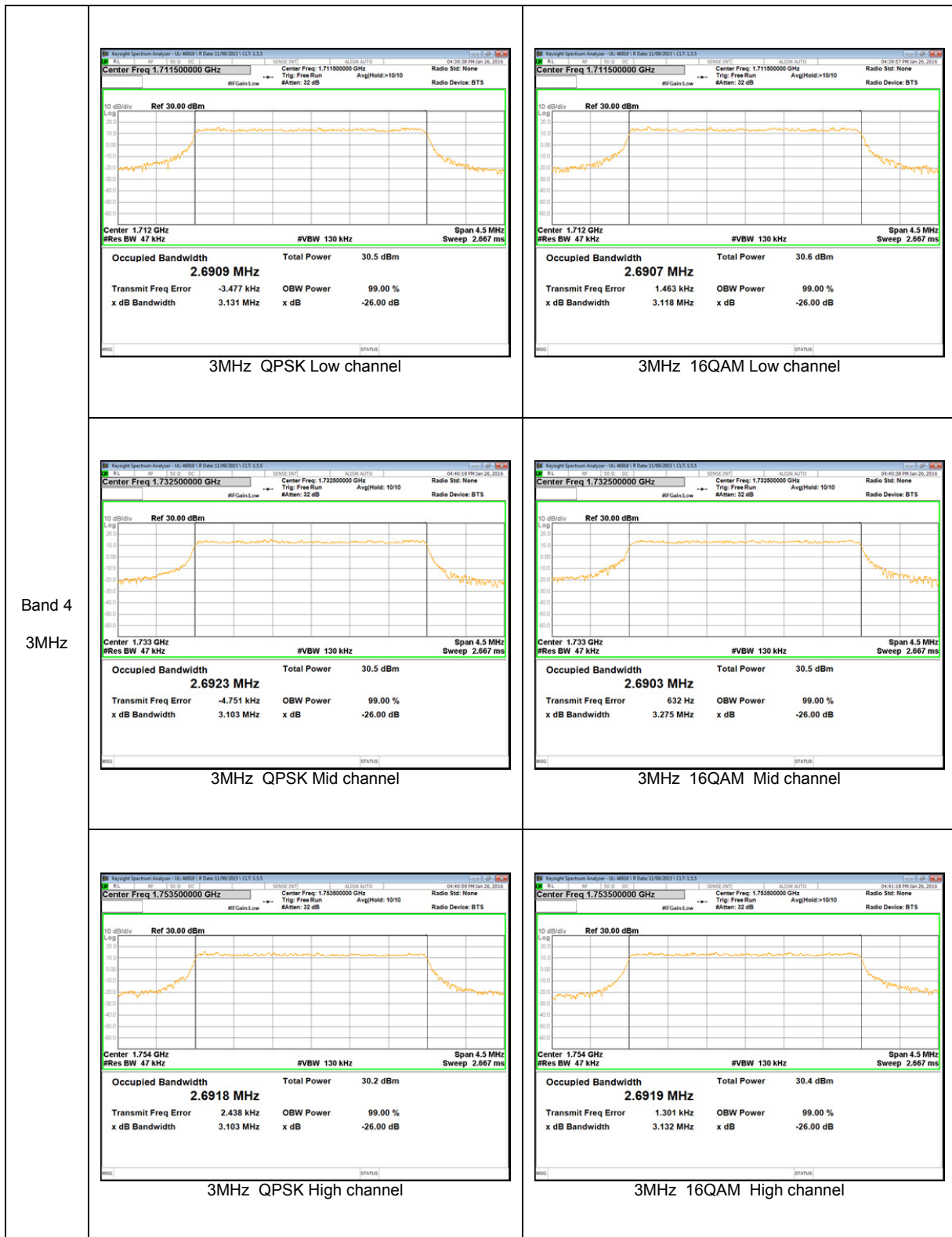
**LTE Band 4**

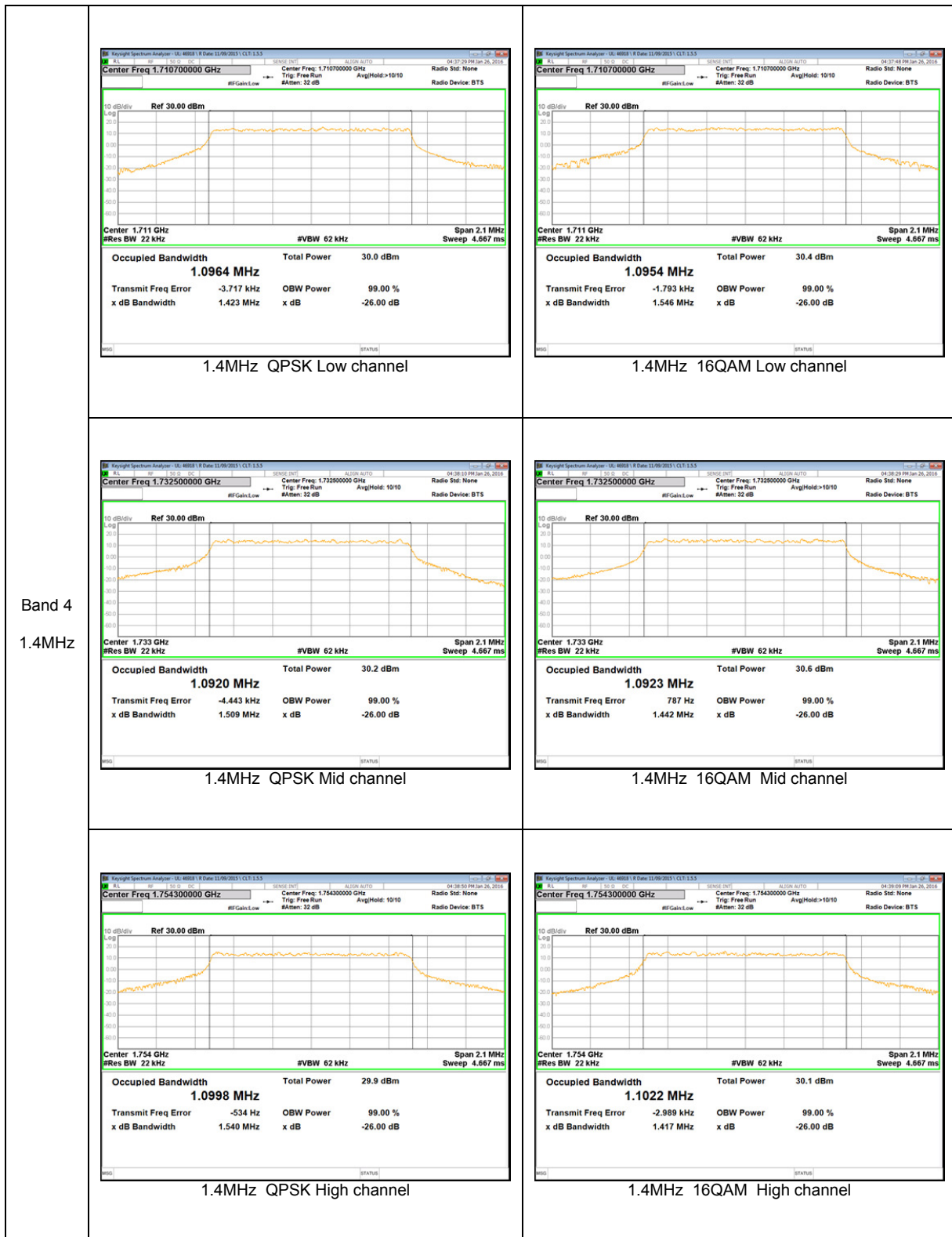




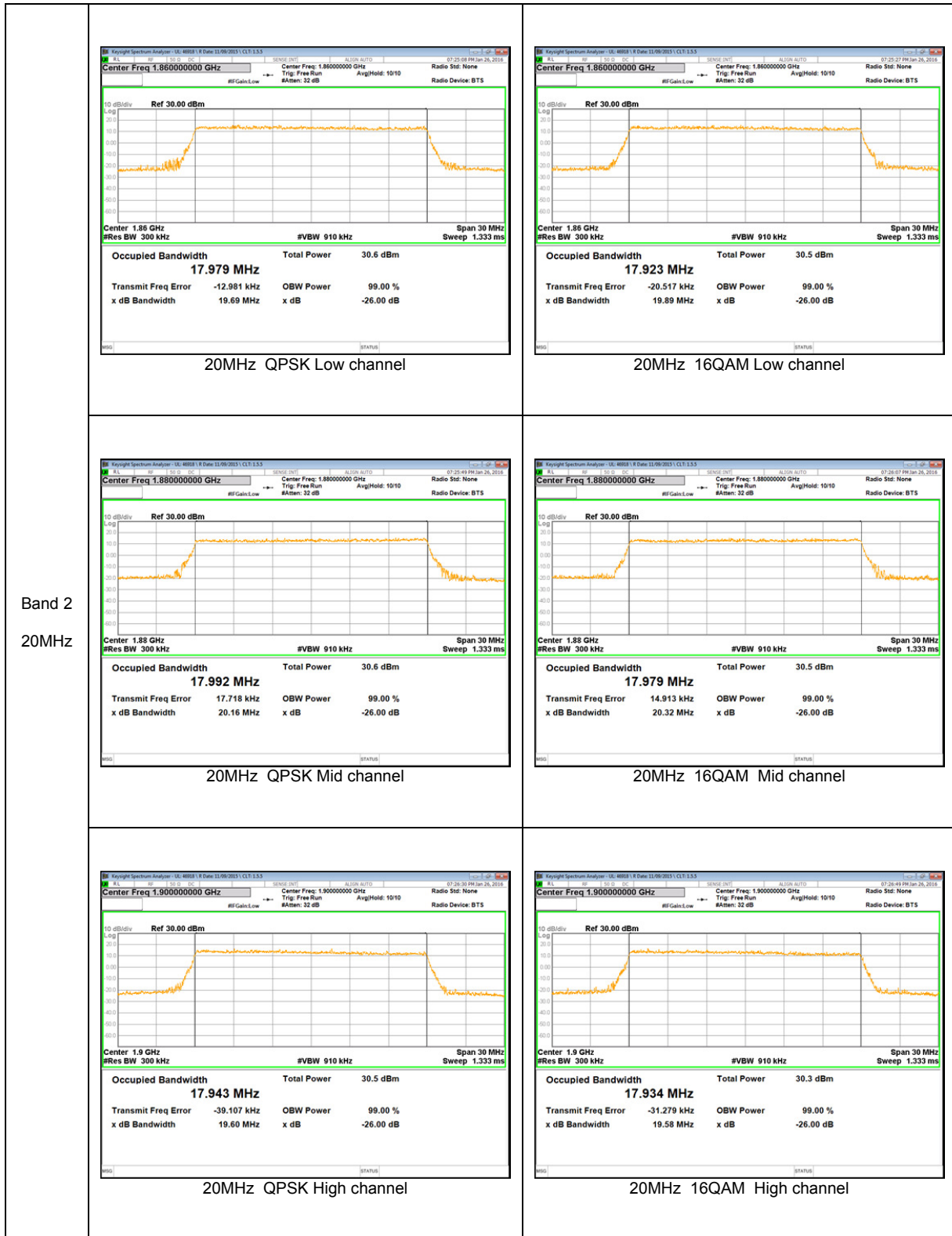


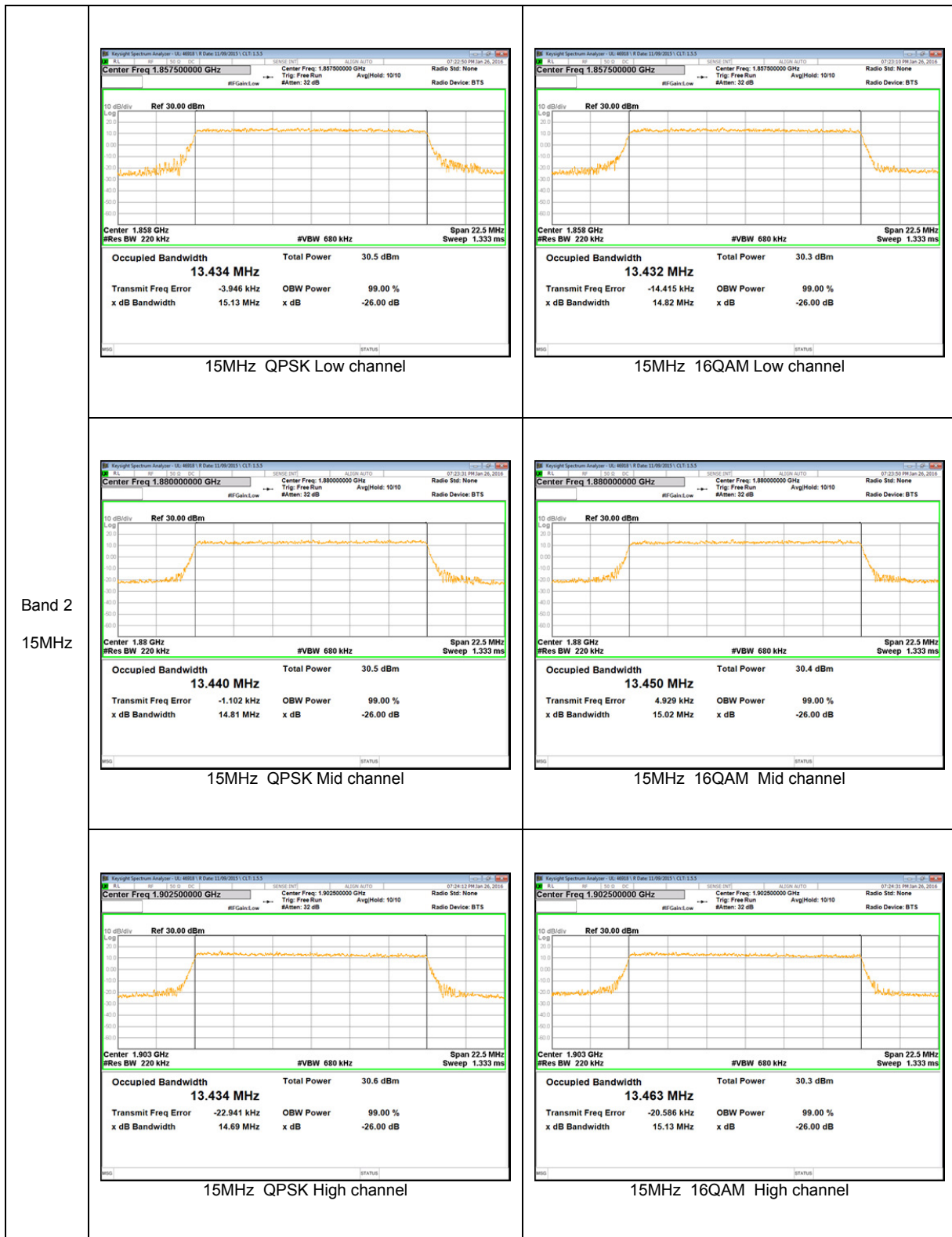


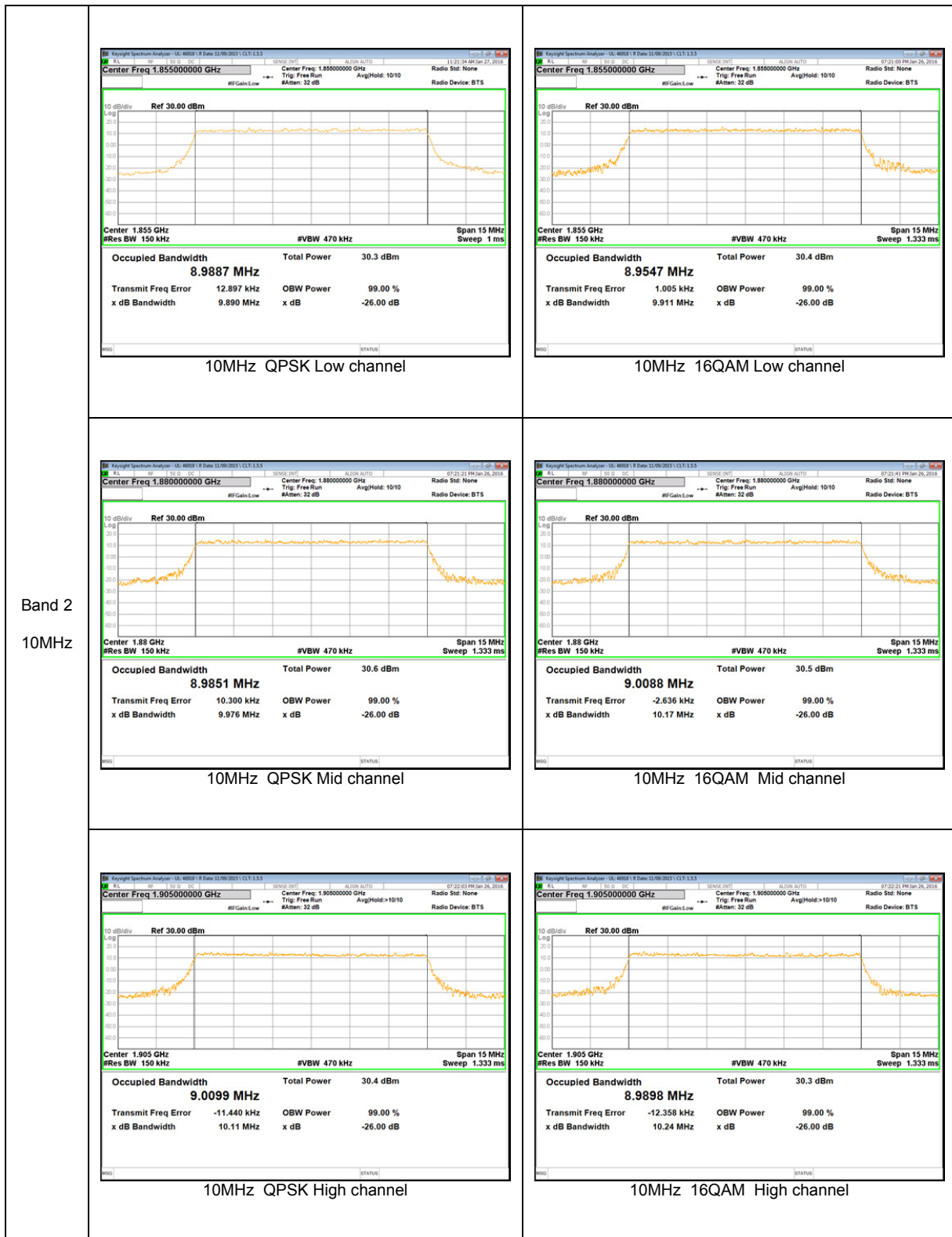




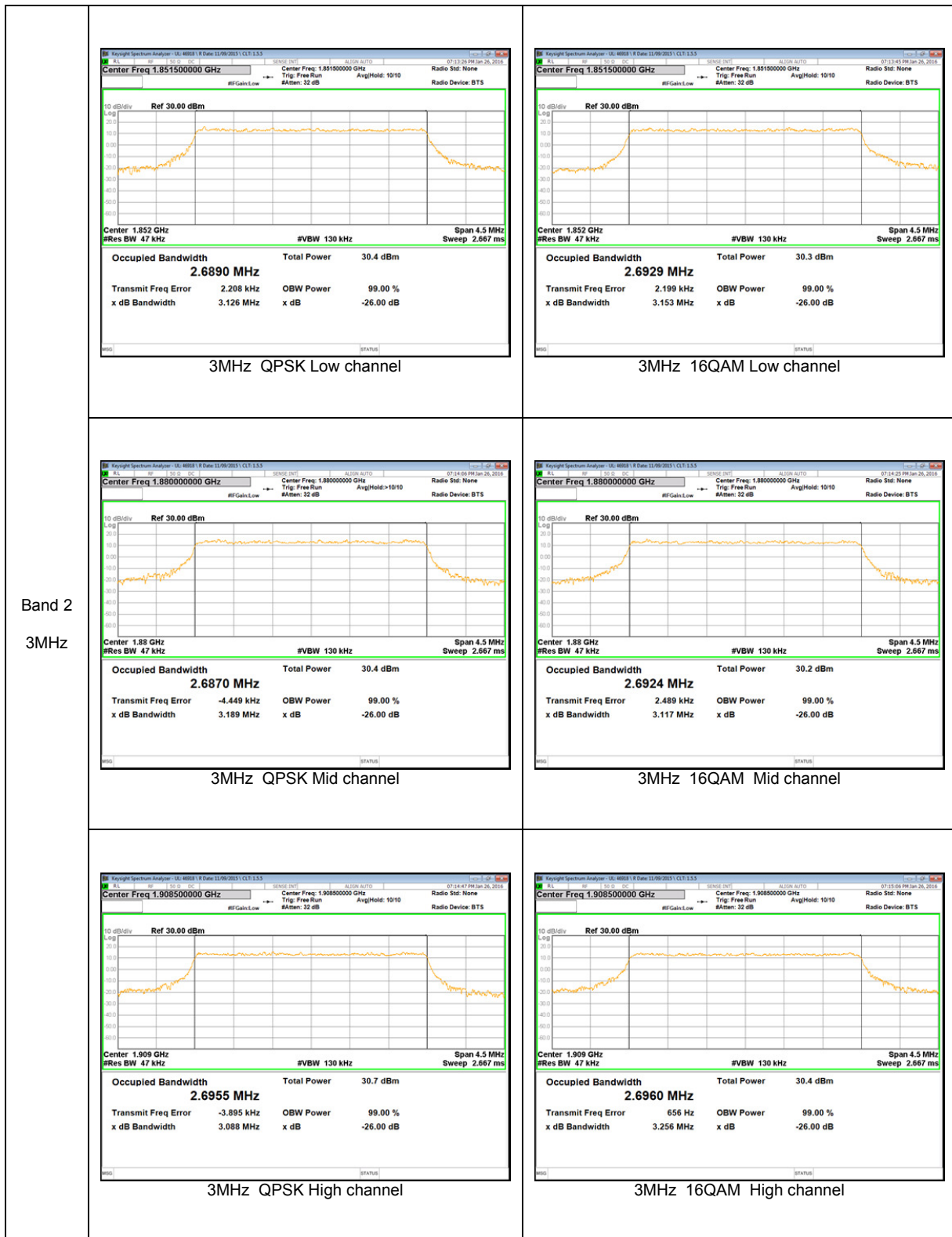
**LTE Band 2**













## 10.2. BAND EDGE EMISSIONS

### RULE PART(S)

FCC: §22.359, §24.238 and §27.53

### LIMITS

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least  $43 + 10 \log (P)$  dB.

### TEST PROCEDURE

Per KDB 971168 D01 Power Meas License Digital Systems v02r02

The transmitter output was connected to a CMW500 Test Set and configured to operate at maximum power. The band edge emissions were measured at the required operating frequencies in each band on the Spectrum Analyzer.

### RESULTS

#### GSM

| Band    | Mode  | Side  | f [MHz]  | Level [dBm] | Limit [dBm] |
|---------|-------|-------|----------|-------------|-------------|
| GSM850  | GPRS  | Lower | 823.982  | -16.253     | -13.00      |
|         |       | Upper | 849.023  | -15.946     |             |
|         | EGPRS | Lower | 823.987  | -23.745     |             |
|         |       | Upper | 849.000  | -21.789     |             |
| GSM1900 | GPRS  | Lower | 1849.982 | -19.009     |             |
|         |       | Upper | 1910.023 | -18.724     |             |
|         | EGPRS | Lower | 1849.997 | -23.714     |             |
|         |       | Upper | 1910.003 | -19.917     |             |

**WCDMA**

| Band   | Mode  | Side  | f [MHz]  | Level [dBm] | Limit [dBm] |
|--------|-------|-------|----------|-------------|-------------|
| Band 5 | REL99 | Lower | 824.000  | -30.153     | -13.00      |
|        |       | Upper | 849.000  | -32.430     |             |
|        | HSDPA | Lower | 824.000  | -32.339     |             |
|        |       | Upper | 849.000  | -32.753     |             |
| Band 4 | REL99 | Lower | 1710.000 | -30.159     |             |
|        |       | Upper | 1755.000 | -30.909     |             |
|        | HSDPA | Lower | 1710.000 | -31.752     |             |
|        |       | Upper | 1755.000 | -32.878     |             |
| Band 2 | REL99 | Lower | 1850.000 | -30.095     |             |
|        |       | Upper | 1910.000 | -27.168     |             |
|        | HSDPA | Lower | 1850.000 | -30.658     |             |
|        |       | Upper | 1910.000 | -32.921     |             |

**LTE 17**

| Bandwidth | Mode  | Side  | RB Status | f [MHz] | Level [dBm] | Limit [dBm] |
|-----------|-------|-------|-----------|---------|-------------|-------------|
| 10 MHz    | QPSK  | Lower | 1RB       | 704.000 | -23.728     | -13.00      |
|           |       |       | FRB       | 704.000 | -33.364     |             |
|           |       | Upper | 1RB       | 716.000 | -21.474     |             |
|           |       |       | FRB       | 716.000 | -32.218     |             |
|           | 16QAM | Lower | 1RB       | 704.000 | -25.698     |             |
|           |       |       | FRB       | 704.000 | -33.601     |             |
|           |       | Upper | 1RB       | 716.000 | -22.638     |             |
|           |       |       | FRB       | 716.000 | -35.198     |             |
| 5 MHz     | QPSK  | Lower | 1RB       | 704.000 | -16.196     |             |
|           |       |       | FRB       | 704.000 | -26.885     |             |
|           |       | Upper | 1RB       | 716.000 | -15.248     |             |
|           |       |       | FRB       | 716.000 | -26.724     |             |
|           | 16QAM | Lower | 1RB       | 704.000 | -17.098     |             |
|           |       |       | FRB       | 704.000 | -24.712     |             |
|           |       | Upper | 1RB       | 716.000 | -15.220     |             |
|           |       |       | FRB       | 716.000 | -28.644     |             |

**LTE 5**

| Bandwidth | Mode  | Side  | RB Status | f [MHz] | Level [dBm] | Limit [dBm] |
|-----------|-------|-------|-----------|---------|-------------|-------------|
| 10 MHz    | QPSK  | Lower | 1RB       | 824.000 | -21.321     | -13.00      |
|           |       |       | FRB       | 824.000 | -31.526     |             |
|           |       | Upper | 1RB       | 849.000 | -20.679     |             |
|           |       |       | FRB       | 849.000 | -30.038     |             |
|           | 16QAM | Lower | 1RB       | 824.000 | -22.837     |             |
|           |       |       | FRB       | 824.000 | -32.173     |             |
|           |       | Upper | 1RB       | 849.000 | -22.397     |             |
|           |       |       | FRB       | 849.000 | -31.317     |             |
| 5 MHz     | QPSK  | Lower | 1RB       | 824.000 | -15.589     |             |
|           |       |       | FRB       | 824.000 | -26.498     |             |
|           |       | Upper | 1RB       | 849.000 | -14.670     |             |
|           |       |       | FRB       | 849.000 | -25.222     |             |
|           | 16QAM | Lower | 1RB       | 824.000 | -15.992     |             |
|           |       |       | FRB       | 824.000 | -26.262     |             |
|           |       | Upper | 1RB       | 849.000 | -16.086     |             |
|           |       |       | FRB       | 849.000 | -29.337     |             |
| 3 MHz     | QPSK  | Lower | 1RB       | 824.000 | -15.718     |             |
|           |       |       | FRB       | 824.000 | -24.195     |             |
|           |       | Upper | 1RB       | 849.000 | -16.363     |             |
|           |       |       | FRB       | 849.000 | -25.904     |             |
|           | 16QAM | Lower | 1RB       | 824.000 | -17.669     |             |
|           |       |       | FRB       | 824.000 | -26.053     |             |
|           |       | Upper | 1RB       | 849.000 | -17.525     |             |
|           |       |       | FRB       | 849.000 | -26.499     |             |
| 1.4 MHz   | QPSK  | Lower | 1RB       | 824.000 | -16.111     |             |
|           |       |       | FRB       | 824.000 | -22.675     |             |
|           |       | Upper | 1RB       | 849.000 | -16.063     |             |
|           |       |       | FRB       | 849.000 | -23.778     |             |
|           | 16QAM | Lower | 1RB       | 824.000 | -14.565     |             |
|           |       |       | FRB       | 824.000 | -21.955     |             |
|           |       | Upper | 1RB       | 849.000 | -16.314     |             |
|           |       |       | FRB       | 849.000 | -24.439     |             |

**LTE 4**

| Bandwidth | Mode  | Side  | RB Status | f [MHz]  | Level [dBm] | Limit [dBm] |
|-----------|-------|-------|-----------|----------|-------------|-------------|
| 20 MHz    | QPSK  | Lower | 1RB       | 1710.000 | -25.621     | -13.00      |
|           |       |       | FRB       | 1710.000 | -32.207     |             |
|           |       | Upper | 1RB       | 1755.000 | -27.561     |             |
|           |       |       | FRB       | 1755.000 | -31.718     |             |
|           | 16QAM | Lower | 1RB       | 1710.000 | -24.719     |             |
|           |       |       | FRB       | 1710.000 | -30.619     |             |
|           |       | Upper | 1RB       | 1755.000 | -25.736     |             |
|           |       |       | FRB       | 1755.000 | -30.231     |             |
| 15 MHz    | QPSK  | Lower | 1RB       | 1710.000 | -24.504     | -13.00      |
|           |       |       | FRB       | 1710.000 | -33.436     |             |
|           |       | Upper | 1RB       | 1755.000 | -29.669     |             |
|           |       |       | FRB       | 1755.000 | -30.096     |             |
|           | 16QAM | Lower | 1RB       | 1710.000 | -27.194     |             |
|           |       |       | FRB       | 1710.000 | -30.930     |             |
|           |       | Upper | 1RB       | 1755.000 | -25.257     |             |
|           |       |       | FRB       | 1755.000 | -32.987     |             |
| 10 MHz    | QPSK  | Lower | 1RB       | 1710.000 | -24.302     | -13.00      |
|           |       |       | FRB       | 1710.000 | -31.568     |             |
|           |       | Upper | 1RB       | 1755.000 | -21.108     |             |
|           |       |       | FRB       | 1755.000 | -32.243     |             |
|           | 16QAM | Lower | 1RB       | 1710.000 | -22.820     |             |
|           |       |       | FRB       | 1710.000 | -31.030     |             |
|           |       | Upper | 1RB       | 1755.000 | -22.373     |             |
|           |       |       | FRB       | 1755.000 | -32.704     |             |
| 5 MHz     | QPSK  | Lower | 1RB       | 1710.000 | -15.807     | -13.00      |
|           |       |       | FRB       | 1710.000 | -26.128     |             |
|           |       | Upper | 1RB       | 1755.000 | -16.189     |             |
|           |       |       | FRB       | 1755.000 | -26.791     |             |
|           | 16QAM | Lower | 1RB       | 1710.000 | -15.937     |             |
|           |       |       | FRB       | 1710.000 | -25.248     |             |
|           |       | Upper | 1RB       | 1755.000 | -16.310     |             |
|           |       |       | FRB       | 1755.000 | -24.548     |             |

| Bandwidth | Mode  | Side  | RB Status | f [MHz]  | Level [dBm] | Limit [dBm] |
|-----------|-------|-------|-----------|----------|-------------|-------------|
| 3 MHz     | QPSK  | Lower | 1RB       | 1710.000 | -15.139     | -13.00      |
|           |       |       | FRB       | 1710.000 | -24.381     |             |
|           |       | Upper | 1RB       | 1755.000 | -16.344     |             |
|           |       |       | FRB       | 1755.000 | -26.735     |             |
|           | 16QAM | Lower | 1RB       | 1710.000 | -16.252     |             |
|           |       |       | FRB       | 1710.000 | -24.363     |             |
|           |       | Upper | 1RB       | 1755.000 | -15.941     |             |
|           |       |       | FRB       | 1755.000 | -24.363     |             |
| 1.4 MHz   | QPSK  | Lower | 1RB       | 1710.000 | -16.703     | -13.00      |
|           |       |       | FRB       | 1710.000 | -21.810     |             |
|           |       | Upper | 1RB       | 1755.000 | -16.123     |             |
|           |       |       | FRB       | 1755.000 | -21.093     |             |
|           | 16QAM | Lower | 1RB       | 1710.000 | -15.196     |             |
|           |       |       | FRB       | 1710.000 | -21.009     |             |
|           |       | Upper | 1RB       | 1755.000 | -16.517     |             |
|           |       |       | FRB       | 1755.000 | -23.018     |             |

**LTE 2**

| Bandwidth | Mode  | Side     | RB Status | f [MHz]  | Level [dBm] | Limit [dBm] |
|-----------|-------|----------|-----------|----------|-------------|-------------|
| 20 MHz    | QPSK  | Lower    | 1RB       | 1850.000 | -21.682     | -13.00      |
|           |       |          | FRB       | 1850.000 | -31.693     |             |
|           |       | Upper    | 1RB       | 1910.000 | -22.808     |             |
|           |       |          | FRB       | 1910.000 | -30.943     |             |
|           | 16QAM | Lower    | 1RB       | 1850.000 | -22.879     |             |
|           |       |          | FRB       | 1850.000 | -32.073     |             |
| Upper     | 1RB   | 1910.000 | -26.154   |          |             |             |
|           | FRB   | 1910.000 | -31.234   |          |             |             |
| 15 MHz    | QPSK  | Lower    | 1RB       | 1844.561 | -20.123     | -13.00      |
|           |       |          | FRB       | 1850.000 | -34.713     |             |
|           |       | Upper    | 1RB       | 1910.000 | -26.659     |             |
|           |       |          | FRB       | 1910.000 | -31.589     |             |
|           | 16QAM | Lower    | 1RB       | 1844.558 | -20.133     |             |
|           |       |          | FRB       | 1850.000 | -35.625     |             |
|           |       | Upper    | 1RB       | 1915.427 | -21.530     |             |
|           |       |          | FRB       | 1910.000 | -31.547     |             |

| Bandwidth | Mode  | Side  | RB Status | f [MHz]  | Level [dBm] | Limit [dBm] |
|-----------|-------|-------|-----------|----------|-------------|-------------|
| 10 MHz    | QPSK  | Lower | 1RB       | 1850.000 | -22.838     | -13.00      |
|           |       |       | FRB       | 1850.000 | -32.330     |             |
|           |       | Upper | 1RB       | 1910.000 | -22.263     |             |
|           |       |       | FRB       | 1910.000 | -33.011     |             |
|           | 16QAM | Lower | 1RB       | 1850.000 | -23.714     |             |
|           |       |       | FRB       | 1850.000 | -30.584     |             |
|           |       | Upper | 1RB       | 1910.000 | -21.574     |             |
|           |       |       | FRB       | 1910.000 | -31.361     |             |
| 5 MHz     | QPSK  | Lower | 1RB       | 1850.000 | -15.825     |             |
|           |       |       | FRB       | 1850.000 | -27.355     |             |
|           |       | Upper | 1RB       | 1910.000 | -14.331     |             |
|           |       |       | FRB       | 1910.000 | -24.813     |             |
|           | 16QAM | Lower | 1RB       | 1850.000 | -15.852     |             |
|           |       |       | FRB       | 1850.000 | -24.152     |             |
|           |       | Upper | 1RB       | 1910.000 | -14.313     |             |
|           |       |       | FRB       | 1910.000 | -25.356     |             |
| 3 MHz     | QPSK  | Lower | 1RB       | 1850.000 | -15.502     |             |
|           |       |       | FRB       | 1850.000 | -25.118     |             |
|           |       | Upper | 1RB       | 1910.000 | -15.287     |             |
|           |       |       | FRB       | 1910.000 | -25.391     |             |
|           | 16QAM | Lower | 1RB       | 1850.000 | -15.090     |             |
|           |       |       | FRB       | 1850.000 | -24.954     |             |
|           |       | Upper | 1RB       | 1910.000 | -14.716     |             |
|           |       |       | FRB       | 1910.000 | -24.692     |             |
| 1.4 MHz   | QPSK  | Lower | 1RB       | 1850.000 | -15.502     |             |
|           |       |       | FRB       | 1850.000 | -21.780     |             |
|           |       | Upper | 1RB       | 1910.000 | -14.534     |             |
|           |       |       | FRB       | 1910.000 | -21.582     |             |
|           | 16QAM | Lower | 1RB       | 1850.000 | -14.339     |             |
|           |       |       | FRB       | 1850.000 | -21.892     |             |
|           |       | Upper | 1RB       | 1910.000 | -15.611     |             |
|           |       |       | FRB       | 1910.000 | -21.985     |             |

### 10.2.1. BAND EDGE PLOTS

#### GSM

