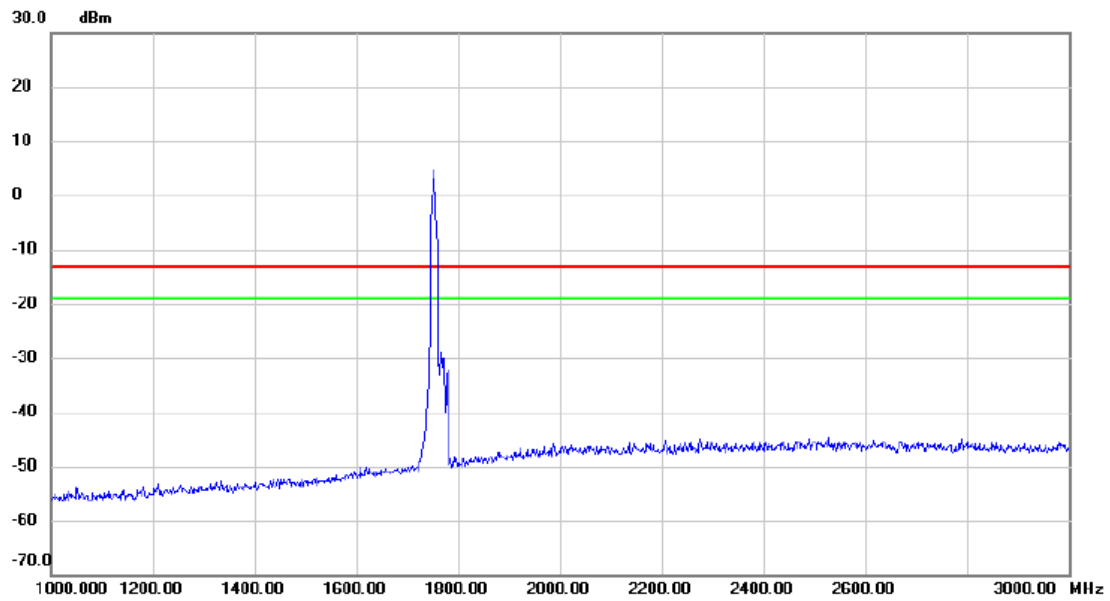


|            |                        |
|------------|------------------------|
| Test Mode: | WCDMA Band 4_TX CH1513 |
|------------|------------------------|

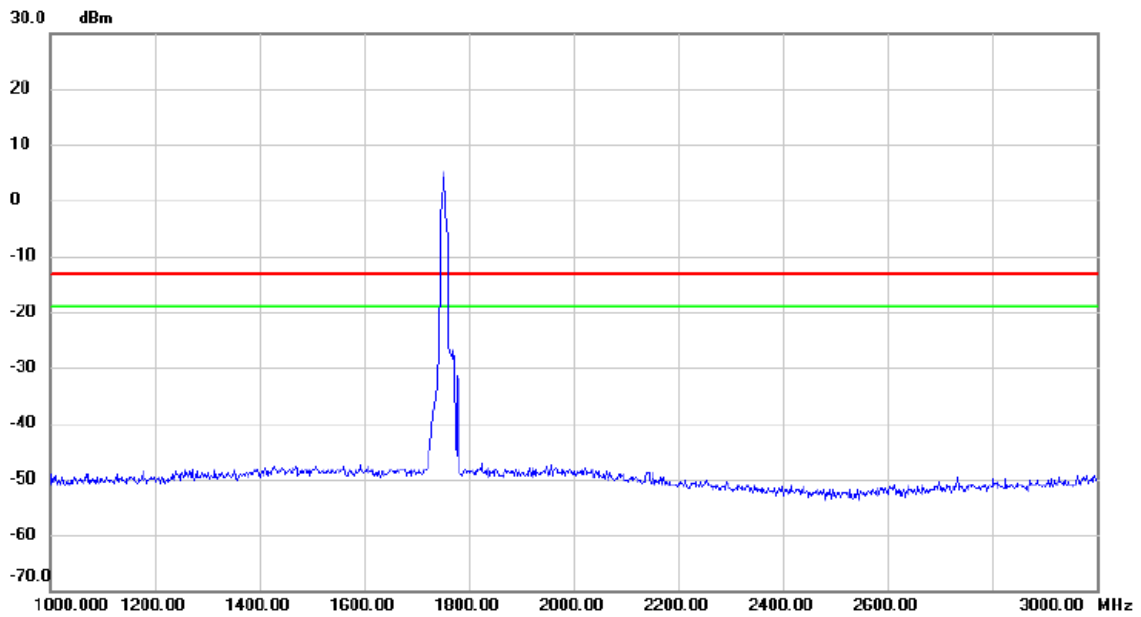
### Vertical



| No. | Mk. | Freq. | Reading | Correct | Measure- | Limit | Margin |          |         |
|-----|-----|-------|---------|---------|----------|-------|--------|----------|---------|
|     |     | MHz   | Level   | Factor  | ment     |       |        | Detector | Comment |
|     |     |       | dBm     | dB      | dBm      | dBm   | dB     |          |         |

Test Mode: WCDMA Band 4\_TX CH1513

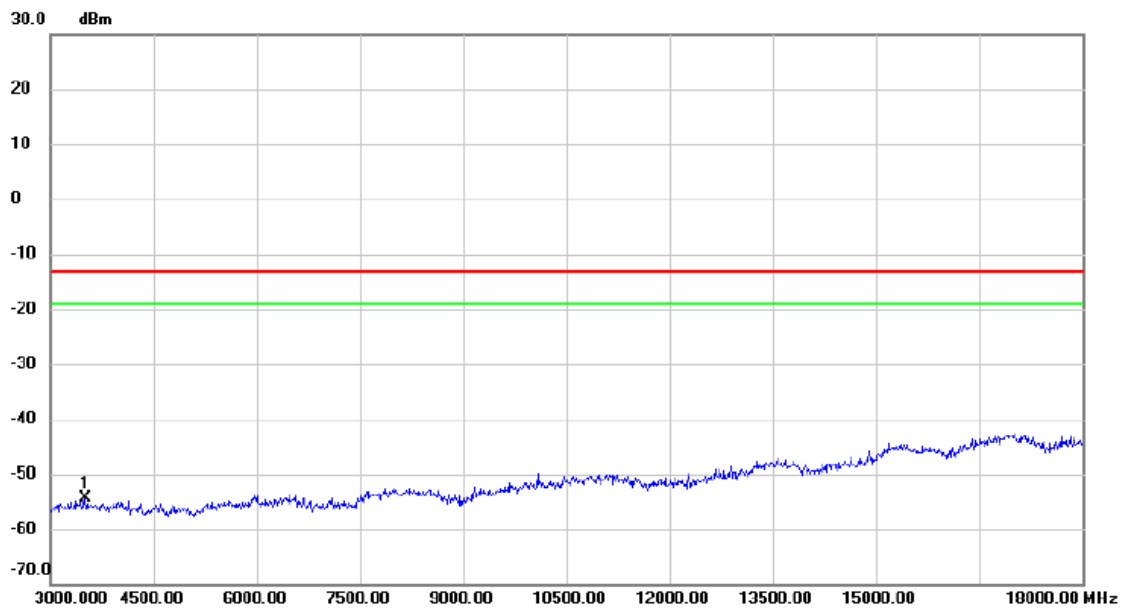
**Horizontal**



| No. | Mk. | Freq. | Reading<br>Level | Correct<br>Factor | Measure-<br>ment | Limit | Margin |          |         |
|-----|-----|-------|------------------|-------------------|------------------|-------|--------|----------|---------|
|     |     | MHz   | dBm              | dB                | dBm              | dBm   | dB     | Detector | Comment |

Test Mode: WCDMA Band 4\_TX CH1513

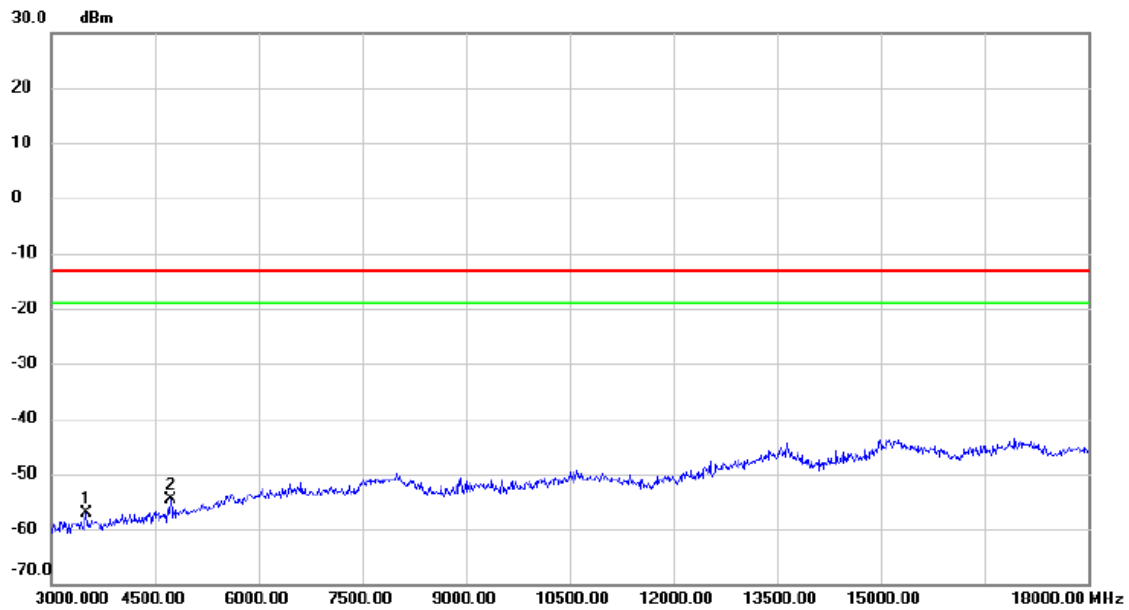
**Vertical**



| No. | Mk. | Freq.<br>MHz | Reading<br>Level<br>dBm | Correct<br>Factor<br>dB | Measure-<br>ment<br>dBm | Limit<br>dBm | Margin<br>dB | Detector | Comment |
|-----|-----|--------------|-------------------------|-------------------------|-------------------------|--------------|--------------|----------|---------|
| 1   | *   | 3510.000     | -68.55                  | 14.27                   | -54.28                  | -13.00       | -41.28       | peak     |         |

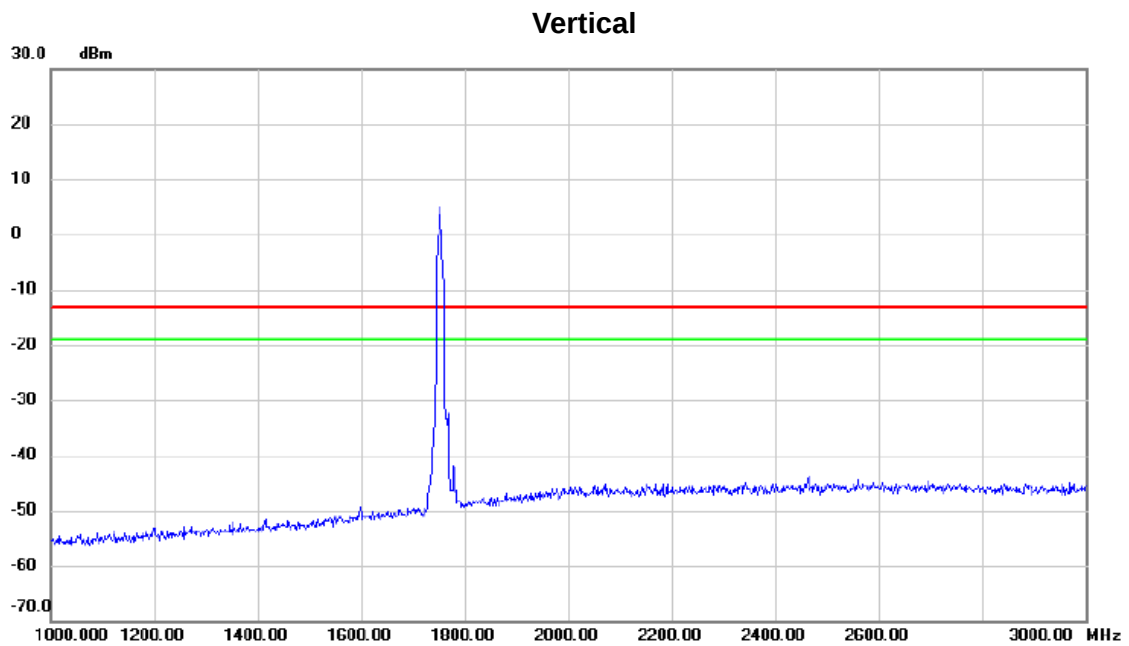
Test Mode: WCDMA Band 4\_TX CH1513

### Horizontal



| No. | Mk. | Freq.<br>MHz | Reading<br>Level<br>dBm | Correct<br>Factor<br>dB | Measure-<br>ment<br>dBm | Limit<br>dBm | Margin<br>dB | Detector | Comment |
|-----|-----|--------------|-------------------------|-------------------------|-------------------------|--------------|--------------|----------|---------|
| 1   |     | 3510.000     | -67.84                  | 10.66                   | -57.18                  | -13.00       | -44.18       | peak     |         |
| 2   | *   | 4725.000     | -68.51                  | 13.80                   | -54.71                  | -13.00       | -41.71       | peak     |         |

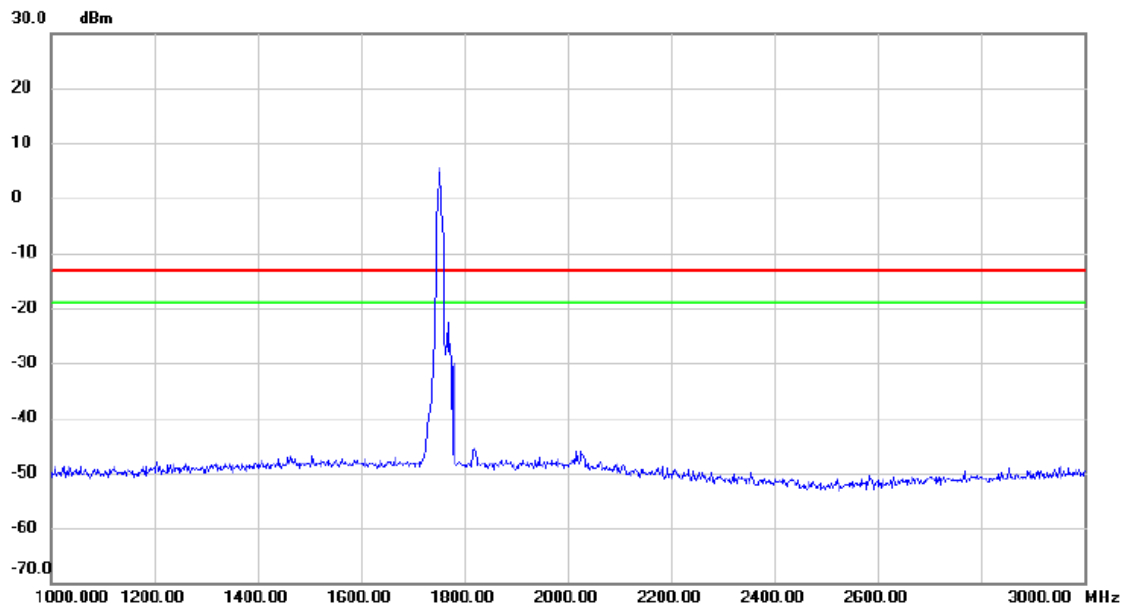
|            |                               |
|------------|-------------------------------|
| Test Mode: | WCDMA Band 4_TX CH1513_ HSDPA |
|------------|-------------------------------|



| No. | Mk. | Freq. | Reading Level | Correct Factor | Measurement | Limit | Margin |          |         |
|-----|-----|-------|---------------|----------------|-------------|-------|--------|----------|---------|
|     |     | MHz   | dBm           | dB             | dBm         | dBm   | dB     | Detector | Comment |

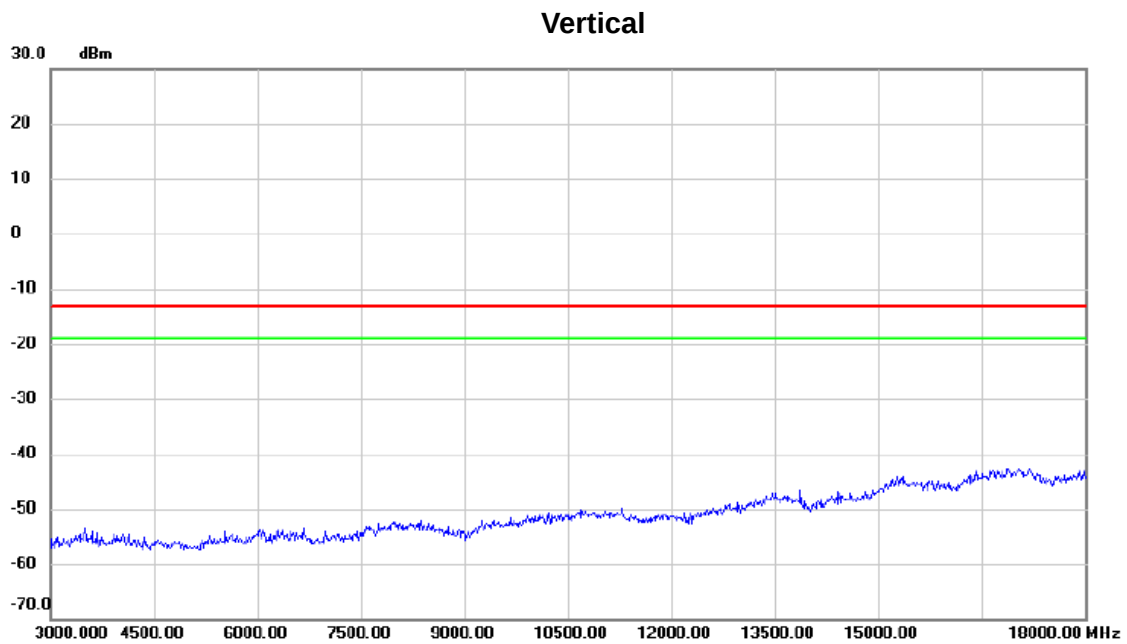
Test Mode: WCDMA Band 4\_TX CH1513\_ HSDPA

### Horizontal



| No. | Mk. | Freq. | Reading Level | Correct Factor | Measurement | Limit | Margin | Detector | Comment |
|-----|-----|-------|---------------|----------------|-------------|-------|--------|----------|---------|
|     |     | MHz   | dBm           | dB             | dBm         | dBm   | dB     |          |         |

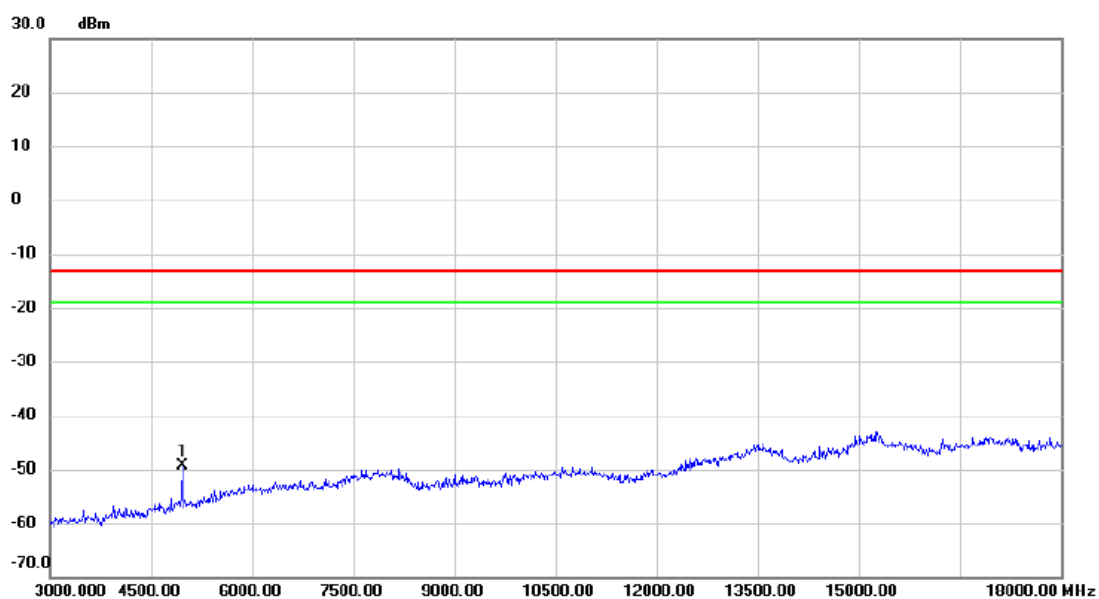
|            |                               |
|------------|-------------------------------|
| Test Mode: | WCDMA Band 4_TX CH1513_ HSDPA |
|------------|-------------------------------|



| No. | Mk. | Freq. | Reading Level | Correct Factor | Measurement | Limit | Margin |          |         |
|-----|-----|-------|---------------|----------------|-------------|-------|--------|----------|---------|
|     |     | MHz   | dBm           | dB             | dBm         | dBm   | dB     | Detector | Comment |

Test Mode: WCDMA Band 4\_TX CH1513\_ HSDPA

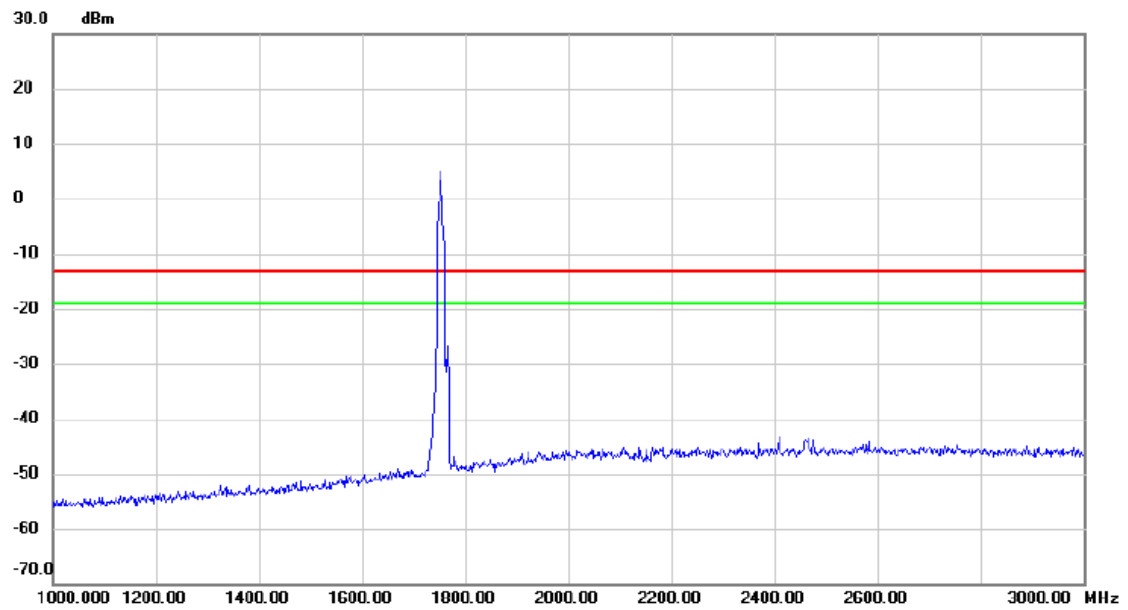
### Horizontal



| No. | Mk. | Freq.<br>MHz | Reading<br>Level<br>dBm | Correct<br>Factor<br>dB | Measure-<br>ment<br>dBm | Limit<br>dBm | Margin<br>dB | Detector | Comment |
|-----|-----|--------------|-------------------------|-------------------------|-------------------------|--------------|--------------|----------|---------|
| 1   | *   | 4965.000     | -63.91                  | 14.55                   | -49.36                  | -13.00       | -36.36       | peak     |         |

Test Mode: WCDMA Band 4\_TX CH1513\_ HSUPA

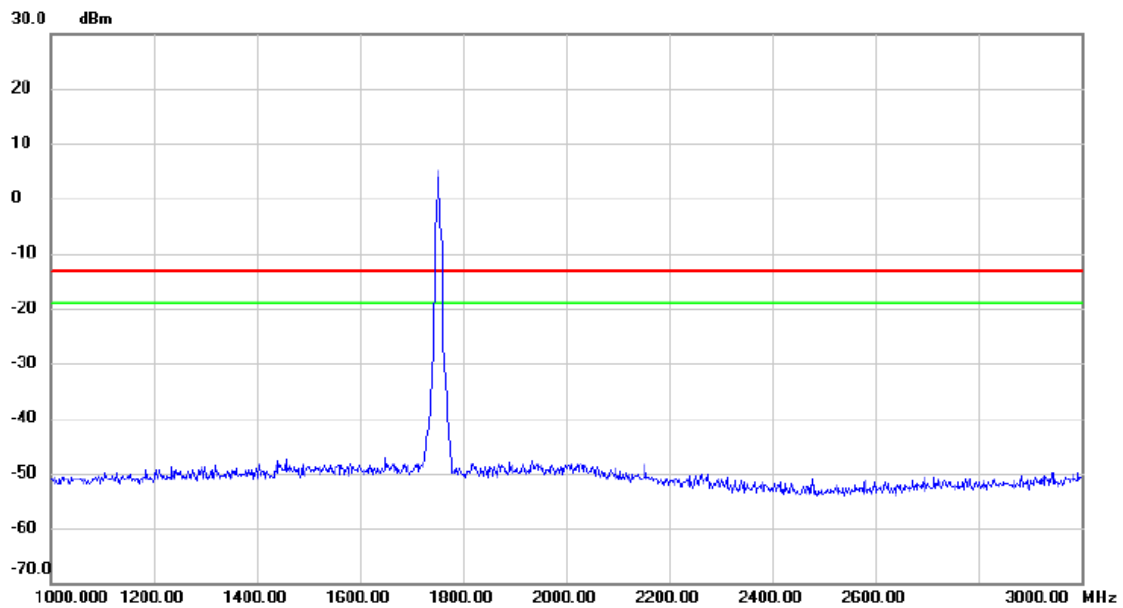
**Vertical**



| No. | Mk. | Freq. | Reading | Correct | Measure- | Limit | Margin |          |         |
|-----|-----|-------|---------|---------|----------|-------|--------|----------|---------|
|     |     | MHz   | Level   | Factor  | ment     |       |        | Detector | Comment |
|     |     |       | dBm     | dB      | dBm      | dBm   | dB     |          |         |

Test Mode: WCDMA Band 4\_TX CH1513\_ HSUPA

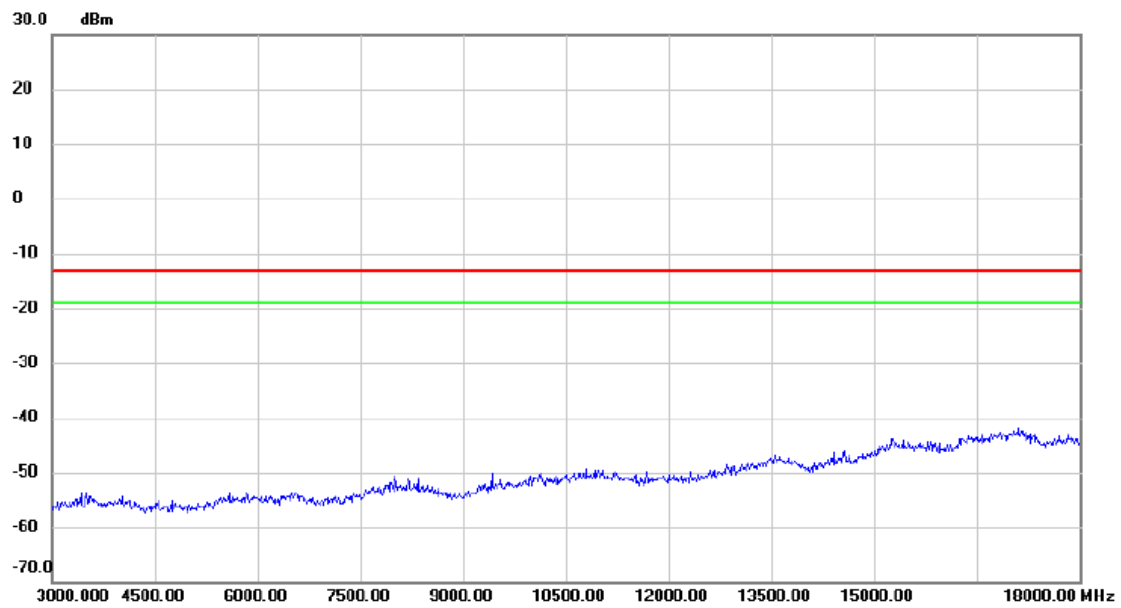
### Horizontal



| No. | Mk. | Freq. | Reading<br>Level | Correct<br>Factor | Measure-<br>ment | Limit | Margin |          |         |
|-----|-----|-------|------------------|-------------------|------------------|-------|--------|----------|---------|
|     |     | MHz   | dBm              | dB                | dBm              | dBm   | dB     | Detector | Comment |

Test Mode: WCDMA Band 4\_TX CH1513\_ HSUPA

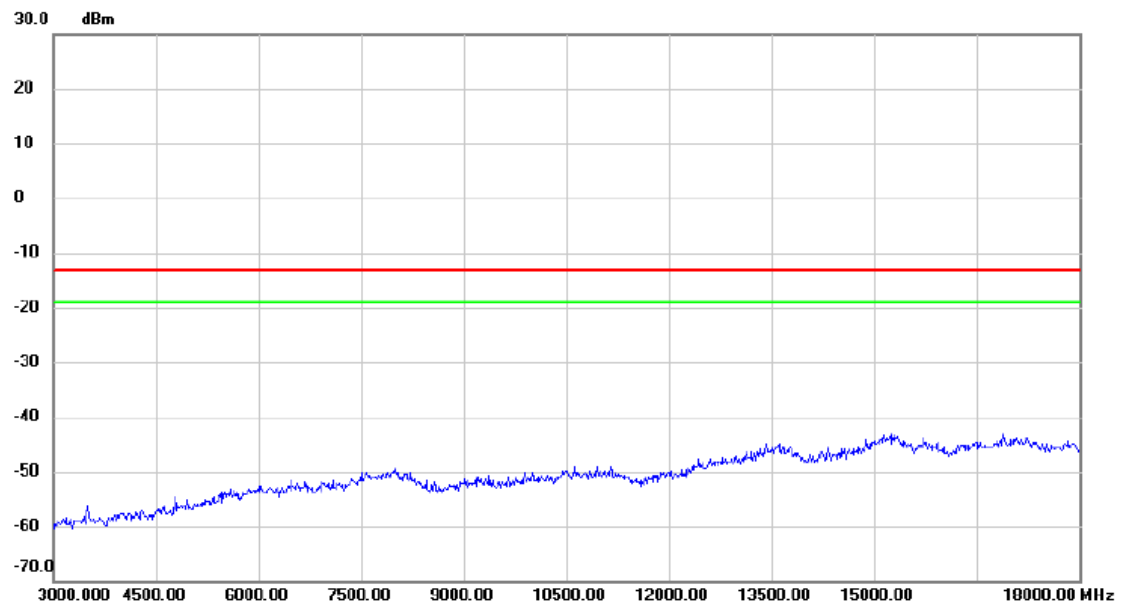
### Vertical



| No. | Mk. | Freq. | Reading | Correct | Measure- | Limit | Margin |          |         |
|-----|-----|-------|---------|---------|----------|-------|--------|----------|---------|
|     |     | MHz   | Level   | Factor  | ment     |       |        | Detector | Comment |
|     |     |       | dBm     | dB      | dBm      | dBm   | dB     |          |         |

Test Mode: WCDMA Band 4\_TX CH1513\_ HSUPA

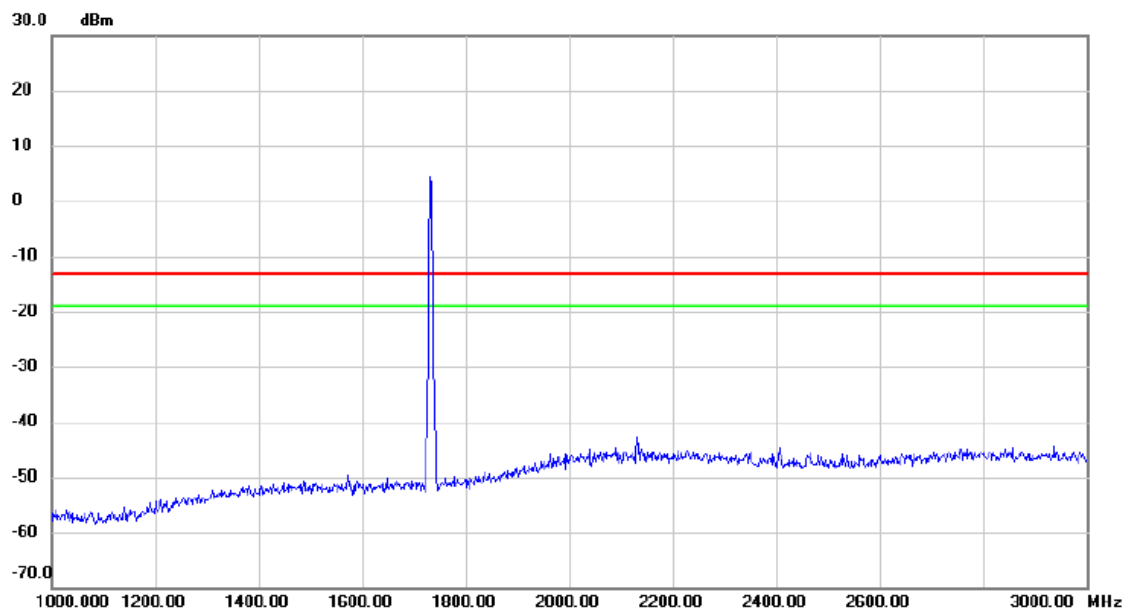
### Horizontal



| No. | Mk. | Freq. | Reading Level | Correct Factor | Measurement | Limit | Margin | Detector | Comment |
|-----|-----|-------|---------------|----------------|-------------|-------|--------|----------|---------|
|     |     | MHz   | dBm           | dB             | dBm         | dBm   | dB     |          |         |

|            |                            |
|------------|----------------------------|
| Test Mode: | LTE Band 4_TX CH20175_1.4M |
|------------|----------------------------|

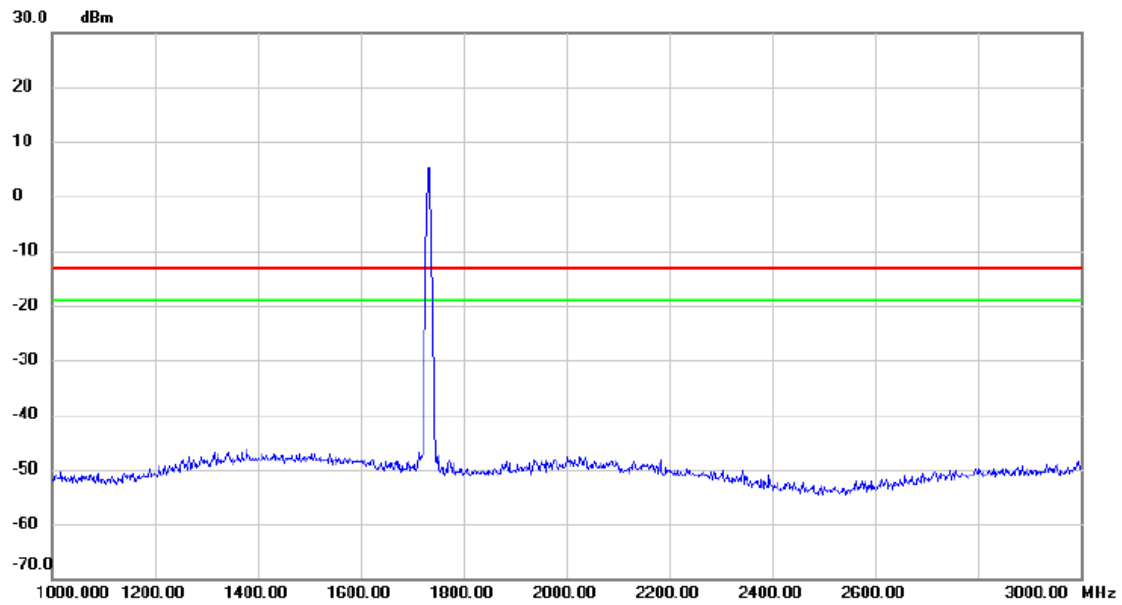
### Vertical



| No. | Mk. | Freq. | Reading Level | Correct Factor | Measurement | Limit | Margin |          |         |
|-----|-----|-------|---------------|----------------|-------------|-------|--------|----------|---------|
|     |     | MHz   | dBm           | dB             | dBm         | dBm   | dB     | Detector | Comment |

|            |                            |
|------------|----------------------------|
| Test Mode: | LTE Band 4_TX CH20175_1.4M |
|------------|----------------------------|

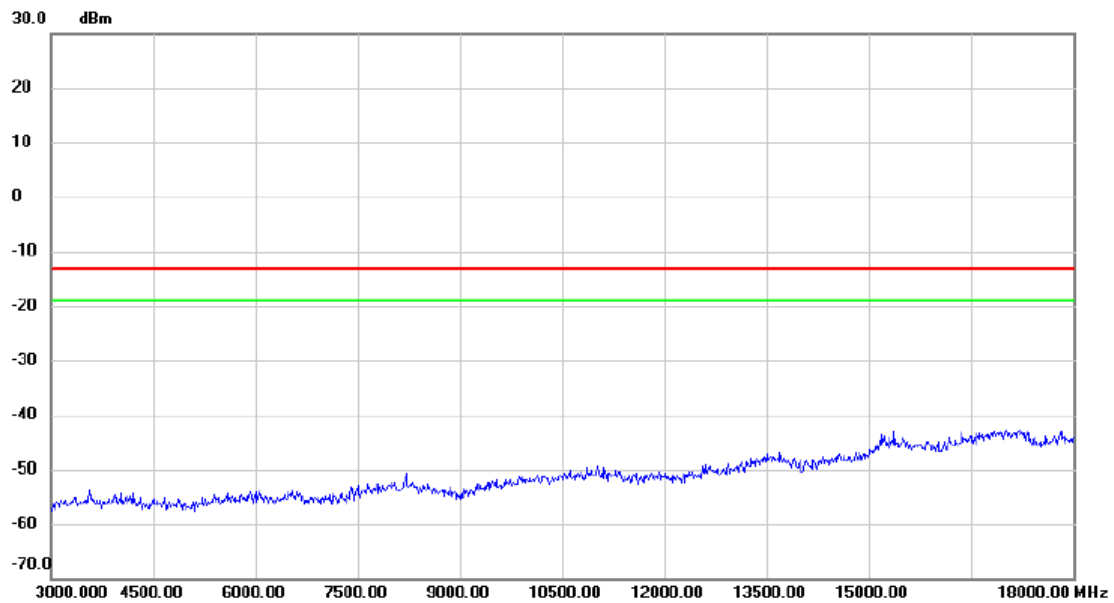
### Horizontal



| No. | Mk. | Freq. | Reading Level | Correct Factor | Measurement | Limit | Margin |          |         |
|-----|-----|-------|---------------|----------------|-------------|-------|--------|----------|---------|
|     |     | MHz   | dBm           | dB             | dBm         | dBm   | dB     | Detector | Comment |

|            |                            |
|------------|----------------------------|
| Test Mode: | LTE Band 4_TX CH20175_1.4M |
|------------|----------------------------|

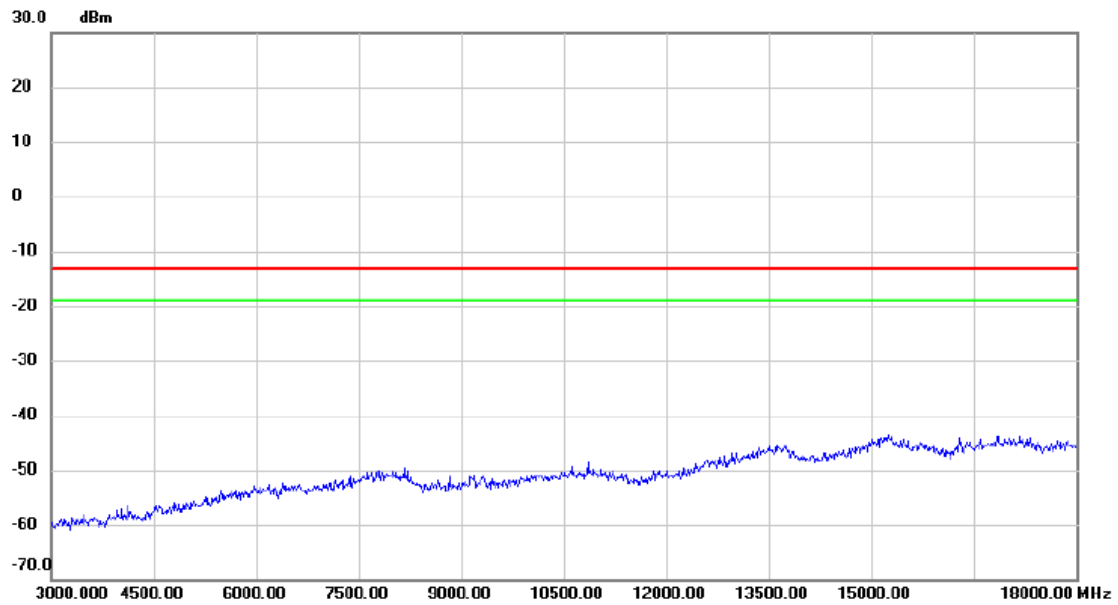
### Vertical



| No. | Mk. | Freq. | Reading | Correct | Measure- | Limit | Margin |          |         |
|-----|-----|-------|---------|---------|----------|-------|--------|----------|---------|
|     |     | MHz   | Level   | Factor  | ment     |       |        | Detector | Comment |
|     |     |       | dBm     | dB      | dBm      | dBm   | dB     |          |         |

|            |                            |
|------------|----------------------------|
| Test Mode: | LTE Band 4_TX CH20175_1.4M |
|------------|----------------------------|

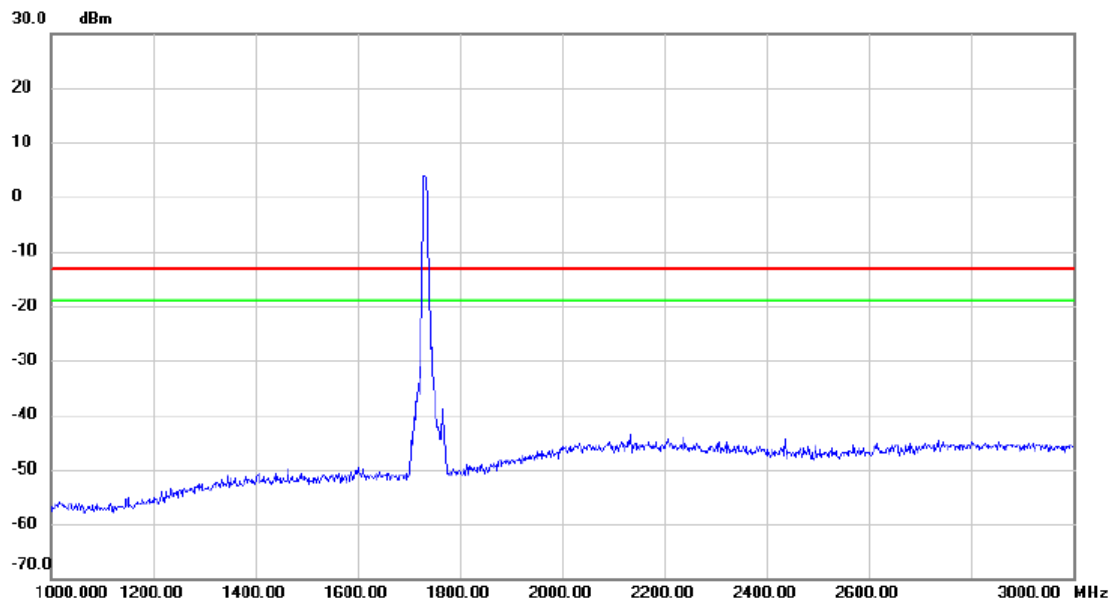
### Horizontal



| No. | Mk. | Freq. | Reading Level | Correct Factor | Measurement | Limit | Margin |          |         |
|-----|-----|-------|---------------|----------------|-------------|-------|--------|----------|---------|
|     |     | MHz   | dBm           | dB             | dBm         | dBm   | dB     | Detector | Comment |

Test Mode: LTE Band 4\_TX CH20175\_5M

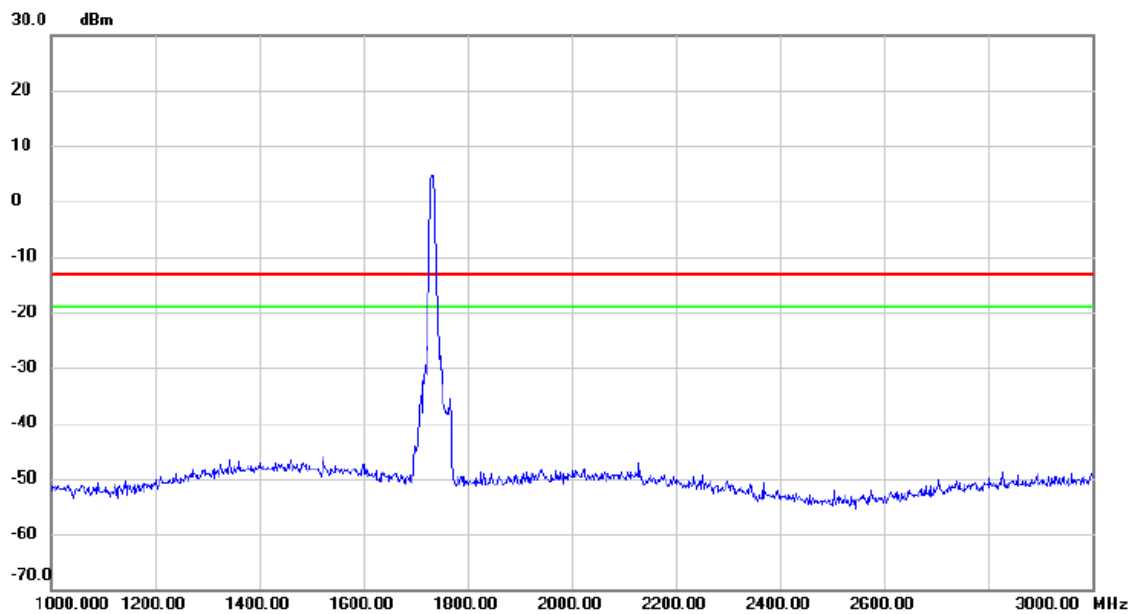
**Vertical**



| No. | Mk. | Freq.<br>MHz | Reading<br>Level<br>dBm | Correct<br>Factor<br>dB | Measure-<br>ment<br>dBm | Limit<br>dBm | Margin<br>dB | Detector | Comment |
|-----|-----|--------------|-------------------------|-------------------------|-------------------------|--------------|--------------|----------|---------|
|-----|-----|--------------|-------------------------|-------------------------|-------------------------|--------------|--------------|----------|---------|

|            |                          |
|------------|--------------------------|
| Test Mode: | LTE Band 4_TX CH20175_5M |
|------------|--------------------------|

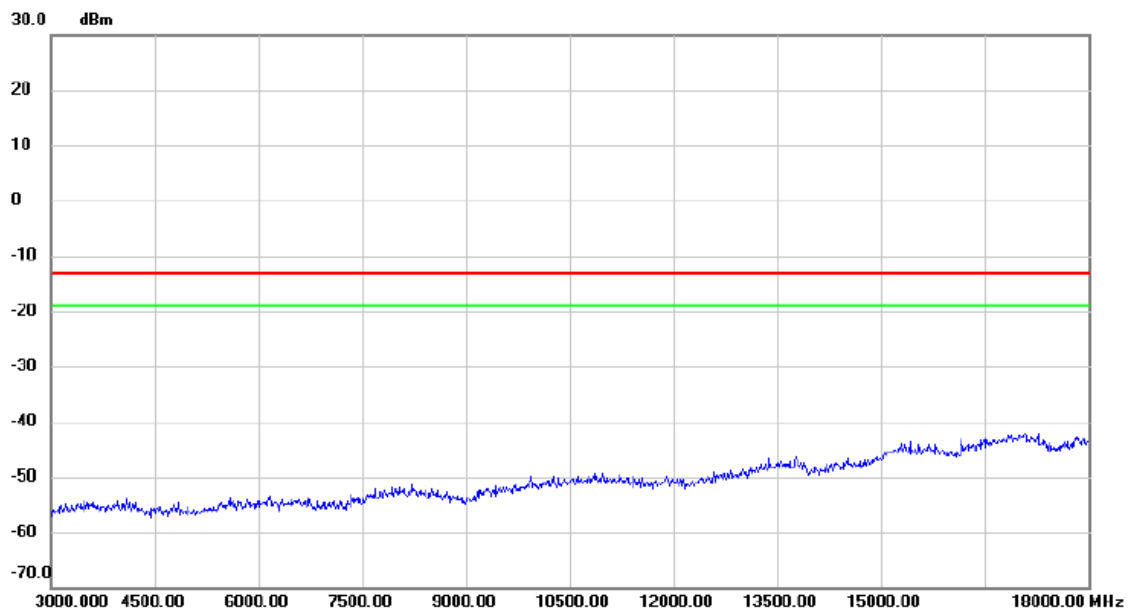
### Horizontal



| No. | Mk. | Freq. | Reading Level | Correct Factor | Measurement | Limit | Margin |          |         |
|-----|-----|-------|---------------|----------------|-------------|-------|--------|----------|---------|
|     |     | MHz   | dBm           | dB             | dBm         | dBm   | dB     | Detector | Comment |

Test Mode: LTE Band 4\_TX CH20175\_5M

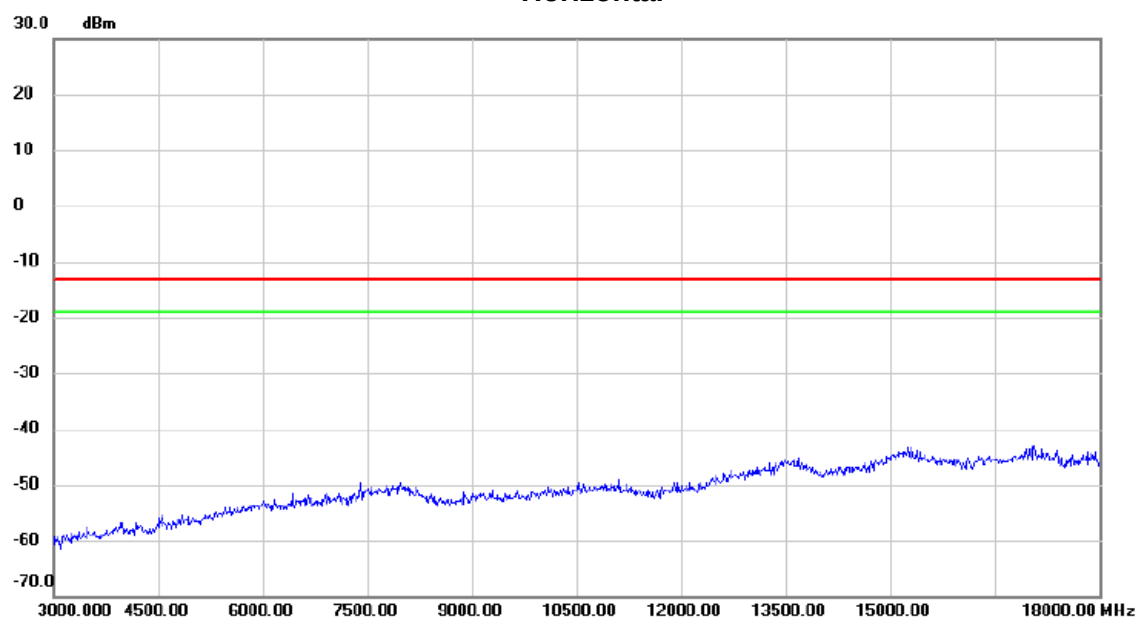
**Vertical**



| No. | Mk. | Freq. | Reading<br>Level | Correct<br>Factor | Measure-<br>ment | Limit | Margin |          |         |
|-----|-----|-------|------------------|-------------------|------------------|-------|--------|----------|---------|
|     |     | MHz   | dBm              | dB                | dBm              | dBm   | dB     | Detector | Comment |

Test Mode: LTE Band 4\_TX CH20175\_5M

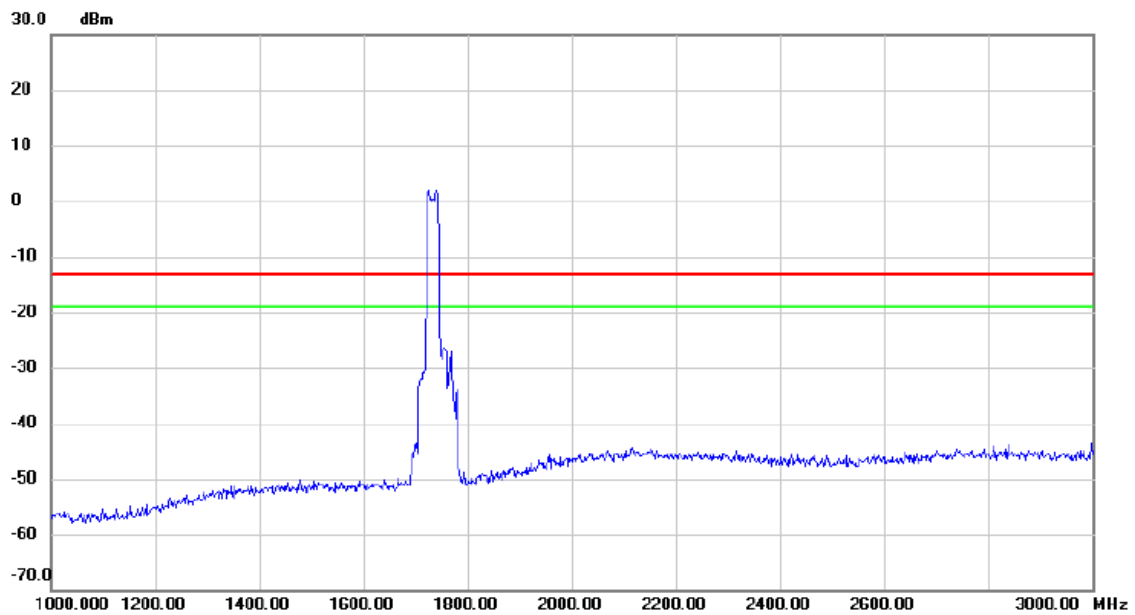
### Horizontal



| No. | Mk. | Freq. | Reading<br>Level | Correct<br>Factor | Measure-<br>ment | Limit | Margin |          |         |
|-----|-----|-------|------------------|-------------------|------------------|-------|--------|----------|---------|
|     |     | MHz   | dBm              | dB                | dBm              | dBm   | dB     | Detector | Comment |

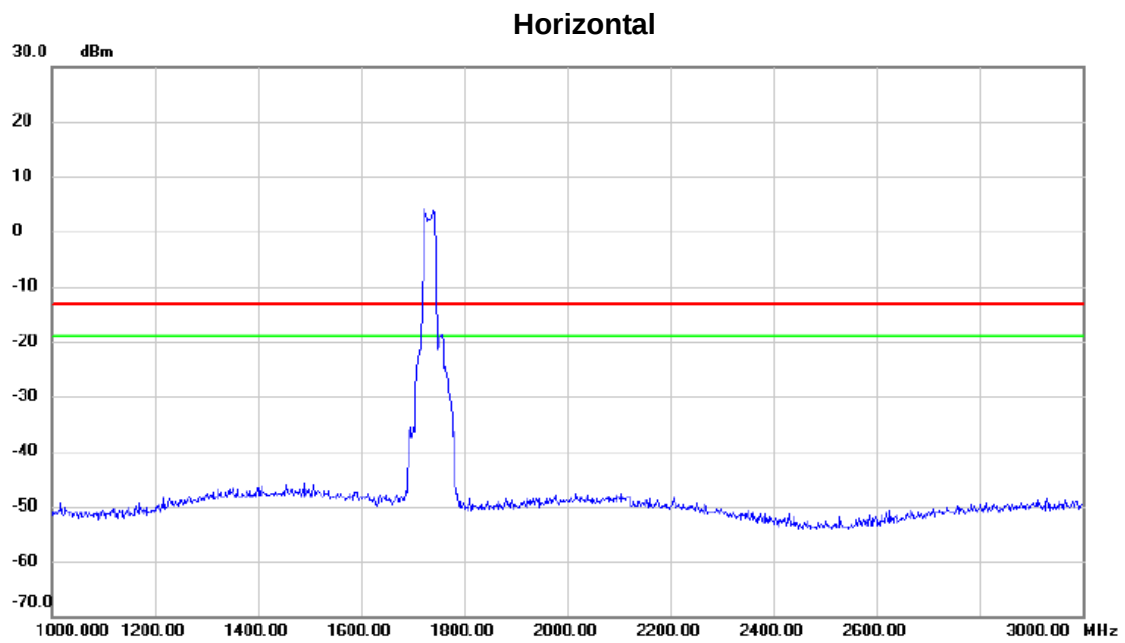
Test Mode: LTE Band 4\_TX CH20175\_20M

**Vertical**



| No. | Mk. | Freq. | Reading | Correct | Measure- | Limit | Margin |          |         |
|-----|-----|-------|---------|---------|----------|-------|--------|----------|---------|
|     |     | MHz   | Level   | Factor  | ment     |       |        | Detector | Comment |
|     |     |       | dBm     | dB      | dBm      | dBm   | dB     |          |         |

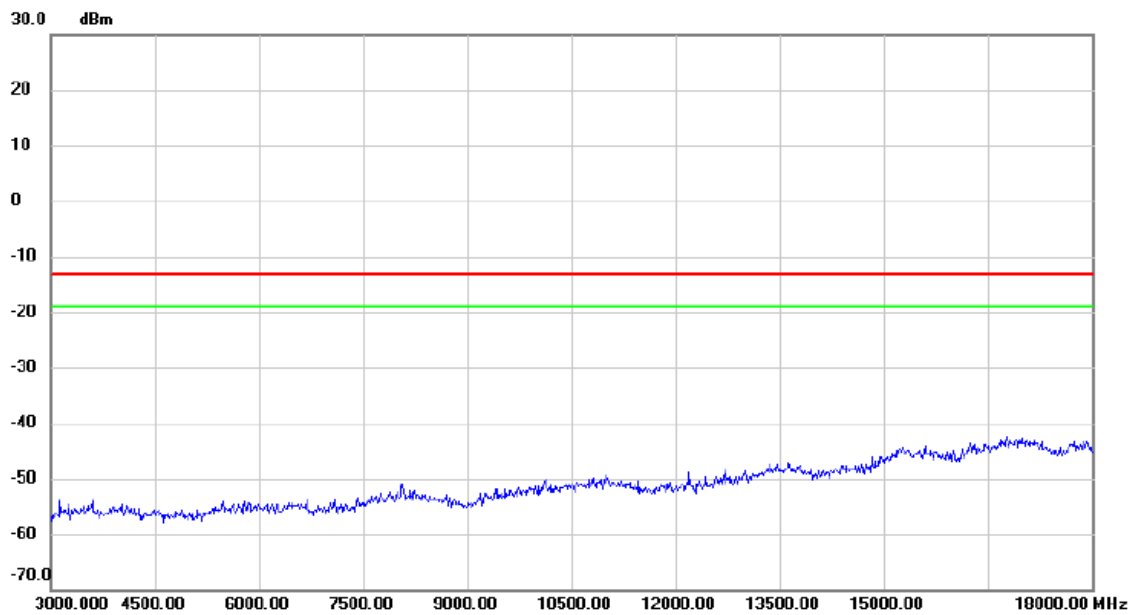
Test Mode: LTE Band 4\_TX CH20175\_20M



| No. | Mk. | Freq. | Reading Level | Correct Factor | Measurement | Limit | Margin |          |         |
|-----|-----|-------|---------------|----------------|-------------|-------|--------|----------|---------|
|     |     | MHz   | dBm           | dB             | dBm         | dBm   | dB     | Detector | Comment |

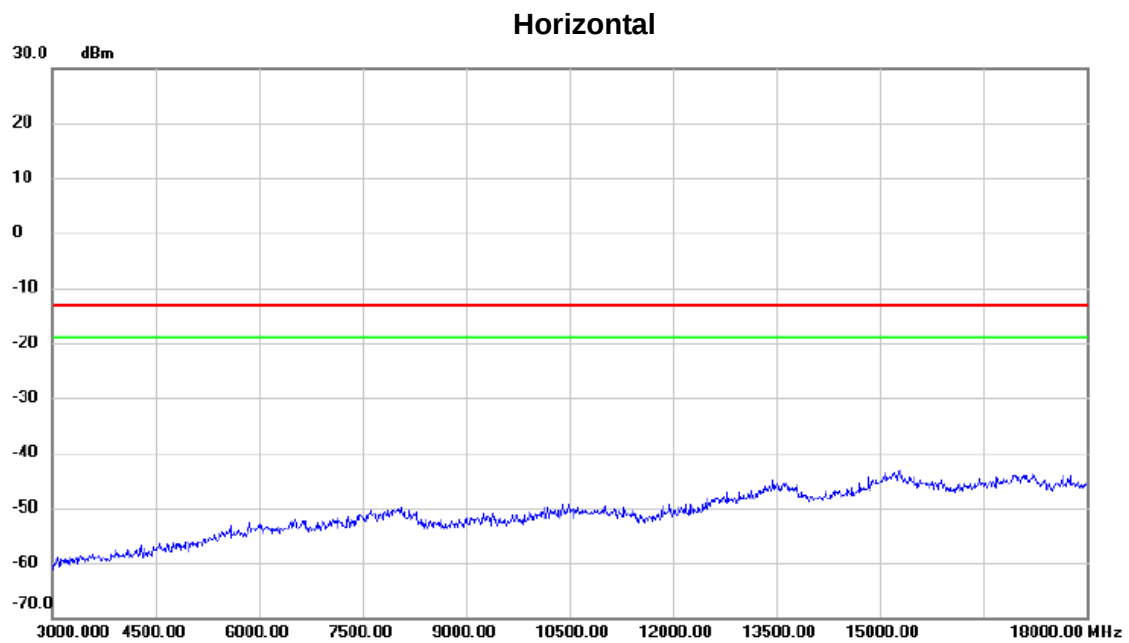
|            |                           |
|------------|---------------------------|
| Test Mode: | LTE Band 4_TX CH20175_20M |
|------------|---------------------------|

### Vertical



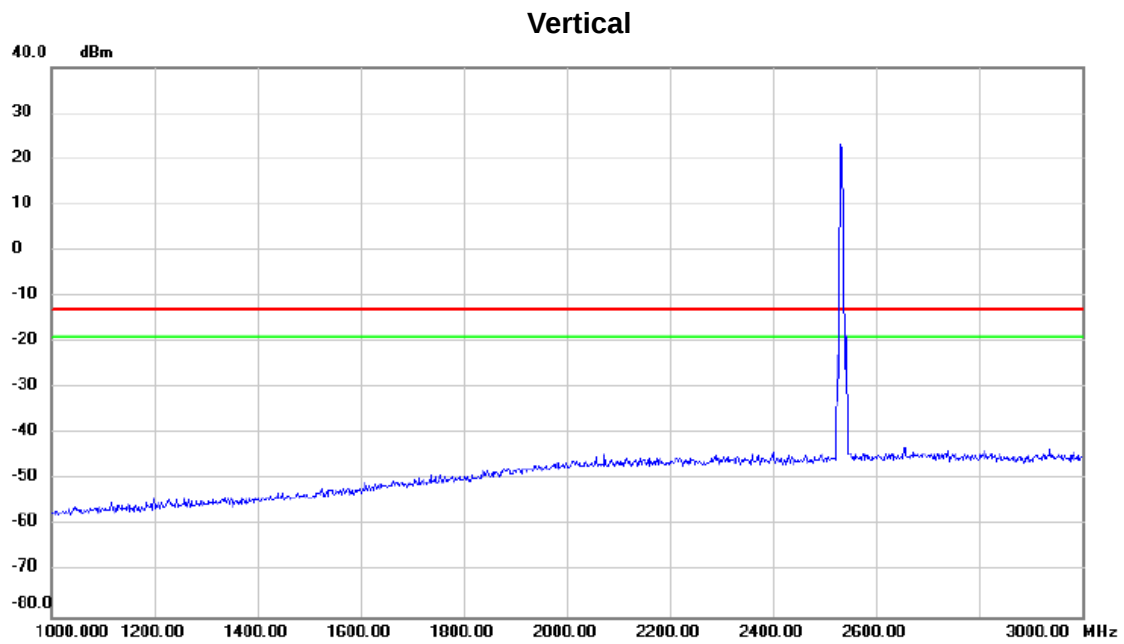
| No. | Mk. | Freq. | Reading Level | Correct Factor | Measurement | Limit | Margin |          |         |
|-----|-----|-------|---------------|----------------|-------------|-------|--------|----------|---------|
|     |     | MHz   | dBm           | dB             | dBm         | dBm   | dB     | Detector | Comment |

|            |                           |
|------------|---------------------------|
| Test Mode: | LTE Band 4_TX CH20175_20M |
|------------|---------------------------|



| No. | Mk. | Freq. | Reading Level | Correct Factor | Measurement | Limit | Margin |          |         |
|-----|-----|-------|---------------|----------------|-------------|-------|--------|----------|---------|
|     |     | MHz   | dBm           | dB             | dBm         | dBm   | dB     | Detector | Comment |

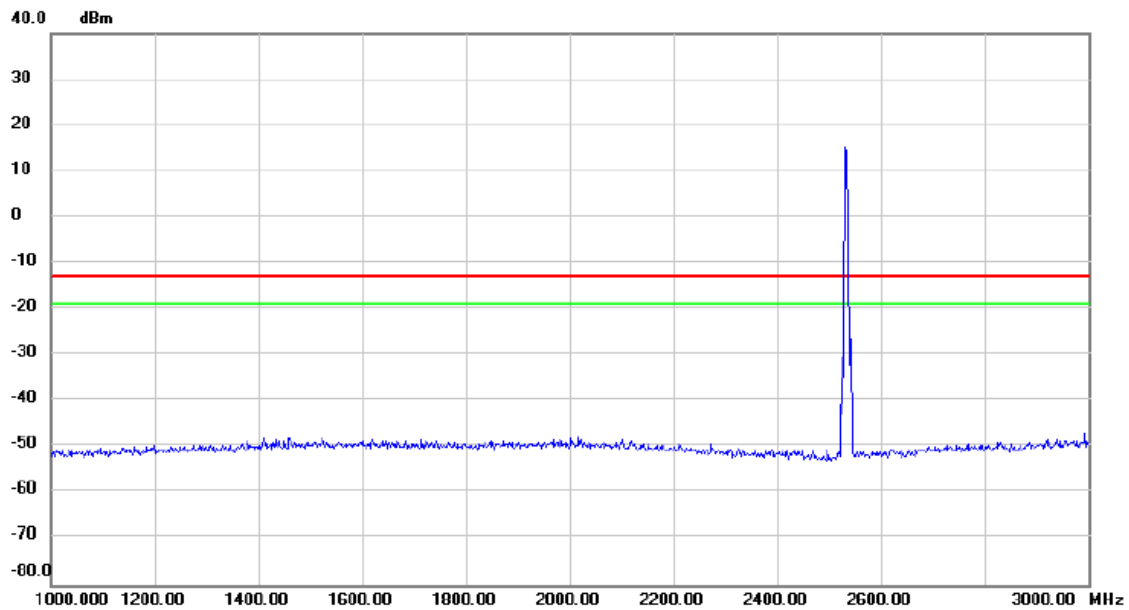
Test Mode: LTE Band 7\_TX CH21100\_5M



| No. | Mk. | Freq. | Reading | Correct | Measure- | Limit | Margin |          |         |
|-----|-----|-------|---------|---------|----------|-------|--------|----------|---------|
|     |     | MHz   | Level   | Factor  | ment     |       |        | Detector | Comment |
|     |     |       | dBm     | dB      | dBm      | dBm   | dB     |          |         |

Test Mode: LTE Band 7\_TX CH21100\_5M

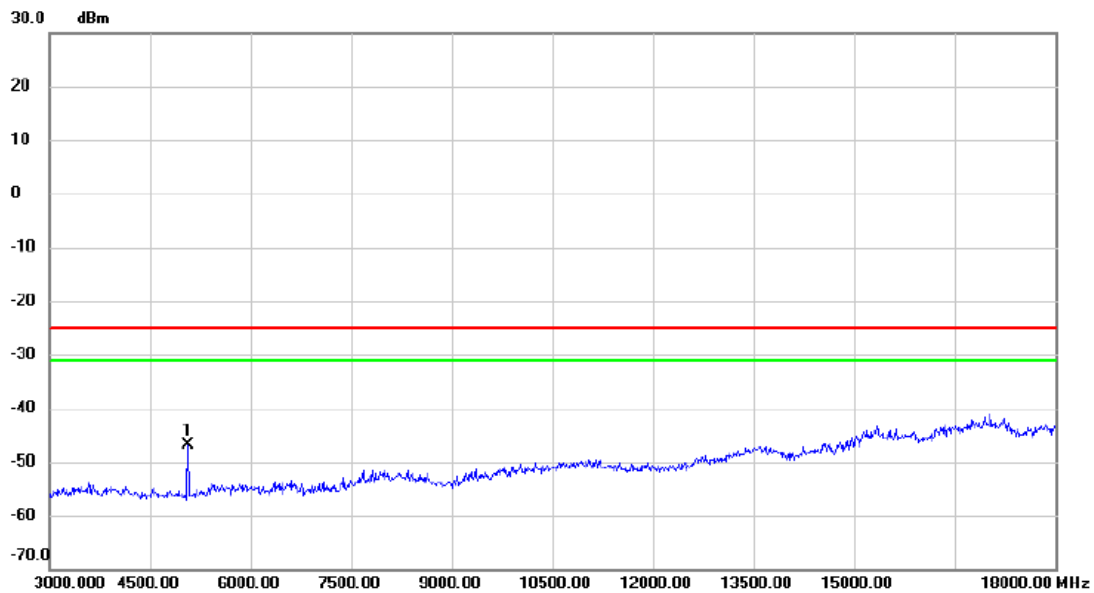
### Horizontal



| No. | Mk. | Freq. | Reading Level | Correct Factor | Measurement | Limit | Margin |          |         |
|-----|-----|-------|---------------|----------------|-------------|-------|--------|----------|---------|
|     |     | MHz   | dBm           | dB             | dBm         | dBm   | dB     | Detector | Comment |

Test Mode: LTE Band 7\_TX CH21100\_5M

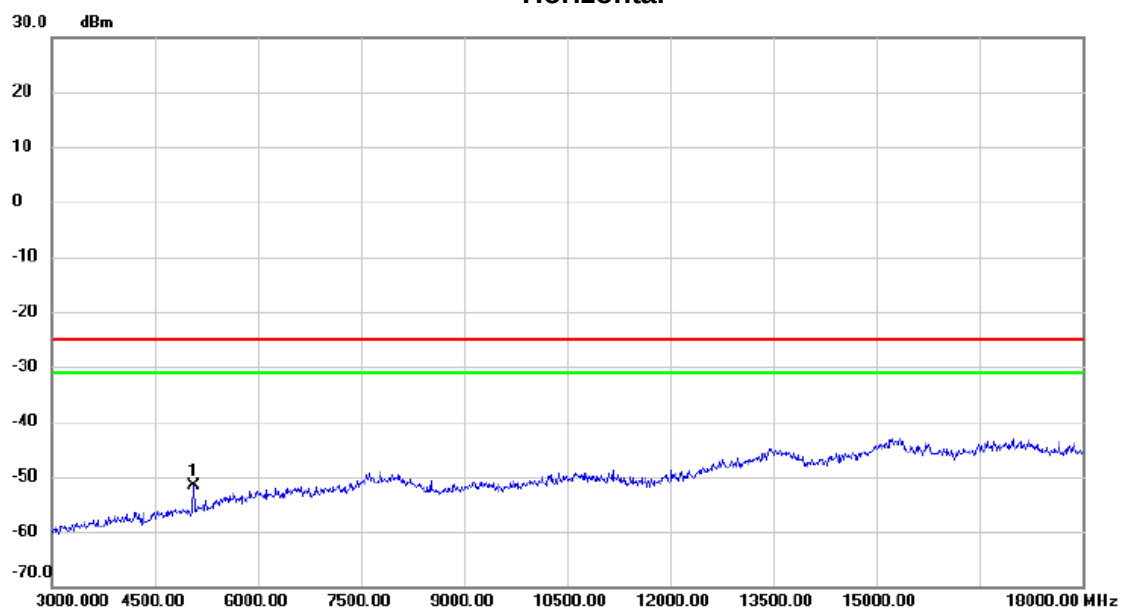
**Vertical**



| No. | Mk. | Freq.<br>MHz | Reading<br>Level<br>dBm | Correct<br>Factor<br>dB | Measure-<br>ment<br>dBm | Limit<br>dBm | Margin<br>dB | Detector | Comment |
|-----|-----|--------------|-------------------------|-------------------------|-------------------------|--------------|--------------|----------|---------|
| 1   | *   | 5070.000     | -61.69                  | 14.79                   | -46.90                  | -25.00       | -21.90       | peak     |         |

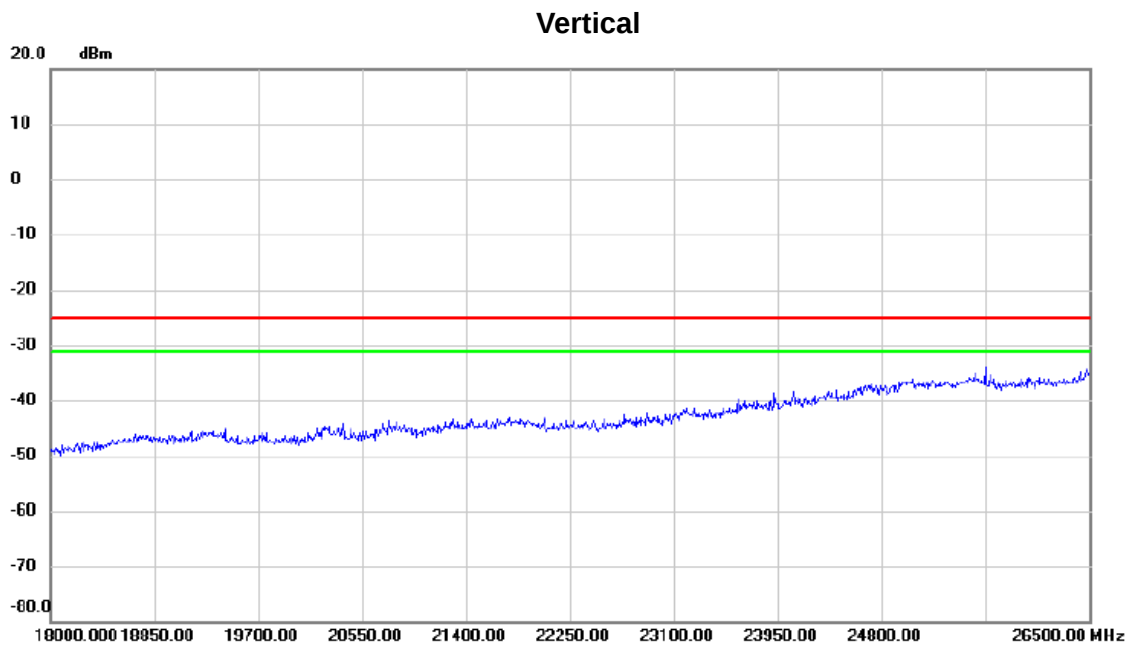
Test Mode: LTE Band 7\_TX CH21100\_5M

### Horizontal



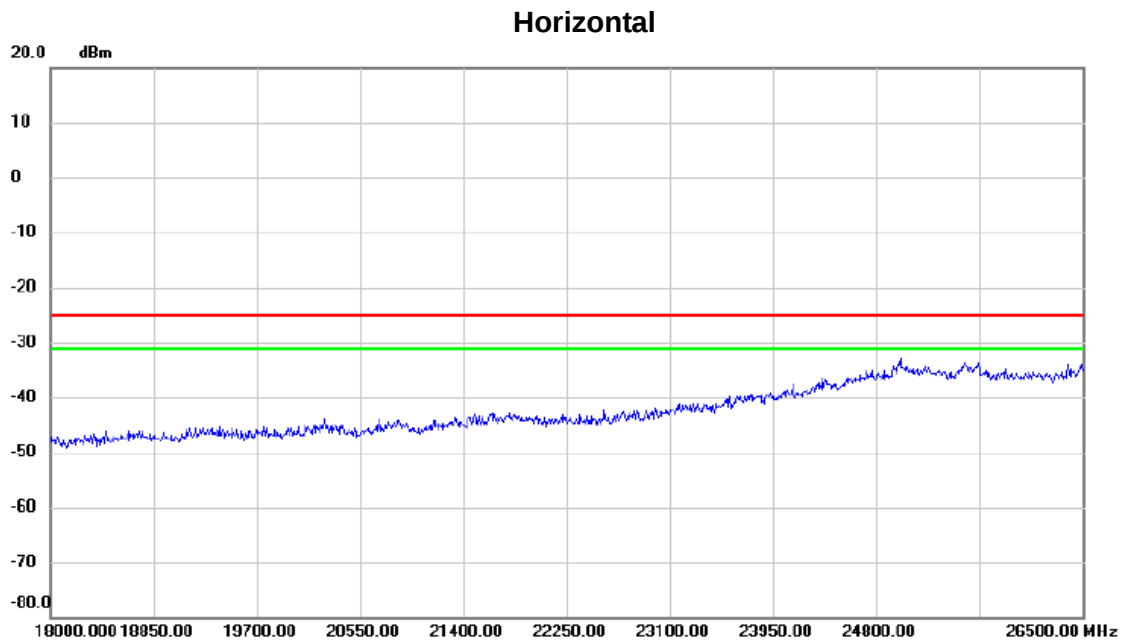
| No. | Mk. | Freq.<br>MHz | Reading<br>Level<br>dBm | Correct<br>Factor<br>dB | Measure-<br>ment<br>dBm | Limit<br>dBm | Margin<br>dB | Detector | Comment |
|-----|-----|--------------|-------------------------|-------------------------|-------------------------|--------------|--------------|----------|---------|
| 1   | *   | 5070.000     | -66.52                  | 14.93                   | -51.59                  | -25.00       | -26.59       | peak     |         |

Test Mode: LTE Band 7\_TX CH21100\_5M



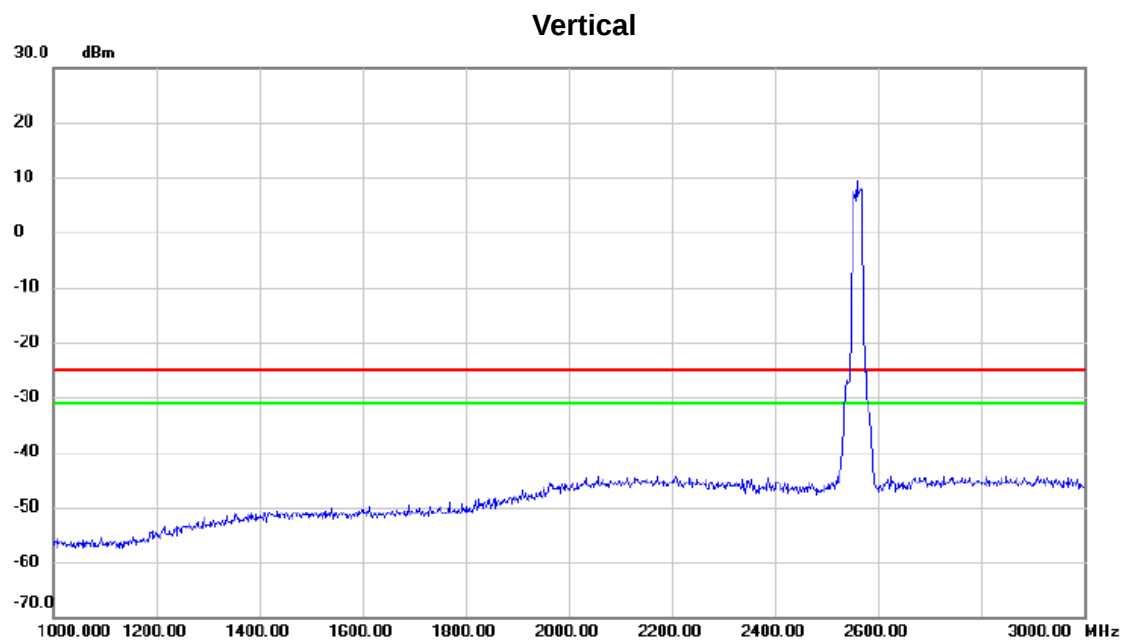
| No. | Mk. | Freq. | Reading Level | Correct Factor | Measurement | Limit | Margin |          |         |
|-----|-----|-------|---------------|----------------|-------------|-------|--------|----------|---------|
|     |     | MHz   | dBm           | dB             | dBm         | dBm   | dB     | Detector | Comment |

|            |                          |
|------------|--------------------------|
| Test Mode: | LTE Band 7_TX CH21100_5M |
|------------|--------------------------|



| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Margin |          |         |
|-----|-----|-------|---------------|----------------|--------------|-------|--------|----------|---------|
|     |     | MHz   | dBm           | dB             | dBm          | dBm   | dB     | Detector | Comment |

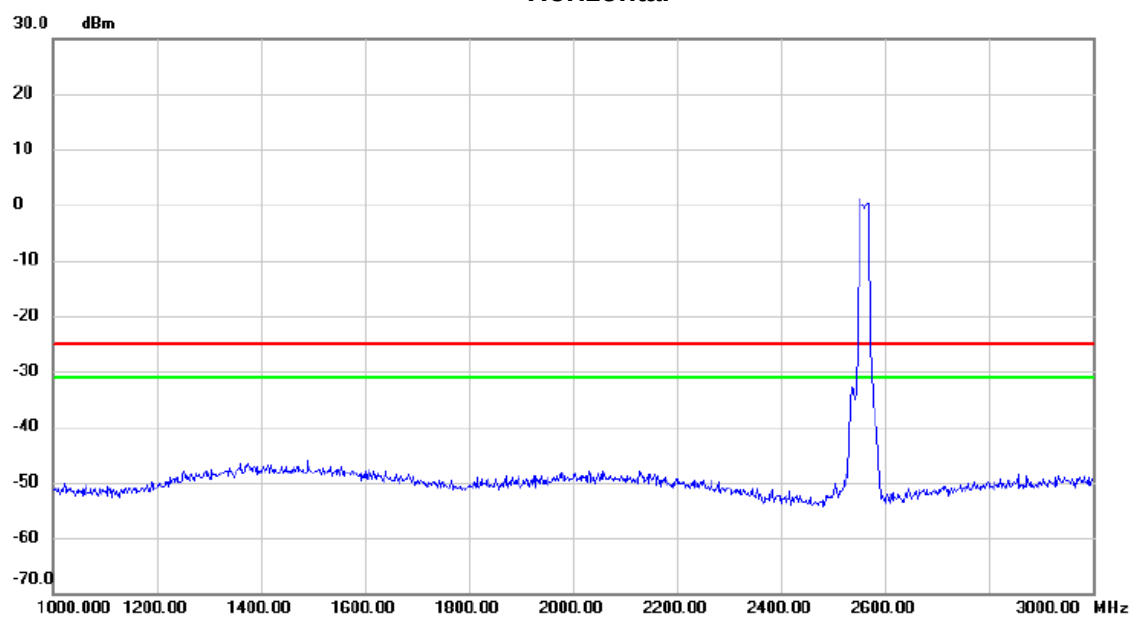
Test Mode: LTE Band 7\_TX CH21350\_20M



| No. | Mk. | Freq. | Reading | Correct | Measure- | Limit | Margin |          |         |
|-----|-----|-------|---------|---------|----------|-------|--------|----------|---------|
|     |     | MHz   | Level   | Factor  | ment     |       |        | Detector | Comment |
|     |     |       | dBm     | dB      | dBm      | dBm   | dB     |          |         |

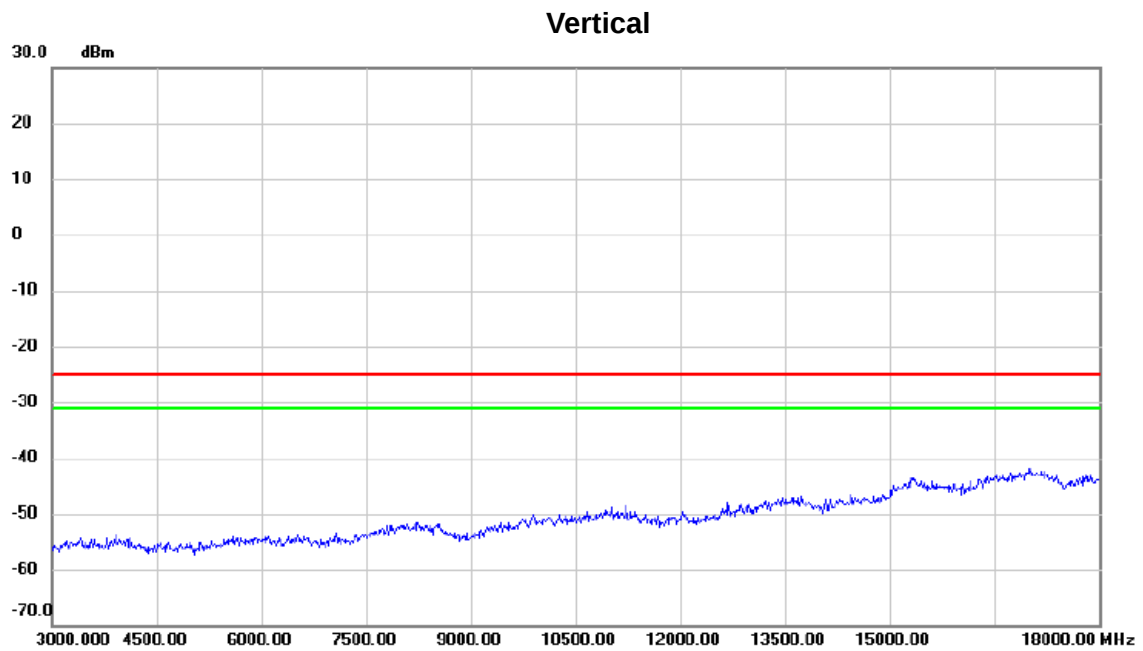
Test Mode: LTE Band 7\_TX CH21350\_20M

### Horizontal



| No. | Mk. | Freq. | Reading<br>Level | Correct<br>Factor | Measure-<br>ment | Limit | Margin |          |         |
|-----|-----|-------|------------------|-------------------|------------------|-------|--------|----------|---------|
|     |     | MHz   | dBm              | dB                | dBm              | dBm   | dB     | Detector | Comment |

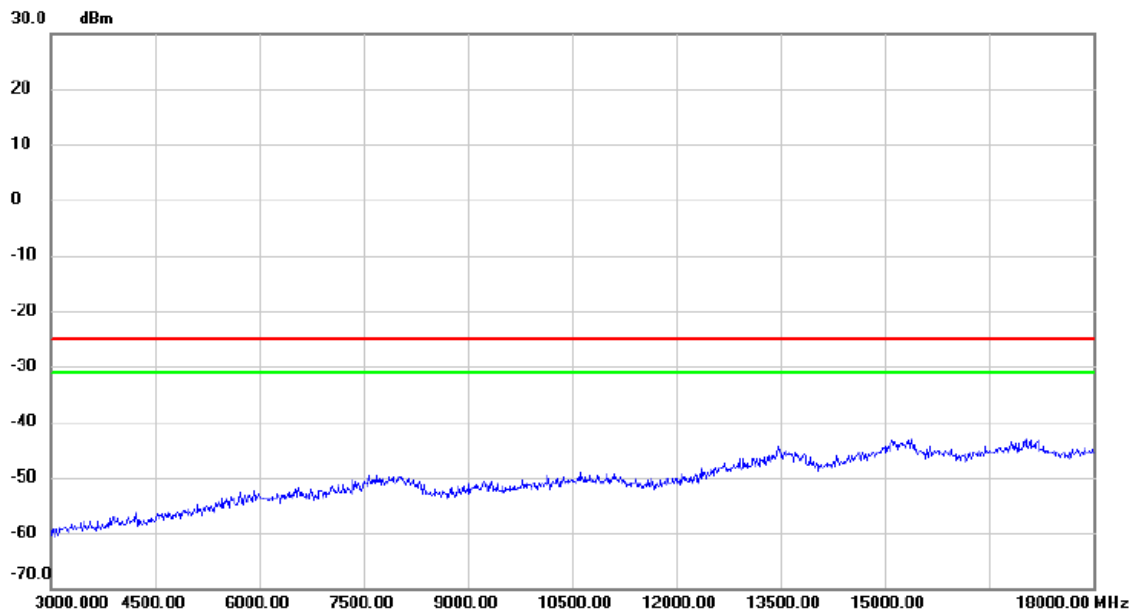
|            |                           |
|------------|---------------------------|
| Test Mode: | LTE Band 7_TX CH21350_20M |
|------------|---------------------------|



| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Margin |          |         |
|-----|-----|-------|---------------|----------------|--------------|-------|--------|----------|---------|
|     |     | MHz   | dBm           | dB             | dBm          | dBm   | dB     | Detector | Comment |

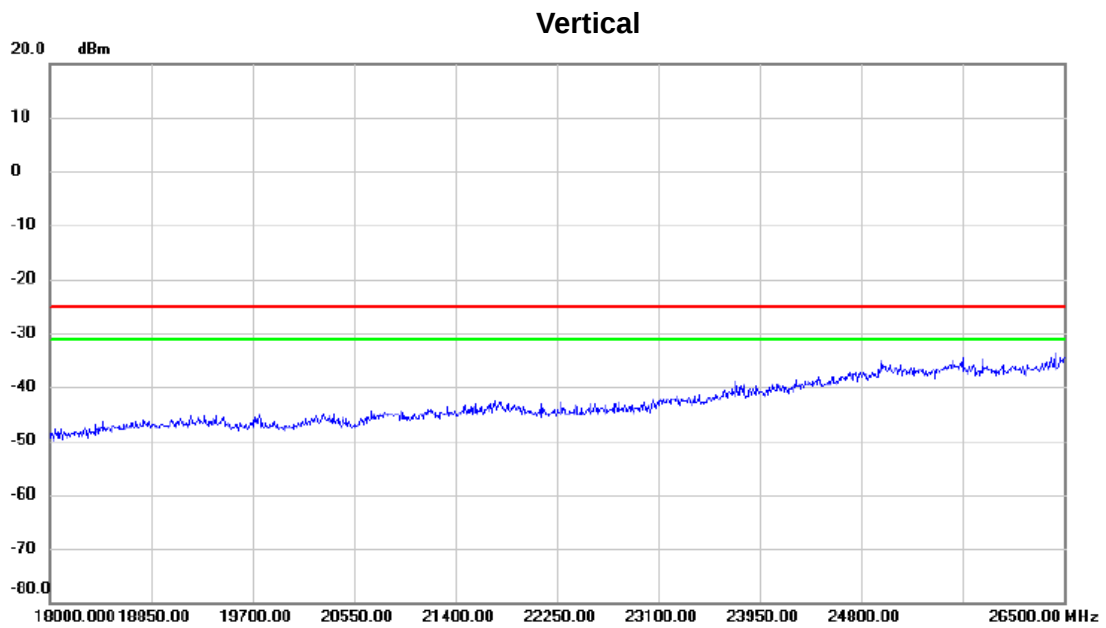
|            |                           |
|------------|---------------------------|
| Test Mode: | LTE Band 7_TX CH21350_20M |
|------------|---------------------------|

### Horizontal



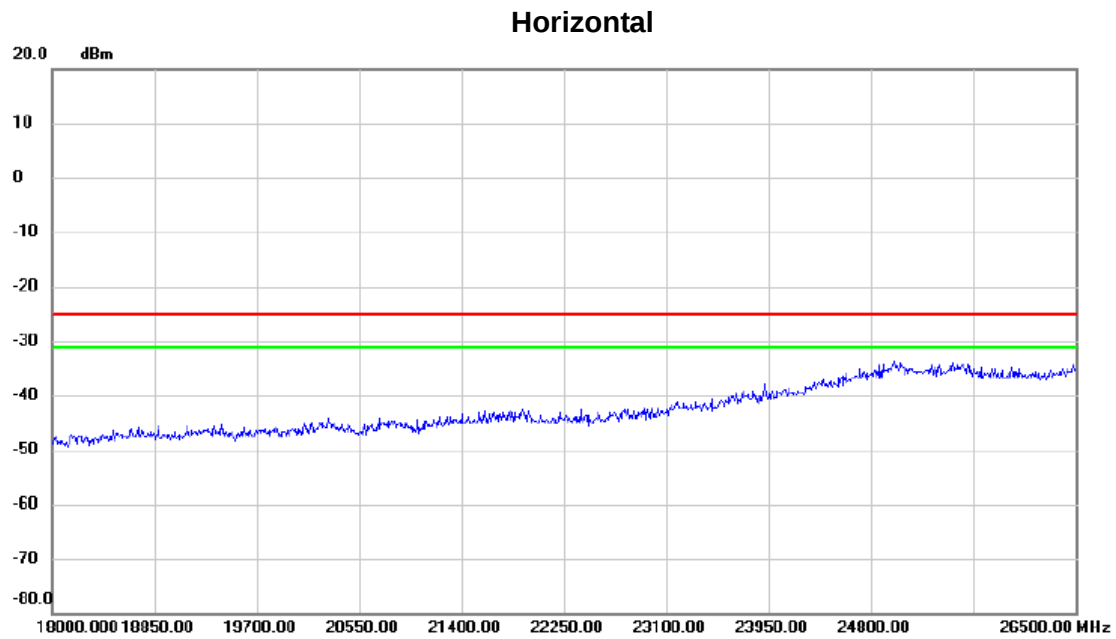
| No. | Mk. | Freq. | Reading<br>Level | Correct<br>Factor | Measure-<br>ment | Limit | Margin |          |         |
|-----|-----|-------|------------------|-------------------|------------------|-------|--------|----------|---------|
|     |     | MHz   | dBm              | dB                | dBm              | dBm   | dB     | Detector | Comment |

Test Mode: LTE Band 7\_TX CH21350\_20M



| No. | Mk. | Freq. | Reading | Correct | Measure- | Limit | Margin |          |         |
|-----|-----|-------|---------|---------|----------|-------|--------|----------|---------|
|     |     | MHz   | Level   | Factor  | ment     |       |        | Detector | Comment |
|     |     |       | dBm     | dB      | dBm      | dBm   | dB     |          |         |

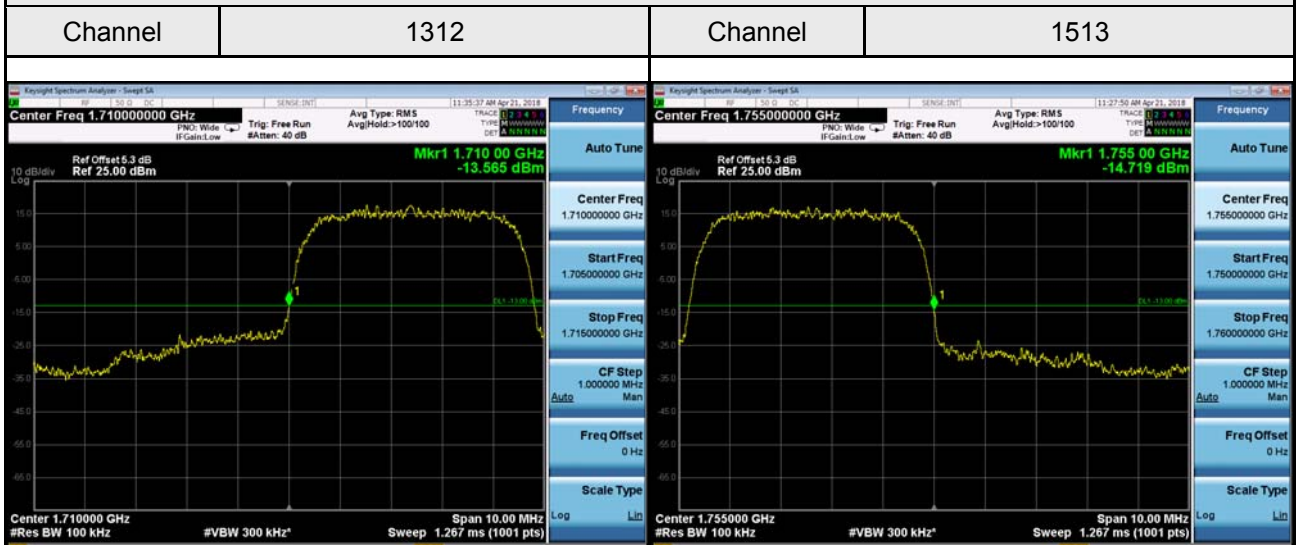
|            |                           |
|------------|---------------------------|
| Test Mode: | LTE Band 7_TX CH21350_20M |
|------------|---------------------------|



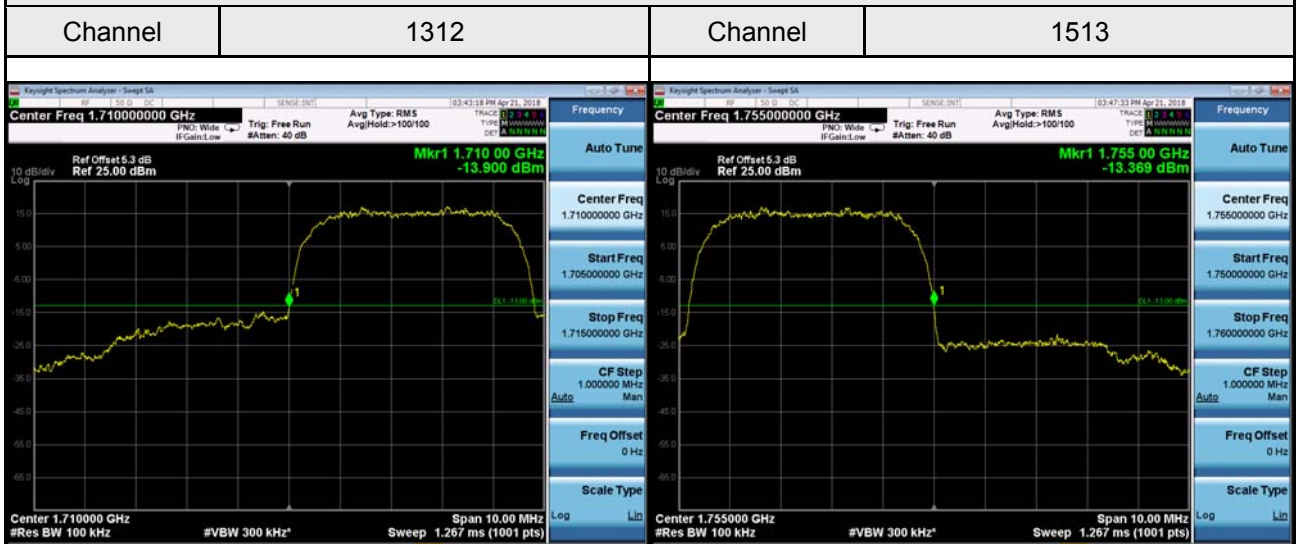
| No. | Mk. | Freq. | Reading Level | Correct Factor | Measurement | Limit | Margin |          |         |
|-----|-----|-------|---------------|----------------|-------------|-------|--------|----------|---------|
|     |     | MHz   | dBm           | dB             | dBm         | dBm   | dB     | Detector | Comment |

## APPENDIX E - BAND EDGE

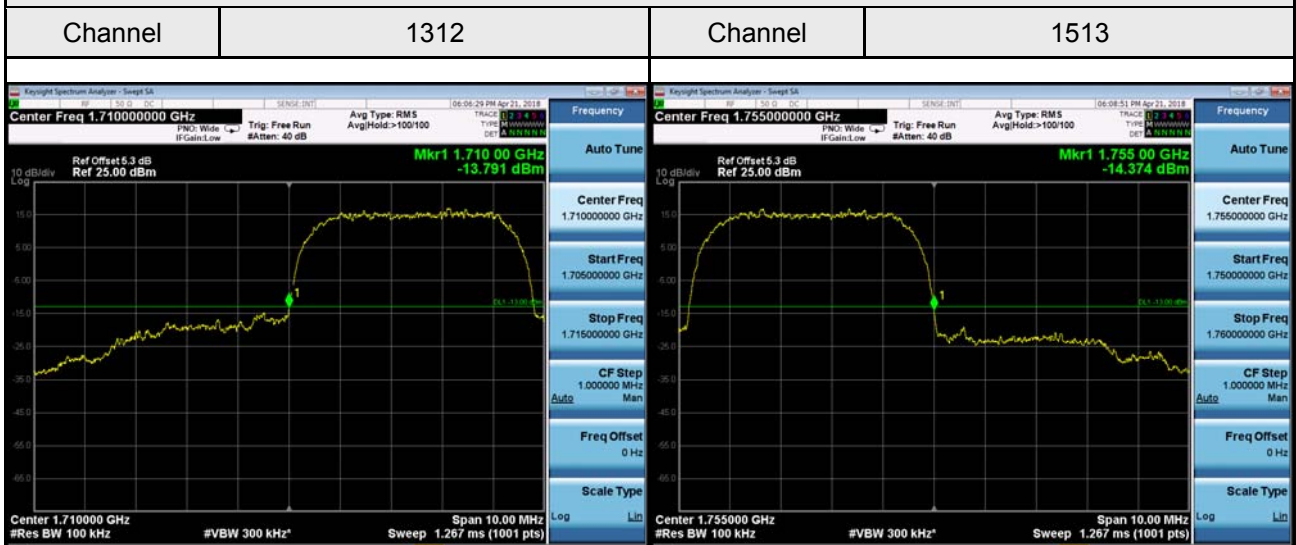
# WCDMA Band 4\_WCDMA



# WCDMA Band 4\_HSDPA



# WCDMA Band 4\_HSUPA



LTE Band 4\_1.4M

1RB0

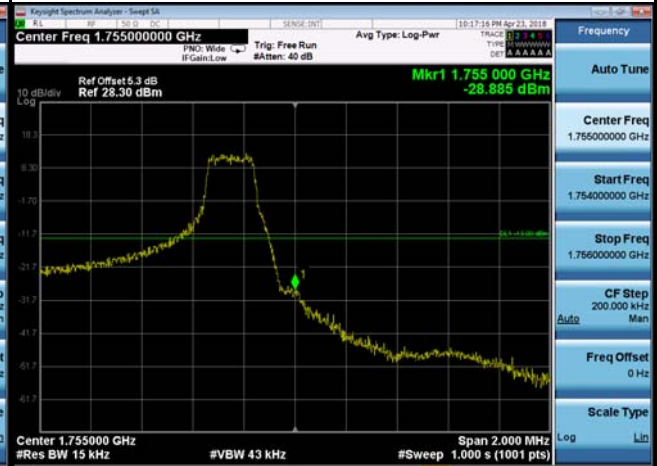
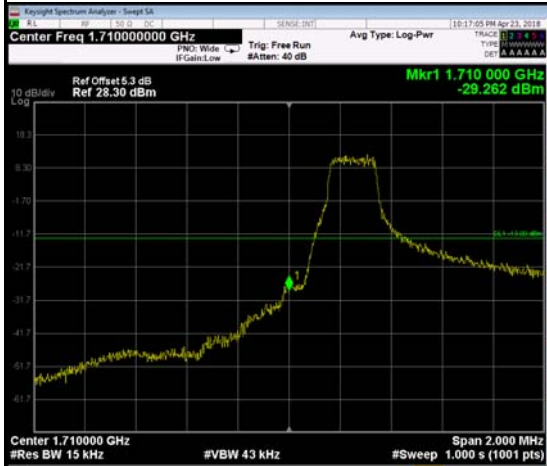
1RB5

Channel

19957

Channel

20393



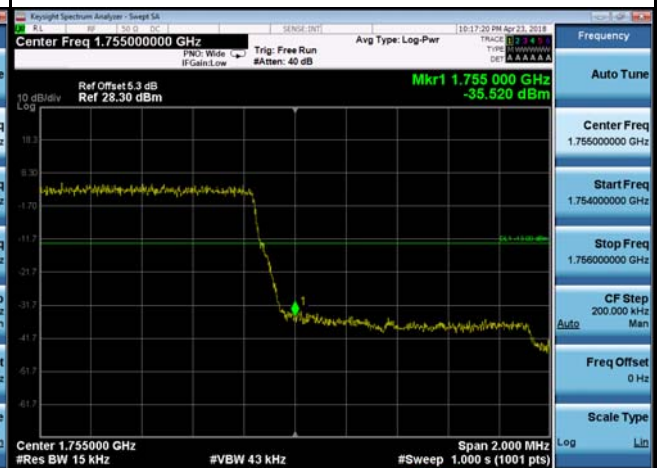
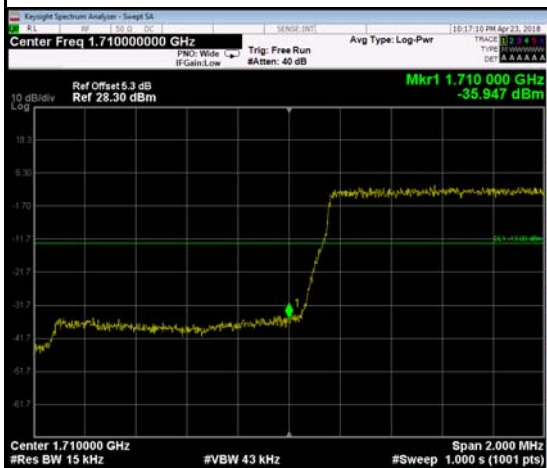
6RB0

Channel

19957

Channel

20393



# LTE Band 4\_3M

1RB0

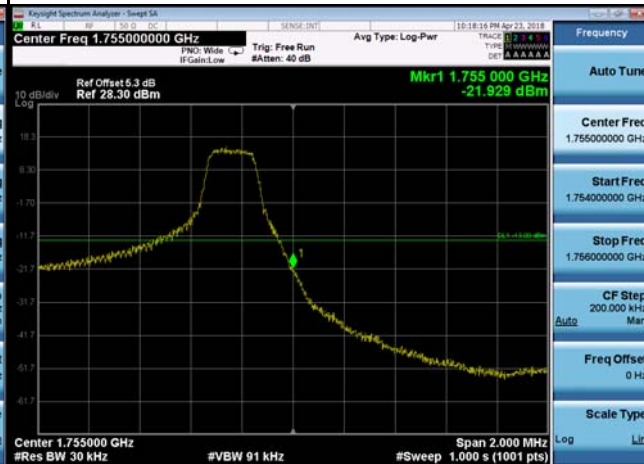
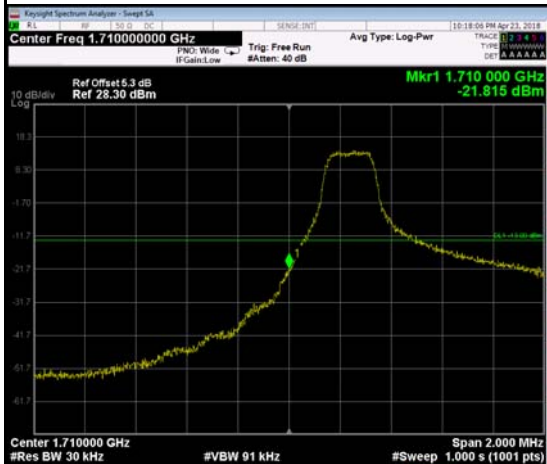
1RB14

Channel

19965

Channel

20385



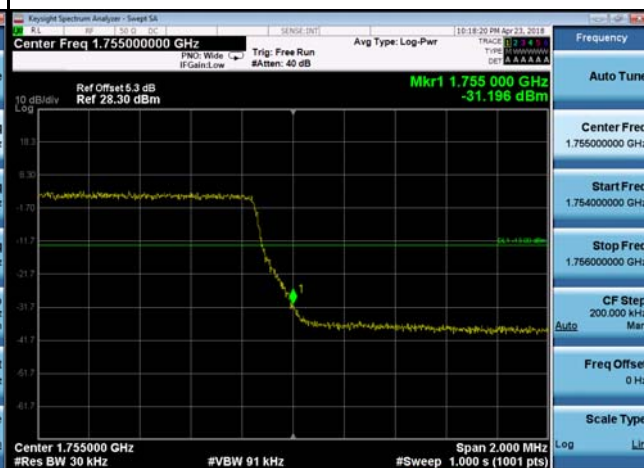
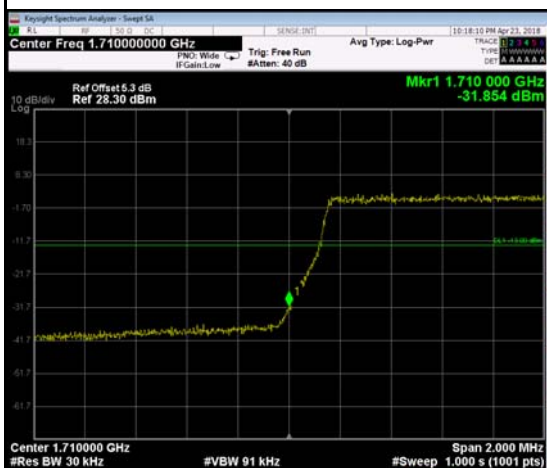
# 15RB0

Channel

19965

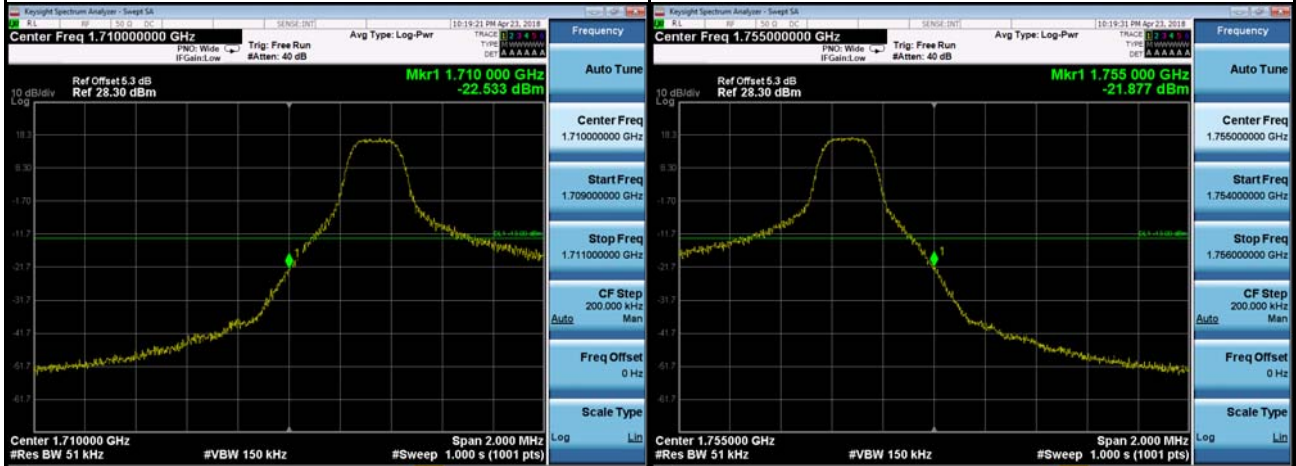
Channel

20385



# LTE Band 4\_5M

| 1RB0    |       | 1RB24   |       |
|---------|-------|---------|-------|
| Channel | 19975 | Channel | 20375 |



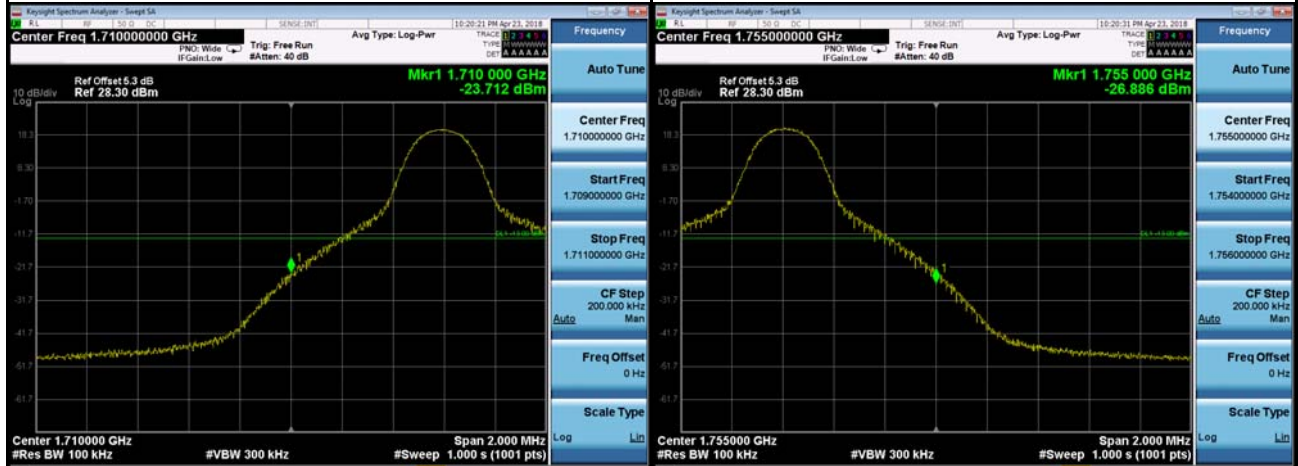
# 25RB0

| Channel | 19975 | Channel | 20375 |
|---------|-------|---------|-------|
|---------|-------|---------|-------|



# LTE Band 4\_10M

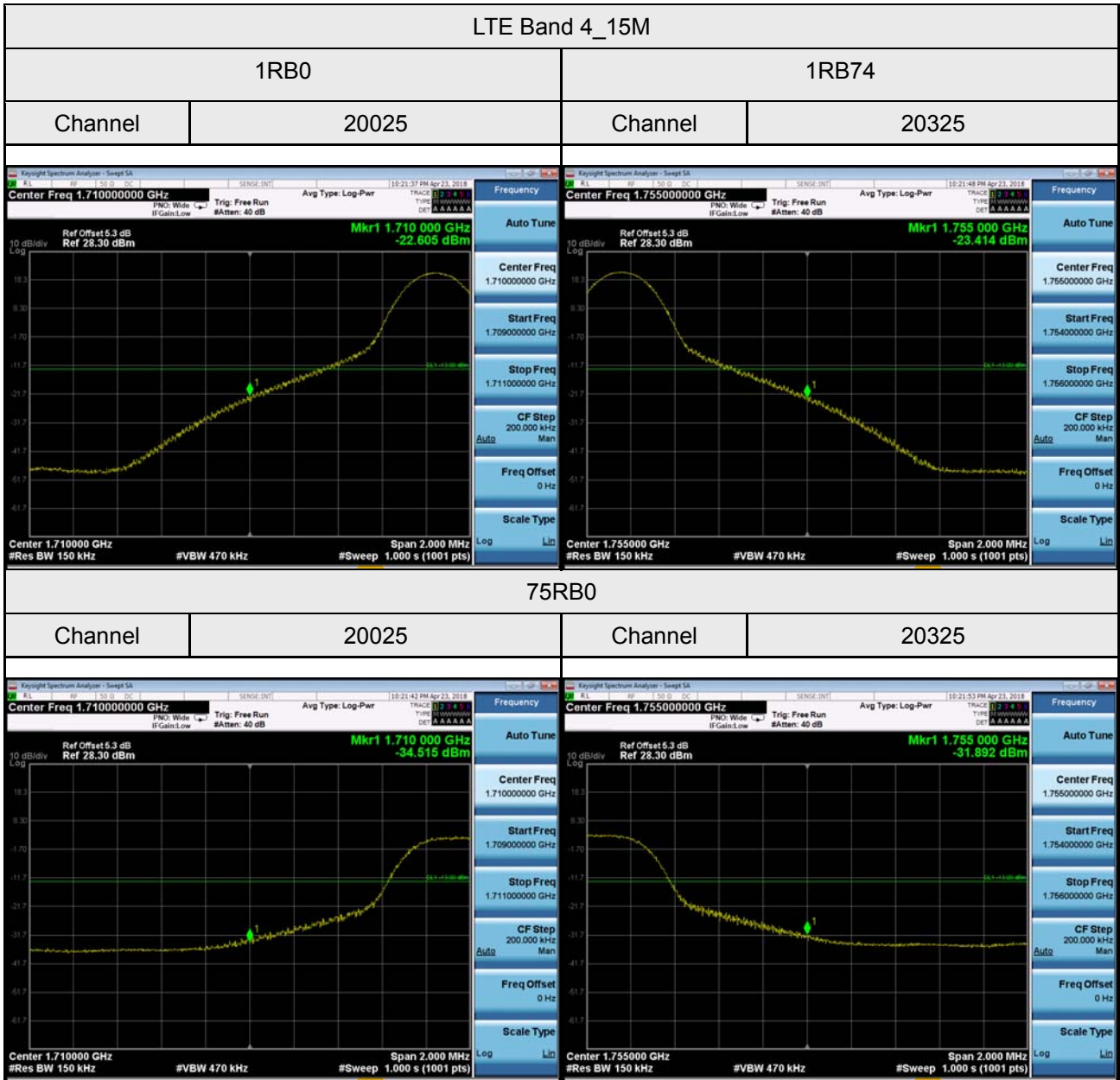
| 1RB0    |       | 1RB49   |       |
|---------|-------|---------|-------|
| Channel | 20000 | Channel | 20350 |

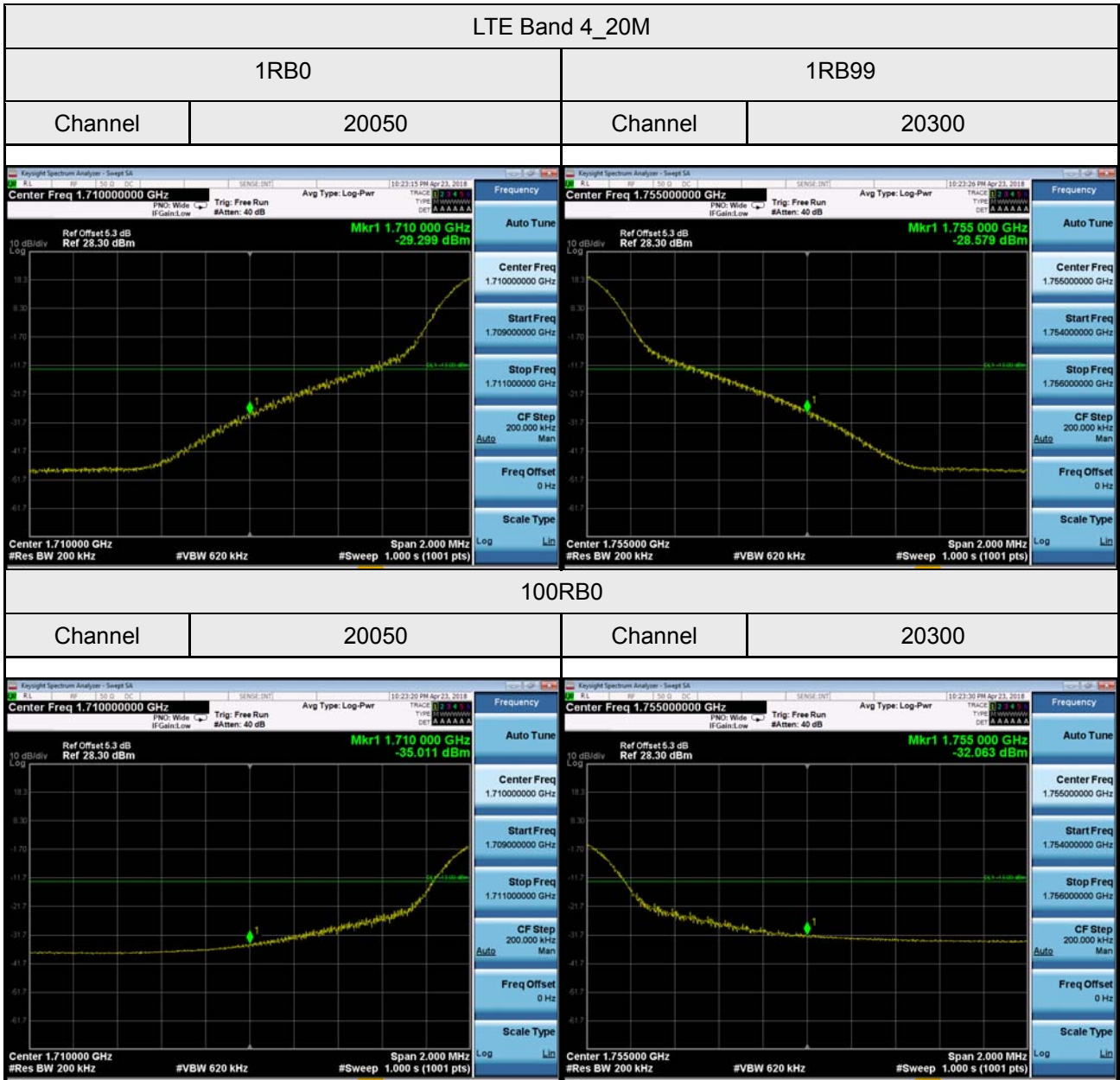


# 50RB0

| Channel | 20000 | Channel | 20350 |
|---------|-------|---------|-------|
|---------|-------|---------|-------|







# LTE Band 7\_5M

1RB0

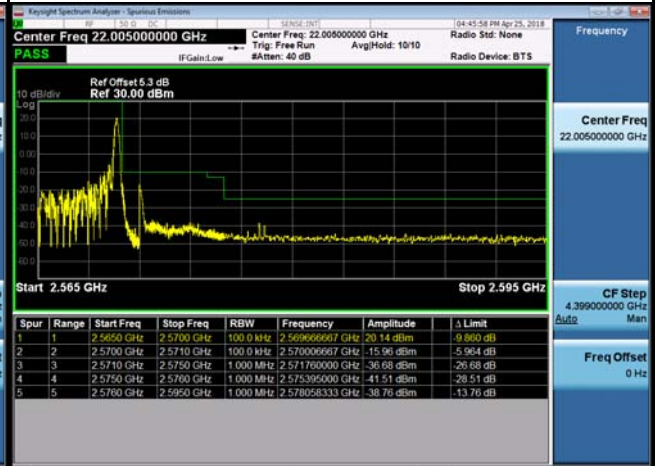
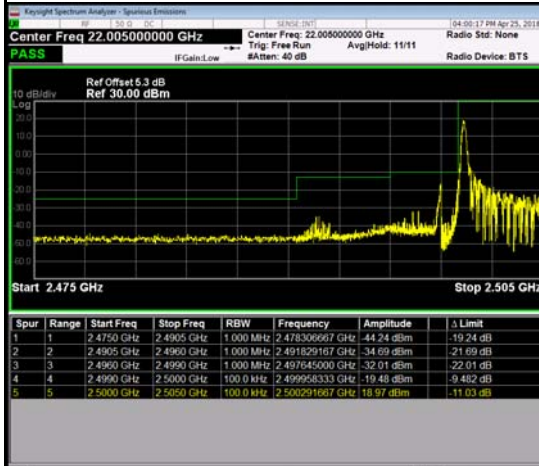
1RB24

Channel

20775

Channel

21425



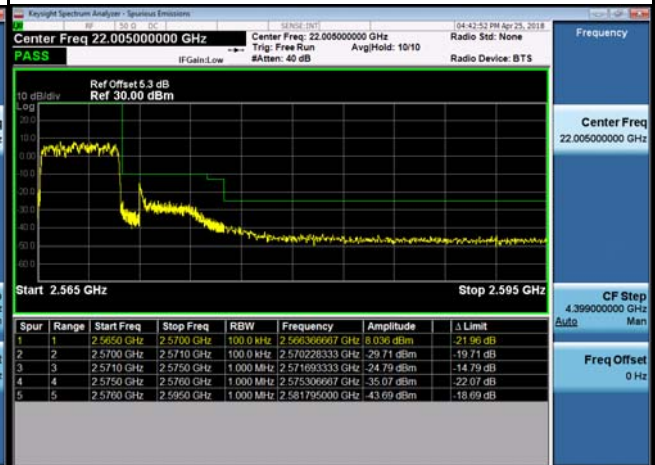
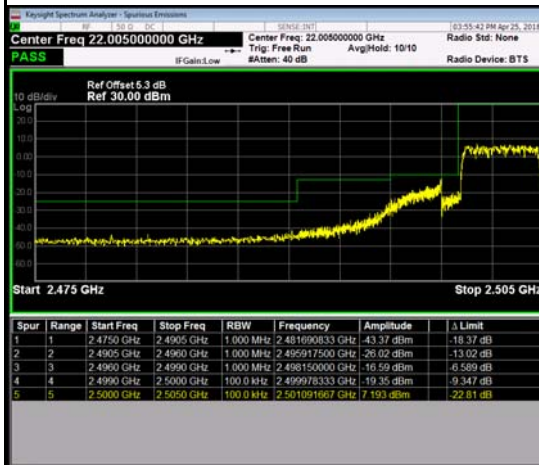
## 25RB0

Channel

20775

Channel

21425



LTE Band 7\_10M

1RB0

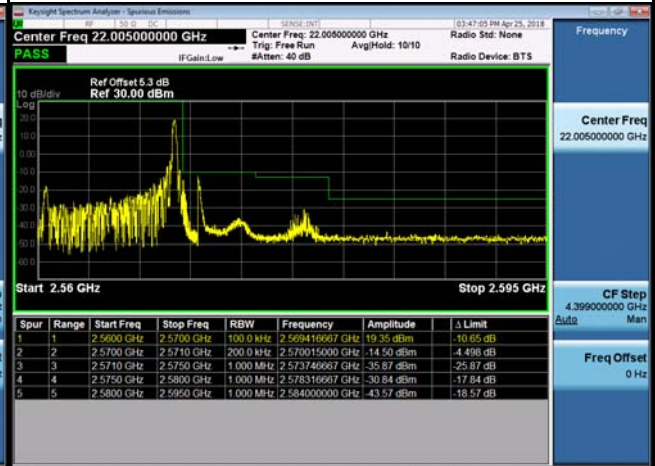
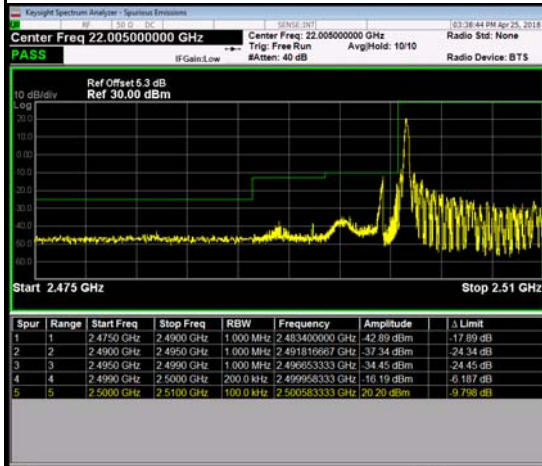
1RB49

Channel

20800

Channel

21400



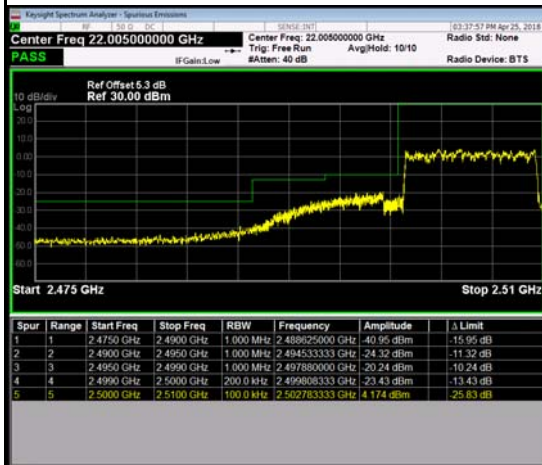
50RB0

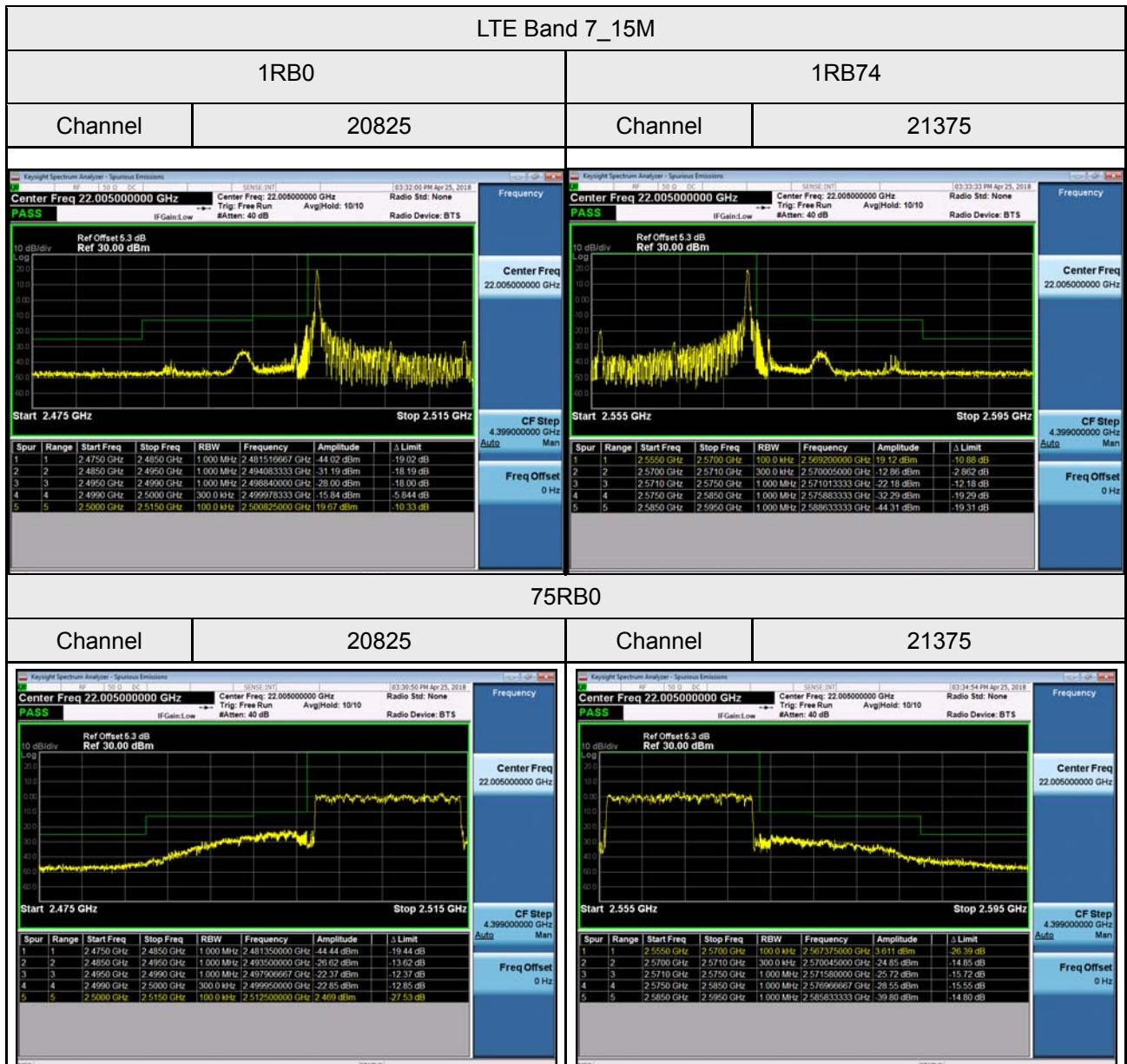
Channel

20800

Channel

21400

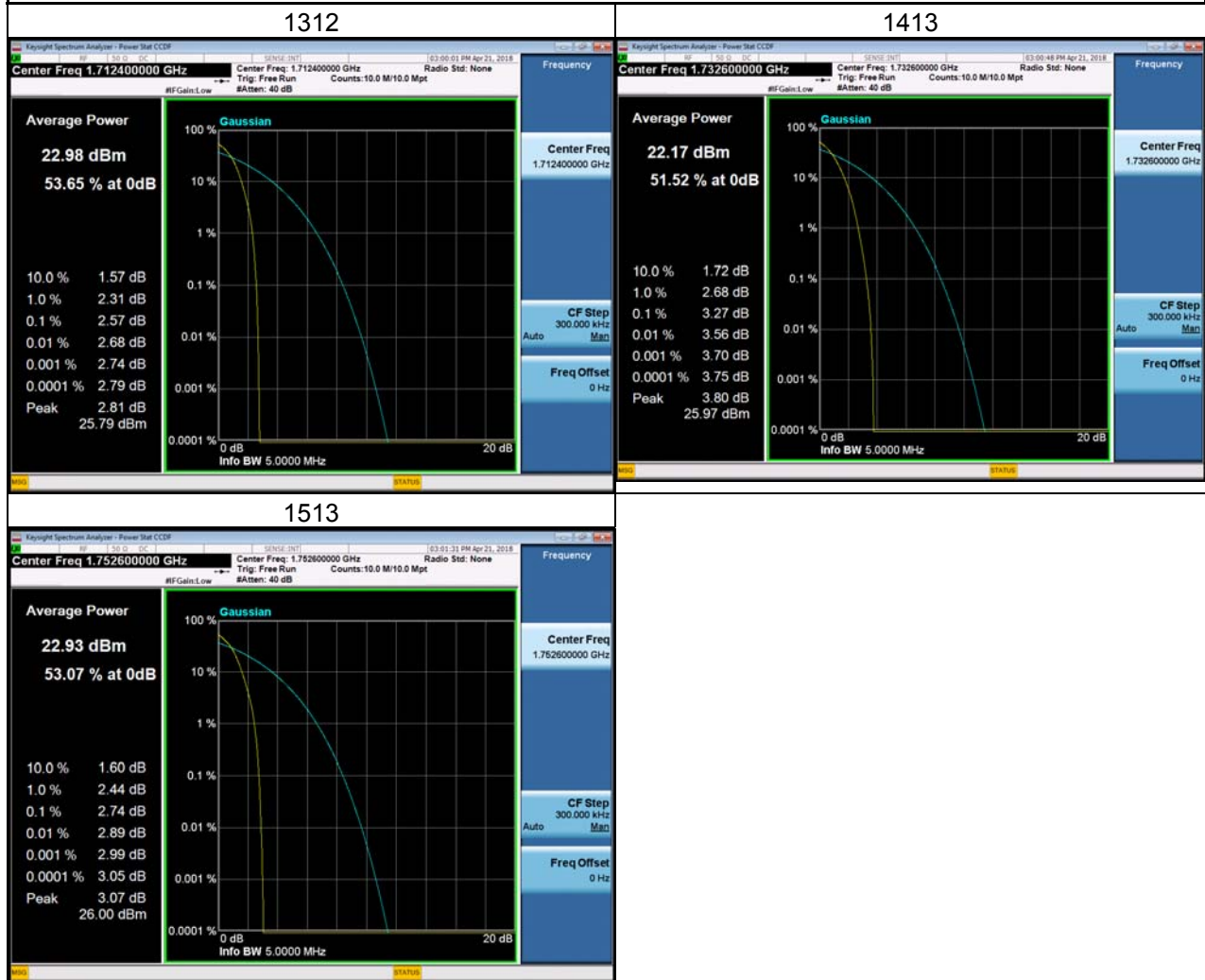




| LTE Band 7_20M                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |       |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |       |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-------|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-------|--|
| 1RB0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |       |  | 1RB99                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  |       |  |
| Channel                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  | 20850 |  | Channel                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  | 21350 |  |
| <div><div>Keyight Spectrum Analyzer - Spurious Emissions</div><div>Center Freq 22.005000000 GHz</div><div>Ref Offset 5.3 dB</div><div>Ref 30.00 dBm</div><div>10 dB/div</div><div>Log</div><div>Start 2.475 GHz</div><div>Stop 2.52 GHz</div><div>Spur Range Start Freq Stop Freq RBW Frequency Amplitude Δ Limit</div><div>1 1 2.4750 GHz 2.4800 GHz 1.000 MHz 2.4760000000 GHz -43.92 dBm -18.92 dB</div><div>2 2 2.4800 GHz 2.4950 GHz 1.000 MHz 2.4920000000 GHz -32.97 dBm -19.97 dB</div><div>3 3 2.4950 GHz 2.4990 GHz 1.000 MHz 2.4989936667 GHz -31.54 dBm -21.54 dB</div><div>4 4 2.4990 GHz 2.5000 GHz 390.0 kHz 2.499931667 GHz -21.30 dBm -11.30 dB</div><div>5 5 2.5000 GHz 2.5200 GHz 100.0 MHz 2.5011000000 GHz -17.66 dBm -12.34 dB</div></div>  |  |       |  | <div><div>Keyight Spectrum Analyzer - Spurious Emissions</div><div>Center Freq 22.005000000 GHz</div><div>Ref Offset 5.3 dB</div><div>Ref 30.00 dBm</div><div>10 dB/div</div><div>Log</div><div>Start 2.55 GHz</div><div>Stop 2.595 GHz</div><div>Spur Range Start Freq Stop Freq RBW Frequency Amplitude Δ Limit</div><div>1 1 2.5500 GHz 2.5700 GHz 100.0 MHz 2.5689999997 GHz -18.60 dBm -11.40 dB</div><div>2 2 2.5700 GHz 2.5710 GHz 390.0 kHz 2.5702333333 GHz -18.66 dBm -8.66 dB</div><div>3 3 2.5710 GHz 2.5750 GHz 1.000 MHz 2.5711099667 GHz -31.24 dBm -21.24 dB</div><div>4 4 2.5750 GHz 2.5900 GHz 1.000 MHz 2.5866750000 GHz -30.27 dBm -17.27 dB</div><div>5 5 2.5900 GHz 2.5950 GHz 1.000 MHz 2.5913166667 GHz -44.20 dBm -19.20 dB</div></div>  |  |       |  |
| 100RB0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |       |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |       |  |
| Channel                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  | 20850 |  | Channel                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  | 21350 |  |
| <div><div>Keyight Spectrum Analyzer - Spurious Emissions</div><div>Center Freq 22.005000000 GHz</div><div>Ref Offset 5.3 dB</div><div>Ref 30.00 dBm</div><div>10 dB/div</div><div>Log</div><div>Start 2.475 GHz</div><div>Stop 2.52 GHz</div><div>Spur Range Start Freq Stop Freq RBW Frequency Amplitude Δ Limit</div><div>1 1 2.4750 GHz 2.4800 GHz 1.000 MHz 2.4778250000 GHz -43.83 dBm -18.83 dB</div><div>2 2 2.4800 GHz 2.4950 GHz 1.000 MHz 2.4873750000 GHz -33.95 dBm -20.95 dB</div><div>3 3 2.4950 GHz 2.4990 GHz 1.000 MHz 2.4967000000 GHz -27.02 dBm -17.02 dB</div><div>4 4 2.4990 GHz 2.5000 GHz 390.0 kHz 2.4999483333 GHz -28.79 dBm -18.79 dB</div><div>5 5 2.5000 GHz 2.5200 GHz 100.0 MHz 2.5006666667 GHz -1.055 dBm -28.94 dB</div></div> |  |       |  | <div><div>Keyight Spectrum Analyzer - Spurious Emissions</div><div>Center Freq 22.005000000 GHz</div><div>Ref Offset 5.3 dB</div><div>Ref 30.00 dBm</div><div>10 dB/div</div><div>Log</div><div>Start 2.55 GHz</div><div>Stop 2.595 GHz</div><div>Spur Range Start Freq Stop Freq RBW Frequency Amplitude Δ Limit</div><div>1 1 2.5500 GHz 2.5700 GHz 100.0 MHz 2.5683000000 GHz -1.123 dBm -28.88 dB</div><div>2 2 2.5700 GHz 2.5710 GHz 390.0 kHz 2.5702166667 GHz -28.35 dBm -18.35 dB</div><div>3 3 2.5710 GHz 2.5750 GHz 1.000 MHz 2.5738066667 GHz -32.42 dBm -22.42 dB</div><div>4 4 2.5750 GHz 2.5900 GHz 1.000 MHz 2.5865250000 GHz -34.85 dBm -21.85 dB</div><div>5 5 2.5900 GHz 2.5950 GHz 1.000 MHz 2.5935916667 GHz -43.20 dBm -18.20 dB</div></div> |  |       |  |

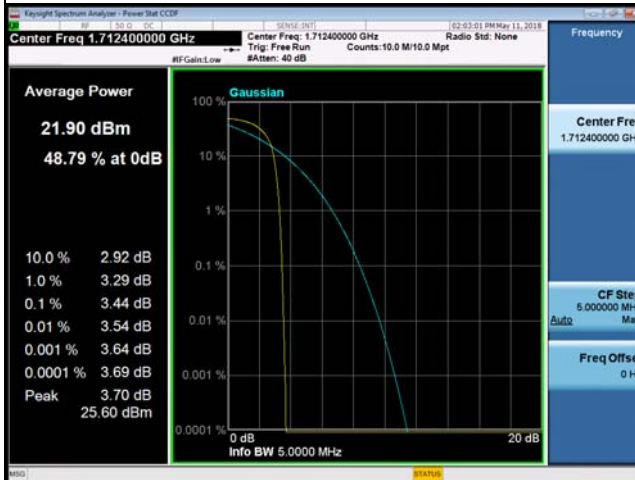
## APPENDIX F - PEAK TO AVERAGE RATIO

# WCDMA Band 4 Spectrum Plot\_WCDMA

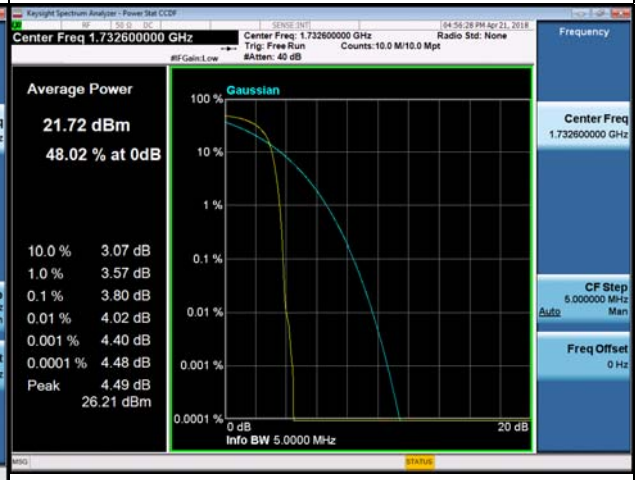


# WCDMA Band 4 Spectrum Plot\_HSDPA

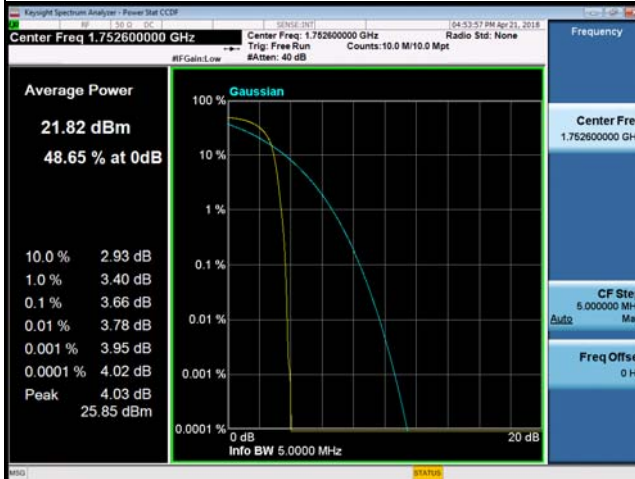
1312



1413



1513

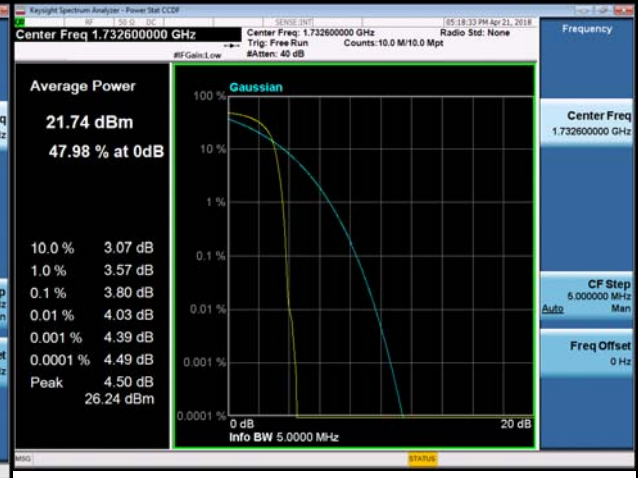


# WCDMA Band 4 Spectrum Plot\_HSUPA

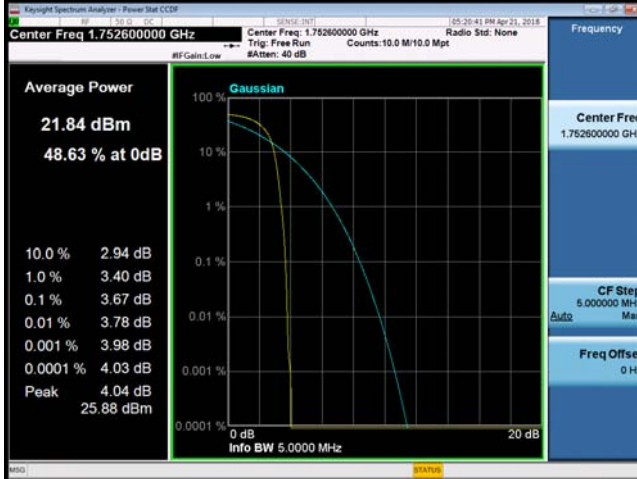
1312



1413

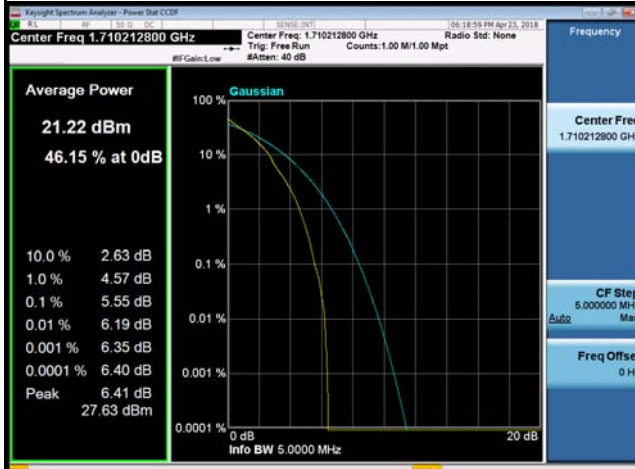


1513



# LTE Band 4 Spectrum Plot\_1.4M

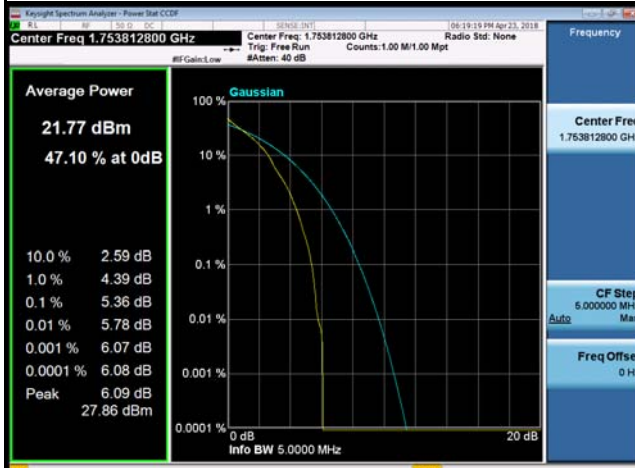
## QPSK-19957



## QPSK-20175



## QPSK-20393



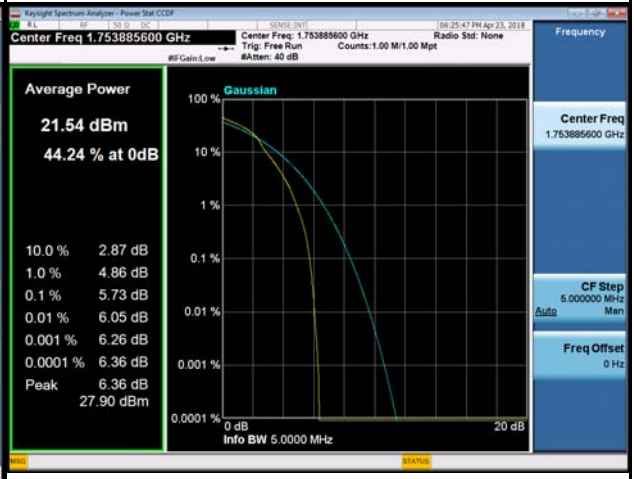
## 16QAM-19957



## 16QAM-20175

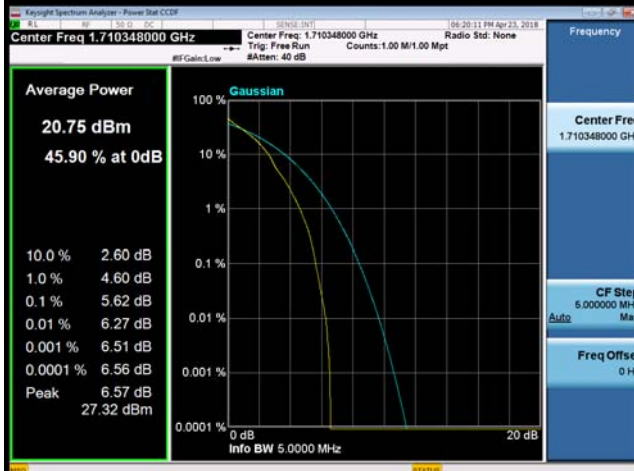


## 16QAM-20393

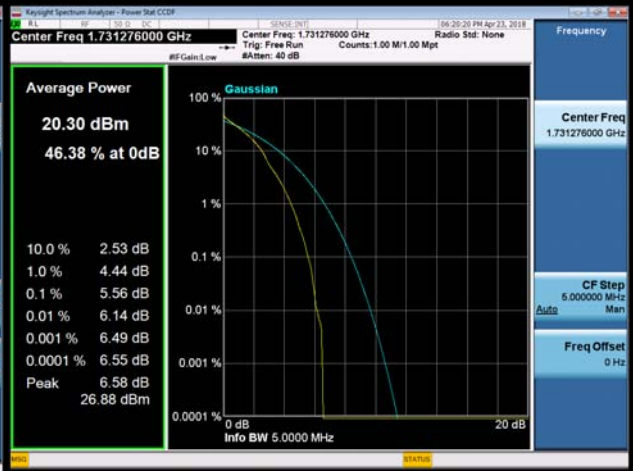


# LTE Band 4 Spectrum Plot\_3M

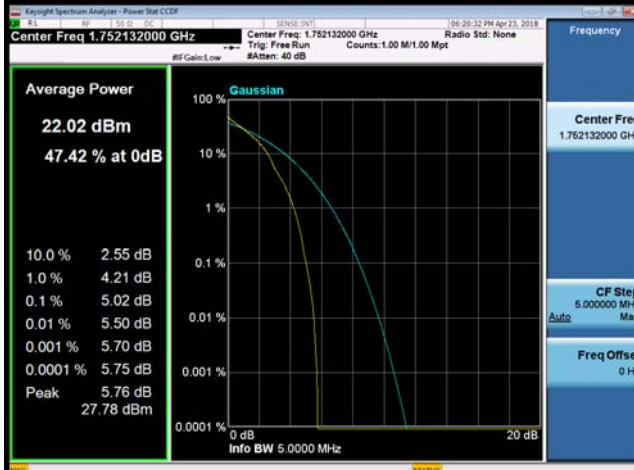
QPSK-19965



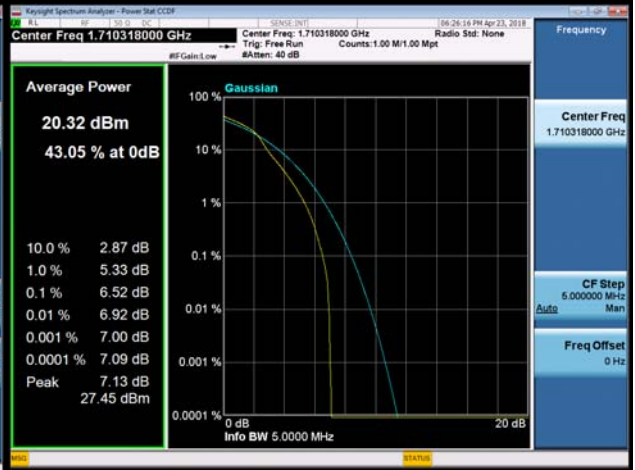
QPSK-20175



QPSK-20385



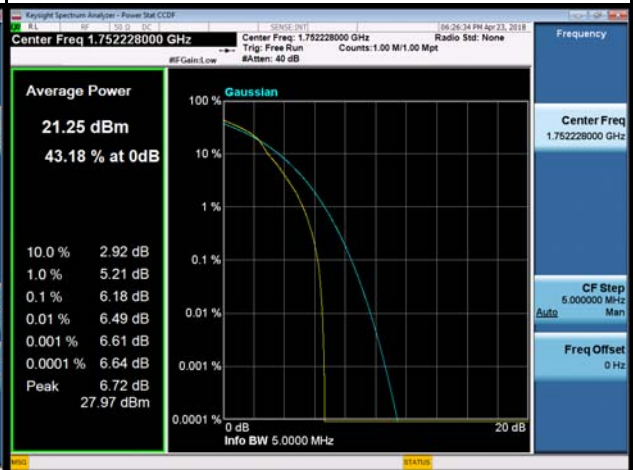
16QAM-19965



16QAM-20175

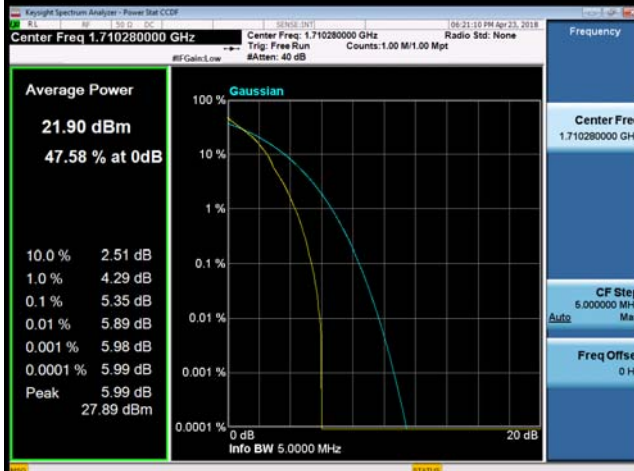


16QAM-20385



# LTE Band 4 Spectrum Plot\_5M

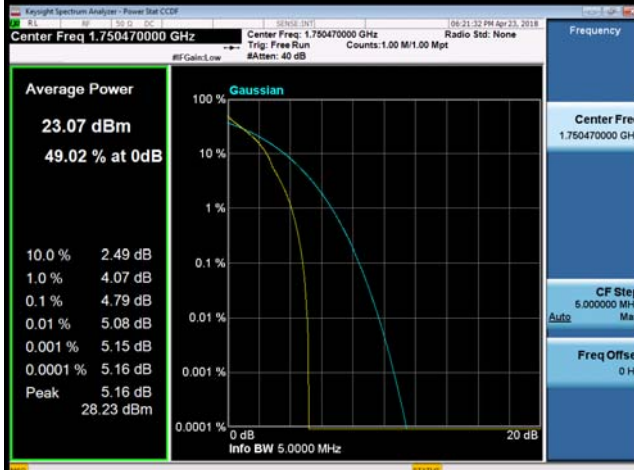
## QPSK-19975



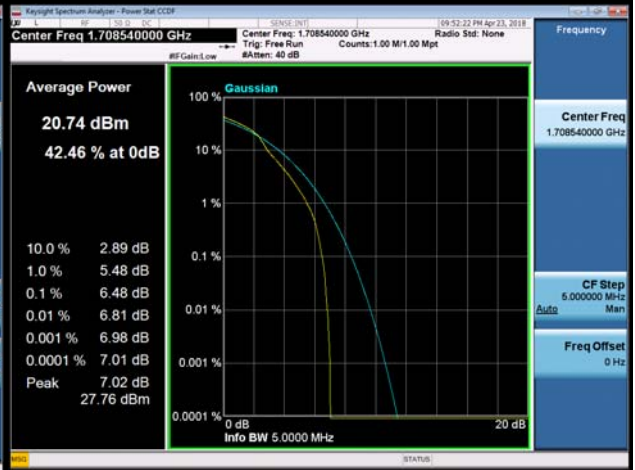
## QPSK-20175



## QPSK-20375



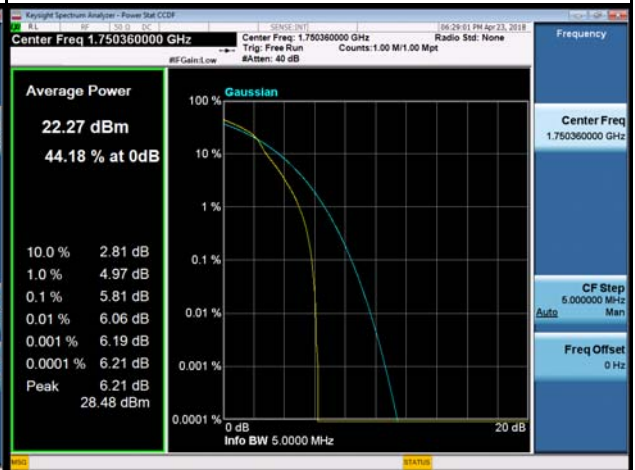
## 16QAM-19975



## 16QAM-20175

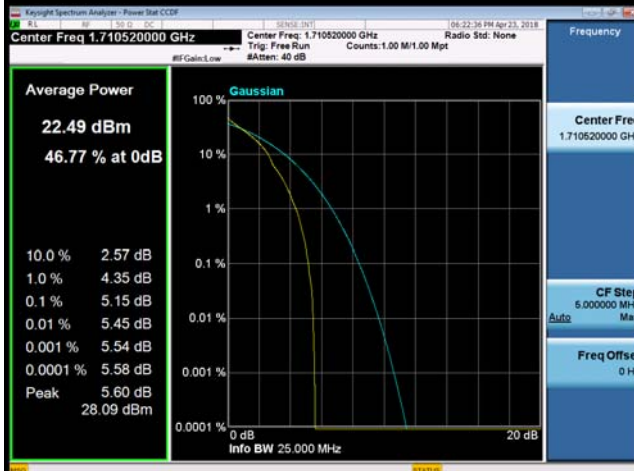


## 16QAM-20375

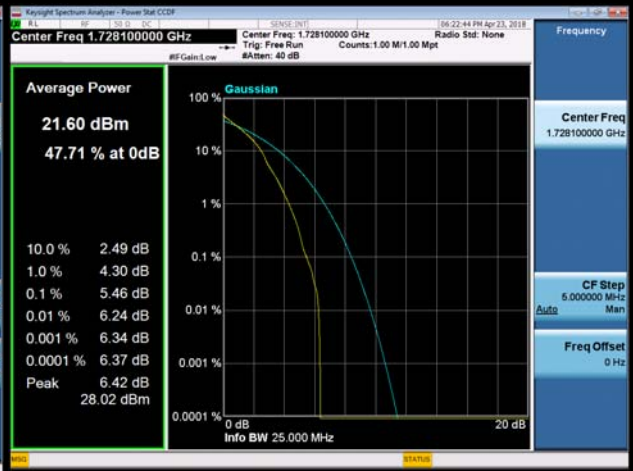


# LTE Band 4 Spectrum Plot\_10M

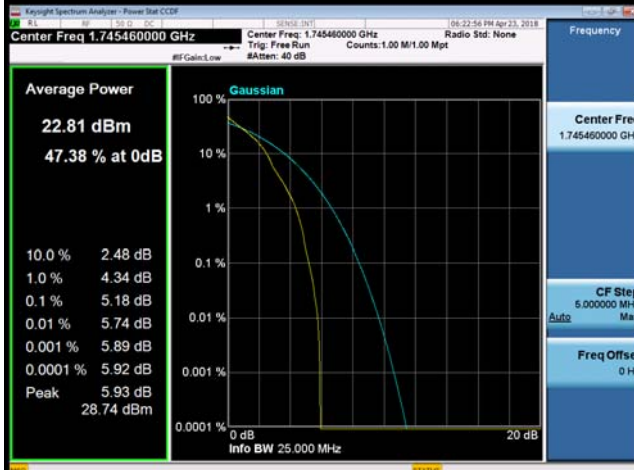
QPSK-20000



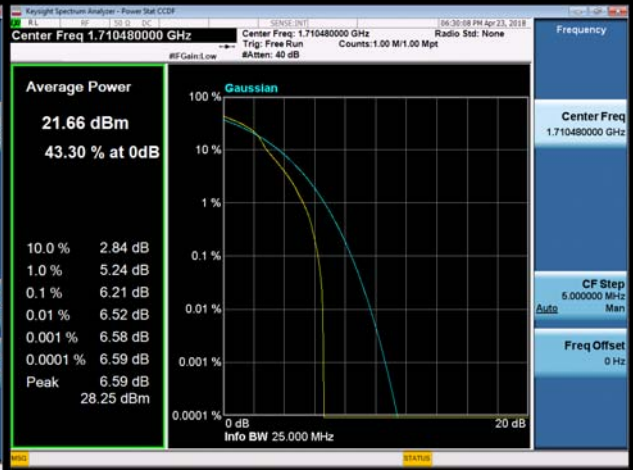
QPSK-20175



QPSK-20350



16QAM-20000



16QAM-20175

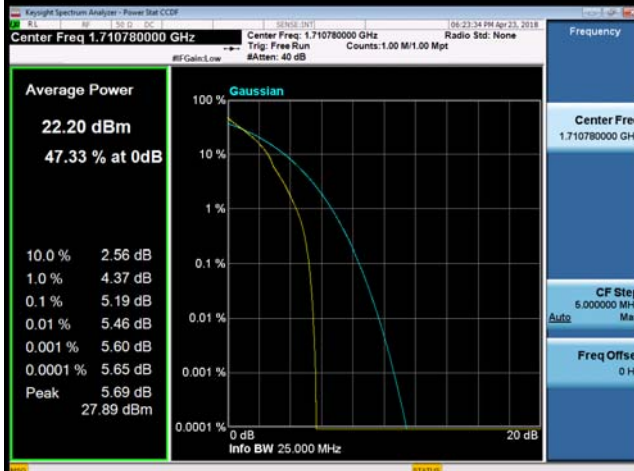


16QAM-20350

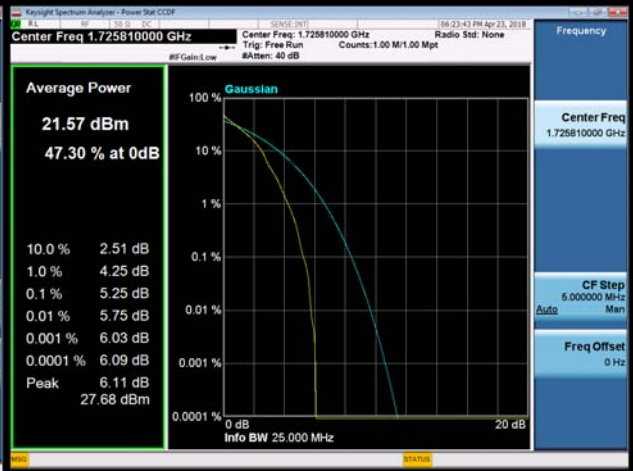


# LTE Band 4 Spectrum Plot\_15M

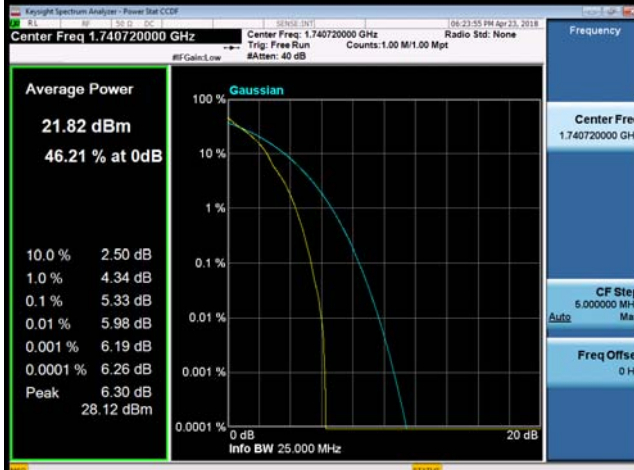
QPSK-20025



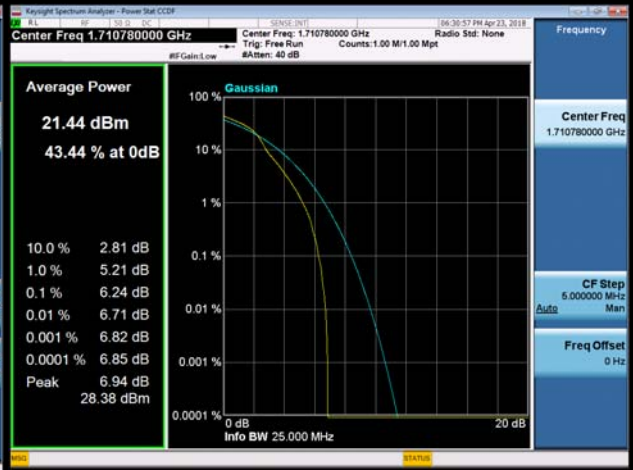
QPSK-20175



QPSK-20325



16QAM-20025



16QAM-20175

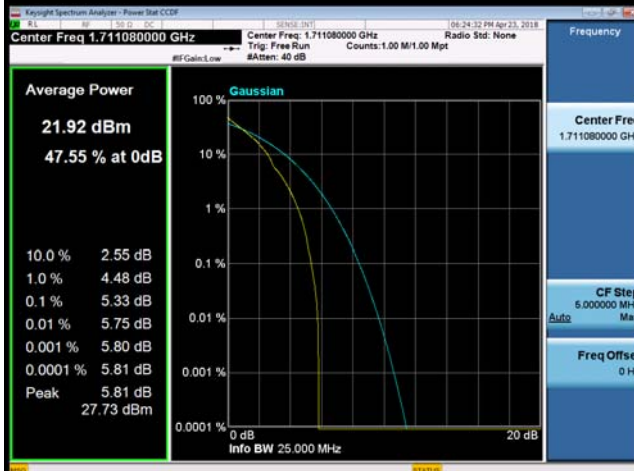


16QAM-20325



# LTE Band 4 Spectrum Plot\_20M

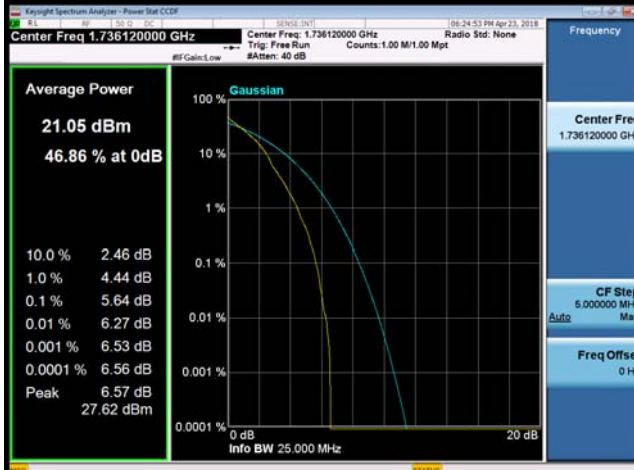
QPSK-20050



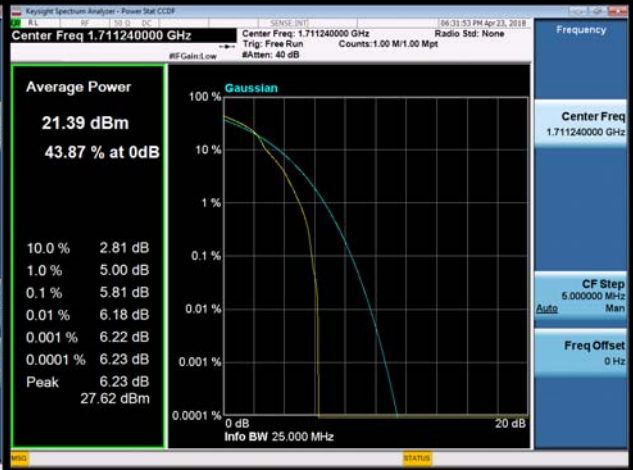
QPSK-20175



QPSK-20300



16QAM-20050



16QAM-20175



16QAM-20300

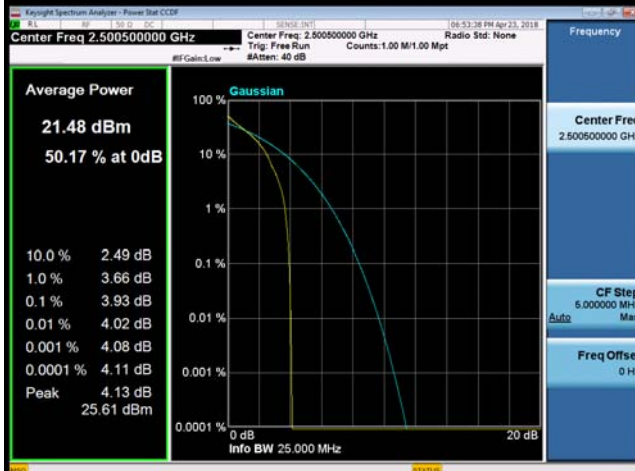


# LTE Band 7 Spectrum Plot\_5M



# LTE Band 7 Spectrum Plot\_10M

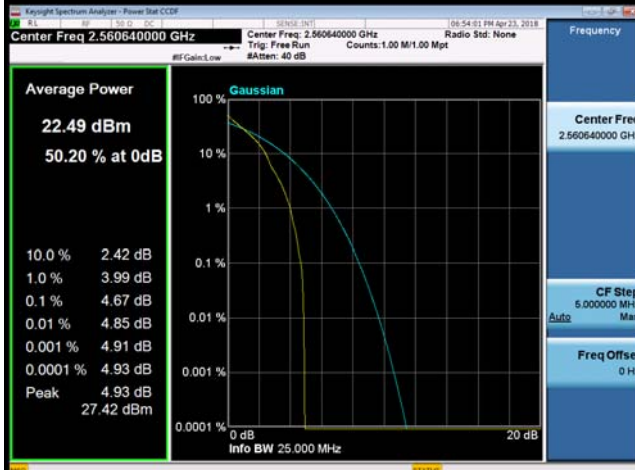
QPSK-20800



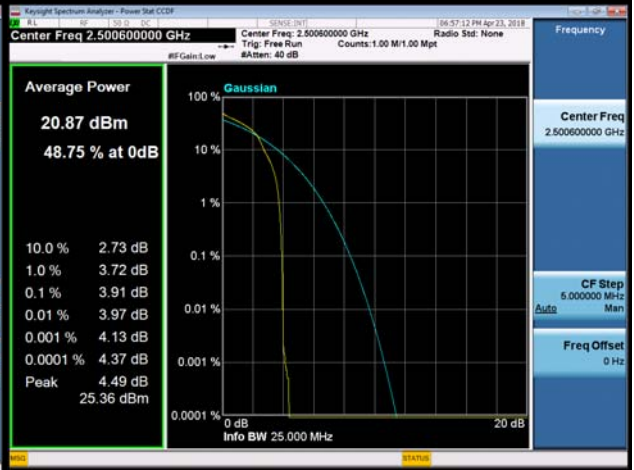
QPSK-21100



QPSK-21400



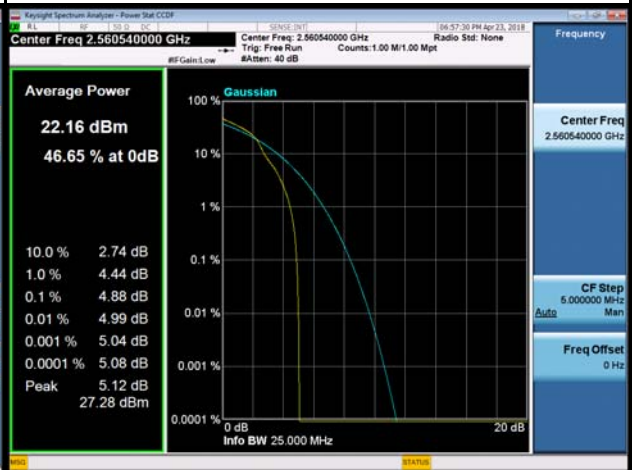
16QAM-20800



16QAM-21100

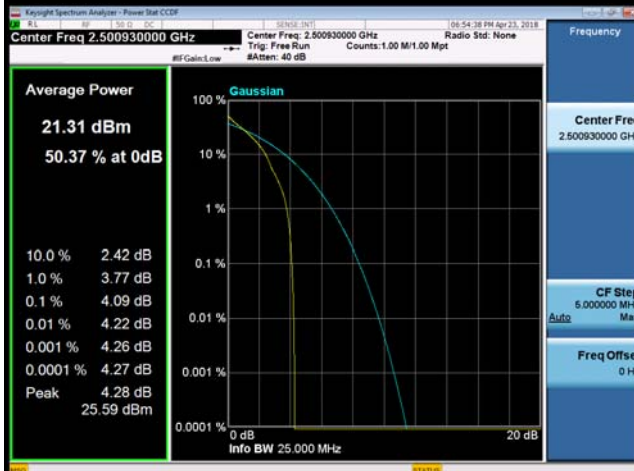


16QAM-21400



# LTE Band 7 Spectrum Plot\_15M

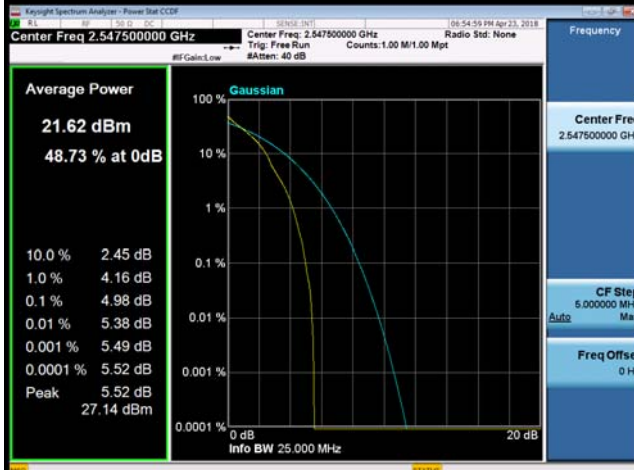
QPSK-20825



QPSK-21100



QPSK-21375



16QAM-20825



16QAM-21100

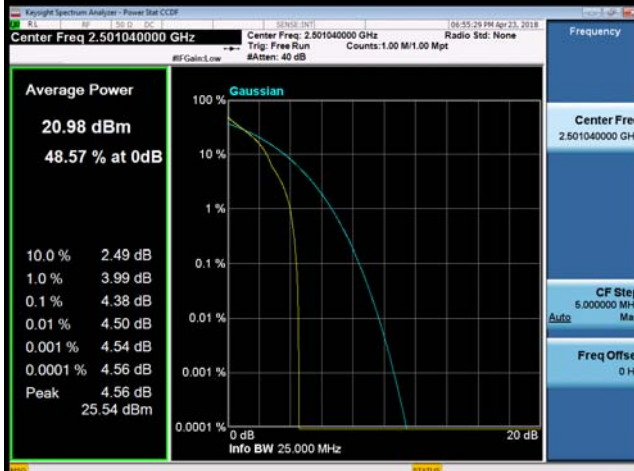


16QAM-21375



# LTE Band 7 Spectrum Plot\_20M

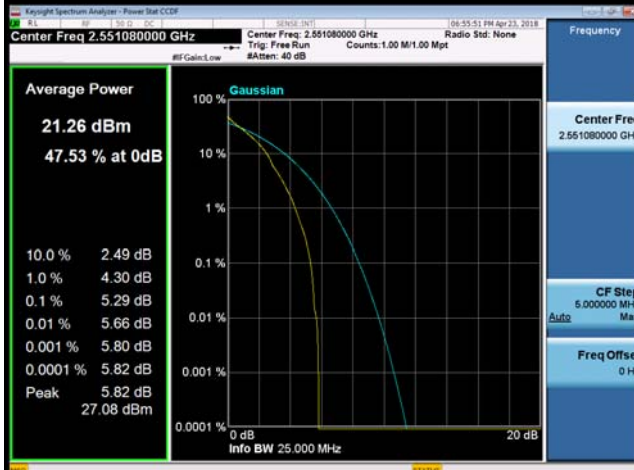
QPSK-20850



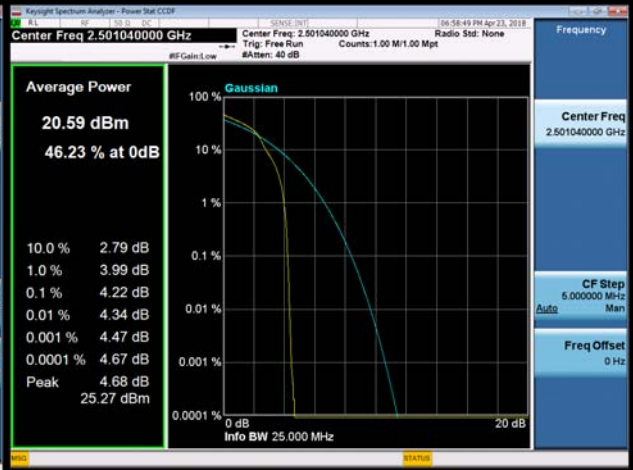
QPSK-21100



QPSK-21350



16QAM-20850



16QAM-21100



16QAM-21350



## APPENDIX G - FREQUENCY STABILITY

|            |                     |
|------------|---------------------|
| Test Mode: | WCDMA Band 4_CH1513 |
|------------|---------------------|

### Temperature vs. Frequency Stability

| Temperature(°C)      | Frequency Error (Hz) | Frequency Error (ppm) | Limit(ppm) |
|----------------------|----------------------|-----------------------|------------|
| -30                  | 3.36                 | 0.001939282           | ±2.5       |
| -20                  | 2.13                 | 0.001229366           |            |
| -10                  | 5.33                 | 0.003076302           |            |
| 0                    | 2.78                 | 0.001604525           |            |
| 10                   | 3.57                 | 0.002060487           |            |
| 20                   | 2.79                 | 0.001610297           |            |
| 30                   | 3.48                 | 0.002008542           |            |
| 40                   | 4.64                 | 0.002678056           |            |
| 50                   | 5.26                 | 0.0030359             |            |
| Max. Deviation (ppm) | <b>5.33</b>          | <b>0.003076302</b>    |            |

### Voltage vs. Frequency Stability

| Voltage(Volts)       | Frequency Error (Hz) | Frequency Error (ppm) | Limit(ppm) |
|----------------------|----------------------|-----------------------|------------|
| 4.2                  | 3.41                 | 0.00196814            | ±2.5       |
| 3.8                  | 3.61                 | 0.002083574           |            |
| 3.6                  | 5.79                 | 0.003341798           |            |
| Max. Deviation (ppm) | <b>5.79</b>          | <b>0.003341798</b>    |            |

|            |                         |
|------------|-------------------------|
| Test Mode: | LTE Band 4_CH20175_1.4M |
|------------|-------------------------|

### Temperature vs. Frequency Stability

| Temperature(°C)      | Frequency Error (Hz) | Frequency Error (ppm) | Limit(ppm) |
|----------------------|----------------------|-----------------------|------------|
| -30                  | 3.23                 | 0.001864358           | ±2.5       |
| -20                  | -2.43                | -0.001402597          |            |
| -10                  | -3.46                | -0.001997114          |            |
| 0                    | 4.92                 | 0.002839827           |            |
| 10                   | -5.49                | -0.003168831          |            |
| 20                   | -3.83                | -0.002210678          |            |
| 30                   | 3.92                 | 0.002262626           |            |
| 40                   | 3.08                 | 0.001777778           |            |
| 50                   | -6.16                | -0.003555556          |            |
| Max. Deviation (ppm) | <b>-6.16</b>         | <b>-0.003555556</b>   |            |

### Voltage vs. Frequency Stability

| Voltage(Volts)       | Frequency Error (Hz) | Frequency Error (ppm) | Limit(ppm) |
|----------------------|----------------------|-----------------------|------------|
| 4.2                  | -7.62                | -0.004398268          | ±2.5       |
| 3.8                  | -3.11                | -0.001795094          |            |
| 3.6                  | -2.57                | -0.001483405          |            |
| Max. Deviation (ppm) | <b>-7.62</b>         | <b>-0.004398268</b>   |            |

|            |                       |
|------------|-----------------------|
| Test Mode: | LTE Band 4_CH20385_3M |
|------------|-----------------------|

### Temperature vs. Frequency Stability

| Temperature(°C)      | Frequency Error (Hz) | Frequency Error (ppm) | Limit(ppm) |
|----------------------|----------------------|-----------------------|------------|
| -30                  | -4.48                | -0.002585859          | ±2.5       |
| -20                  | 3.93                 | 0.002268398           |            |
| -10                  | -4.48                | -0.002585859          |            |
| 0                    | 0.87                 | 0.000502165           |            |
| 10                   | -6.01                | -0.003468975          |            |
| 20                   | -2.57                | -0.001483405          |            |
| 30                   | 3.52                 | 0.002031746           |            |
| 40                   | 5.97                 | 0.003445887           |            |
| 50                   | -6.37                | -0.003676768          |            |
| Max. Deviation (ppm) | <b>-6.37</b>         | <b>-0.003676768</b>   |            |

### Voltage vs. Frequency Stability

| Voltage(Volts)       | Frequency Error (Hz) | Frequency Error (ppm) | Limit(ppm) |
|----------------------|----------------------|-----------------------|------------|
| 4.2                  | 5.76                 | 0.003324675           | ±2.5       |
| 3.8                  | -6.57                | -0.003792208          |            |
| 3.6                  | 3.59                 | 0.00207215            |            |
| Max. Deviation (ppm) | <b>-6.57</b>         | <b>-0.003792208</b>   |            |

|            |                       |
|------------|-----------------------|
| Test Mode: | LTE Band 4_CH20175_5M |
|------------|-----------------------|

### Temperature vs. Frequency Stability

| Temperature(°C)      | Frequency Error (Hz) | Frequency Error (ppm) | Limit(ppm) |
|----------------------|----------------------|-----------------------|------------|
| -30                  | -3.39                | -0.00195671           | ±2.5       |
| -20                  | 5.61                 | 0.003238095           |            |
| -10                  | -3.50                | -0.002020202          |            |
| 0                    | -4.82                | -0.002782107          |            |
| 10                   | 4.86                 | 0.002805195           |            |
| 20                   | -3.19                | -0.00184127           |            |
| 30                   | -1.01                | -0.000582973          |            |
| 40                   | -6.43                | -0.0037114            |            |
| 50                   | -3.81                | -0.002199134          |            |
| Max. Deviation (ppm) | <b>-6.43</b>         | <b>-0.0037114</b>     |            |

### Voltage vs. Frequency Stability

| Voltage(Volts)       | Frequency Error (Hz) | Frequency Error (ppm) | Limit(ppm) |
|----------------------|----------------------|-----------------------|------------|
| 4.2                  | 4.29                 | 0.00247619            | ±2.5       |
| 3.8                  | 3.70                 | 0.002135642           |            |
| 3.6                  | 4.46                 | 0.002574315           |            |
| Max. Deviation (ppm) | <b>4.46</b>          | <b>0.002574315</b>    |            |

|            |                        |
|------------|------------------------|
| Test Mode: | LTE Band 4_CH20350_10M |
|------------|------------------------|

### Temperature vs. Frequency Stability

| Temperature(°C)      | Frequency Error (Hz) | Frequency Error (ppm) | Limit(ppm) |
|----------------------|----------------------|-----------------------|------------|
| -30                  | 3.43                 | 0.001979798           | ±2.5       |
| -20                  | 6.53                 | 0.00376912            |            |
| -10                  | 5.62                 | 0.003243867           |            |
| 0                    | 3.96                 | 0.002285714           |            |
| 10                   | -6.05                | -0.003492063          |            |
| 20                   | 0.53                 | 0.000305916           |            |
| 30                   | 5.30                 | 0.003059163           |            |
| 40                   | 0.98                 | 0.000565657           |            |
| 50                   | 6.96                 | 0.004017316           |            |
| Max. Deviation (ppm) | <b>6.96</b>          | <b>0.004017316</b>    |            |

### Voltage vs. Frequency Stability

| Voltage(Volts)       | Frequency Error (Hz) | Frequency Error (ppm) | Limit(ppm) |
|----------------------|----------------------|-----------------------|------------|
| 4.2                  | -2.11                | -0.001217893          | ±2.5       |
| 3.8                  | -3.60                | -0.002077922          |            |
| 3.6                  | 4.84                 | 0.002793651           |            |
| Max. Deviation (ppm) | <b>4.84</b>          | <b>0.002793651</b>    |            |

|            |                        |
|------------|------------------------|
| Test Mode: | LTE Band 4_CH20325_15M |
|------------|------------------------|

### Temperature vs. Frequency Stability

| Temperature(°C)      | Frequency Error (Hz) | Frequency Error (ppm) | Limit(ppm) |
|----------------------|----------------------|-----------------------|------------|
| -30                  | 4.46                 | 0.002574315           | ±2.5       |
| -20                  | 2.27                 | 0.001310245           |            |
| -10                  | -5.03                | -0.002902742          |            |
| 0                    | 4.59                 | 0.002649351           |            |
| 10                   | -2.17                | -0.001252525          |            |
| 20                   | 3.55                 | 0.002049062           |            |
| 30                   | -3.49                | -0.00201443           |            |
| 40                   | -2.40                | -0.001385281          |            |
| 50                   | -6.39                | -0.003688312          |            |
| Max. Deviation (ppm) | <b>-6.39</b>         | <b>-0.003688312</b>   |            |

### Voltage vs. Frequency Stability

| Voltage(Volts)       | Frequency Error (Hz) | Frequency Error (ppm) | Limit(ppm) |
|----------------------|----------------------|-----------------------|------------|
| 4.2                  | 6.24                 | 0.003601732           | ±2.5       |
| 3.8                  | 2.24                 | 0.001292929           |            |
| 3.6                  | -3.69                | -0.00212987           |            |
| Max. Deviation (ppm) | <b>6.24</b>          | <b>0.003601732</b>    |            |

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|------------|------------------------|
| Test Mode: | LTE Band 4_CH20175_20M |
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### Temperature vs. Frequency Stability

| Temperature(°C)      | Frequency Error (Hz) | Frequency Error (ppm) | Limit(ppm) |
|----------------------|----------------------|-----------------------|------------|
| -30                  | 3.63                 | 0.002095238           | ±2.5       |
| -20                  | 4.62                 | 0.002666667           |            |
| -10                  | 3.52                 | 0.002031746           |            |
| 0                    | -3.14                | -0.00181241           |            |
| 10                   | -7.55                | -0.004357864          |            |
| 20                   | 6.51                 | 0.003757576           |            |
| 30                   | -2.98                | -0.001720058          |            |
| 40                   | 5.13                 | 0.002961039           |            |
| 50                   | -3.76                | -0.002170274          |            |
| Max. Deviation (ppm) | <b>-7.55</b>         | <b>-0.004357864</b>   |            |

### Voltage vs. Frequency Stability

| Voltage(Volts)       | Frequency Error (Hz) | Frequency Error (ppm) | Limit(ppm) |
|----------------------|----------------------|-----------------------|------------|
| 4.2                  | 5.16                 | 0.002978355           | ±2.5       |
| 3.8                  | -3.91                | -0.002256854          |            |
| 3.6                  | 2.24                 | 0.001292929           |            |
| Max. Deviation (ppm) | <b>5.16</b>          | <b>0.002978355</b>    |            |

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|------------|-----------------------|
| Test Mode: | LTE Band 7_CH21100_5M |
|------------|-----------------------|

### Temperature vs. Frequency Stability

| Temperature(°C)      | Frequency Error (Hz) | Frequency Error (ppm) | Limit(ppm) |
|----------------------|----------------------|-----------------------|------------|
| -30                  | 2.53                 | 0.000998028           | ±2.5       |
| -20                  | 6.40                 | 0.002524655           |            |
| -10                  | -2.65                | -0.001045365          |            |
| 0                    | 3.64                 | 0.001435897           |            |
| 10                   | -6.59                | -0.002599606          |            |
| 20                   | 3.56                 | 0.001404339           |            |
| 30                   | 4.65                 | 0.00183432            |            |
| 40                   | -2.83                | -0.001116371          |            |
| 50                   | -1.02                | -0.000402367          |            |
| Max. Deviation (ppm) | <b>-6.59</b>         | <b>-0.002599606</b>   |            |

### Voltage vs. Frequency Stability

| Voltage(Volts)       | Frequency Error (Hz) | Frequency Error (ppm) | Limit(ppm) |
|----------------------|----------------------|-----------------------|------------|
| 4.2                  | -1.04                | -0.000410256          | ±2.5       |
| 3.8                  | 1.59                 | 0.000627219           |            |
| 3.6                  | 2.82                 | 0.001112426           |            |
| Max. Deviation (ppm) | <b>2.82</b>          | <b>0.001112426</b>    |            |

|            |                        |
|------------|------------------------|
| Test Mode: | LTE Band 7_CH21100_10M |
|------------|------------------------|

### Temperature vs. Frequency Stability

| Temperature(°C)      | Frequency Error (Hz) | Frequency Error (ppm) | Limit(ppm) |
|----------------------|----------------------|-----------------------|------------|
| -30                  | 4.16                 | 0.001641026           | ±2.5       |
| -20                  | 2.53                 | 0.000998028           |            |
| -10                  | 3.39                 | 0.001337278           |            |
| 0                    | 1.56                 | 0.000615385           |            |
| 10                   | -2.62                | -0.001033531          |            |
| 20                   | 3.83                 | 0.001510848           |            |
| 30                   | 2.00                 | 0.000788955           |            |
| 40                   | 2.41                 | 0.00095069            |            |
| 50                   | -2.04                | -0.000804734          |            |
| Max. Deviation (ppm) | <b>4.16</b>          | <b>0.001641026</b>    |            |

### Voltage vs. Frequency Stability

| Voltage(Volts)       | Frequency Error (Hz) | Frequency Error (ppm) | Limit(ppm) |
|----------------------|----------------------|-----------------------|------------|
| 4.2                  | -2.19                | -0.000863905          | ±2.5       |
| 3.8                  | 4.40                 | 0.0017357             |            |
| 3.6                  | -2.74                | -0.001080868          |            |
| Max. Deviation (ppm) | <b>4.4</b>           | <b>0.0017357</b>      |            |

|            |                        |
|------------|------------------------|
| Test Mode: | LTE Band 7_CH21375_15M |
|------------|------------------------|

### Temperature vs. Frequency Stability

| Temperature(°C)      | Frequency Error (Hz) | Frequency Error (ppm) | Limit(ppm) |
|----------------------|----------------------|-----------------------|------------|
| -30                  | 5.19                 | 0.002047337           | ±2.5       |
| -20                  | -4.17                | -0.00164497           |            |
| -10                  | -2.71                | -0.001069034          |            |
| 0                    | 2.61                 | 0.001029586           |            |
| 10                   | 3.01                 | 0.001187377           |            |
| 20                   | -2.71                | -0.001069034          |            |
| 30                   | 3.73                 | 0.0014714             |            |
| 40                   | 4.08                 | 0.001609467           |            |
| 50                   | 2.16                 | 0.000852071           |            |
| Max. Deviation (ppm) | <b>5.19</b>          | <b>0.002047337</b>    |            |

### Voltage vs. Frequency Stability

| Voltage(Volts)       | Frequency Error (Hz) | Frequency Error (ppm) | Limit(ppm) |
|----------------------|----------------------|-----------------------|------------|
| 4.2                  | 4.15                 | 0.001637081           | ±2.5       |
| 3.8                  | -5.41                | -0.002134122          |            |
| 3.6                  | 3.26                 | 0.001285996           |            |
| Max. Deviation (ppm) | <b>-5.41</b>         | <b>-0.002134122</b>   |            |

|            |                        |
|------------|------------------------|
| Test Mode: | LTE Band 7_CH21350_20M |
|------------|------------------------|

### Temperature vs. Frequency Stability

| Temperature(°C)      | Frequency Error (Hz) | Frequency Error (ppm) | Limit(ppm) |
|----------------------|----------------------|-----------------------|------------|
| -30                  | -5.26                | -0.002074951          | ±2.5       |
| -20                  | -3.91                | -0.001542406          |            |
| -10                  | 4.25                 | 0.001676529           |            |
| 0                    | 2.11                 | 0.000832347           |            |
| 10                   | 7.41                 | 0.002923077           |            |
| 20                   | -6.46                | -0.002548323          |            |
| 30                   | 3.24                 | 0.001278107           |            |
| 40                   | -2.52                | -0.000994083          |            |
| 50                   | -3.48                | -0.001372781          |            |
| Max. Deviation (ppm) | <b>7.41</b>          | <b>0.002923077</b>    |            |

### Voltage vs. Frequency Stability

| Voltage(Volts)       | Frequency Error (Hz) | Frequency Error (ppm) | Limit(ppm) |
|----------------------|----------------------|-----------------------|------------|
| 4.2                  | -5.20                | -0.002051282          | ±2.5       |
| 3.8                  | 4.29                 | 0.001692308           |            |
| 3.6                  | 3.76                 | 0.001483235           |            |
| Max. Deviation (ppm) | <b>-5.2</b>          | <b>-0.002051282</b>   |            |