

APPENDIX A – TEST DATA OF CONDUCTED EMISSION

RF Power Output-FCC Part2.1046

GSM850

Antenna Gain=-2.10dBi

GSM Measured Power:

| Carrier frequency (MHz) | Channel No. | RF Power Output (dBm) |
|----------------------------|-------------|--------------------------|
| 824.2 | 128 | 33.13 |
| 836.4 | 189 | 33.03 |
| 848.8 | 251 | 33.09 |

GPRS Measured Power:

| Carrier frequency (MHz) | Channel No. | TX Mode | RF Power Output (dBm) |
|----------------------------|-------------|------------------|--------------------------|
| 824.2 | 128 | 4Downlink1uplink | 33.08 |
| 836.4 | 189 | | 32.96 |
| 848.8 | 251 | | 33.04 |
| 824.2 | 128 | 3Downlink2uplink | 30.93 |
| 836.4 | 189 | | 30.87 |
| 848.8 | 251 | | 30.97 |
| 824.2 | 128 | 2Downlink3uplink | 29.12 |
| 836.4 | 189 | | 29.18 |
| 848.8 | 251 | | 29.21 |
| 824.2 | 128 | 1Downlink4uplink | 27.21 |
| 836.4 | 189 | | 27.18 |
| 848.8 | 251 | | 27.25 |

EGPRS (GMSK) Measured Power:

| Carrier frequency (MHz) | Channel No. | TX Mode | RF Power Output (dBm) |
|----------------------------|-------------|--------------------------|--------------------------|
| 824.2 | 128 | GMSK 4Downlink1uplink | 33.11 |
| 836.4 | 189 | | 32.97 |
| 848.8 | 251 | | 33.01 |
| 824.2 | 128 | GMSK 3Downlink2uplink | 30.95 |
| 836.4 | 189 | | 30.92 |
| 848.8 | 251 | | 30.99 |
| 824.2 | 128 | GMSK 2Downlink3uplink | 29.11 |
| 836.4 | 189 | | 29.07 |
| 848.8 | 251 | | 29.13 |
| 824.2 | 128 | GMSK 1Downlink4uplink | 27.13 |
| 836.4 | 189 | | 27.07 |
| 848.8 | 251 | | 27.11 |

EGPRS (8PSK) Measured Power:

| Carrier frequency (MHz) | Channel No. | TX Mode | RF Power Output (dBm) |
|-------------------------|-------------|---------------------------|-----------------------|
| 824.2 | 128 | 8DPSK 4Downlink1uplink | 25.89 |
| 836.4 | 189 | | 25.81 |
| 848.8 | 251 | | 25.86 |
| 824.2 | 128 | 8DPSK 3Downlink2uplink | 24.84 |
| 836.4 | 189 | | 24.68 |
| 848.8 | 251 | | 24.77 |
| 824.2 | 128 | 8DPSK 2Downlink3uplink | 22.66 |
| 836.4 | 189 | | 22.55 |
| 848.8 | 251 | | 22.68 |
| 824.2 | 128 | 8DPSK 1Downlink4uplink | 19.67 |
| 836.4 | 189 | | 19.56 |
| 848.8 | 251 | | 19.62 |

PCS1900

Antenna Gain=-1.40dBi

GSM Measured Power:

| Carrier frequency (MHz) | Channel No. | RF Power Output (dBm) |
|-------------------------|-------------|-----------------------|
| 1850.2 | 512 | 29.77 |
| 1880.0 | 661 | 29.68 |
| 1909.8 | 810 | 29.88 |

GPRS Measured Power:

| Carrier frequency (MHz) | Channel No. | TX Mode | RF Power Output (dBm) |
|-------------------------|-------------|------------------|-----------------------|
| 1850.2 | 512 | 4Downlink1uplink | 29.70 |
| 1880.0 | 661 | | 29.66 |
| 1909.8 | 810 | | 29.87 |
| 1850.2 | 512 | 3Downlink2uplink | 27.63 |
| 1880.0 | 661 | | 27.57 |
| 1909.8 | 810 | | 27.62 |
| 1850.2 | 512 | 2Downlink3uplink | 26.14 |
| 1880.0 | 661 | | 26.05 |
| 1909.8 | 810 | | 26.11 |
| 1850.2 | 512 | 1Downlink4uplink | 24.12 |
| 1880.0 | 661 | | 24.04 |
| 1909.8 | 810 | | 24.09 |

EGPRS (GMSK) Measured Power:

| Carrier frequency (MHz) | Channel No. | TX Mode | RF Power Output (dBm) |
|-------------------------|-------------|--------------------------|-----------------------|
| 1850.2 | 512 | GMSK 4Downlink1uplink | 29.77 |
| 1880.0 | 661 | | 29.69 |
| 1909.8 | 810 | | 29.82 |
| 1850.2 | 512 | GMSK 3Downlink2uplink | 27.64 |
| 1880.0 | 661 | | 27.57 |
| 1909.8 | 810 | | 27.62 |
| 1850.2 | 512 | GMSK 2Downlink3uplink | 26.15 |
| 1880.0 | 661 | | 26.07 |
| 1909.8 | 810 | | 26.09 |
| 1850.2 | 512 | GMSK 1Downlink4uplink | 24.13 |
| 1880.0 | 661 | | 24.03 |
| 1909.8 | 810 | | 24.11 |

EGPRS (8PSK) Measured Power:

| Carrier frequency (MHz) | Channel No. | TX Mode | RF Power Output (dBm) |
|-------------------------|-------------|---------------------------|-----------------------|
| 1850.2 | 512 | 8DPSK 4Downlink1uplink | 26.54 |
| 1880.0 | 661 | | 26.49 |
| 1909.8 | 810 | | 26.42 |
| 1850.2 | 512 | 8DPSK 3Downlink2uplink | 24.95 |
| 1880.0 | 661 | | 24.79 |
| 1909.8 | 810 | | 24.83 |
| 1850.2 | 512 | 8DPSK 2Downlink3uplink | 22.55 |
| 1880.0 | 661 | | 22.47 |
| 1909.8 | 810 | | 22.43 |
| 1850.2 | 512 | 8DPSK 1Downlink4uplink | 21.44 |
| 1880.0 | 661 | | 21.37 |
| 1909.8 | 810 | | 21.35 |

Occupied Bandwidth-FCC Part2.1049

GSM850

GSM/GPRS MODE:

| Carrier frequency (MHz) | Channel No. | Bandwidth of 99% Power (kHz) |
|----------------------------|-------------|---------------------------------|
| 824.2 | 128 | 241.42 |
| 836.4 | 189 | 242.40 |
| 848.8 | 251 | 245.32 |

EDGE (GMSK) MODE:

| Carrier frequency (MHz) | Channel No. | Bandwidth of 99% Power (kHz) |
|----------------------------|-------------|---------------------------------|
| 824.2 | 128 | 243.65 |
| 836.4 | 189 | 241.53 |
| 848.8 | 251 | 241.75 |

EDGE (8PSK) MODE:

| Carrier frequency (MHz) | Channel No. | Bandwidth of 99% Power (kHz) |
|----------------------------|-------------|---------------------------------|
| 824.2 | 128 | 246.46 |
| 836.4 | 189 | 247.30 |
| 848.8 | 251 | 242.74 |

PCS1900

GSM/GPRS MODE:

| Carrier frequency (MHz) | Channel No. | Bandwidth of 99% Power (kHz) |
|----------------------------|-------------|---------------------------------|
| 1850.2 | 512 | 238.75 |
| 1880.0 | 661 | 241.63 |
| 1909.8 | 810 | 239.96 |

EDGE (GMSK) MODE:

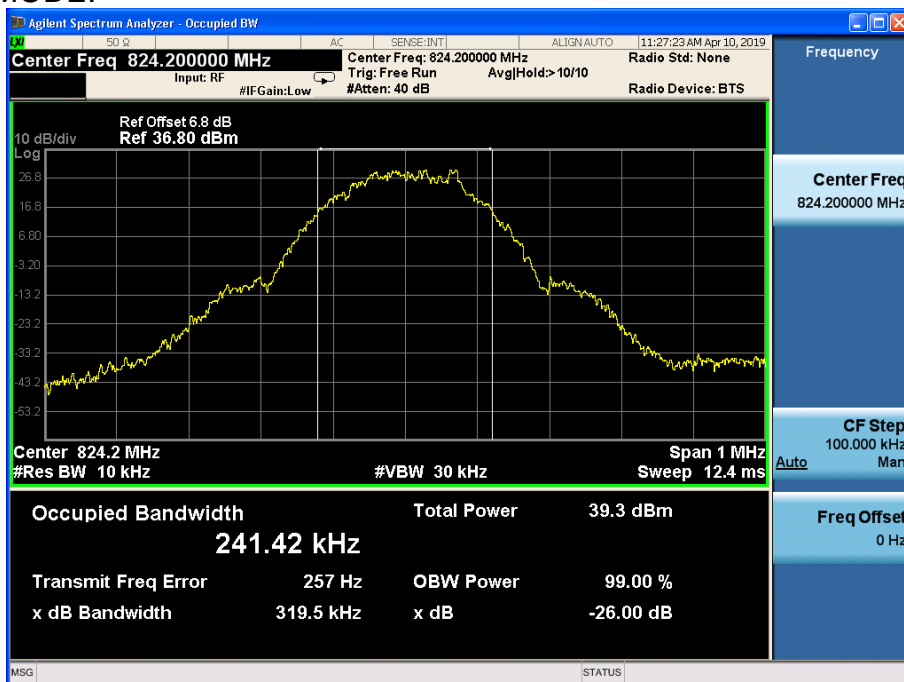
| Carrier frequency (MHz) | Channel No. | Bandwidth of 99% Power (kHz) |
|----------------------------|-------------|---------------------------------|
| 1850.2 | 512 | 238.88 |
| 1880.0 | 661 | 242.83 |
| 1909.8 | 810 | 240.91 |

EDGE (8PSK) MODE:

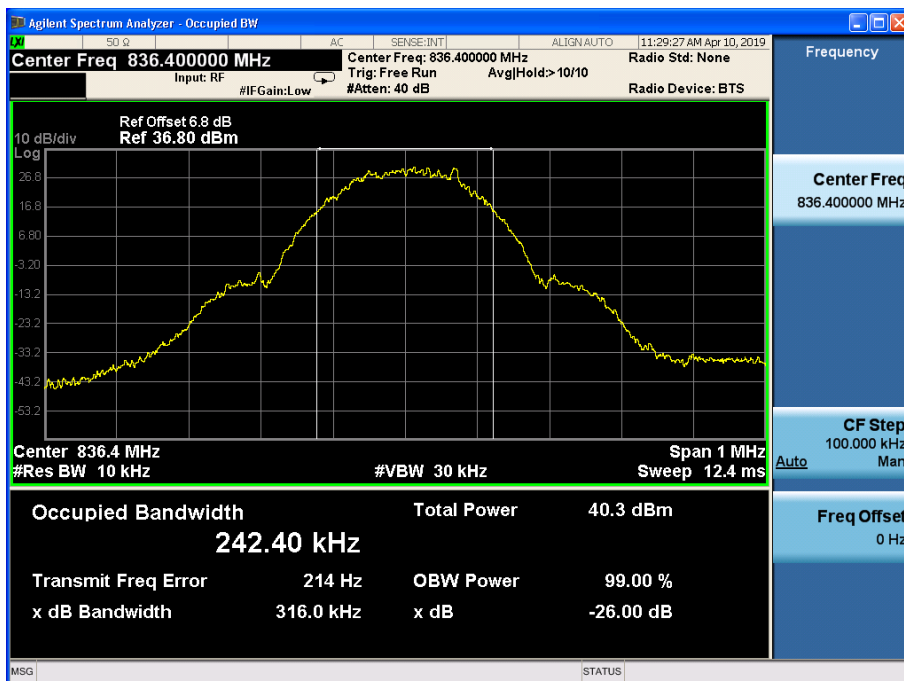
| Carrier frequency (MHz) | Channel No. | Bandwidth of 99% Power (kHz) |
|----------------------------|-------------|---------------------------------|
| 1850.2 | 512 | 237.59 |
| 1880.0 | 661 | 241.58 |
| 1909.8 | 810 | 242.85 |

GSM850

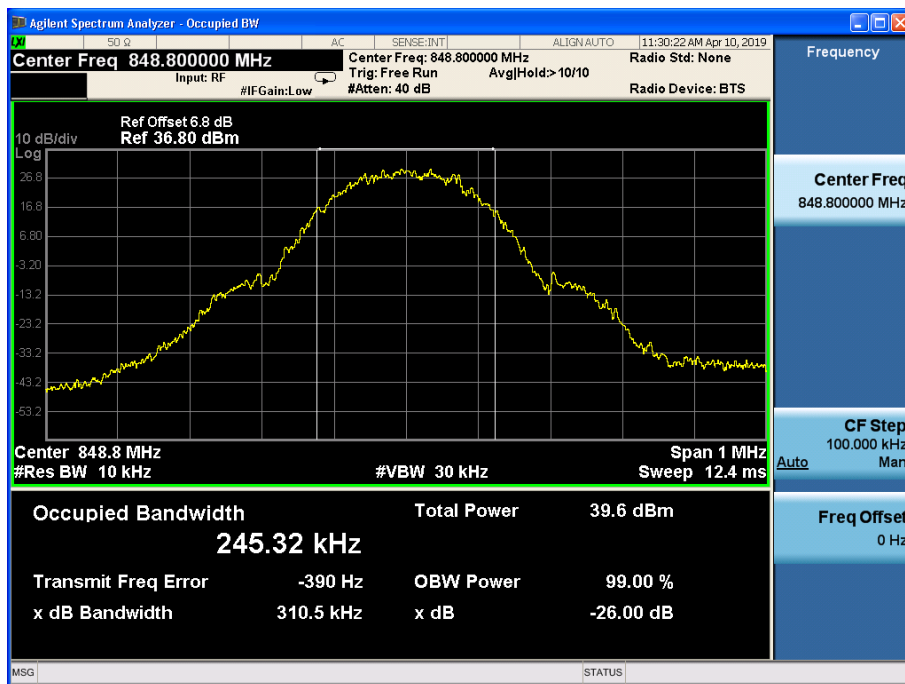
GSM/GPRS MODE:



Channel 128

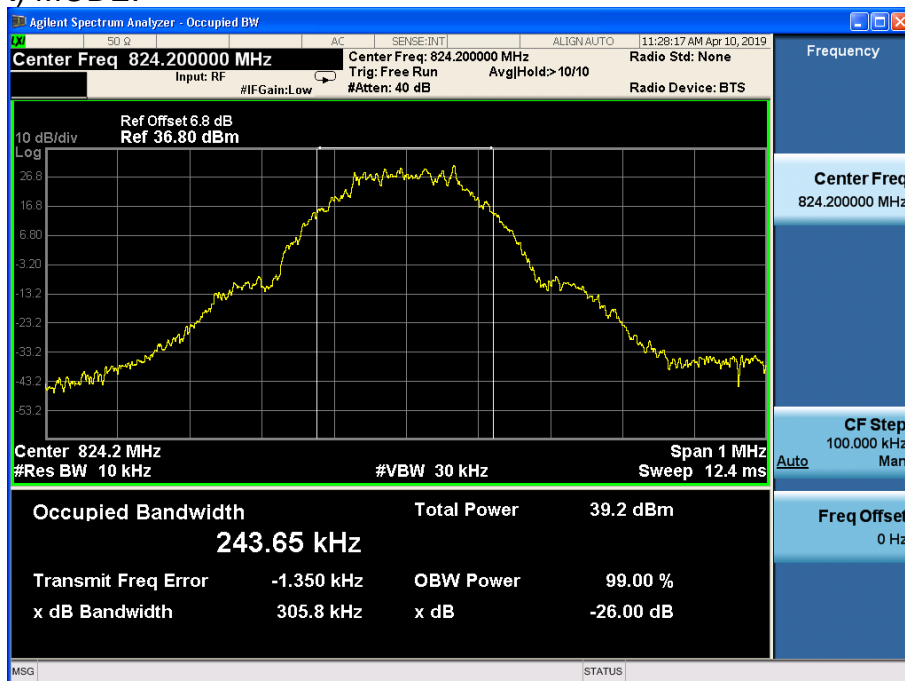


Channel 189

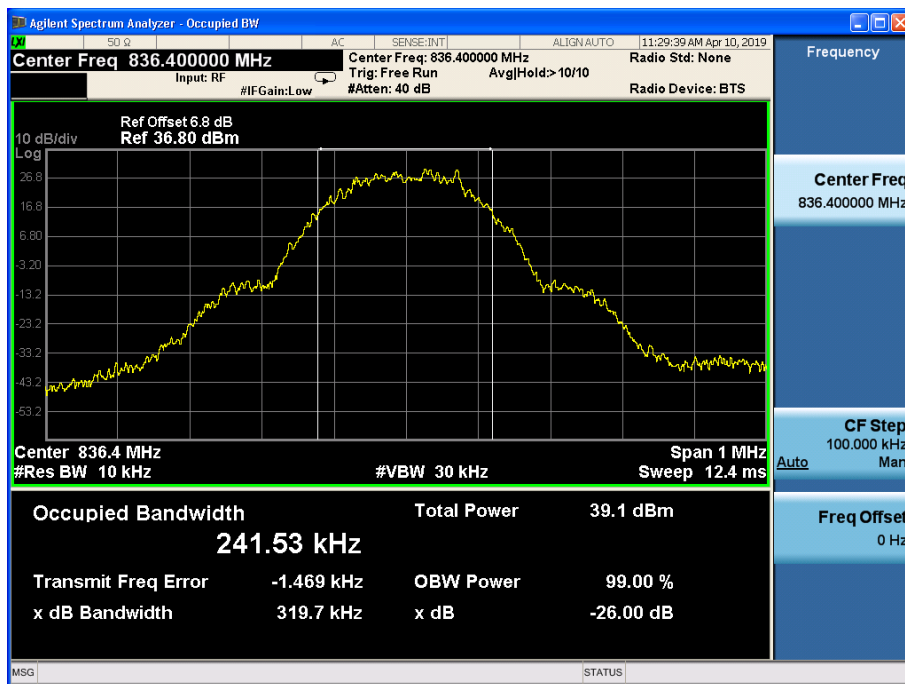


Channel 251

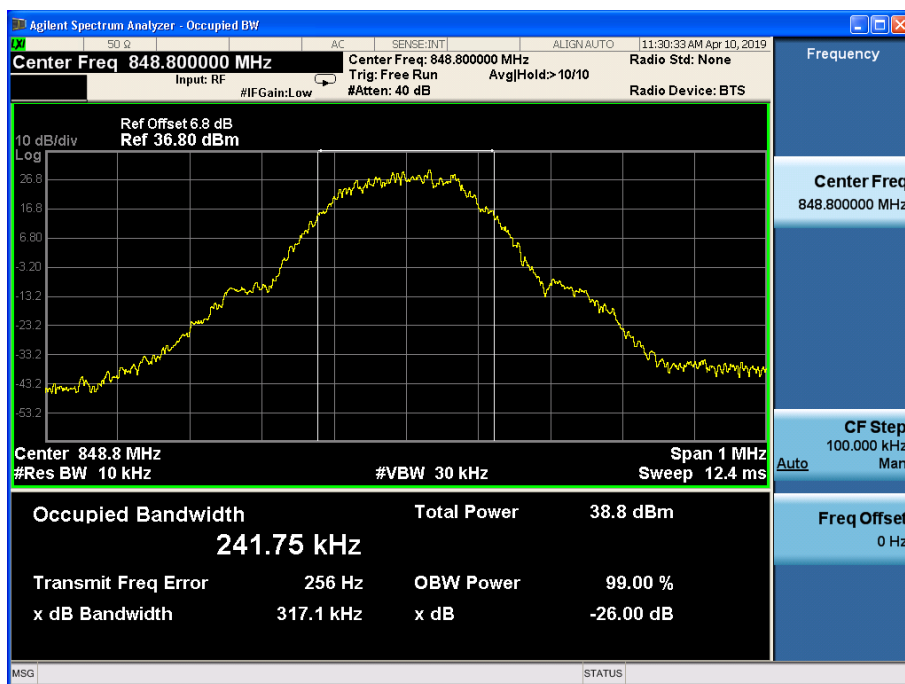
EDGE (GMSK) MODE:



Channel 128

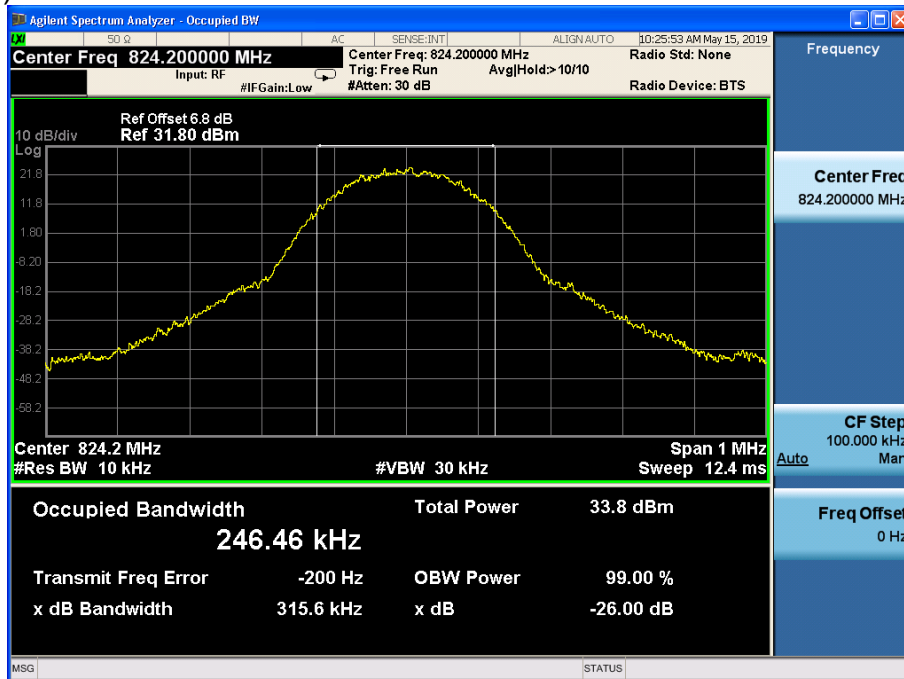


Channel 189

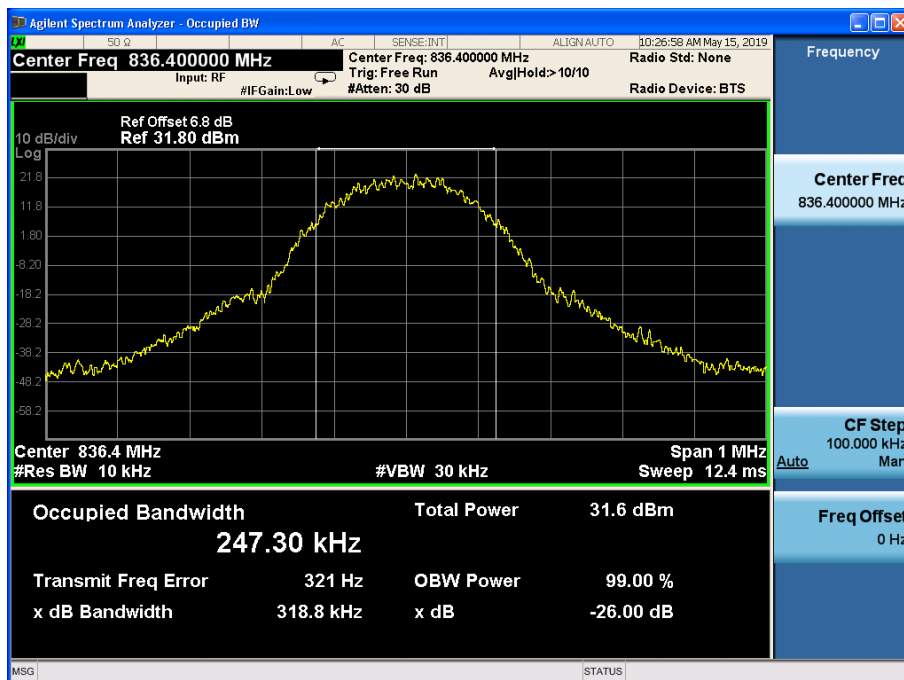


Channel 251

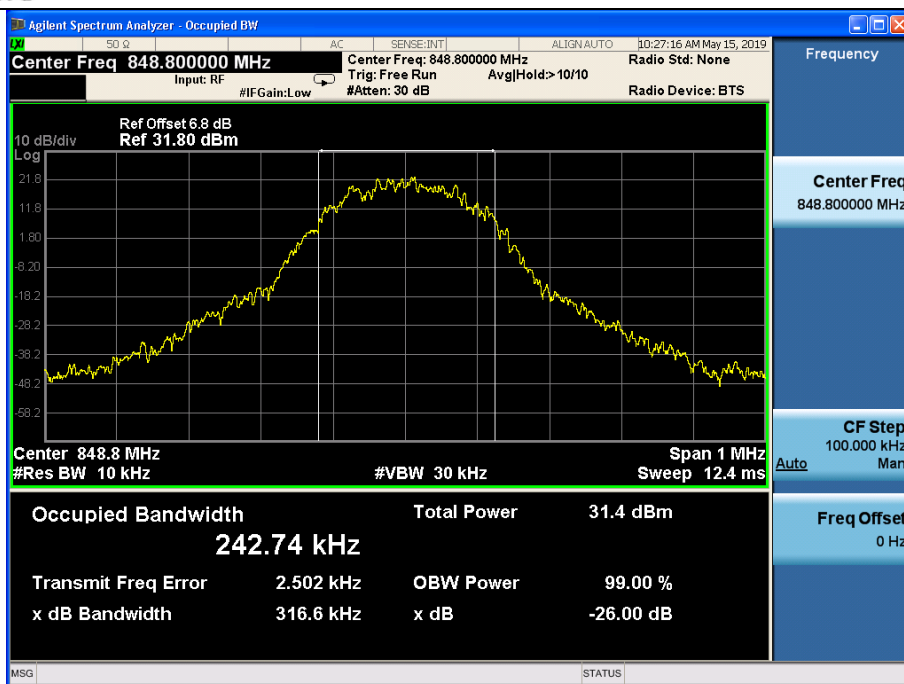
EDGE (8PSK) MODE:



Channel 128



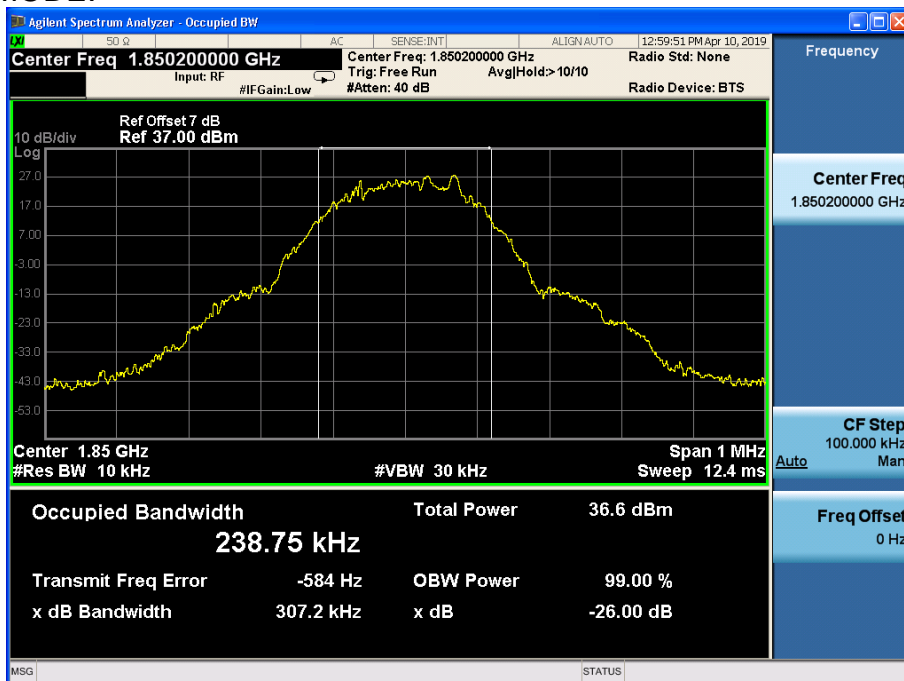
Channel 189



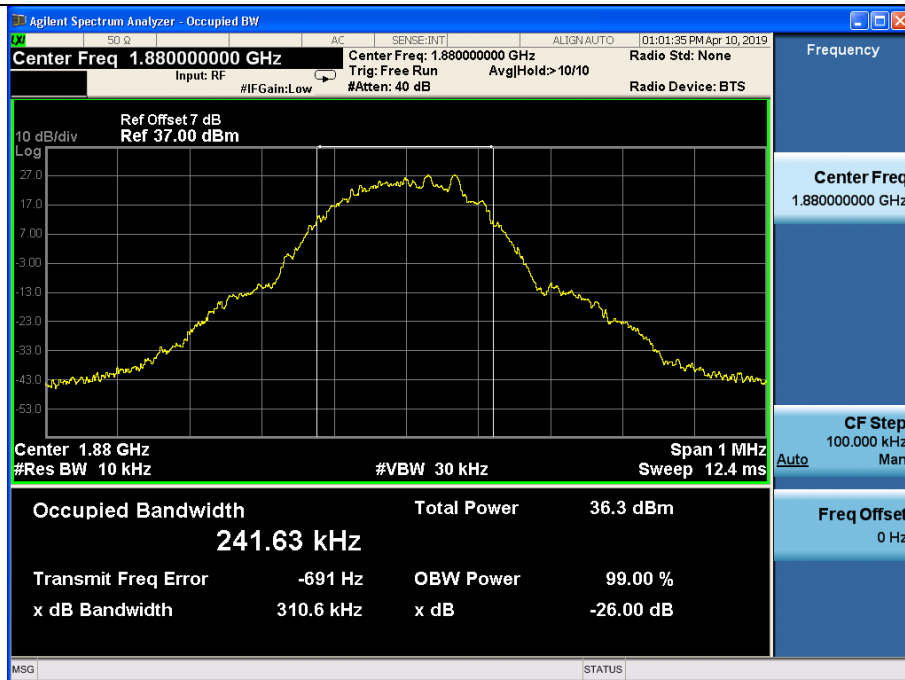
Channel 251

PCS1900

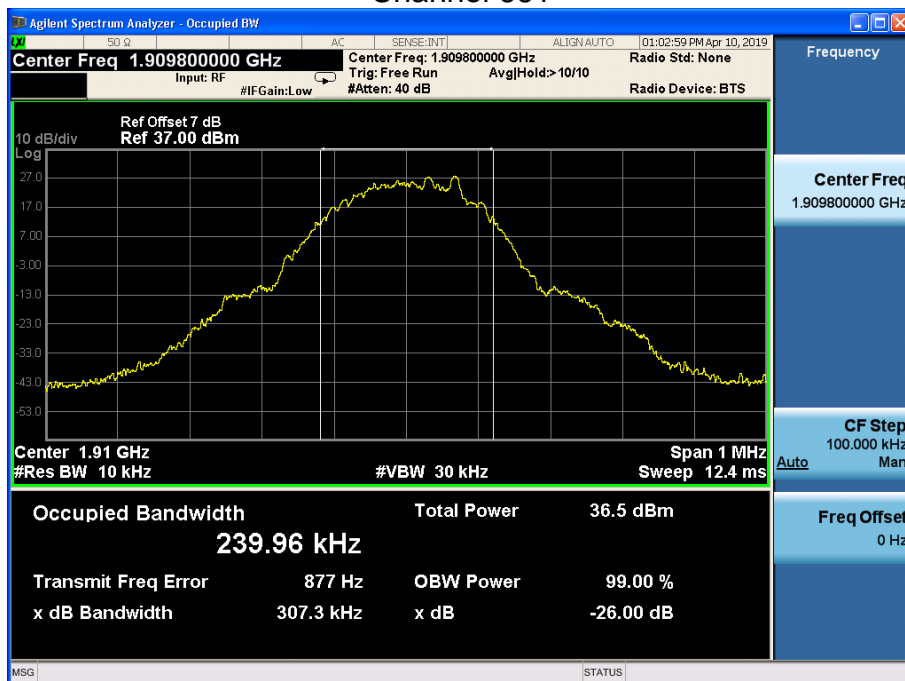
GSM/GPRS MODE:



Channel 512

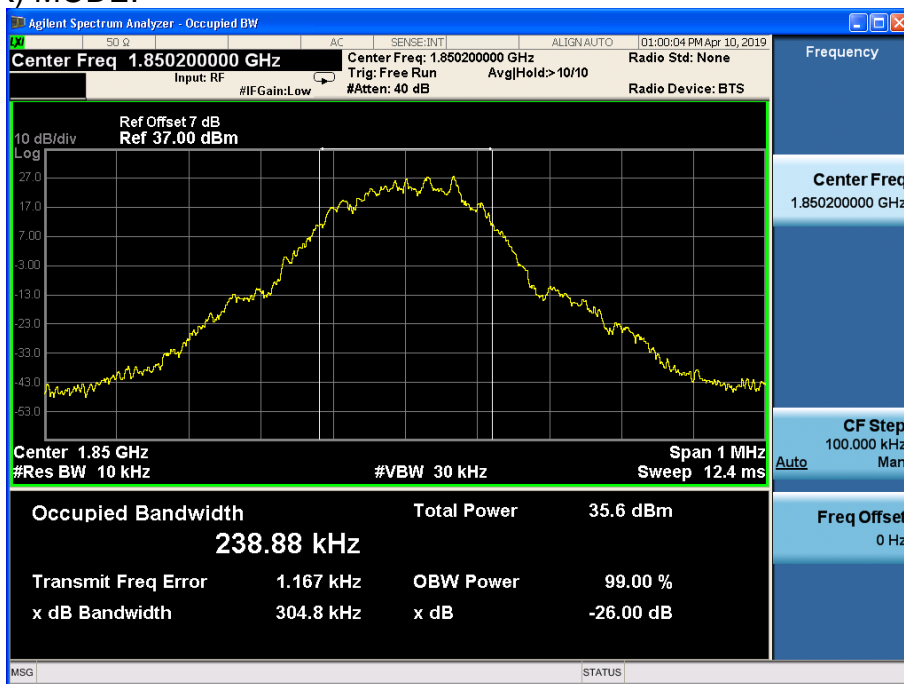


Channel 661

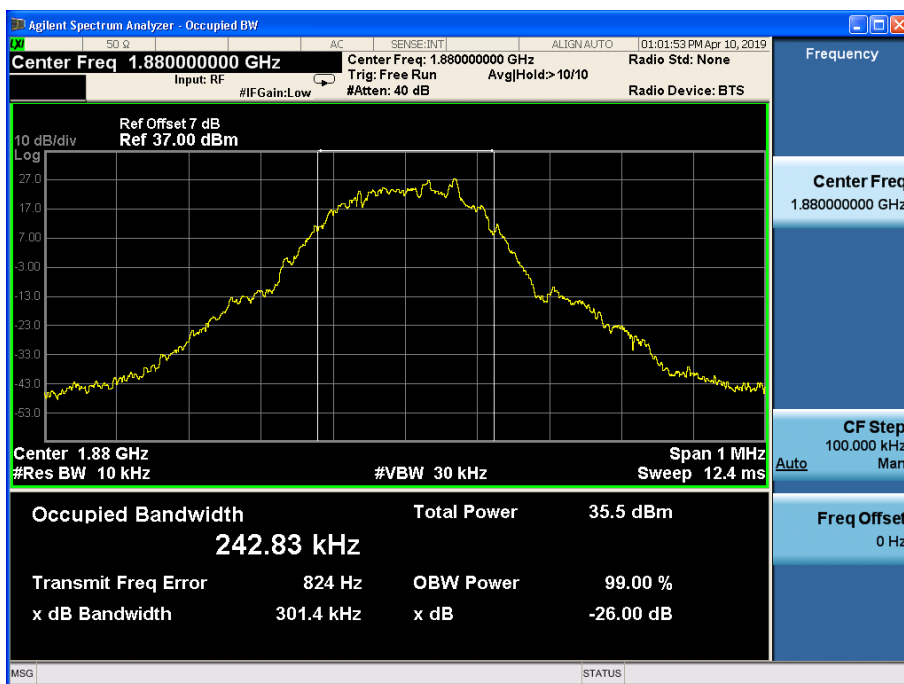


Channel 810

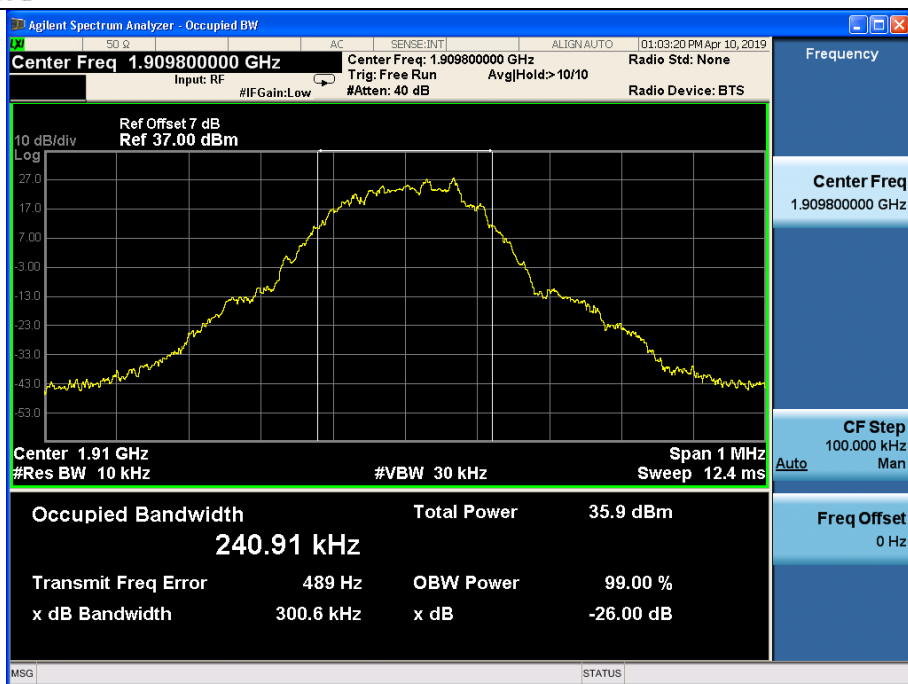
EDGE (GMSK) MODE:



Channel 512

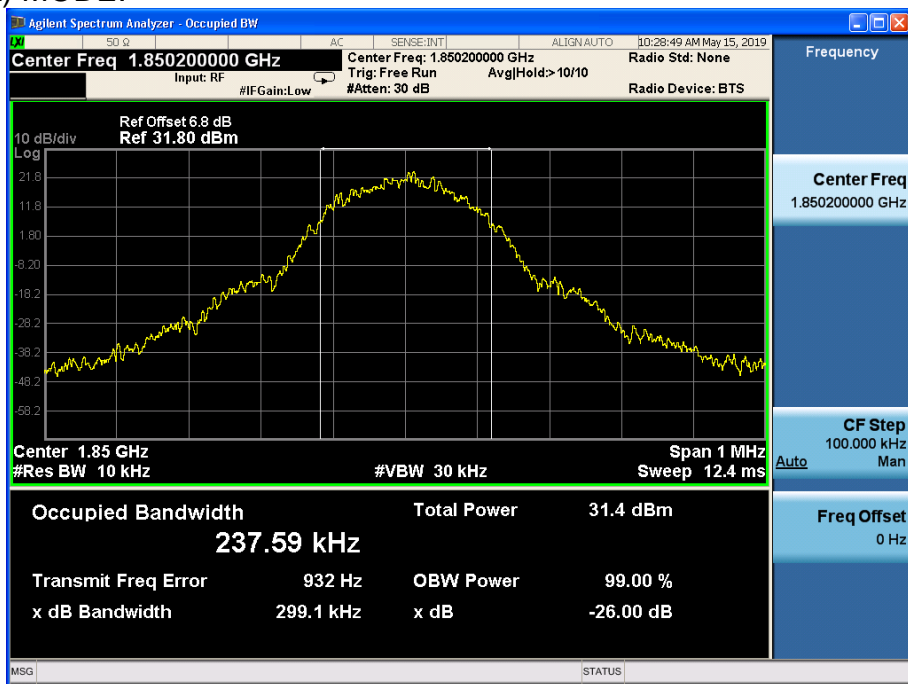


Channel 661

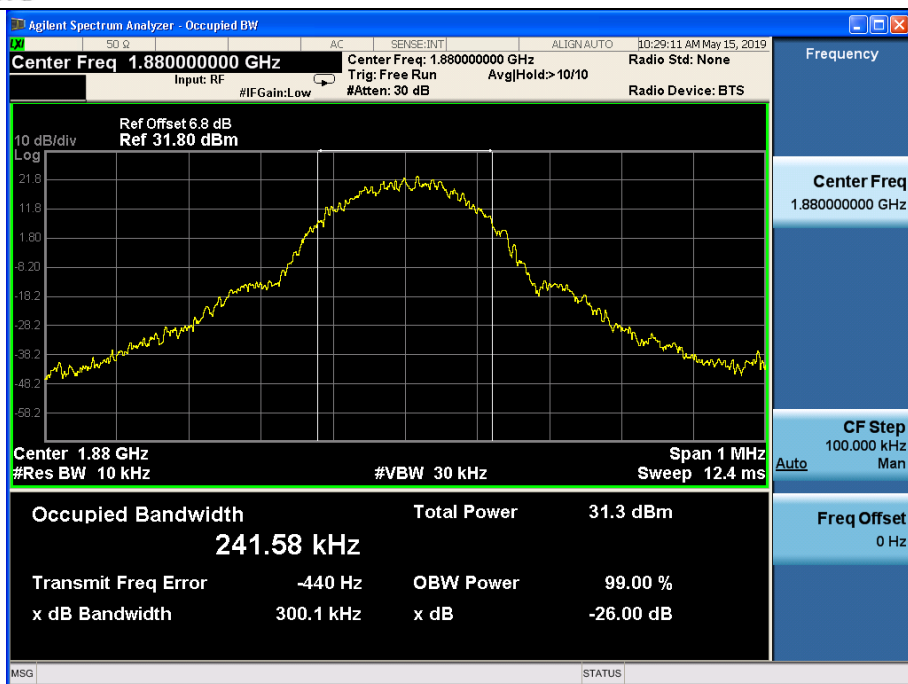


Channel 810

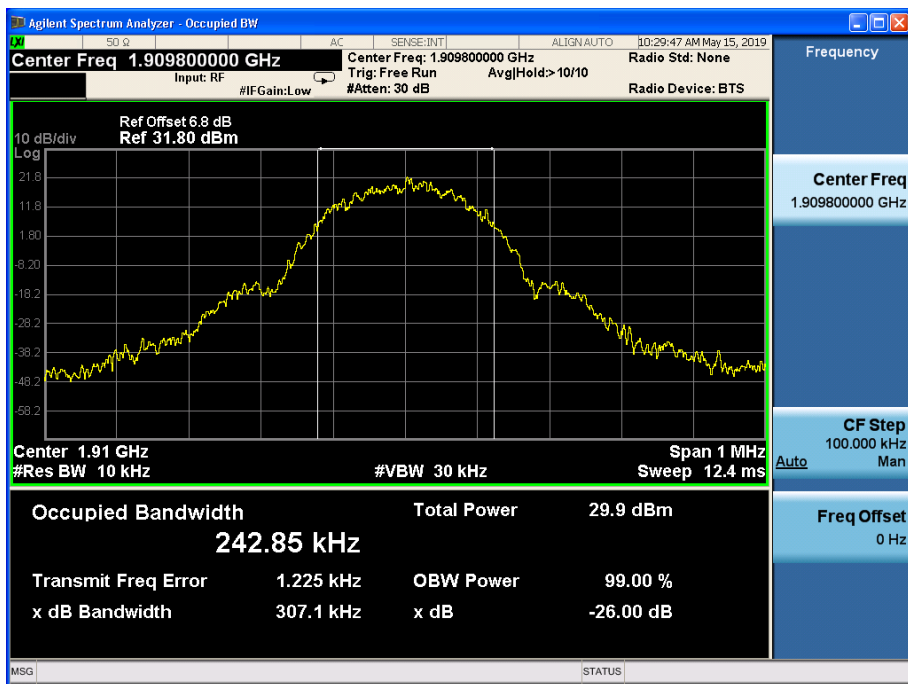
EDGE (8PSK) MODE:



Channel 512



Channel 661



Channel 810

Emission Bandwidth-FCC Part 22.917(b)/Part 24.238(b)

GSM850

GSM/GPRS MODE:

| Carrier frequency (MHz) | Channel No. | Bandwidth of -26dB transmitter power (kHz) |
|-------------------------|-------------|--------------------------------------------|
| 824.2 | 128 | 319.5 |
| 836.4 | 189 | 316.0 |
| 848.8 | 251 | 310.5 |

EDGE (GMSK) MODE:

| Carrier frequency (MHz) | Channel No. | Bandwidth of -26dB transmitter power (kHz) |
|-------------------------|-------------|--------------------------------------------|
| 824.2 | 128 | 305.8 |
| 836.4 | 189 | 319.7 |
| 848.8 | 251 | 317.1 |

EDGE (8PSK) MODE:

| Carrier frequency (MHz) | Channel No. | Bandwidth of -26dB transmitter power (kHz) |
|-------------------------|-------------|--------------------------------------------|
| 824.2 | 128 | 315.6 |
| 836.4 | 189 | 318.8 |
| 848.8 | 251 | 316.6 |

PCS1900

GSM/GPRS MODE:

| Carrier frequency (MHz) | Channel No. | Bandwidth of -26dB transmitter power (kHz) |
|-------------------------|-------------|--------------------------------------------|
| 1850.2 | 512 | 307.2 |
| 1880.0 | 661 | 310.6 |
| 1909.8 | 810 | 307.3 |

EDGE (GMSK) MODE:

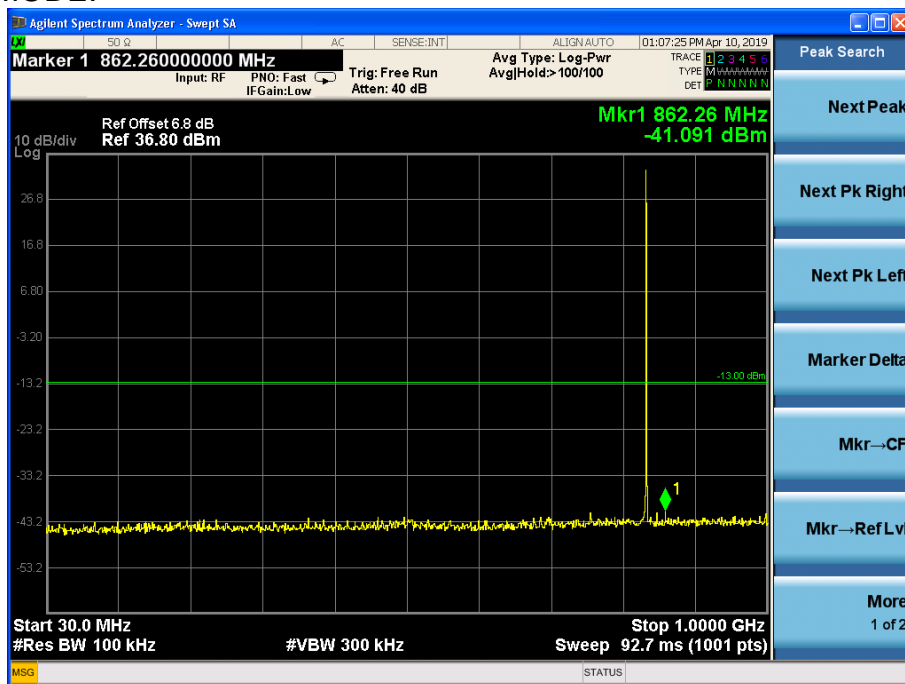
| Carrier frequency (MHz) | Channel No. | Bandwidth of -26dB transmitter power (kHz) |
|-------------------------|-------------|--------------------------------------------|
| 1850.2 | 512 | 304.8 |
| 1880.0 | 661 | 301.4 |
| 1909.8 | 810 | 300.6 |

EDGE (8PSK) MODE:

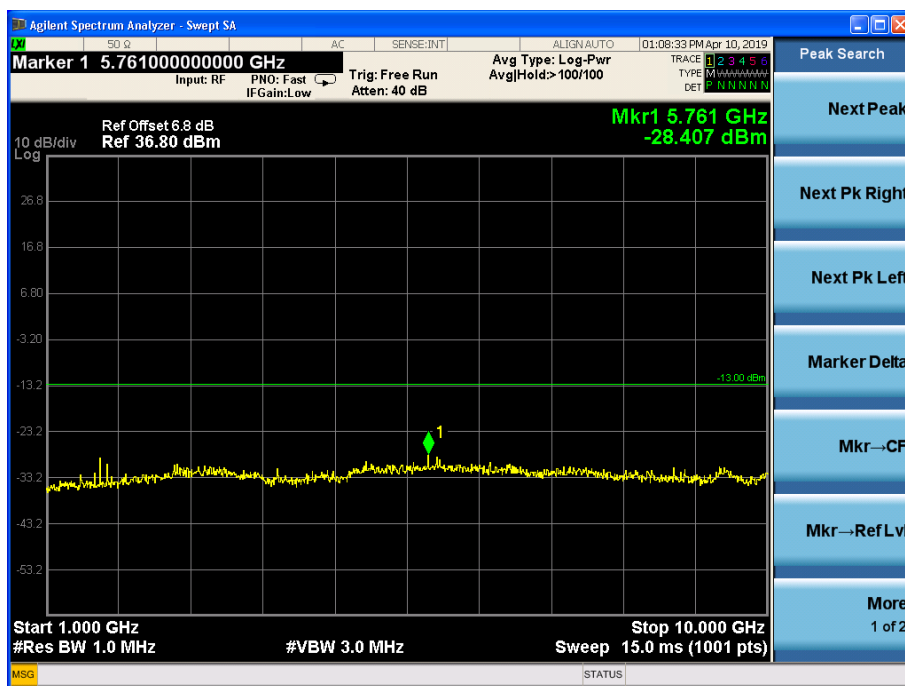
| Carrier frequency (MHz) | Channel No. | Bandwidth of -26dB transmitter power (kHz) |
|-------------------------|-------------|--------------------------------------------|
| 1850.2 | 512 | 299.1 |
| 1880.0 | 661 | 300.1 |
| 1909.8 | 810 | 307.1 |

Spurious Emissions at antenna terminal- FCC Part 2.1051/ 22.917(a) /Part 24.238(a) GSM850

GSM/GPRS MODE:



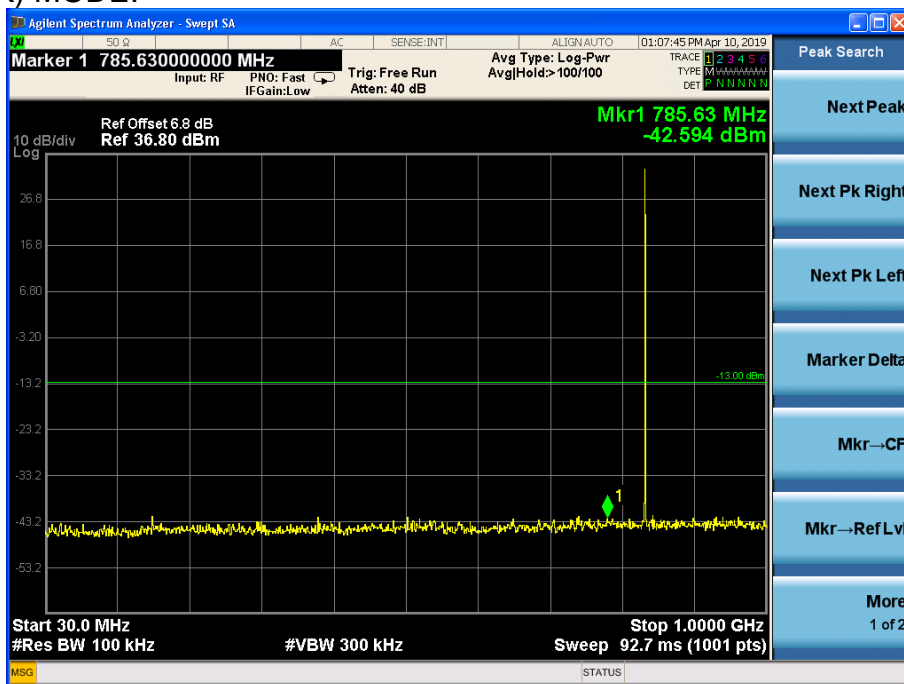
Channel 189, 30MHz~1GHz



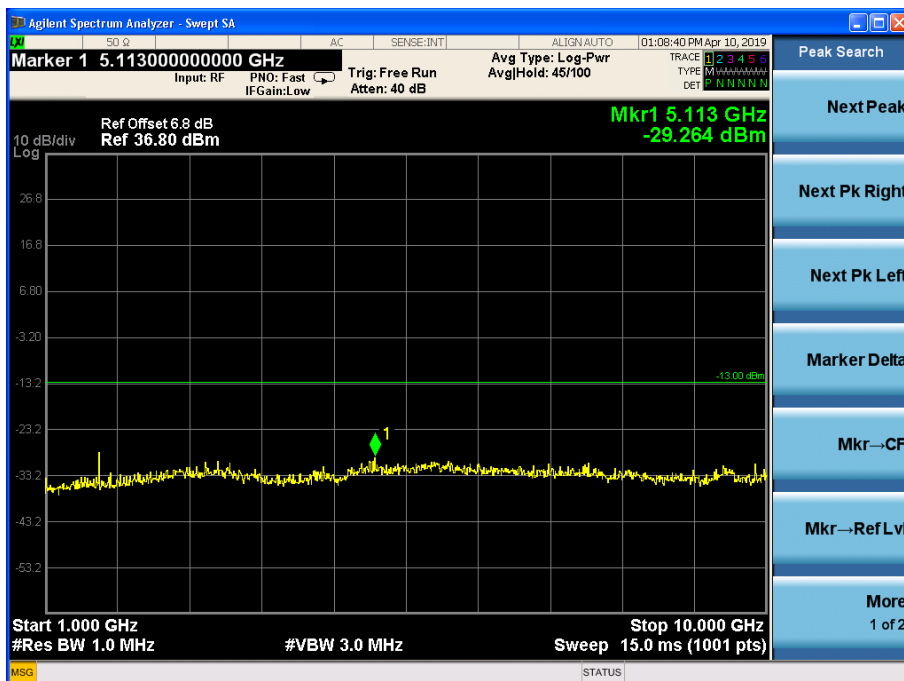
Channel 189, 1GHz~10GHz

Note: The signal beyond the limit is the signal transmitted by EUT.

EDGE (GMSK) MODE:



Channel 189, 30MHz~1GHz

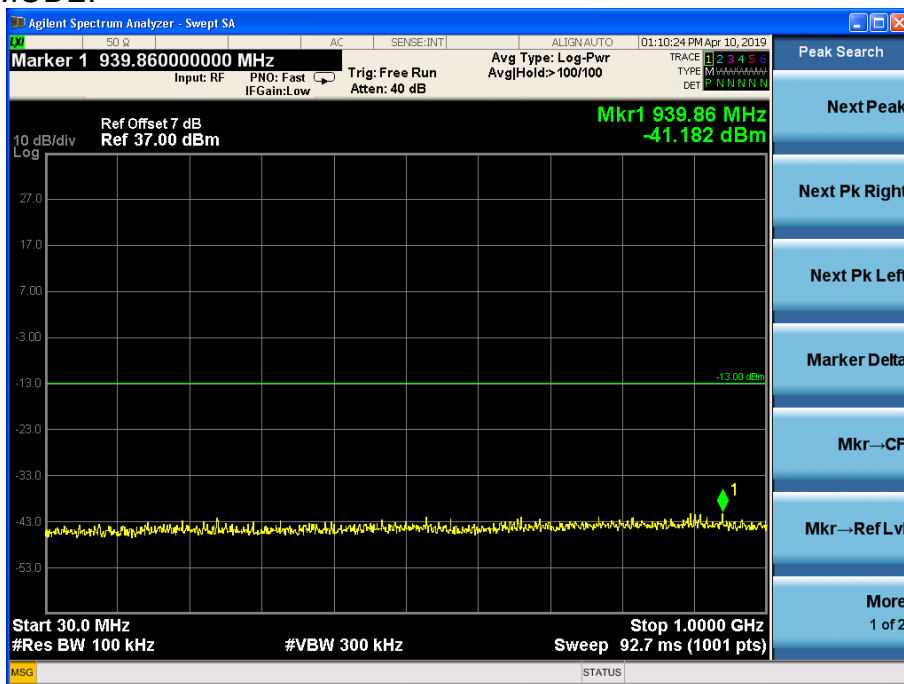


Channel 189, 1GHz~10GHz

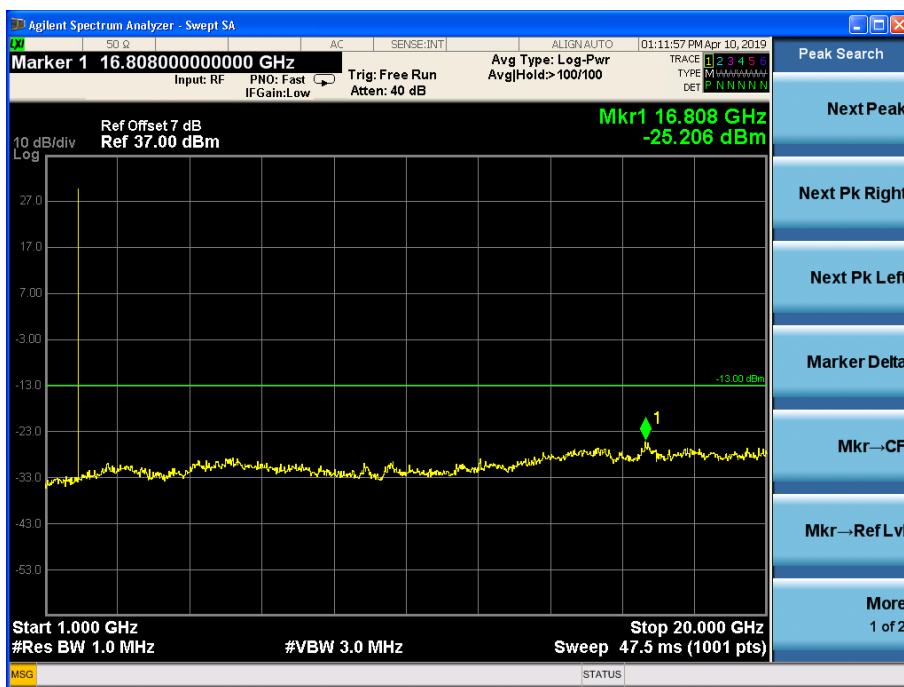
Note: The signal beyond the limit is the signal transmitted by EUT.

PCS1900

GSM/GPRS MODE:



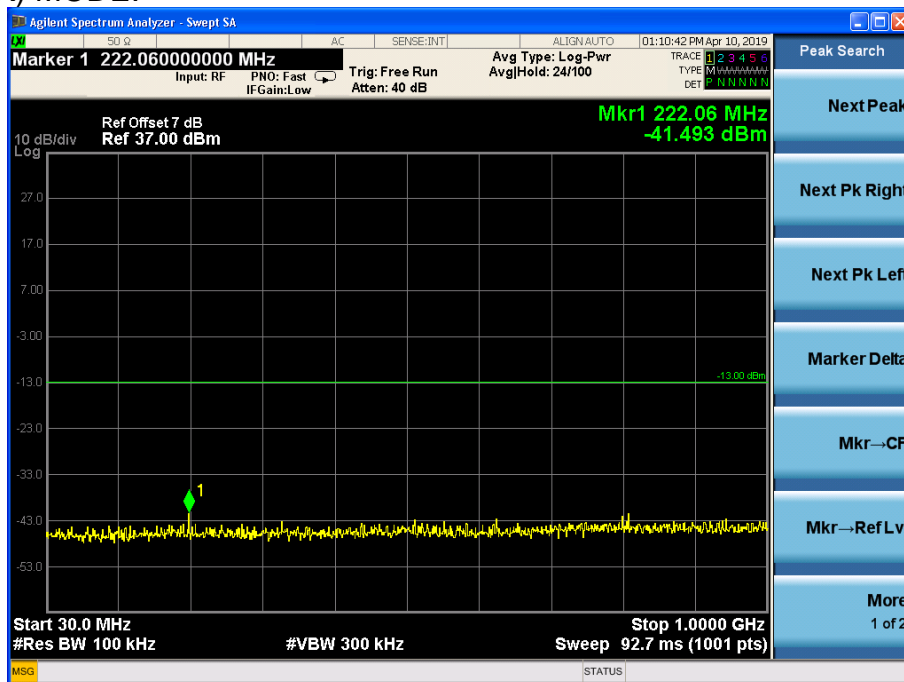
Channel 661, 30MHz~1GHz



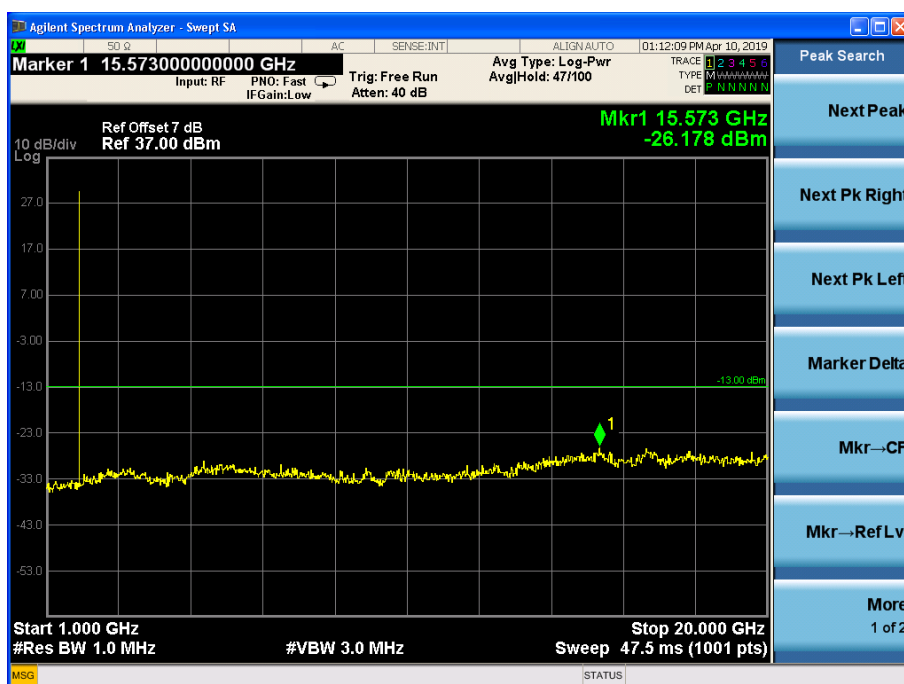
Channel 661, 1GHz~20GHz

Note: The signal beyond the limit is the signal transmitted by EUT.

EDGE (GMSK) MODE:



Channel 661, 30MHz~1850MHz



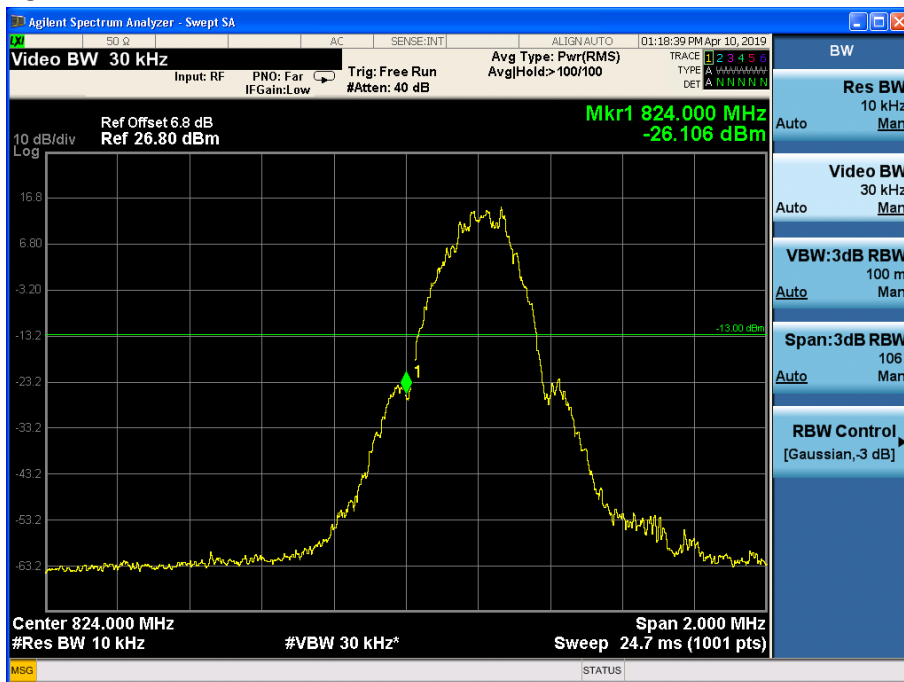
Channel 661, 1GHz~20GHz

Note: The signal beyond the limit is the signal transmitted by EUT.

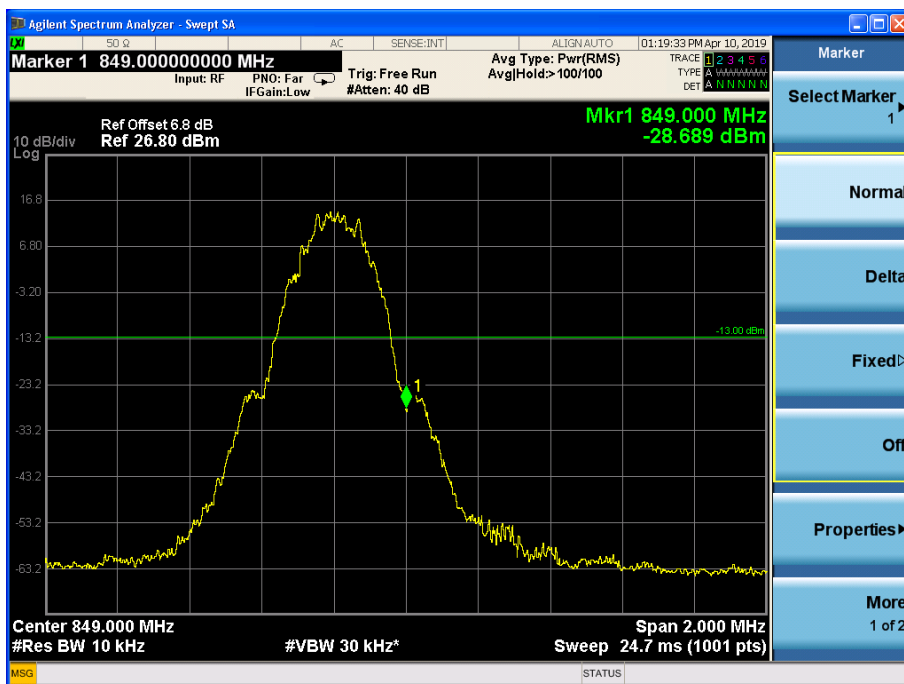
Band Edges Compliance- FCC Part 2.1051/ 22.917(a) /Part 24.238(a)

GSM850

GSM/GPRS MODE:

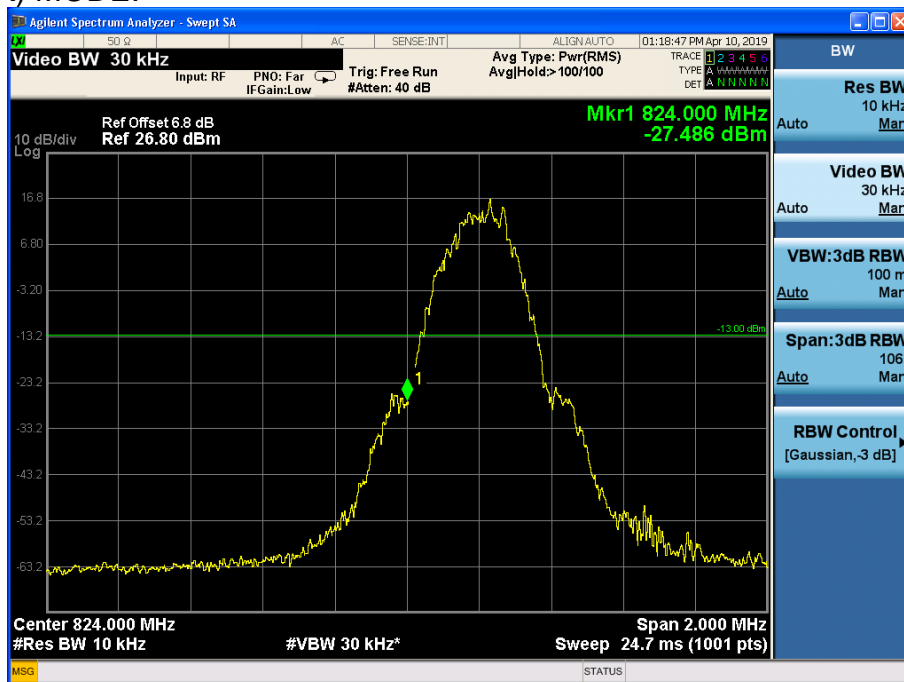


Channel 128

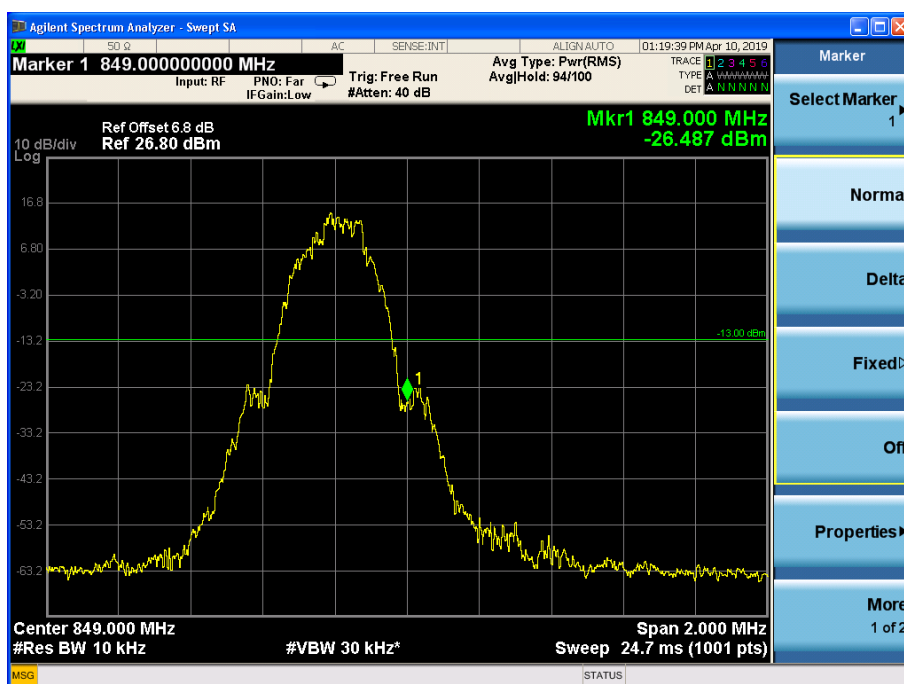


Channel 251

EDGE (GMSK) MODE:



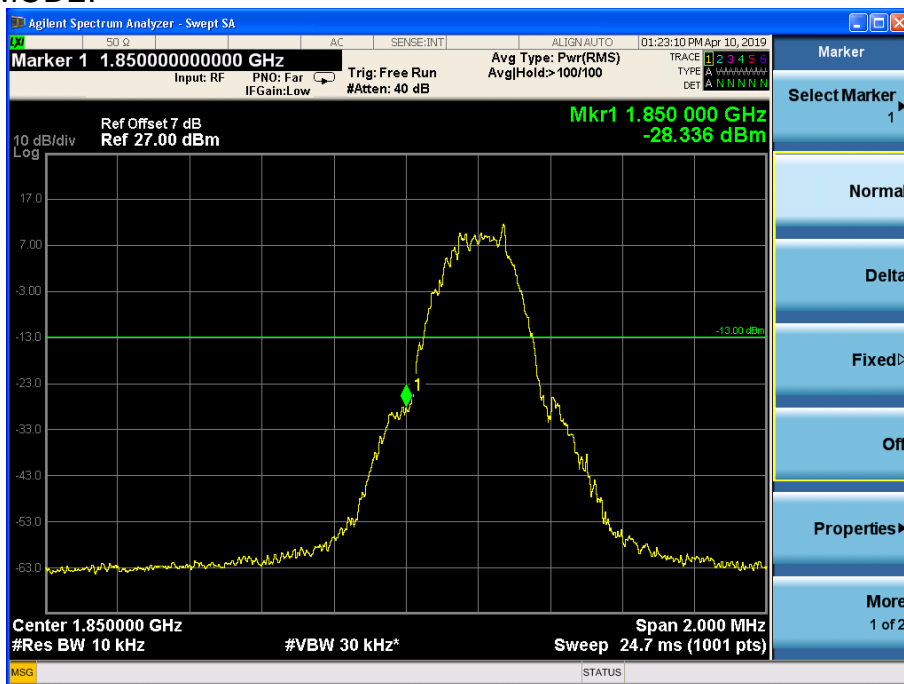
Channel 128



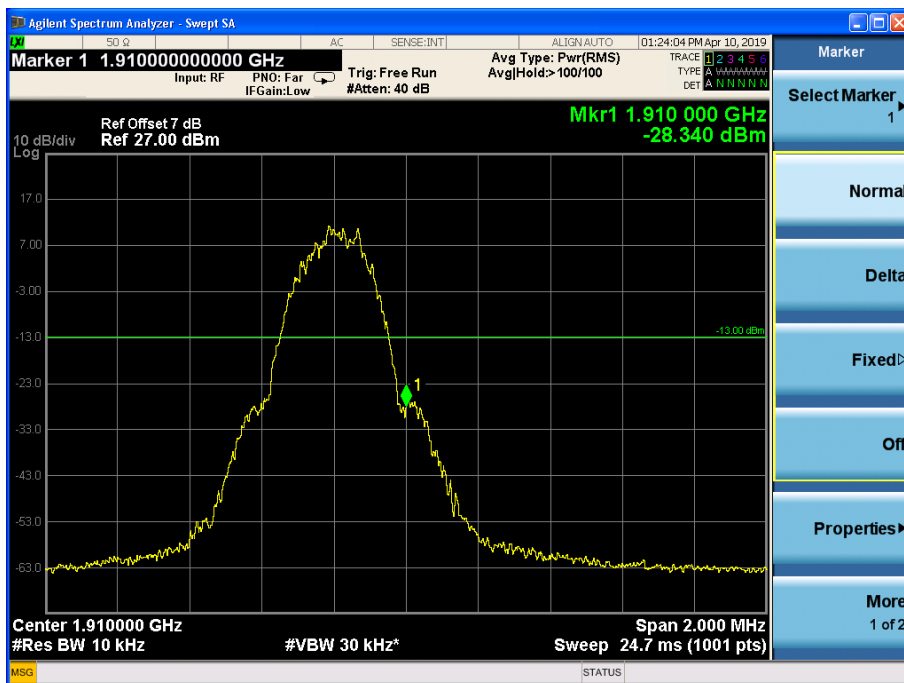
Channel 251

PCS1900

GSM/GPRS MODE:

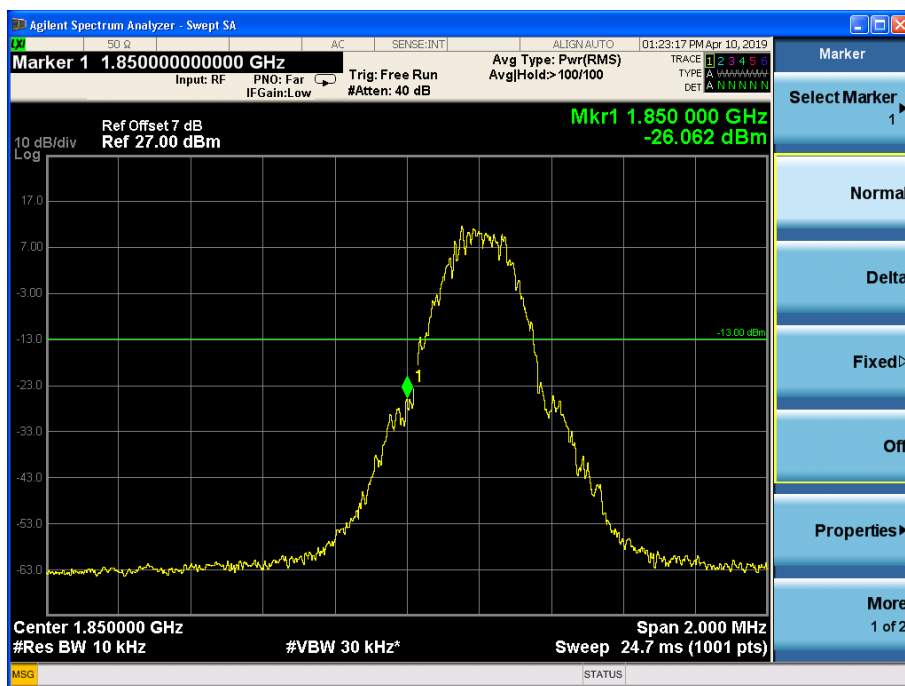


Channel 512

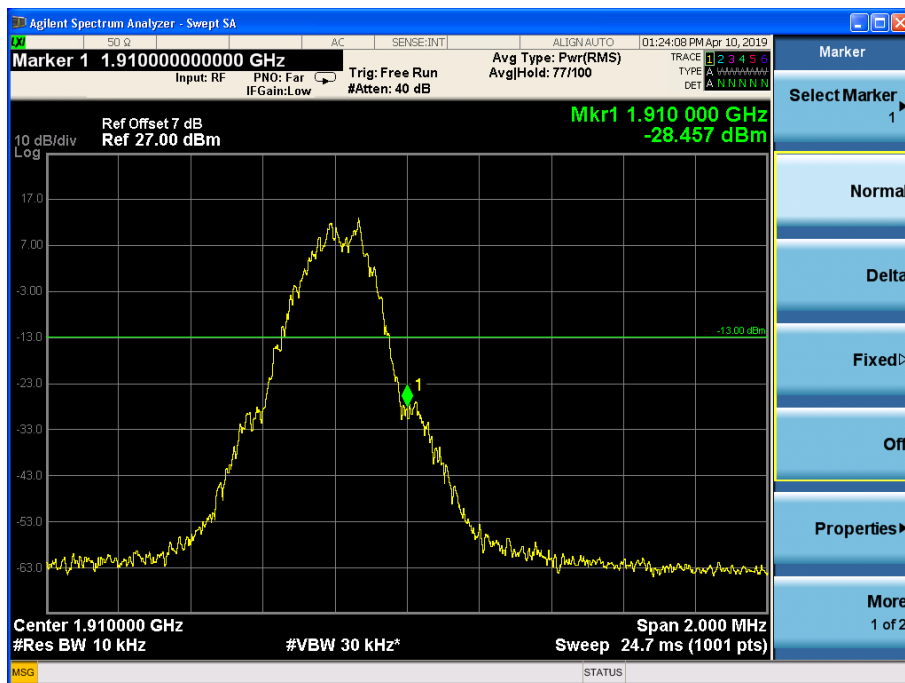


Channel 810

EDGE (GMSK) MODE:



Channel 512



Channel 810

Frequency Stability- FCC Part 2.1055/22.355 /Part 24.235

GSM850

GSM/GPRS MODE:

| Temperature(°C) | Test Result (ppm)@NV | | |
|-----------------|----------------------|-------------|-------------|
| | Channel 128 | Channel 189 | Channel 251 |
| 0 | 0.024 | -0.014 | 0.023 |
| +10 | 0.001 | 0.016 | 0.002 |
| +20 | 0.016 | 0.003 | 0.010 |
| +30 | -0.022 | -0.011 | -0.003 |
| +40 | 0.004 | 0.001 | -0.004 |
| +50 | -0.023 | -0.009 | 0.000 |
| +55 | -0.007 | 0.009 | 0.005 |
| Voltage | Test Result (ppm)@NT | | |
| | Channel 128 | Channel 189 | Channel 251 |
| LV | 0.001 | 0.007 | 0.007 |
| HV | 0.015 | 0.007 | 0.006 |

EDGE (GMSK) MODE:

| Temperature(°C) | Test Result (ppm)@NV | | |
|-----------------|----------------------|-------------|-------------|
| | Channel 128 | Channel 189 | Channel 251 |
| 0 | 0.007 | -0.002 | -0.006 |
| +10 | 0.000 | 0.008 | -0.005 |
| +20 | 0.007 | -0.003 | 0.011 |
| +30 | -0.017 | 0.000 | -0.012 |
| +40 | -0.015 | -0.002 | -0.007 |
| +50 | -0.002 | 0.012 | 0.007 |
| +55 | 0.018 | -0.008 | 0.010 |
| Voltage | Test Result (ppm)@NT | | |
| | Channel 128 | Channel 189 | Channel 251 |
| LV | 0.021 | 0.011 | -0.014 |
| HV | -0.012 | -0.003 | 0.011 |

EDGE (8PSK) MODE:

| Temperature(°C) | Test Result (ppm)@NV | | |
|-----------------|----------------------|-------------|-------------|
| | Channel 128 | Channel 189 | Channel 251 |
| 0 | 0.007 | -0.012 | -0.006 |
| +10 | 0.000 | 0.008 | -0.005 |
| +20 | 0.007 | -0.003 | 0.011 |
| +30 | -0.017 | 0.000 | -0.012 |
| +40 | -0.015 | -0.002 | -0.007 |
| +50 | -0.002 | 0.012 | 0.007 |
| +55 | 0.018 | -0.005 | 0.010 |
| Voltage | Test Result (ppm)@NT | | |
| | Channel 128 | Channel 189 | Channel 251 |
| LV | 0.021 | 0.011 | -0.014 |
| HV | -0.012 | -0.004 | 0.008 |

PCS1900

GSM/GPRS MODE:

| Temperature(°C) | Test Result (ppm)@NV | | |
|-----------------|----------------------|-------------|-------------|
| | Channel 512 | Channel 661 | Channel 810 |
| 0 | 0.002 | -0.001 | -0.012 |
| +10 | -0.005 | 0.012 | 0.015 |
| +20 | 0.008 | 0.006 | 0.004 |
| +30 | 0.003 | 0.004 | 0.012 |
| +40 | 0.014 | -0.001 | -0.010 |
| +50 | -0.006 | 0.009 | -0.002 |
| +55 | 0.015 | -0.013 | 0.012 |
| Voltage | Test Result (ppm)@NT | | |
| | Channel 512 | Channel 661 | Channel 810 |
| LV | 0.001 | -0.002 | 0.006 |
| HV | 0.008 | -0.008 | 0.011 |

EDGE (GMSK) MODE:

| Temperature(°C) | Test Result (ppm)@NV | | |
|-----------------|----------------------|-------------|-------------|
| | Channel 512 | Channel 661 | Channel 810 |
| 0 | 0.019 | -0.006 | 0.000 |
| +10 | 0.000 | -0.006 | 0.003 |
| +20 | 0.013 | -0.014 | 0.004 |
| +30 | -0.010 | -0.002 | 0.013 |
| +40 | 0.002 | 0.009 | 0.006 |
| +50 | 0.013 | 0.011 | -0.012 |
| +55 | -0.012 | 0.000 | -0.006 |
| Voltage | Test Result (ppm)@NT | | |
| | Channel 512 | Channel 661 | Channel 810 |
| LV | 0.015 | 0.001 | -0.010 |
| HV | 0.010 | -0.014 | -0.001 |

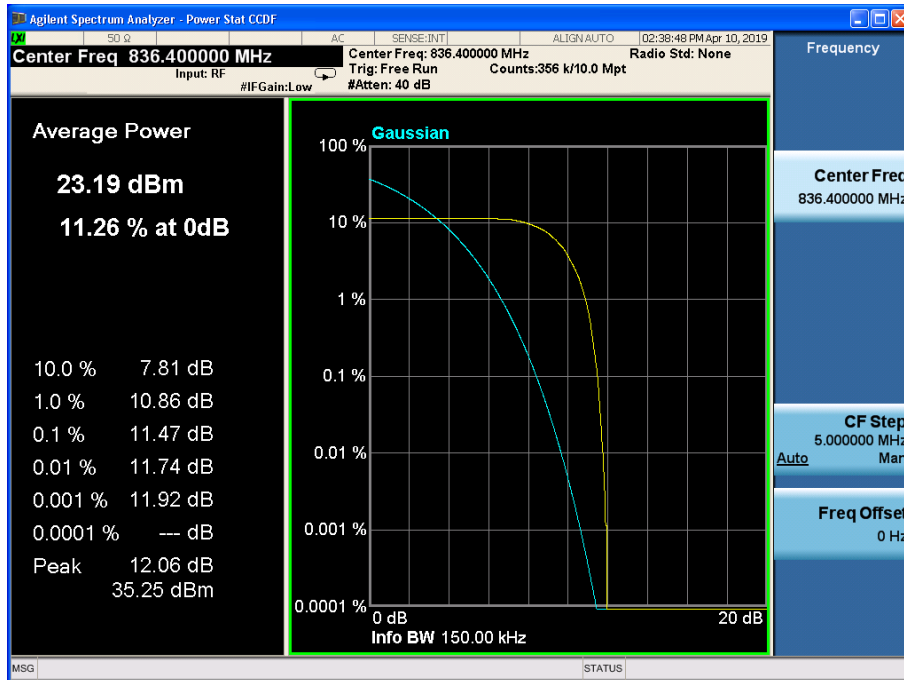
EDGE (8PSK) MODE:

| Temperature(°C) | Test Result (ppm)@NV | | |
|-----------------|----------------------|-------------|-------------|
| | Channel 512 | Channel 661 | Channel 810 |
| 0 | 0.019 | -0.006 | 0.000 |
| +10 | 0.000 | -0.006 | 0.003 |
| +20 | 0.010 | -0.014 | 0.004 |
| +30 | -0.010 | -0.002 | 0.012 |
| +40 | 0.002 | 0.009 | 0.006 |
| +50 | 0.005 | 0.004 | -0.012 |
| +55 | -0.012 | 0.000 | -0.006 |
| Voltage | Test Result (ppm)@NT | | |
| | Channel 512 | Channel 661 | Channel 810 |
| LV | 0.012 | 0.001 | -0.008 |
| HV | 0.010 | -0.011 | -0.001 |

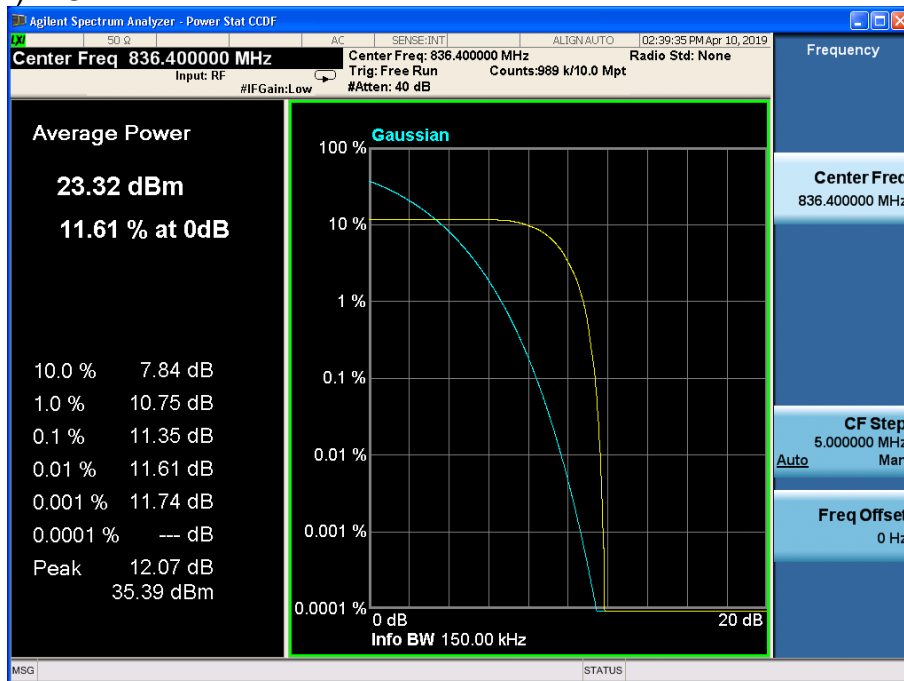
Peak-Average Ratio -FCC Part 24.232(d)

GSM850

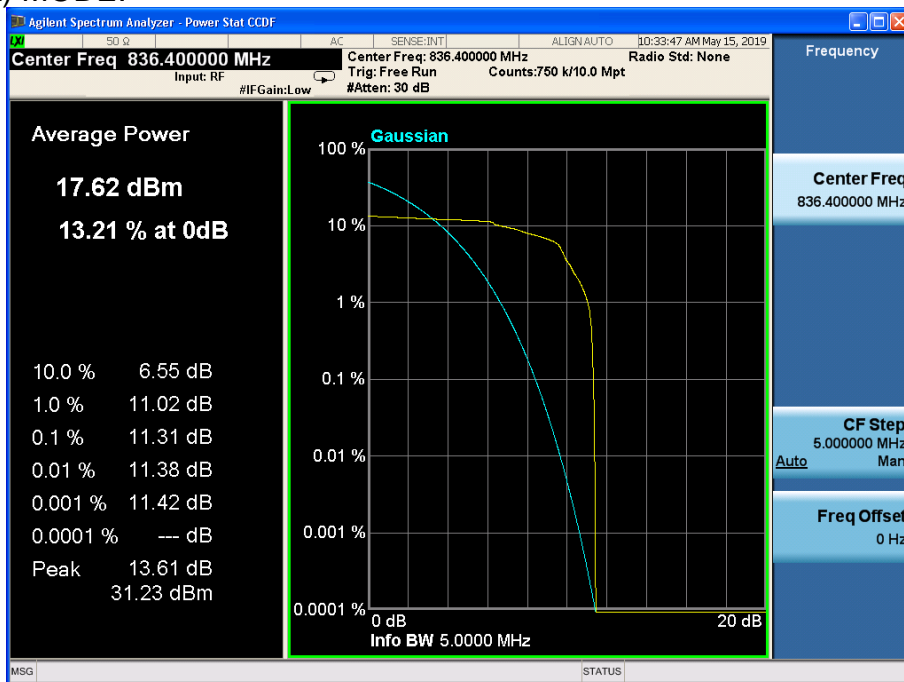
GSM/GPRS MODE:



EDGE (GMSK) MODE:

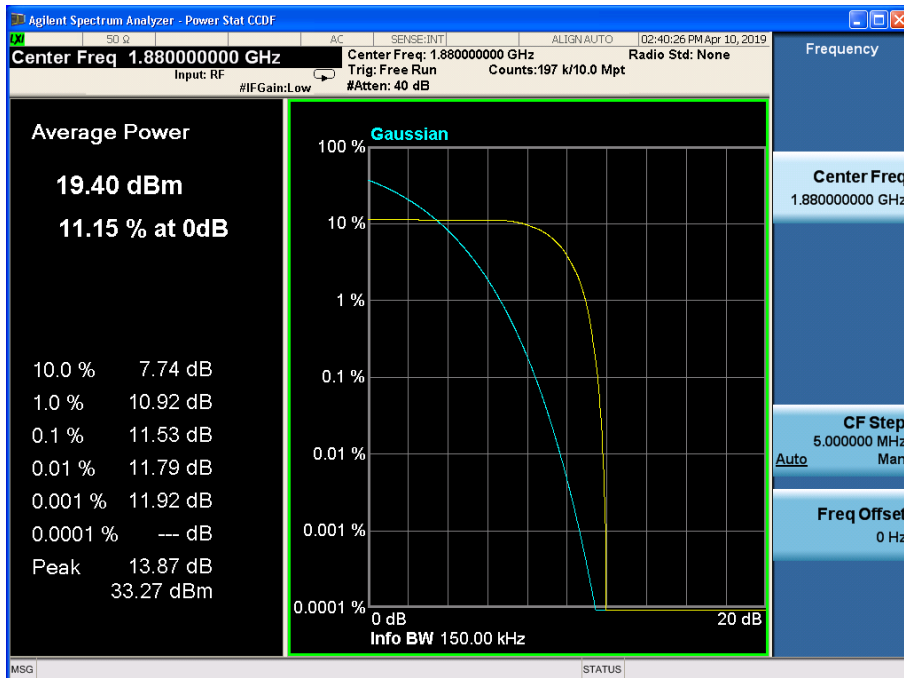


EDGE (8PSK) MODE:

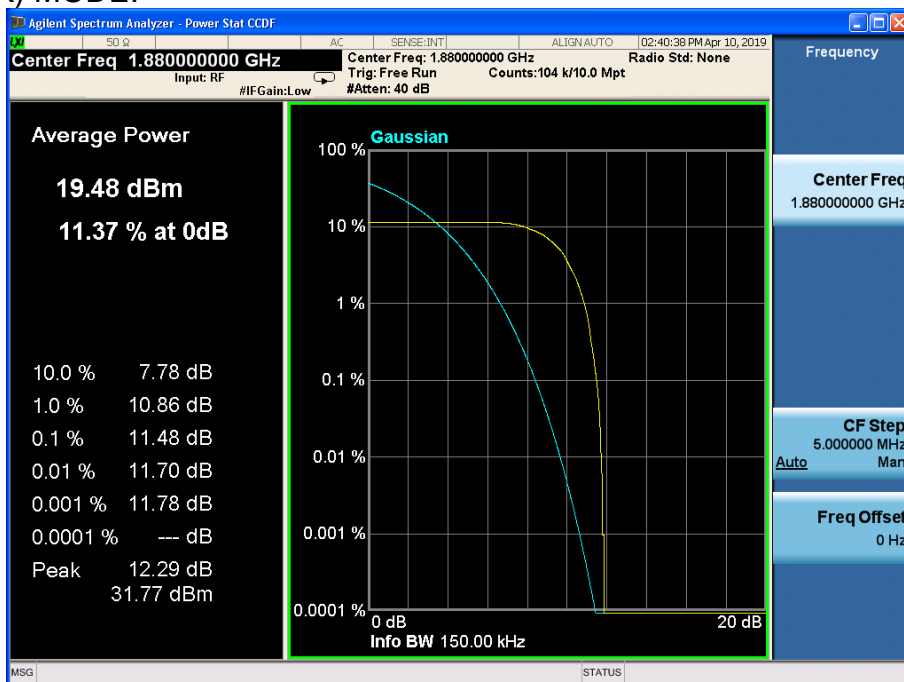


PCS1900

GSM/GPRS MODE:



EDGE (GMSK) MODE:



EDGE (8PSK) MODE:

