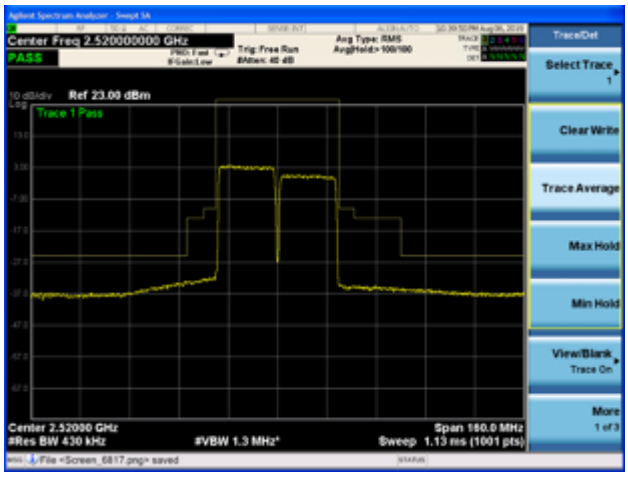
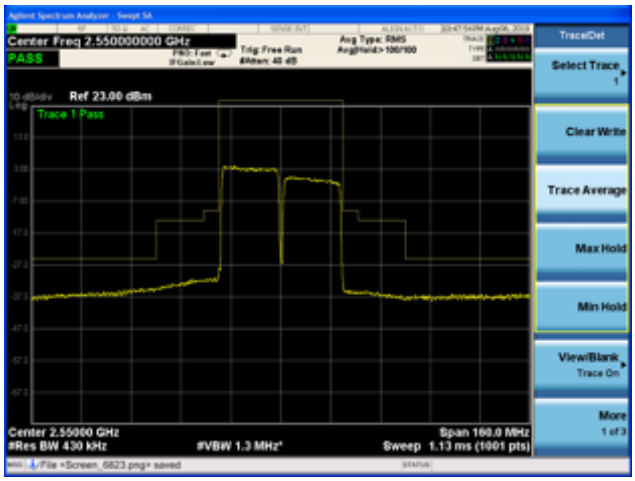
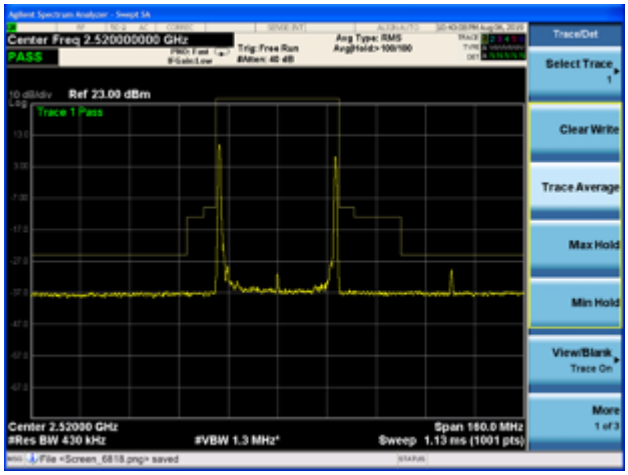
CA-7C 16QAM 20MHz+20MHz CH-Low, 100%RB



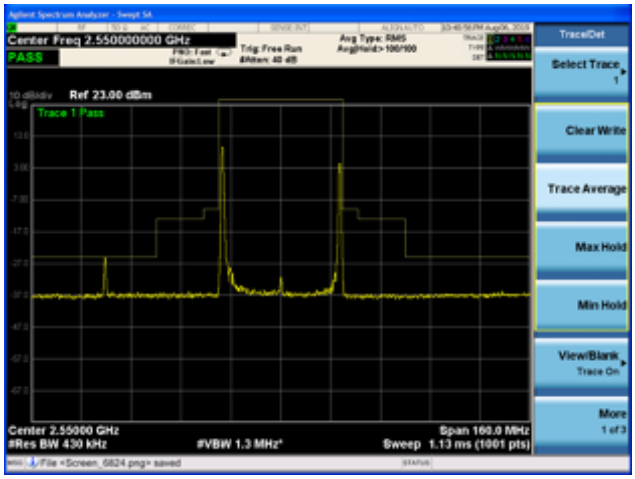

CA-7C 16QAM 20MHz+20MHz CH-High, 100%RB



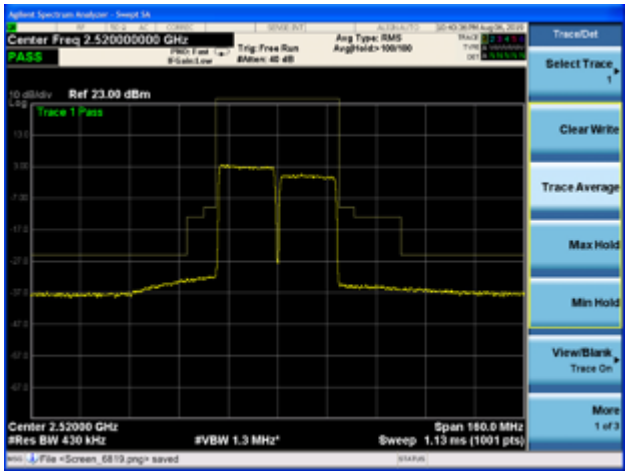

CA-7C 64QAM 20MHz+20MHz CH-Low, 1 RB



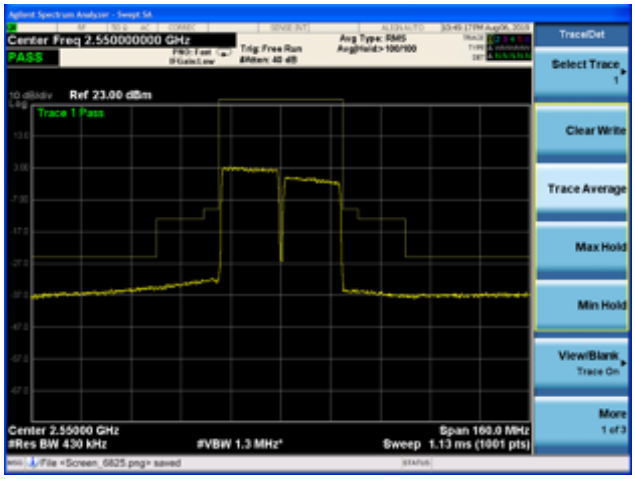

CA-7C 64QAM 20MHz+20MHz CH-High, 1 RB




CA-7C 64QAM 20MHz+20MHz CH-Low, 100%RB




CA-7C 64QAM 20MHz+20MHz CH-High, 100%RB





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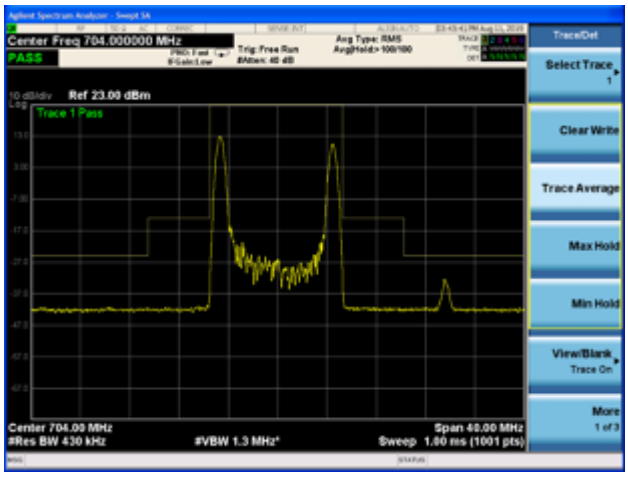
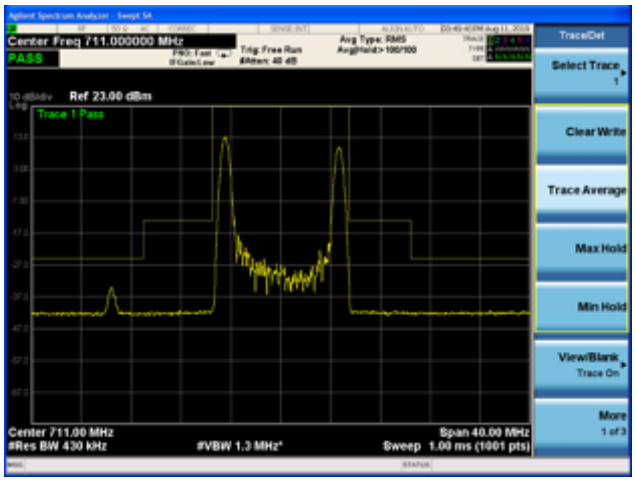
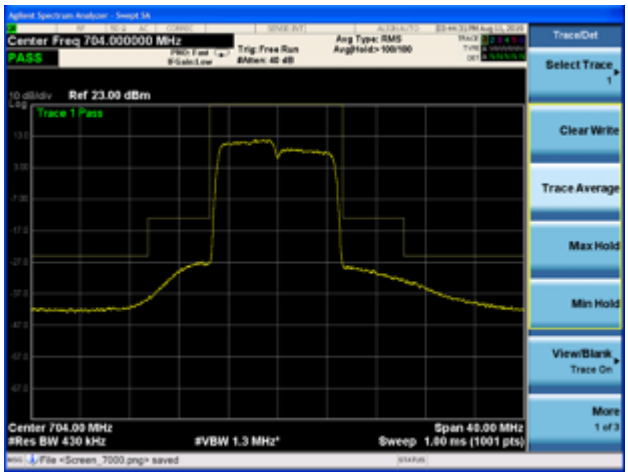
CA-12B QPSK 5MHz+5MHz CH-Low, 1 RB



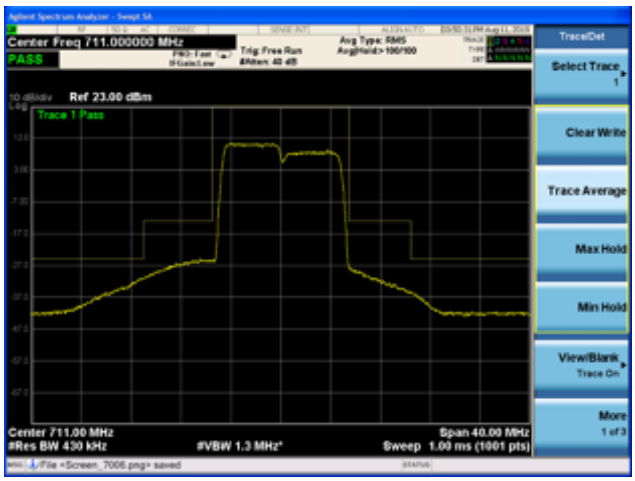

CA-12B QPSK 5MHz+5MHz CH-High, 1 RB



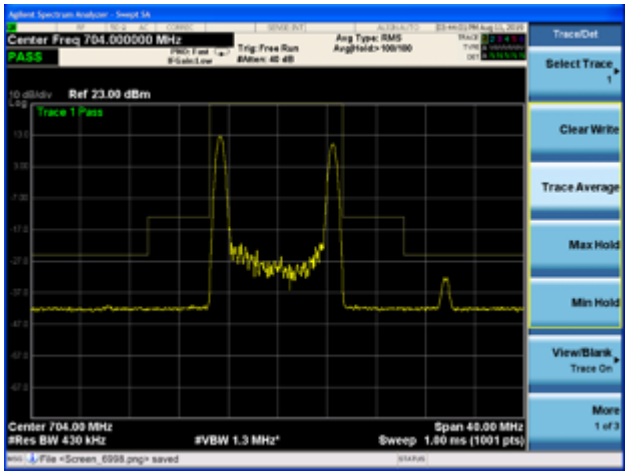

CA-12B QPSK 5MHz+5MHz CH-Low, 100%RB



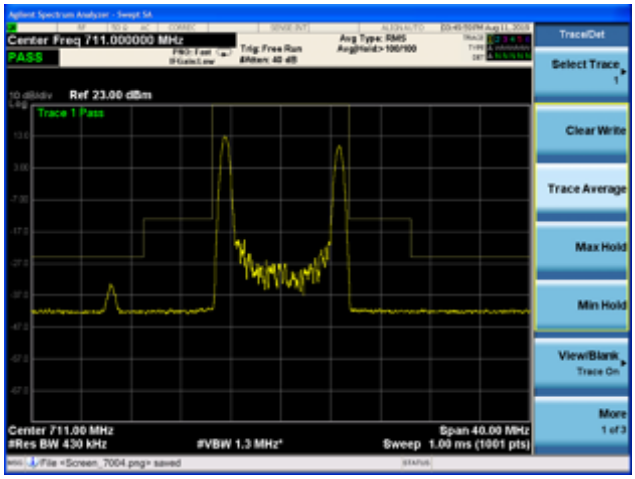

CA-12B QPSK 5MHz+5MHz CH-High, 100%RB




CA-12B 16QAM 5MHz+5MHz CH-Low, 1 RB




CA-12B 16QAM 5MHz+5MHz CH-High, 1 RB





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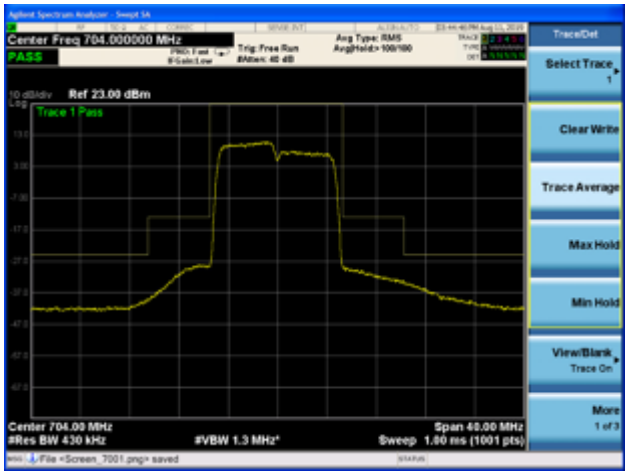
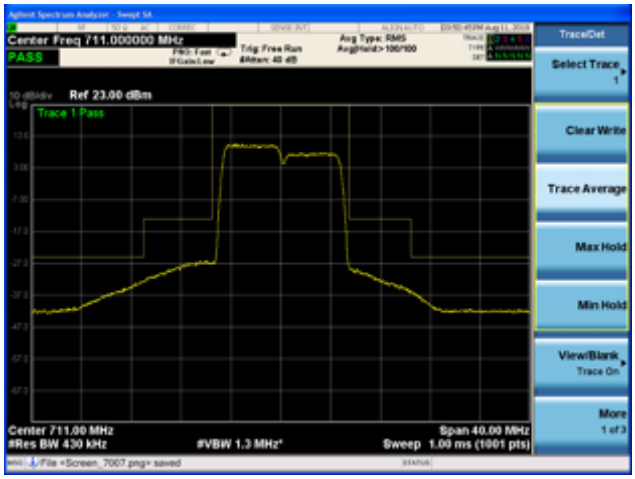
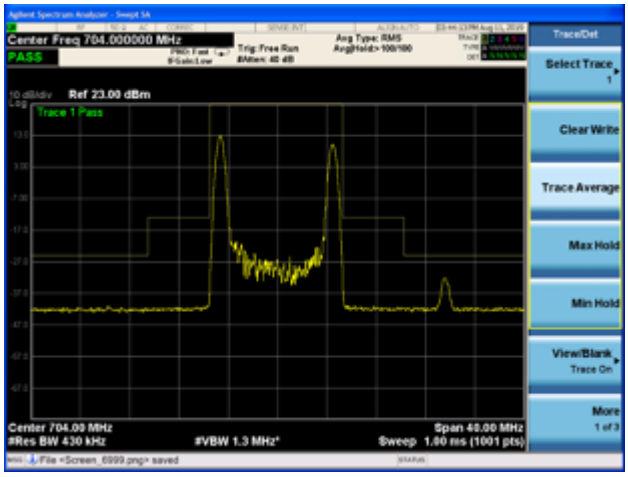
CA-12B 16QAM 5MHz+5MHz CH-Low, 100%RB



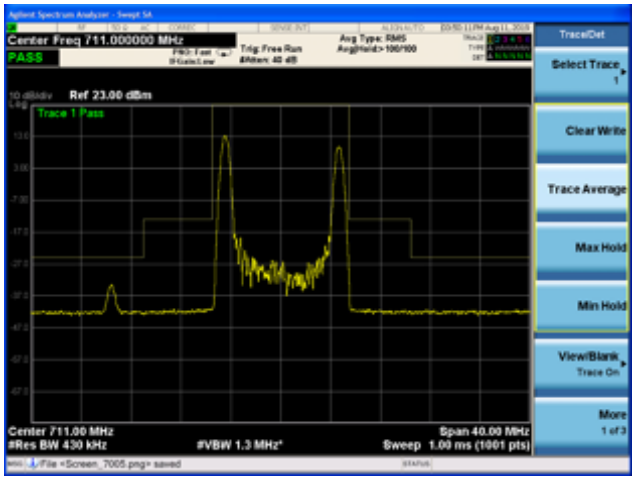

CA-12B 16QAM 5MHz+5MHz CH-High, 100%RB



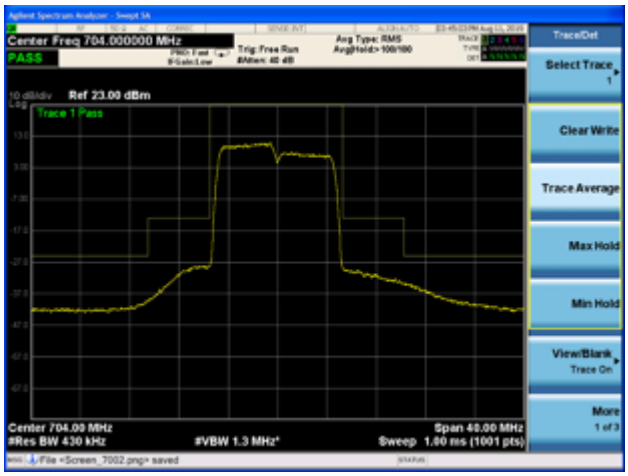

CA-12B 64QAM 5MHz+5MHz CH-Low, 1 RB



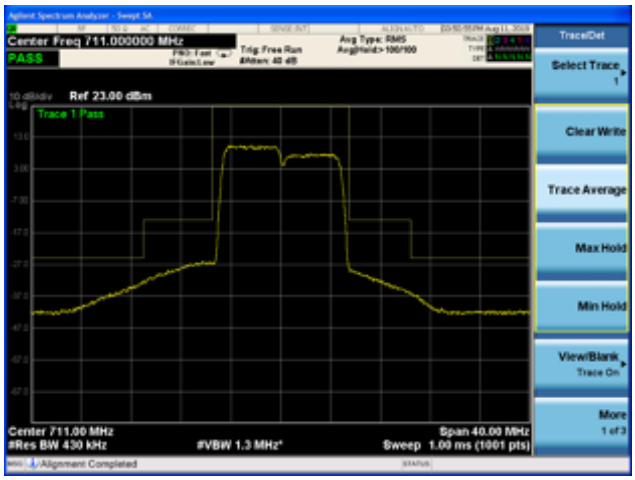

CA-12B 64QAM 5MHz+5MHz CH-High, 1 RB




CA-12B 64QAM 5MHz+5MHz CH-Low, 100%RB




CA-12B 64QAM 5MHz+5MHz CH-High, 100%RB





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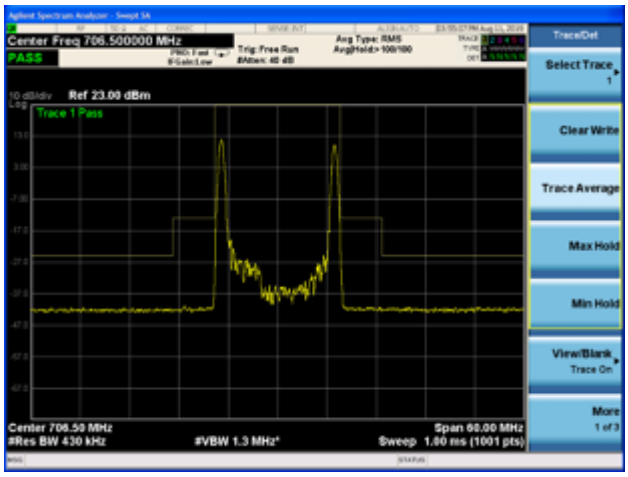
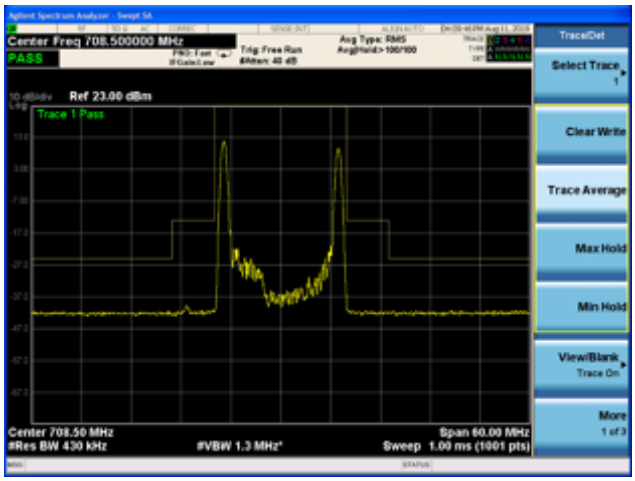
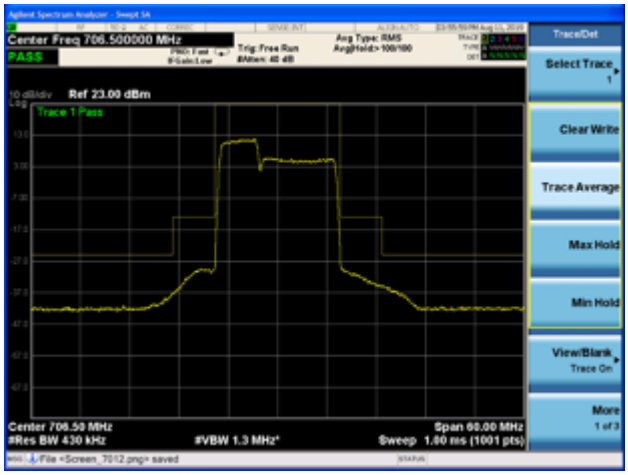
CA-12B QPSK 5MHz+10MHz CH-Low, 1 RB



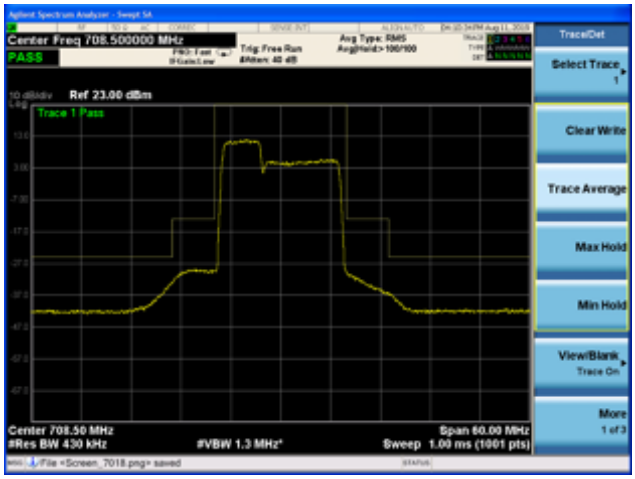

CA-12B QPSK 5MHz+10MHz CH-High, 1 RB



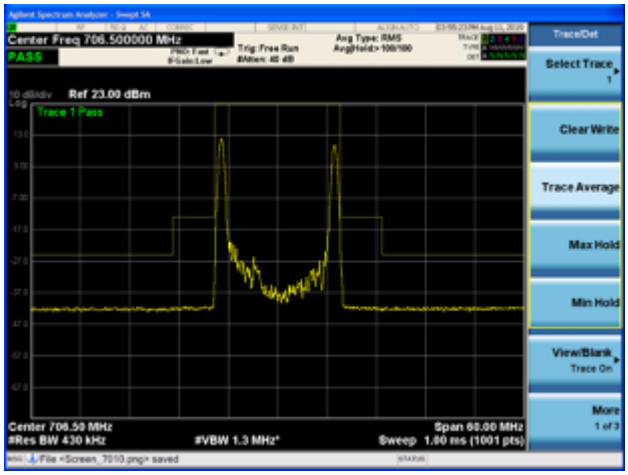

CA-12B QPSK 5MHz+10MHz CH-Low, 100%RB



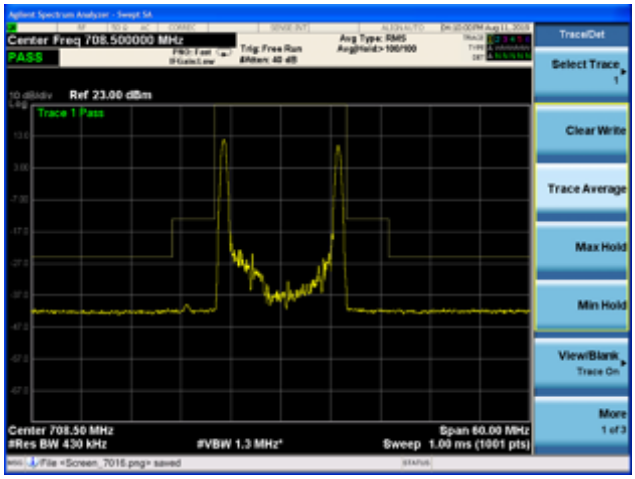

CA-12B QPSK 5MHz+10MHz CH-High, 100%RB




CA-12B 16QAM 5MHz+10MHz CH-Low, 1 RB




CA-12B 16QAM 5MHz+10MHz CH-High, 1 RB





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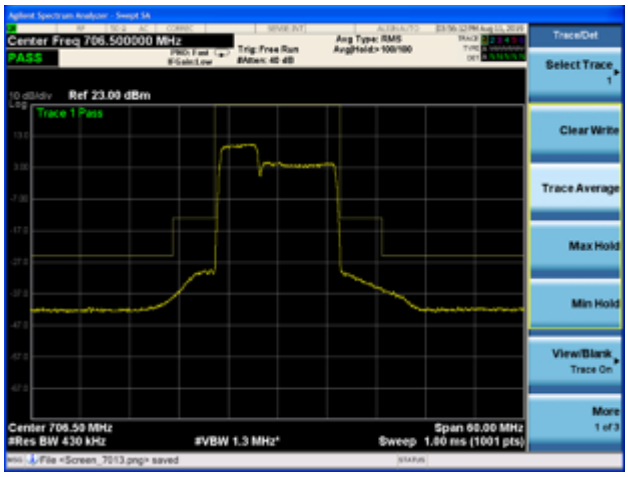
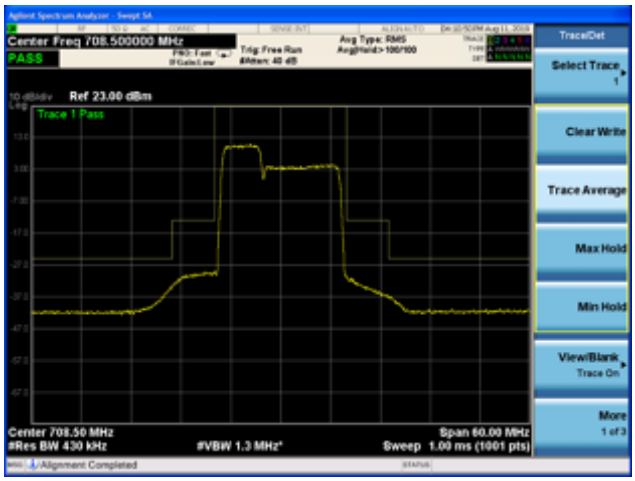
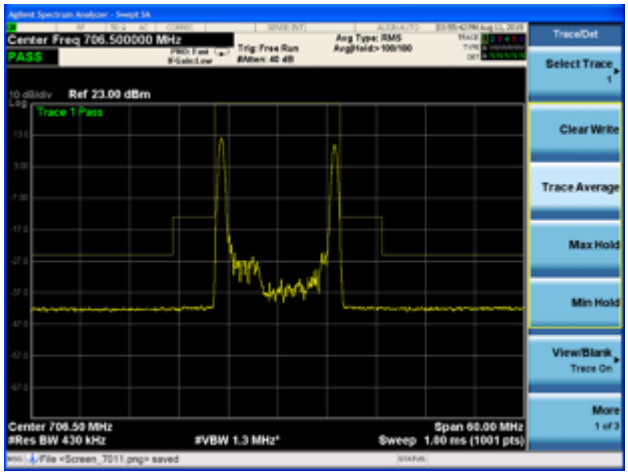
CA-12B 16QAM 5MHz+10MHz CH-Low, 100%RB



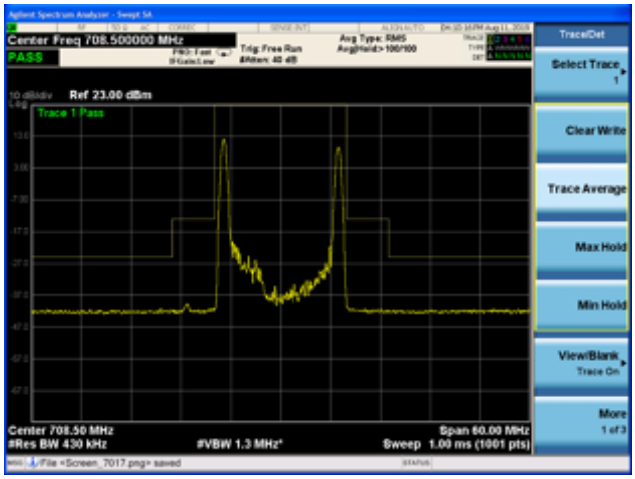

CA-12B 16QAM 5MHz+10MHz CH-High, 100%RB



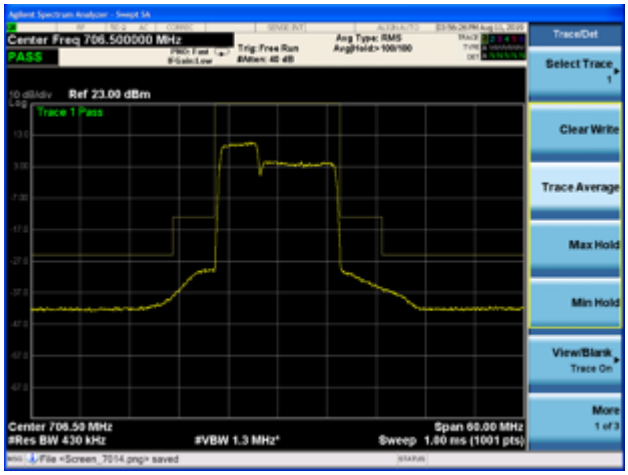

CA-12B 64QAM 5MHz+10MHz CH-Low, 1 RB



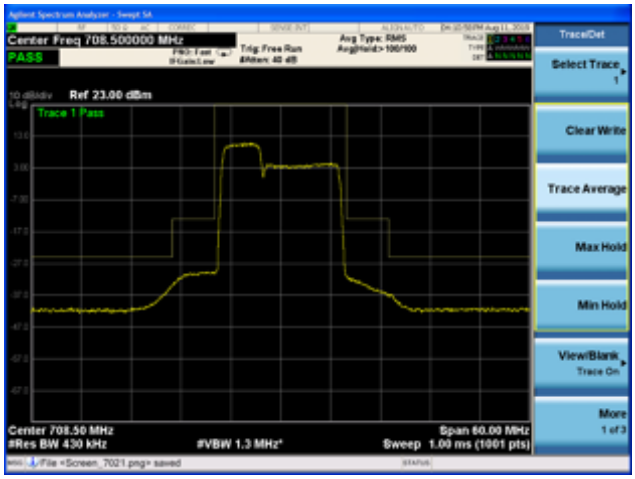

CA-12B 64QAM 5MHz+10MHz CH-High, 1 RB




CA-12B 64QAM 5MHz+10MHz CH-Low, 100%RB




CA-12B 64QAM 5MHz+10MHz CH-High, 100%RB





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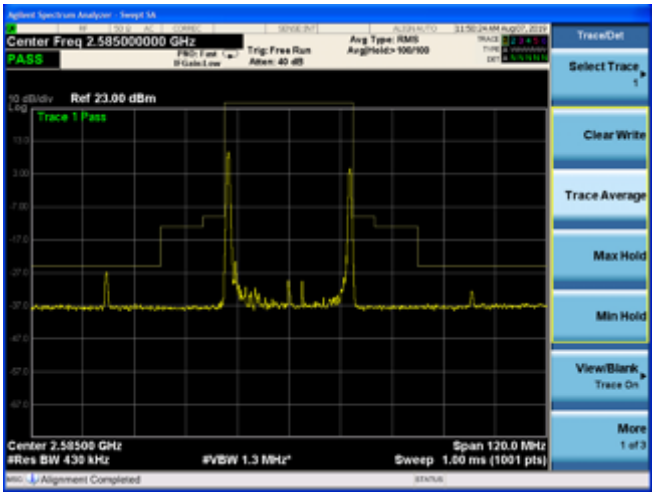
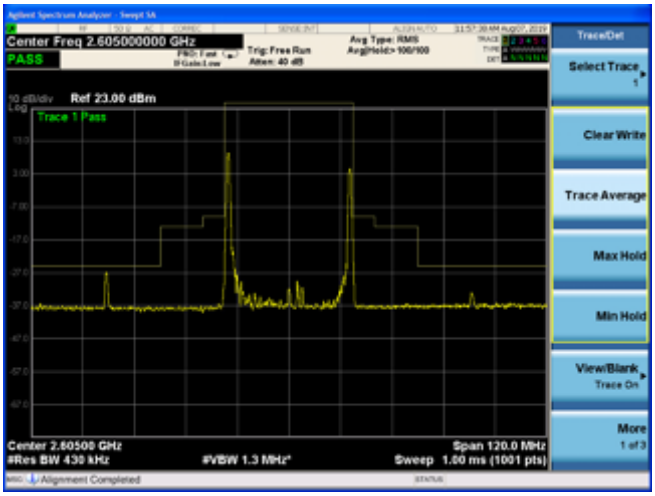
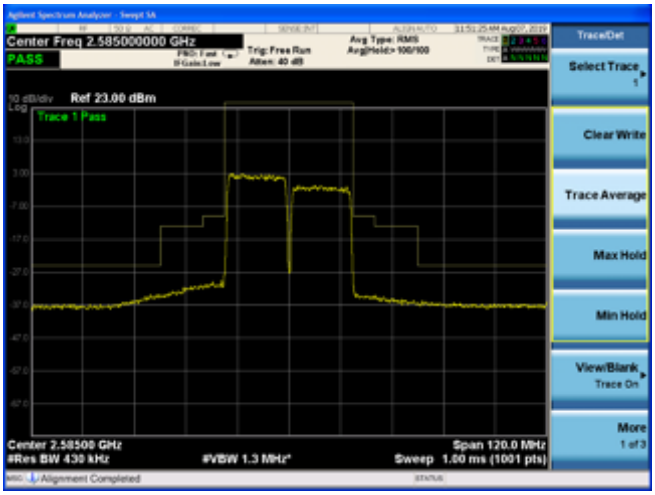
CA-38C QPSK 15MHz+15MHz CH-Low, 1 RB



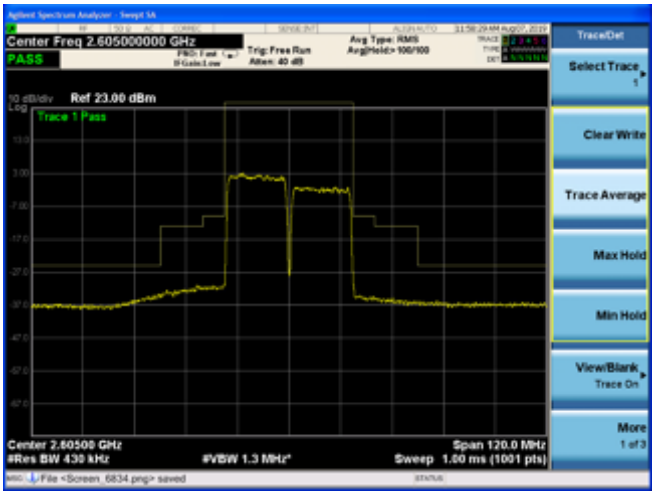

CA-38C QPSK 15MHz+15MHz CH-High, 1 RB



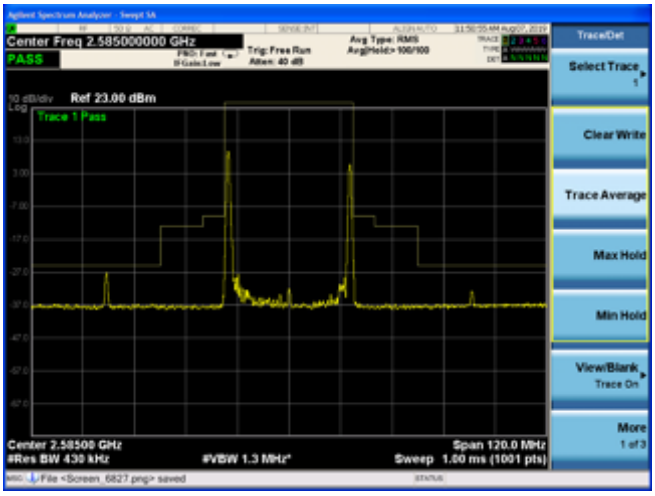

CA-38C QPSK 15MHz+15MHz CH-Low, 100%RB



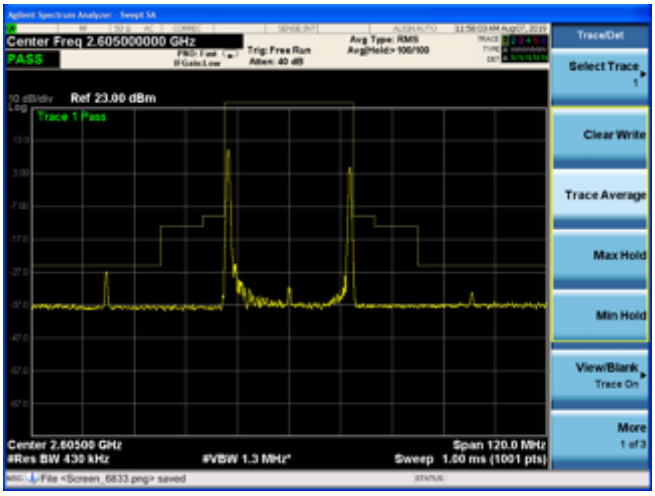

CA-38C QPSK 15MHz+15MHz CH-High, 100%RB




CA-38C 16QAM 15MHz+15MHz CH-Low, 1 RB




CA-38C 16QAM 15MHz+15MHz CH-High, 1 RB





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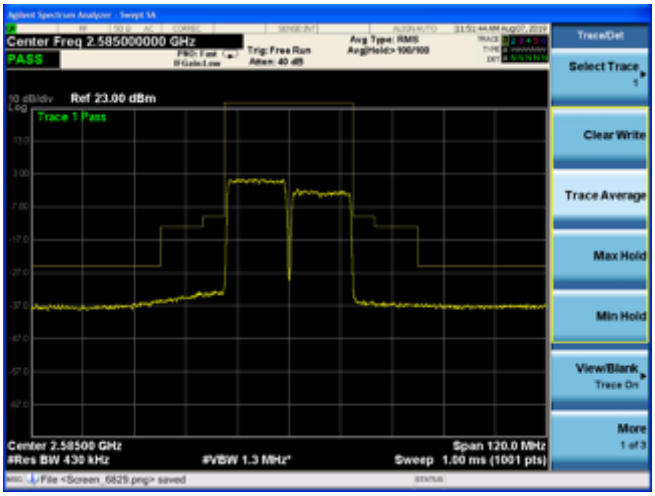
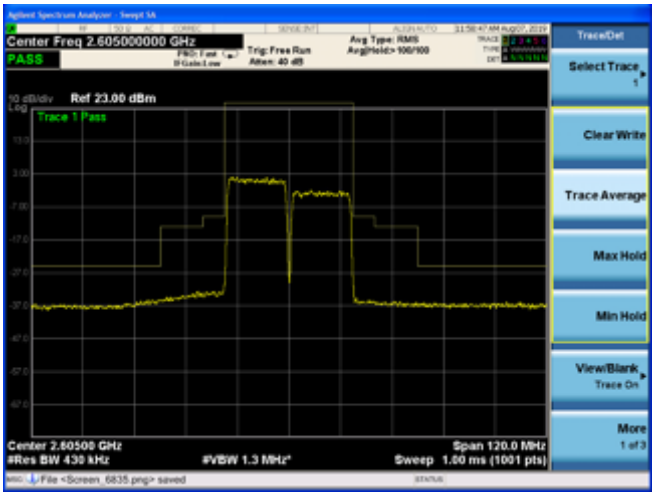
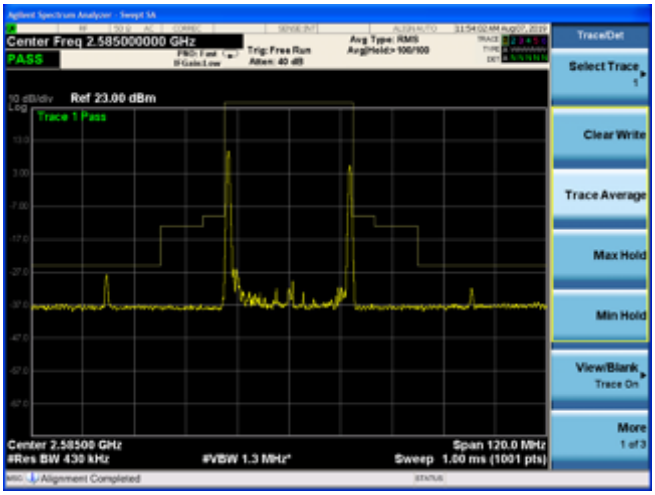
CA-38C 16QAM 15MHz+15MHz CH-Low, 100%RB




CA-38C 16QAM15MHz+15MHz CH-High, 100%RB

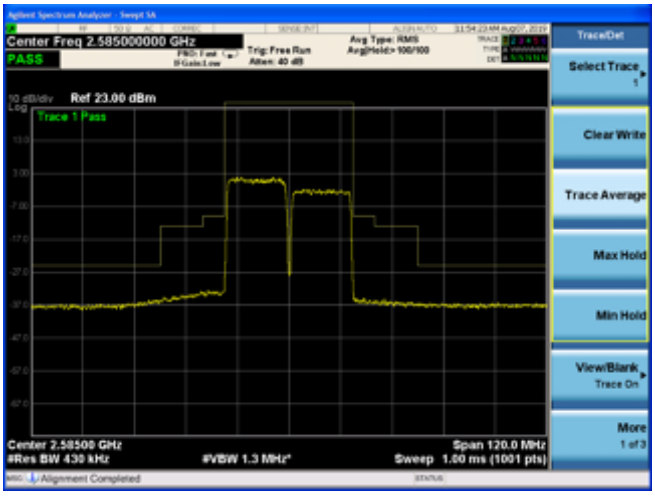



CA-38C 64QAM 15MHz+15MHz CH-Low, 1 RB

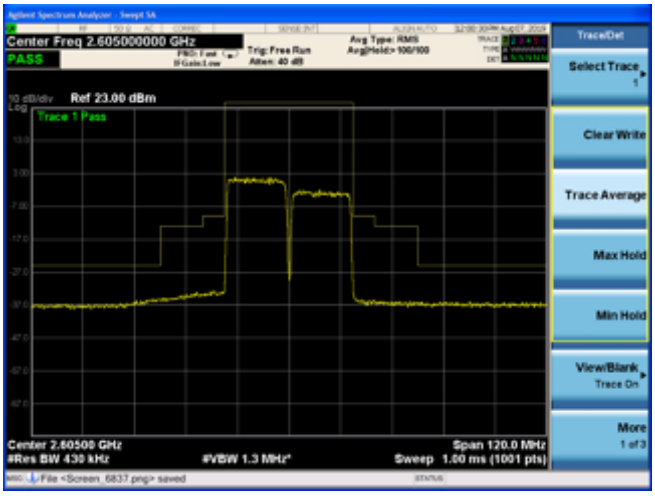



CA-38C 64QAM 15MHz+15MHz CH-High, 1 RB

CA-38C 64QAM 15MHz+15MHz CH-Low, 100%RB




CA-38C 64QAM 15MHz+15MHz CH-High, 100%RB





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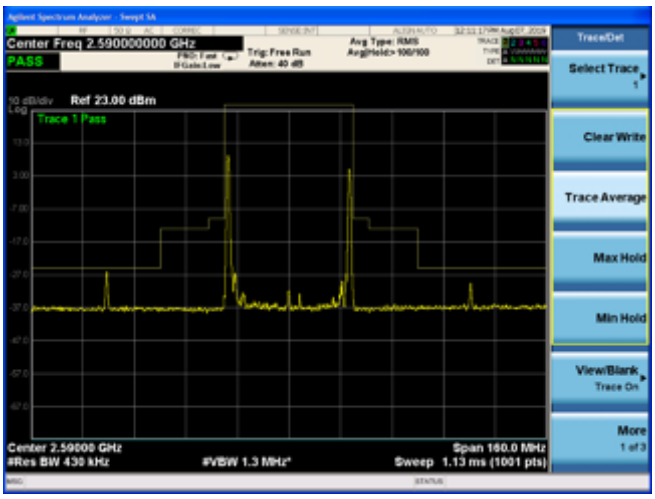
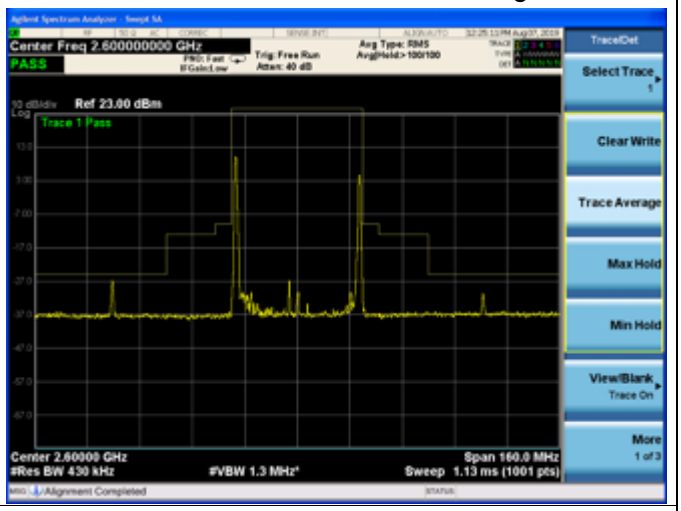
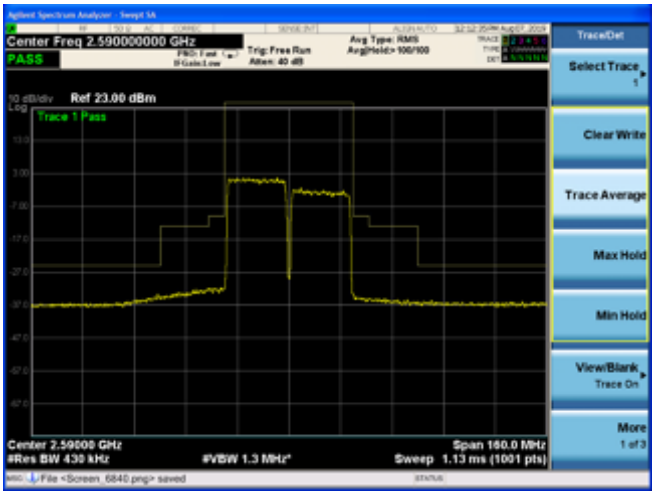
CA-38C QPSK 20MHz+20MHz CH-Low, 1 RB



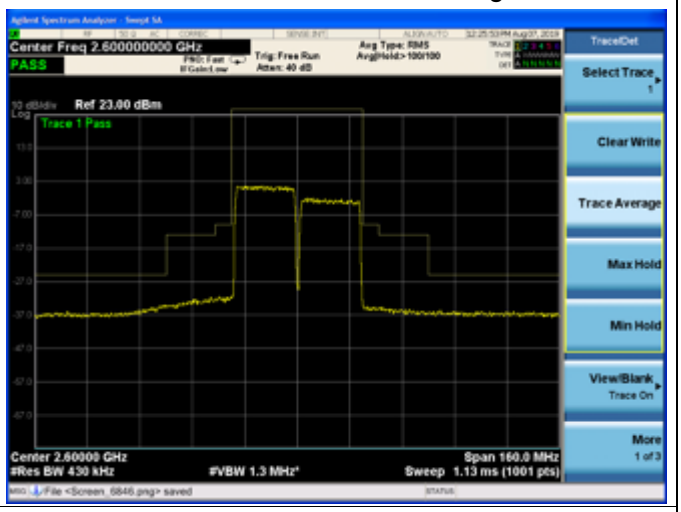

CA-38C QPSK 20MHz+20MHz CH-High, 1 RB



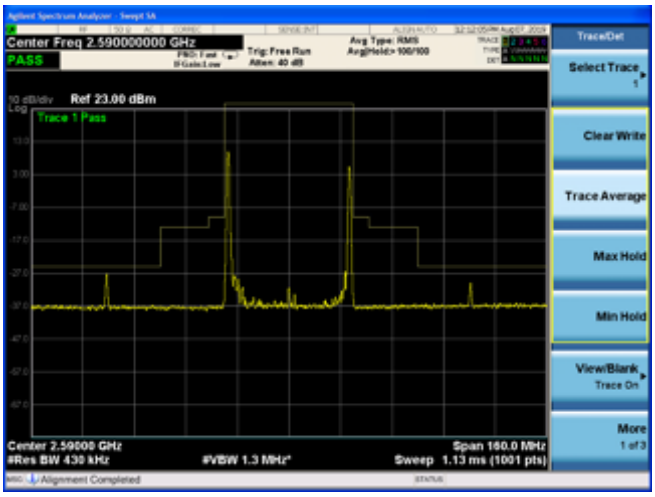

CA-38C QPSK 20MHz+20MHz CH-Low, 100%RB



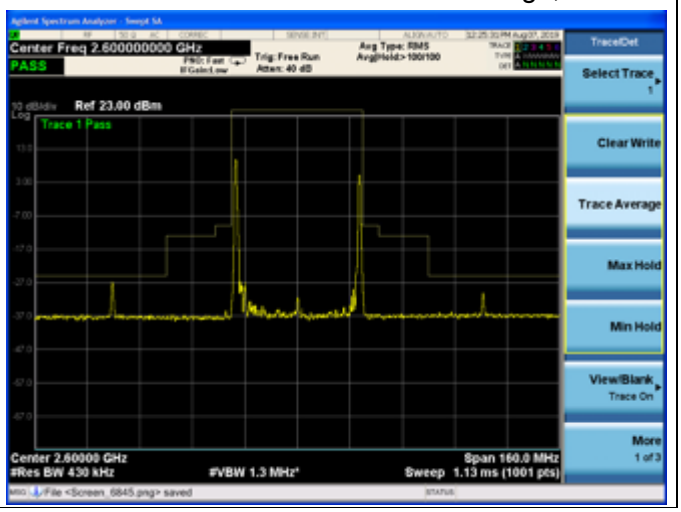

CA-38C QPSK 20MHz+20MHz CH-High, 100%RB




CA-38C 16QAM 20MHz+20MHz CH-Low, 1 RB




CA-38C 16QAM 20MHz+20MHz CH-High, 1 RB





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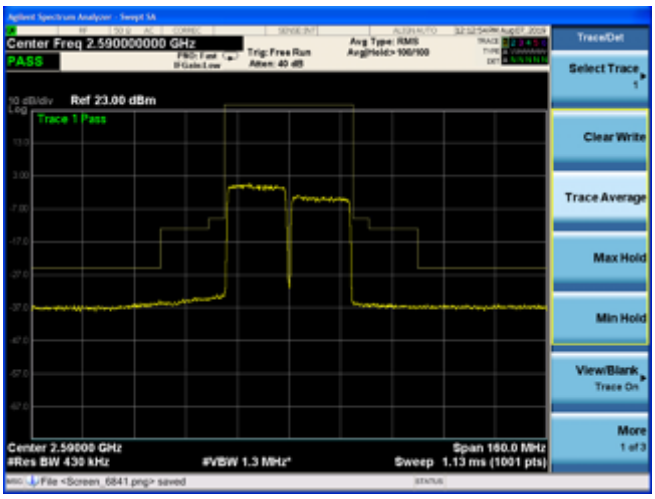
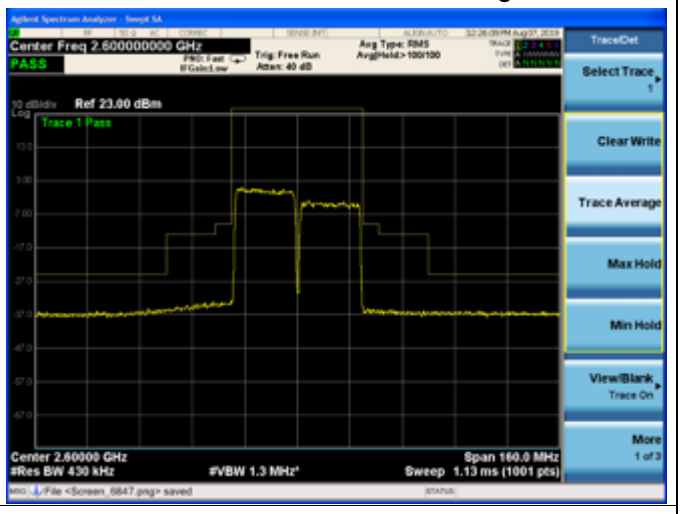
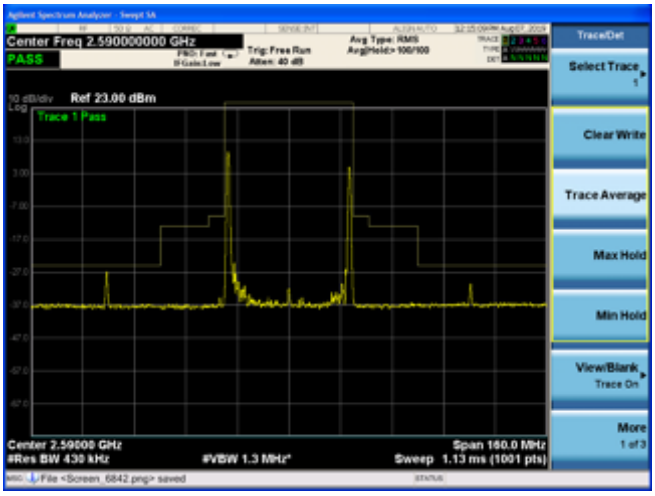
CA-38C 16QAM 20MHz+20MHz CH-Low, 100%RB



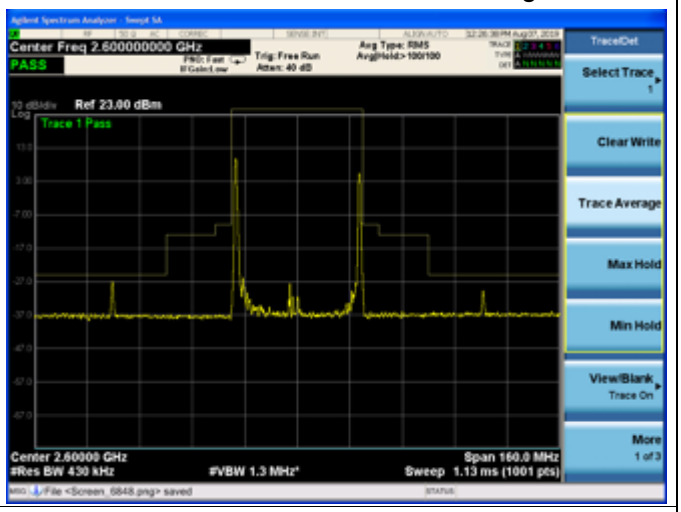

CA-38C 16QAM 20MHz+20MHz CH-High, 100%RB



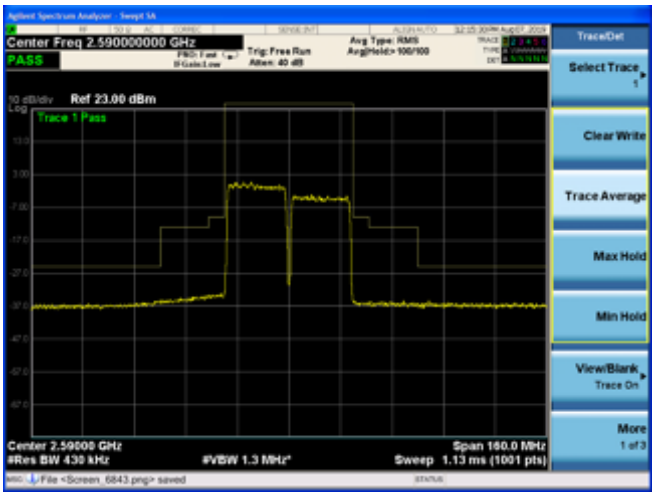

CA-38C 64QAM 20MHz+20MHz CH-Low, 1 RB



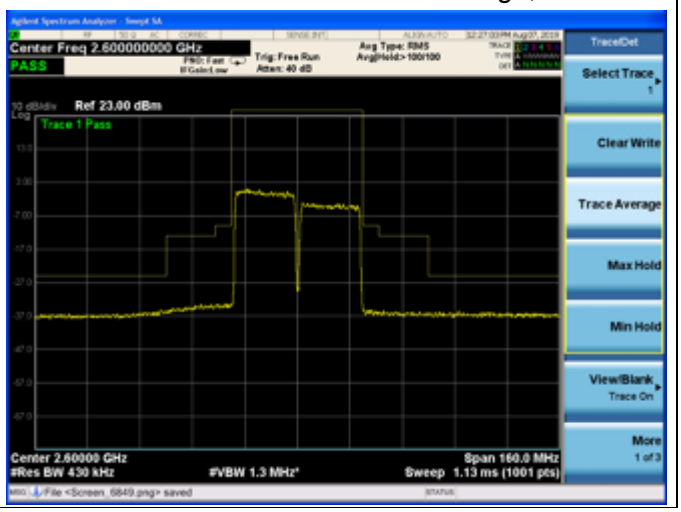

CA-38C 64QAM 20MHz+20MHz CH-High, 1 RB




CA-38C 64QAM 20MHz+20MHz CH-Low, 100%RB




CA-38C 64QAM 20MHz+20MHz CH-High, 100%RB





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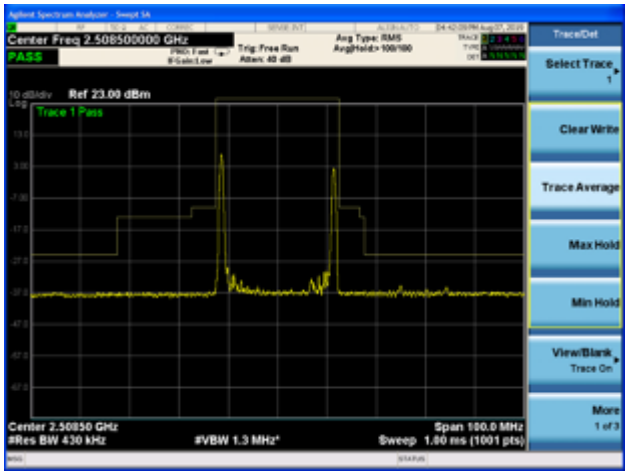
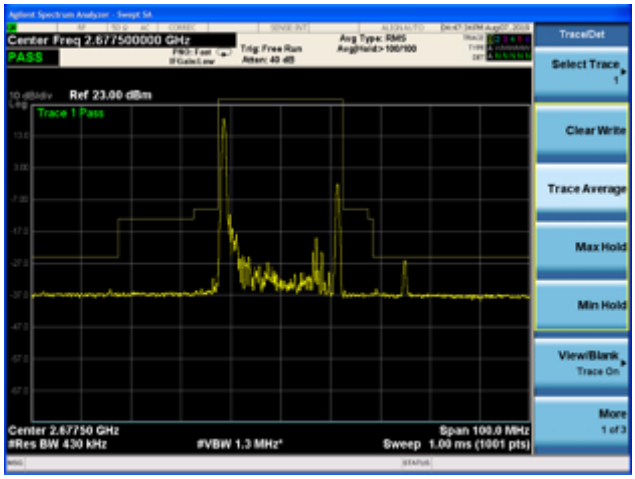
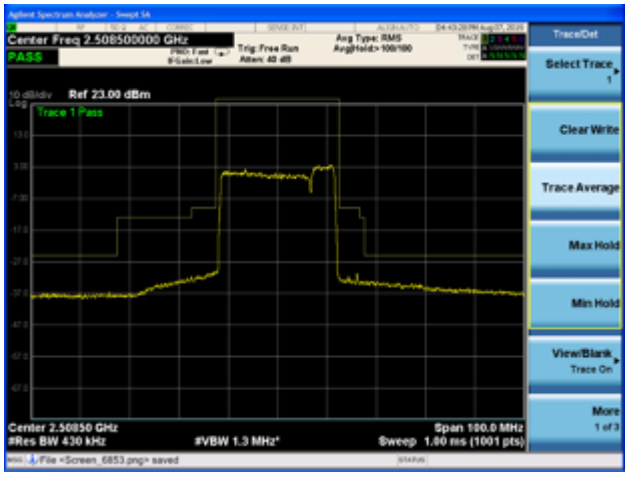
CA-41C QPSK 20MHz+5MHz CH-Low, 1 RB



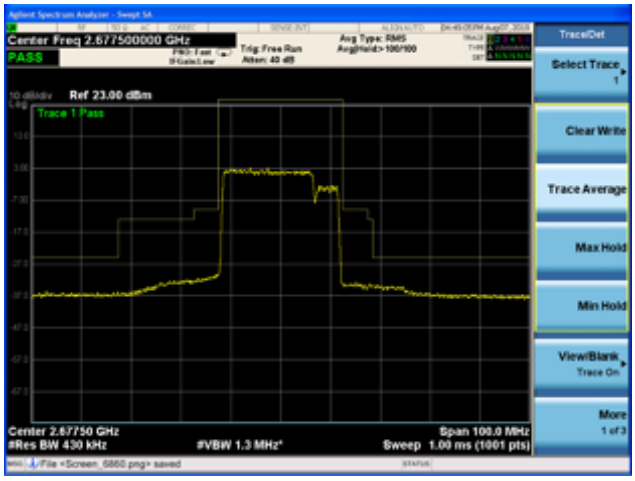

CA-41C QPSK 20MHz+5MHz CH-High, 1 RB



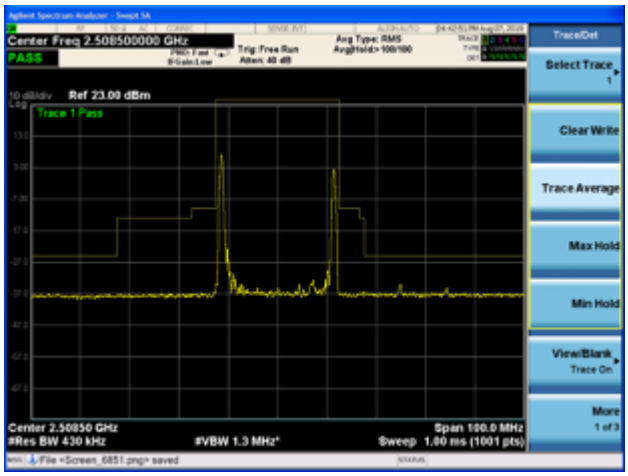

CA-41C QPSK 20MHz+5MHz CH-Low, 100%RB



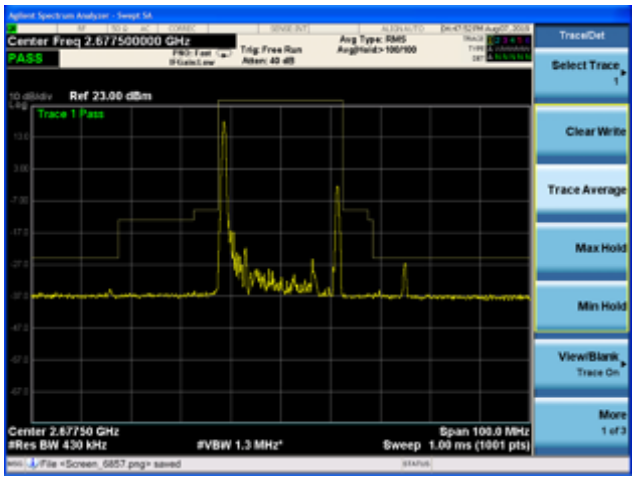

CA-41C QPSK 20MHz+5MHz CH-High, 100%RB




CA-41C 16QAM 20MHz+5MHz CH-Low, 1 RB




CA-41C 16QAM 20MHz+5MHz CH-High, 1 RB





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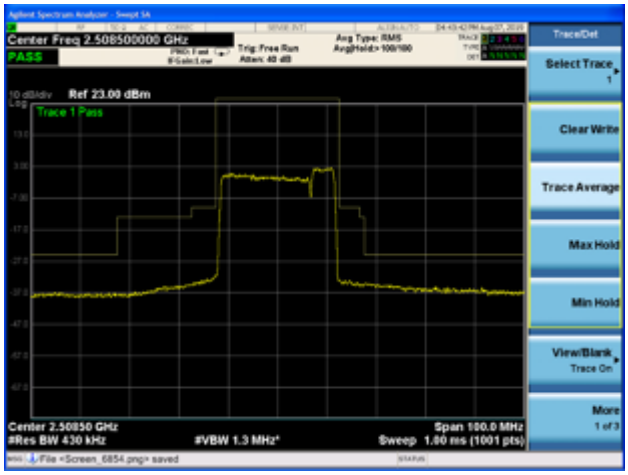
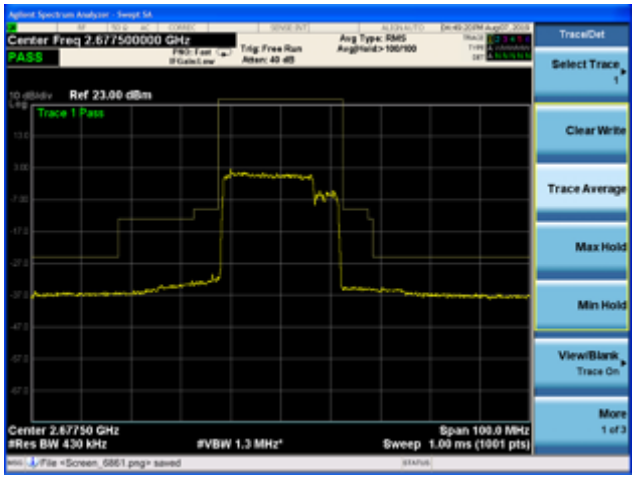
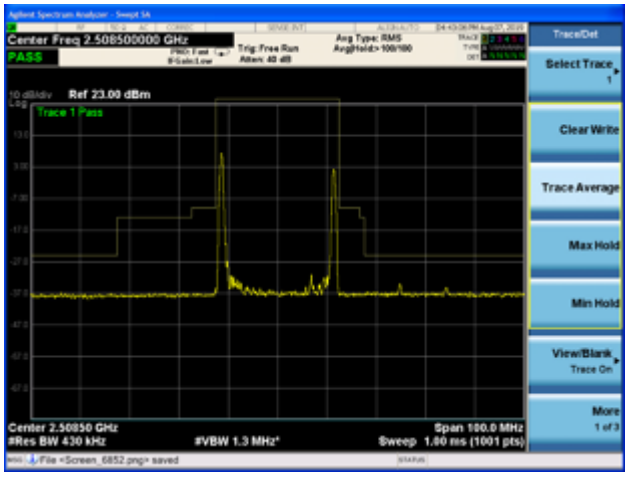
CA-41C 16QAM 20MHz+5MHz CH-Low, 100%RB



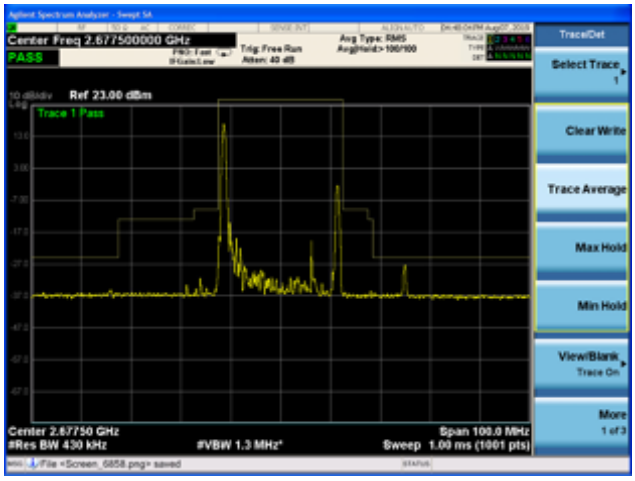

CA-41C 16QAM 20MHz+5MHz CH-High, 100%RB



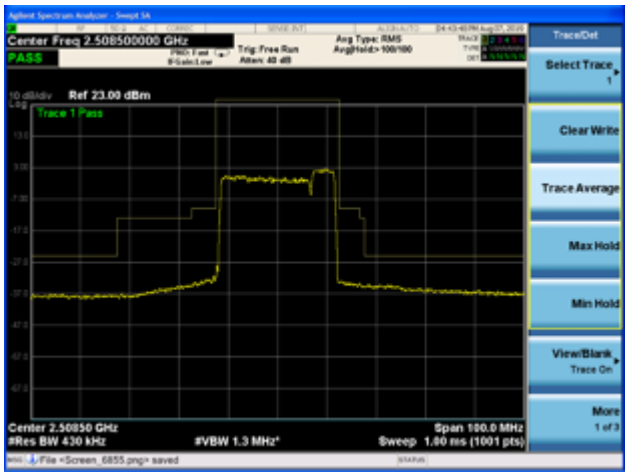

CA-41C 64QAM 20MHz+5MHz CH-Low, 1 RB



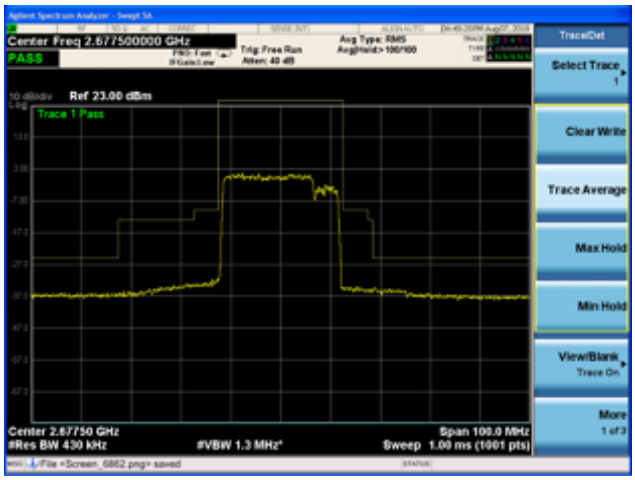

CA-41C 64QAM 20MHz+5MHz CH-High, 1 RB




CA-41C 64QAM 20MHz+5MHz CH-Low, 100%RB




CA-41C 64QAM 20MHz+5MHz CH-High, 100%RB





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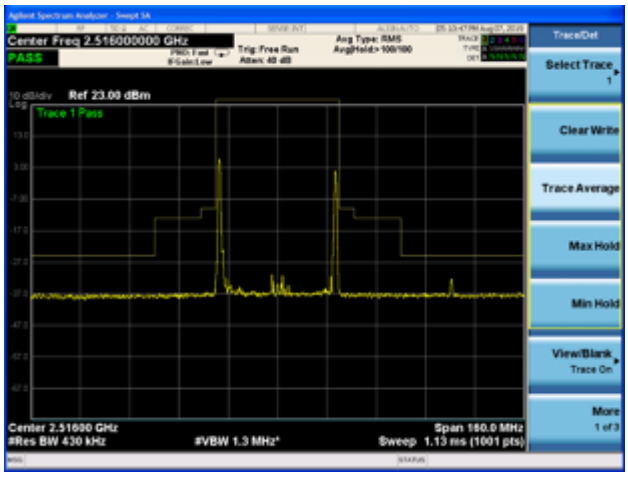
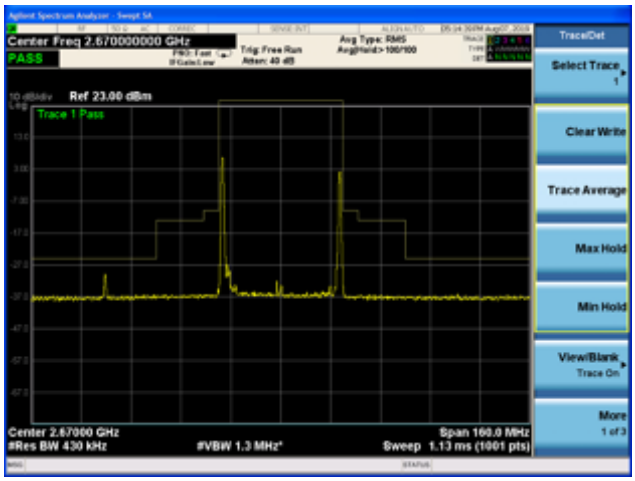
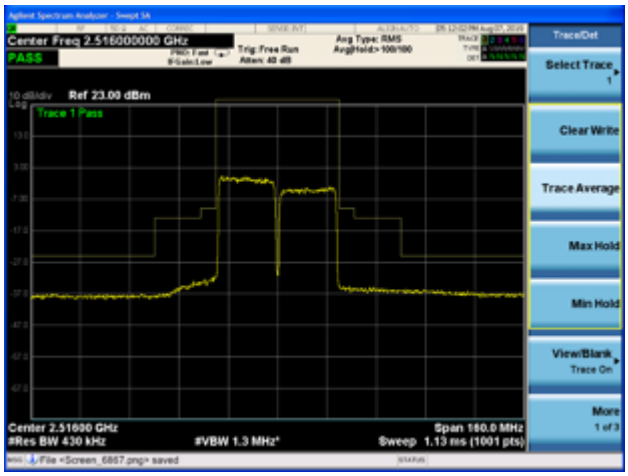
CA-41C QPSK 20MHz+20MHz CH-Low, 1 RB



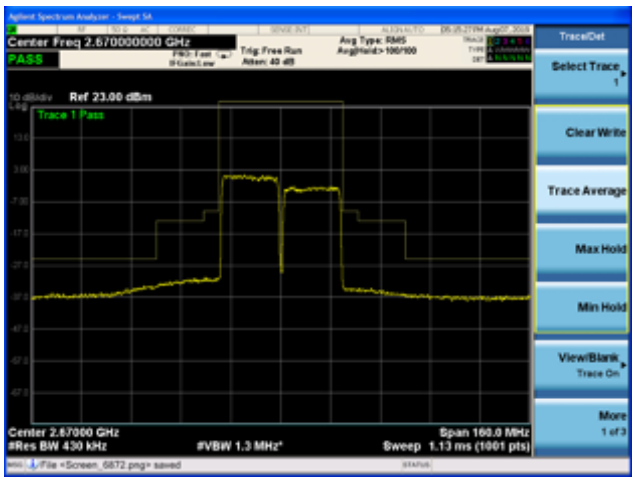

CA-41C QPSK 20MHz+20MHz CH-High, 1 RB



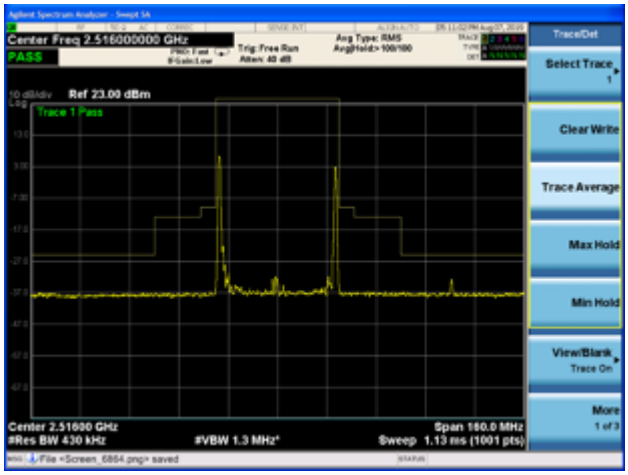

CA-41C QPSK 20MHz+20MHz CH-Low, 100%RB



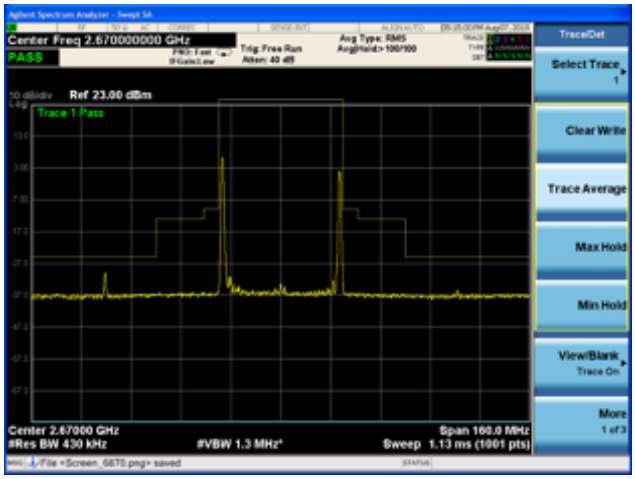

CA-41C QPSK 20MHz+20MHz CH-High, 100%RB




CA-41C 16QAM 20MHz+20MHz CH-Low, 1 RB




CA-41C 16QAM 20MHz+20MHz CH-High, 1 RB





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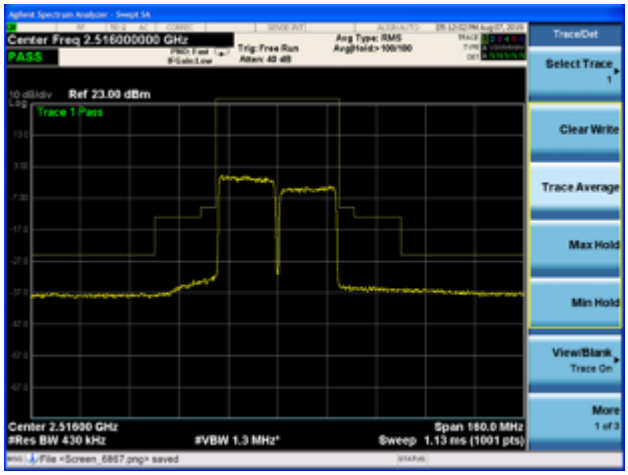
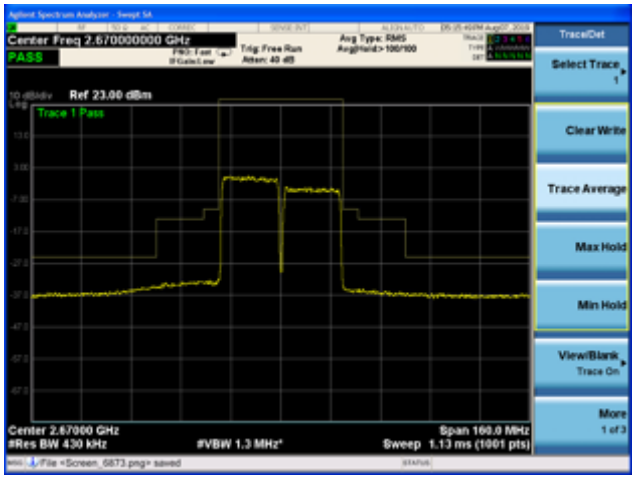
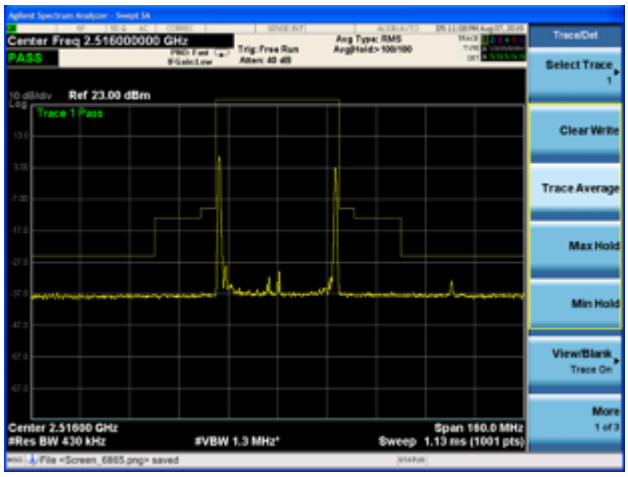
CA-41C 16QAM 20MHz+20MHz CH-Low, 100%RB



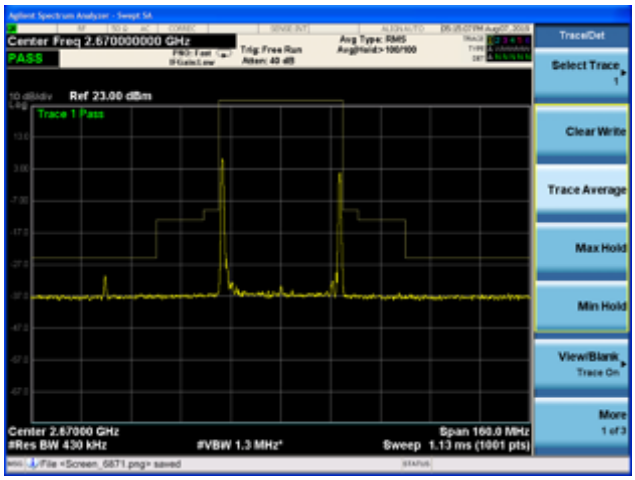

CA-41C 16QAM 20MHz+20MHz CH-High, 100%RB



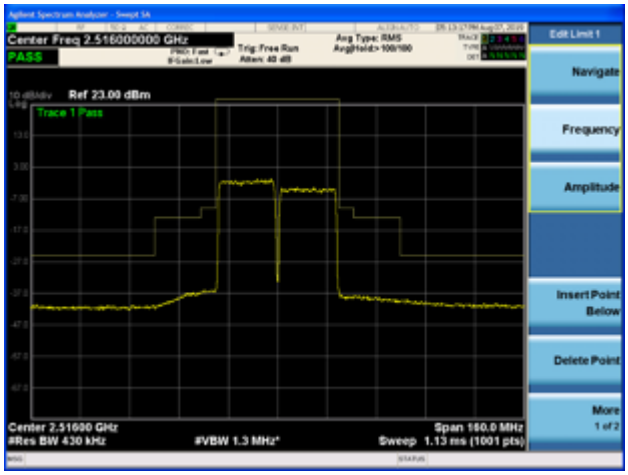

CA-41C 64QAM 20MHz+20MHz CH-Low, 1 RB



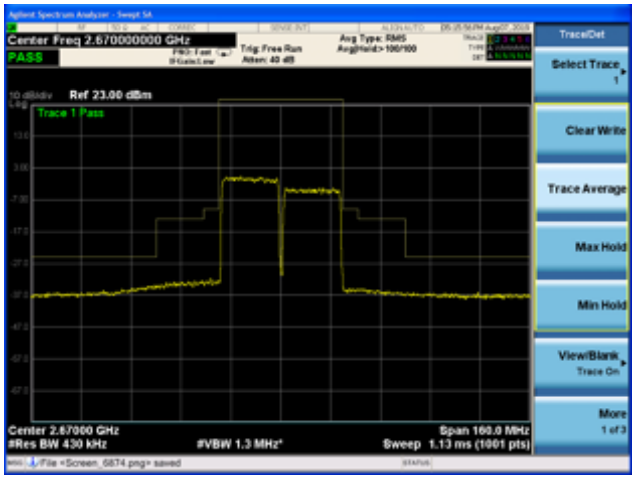

CA-41C 64QAM 20MHz+20MHz CH-High, 1 RB




CA-41C 64QAM 20MHz+20MHz CH-Low, 100%RB




CA-41C 64QAM 20MHz+20MHz CH-High, 100%RB





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## 5.5 Peak-to-Average Power Ratio (PAPR)

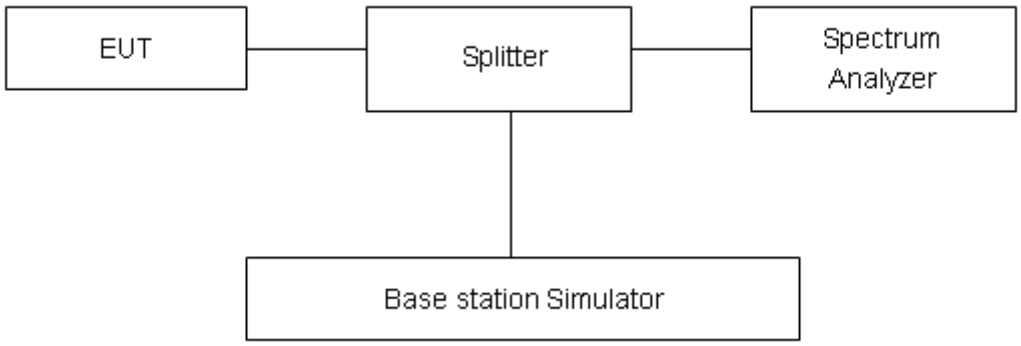
### Ambient condition

| Temperature | Relative humidity | Pressure |
|---|---|---|
| 23°C ~25°C | 45%~50% | 101.5kPa |

### Methods of Measurement

Measure the total peak power and record as PPk. And measure the total average power and record as PAvg. Both the peak and average power levels must be expressed in the same logarithmic units (*e.g.*, dBm). Determine the PAPR from:
PAPR (dB) = PPk (dBm) - PAvg (dBm).

### Test Setup




### Limits

Rule Part 27.50(d)(5) Equipment employed must be authorized in accordance with the provisions of 24.51. Power measurements for transmissions by stations authorized under this section may be made either in accordance with a Commission-approved average power technique or in compliance with paragraph (d)(6) of this section. In measuring transmissions in this band using an average power technique, the peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.

### Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for thenormal distribution is with the coverage factor k = 2, U= 0.4 dB.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## Test Results

| WCDMA Band IV | Channel | Frequency (MHz) | Peak (dBm) | Avg (dBm) | PAPR (dB) | Limit (dB) | Conclusion |
|---|---|---|---|---|---|---|---|
| RMC | 1312 | 1712.4 | 26.59 | 23.44 | 3.15 | ≤13 | PASS |
| | 1413 | 1732.6 | 26.69 | 23.50 | 3.19 | ≤13 | PASS |
| | 1513 | 1752.6 | 26.80 | 23.55 | 3.25 | ≤13 | PASS |

| LTE Band 4 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Modulation | Bandwidth (MHz) | Channel | Frequency (MHz) | Peak (dBm) | Avg (dBm) | PAPR (dB) | Limit (dB) | Conclusion |
| QPSK | 1.4 | 19957 | 1710.7 | 29.02 | 23.63 | 5.39 | ≤13 | PASS |
| | | 20175 | 1732.5 | 28.75 | 23.26 | 5.49 | ≤13 | PASS |
| | | 20393 | 1754.3 | 28.46 | 22.89 | 5.57 | ≤13 | PASS |
| | 3 | 19965 | 1711.5 | 29.07 | 23.63 | 5.44 | ≤13 | PASS |
| | | 20175 | 1732.5 | 28.92 | 23.38 | 5.54 | ≤13 | PASS |
| | | 20385 | 1753.5 | 28.54 | 23.00 | 5.54 | ≤13 | PASS |
| | 5 | 19975 | 1712.5 | 29.04 | 23.60 | 5.44 | ≤13 | PASS |
| | | 20175 | 1732.5 | 28.91 | 23.39 | 5.52 | ≤13 | PASS |
| | | 20375 | 1752.5 | 28.52 | 22.99 | 5.53 | ≤13 | PASS |
| | 10 | 20000 | 1715 | 29.01 | 23.61 | 5.40 | ≤13 | PASS |
| | | 20175 | 1732.5 | 28.87 | 23.38 | 5.49 | ≤13 | PASS |
| | | 20350 | 1750 | 28.52 | 23.00 | 5.52 | ≤13 | PASS |
| | 15 | 20025 | 1717.5 | 28.50 | 23.17 | 5.33 | ≤13 | PASS |
| | | 20175 | 1732.5 | 28.22 | 22.91 | 5.31 | ≤13 | PASS |
| | | 20325 | 1747.5 | 28.07 | 22.70 | 5.37 | ≤13 | PASS |
| | 20 | 20050 | 1720 | 29.08 | 23.57 | 5.51 | ≤13 | PASS |
| | | 20175 | 1732.5 | 28.80 | 23.29 | 5.51 | ≤13 | PASS |
| | | 20300 | 1745 | 28.72 | 23.21 | 5.51 | ≤13 | PASS |
| 16QAM | 1.4 | 19957 | 1710.7 | 28.77 | 22.63 | 6.14 | ≤13 | PASS |
| | | 20175 | 1732.5 | 28.76 | 22.56 | 6.20 | ≤13 | PASS |
| | | 20393 | 1754.3 | 28.19 | 21.86 | 6.33 | ≤13 | PASS |
| | 3 | 19965 | 1711.5 | 28.72 | 22.56 | 6.16 | ≤13 | PASS |
| | | 20175 | 1732.5 | 28.43 | 22.19 | 6.24 | ≤13 | PASS |
| | | 20385 | 1753.5 | 28.18 | 21.86 | 6.32 | ≤13 | PASS |
| | 5 | 19975 | 1712.5 | 28.72 | 22.52 | 6.20 | ≤13 | PASS |
| | | 20175 | 1732.5 | 28.45 | 22.16 | 6.29 | ≤13 | PASS |
| | | 20375 | 1752.5 | 28.23 | 21.94 | 6.29 | ≤13 | PASS |
| | 10 | 20000 | 1715 | 28.64 | 22.52 | 6.12 | ≤13 | PASS |
| | | 20175 | 1732.5 | 28.45 | 22.21 | 6.24 | ≤13 | PASS |
| | | 20350 | 1750 | 28.19 | 21.95 | 6.24 | ≤13 | PASS |


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| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 15 | 20025 | 1717.5 | 28.20 | 22.12 | 6.08 | ≤13 | PASS |
| | | 20175 | 1732.5 | 27.90 | 21.79 | 6.11 | ≤13 | PASS |
| | | 20325 | 1747.5 | 27.71 | 21.55 | 6.16 | ≤13 | PASS |
| | 20 | 20050 | 1720 | 28.77 | 22.53 | 6.24 | ≤13 | PASS |
| | | 20175 | 1732.5 | 28.45 | 22.19 | 6.26 | ≤13 | PASS |
| | | 20300 | 1745 | 28.36 | 22.12 | 6.24 | ≤13 | PASS |
| 64QAM | 1.4 | 19957 | 1710.7 | 28.56 | 22.44 | 6.12 | ≤13 | PASS |
| | | 20175 | 1732.5 | 28.67 | 22.51 | 6.16 | ≤13 | PASS |
| | | 20393 | 1754.3 | 29.45 | 23.15 | 6.30 | ≤13 | PASS |
| | 3 | 19965 | 1711.5 | 28.57 | 22.44 | 6.13 | ≤13 | PASS |
| | | 20175 | 1732.5 | 28.79 | 22.53 | 6.26 | ≤13 | PASS |
| | | 20385 | 1753.5 | 29.28 | 23.04 | 6.24 | ≤13 | PASS |
| | 5 | 19975 | 1712.5 | 28.63 | 22.47 | 6.16 | ≤13 | PASS |
| | | 20175 | 1732.5 | 28.97 | 22.73 | 6.24 | ≤13 | PASS |
| | | 20375 | 1752.5 | 29.28 | 22.99 | 6.29 | ≤13 | PASS |
| | 10 | 20000 | 1715 | 28.79 | 22.65 | 6.14 | ≤13 | PASS |
| | | 20175 | 1732.5 | 28.86 | 22.62 | 6.24 | ≤13 | PASS |
| | | 20350 | 1750 | 29.21 | 22.96 | 6.25 | ≤13 | PASS |
| | 15 | 20025 | 1717.5 | 28.26 | 22.16 | 6.10 | ≤13 | PASS |
| | | 20175 | 1732.5 | 28.33 | 22.21 | 6.12 | ≤13 | PASS |
| | | 20325 | 1747.5 | 28.67 | 22.53 | 6.14 | ≤13 | PASS |
| | 20 | 20050 | 1720 | 28.84 | 22.63 | 6.21 | ≤13 | PASS |
| | | 20175 | 1732.5 | 28.93 | 22.66 | 6.27 | ≤13 | PASS |
| | | 20300 | 1745 | 29.28 | 23.04 | 6.24 | ≤13 | PASS |

| LTE Band 7 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Modulation** | **Bandwidth (MHz)** | **Channel** | **Frequency (MHz)** | **Peak (dBm)** | **Avg (dBm)** | **PAPR (dB)** | **Limit (dB)** | **Conclusion** |
| QPSK | 5 | 20775 | 2502.5 | 31.21 | 25.84 | 5.37 | ≤13 | PASS |
| | | 21100 | 2535 | 31.14 | 25.77 | 5.37 | ≤13 | PASS |
| | | 21425 | 2567.5 | 31.70 | 26.58 | 5.12 | ≤13 | PASS |
| | 10 | 20800 | 2505 | 31.10 | 25.76 | 5.34 | ≤13 | PASS |
| | | 21100 | 2535 | 31.11 | 25.74 | 5.37 | ≤13 | PASS |
| | | 21400 | 2565 | 31.79 | 26.64 | 5.15 | ≤13 | PASS |
| | 15 | 20825 | 2507.5 | 30.72 | 25.53 | 5.19 | ≤13 | PASS |
| | | 21100 | 2535 | 30.62 | 25.36 | 5.26 | ≤13 | PASS |
| | | 21375 | 2562.5 | 31.33 | 26.21 | 5.12 | ≤13 | PASS |


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| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 20 | 20850 | 2510 | 31.34 | 26.01 | 5.33 | ≤13 | PASS |
| | | 21100 | 2535 | 31.20 | 25.80 | 5.40 | ≤13 | PASS |
| | | 21350 | 2560 | 31.68 | 26.61 | 5.07 | ≤13 | PASS |
| 16QAM | 5 | 20775 | 2502.5 | 31.02 | 24.92 | 6.10 | ≤13 | PASS |
| | | 21100 | 2535 | 30.91 | 24.82 | 6.09 | ≤13 | PASS |
| | | 21425 | 2567.5 | 31.43 | 25.65 | 5.78 | ≤13 | PASS |
| | 10 | 20800 | 2505 | 30.98 | 24.92 | 6.06 | ≤13 | PASS |
| | | 21100 | 2535 | 30.91 | 24.80 | 6.11 | ≤13 | PASS |
| | | 21400 | 2565 | 31.48 | 25.56 | 5.92 | ≤13 | PASS |
| | 15 | 20825 | 2507.5 | 30.52 | 24.50 | 6.02 | ≤13 | PASS |
| | | 21100 | 2535 | 30.44 | 24.39 | 6.05 | ≤13 | PASS |
| | | 21375 | 2562.5 | 31.05 | 25.17 | 5.88 | ≤13 | PASS |
| | 20 | 20850 | 2510 | 31.05 | 24.97 | 6.08 | ≤13 | PASS |
| | | 21100 | 2535 | 31.00 | 24.87 | 6.13 | ≤13 | PASS |
| | | 21350 | 2560 | 31.48 | 25.59 | 5.89 | ≤13 | PASS |
| 64QAM | 5 | 20775 | 2502.5 | 29.25 | 23.15 | 6.10 | ≤13 | PASS |
| | | 21100 | 2535 | 29.12 | 22.98 | 6.14 | ≤13 | PASS |
| | | 21425 | 2567.5 | 29.48 | 23.56 | 5.92 | ≤13 | PASS |
| | 10 | 20800 | 2505 | 29.19 | 23.09 | 6.10 | ≤13 | PASS |
| | | 21100 | 2535 | 29.14 | 22.95 | 6.19 | ≤13 | PASS |
| | | 21400 | 2565 | 29.69 | 23.80 | 5.89 | ≤13 | PASS |
| | 15 | 20825 | 2507.5 | 28.78 | 22.73 | 6.05 | ≤13 | PASS |
| | | 21100 | 2535 | 28.70 | 22.66 | 6.04 | ≤13 | PASS |
| | | 21375 | 2562.5 | 29.08 | 23.13 | 5.95 | ≤13 | PASS |
| | 20 | 20850 | 2510 | 29.20 | 23.02 | 6.18 | ≤13 | PASS |
| | | 21100 | 2535 | 29.25 | 23.11 | 6.14 | ≤13 | PASS |
| | | 21350 | 2560 | 29.45 | 23.38 | 6.07 | ≤13 | PASS |

| LTE Band 12 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Modulation | Bandwidth (MHz) | Channel | Frequency (MHz) | Peak (dBm) | Avg (dBm) | PAPR (dB) | Limit (dB) | Conclusion |
| QPSK | 1.4 | 23017 | 699.7 | 32.46 | 26.77 | 5.69 | ≤13 | PASS |
| | | 23095 | 707.5 | 32.56 | 26.85 | 5.71 | ≤13 | PASS |
| | | 23173 | 715.3 | 32.65 | 26.98 | 5.67 | ≤13 | PASS |
| | 3 | 23025 | 700.5 | 32.50 | 26.81 | 5.69 | ≤13 | PASS |


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| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | 23095 | 707.5 | 32.56 | 26.83 | 5.73 | ≤13 | PASS |
| | | 23165 | 714.5 | 32.60 | 27.00 | 5.60 | ≤13 | PASS |
| | 5 | 23035 | 701.5 | 32.51 | 26.81 | 5.70 | ≤13 | PASS |
| | | 23095 | 707.5 | 32.62 | 26.87 | 5.75 | ≤13 | PASS |
| | | 23155 | 713.5 | 32.58 | 26.96 | 5.62 | ≤13 | PASS |
| | 10 | 23060 | 704 | 32.33 | 26.78 | 5.55 | ≤13 | PASS |
| | | 23095 | 707.5 | 32.57 | 26.83 | 5.74 | ≤13 | PASS |
| | | 23130 | 711 | 32.75 | 26.99 | 5.76 | ≤13 | PASS |
| 16QAM | 1.4 | 23017 | 699.7 | 32.19 | 25.79 | 6.40 | ≤13 | PASS |
| | | 23095 | 707.5 | 32.20 | 25.76 | 6.44 | ≤13 | PASS |
| | | 23173 | 715.3 | 32.26 | 25.93 | 6.33 | ≤13 | PASS |
| | 3 | 23025 | 700.5 | 32.15 | 25.77 | 6.38 | ≤13 | PASS |
| | | 23095 | 707.5 | 32.20 | 25.80 | 6.40 | ≤13 | PASS |
| | | 23165 | 714.5 | 32.23 | 25.92 | 6.31 | ≤13 | PASS |
| | 5 | 23035 | 701.5 | 32.21 | 25.79 | 6.42 | ≤13 | PASS |
| | | 23095 | 707.5 | 32.28 | 25.78 | 6.50 | ≤13 | PASS |
| | | 23155 | 713.5 | 32.31 | 25.92 | 6.39 | ≤13 | PASS |
| | 10 | 23060 | 704 | 32.06 | 25.75 | 6.31 | ≤13 | PASS |
| | | 23095 | 707.5 | 32.17 | 25.70 | 6.47 | ≤13 | PASS |
| | | 23130 | 711 | 32.27 | 25.86 | 6.41 | ≤13 | PASS |
| 64QAM | 1.4 | 23017 | 699.7 | 31.45 | 25.06 | 6.39 | ≤13 | PASS |
| | | 23095 | 707.5 | 31.40 | 25.02 | 6.38 | ≤13 | PASS |
| | | 23173 | 715.3 | 31.48 | 25.11 | 6.37 | ≤13 | PASS |
| | 3 | 23025 | 700.5 | 31.45 | 25.09 | 6.36 | ≤13 | PASS |
| | | 23095 | 707.5 | 31.39 | 25.04 | 6.35 | ≤13 | PASS |
| | | 23165 | 714.5 | 31.43 | 25.11 | 6.32 | ≤13 | PASS |
| | 5 | 23035 | 701.5 | 31.46 | 25.06 | 6.40 | ≤13 | PASS |
| | | 23095 | 707.5 | 31.52 | 25.06 | 6.46 | ≤13 | PASS |
| | | 23155 | 713.5 | 31.49 | 25.13 | 6.36 | ≤13 | PASS |
| | 10 | 23060 | 704 | 31.33 | 25.03 | 6.30 | ≤13 | PASS |
| | | 23095 | 707.5 | 31.44 | 24.98 | 6.46 | ≤13 | PASS |
| | | 23130 | 711 | 31.52 | 25.12 | 6.40 | ≤13 | PASS |

| LTE Band 17 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Modulation** | **Bandwidth (MHz)** | **Channel** | **Frequency (MHz)** | **Peak (dBm)** | **Avg (dBm)** | **PAPR (dB)** | **Limit (dB)** | **Conclusion** |
| QPSK | 5 | 23755 | 706.5 | 32.95 | 27.36 | 5.59 | ≤13 | PASS |
| | | 23790 | 710 | 33.01 | 27.35 | 5.66 | ≤13 | PASS |
| | | 23825 | 713.5 | 32.91 | 27.31 | 5.60 | ≤13 | PASS |
| | 10 | 23780 | 709 | 33.16 | 27.46 | 5.70 | ≤13 | PASS |


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| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | 23790 | 710 | 33.16 | 27.45 | 5.71 | ≤13 | PASS |
| | | 23800 | 711 | 33.08 | 27.45 | 5.63 | ≤13 | PASS |
| 16QAM | 5 | 23755 | 706.5 | 32.63 | 26.27 | 6.36 | ≤13 | PASS |
| | | 23790 | 710 | 32.64 | 26.26 | 6.38 | ≤13 | PASS |
| | | 23825 | 713.5 | 32.60 | 26.27 | 6.33 | ≤13 | PASS |
| | 10 | 23780 | 709 | 32.72 | 26.36 | 6.36 | ≤13 | PASS |
| | | 23790 | 710 | 32.75 | 26.36 | 6.39 | ≤13 | PASS |
| | | 23800 | 711 | 32.67 | 26.36 | 6.31 | ≤13 | PASS |
| 64QAM | 5 | 23755 | 706.5 | 31.82 | 25.45 | 6.37 | ≤13 | PASS |
| | | 23790 | 710 | 31.83 | 25.46 | 6.37 | ≤13 | PASS |
| | | 23825 | 713.5 | 31.78 | 25.44 | 6.34 | ≤13 | PASS |
| | 10 | 23780 | 709 | 31.94 | 25.57 | 6.37 | ≤13 | PASS |
| | | 23790 | 710 | 31.93 | 25.54 | 6.39 | ≤13 | PASS |
| | | 23800 | 711 | 31.93 | 25.58 | 6.35 | ≤13 | PASS |

| LTE Band 38 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Modulation | Bandwidth (MHz) | Channel | Frequency (MHz) | Peak (dBm) | Avg (dBm) | PAPR (dB) | Limit (dB) | Conclusion |
| QPSK | 5 | 37775 | 2572.5 | 31.38 | 22.39 | 8.99 | ≤13 | PASS |
| | | 38000 | 2595 | 31.32 | 22.50 | 8.82 | ≤13 | PASS |
| | | 38225 | 2617.5 | 31.24 | 21.83 | 9.41 | ≤13 | PASS |
| | 10 | 37800 | 2575 | 31.39 | 22.37 | 9.02 | ≤13 | PASS |
| | | 38000 | 2595 | 31.30 | 22.21 | 9.09 | ≤13 | PASS |
| | | 38200 | 2615 | 31.31 | 21.93 | 9.38 | ≤13 | PASS |
| | 15 | 37825 | 2577.5 | 30.99 | 21.77 | 9.22 | ≤13 | PASS |
| | | 38000 | 2595 | 30.89 | 21.66 | 9.23 | ≤13 | PASS |
| | | 38175 | 2612.5 | 30.86 | 21.69 | 9.17 | ≤13 | PASS |
| | 20 | 37850 | 2580 | 31.56 | 22.81 | 8.75 | ≤13 | PASS |
| | | 38000 | 2595 | 31.34 | 22.14 | 9.20 | ≤13 | PASS |
| | | 38150 | 2610 | 31.43 | 21.95 | 9.48 | ≤13 | PASS |
| 16QAM | 5 | 37775 | 2572.5 | 31.28 | 21.51 | 9.77 | ≤13 | PASS |
| | | 38000 | 2595 | 31.30 | 21.55 | 9.75 | ≤13 | PASS |
| | | 38225 | 2617.5 | 31.28 | 20.92 | 10.36 | ≤13 | PASS |
| | 10 | 37800 | 2575 | 31.21 | 21.43 | 9.78 | ≤13 | PASS |
| | | 38000 | 2595 | 31.21 | 21.32 | 9.89 | ≤13 | PASS |
| | | 38200 | 2615 | 31.23 | 21.05 | 10.18 | ≤13 | PASS |


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| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 15 | 37825 | 2577.5 | 30.82 | 21.09 | 9.73 | ≤13 | PASS |
| | | 38000 | 2595 | 30.83 | 20.88 | 9.95 | ≤13 | PASS |
| | | 38175 | 2612.5 | 30.85 | 20.42 | 10.43 | ≤13 | PASS |
| | 20 | 37850 | 2580 | 31.34 | 21.53 | 9.81 | ≤13 | PASS |
| | | 38000 | 2595 | 31.25 | 21.42 | 9.83 | ≤13 | PASS |
| | | 38150 | 2610 | 31.25 | 21.02 | 10.23 | ≤13 | PASS |
| 64QAM | 5 | 37775 | 2572.5 | 29.62 | 19.62 | 10.00 | ≤13 | PASS |
| | | 38000 | 2595 | 29.56 | 19.68 | 9.88 | ≤13 | PASS |
| | | 38225 | 2617.5 | 29.77 | 19.85 | 9.92 | ≤13 | PASS |
| | 10 | 37800 | 2575 | 29.56 | 19.70 | 9.86 | ≤13 | PASS |
| | | 38000 | 2595 | 29.69 | 19.84 | 9.85 | ≤13 | PASS |
| | | 38200 | 2615 | 29.56 | 19.23 | 10.33 | ≤13 | PASS |
| | 15 | 37825 | 2577.5 | 29.20 | 19.71 | 9.49 | ≤13 | PASS |
| | | 38000 | 2595 | 29.22 | 19.31 | 9.91 | ≤13 | PASS |
| | | 38175 | 2612.5 | 29.30 | 19.19 | 10.11 | ≤13 | PASS |
| | 20 | 37850 | 2580 | 29.65 | 19.84 | 9.81 | ≤13 | PASS |
| | | 38000 | 2595 | 29.55 | 19.32 | 10.23 | ≤13 | PASS |
| | | 38150 | 2610 | 29.69 | 19.54 | 10.15 | ≤13 | PASS |

| LTE Band 41 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Modulation** | **Bandwidth ((MHz))** | **Channel** | **Frequency (MHz)** | **Peak (dBm)** | **Avg (dBm)** | **PAPR (dB)** | **Limit (dB)** | **Conclusion** |
| QPSK | 5 | 39675 | 2498.5 | 31.10 | 22.43 | 8.67 | ≤13 | PASS |
| | | 40620 | 2593 | 31.36 | 22.50 | 8.86 | ≤13 | PASS |
| | | 41565 | 2687.5 | 31.26 | 22.04 | 9.22 | ≤13 | PASS |
| | 10 | 39700 | 2501 | 31.11 | 22.42 | 8.69 | ≤13 | PASS |
| | | 40620 | 2593 | 31.31 | 22.36 | 8.95 | ≤13 | PASS |
| | | 41540 | 2685 | 31.20 | 22.50 | 8.70 | ≤13 | PASS |
| | 15 | 39725 | 2503.5 | 30.74 | 22.56 | 8.18 | ≤13 | PASS |
| | | 40620 | 2593 | 30.92 | 21.95 | 8.97 | ≤13 | PASS |
| | | 41515 | 2682.5 | 30.86 | 22.37 | 8.49 | ≤13 | PASS |
| | 20 | 39750 | 2506 | 31.14 | 22.14 | 9.00 | ≤13 | PASS |
| | | 40620 | 2593 | 31.33 | 22.24 | 9.09 | ≤13 | PASS |
| | | 41490 | 2680 | 31.14 | 21.99 | 9.15 | ≤13 | PASS |


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| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 16QAM | 5 | 39675 | 2498.5 | 30.82 | 21.28 | 9.54 | ≤13 | PASS |
| | | 40620 | 2593 | 31.05 | 21.62 | 9.43 | ≤13 | PASS |
| | | 41565 | 2687.5 | 31.08 | 20.89 | 10.19 | ≤13 | PASS |
| | 10 | 39700 | 2501 | 30.82 | 21.25 | 9.57 | ≤13 | PASS |
| | | 40620 | 2593 | 31.00 | 21.42 | 9.58 | ≤13 | PASS |
| | | 41540 | 2685 | 31.09 | 21.21 | 9.88 | ≤13 | PASS |
| | 15 | 39725 | 2503.5 | 30.46 | 20.71 | 9.75 | ≤13 | PASS |
| | | 40620 | 2593 | 30.66 | 21.12 | 9.54 | ≤13 | PASS |
| | | 41515 | 2682.5 | 30.55 | 20.74 | 9.81 | ≤13 | PASS |
| | 20 | 39750 | 2506 | 30.85 | 21.21 | 9.64 | ≤13 | PASS |
| | | 40620 | 2593 | 31.03 | 21.28 | 9.75 | ≤13 | PASS |
| | | 41490 | 2680 | 30.97 | 20.91 | 10.06 | ≤13 | PASS |
| 64QAM | 5 | 39675 | 2498.5 | 29.17 | 19.32 | 9.85 | ≤13 | PASS |
| | | 40620 | 2593 | 29.46 | 19.78 | 9.68 | ≤13 | PASS |
| | | 41565 | 2687.5 | 29.73 | 19.85 | 9.88 | ≤13 | PASS |
| | 10 | 39700 | 2501 | 29.11 | 19.36 | 9.75 | ≤13 | PASS |
| | | 40620 | 2593 | 29.37 | 19.74 | 9.63 | ≤13 | PASS |
| | | 41540 | 2685 | 29.30 | 19.39 | 9.91 | ≤13 | PASS |
| | 15 | 39725 | 2503.5 | 28.70 | 19.18 | 9.52 | ≤13 | PASS |
| | | 40620 | 2593 | 29.06 | 19.37 | 9.69 | ≤13 | PASS |
| | | 41515 | 2682.5 | 28.92 | 19.19 | 9.73 | ≤13 | PASS |
| | 20 | 39750 | 2506 | 29.18 | 19.68 | 9.50 | ≤13 | PASS |
| | | 40620 | 2593 | 29.40 | 19.63 | 9.77 | ≤13 | PASS |
| | | 41490 | 2680 | 29.50 | 19.76 | 9.74 | ≤13 | PASS |

| Mode | Bandwidth | PCC | | SCC1 | | Modulation | Peak-to-Average Power Ratio (PAPR) | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Channel | Frequency (MHz) | Channel | Frequency (MHz) | | Peak (dBm) | Avg (dBm) | PAPR (dB) |
| CA_7C | CA_7C_10MHz+20MHz_QPSK | 21006 | 2525.6 | 21150 | 2540 | QPSK | 26.09 | 19.84 | 6.25 |
| | CA_7C_10MHz+20MHz_16QAM | 21006 | 2525.6 | 21150 | 2540 | 16QAM | 25.64 | 18.77 | 6.87 |
| | CA_7C_10MHz+20MHz_64QAM | 21006 | 2525.6 | 21150 | 2540 | 64QAM | 25.29 | 18.43 | 6.86 |
| | CA_7C_20MHz+10MHz_QPSK | 21051 | 2530.1 | 21195 | 2544.5 | QPSK | 26.14 | 19.89 | 6.25 |
| | CA_7C_20MHz+10MHz_16QAM | 21051 | 2530.1 | 21195 | 2544.5 | 16QAM | 25.61 | 18.76 | 6.85 |
| | CA_7C_20MHz+10MHz_64QAM | 21051 | 2530.1 | 21195 | 2544.5 | 64QAM | 25.14 | 18.31 | 6.83 |
| | CA_7C_15MHz+10MHz_QPSK | 21051 | 2530.1 | 21171 | 2542.1 | QPSK | 26.09 | 19.79 | 6.30 |
| | CA_7C_15MHz+10MHz_16QAM | 21051 | 2530.1 | 21171 | 2542.1 | 16QAM | 25.63 | 18.74 | 6.89 |


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| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | CA_7C_15MHz+10MHz_64QAM | 21051 | 2530.1 | 21171 | 2542.1 | 64QAM | 25.11 | 18.24 | 6.87 |
| | CA_7C_15MHz+15MHz_QPSK | 21025 | 2527.5 | 21175 | 2542.5 | QPSK | 26.33 | 19.82 | 6.51 |
| | CA_7C_15MHz+15MHz_16QAM | 21025 | 2527.5 | 21175 | 2542.5 | 16QAM | 25.73 | 18.71 | 7.02 |
| | CA_7C_15MHz+15MHz_64QAM | 21025 | 2527.5 | 21175 | 2542.5 | 64QAM | 25.53 | 18.77 | 6.76 |
| | CA_7C_15MHz+20MHz_QPSK | 21003 | 2525.3 | 21174 | 2542.4 | QPSK | 26.08 | 19.44 | 6.64 |
| | CA_7C_15MHz+20MHz_16QAM | 21003 | 2525.3 | 21174 | 2542.4 | 16QAM | 25.46 | 18.29 | 7.17 |
| | CA_7C_15MHz+20MHz_64QAM | 21003 | 2525.3 | 21174 | 2542.4 | 64QAM | 25.14 | 17.97 | 7.17 |
| | CA_7C_20MHz+15MHz_QPSK | 21026 | 2527.6 | 21197 | 2544.7 | QPSK | 26.00 | 19.35 | 6.65 |
| | CA_7C_20MHz+15MHz_16QAM | 21026 | 2527.6 | 21197 | 2544.7 | 16QAM | 25.46 | 18.30 | 7.16 |
| | CA_7C_20MHz+15MHz_64QAM | 21026 | 2527.6 | 21197 | 2544.7 | 64QAM | 25.11 | 17.97 | 7.14 |
| | CA_7C_20MHz+20MHz_QPSK | 21001 | 2525.1 | 21199 | 2544.9 | QPSK | 25.72 | 18.93 | 6.79 |
| | CA_7C_20MHz+20MHz_16QAM | 21001 | 2525.1 | 21199 | 2544.9 | 16QAM | 25.12 | 17.79 | 7.33 |
| | CA_7C_20MHz+20MHz_64QAM | 21001 | 2525.1 | 21199 | 2544.9 | 64QAM | 24.46 | 17.15 | 7.31 |

| Mode | Bandwidth | PCC | | SCC1 | | Modulation | Peak-to-Average Power Ratio (PAPR) | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Channel | Frequency (MHz) | Channel | Frequency (MHz) | | Peak (dBm) | Avg (dBm) | PAPR (dB) |
| CA_12B | CA_12B_5MHz+5MHz_QPSK | 23071 | 705.1 | 23119 | 709.9 | QPSK | 28.83 | 22.53 | 6.30 |
| | CA_12B_5MHz+5MHz_16QAM | 23071 | 705.1 | 23119 | 709.9 | 16QAM | 28.20 | 21.45 | 6.75 |
| | CA_12B_5MHz+5MHz_64QAM | 23071 | 705.1 | 23119 | 709.9 | 64QAM | 28.13 | 21.40 | 6.73 |
| | CA_12B_5MHz+10MHz_QPSK | 23048 | 702.8 | 23120 | 710 | QPSK | 28.81 | 22.64 | 6.17 |
| | CA_12B_5MHz+10MHz_16QAM | 23048 | 702.8 | 23120 | 710 | 16QAM | 28.22 | 21.56 | 6.66 |
| | CA_12B_5MHz+10MHz_64QAM | 23048 | 702.8 | 23120 | 710 | 64QAM | 28.01 | 21.31 | 6.70 |

| Mode | Bandwidth | PCC | | SCC1 | | Modulation | Peak-to-Average Power Ratio (PAPR) | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Channel | Frequency (MHz) | Channel | Frequency (MHz) | | Peak (dBm) | Avg (dBm) | PAPR (dB) |
| CA_38C | CA_38C_15MHz+15MHz_QPSK | 37925 | 2587.5 | 38075 | 2602.5 | QPSK | 26.48 | 18.03 | 8.45 |
| | CA_38C_15MHz+15MHz_16QAM | 37925 | 2587.5 | 38075 | 2602.5 | 16QAM | 25.97 | 16.96 | 9.01 |
| | CA_38C_15MHz+15MHz_64QAM | 37925 | 2587.5 | 38075 | 2602.5 | 64QAM | 25.24 | 16.44 | 8.80 |
| | CA_38C_20MHz+20MHz_QPSK | 37901 | 2585.1 | 38099 | 2604.9 | QPSK | 25.82 | 17.18 | 8.64 |
| | CA_38C_20MHz+20MHz_16QAM | 37901 | 2585.1 | 38099 | 2604.9 | 16QAM | 25.26 | 16.13 | 9.13 |
| | CA_38C_20MHz+20MHz_64QAM | 37901 | 2585.1 | 38099 | 2604.9 | 64QAM | 24.51 | 15.33 | 9.18 |

| Mode | Bandwidth | PCC | | SCC1 | | Modulation | Peak-to-Average Power Ratio (PAPR) | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Channel | Frequency (MHz) | Channel | Frequency (MHz) | | Peak (dBm) | Avg (dBm) | PAPR (dB) |
| CA_41C | CA_41C_5MHz+20MHz_QPSK | 40528 | 2583.8 | 40645 | 2595.5 | QPSK | 27.78 | 17.91 | 9.87 |
| | CA_41C_5MHz+20MHz_16QAM | 40528 | 2583.8 | 40645 | 2595.5 | 16QAM | 27.44 | 17.33 | 10.11 |
| | CA_41C_5MHz+20MHz_64QAM | 40528 | 2583.8 | 40645 | 2595.5 | 64QAM | 26.77 | 16.27 | 10.50 |


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| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | CA_41C_20MHz+5MHz_QPSK | 40595 | 2590.5 | 40712 | 2602.2 | QPSK | 27.56 | 18.69 | 8.87 |
| | CA_41C_20MHz+5MHz_16QAM | 40595 | 2590.5 | 40712 | 2602.2 | 16QAM | 27.13 | 17.02 | 10.11 |
| | CA_41C_20MHz+5MHz_64QAM | 40595 | 2590.5 | 40712 | 2602.2 | 64QAM | 26.54 | 17.01 | 9.53 |
| | CA_41C_10MHz+20MHz_QPSK | 40526 | 2583.6 | 40670 | 2598 | QPSK | 27.97 | 18.50 | 9.47 |
| | CA_41C_10MHz+20MHz_16QAM | 40526 | 2583.6 | 40670 | 2598 | 16QAM | 27.54 | 17.58 | 9.96 |
| | CA_41C_10MHz+20MHz_64QAM | 40526 | 2583.6 | 40670 | 2598 | 64QAM | 26.85 | 15.87 | 10.98 |
| | CA_41C_20MHz+10MHz_QPSK | 40571 | 2588.1 | 40715 | 2602.5 | QPSK | 28.02 | 18.22 | 9.80 |
| | CA_41C_20MHz+10MHz_16QAM | 40571 | 2588.1 | 40715 | 2602.5 | 16QAM | 27.57 | 17.44 | 10.13 |
| | CA_41C_20MHz+10MHz_64QAM | 40571 | 2588.1 | 40715 | 2602.5 | 64QAM | 26.94 | 16.38 | 10.56 |
| | CA_41C_15MHz+15MHz_QPSK | 40545 | 2585.5 | 40695 | 2600.5 | QPSK | 28.24 | 18.29 | 9.95 |
| | CA_41C_15MHz+15MHz_16QAM | 40545 | 2585.5 | 40695 | 2600.5 | 16QAM | 27.58 | 17.38 | 10.20 |
| | CA_41C_15MHz+15MHz_64QAM | 40545 | 2585.5 | 40695 | 2600.5 | 64QAM | 27.07 | 16.54 | 10.53 |
| | CA_41C_15MHz+20MHz_QPSK | 40523 | 2583.3 | 40694 | 2600.4 | QPSK | 27.94 | 17.57 | 10.37 |
| | CA_41C_15MHz+20MHz_16QAM | 40523 | 2583.3 | 40694 | 2600.4 | 16QAM | 27.37 | 16.39 | 10.98 |
| | CA_41C_15MHz+20MHz_64QAM | 40523 | 2583.3 | 40694 | 2600.4 | 64QAM | 26.83 | 15.99 | 10.84 |
| | CA_41C_20MHz+15MHz_QPSK | 40546 | 2585.6 | 40717 | 2602.7 | QPSK | 28.09 | 17.78 | 10.31 |
| | CA_41C_20MHz+15MHz_16QAM | 40546 | 2585.6 | 40717 | 2602.7 | 16QAM | 27.45 | 16.69 | 10.76 |
| | CA_41C_20MHz+15MHz_64QAM | 40546 | 2585.6 | 40717 | 2602.7 | 64QAM | 26.87 | 15.75 | 11.12 |
| | CA_41C_20MHz+20MHz_QPSK | 40521 | 2583.1 | 40719 | 2602.9 | QPSK | 27.62 | 17.38 | 10.24 |
| | CA_41C_20MHz+20MHz_16QAM | 40521 | 2583.1 | 40719 | 2602.9 | 16QAM | 26.84 | 15.89 | 10.95 |
| | CA_41C_20MHz+20MHz_64QAM | 40521 | 2583.1 | 40719 | 2602.9 | 64QAM | 26.48 | 16.10 | 10.38 |


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## 5.6 Frequency Stability

### Ambient condition

| Temperature | Relative humidity | Pressure |
|---|---|---|
| 23°C ~25°C | 45%~50% | 101.5kPa |

### Method of Measurement

Frequency Stability (Temperature Variation)

The temperature inside the climate chamber is varied from -30°C to +55°C in 10°C step size.

(1)With all power removed, the temperature was decreased to -10°C and permitted to stabilize for three hours.

(2)Measure the carrier frequency with the test equipment in a “call mode”. These measurements should be made within 1 minute of powering up the mobile station, to prevent significant self warming.

(3) Repeat the above measurements at 10°C increments from -30°C to +55°C. Allow at least 1.5 hours at each temperature, un-powered, before making measurements.

Frequency Stability (Voltage Variation)

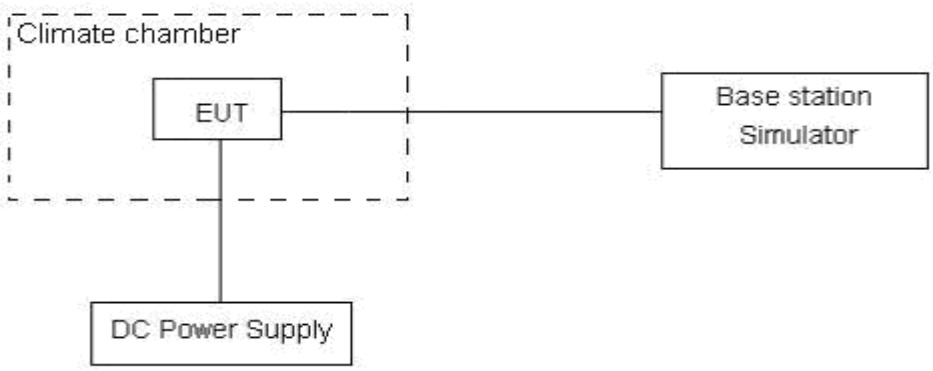
The frequency stability shall be measured with variation of primary supply voltage as follows:

(1) Vary primary supply voltage from 85 to 115 percent of the nominal value for other than hand carried battery equipment.

(2) For hand carried, battery powered equipment, reduce primary supply voltage to the battery-operating end point which shall be specified by the manufacturer.

This transceiver is specified to operate with an input voltage of between 3.6 V and 4.35 V, with a nominal voltage of 3.8V.

### Test setup




### Limits

The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

### Measurement Uncertainty

The assessed measurement uncertainty to ensure 99.75％ confidence level for the normal distribution is with the coverage factor $k$ = 3,$U$=0.01ppm.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## Test Result

| WCDMA Band IV | | | | | | |
|---|---|---|---|---|---|---|
| Condition | | Freq.Error (Hz) | Freq.Error (Hz) | Frequency Stability（ppm） | Frequency Stability（ppm） | Verdict |
| Temperature | Voltage | BPSK | QPSK | BPSK | QPSK | |
| Normal（25℃） | Normal | 13.51 | 7.01 | 0.00719 | 0.00373 | PASS |
| Extreme（55℃） | | 9.03 | 10.47 | 0.00480 | 0.00557 | PASS |
| Extreme（50℃） | | 7.39 | 10.46 | 0.00393 | 0.00556 | PASS |
| Extreme（40℃） | | 14.16 | 14.92 | 0.00753 | 0.00793 | PASS |
| Extreme（30℃） | | 17.70 | 16.55 | 0.00942 | 0.00880 | PASS |
| Extreme（20℃） | | 8.12 | 8.01 | 0.00432 | 0.00426 | PASS |
| Extreme（10℃） | | 9.83 | 13.79 | 0.00523 | 0.00734 | PASS |
| Extreme（0℃） | | 10.89 | 13.52 | 0.00579 | 0.00719 | PASS |
| Extreme（-10℃） | | 9.19 | 8.72 | 0.00489 | 0.00464 | PASS |
| Extreme（-20℃） | | 9.72 | 7.96 | 0.00517 | 0.00423 | PASS |
| Extreme（-30℃） | | 5.32 | 14.86 | 0.00283 | 0.00790 | PASS |
| 25℃ | LV | 7.38 | 9.56 | 0.00393 | 0.00509 | PASS |
| | HV | 9.79 | 10.16 | 0.00521 | 0.00540 | PASS |

| LTE Band 4 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Condition | | Freq.Error (Hz) | Freq.Error (Hz) | Freq.Error (Hz) | Frequency Stability（ppm） | Frequency Stability（ppm） | Frequency Stability（ppm） | Verdict |
| BANDWIDTH | 1.4MHz | | | | | | | |
| Temperature | Voltage | 64QAM | 16QAM | QPSK | 64QAM | 16QAM | QPSK | |
| Normal（25℃） | Normal | 17.50 | 13.24 | 13.88 | 0.00931 | 0.00704 | 0.00738 | PASS |
| Extreme（55℃） | | 10.66 | 8.44 | 17.98 | 0.00567 | 0.00449 | 0.00957 | PASS |
| Extreme（50℃） | | 4.68 | 10.35 | 15.12 | 0.00249 | 0.00551 | 0.00804 | PASS |
| Extreme（40℃） | | 13.19 | 7.09 | 5.11 | 0.00701 | 0.00377 | 0.00272 | PASS |
| Extreme（30℃） | | 3.41 | 4.47 | 14.37 | 0.00181 | 0.00238 | 0.00764 | PASS |
| Extreme（20℃） | | 1.03 | 5.56 | 5.59 | 0.00055 | 0.00296 | 0.00297 | PASS |
| Extreme（10℃） | | 16.89 | 9.69 | 2.46 | 0.00899 | 0.00516 | 0.00131 | PASS |
| Extreme（0℃） | | 6.89 | 7.31 | 5.18 | 0.00366 | 0.00389 | 0.00276 | PASS |
| Extreme（-10℃） | | 2.92 | 17.63 | 14.22 | 0.00156 | 0.00938 | 0.00756 | PASS |
| Extreme（-20℃） | | 12.82 | 7.99 | 12.65 | 0.00682 | 0.00425 | 0.00673 | PASS |
| Extreme（-30℃） | | 1.41 | 5.13 | 8.98 | 0.00075 | 0.00273 | 0.00478 | PASS |
| 25℃ | LV | 5.92 | 7.76 | 6.06 | 0.00315 | 0.00413 | 0.00322 | PASS |
| | HV | 3.27 | 8.35 | 6.23 | 0.00174 | 0.00444 | 0.00332 | PASS |
| Condition | | Freq.Error (Hz) | Freq.Error (Hz) | Freq.Error (Hz) | Frequency Stability | Frequency Stability | Frequency Stability | Verdict |


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| BANDWIDTH | 3MHz | | | | (ppm) | (ppm) | (ppm) | |
|---|---|---|---|---|---|---|---|---|
| Temperature | Voltage | 64QAM | 16QAM | QPSK | 64QAM | 16QAM | QPSK | |
| Normal (25℃) | Normal | 1.20 | 6.55 | 4.38 | 0.00064 | 0.00348 | 0.00233 | PASS |
| Extreme (55℃) | | 10.23 | 13.43 | 10.89 | 0.00544 | 0.00715 | 0.00579 | PASS |
| Extreme (50℃) | | 16.07 | 1.07 | 13.96 | 0.00855 | 0.00057 | 0.00743 | PASS |
| Extreme (40℃) | | 11.26 | 4.89 | 12.15 | 0.00599 | 0.00260 | 0.00647 | PASS |
| Extreme (30℃) | | 16.98 | 3.56 | 4.80 | 0.00903 | 0.00189 | 0.00255 | PASS |
| Extreme (20℃) | | 13.49 | 7.83 | 2.94 | 0.00718 | 0.00416 | 0.00156 | PASS |
| Extreme (10℃) | | 11.69 | 2.77 | 1.13 | 0.00622 | 0.00147 | 0.00060 | PASS |
| Extreme (0℃) | | 1.50 | 4.27 | 14.49 | 0.00080 | 0.00227 | 0.00771 | PASS |
| Extreme (-10℃) | | 13.15 | 8.37 | 1.70 | 0.00700 | 0.00445 | 0.00091 | PASS |
| Extreme (-20℃) | | 8.33 | 14.82 | 10.69 | 0.00443 | 0.00788 | 0.00569 | PASS |
| Extreme (-30℃) | | 5.72 | 12.06 | 1.86 | 0.00304 | 0.00641 | 0.00099 | PASS |
| 25℃ | LV | 8.28 | 6.18 | 13.12 | 0.00441 | 0.00329 | 0.00698 | PASS |
| | HV | 3.53 | 13.90 | 4.07 | 0.00188 | 0.00739 | 0.00216 | PASS |
| Condition | | Freq.Error (Hz) | Freq.Error (Hz) | Freq.Error (Hz) | Frequency Stability (ppm) | Frequency Stability (ppm) | Frequency Stability (ppm) | Verdict |
| BANDWIDTH | 5MHz | | | | | | | |
| Temperature | Voltage | 64QAM | 16QAM | QPSK | 64QAM | 16QAM | QPSK | |
| Normal (25℃) | Normal | 8.33 | 4.38 | 15.68 | 0.00443 | 0.00233 | 0.00834 | PASS |
| Extreme (55℃) | | 3.50 | 1.74 | 1.86 | 0.00186 | 0.00093 | 0.00099 | PASS |
| Extreme (50℃) | | 15.44 | 5.94 | 10.72 | 0.00821 | 0.00316 | 0.00570 | PASS |
| Extreme (40℃) | | 4.48 | 5.32 | 1.25 | 0.00238 | 0.00283 | 0.00066 | PASS |
| Extreme (30℃) | | 17.82 | 7.54 | 17.63 | 0.00948 | 0.00401 | 0.00938 | PASS |
| Extreme (20℃) | | 10.87 | 15.38 | 17.84 | 0.00578 | 0.00818 | 0.00949 | PASS |
| Extreme (10℃) | | 8.87 | 16.86 | 10.98 | 0.00472 | 0.00897 | 0.00584 | PASS |
| Extreme (0℃) | | 7.49 | 9.03 | 17.30 | 0.00399 | 0.00480 | 0.00920 | PASS |
| Extreme (-10℃) | | 11.31 | 1.21 | 5.38 | 0.00602 | 0.00064 | 0.00286 | PASS |
| Extreme (-20℃) | | 6.17 | 8.95 | 9.97 | 0.00328 | 0.00476 | 0.00530 | PASS |
| Extreme (-30℃) | | 17.05 | 1.73 | 5.07 | 0.00907 | 0.00092 | 0.00270 | PASS |
| 25℃ | LV | 7.78 | 15.80 | 17.51 | 0.00414 | 0.00840 | 0.00932 | PASS |
| | HV | 6.60 | 6.71 | 4.02 | 0.00351 | 0.00357 | 0.00214 | PASS |
| Condition | | Freq.Error (Hz) | Freq.Error (Hz) | Freq.Error (Hz) | Frequency Stability (ppm) | Frequency Stability (ppm) | Frequency Stability (ppm) | Verdict |
| BANDWIDTH | 10MHz | | | | | | | |
| Temperature | Voltage | 64QAM | 16QAM | QPSK | 64QAM | 16QAM | QPSK | |
| Normal (25℃) | Normal | 9.32 | 15.03 | 12.97 | 0.00496 | 0.00800 | 0.00690 | PASS |
| Extreme (55℃) | | 2.59 | 8.53 | 3.10 | 0.00138 | 0.00454 | 0.00165 | PASS |
| Extreme (50℃) | | 11.18 | 9.67 | 16.79 | 0.00595 | 0.00514 | 0.00893 | PASS |
| Extreme (40℃) | | 6.39 | 10.83 | 12.17 | 0.00340 | 0.00576 | 0.00648 | PASS |
| Extreme (30℃) | | 7.65 | 1.99 | 2.04 | 0.00407 | 0.00106 | 0.00109 | PASS |
| Extreme (20℃) | | 9.46 | 17.47 | 4.09 | 0.00503 | 0.00929 | 0.00218 | PASS |


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| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Extreme（10℃） | | 5.35 | 12.12 | 13.08 | 0.00285 | 0.00645 | 0.00696 | PASS |
| Extreme（0℃） | | 12.21 | 9.75 | 12.59 | 0.00649 | 0.00519 | 0.00670 | PASS |
| Extreme（-10℃） | | 3.31 | 12.97 | 7.44 | 0.00176 | 0.00690 | 0.00396 | PASS |
| Extreme（-20℃） | | 3.94 | 15.58 | 16.02 | 0.00210 | 0.00829 | 0.00852 | PASS |
| Extreme（-30℃） | | 1.76 | 5.38 | 14.65 | 0.00094 | 0.00286 | 0.00779 | PASS |
| 25℃ | LV | 16.95 | 4.73 | 11.43 | 0.00902 | 0.00251 | 0.00608 | PASS |
| | HV | 10.04 | 5.29 | 2.99 | 0.00534 | 0.00282 | 0.00159 | PASS |
| Condition | | Freq.Error (Hz) | Freq.Error (Hz) | Freq.Error (Hz) | Frequency Stability（ppm） | Frequency Stability（ppm） | Frequency Stability（ppm） | Verdict |
| BANDWIDTH | 15MHz | | | | | | | |
| Temperature | Voltage | 64QAM | 16QAM | QPSK | 64QAM | 16QAM | QPSK | |
| Normal（25℃） | | 3.08 | 2.50 | 6.02 | 0.00164 | 0.00133 | 0.00320 | PASS |
| Extreme（55℃） | | 5.55 | 4.04 | 7.57 | 0.00295 | 0.00215 | 0.00403 | PASS |
| Extreme（50℃） | | 15.05 | 1.31 | 15.78 | 0.00801 | 0.00070 | 0.00839 | PASS |
| Extreme（40℃） | | 6.10 | 7.75 | 1.65 | 0.00325 | 0.00412 | 0.00088 | PASS |
| Extreme（30℃） | | 9.53 | 12.91 | 8.84 | 0.00507 | 0.00687 | 0.00470 | PASS |
| Extreme（20℃） | Normal | 3.78 | 11.75 | 6.69 | 0.00201 | 0.00625 | 0.00356 | PASS |
| Extreme（10℃） | | 13.38 | 12.62 | 4.53 | 0.00712 | 0.00671 | 0.00241 | PASS |
| Extreme（0℃） | | 17.76 | 1.11 | 6.06 | 0.00945 | 0.00059 | 0.00322 | PASS |
| Extreme（-10℃） | | 1.74 | 8.90 | 17.20 | 0.00092 | 0.00474 | 0.00915 | PASS |
| Extreme（-20℃） | | 9.11 | 11.87 | 10.86 | 0.00485 | 0.00631 | 0.00578 | PASS |
| Extreme（-30℃） | | 17.87 | 15.65 | 10.37 | 0.00950 | 0.00832 | 0.00552 | PASS |
| 25℃ | LV | 2.17 | 12.48 | 10.16 | 0.00115 | 0.00664 | 0.00540 | PASS |
| | HV | 16.22 | 4.56 | 16.93 | 0.00863 | 0.00243 | 0.00901 | PASS |
| Condition | | Freq.Error (Hz) | Freq.Error (Hz) | Freq.Error (Hz) | Frequency Stability（ppm） | Frequency Stability（ppm） | Frequency Stability（ppm） | Verdict |
| BANDWIDTH | 20MHz | | | | | | | |
| Temperature | Voltage | 64QAM | 16QAM | QPSK | 64QAM | 16QAM | QPSK | |
| Normal（25℃） | | 3.08 | 6.19 | 13.59 | 0.00164 | 0.00329 | 0.00723 | PASS |
| Extreme（55℃） | | 7.31 | 1.80 | 16.89 | 0.00389 | 0.00096 | 0.00899 | PASS |
| Extreme（50℃） | | 7.63 | 6.61 | 4.92 | 0.00406 | 0.00352 | 0.00262 | PASS |
| Extreme（40℃） | | 2.01 | 6.73 | 9.85 | 0.00107 | 0.00358 | 0.00524 | PASS |
| Extreme（30℃） | | 10.86 | 15.72 | 16.07 | 0.00578 | 0.00836 | 0.00855 | PASS |
| Extreme（20℃） | Normal | 16.62 | 14.64 | 4.99 | 0.00884 | 0.00779 | 0.00266 | PASS |
| Extreme（10℃） | | 17.09 | 11.68 | 7.26 | 0.00909 | 0.00621 | 0.00386 | PASS |
| Extreme（0℃） | | 11.15 | 1.91 | 6.71 | 0.00593 | 0.00102 | 0.00357 | PASS |
| Extreme（-10℃） | | 5.13 | 1.13 | 15.07 | 0.00273 | 0.00060 | 0.00801 | PASS |
| Extreme（-20℃） | | 13.30 | 6.57 | 4.75 | 0.00708 | 0.00349 | 0.00253 | PASS |
| Extreme（-30℃） | | 16.22 | 10.77 | 6.68 | 0.00863 | 0.00573 | 0.00355 | PASS |
| 25℃ | LV | 4.41 | 2.19 | 16.36 | 0.00234 | 0.00116 | 0.00870 | PASS |
| | HV | 5.54 | 17.59 | 10.07 | 0.00295 | 0.00936 | 0.00536 | PASS |


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| LTE Band 7 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Condition | | Freq.Error (Hz) | Freq.Error (Hz) | Freq.Error (Hz) | Frequency Stability (ppm) | Frequency Stability (ppm) | Frequency Stability (ppm) | Verdict |
| BANDWIDTH | 5MHz | | | | | | | |
| Temperature | Voltage | 64QAM | 16QAM | QPSK | 64QAM | 16QAM | QPSK | |
| Normal（25℃） | Normal | 16.08 | 6.60 | 5.07 | 0.00855 | 0.00351 | 0.00270 | PASS |
| Extreme（55℃） | | 10.44 | 11.36 | 15.04 | 0.00555 | 0.00604 | 0.00800 | PASS |
| Extreme（50℃） | | 16.11 | 4.07 | 5.90 | 0.00857 | 0.00216 | 0.00314 | PASS |
| Extreme（40℃） | | 13.03 | 10.07 | 12.78 | 0.00693 | 0.00536 | 0.00680 | PASS |
| Extreme（30℃） | | 11.75 | 10.62 | 14.28 | 0.00625 | 0.00565 | 0.00760 | PASS |
| Extreme（20℃） | | 14.84 | 8.26 | 5.73 | 0.00789 | 0.00440 | 0.00305 | PASS |
| Extreme（10℃） | | 12.32 | 4.14 | 15.25 | 0.00655 | 0.00220 | 0.00811 | PASS |
| Extreme（0℃） | | 6.15 | 14.59 | 2.62 | 0.00327 | 0.00776 | 0.00140 | PASS |
| Extreme（-10℃） | | 5.37 | 8.45 | 17.85 | 0.00286 | 0.00450 | 0.00949 | PASS |
| Extreme（-20℃） | | 4.61 | 8.94 | 1.27 | 0.00245 | 0.00475 | 0.00067 | PASS |
| Extreme（-30℃） | | 9.20 | 4.41 | 12.77 | 0.00489 | 0.00235 | 0.00679 | PASS |
| 25℃ | LV | 15.21 | 4.78 | 4.51 | 0.00809 | 0.00254 | 0.00240 | PASS |
| | HV | 2.59 | 4.28 | 1.35 | 0.00138 | 0.00228 | 0.00072 | PASS |
| Condition | | Freq.Error (Hz) | Freq.Error (Hz) | Freq.Error (Hz) | Frequency Stability (ppm) | Frequency Stability (ppm) | Frequency Stability (ppm) | Verdict |
| BANDWIDTH | 10MHz | | | | | | | |
| Temperature | Voltage | 64QAM | 16QAM | QPSK | 64QAM | 16QAM | QPSK | |
| Normal（25℃） | Normal | 12.35 | 1.43 | 7.42 | 0.00657 | 0.00076 | 0.00395 | PASS |
| Extreme（55℃） | | 4.63 | 17.46 | 6.88 | 0.00246 | 0.00929 | 0.00366 | PASS |
| Extreme（50℃） | | 2.94 | 10.89 | 4.49 | 0.00156 | 0.00579 | 0.00239 | PASS |
| Extreme（40℃） | | 4.63 | 6.43 | 8.57 | 0.00246 | 0.00342 | 0.00456 | PASS |
| Extreme（30℃） | | 2.07 | 11.36 | 10.68 | 0.00110 | 0.00604 | 0.00568 | PASS |
| Extreme（20℃） | | 11.88 | 3.64 | 12.91 | 0.00632 | 0.00194 | 0.00687 | PASS |
| Extreme（10℃） | | 8.40 | 12.32 | 13.36 | 0.00447 | 0.00655 | 0.00711 | PASS |
| Extreme（0℃） | | 10.25 | 1.36 | 3.38 | 0.00545 | 0.00072 | 0.00180 | PASS |
| Extreme（-10℃） | | 11.78 | 2.39 | 4.26 | 0.00627 | 0.00127 | 0.00226 | PASS |
| Extreme（-20℃） | | 15.97 | 15.91 | 13.76 | 0.00849 | 0.00847 | 0.00732 | PASS |
| Extreme（-30℃） | | 9.35 | 15.99 | 14.51 | 0.00498 | 0.00850 | 0.00772 | PASS |
| 25℃ | LV | 16.87 | 17.28 | 12.66 | 0.00897 | 0.00919 | 0.00673 | PASS |
| | HV | 1.46 | 14.85 | 13.36 | 0.00078 | 0.00790 | 0.00711 | PASS |
| Condition | | Freq.Error (Hz) | Freq.Error (Hz) | Freq.Error (Hz) | Frequency Stability (ppm) | Frequency Stability (ppm) | Frequency Stability (ppm) | Verdict |
| BANDWIDTH | 15MHz | | | | | | | |
| Temperature | Voltage | 64QAM | 16QAM | QPSK | 64QAM | 16QAM | QPSK | |
| Normal（25℃） | Normal | 1.20 | 2.46 | 13.37 | 0.00064 | 0.00131 | 0.00711 | PASS |
| Extreme（55℃） | | 17.11 | 1.83 | 10.37 | 0.00910 | 0.00098 | 0.00551 | PASS |


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| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Extreme（50℃） | | 14.68 | 12.94 | 1.20 | 0.00781 | 0.00688 | 0.00064 | PASS |
| Extreme（40℃） | | 17.51 | 9.61 | 10.46 | 0.00932 | 0.00511 | 0.00557 | PASS |
| Extreme（30℃） | | 6.33 | 11.36 | 12.86 | 0.00337 | 0.00604 | 0.00684 | PASS |
| Extreme（20℃） | | 11.08 | 8.89 | 5.56 | 0.00589 | 0.00473 | 0.00296 | PASS |
| Extreme（10℃） | | 9.16 | 4.52 | 15.79 | 0.00487 | 0.00241 | 0.00840 | PASS |
| Extreme（0℃） | | 8.71 | 16.46 | 1.97 | 0.00463 | 0.00876 | 0.00105 | PASS |
| Extreme（-10℃） | | 4.07 | 16.06 | 4.94 | 0.00216 | 0.00854 | 0.00263 | PASS |
| Extreme（-20℃） | | 11.93 | 1.86 | 1.22 | 0.00635 | 0.00099 | 0.00065 | PASS |
| Extreme（-30℃） | | 5.62 | 10.47 | 1.99 | 0.00299 | 0.00557 | 0.00106 | PASS |
| 25℃ | LV | 4.44 | 13.96 | 16.75 | 0.00236 | 0.00742 | 0.00891 | PASS |
| | HV | 12.01 | 1.75 | 10.68 | 0.00639 | 0.00093 | 0.00568 | PASS |
| Condition | | Freq.Error (Hz) | Freq.Error (Hz) | Freq.Error (Hz) | Frequency Stability（ppm） | Frequency Stability（ppm） | Frequency Stability（ppm） | Verdict |
| BANDWIDTH | 20MHz | | | | | | | |
| Temperature | Voltage | 64QAM | 16QAM | QPSK | 64QAM | 16QAM | QPSK | |
| Normal（25℃） | | 12.17 | 16.84 | 13.84 | 0.00647 | 0.00896 | 0.00736 | PASS |
| Extreme（55℃） | | 7.90 | 17.44 | 16.58 | 0.00420 | 0.00928 | 0.00882 | PASS |
| Extreme（50℃） | | 14.26 | 6.80 | 7.02 | 0.00758 | 0.00362 | 0.00373 | PASS |
| Extreme（40℃） | | 10.54 | 16.03 | 12.38 | 0.00561 | 0.00853 | 0.00659 | PASS |
| Extreme（30℃） | | 16.19 | 4.03 | 15.89 | 0.00861 | 0.00214 | 0.00845 | PASS |
| Extreme（20℃） | Normal | 4.04 | 3.00 | 8.96 | 0.00215 | 0.00160 | 0.00477 | PASS |
| Extreme（10℃） | | 17.38 | 15.68 | 11.88 | 0.00925 | 0.00834 | 0.00632 | PASS |
| Extreme（0℃） | | 11.29 | 2.11 | 16.56 | 0.00601 | 0.00112 | 0.00881 | PASS |
| Extreme（-10℃） | | 13.22 | 8.59 | 11.29 | 0.00703 | 0.00457 | 0.00601 | PASS |
| Extreme（-20℃） | | 4.52 | 2.04 | 2.54 | 0.00240 | 0.00109 | 0.00135 | PASS |
| Extreme（-30℃） | | 7.37 | 2.04 | 17.86 | 0.00392 | 0.00109 | 0.00950 | PASS |
| 25℃ | LV | 15.87 | 5.32 | 8.29 | 0.00844 | 0.00283 | 0.00441 | PASS |
| | HV | 1.36 | 14.63 | 8.16 | 0.00072 | 0.00778 | 0.00434 | PASS |

| LTE Band 12 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Condition | | Freq.Error (Hz) | Freq.Error (Hz) | Freq.Error (Hz) | Frequency Stability（ppm） | Frequency Stability（ppm） | Frequency Stability（ppm） | Verdict |
| BANDWIDTH | 1.4MHz | | | | | | | |
| Temperature | Voltage | 64QAM | 16QAM | QPSK | 64QAM | 16QAM | QPSK | |
| Normal（25℃） | | 6.52 | 5.64 | 2.60 | 0.00347 | 0.00300 | 0.00138 | PASS |
| Extreme（55℃） | | 15.16 | 4.36 | 17.54 | 0.00806 | 0.00232 | 0.00933 | PASS |
| Extreme（50℃） | | 11.09 | 10.27 | 1.08 | 0.00590 | 0.00546 | 0.00057 | PASS |
| Extreme（40℃） | Normal | 6.30 | 17.96 | 5.00 | 0.00335 | 0.00955 | 0.00266 | PASS |
| Extreme（30℃） | | 2.17 | 12.64 | 6.38 | 0.00116 | 0.00672 | 0.00340 | PASS |
| Extreme（20℃） | | 17.77 | 8.44 | 7.34 | 0.00945 | 0.00449 | 0.00390 | PASS |
| Extreme（10℃） | | 5.67 | 8.71 | 9.61 | 0.00302 | 0.00463 | 0.00511 | PASS |


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| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Extreme（0℃） | | 17.37 | 15.57 | 4.29 | 0.00924 | 0.00828 | 0.00228 | PASS |
| Extreme（-10℃） | | 8.98 | 5.81 | 10.96 | 0.00478 | 0.00309 | 0.00583 | PASS |
| Extreme（-20℃） | | 12.15 | 10.07 | 16.71 | 0.00646 | 0.00535 | 0.00889 | PASS |
| Extreme（-30℃） | | 1.91 | 8.77 | 12.97 | 0.00102 | 0.00466 | 0.00690 | PASS |
| 25℃ | LV | 3.45 | 14.94 | 16.20 | 0.00184 | 0.00795 | 0.00862 | PASS |
| | HV | 2.33 | 14.79 | 14.82 | 0.00124 | 0.00787 | 0.00789 | PASS |
| Condition | | Freq.Error (Hz) | Freq.Error (Hz) | Freq.Error (Hz) | Frequency Stability（ppm） | Frequency Stability（ppm） | Frequency Stability（ppm） | Verdict |
| BANDWIDTH | 3MHz | | | | | | | |
| Temperature | Voltage | 64QAM | 16QAM | QPSK | 64QAM | 16QAM | QPSK | |
| Normal（25℃） | Normal | 4.09 | 15.06 | 14.61 | 0.00218 | 0.00801 | 0.00777 | PASS |
| Extreme（55℃） | | 17.01 | 10.21 | 14.26 | 0.00905 | 0.00543 | 0.00759 | PASS |
| Extreme（50℃） | | 17.15 | 3.40 | 2.95 | 0.00912 | 0.00181 | 0.00157 | PASS |
| Extreme（40℃） | | 6.01 | 15.55 | 5.29 | 0.00319 | 0.00827 | 0.00281 | PASS |
| Extreme（30℃） | | 17.26 | 16.36 | 4.03 | 0.00918 | 0.00870 | 0.00215 | PASS |
| Extreme（20℃） | | 8.32 | 7.88 | 1.95 | 0.00443 | 0.00419 | 0.00104 | PASS |
| Extreme（10℃） | | 15.68 | 14.56 | 3.79 | 0.00834 | 0.00774 | 0.00201 | PASS |
| Extreme（0℃） | | 10.00 | 12.26 | 11.14 | 0.00532 | 0.00652 | 0.00593 | PASS |
| Extreme（-10℃） | | 1.97 | 8.87 | 9.86 | 0.00105 | 0.00472 | 0.00525 | PASS |
| Extreme（-20℃） | | 4.55 | 7.24 | 12.32 | 0.00242 | 0.00385 | 0.00655 | PASS |
| Extreme（-30℃） | | 16.32 | 8.31 | 8.00 | 0.00868 | 0.00442 | 0.00426 | PASS |
| 25℃ | LV | 4.40 | 17.14 | 10.80 | 0.00234 | 0.00912 | 0.00575 | PASS |
| | HV | 1.29 | 2.31 | 15.97 | 0.00069 | 0.00123 | 0.00850 | PASS |
| Condition | | Freq.Error (Hz) | Freq.Error (Hz) | Freq.Error (Hz) | Frequency Stability（ppm） | Frequency Stability（ppm） | Frequency Stability（ppm） | Verdict |
| BANDWIDTH | 5MHz | | | | | | | |
| Temperature | Voltage | 64QAM | 16QAM | QPSK | 64QAM | 16QAM | QPSK | |
| Normal（25℃） | Normal | 8.29 | 11.19 | 11.37 | 0.00441 | 0.00595 | 0.00605 | PASS |
| Extreme（55℃） | | 15.45 | 14.05 | 15.79 | 0.00822 | 0.00747 | 0.00840 | PASS |
| Extreme（50℃） | | 17.18 | 13.55 | 2.92 | 0.00914 | 0.00721 | 0.00156 | PASS |
| Extreme（40℃） | | 4.78 | 6.26 | 15.51 | 0.00254 | 0.00333 | 0.00825 | PASS |
| Extreme（30℃） | | 4.79 | 8.50 | 1.99 | 0.00255 | 0.00452 | 0.00106 | PASS |
| Extreme（20℃） | | 2.41 | 15.92 | 12.79 | 0.00128 | 0.00847 | 0.00680 | PASS |
| Extreme（10℃） | | 15.12 | 6.57 | 4.81 | 0.00804 | 0.00350 | 0.00256 | PASS |
| Extreme（0℃） | | 17.90 | 10.06 | 2.85 | 0.00952 | 0.00535 | 0.00152 | PASS |
| Extreme（-10℃） | | 17.82 | 17.78 | 1.74 | 0.00948 | 0.00946 | 0.00093 | PASS |
| Extreme（-20℃） | | 17.71 | 14.15 | 3.51 | 0.00942 | 0.00753 | 0.00187 | PASS |
| Extreme（-30℃） | | 10.23 | 2.03 | 10.34 | 0.00544 | 0.00108 | 0.00550 | PASS |
| 25℃ | LV | 11.57 | 4.45 | 13.34 | 0.00615 | 0.00237 | 0.00710 | PASS |
| | HV | 4.02 | 3.98 | 13.37 | 0.00214 | 0.00212 | 0.00711 | PASS |
| Condition | | Freq.Error (Hz) | Freq.Error (Hz) | Freq.Error (Hz) | Frequency Stability | Frequency Stability | Frequency Stability | Verdict |


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| BANDWIDTH | 10MHz | | | | （ppm） | （ppm） | （ppm） | |
|---|---|---|---|---|---|---|---|---|
| Temperature | Voltage | 64QAM | 16QAM | QPSK | 64QAM | 16QAM | QPSK | |
| Normal（25℃） | Normal | 6.53 | 5.67 | 14.30 | 0.00347 | 0.00302 | 0.00761 | PASS |
| Extreme（55℃） | | 6.01 | 13.90 | 12.93 | 0.00319 | 0.00739 | 0.00688 | PASS |
| Extreme（50℃） | | 3.59 | 8.40 | 11.87 | 0.00191 | 0.00447 | 0.00631 | PASS |
| Extreme（40℃） | | 4.81 | 6.45 | 2.79 | 0.00256 | 0.00343 | 0.00148 | PASS |
| Extreme（30℃） | | 11.50 | 11.77 | 9.07 | 0.00612 | 0.00626 | 0.00482 | PASS |
| Extreme（20℃） | | 6.83 | 15.62 | 3.47 | 0.00363 | 0.00831 | 0.00184 | PASS |
| Extreme（10℃） | | 17.38 | 7.76 | 16.66 | 0.00925 | 0.00413 | 0.00886 | PASS |
| Extreme（0℃） | | 9.41 | 2.76 | 5.69 | 0.00501 | 0.00147 | 0.00303 | PASS |
| Extreme（-10℃） | | 4.85 | 15.50 | 5.14 | 0.00258 | 0.00825 | 0.00273 | PASS |
| Extreme（-20℃） | | 5.68 | 10.01 | 13.25 | 0.00302 | 0.00533 | 0.00705 | PASS |
| Extreme（-30℃） | | 14.06 | 17.81 | 16.79 | 0.00748 | 0.00948 | 0.00893 | PASS |
| 25℃ | LV | 15.24 | 15.99 | 8.91 | 0.00810 | 0.00850 | 0.00474 | PASS |
| | HV | 10.29 | 10.78 | 5.13 | 0.00548 | 0.00573 | 0.00273 | PASS |

| LTE Band 17 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Condition | | Freq.Error (Hz) | Freq.Error (Hz) | Freq.Error (Hz) | Frequency Stability （ppm） | Frequency Stability （ppm） | Frequency Stability （ppm） | Verdict |
| BANDWIDTH | 5MHz | | | | | | | |
| Temperature | Voltage | 64QAM | 16QAM | QPSK | 64QAM | 16QAM | QPSK | |
| Normal（25℃） | Normal | 1.58 | 17.01 | 8.75 | 0.00084 | 0.00905 | 0.00465 | PASS |
| Extreme（55℃） | | 9.84 | 4.65 | 6.35 | 0.00523 | 0.00247 | 0.00338 | PASS |
| Extreme（50℃） | | 15.48 | 3.21 | 8.72 | 0.00823 | 0.00171 | 0.00464 | PASS |
| Extreme（40℃） | | 11.19 | 15.46 | 12.15 | 0.00595 | 0.00822 | 0.00646 | PASS |
| Extreme（30℃） | | 17.45 | 11.11 | 3.19 | 0.00928 | 0.00591 | 0.00170 | PASS |
| Extreme（20℃） | | 8.51 | 13.40 | 13.62 | 0.00453 | 0.00713 | 0.00724 | PASS |
| Extreme（10℃） | | 6.91 | 2.32 | 12.25 | 0.00368 | 0.00124 | 0.00652 | PASS |
| Extreme（0℃） | | 17.06 | 13.21 | 4.23 | 0.00907 | 0.00703 | 0.00225 | PASS |
| Extreme（-10℃） | | 14.22 | 4.36 | 1.02 | 0.00756 | 0.00232 | 0.00054 | PASS |
| Extreme（-20℃） | | 11.32 | 14.71 | 11.16 | 0.00602 | 0.00783 | 0.00594 | PASS |
| Extreme（-30℃） | | 2.87 | 17.05 | 2.50 | 0.00152 | 0.00907 | 0.00133 | PASS |
| 25℃ | LV | 4.72 | 8.03 | 6.74 | 0.00251 | 0.00427 | 0.00358 | PASS |
| | HV | 17.60 | 4.21 | 3.48 | 0.00936 | 0.00224 | 0.00185 | PASS |
| Condition | | Freq.Error (Hz) | Freq.Error (Hz) | Freq.Error (Hz) | Frequency Stability （ppm） | Frequency Stability （ppm） | Frequency Stability （ppm） | Verdict |
| BANDWIDTH | 10MHz | | | | | | | |
| Temperature | Voltage | 64QAM | 16QAM | QPSK | 64QAM | 16QAM | QPSK | |
| Normal（25℃） | Normal | 17.23 | 13.76 | 4.94 | 0.00916 | 0.00732 | 0.00263 | PASS |
| Extreme（55℃） | | 5.46 | 10.54 | 2.02 | 0.00290 | 0.00560 | 0.00108 | PASS |
| Extreme（50℃） | | 3.31 | 13.21 | 8.72 | 0.00176 | 0.00703 | 0.00464 | PASS |


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|---|---|---|---|---|---|---|---|---|
| Extreme（40℃） | | 4.20 | 17.59 | 17.69 | 0.00223 | 0.00935 | 0.00941 | PASS |
| Extreme（30℃） | | 14.51 | 10.50 | 3.73 | 0.00772 | 0.00559 | 0.00199 | PASS |
| Extreme（20℃） | | 9.82 | 17.77 | 13.89 | 0.00522 | 0.00945 | 0.00739 | PASS |
| Extreme（10℃） | | 4.63 | 16.98 | 15.33 | 0.00246 | 0.00903 | 0.00816 | PASS |
| Extreme（0℃） | | 11.72 | 14.16 | 12.68 | 0.00623 | 0.00753 | 0.00674 | PASS |
| Extreme（-10℃） | | 6.41 | 2.42 | 1.82 | 0.00341 | 0.00129 | 0.00097 | PASS |
| Extreme（-20℃） | | 15.89 | 4.18 | 14.02 | 0.00845 | 0.00222 | 0.00746 | PASS |
| Extreme（-30℃） | | 2.51 | 16.61 | 5.70 | 0.00133 | 0.00884 | 0.00303 | PASS |
| 25℃ | LV | 4.73 | 14.62 | 5.47 | 0.00252 | 0.00778 | 0.00291 | PASS |
| | HV | 5.17 | 8.54 | 3.15 | 0.00275 | 0.00454 | 0.00168 | PASS |

| LTE Band 38 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Condition | | Freq.Error (Hz) | Freq.Error (Hz) | Freq.Error (Hz) | Frequency Stability（ppm） | Frequency Stability（ppm） | Frequency Stability（ppm） | Verdict |
| BANDWIDTH | 5MHz | | | | | | | |
| Temperature | Voltage | 64QAM | 16QAM | QPSK | 64QAM | 16QAM | QPSK | |
| Normal（25℃） | Normal | 1.85 | 9.57 | 16.74 | 0.00099 | 0.00509 | 0.00890 | PASS |
| Extreme（55℃） | | 10.15 | 17.66 | 7.44 | 0.00540 | 0.00939 | 0.00396 | PASS |
| Extreme（50℃） | | 6.56 | 9.36 | 8.01 | 0.00349 | 0.00498 | 0.00426 | PASS |
| Extreme（40℃） | | 16.07 | 9.49 | 1.29 | 0.00855 | 0.00505 | 0.00068 | PASS |
| Extreme（30℃） | | 3.61 | 2.91 | 6.41 | 0.00192 | 0.00155 | 0.00341 | PASS |
| Extreme（20℃） | | 4.30 | 9.47 | 12.83 | 0.00229 | 0.00504 | 0.00682 | PASS |
| Extreme（10℃） | | 14.23 | 10.17 | 3.35 | 0.00757 | 0.00541 | 0.00178 | PASS |
| Extreme（0℃） | | 10.94 | 11.53 | 14.94 | 0.00582 | 0.00613 | 0.00795 | PASS |
| Extreme（-10℃） | | 8.01 | 9.64 | 11.88 | 0.00426 | 0.00513 | 0.00632 | PASS |
| Extreme（-20℃） | | 11.40 | 4.93 | 9.72 | 0.00606 | 0.00262 | 0.00517 | PASS |
| Extreme（-30℃） | | 10.57 | 11.25 | 10.69 | 0.00562 | 0.00599 | 0.00569 | PASS |
| 25℃ | LV | 10.33 | 15.85 | 9.55 | 0.00550 | 0.00843 | 0.00508 | PASS |
| | HV | 17.60 | 17.83 | 17.33 | 0.00936 | 0.00948 | 0.00922 | PASS |
| Condition | | Freq.Error (Hz) | Freq.Error (Hz) | Freq.Error (Hz) | Frequency Stability（ppm） | Frequency Stability（ppm） | Frequency Stability（ppm） | Verdict |
| BANDWIDTH | 10MHz | | | | | | | |
| Temperature | Voltage | 64QAM | 16QAM | QPSK | 64QAM | 16QAM | QPSK | |
| Normal（25℃） | Normal | 8.15 | 9.23 | 12.80 | 0.00433 | 0.00491 | 0.00681 | PASS |
| Extreme（55℃） | | 15.12 | 2.42 | 14.87 | 0.00804 | 0.00129 | 0.00791 | PASS |
| Extreme（50℃） | | 6.19 | 10.52 | 11.21 | 0.00329 | 0.00560 | 0.00596 | PASS |
| Extreme（40℃） | | 1.77 | 10.66 | 1.37 | 0.00094 | 0.00567 | 0.00073 | PASS |
| Extreme（30℃） | | 8.25 | 17.22 | 8.15 | 0.00439 | 0.00916 | 0.00433 | PASS |
| Extreme（20℃） | | 16.88 | 6.64 | 13.67 | 0.00898 | 0.00353 | 0.00727 | PASS |
| Extreme（10℃） | | 9.15 | 10.64 | 11.77 | 0.00487 | 0.00566 | 0.00626 | PASS |
| Extreme（0℃） | | 12.20 | 5.86 | 2.54 | 0.00649 | 0.00312 | 0.00135 | PASS |


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| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Extreme（-10℃） | | 14.65 | 7.13 | 15.35 | 0.00779 | 0.00379 | 0.00816 | PASS |
| Extreme（-20℃） | | 8.88 | 10.84 | 7.99 | 0.00472 | 0.00577 | 0.00425 | PASS |
| Extreme（-30℃） | | 11.08 | 15.70 | 10.05 | 0.00589 | 0.00835 | 0.00535 | PASS |
| 25℃ | LV | 1.48 | 15.95 | 6.82 | 0.00079 | 0.00848 | 0.00363 | PASS |
| | HV | 1.34 | 7.17 | 16.62 | 0.00071 | 0.00382 | 0.00884 | PASS |
| Condition | | Freq.Error (Hz) | Freq.Error (Hz) | Freq.Error (Hz) | Frequency Stability（ppm） | Frequency Stability（ppm） | Frequency Stability（ppm） | Verdict |
| BANDWIDTH | 15MHz | | | | | | | |
| Temperature | Voltage | 64QAM | 16QAM | QPSK | 64QAM | 16QAM | QPSK | |
| Normal（25℃） | Normal | 13.81 | 10.14 | 17.94 | 0.00734 | 0.00539 | 0.00954 | PASS |
| Extreme（55℃） | | 10.99 | 13.95 | 11.09 | 0.00585 | 0.00742 | 0.00590 | PASS |
| Extreme（50℃） | | 1.24 | 3.88 | 3.90 | 0.00066 | 0.00207 | 0.00207 | PASS |
| Extreme（40℃） | | 3.69 | 6.51 | 10.28 | 0.00196 | 0.00346 | 0.00547 | PASS |
| Extreme（30℃） | | 8.88 | 16.53 | 10.97 | 0.00472 | 0.00879 | 0.00584 | PASS |
| Extreme（20℃） | | 11.61 | 14.50 | 13.78 | 0.00617 | 0.00771 | 0.00733 | PASS |
| Extreme（10℃） | | 17.01 | 3.60 | 2.92 | 0.00905 | 0.00192 | 0.00155 | PASS |
| Extreme（0℃） | | 5.02 | 10.11 | 5.31 | 0.00267 | 0.00538 | 0.00283 | PASS |
| Extreme（-10℃） | | 8.85 | 8.91 | 11.20 | 0.00471 | 0.00474 | 0.00596 | PASS |
| Extreme（-20℃） | | 15.44 | 16.79 | 11.70 | 0.00821 | 0.00893 | 0.00623 | PASS |
| Extreme（-30℃） | | 17.48 | 11.80 | 6.62 | 0.00930 | 0.00628 | 0.00352 | PASS |
| 25℃ | LV | 3.00 | 14.12 | 4.68 | 0.00160 | 0.00751 | 0.00249 | PASS |
| | HV | 1.82 | 2.01 | 9.98 | 0.00097 | 0.00107 | 0.00531 | PASS |
| Condition | | Freq.Error (Hz) | Freq.Error (Hz) | Freq.Error (Hz) | Frequency Stability（ppm） | Frequency Stability（ppm） | Frequency Stability（ppm） | Verdict |
| BANDWIDTH | 20MHz | | | | | | | |
| Temperature | Voltage | 64QAM | 16QAM | QPSK | 64QAM | 16QAM | QPSK | |
| Normal（25℃） | Normal | 4.54 | 16.59 | 9.21 | 0.00241 | 0.00883 | 0.00490 | PASS |
| Extreme（55℃） | | 2.86 | 15.40 | 17.39 | 0.00152 | 0.00819 | 0.00925 | PASS |
| Extreme（50℃） | | 15.61 | 12.06 | 10.25 | 0.00830 | 0.00641 | 0.00545 | PASS |
| Extreme（40℃） | | 2.82 | 1.27 | 10.80 | 0.00150 | 0.00068 | 0.00575 | PASS |
| Extreme（30℃） | | 10.63 | 17.35 | 4.46 | 0.00566 | 0.00923 | 0.00237 | PASS |
| Extreme（20℃） | | 9.71 | 1.07 | 3.44 | 0.00517 | 0.00057 | 0.00183 | PASS |
| Extreme（10℃） | | 14.52 | 3.87 | 2.81 | 0.00773 | 0.00206 | 0.00149 | PASS |
| Extreme（0℃） | | 12.00 | 16.64 | 13.22 | 0.00638 | 0.00885 | 0.00703 | PASS |
| Extreme（-10℃） | | 8.42 | 5.27 | 4.29 | 0.00448 | 0.00281 | 0.00228 | PASS |
| Extreme（-20℃） | | 10.94 | 8.68 | 2.51 | 0.00582 | 0.00462 | 0.00134 | PASS |
| Extreme（-30℃） | | 11.23 | 2.75 | 16.93 | 0.00597 | 0.00147 | 0.00900 | PASS |
| 25℃ | LV | 4.27 | 7.62 | 11.80 | 0.00227 | 0.00405 | 0.00628 | PASS |
| | HV | 8.14 | 14.18 | 5.64 | 0.00433 | 0.00754 | 0.00300 | PASS |


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| LTE Band 41 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Condition | | Freq.Error (Hz) | Freq.Error (Hz) | Freq.Error (Hz) | Frequency Stability (ppm) | Frequency Stability (ppm) | Frequency Stability (ppm) | Verdict |
| BANDWIDTH | 5MHz | | | | | | | |
| Temperature | Voltage | 64QAM | 16QAM | QPSK | 64QAM | 16QAM | QPSK | |
| Normal（25℃） | Normal | 6.21 | 4.81 | 4.87 | 0.00330 | 0.00256 | 0.00259 | PASS |
| Extreme（55℃） | | 4.65 | 12.17 | 14.32 | 0.00247 | 0.00647 | 0.00762 | PASS |
| Extreme（50℃） | | 13.83 | 7.08 | 5.53 | 0.00736 | 0.00377 | 0.00294 | PASS |
| Extreme（40℃） | | 5.45 | 11.15 | 7.91 | 0.00290 | 0.00593 | 0.00420 | PASS |
| Extreme（30℃） | | 7.85 | 11.06 | 17.05 | 0.00417 | 0.00588 | 0.00907 | PASS |
| Extreme（20℃） | | 8.71 | 6.18 | 8.65 | 0.00463 | 0.00329 | 0.00460 | PASS |
| Extreme（10℃） | | 14.95 | 2.45 | 3.42 | 0.00795 | 0.00130 | 0.00182 | PASS |
| Extreme（0℃） | | 3.78 | 13.74 | 2.87 | 0.00201 | 0.00731 | 0.00153 | PASS |
| Extreme（-10℃） | | 13.07 | 13.68 | 4.13 | 0.00695 | 0.00728 | 0.00220 | PASS |
| Extreme（-20℃） | | 3.10 | 7.69 | 10.84 | 0.00165 | 0.00409 | 0.00577 | PASS |
| Extreme（-30℃） | | 3.80 | 12.72 | 15.66 | 0.00202 | 0.00677 | 0.00833 | PASS |
| 25℃ | LV | 3.11 | 7.71 | 16.47 | 0.00165 | 0.00410 | 0.00876 | PASS |
| | HV | 12.34 | 4.10 | 14.13 | 0.00657 | 0.00218 | 0.00751 | PASS |
| Condition | | Freq.Error (Hz) | Freq.Error (Hz) | Freq.Error (Hz) | Frequency Stability (ppm) | Frequency Stability (ppm) | Frequency Stability (ppm) | Verdict |
| BANDWIDTH | 10MHz | | | | | | | |
| Temperature | Voltage | 64QAM | 16QAM | QPSK | 64QAM | 16QAM | QPSK | |
| Normal（25℃） | Normal | 15.19 | 2.61 | 7.18 | 0.00808 | 0.00139 | 0.00382 | PASS |
| Extreme（55℃） | | 14.77 | 3.94 | 7.18 | 0.00785 | 0.00209 | 0.00382 | PASS |
| Extreme（50℃） | | 17.60 | 4.08 | 10.21 | 0.00936 | 0.00217 | 0.00543 | PASS |
| Extreme（40℃） | | 17.61 | 16.50 | 1.00 | 0.00937 | 0.00878 | 0.00053 | PASS |
| Extreme（30℃） | | 14.74 | 2.38 | 3.61 | 0.00784 | 0.00127 | 0.00192 | PASS |
| Extreme（20℃） | | 13.93 | 17.05 | 10.41 | 0.00741 | 0.00907 | 0.00554 | PASS |
| Extreme（10℃） | | 4.29 | 9.57 | 8.43 | 0.00228 | 0.00509 | 0.00448 | PASS |
| Extreme（0℃） | | 12.20 | 17.18 | 17.11 | 0.00649 | 0.00914 | 0.00910 | PASS |
| Extreme（-10℃） | | 12.18 | 13.94 | 12.30 | 0.00648 | 0.00742 | 0.00654 | PASS |
| Extreme（-20℃） | | 6.82 | 12.84 | 10.73 | 0.00363 | 0.00683 | 0.00571 | PASS |
| Extreme（-30℃） | | 9.45 | 10.58 | 9.21 | 0.00502 | 0.00563 | 0.00490 | PASS |
| 25℃ | LV | 3.29 | 17.73 | 10.86 | 0.00175 | 0.00943 | 0.00577 | PASS |
| | HV | 7.90 | 3.86 | 3.00 | 0.00420 | 0.00205 | 0.00159 | PASS |
| Condition | | Freq.Error (Hz) | Freq.Error (Hz) | Freq.Error (Hz) | Frequency Stability (ppm) | Frequency Stability (ppm) | Frequency Stability (ppm) | Verdict |
| BANDWIDTH | 15MHz | | | | | | | |
| Temperature | Voltage | 64QAM | 16QAM | QPSK | 64QAM | 16QAM | QPSK | |
| Normal（25℃） | Normal | 8.97 | 17.11 | 2.34 | 0.00477 | 0.00910 | 0.00124 | PASS |
| Extreme（55℃） | | 6.97 | 3.37 | 1.64 | 0.00371 | 0.00179 | 0.00087 | PASS |


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| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Extreme（50℃） | | 8.29 | 7.54 | 9.88 | 0.00441 | 0.00401 | 0.00526 | PASS |
| Extreme（40℃） | | 5.49 | 9.81 | 7.78 | 0.00292 | 0.00522 | 0.00414 | PASS |
| Extreme（30℃） | | 3.86 | 13.67 | 3.43 | 0.00206 | 0.00727 | 0.00183 | PASS |
| Extreme（20℃） | | 13.69 | 11.75 | 13.10 | 0.00728 | 0.00625 | 0.00697 | PASS |
| Extreme（10℃） | | 9.54 | 7.62 | 15.29 | 0.00508 | 0.00405 | 0.00813 | PASS |
| Extreme（0℃） | | 7.73 | 8.36 | 8.67 | 0.00411 | 0.00445 | 0.00461 | PASS |
| Extreme（-10℃） | | 3.10 | 14.12 | 5.24 | 0.00165 | 0.00751 | 0.00279 | PASS |
| Extreme（-20℃） | | 17.22 | 9.22 | 2.75 | 0.00916 | 0.00490 | 0.00146 | PASS |
| Extreme（-30℃） | | 1.51 | 17.25 | 12.12 | 0.00080 | 0.00917 | 0.00645 | PASS |
| 25℃ | LV | 16.51 | 8.08 | 3.69 | 0.00878 | 0.00430 | 0.00196 | PASS |
| | HV | 13.20 | 16.79 | 3.99 | 0.00702 | 0.00893 | 0.00212 | PASS |
| Condition | | Freq.Error (Hz) | Freq.Error (Hz) | Freq.Error (Hz) | Frequency Stability（ppm） | Frequency Stability（ppm） | Frequency Stability（ppm） | Verdict |
| BANDWIDTH | 20MHz | | | | | | | |
| Temperature | Voltage | 64QAM | 16QAM | QPSK | 64QAM | 16QAM | QPSK | |
| Normal（25℃） | Normal | 12.86 | 17.13 | 10.50 | 0.00684 | 0.00911 | 0.00558 | PASS |
| Extreme（55℃） | | 1.98 | 10.10 | 10.57 | 0.00105 | 0.00537 | 0.00562 | PASS |
| Extreme（50℃） | | 13.85 | 6.41 | 4.92 | 0.00737 | 0.00341 | 0.00262 | PASS |
| Extreme（40℃） | | 14.53 | 1.88 | 7.75 | 0.00773 | 0.00100 | 0.00412 | PASS |
| Extreme（30℃） | | 5.47 | 7.30 | 12.91 | 0.00291 | 0.00388 | 0.00687 | PASS |
| Extreme（20℃） | | 3.39 | 14.91 | 7.16 | 0.00180 | 0.00793 | 0.00381 | PASS |
| Extreme（10℃） | | 8.03 | 5.43 | 14.22 | 0.00427 | 0.00289 | 0.00756 | PASS |
| Extreme（0℃） | | 12.18 | 1.14 | 15.13 | 0.00648 | 0.00061 | 0.00805 | PASS |
| Extreme（-10℃） | | 2.60 | 9.12 | 5.05 | 0.00138 | 0.00485 | 0.00268 | PASS |
| Extreme（-20℃） | | 3.42 | 15.92 | 17.87 | 0.00182 | 0.00847 | 0.00950 | PASS |
| Extreme（-30℃） | | 8.80 | 15.41 | 9.72 | 0.00468 | 0.00820 | 0.00517 | PASS |
| 25℃ | LV | 6.34 | 1.80 | 17.64 | 0.00337 | 0.00095 | 0.00939 | PASS |
| | HV | 16.53 | 9.33 | 5.31 | 0.00879 | 0.00496 | 0.00282 | PASS |

| CA_7C_QPSK | | 20MHz+10MHz (Bandwidth) | | 20MHz+20MHz (Bandwidth) | | Verdict |
|---|---|---|---|---|---|---|
| Condition | | Delta (Hz) | Frequency Stability (ppm) | Delta (Hz) | Frequency Stability (ppm) | |
| Temperature | Voltage | | | | | |
| Normal（25℃） | Normal | 12.84 | 0.00683 | 6.93 | 0.00368 | PASS |
| Extreme（55℃） | | 10.00 | 0.00532 | 8.06 | 0.00429 | PASS |
| Extreme（50℃） | | 2.46 | 0.00131 | 16.15 | 0.00859 | PASS |
| Extreme（40℃） | | 11.19 | 0.00595 | 8.00 | 0.00426 | PASS |
| Extreme（30℃） | | 8.93 | 0.00475 | 17.21 | 0.00916 | PASS |
| Extreme（20℃） | | 11.07 | 0.00589 | 14.93 | 0.00794 | PASS |
| Extreme（10℃） | | 10.49 | 0.00558 | 15.67 | 0.00833 | PASS |
| Extreme（0℃） | | 13.87 | 0.00738 | 4.62 | 0.00246 | PASS |


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| | | | | | | |
|---|---|---|---|---|---|---|
| Extreme（-10℃） | | 4.56 | 0.00243 | 13.41 | 0.00713 | PASS |
| Extreme（-20℃） | | 11.27 | 0.00599 | 13.98 | 0.00744 | PASS |
| Extreme（-30℃） | | 6.65 | 0.00354 | 4.75 | 0.00253 | PASS |
| 25℃ | LV | 8.23 | 0.00438 | 15.77 | 0.00839 | PASS |
| | HV | 17.87 | 0.00951 | 15.94 | 0.00848 | PASS |
| CA_7C_16QAM | | 20MHz+10MHz (Bandwidth) | | 20MHz+20MHz (Bandwidth) | | Verdict |
| Condition | | Delta (Hz) | Frequency Stability (ppm) | Delta (Hz) | Frequency Stability (ppm) | |
| Temperature | Voltage | | | | | |
| Normal（25℃） | Normal | 1.22 | 0.00065 | 6.37 | 0.00339 | PASS |
| Extreme（55℃） | | 13.97 | 0.00743 | 14.24 | 0.00757 | PASS |
| Extreme（50℃） | | 16.94 | 0.00901 | 14.08 | 0.00749 | PASS |
| Extreme（40℃） | | 17.53 | 0.00932 | 14.32 | 0.00762 | PASS |
| Extreme（30℃） | | 6.49 | 0.00345 | 11.01 | 0.00586 | PASS |
| Extreme（20℃） | | 16.47 | 0.00876 | 2.60 | 0.00138 | PASS |
| Extreme（10℃） | | 14.54 | 0.00774 | 8.81 | 0.00469 | PASS |
| Extreme（0℃） | | 7.17 | 0.00381 | 8.98 | 0.00477 | PASS |
| Extreme（-10℃） | | 1.78 | 0.00095 | 2.48 | 0.00132 | PASS |
| Extreme（-20℃） | | 4.20 | 0.00223 | 15.96 | 0.00849 | PASS |
| Extreme（-30℃） | | 14.62 | 0.00778 | 11.00 | 0.00585 | PASS |
| 25℃ | LV | 12.36 | 0.00658 | 8.75 | 0.00465 | PASS |
| | HV | 2.36 | 0.00126 | 7.78 | 0.00414 | PASS |
| CA_7C_64QAM | | 20MHz+10MHz (Bandwidth) | | 20MHz+20MHz (Bandwidth) | | Verdict |
| Condition | | Delta (Hz) | Frequency Stability (ppm) | Delta (Hz) | Frequency Stability (ppm) | |
| Temperature | Voltage | | | | | |
| Normal（25℃） | Normal | 14.01 | 0.00745 | 16.43 | 0.00874 | PASS |
| Extreme（55℃） | | 11.31 | 0.00601 | 1.16 | 0.00062 | PASS |
| Extreme（50℃） | | 10.29 | 0.00547 | 9.27 | 0.00493 | PASS |
| Extreme（40℃） | | 13.52 | 0.00719 | 5.71 | 0.00304 | PASS |
| Extreme（30℃） | | 12.37 | 0.00658 | 13.18 | 0.00701 | PASS |
| Extreme（20℃） | | 13.74 | 0.00731 | 6.13 | 0.00326 | PASS |
| Extreme（10℃） | | 6.25 | 0.00332 | 7.71 | 0.00410 | PASS |
| Extreme（0℃） | | 6.46 | 0.00344 | 2.36 | 0.00126 | PASS |
| Extreme（-10℃） | | 12.51 | 0.00666 | 3.15 | 0.00168 | PASS |
| Extreme（-20℃） | | 7.84 | 0.00417 | 16.99 | 0.00904 | PASS |
| Extreme（-30℃） | | 8.88 | 0.00472 | 9.90 | 0.00527 | PASS |
| 25℃ | LV | 14.49 | 0.00771 | 10.00 | 0.00532 | PASS |
| | HV | 4.66 | 0.00248 | 7.66 | 0.00407 | PASS |


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| CA_12B_QPSK | | 5MHz+5MHz (Bandwidth) | | 5MHz+10MHz (Bandwidth) | | Verdict |
|---|---|---|---|---|---|---|
| Condition | | Delta (Hz) | Frequency Stability (ppm) | Delta (Hz) | Frequency Stability (ppm) | |
| Temperature | Voltage | | | | | |
| Normal（25℃） | Normal | 12.84 | 0.00683 | 6.93 | 0.00368 | PASS |
| Extreme（55℃） | | 10.00 | 0.00532 | 8.06 | 0.00429 | PASS |
| Extreme（50℃） | | 2.46 | 0.00131 | 16.15 | 0.00859 | PASS |
| Extreme（40℃） | | 11.19 | 0.00595 | 8.00 | 0.00426 | PASS |
| Extreme（30℃） | | 8.93 | 0.00475 | 17.21 | 0.00916 | PASS |
| Extreme（20℃） | | 11.07 | 0.00589 | 14.93 | 0.00794 | PASS |
| Extreme（10℃） | | 10.49 | 0.00558 | 15.67 | 0.00833 | PASS |
| Extreme（0℃） | | 13.87 | 0.00738 | 4.62 | 0.00246 | PASS |
| Extreme（-10℃） | | 4.56 | 0.00243 | 13.41 | 0.00713 | PASS |
| Extreme（-20℃） | | 11.27 | 0.00599 | 13.98 | 0.00744 | PASS |
| Extreme（-30℃） | | 6.65 | 0.00354 | 4.75 | 0.00253 | PASS |
| 25℃ | LV | 8.23 | 0.00438 | 15.77 | 0.00839 | PASS |
| | HV | 17.87 | 0.00951 | 15.94 | 0.00848 | PASS |

| CA_12B_16QAM | | 5MHz+5MHz (Bandwidth) | | 5MHz+10MHz (Bandwidth) | | Verdict |
|---|---|---|---|---|---|---|
| Condition | | Delta (Hz) | Frequency Stability (ppm) | Delta (Hz) | Frequency Stability (ppm) | |
| Temperature | Voltage | | | | | |
| Normal（25℃） | Normal | 1.22 | 0.00065 | 6.37 | 0.00339 | PASS |
| Extreme（55℃） | | 13.97 | 0.00743 | 14.24 | 0.00757 | PASS |
| Extreme（50℃） | | 16.94 | 0.00901 | 14.08 | 0.00749 | PASS |
| Extreme（40℃） | | 17.53 | 0.00932 | 14.32 | 0.00762 | PASS |
| Extreme（30℃） | | 6.49 | 0.00345 | 11.01 | 0.00586 | PASS |
| Extreme（20℃） | | 16.47 | 0.00876 | 2.60 | 0.00138 | PASS |
| Extreme（10℃） | | 14.54 | 0.00774 | 8.81 | 0.00469 | PASS |
| Extreme（0℃） | | 7.17 | 0.00381 | 8.98 | 0.00477 | PASS |
| Extreme（-10℃） | | 1.78 | 0.00095 | 2.48 | 0.00132 | PASS |
| Extreme（-20℃） | | 4.20 | 0.00223 | 15.96 | 0.00849 | PASS |
| Extreme（-30℃） | | 14.62 | 0.00778 | 11.00 | 0.00585 | PASS |
| 25℃ | LV | 12.36 | 0.00658 | 8.75 | 0.00465 | PASS |
| | HV | 2.36 | 0.00126 | 7.78 | 0.00414 | PASS |

| CA_12B_64QAM | | 5MHz+5MHz (Bandwidth) | | 5MHz+10MHz (Bandwidth) | | Verdict |
|---|---|---|---|---|---|---|
| Condition | | Delta (Hz) | Frequency Stability (ppm) | Delta (Hz) | Frequency Stability (ppm) | |
| Temperature | Voltage | | | | | |
| Normal（25℃） | Normal | 14.01 | 0.00745 | 16.43 | 0.00874 | PASS |
| Extreme（55℃） | | 11.31 | 0.00601 | 1.16 | 0.00062 | PASS |


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| | | | | | | |
|---|---|---|---|---|---|---|
| Extreme（50℃） | | 10.29 | 0.00547 | 9.27 | 0.00493 | PASS |
| Extreme（40℃） | | 13.52 | 0.00719 | 5.71 | 0.00304 | PASS |
| Extreme（30℃） | | 12.37 | 0.00658 | 13.18 | 0.00701 | PASS |
| Extreme（20℃） | | 13.74 | 0.00731 | 6.13 | 0.00326 | PASS |
| Extreme（10℃） | | 6.25 | 0.00332 | 7.71 | 0.00410 | PASS |
| Extreme（0℃） | | 6.46 | 0.00344 | 2.36 | 0.00126 | PASS |
| Extreme（-10℃） | | 12.51 | 0.00666 | 3.15 | 0.00168 | PASS |
| Extreme（-20℃） | | 7.84 | 0.00417 | 16.99 | 0.00904 | PASS |
| Extreme（-30℃） | | 8.88 | 0.00472 | 9.90 | 0.00527 | PASS |
| 25℃ | LV | 14.49 | 0.00771 | 10.00 | 0.00532 | PASS |
| | HV | 4.66 | 0.00248 | 7.66 | 0.00407 | PASS |

| CA_38C_QPSK | | 15MHz+15MHz (Bandwidth) | | 20MHz+20MHz (Bandwidth) | | Verdict |
|---|---|---|---|---|---|---|
| Condition | | Delta (Hz) | Frequency Stability (ppm) | Delta (Hz) | Frequency Stability (ppm) | |
| Temperature | Voltage | | | | | |
| Normal（25℃） | Normal | 11.21 | 0.00596 | 14.20 | 0.00755 | PASS |
| Extreme（55℃） | | 7.23 | 0.00384 | 8.36 | 0.00445 | PASS |
| Extreme（50℃） | | 6.29 | 0.00335 | 17.44 | 0.00928 | PASS |
| Extreme（40℃） | | 6.27 | 0.00333 | 4.83 | 0.00257 | PASS |
| Extreme（30℃） | | 17.61 | 0.00937 | 15.08 | 0.00802 | PASS |
| Extreme（20℃） | | 12.97 | 0.00690 | 9.00 | 0.00479 | PASS |
| Extreme（10℃） | | 7.07 | 0.00376 | 12.14 | 0.00646 | PASS |
| Extreme（0℃） | | 2.76 | 0.00147 | 9.53 | 0.00507 | PASS |
| Extreme（-10℃） | | 4.69 | 0.00249 | 16.49 | 0.00877 | PASS |
| Extreme（-20℃） | | 15.81 | 0.00841 | 2.33 | 0.00124 | PASS |
| Extreme（-30℃） | | 1.92 | 0.00102 | 1.32 | 0.00070 | PASS |
| 25℃ | LV | 4.47 | 0.00238 | 16.19 | 0.00861 | PASS |
| | HV | 16.50 | 0.00878 | 5.10 | 0.00271 | PASS |
| CA_38C_16QAM | | 15MHz+15MHz (Bandwidth) | | 20MHz+20MHz (Bandwidth) | | Verdict |
| Condition | | Delta (Hz) | Frequency Stability (ppm) | Delta (Hz) | Frequency Stability (ppm) | |
| Temperature | Voltage | | | | | |
| Normal（25℃） | Normal | 16.72 | 0.00890 | 11.30 | 0.00601 | PASS |
| Extreme（55℃） | | 9.93 | 0.00528 | 5.00 | 0.00266 | PASS |
| Extreme（50℃） | | 6.23 | 0.00332 | 6.33 | 0.00337 | PASS |
| Extreme（40℃） | | 9.78 | 0.00520 | 17.45 | 0.00928 | PASS |
| Extreme（30℃） | | 11.91 | 0.00634 | 16.41 | 0.00873 | PASS |
| Extreme（20℃） | | 15.73 | 0.00837 | 3.95 | 0.00210 | PASS |
| Extreme（10℃） | | 10.35 | 0.00551 | 10.12 | 0.00538 | PASS |


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| | | | | | | |
|---|---|---|---|---|---|---|
| Extreme（0℃） | | 8.21 | 0.00437 | 16.42 | 0.00874 | PASS |
| Extreme（-10℃） | | 13.69 | 0.00728 | 2.77 | 0.00148 | PASS |
| Extreme（-20℃） | | 17.51 | 0.00932 | 9.35 | 0.00497 | PASS |
| Extreme（-30℃） | | 3.67 | 0.00195 | 11.31 | 0.00602 | PASS |
| 25℃ | LV | 10.50 | 0.00558 | 16.36 | 0.00870 | PASS |
| | HV | 16.91 | 0.00899 | 9.60 | 0.00511 | PASS |
| CA_38C_64QAM | | 15MHz+15MHz (Bandwidth) | | 20MHz+20MHz (Bandwidth) | | Verdict |
| Condition | | Delta (Hz) | Frequency Stability (ppm) | Delta (Hz) | Frequency Stability (ppm) | |
| Temperature | Voltage | | | | | |
| Normal（25℃） | Normal | 6.10 | 0.00325 | 9.72 | 0.00517 | PASS |
| Extreme（55℃） | | 9.14 | 0.00486 | 14.35 | 0.00763 | PASS |
| Extreme（50℃） | | 7.34 | 0.00390 | 8.42 | 0.00448 | PASS |
| Extreme（40℃） | | 4.21 | 0.00224 | 4.65 | 0.00247 | PASS |
| Extreme（30℃） | | 4.78 | 0.00254 | 4.85 | 0.00258 | PASS |
| Extreme（20℃） | | 3.78 | 0.00201 | 12.19 | 0.00648 | PASS |
| Extreme（10℃） | | 6.68 | 0.00355 | 4.84 | 0.00257 | PASS |
| Extreme（0℃） | | 17.74 | 0.00944 | 3.53 | 0.00188 | PASS |
| Extreme（-10℃） | | 9.86 | 0.00524 | 3.57 | 0.00190 | PASS |
| Extreme（-20℃） | | 13.44 | 0.00715 | 15.87 | 0.00844 | PASS |
| Extreme（-30℃） | | 10.53 | 0.00560 | 10.24 | 0.00545 | PASS |
| 25℃ | LV | 5.98 | 0.00318 | 3.81 | 0.00203 | PASS |
| | HV | 15.71 | 0.00836 | 8.51 | 0.00453 | PASS |

| | | | | | | |
|---|---|---|---|---|---|---|
| CA_41C_QPSK | | 5MHz+20MHz (Bandwidth) | | 20MHz+20MHz (Bandwidth) | | Verdict |
| Condition | | Delta (Hz) | Frequency Stability (ppm) | Delta (Hz) | Frequency Stability (ppm) | |
| Temperature | Voltage | | | | | |
| Normal（25℃） | Normal | 11.21 | 0.00596 | 14.20 | 0.00755 | PASS |
| Extreme（55℃） | | 7.23 | 0.00384 | 8.36 | 0.00445 | PASS |
| Extreme（50℃） | | 6.29 | 0.00335 | 17.44 | 0.00928 | PASS |
| Extreme（40℃） | | 6.27 | 0.00333 | 4.83 | 0.00257 | PASS |
| Extreme（30℃） | | 17.61 | 0.00937 | 15.08 | 0.00802 | PASS |
| Extreme（20℃） | | 12.97 | 0.00690 | 9.00 | 0.00479 | PASS |
| Extreme（10℃） | | 7.07 | 0.00376 | 12.14 | 0.00646 | PASS |
| Extreme（0℃） | | 2.76 | 0.00147 | 9.53 | 0.00507 | PASS |
| Extreme（-10℃） | | 4.69 | 0.00249 | 16.49 | 0.00877 | PASS |
| Extreme（-20℃） | | 15.81 | 0.00841 | 2.33 | 0.00124 | PASS |
| Extreme（-30℃） | | 1.92 | 0.00102 | 1.32 | 0.00070 | PASS |
| 25℃ | LV | 4.47 | 0.00238 | 16.19 | 0.00861 | PASS |


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| | | | | | | |
|---|---|---|---|---|---|---|
| | HV | 16.50 | 0.00878 | 5.10 | 0.00271 | PASS |
| CA_41C_16QAM | | 5MHz+20MHz (Bandwidth) | | 20MHz+20MHz (Bandwidth) | | Verdict |
| Condition | | Delta (Hz) | Frequency Stability (ppm) | Delta (Hz) | Frequency Stability (ppm) | |
| Temperature | Voltage | | | | | |
| Normal（25℃） | Normal | 16.72 | 0.00890 | 11.30 | 0.00601 | PASS |
| Extreme（55℃） | | 9.93 | 0.00528 | 5.00 | 0.00266 | PASS |
| Extreme（50℃） | | 6.23 | 0.00332 | 6.33 | 0.00337 | PASS |
| Extreme（40℃） | | 9.78 | 0.00520 | 17.45 | 0.00928 | PASS |
| Extreme（30℃） | | 11.91 | 0.00634 | 16.41 | 0.00873 | PASS |
| Extreme（20℃） | | 15.73 | 0.00837 | 3.95 | 0.00210 | PASS |
| Extreme（10℃） | | 10.35 | 0.00551 | 10.12 | 0.00538 | PASS |
| Extreme（0℃） | | 8.21 | 0.00437 | 16.42 | 0.00874 | PASS |
| Extreme（-10℃） | | 13.69 | 0.00728 | 2.77 | 0.00148 | PASS |
| Extreme（-20℃） | | 17.51 | 0.00932 | 9.35 | 0.00497 | PASS |
| Extreme（-30℃） | | 3.67 | 0.00195 | 11.31 | 0.00602 | PASS |
| 25℃ | LV | 10.50 | 0.00558 | 16.36 | 0.00870 | PASS |
| | HV | 16.91 | 0.00899 | 9.60 | 0.00511 | PASS |
| CA_41C_64QAM | | 5MHz+20MHz (Bandwidth) | | 20MHz+20MHz (Bandwidth) | | Verdict |
| Condition | | Delta (Hz) | Frequency Stability (ppm) | Delta (Hz) | Frequency Stability (ppm) | |
| Temperature | Voltage | | | | | |
| Normal（25℃） | Normal | 6.10 | 0.00325 | 9.72 | 0.00517 | PASS |
| Extreme（55℃） | | 9.14 | 0.00486 | 14.35 | 0.00763 | PASS |
| Extreme（50℃） | | 7.34 | 0.00390 | 8.42 | 0.00448 | PASS |
| Extreme（40℃） | | 4.21 | 0.00224 | 4.65 | 0.00247 | PASS |
| Extreme（30℃） | | 4.78 | 0.00254 | 4.85 | 0.00258 | PASS |
| Extreme（20℃） | | 3.78 | 0.00201 | 12.19 | 0.00648 | PASS |
| Extreme（10℃） | | 6.68 | 0.00355 | 4.84 | 0.00257 | PASS |
| Extreme（0℃） | | 17.74 | 0.00944 | 3.53 | 0.00188 | PASS |
| Extreme（-10℃） | | 9.86 | 0.00524 | 3.57 | 0.00190 | PASS |
| Extreme（-20℃） | | 13.44 | 0.00715 | 15.87 | 0.00844 | PASS |
| Extreme（-30℃） | | 10.53 | 0.00560 | 10.24 | 0.00545 | PASS |
| 25℃ | LV | 5.98 | 0.00318 | 3.81 | 0.00203 | PASS |
| | HV | 15.71 | 0.00836 | 8.51 | 0.00453 | PASS |


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## 5.7 Spurious Emissions at Antenna Terminals

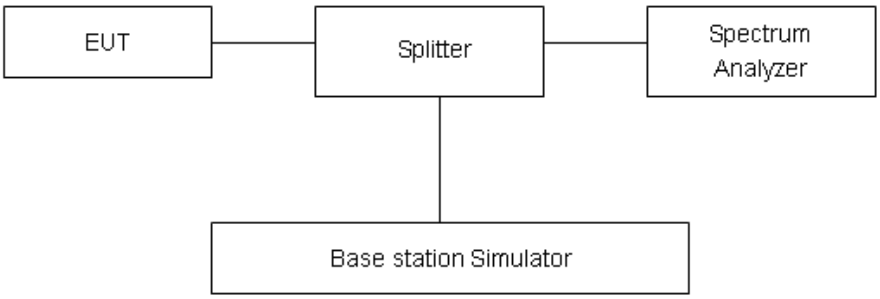
**Ambient condition**

| Temperature | Relative humidity | Pressure |
|---|---|---|
| 23°C ~25°C | 45%~50% | 101.5kPa |

**Method of Measurement**

The EUT was connected to Spectrum Analyzer and Base Station Simulator via power Splitter. The measurement is carried out using a spectrum analyzer. The spectrum analyzer scans from 9kHz to the 10th harmonic of the carrier. The peak detector is used.
RBW is set to 100kHz, VBW is set to 300kHz for 30MHz~1GHz
RBW is set to 1MHz, VBW is set to 3MHz for above 1GHz, Sweep is set to ATUO.
Of those disturbances below (limit – 20 dB), the mark is not required for the EUT.
The modulation mode and RB allocation refer to section 5.1, using the maximum output power configuration.

**Test setup**




**Limits**

LTE -4 Rule Part 27.53(h) specifies that “for operations in the 1695-1710 MHz, 1710-1755 MHz, 1755-1780 MHz, 1915-1920 MHz, 1995-2000 MHz, 2000-2020 MHz, 2110-2155 MHz, 2155-2180 MHz, and 2180-2200 bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least 43 + 10 log10 (P) dB..”

LTE -12 Rule Part 27.53 (g) For operations in the 600 MHz band and the 698-746 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least 43 + 10 log (P) dB. Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kilohertz or greater. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

LTE -7/38/41 Rule Part 27.53(m) 55 + 10 log (P) dB on all frequencies more than X megahertz from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the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(4) of this section.

| | |
|---|---|
| Part 27.53 (h)/(g) Limit | -13 dBm |
| Part 27.53(m) Limit | -25 dBm |

**Measurement Uncertainty**

The assessed measurement uncertainty to ensure 99.75％ confidence level for the normal distribution is with the coverage factor *k* = 1.96.

| Frequency | Uncertainty |
|---|---|
| 9kHz-1GHz | 0.684 dB |
| 1GHz-27GHz | 1.407 dB |


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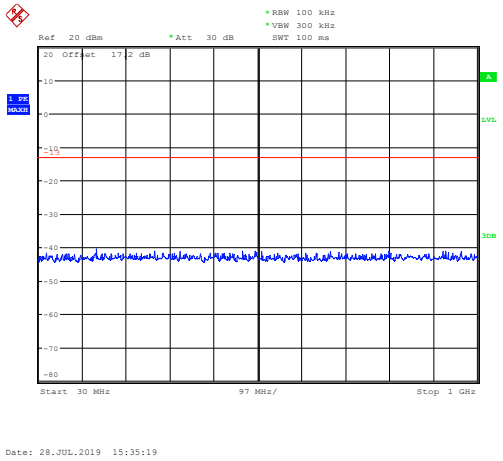
## Test Result

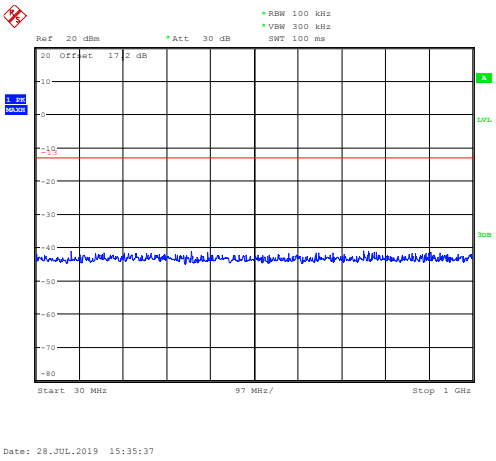
Sweep the whole frequency band through the range from 9kHz to the 10th harmonic of the carrier, the emissions more than 20 dB below the limit are not reported.

The signal beyond the limit is carrier.

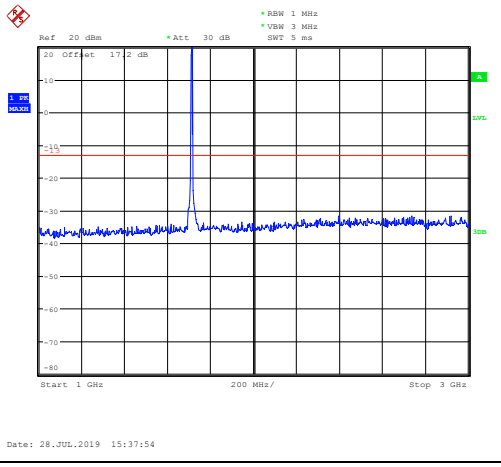
WCDMA Band IV CH-Low 30MHz~1GHz



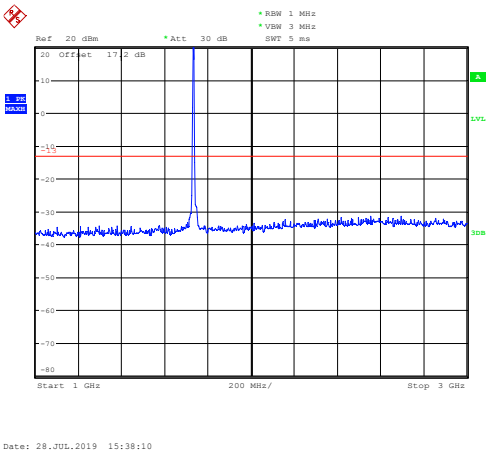

WCDMA Band IV CH-Middle 30MHz~1GHz



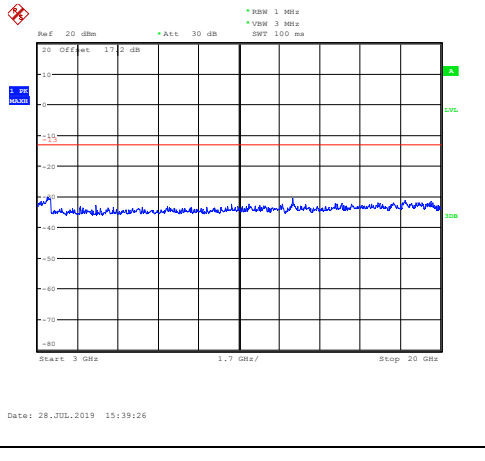

WCDMA Band IV CH-Low 1GHz ~3GHz



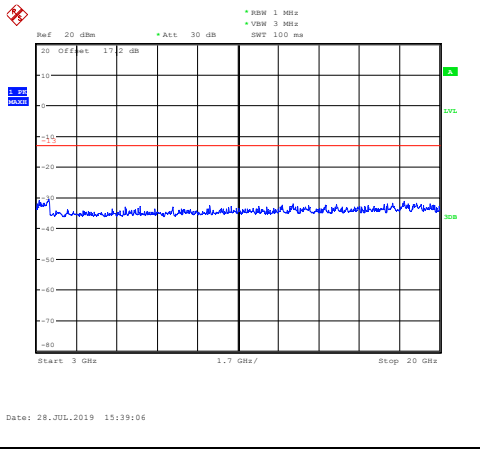

WCDMA Band IV CH-Middle 1GHz ~3GHz




WCDMA Band IV CH-Low 3GHz ~20GHz




WCDMA Band IV CH-Middle 3GHz ~20GHz





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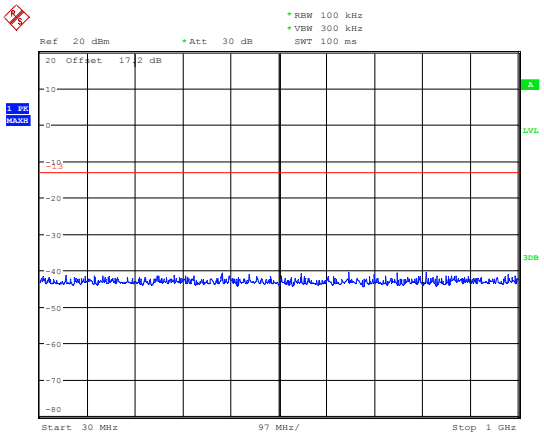
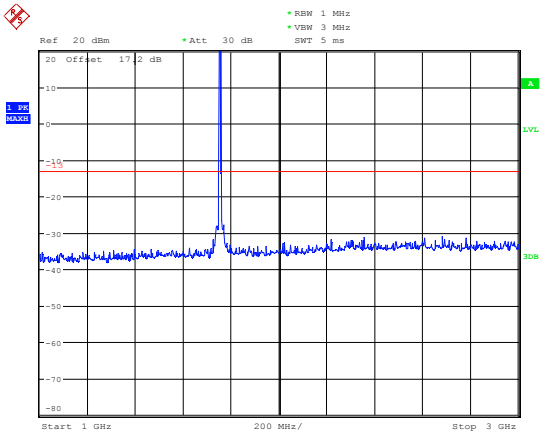
WCDMA Band IV CH-High 30MHz~1GHz



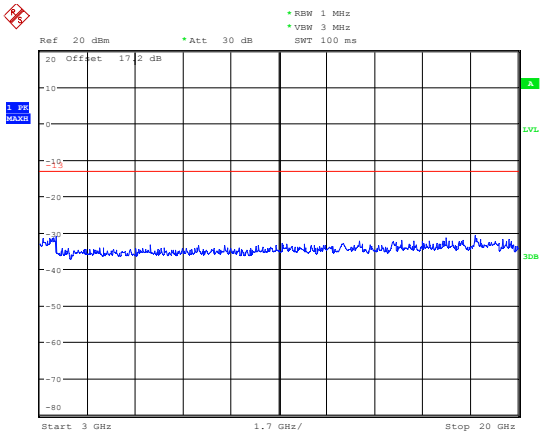

Date: 28.JUL.2019 15:35:57

WCDMA Band IV CH-High 1GHz ~3GHz




Date: 28.JUL.2019 15:38:27

WCDMA Band IV CH-High 3GHz ~20GHz




Date: 28.JUL.2019 15:38:51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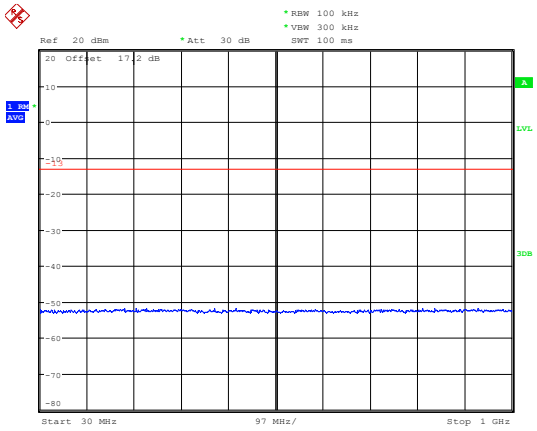
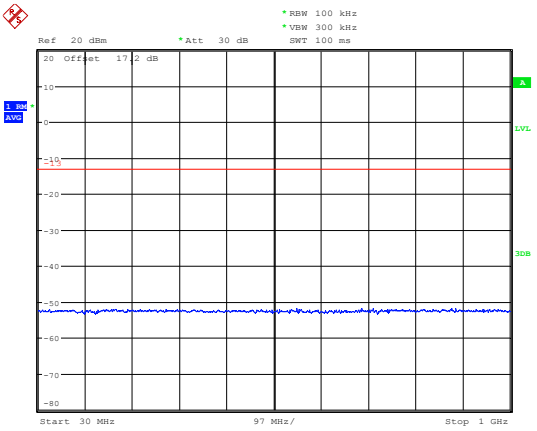
LTE Band 4 1.4MHz CH-Low 30MHz~1GHz



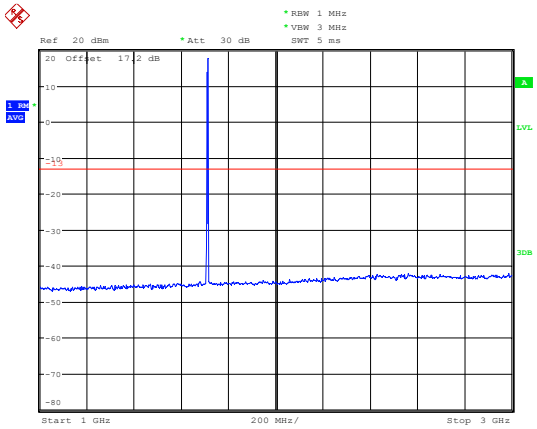

Date: 2.AUG.2019 12:48:49

LTE Band 4 1.4MHz CH-Middle 30MHz~1GHz



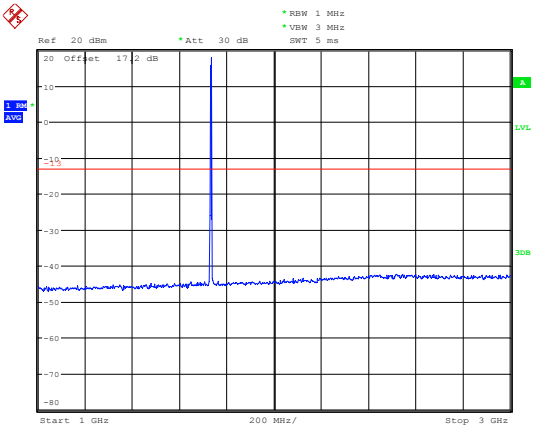

Date: 2.AUG.2019 12:49:15

LTE Band 4 1.4MHz CH-Low 1GHz~3GHz



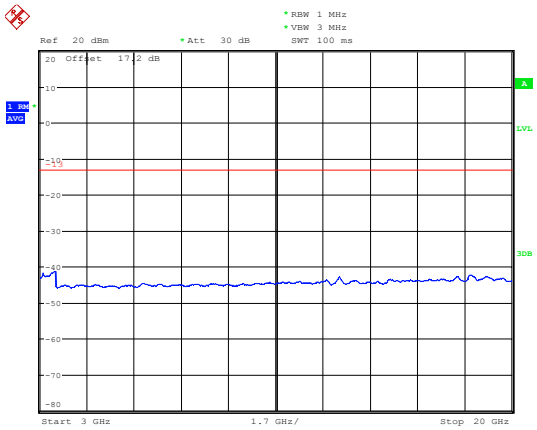

Date: 2.AUG.2019 12:56:45

LTE Band 4 1.4MHz CH-Middle 1GHz~3GHz



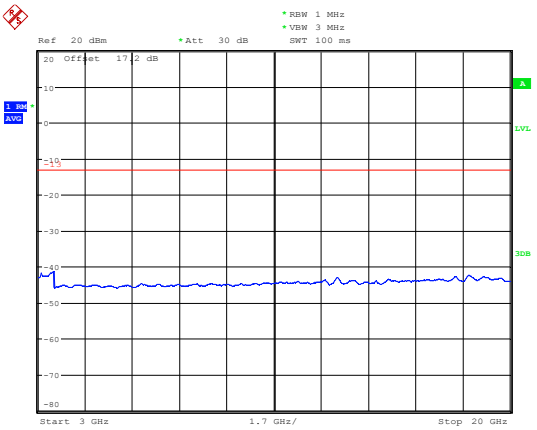

Date: 2.AUG.2019 12:56:57

LTE Band 4 1.4MHz CH-Low 3GHz~20GHz




Date: 2.AUG.2019 13:03:14

LTE Band 4 1.4MHz CH-Middle 3GHz~20GHz




Date: 2.AUG.2019 13:03:27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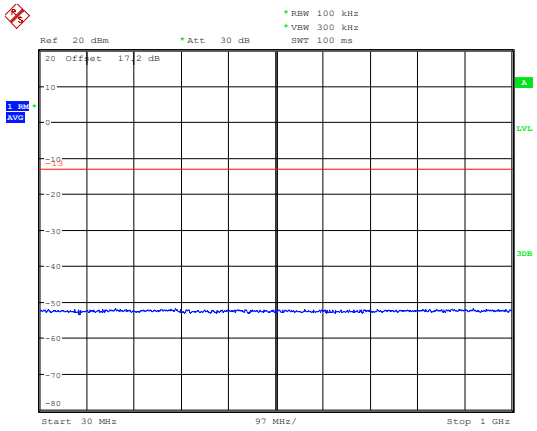
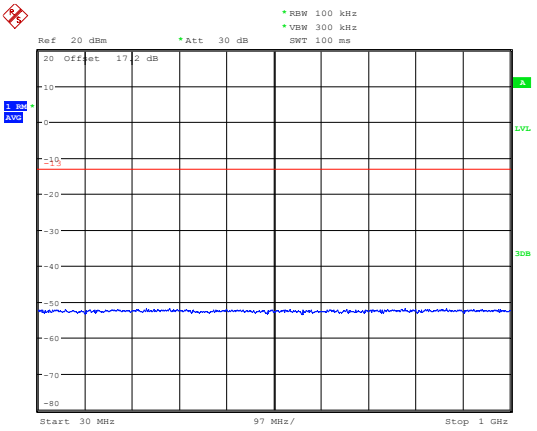
LTE Band 4 1.4MHz CH-High 30MHz~1GHz



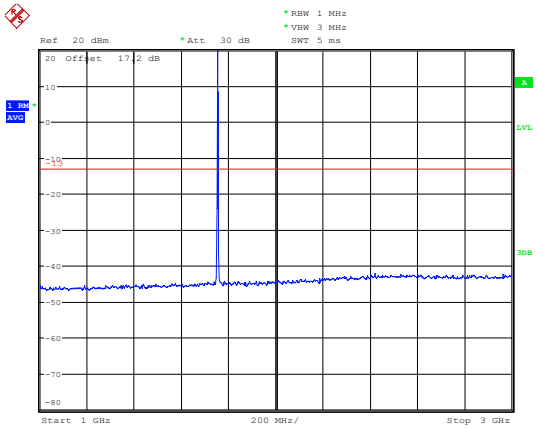

Date: 2.AUG.2019 12:50:47

LTE Band 4 3MHz CH-Low 30MHz~1GHz



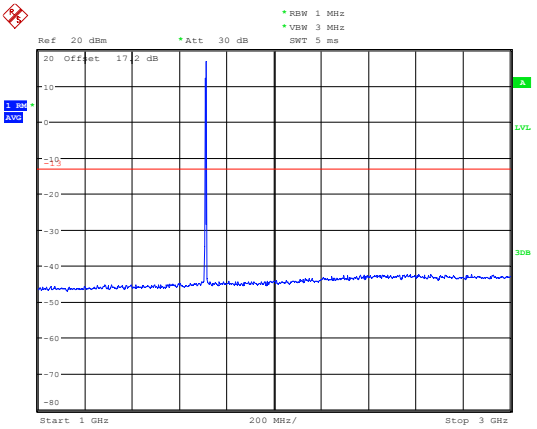

Date: 2.AUG.2019 12:51:07

LTE Band 4 1.4MHz CH-High 1GHz~3GHz



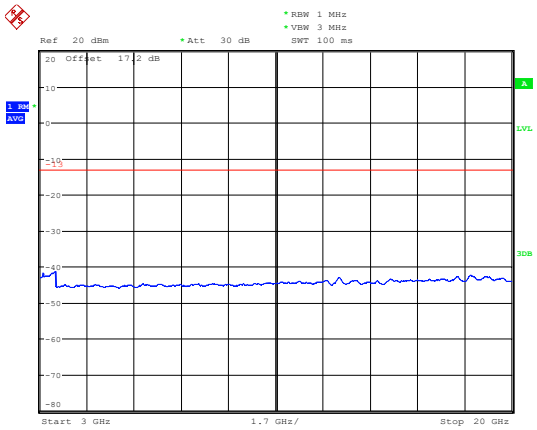

Date: 2.AUG.2019 12:57:08

LTE Band 4 3MHz CH-Low 1GHz~3GHz



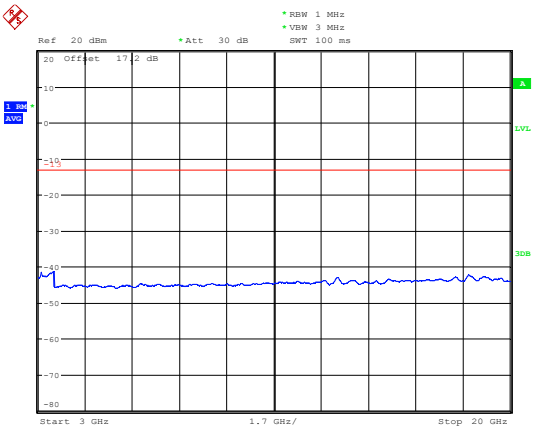

Date: 2.AUG.2019 12:57:27

LTE Band 4 1.4MHz CH-High 3GHz~20GHz




Date: 2.AUG.2019 13:03:39

LTE Band 4 3MHz CH-Low 3GHz~20GHz




Date: 2.AUG.2019 13:03:56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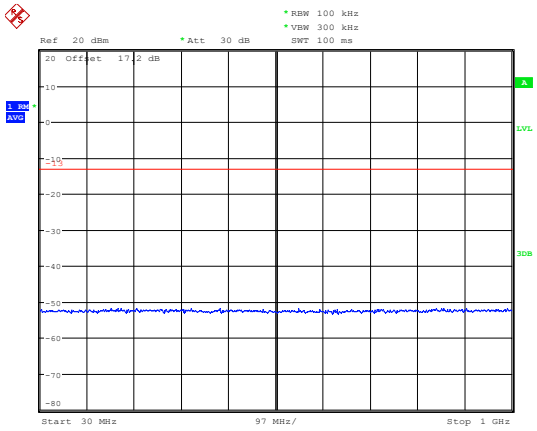
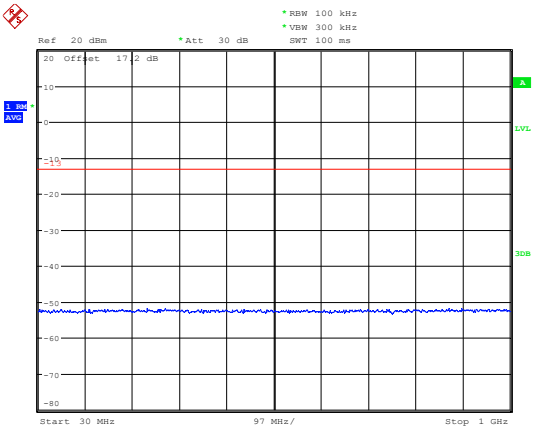
LTE Band 4 3MHz CH-Middle 30MHz~1GHz



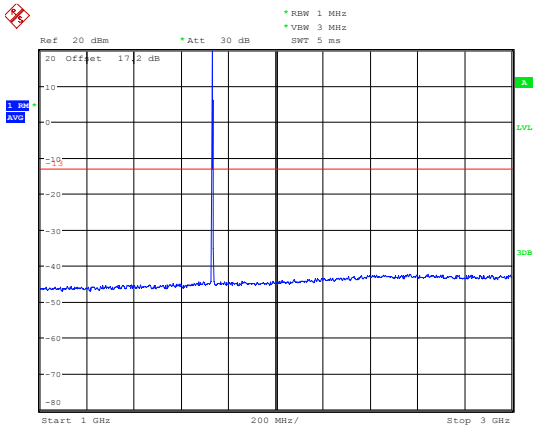

Date: 2.AUG.2019 12:51:43

LTE Band 4 3MHz CH-High 30MHz~1GHz



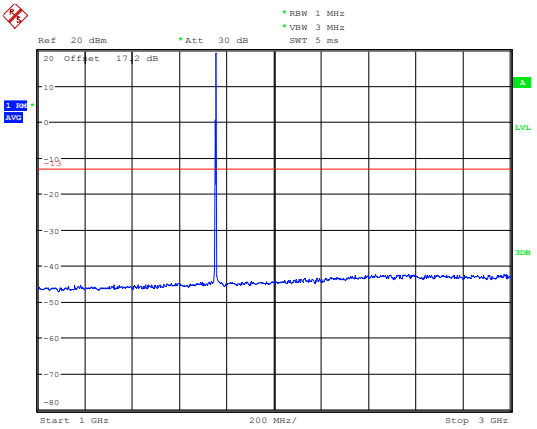

Date: 2.AUG.2019 12:52:04

LTE Band 4 3MHz CH-Middle 1GHz~3GHz



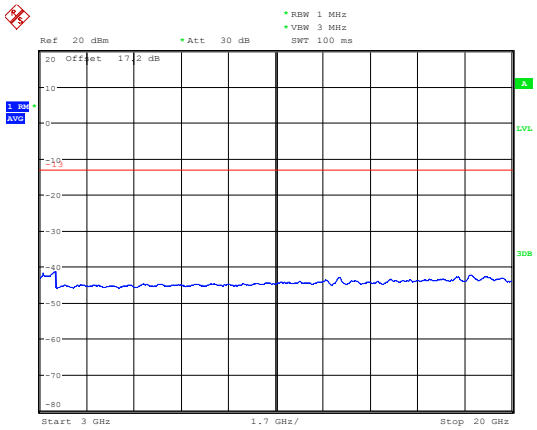

Date: 2.AUG.2019 12:57:39

LTE Band 4 3MHz CH-High 1GHz~3GHz



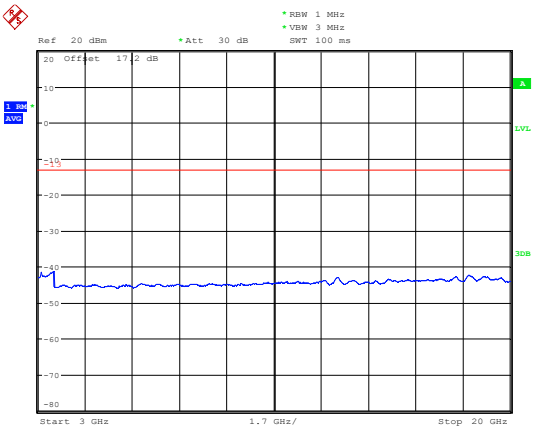

Date: 2.AUG.2019 12:58:05

LTE Band 4 3MHz CH-Middle 3GHz~20GHz




Date: 2.AUG.2019 13:04:07

LTE Band 4 3MHz CH-High 3GHz~20GHz




Date: 2.AUG.2019 13:04:24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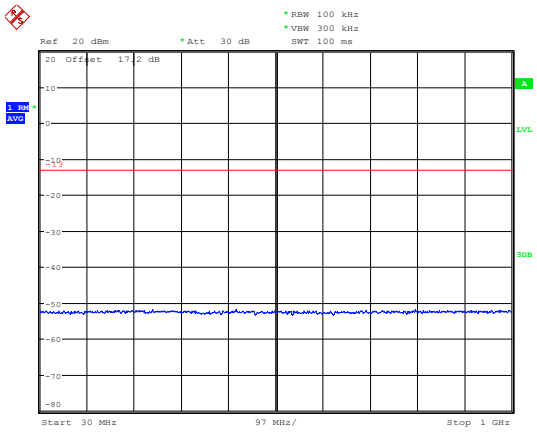
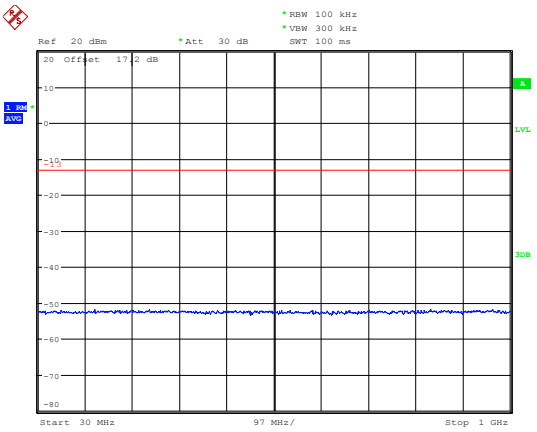
LTE Band 4 5MHz CH-Low 30MHz~1GHz



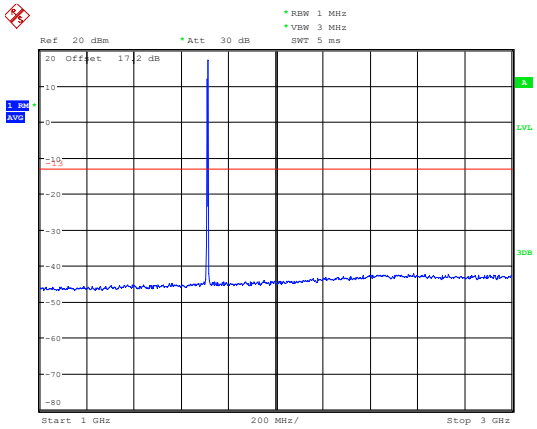

Date: 2.AUG.2019 12:52:23

LTE Band 4 5MHz CH-Middle 30MHz~1GHz



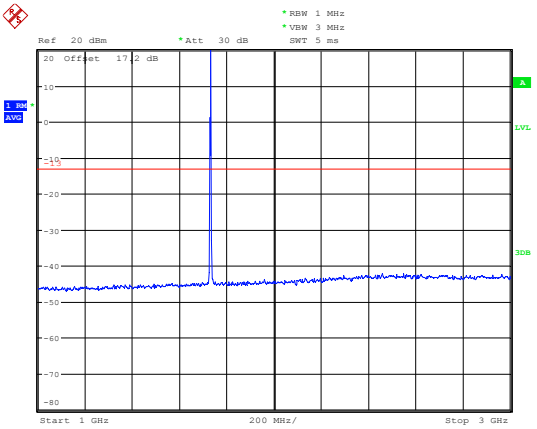

Date: 2.AUG.2019 12:52:39

LTE Band 4 5MHz CH-Low 1GHz~3GHz



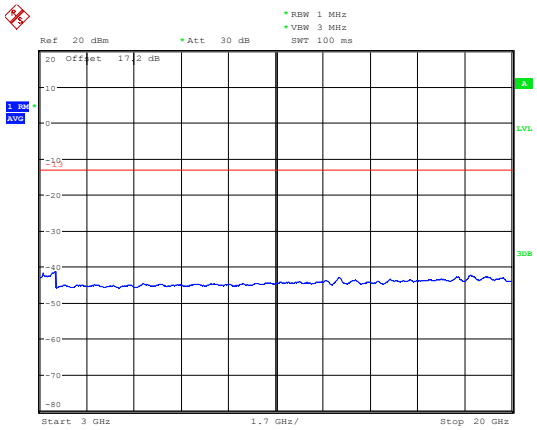

Date: 2.AUG.2019 12:58:35

LTE Band 4 5MHz CH-Middle 1GHz~3GHz



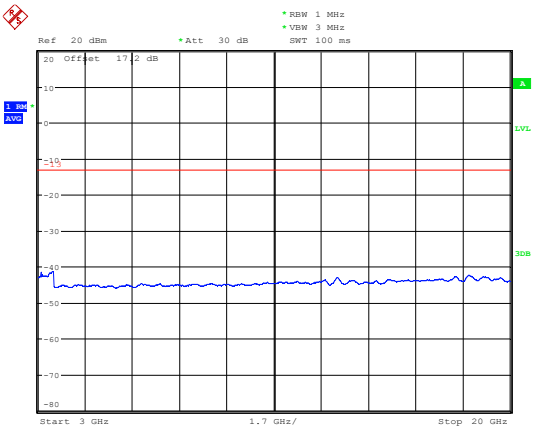

Date: 2.AUG.2019 12:58:46

LTE Band 4 5MHz CH-Low 3GHz~20GHz




Date: 2.AUG.2019 13:04:38

LTE Band 4 5MHz CH-Middle 3GHz~20GHz




Date: 2.AUG.2019 13:04:52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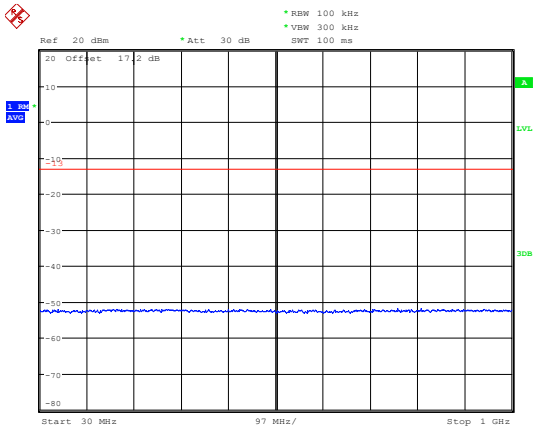
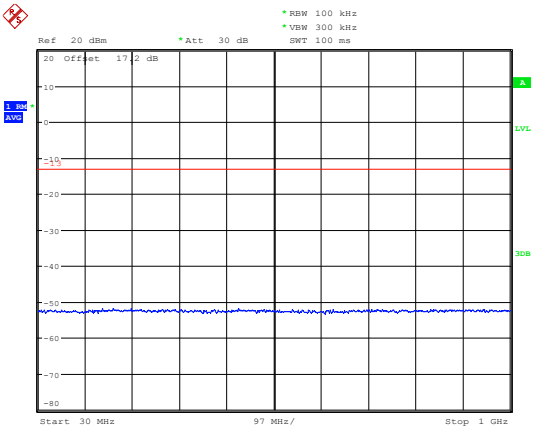
LTE Band 4 5MHz CH-High 30MHz~1GHz



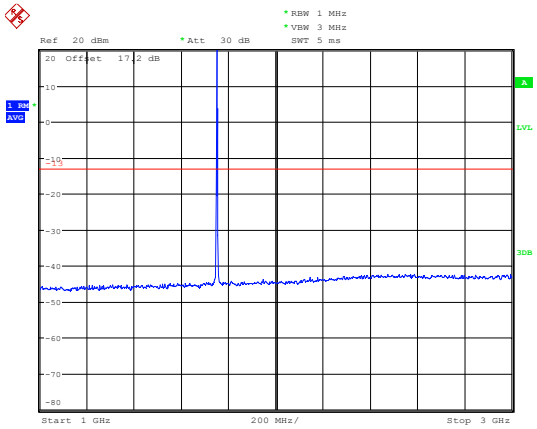

Date: 2.AUG.2019 12:52:55

LTE Band 4 10MHz CH-Low 30MHz~1GHz



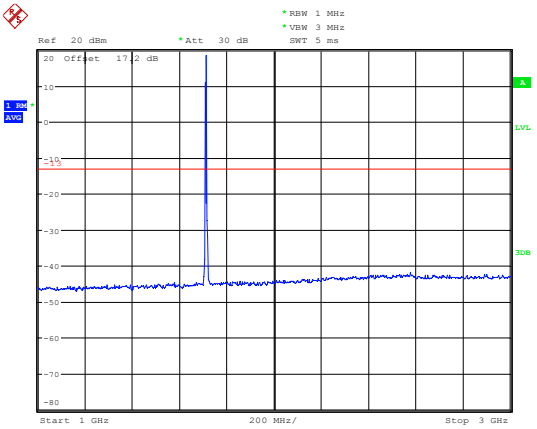

Date: 2.AUG.2019 12:53:07

LTE Band 4 5MHz CH-High 1GHz~3GHz



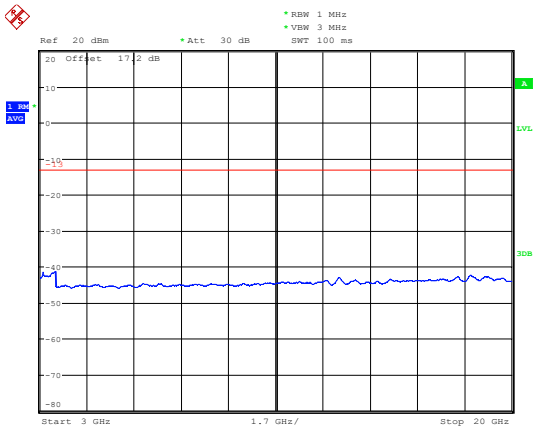

Date: 2.AUG.2019 12:59:00

LTE Band 4 10MHz CH-Low 1GHz~3GHz



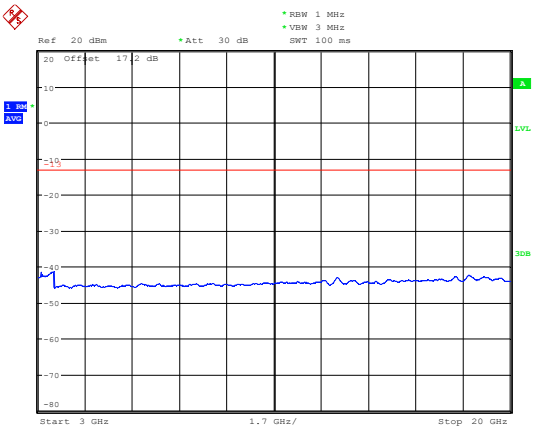

Date: 2.AUG.2019 12:59:33

LTE Band 4 5MHz CH-High 3GHz~20GHz




Date: 2.AUG.2019 13:05:06

LTE Band 4 10MHz CH-Low 3GHz~20GHz




Date: 2.AUG.2019 13:05:19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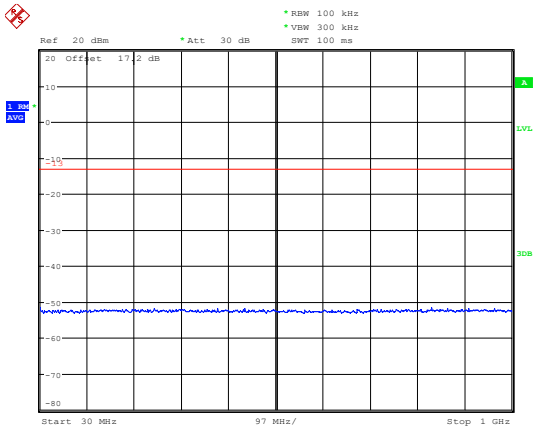
LTE Band 4 10MHz CH-Middle 30MHz~1GHz

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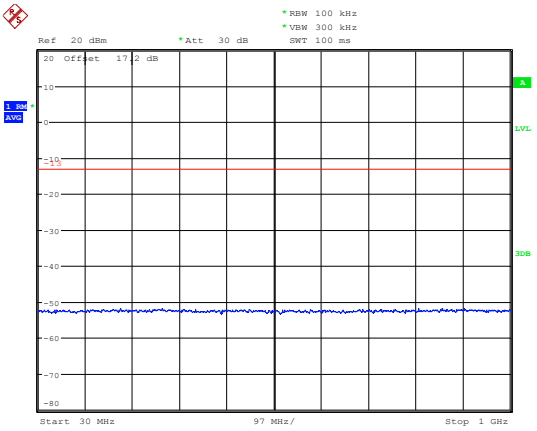
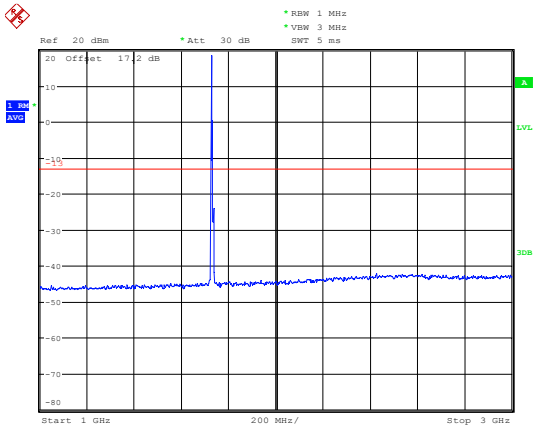
LTE Band 4 10MHz CH-High 30MHz~1GHz



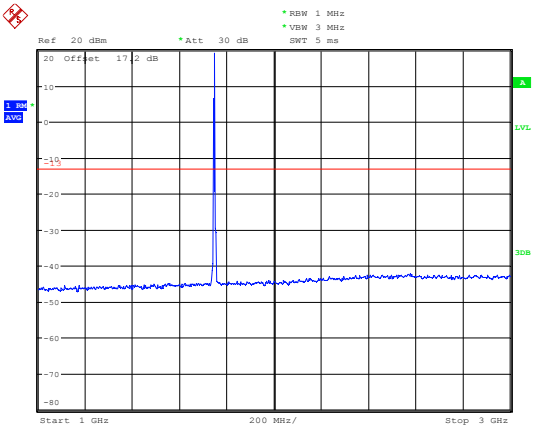

Date: 2.AUG.2019 12:53:35

LTE Band 4 10MHz CH-Middle 1GHz~3GHz



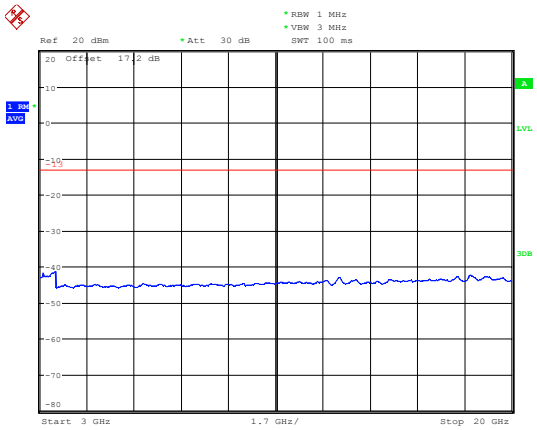

Date: 2.AUG.2019 12:59:45

LTE Band 4 10MHz CH-High 1GHz~3GHz



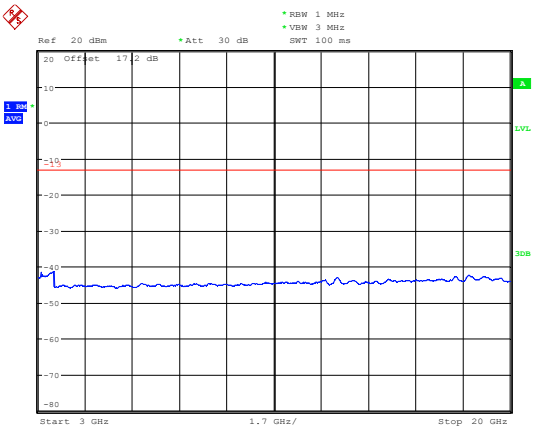

Date: 2.AUG.2019 12:59:56

LTE Band 4 10MHz CH-Middle 3GHz~20GHz




Date: 2.AUG.2019 13:05:33

LTE Band 4 10MHz CH-High 3GHz~20GHz

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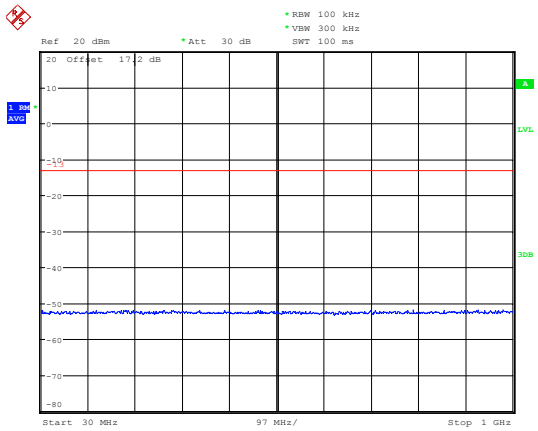
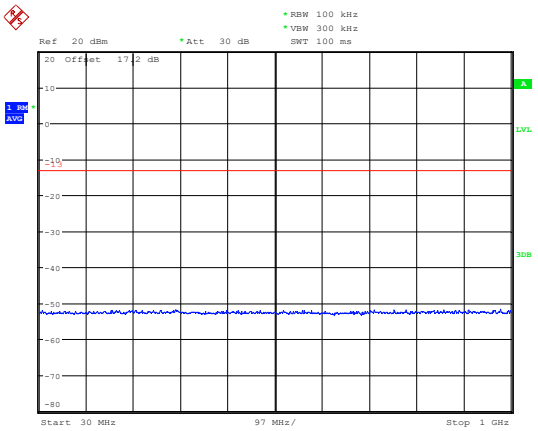
LTE Band 4 15MHz CH-Low 30MHz~1GHz



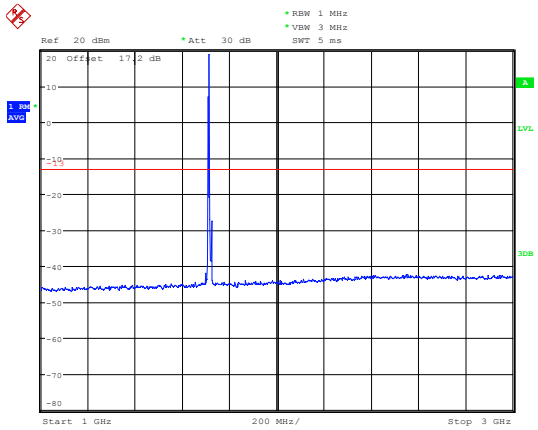

Date: 2.AUG.2019 12:53:45

LTE Band 4 15MHz CH-Middle 30MHz~1GHz



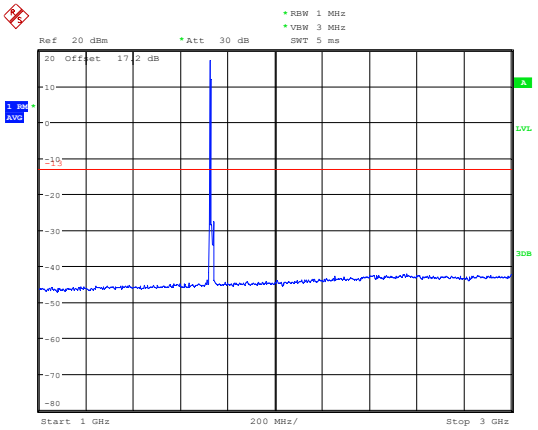

Date: 2.AUG.2019 12:54:00

LTE Band 4 15MHz CH-Low 1GHz~3GHz



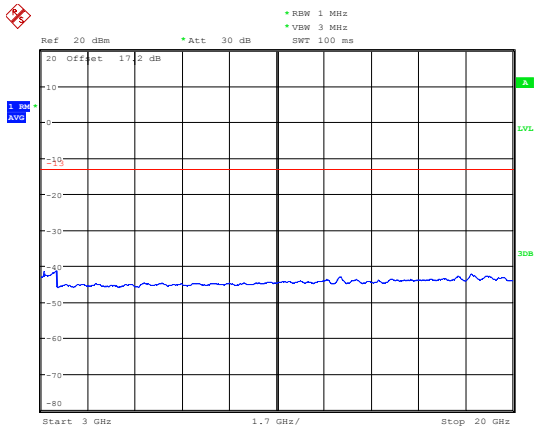

Date: 2.AUG.2019 13:00:42

LTE Band 4 15MHz CH-Middle 1GHz~3GHz



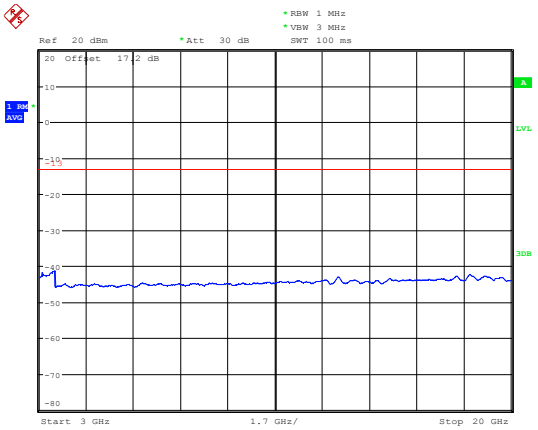

Date: 2.AUG.2019 13:00:53

LTE Band 4 15MHz CH-Low 3GHz~20GHz




Date: 2.AUG.2019 13:05:53

LTE Band 4 15MHz CH-Middle 3GHz~20GHz




Date: 2.AUG.2019 13:06:04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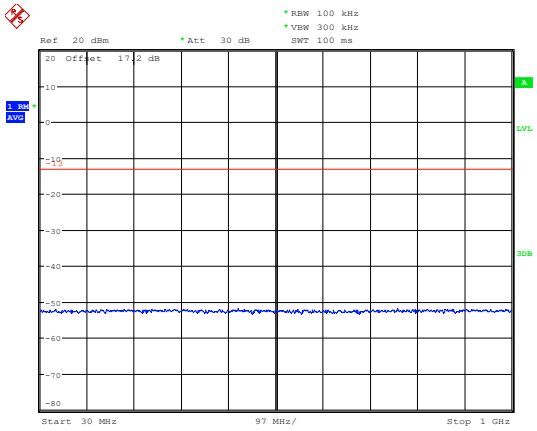
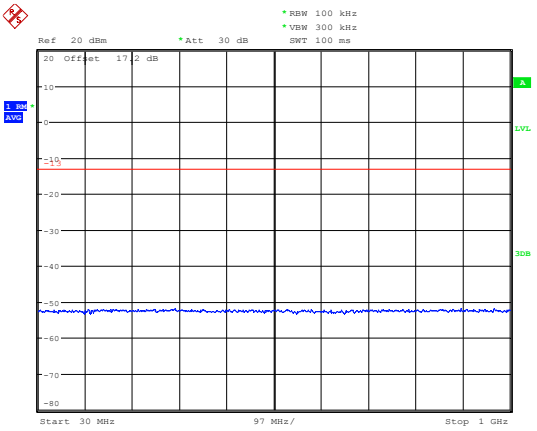
LTE Band 4 15MHz CH-High 30MHz~1GHz



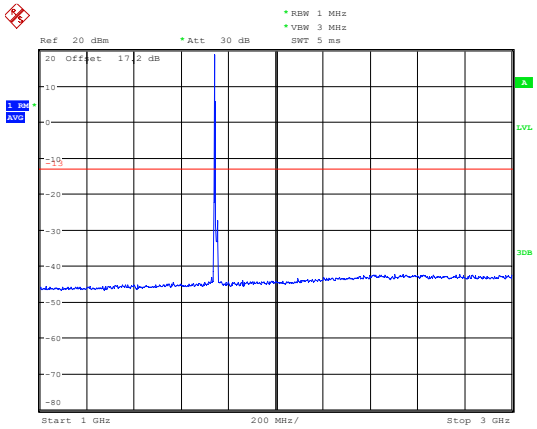

Date: 2.AUG.2019 12:54:08

LTE Band 4 20MHz CH-Low 30MHz~1GHz



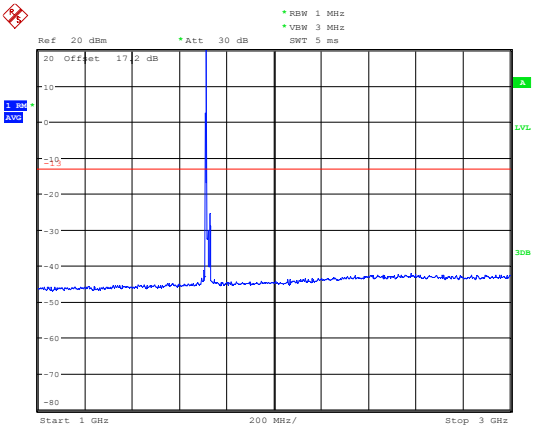

Date: 2.AUG.2019 12:54:21

LTE Band 4 15MHz CH-High 1GHz~3GHz



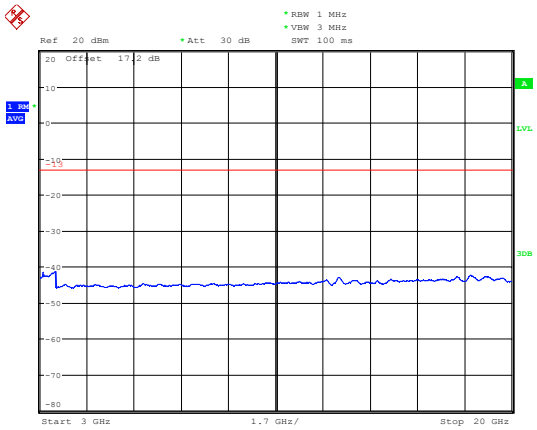

Date: 2.AUG.2019 13:01:09

LTE Band 4 20MHz CH-Low 1GHz~3GHz




Date: 2.AUG.2019 13:01:25

LTE Band 4 15MHz CH-High 3GHz~20GHz

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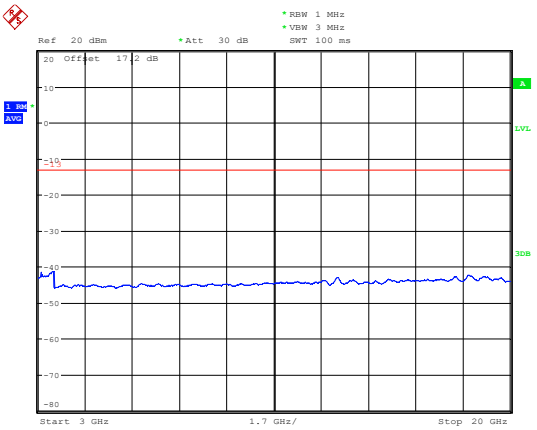
LTE Band 4 20MHz CH-Low 3GHz~20GHz




Date: 2.AUG.2019 13:06:19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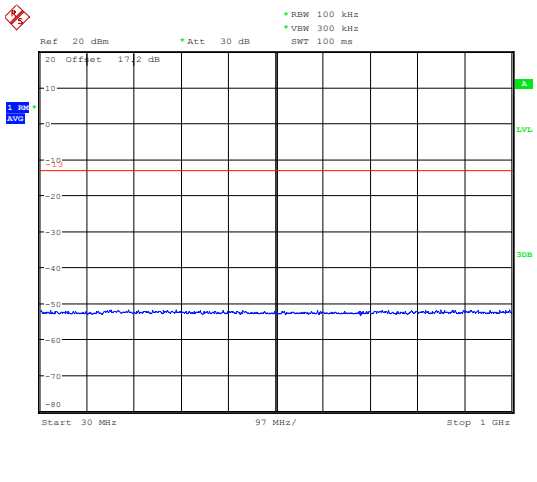
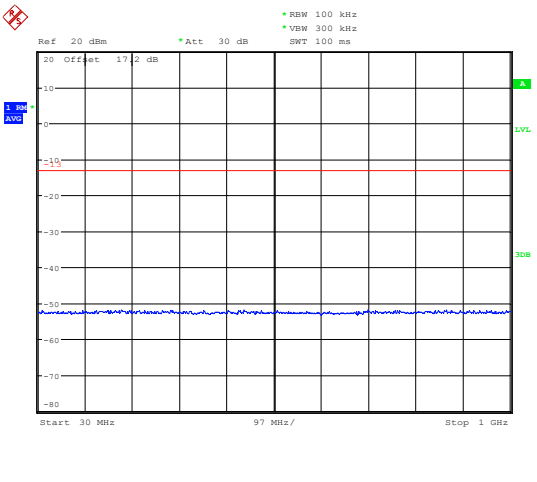
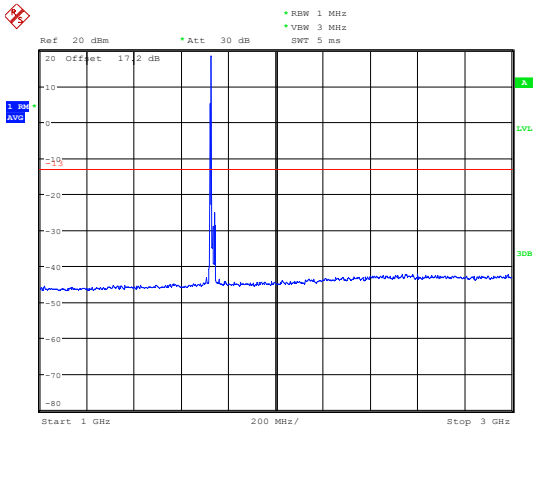
LTE Band 4 20MHz CH- Middle 30MHz~1GHz



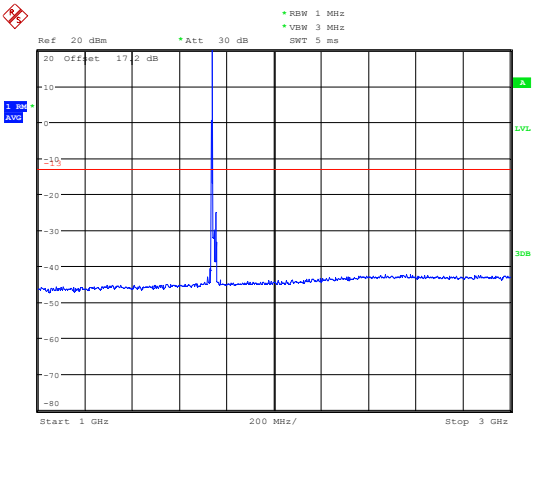

LTE Band 4 20MHz CH- High 30MHz~1GHz



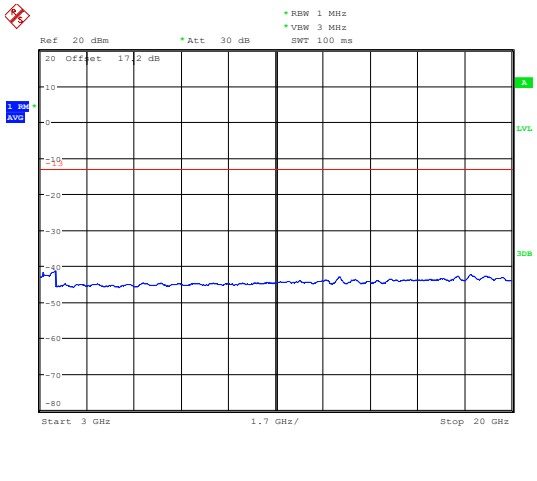

LTE Band 4 20MHz CH- Middle 1GHz~3GHz



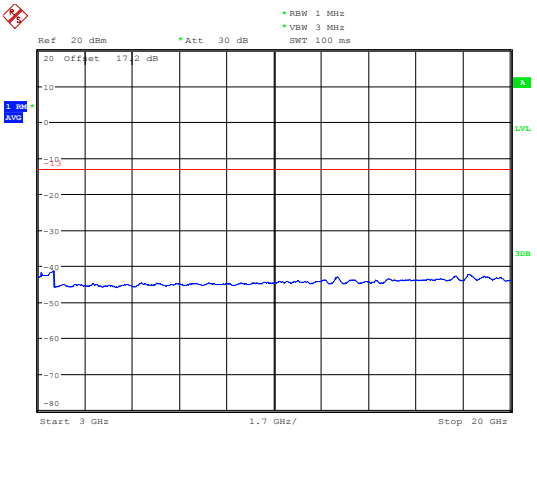

LTE Band 4 20MHz CH- High 1GHz~3GHz




LTE Band 4 20MHz CH- Middle 3GHz~20GHz




LTE Band 4 20MHz CH- High 3GHz~20GHz





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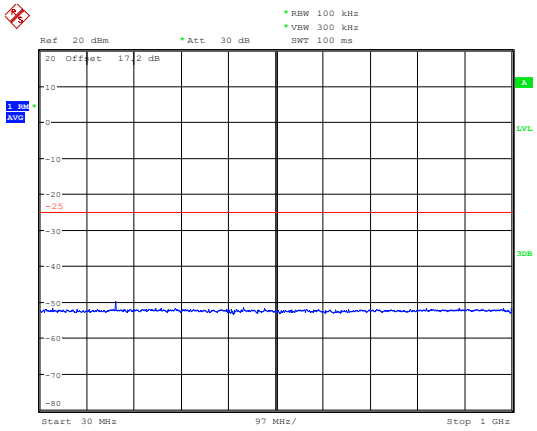
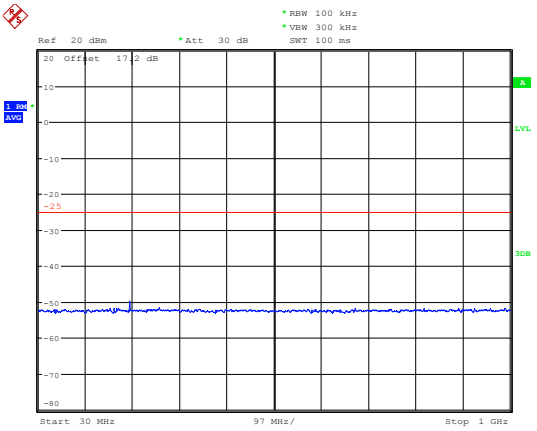
LTE Band 7 5MHz CH-Low 30MHz~1GHz



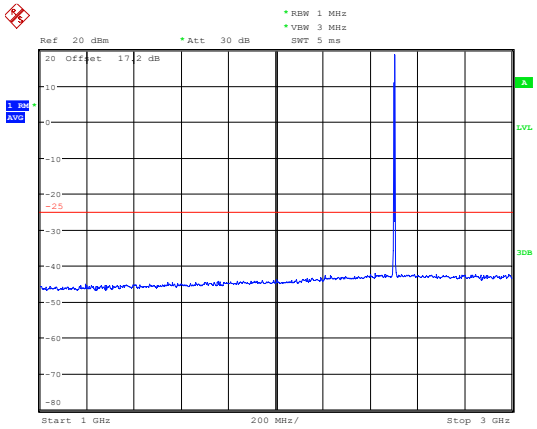

Date: 2.AUG.2019 14:52:46

LTE Band 7 5MHz CH-Middle 30MHz~1GHz



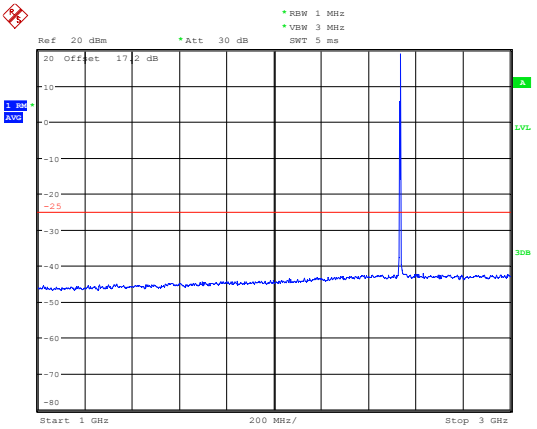

Date: 2.AUG.2019 14:53:00

LTE Band 7 5MHz CH-Low 1GHz~3GHz




Date: 2.AUG.2019 14:56:00

LTE Band 7 5MHz CH-Middle 1GHz~3GHz

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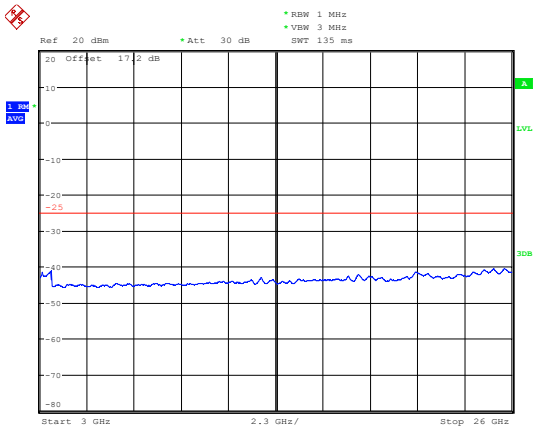
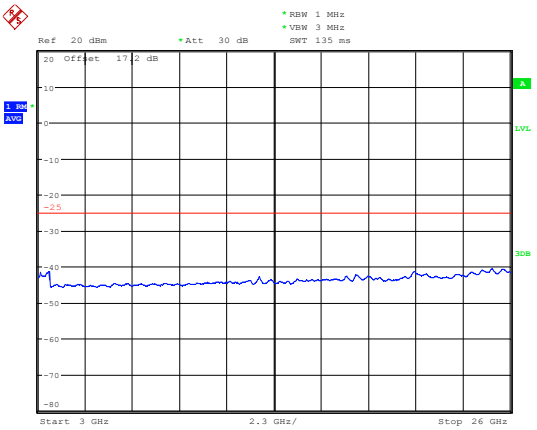
LTE Band 7 5MHz CH-Low 3GHz~20GHz




Date: 2.AUG.2019 15:08:46

LTE Band 7 5MHz CH-Middle 3GHz~20GHz

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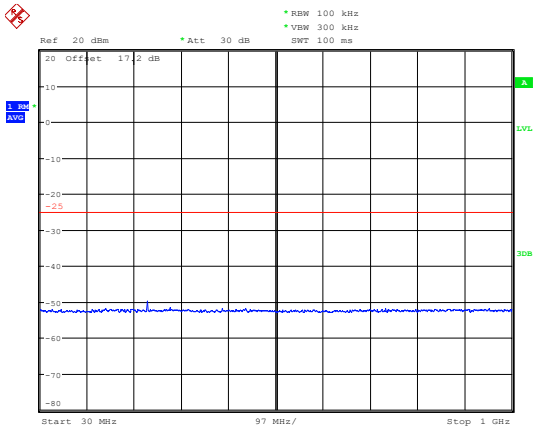
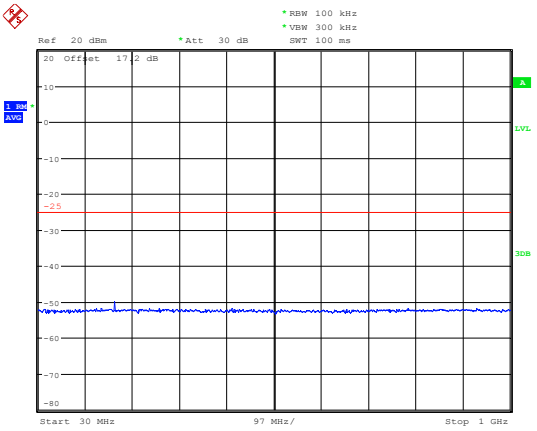
LTE Band 7 5MHz CH-High 30MHz~1GHz




Date: 2.AUG.2019 14:53:14

LTE Band 7 10MHz CH-Low 30MHz~1GHz

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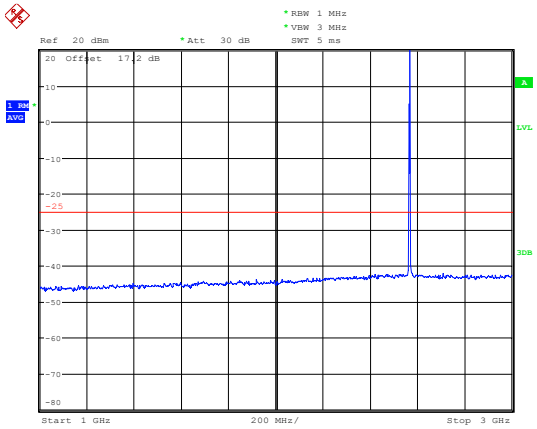
LTE Band 7 5MHz CH-High 1GHz~3GHz

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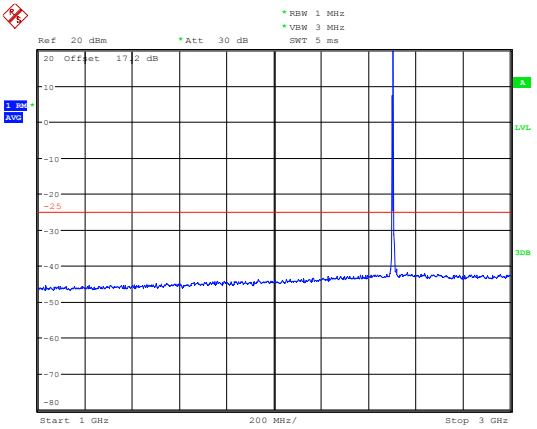
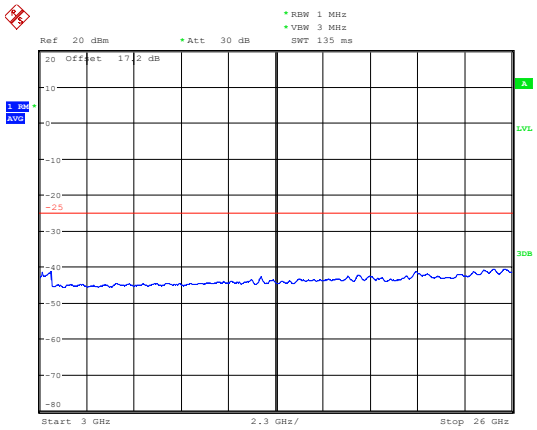
LTE Band 7 10MHz CH-Low 1GHz~3GHz



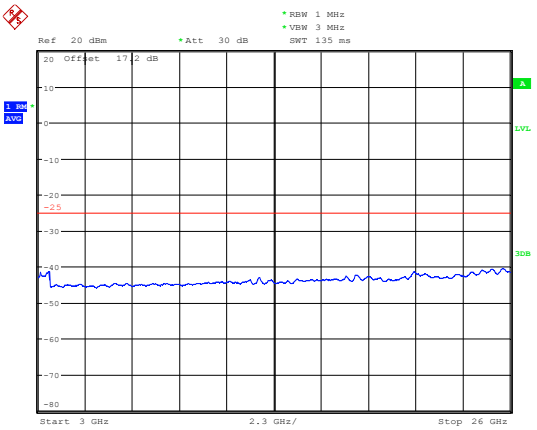

Date: 2.AUG.2019 14:56:46

LTE Band 7 5MHz CH-High 3GHz~20GHz




Date: 2.AUG.2019 15:09:13

LTE Band 7 10MHz CH-Low 3GHz~20GHz

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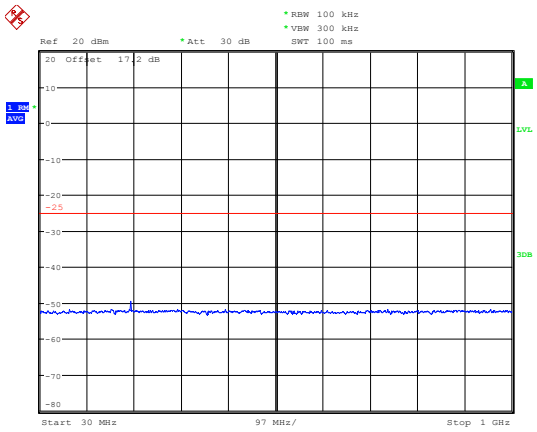
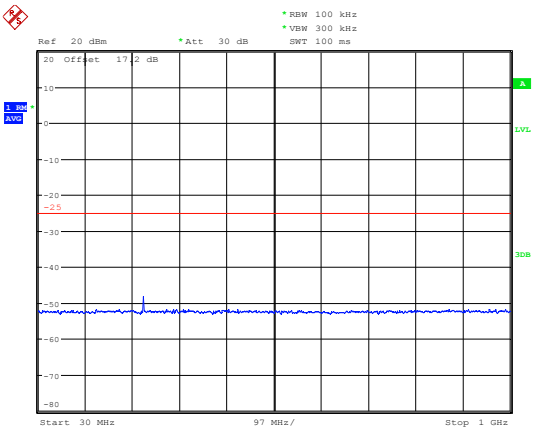
LTE Band 7 10MHz CH-Middle 30MHz~1GHz



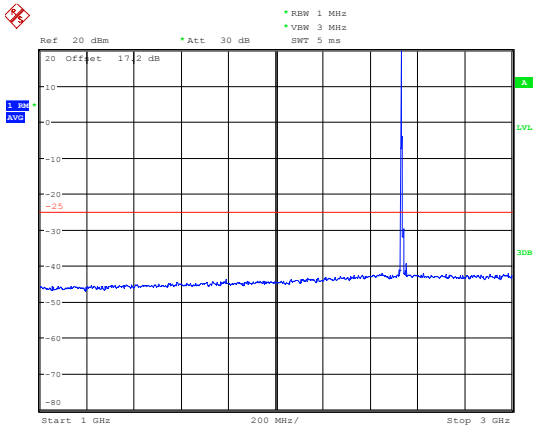

Date: 2.AUG.2019 14:53:44

LTE Band 7 10MHz CH-High 30MHz~1GHz




Date: 2.AUG.2019 14:54:01

LTE Band 7 10MHz CH-Middle 1GHz~3GHz

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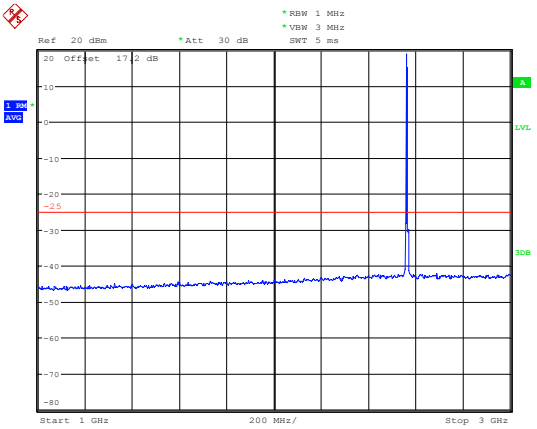
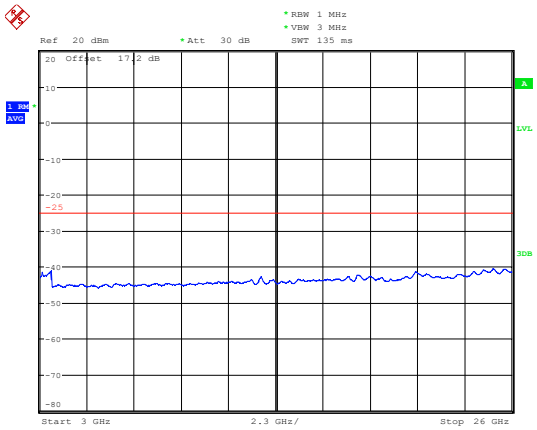
LTE Band 7 10MHz CH-High 1GHz~3GHz



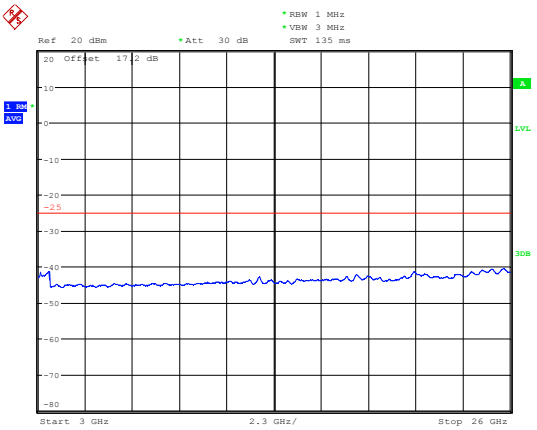

Date: 2.AUG.2019 14:57:06

LTE Band 7 10MHz CH-Middle 3GHz~20GHz




Date: 2.AUG.2019 15:09:42

LTE Band 7 10MHz CH-High 3GHz~20GHz




Date: 2.AUG.2019 15:09:57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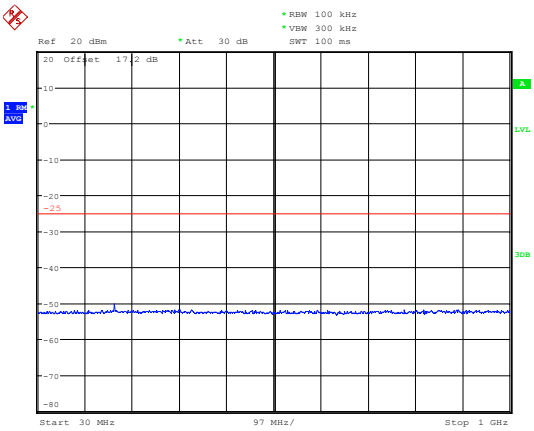
LTE Band 7 15MHz CH-Low 30MHz~1GHz

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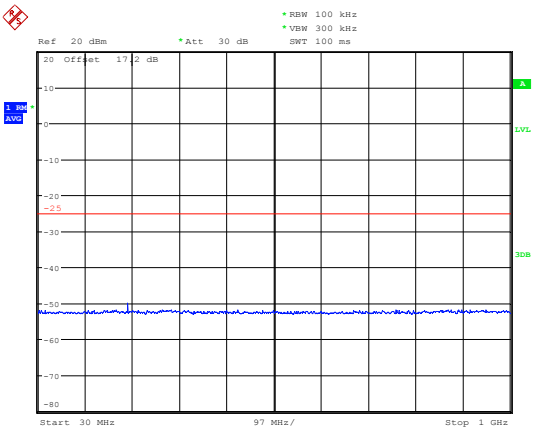
LTE Band 7 15MHz CH-Middle 30MHz~1GHz

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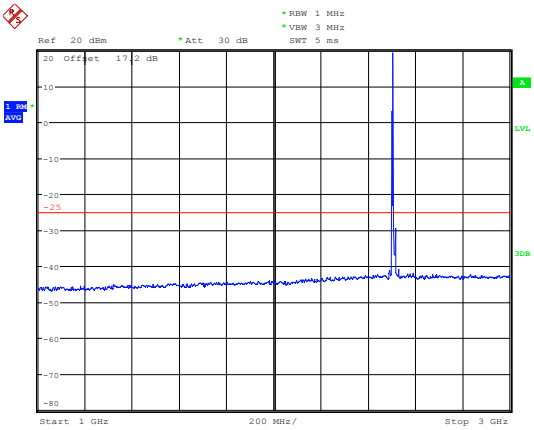
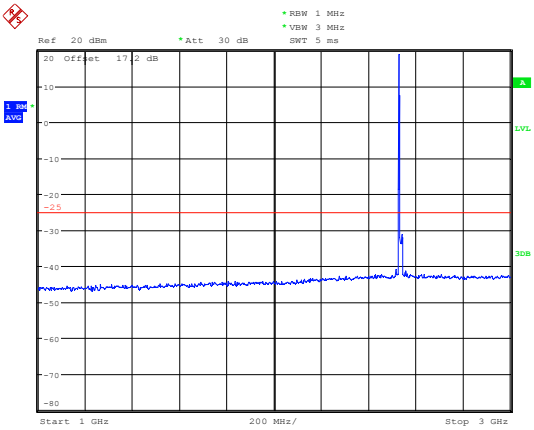
LTE Band 7 15MHz CH-Low 1GHz~3GHz




Date: 2.AUG.2019 14:57:25

LTE Band 7 15MHz CH-Middle 1GHz~3GHz

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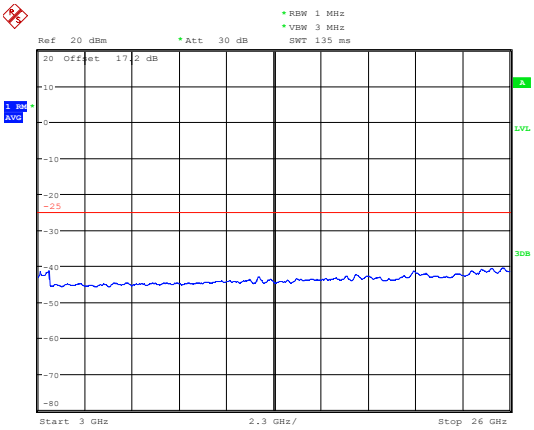
LTE Band 7 15MHz CH-Low 3GHz~20GHz

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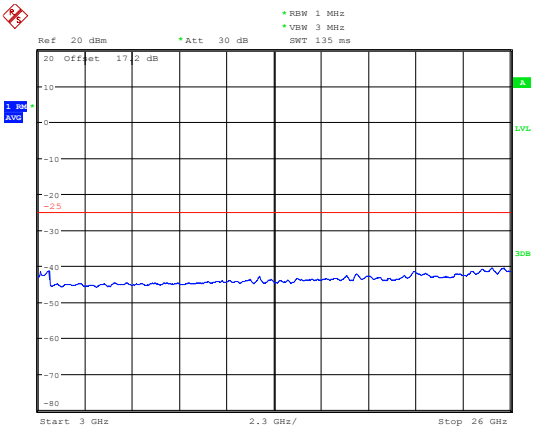
LTE Band 7 15MHz CH-Middle 3GHz~20GHz

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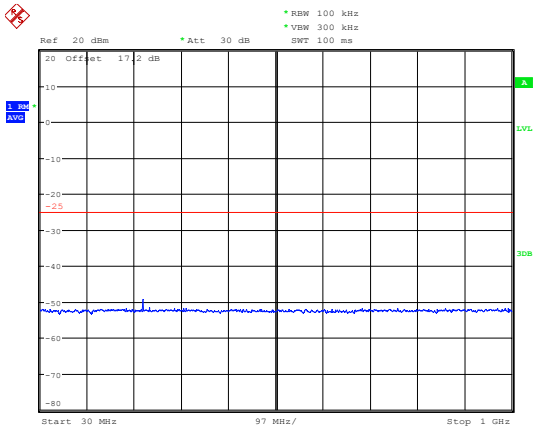
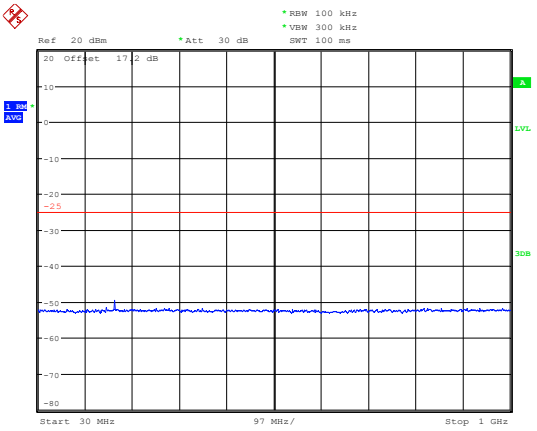
LTE Band 7 15MHz CH-High 30MHz~1GHz




Date: 2.AUG.2019 14:54:46

LTE Band 7 20MHz CH-Low 30MHz~1GHz

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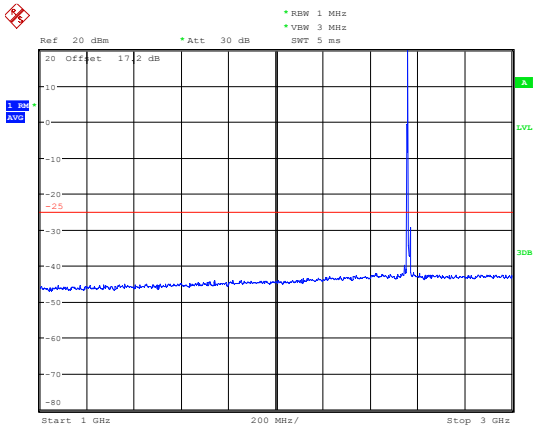
LTE Band 7 15MHz CH-High 1GHz~3GHz

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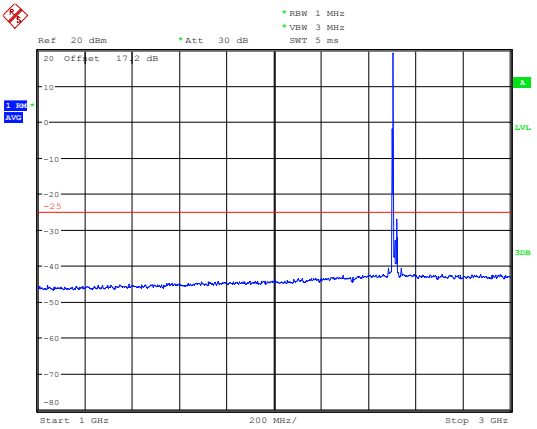
LTE Band 7 20MHz CH-Low 1GHz~3GHz

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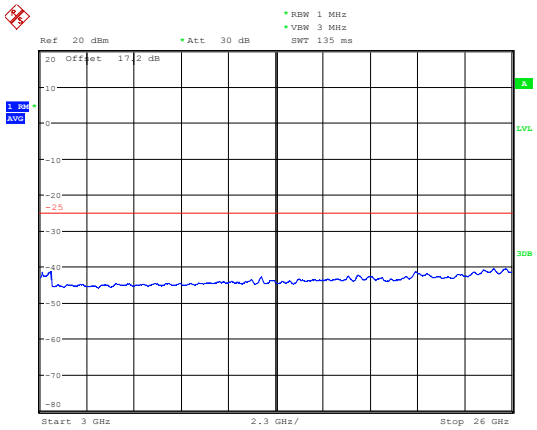
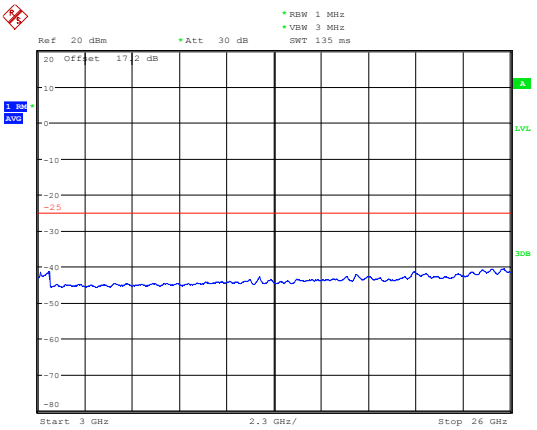
LTE Band 7 15MHz CH-High 3GHz~20GHz




Date: 2.AUG.2019 15:10:43

LTE Band 7 20MHz CH-Low 3GHz~20GHz




Date: 2.AUG.2019 15:10:59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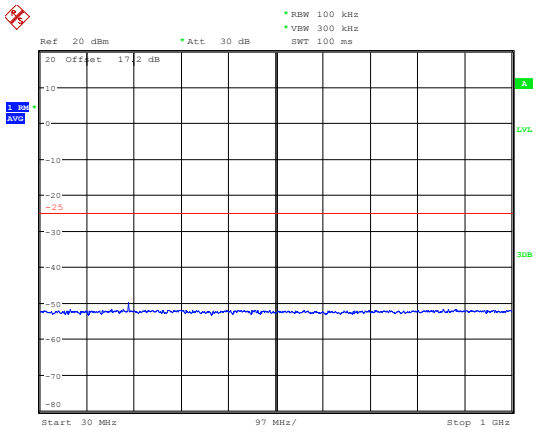
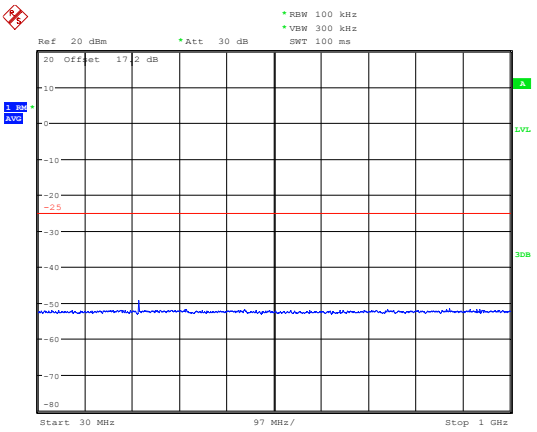
LTE Band 7 20MHz CH-Middle 30MHz~1GHz



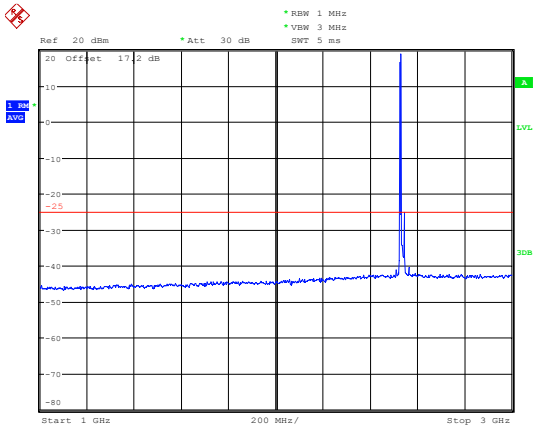

Date: 2.AUG.2019 14:55:12

LTE Band 7 20MHz CH-High 30MHz~1GHz



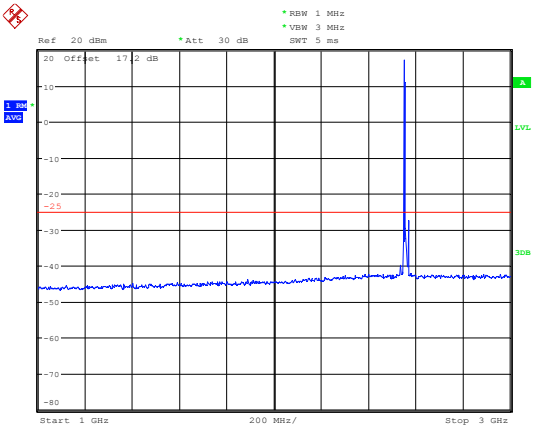

Date: 2.AUG.2019 14:55:23

LTE Band 7 20MHz CH-Middle 1GHz~3GHz




Date: 2.AUG.2019 14:58:15

LTE Band 7 20MHz CH-High 1GHz~3GHz

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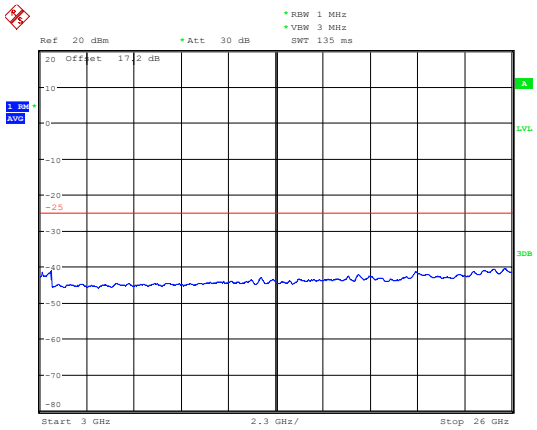
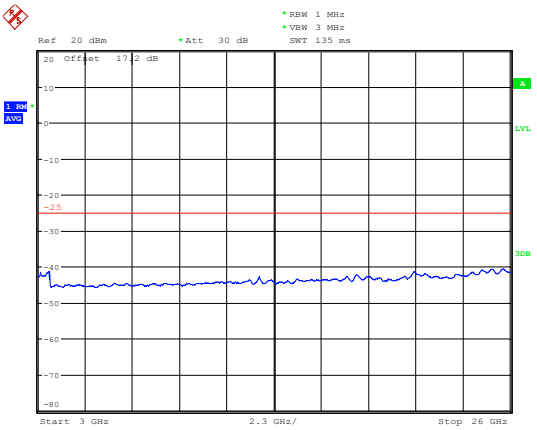
LTE Band 7 20MHz CH-Middle 3GHz~20GHz




Date: 2.AUG.2019 15:11:10

LTE Band 7 20MHz CH-High 3GHz~20GHz

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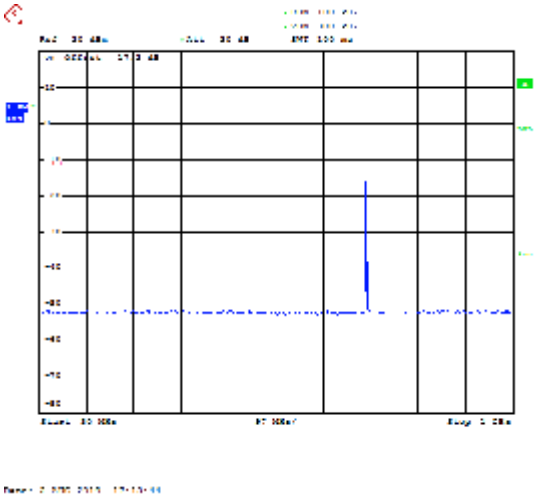
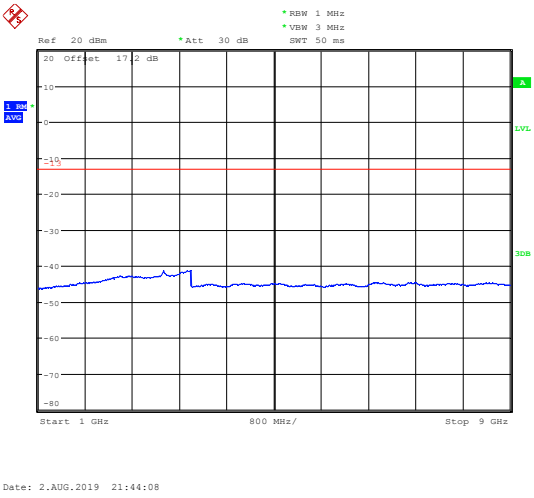
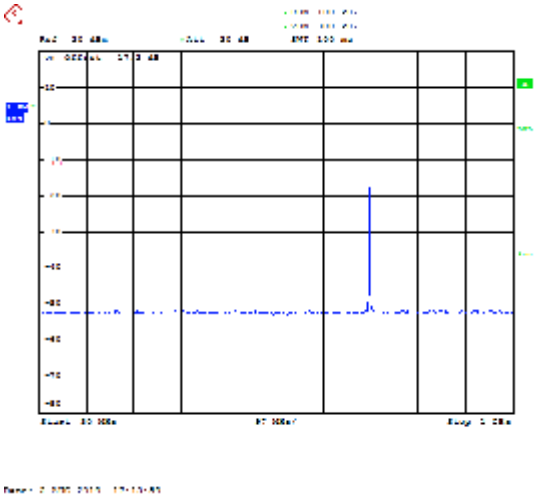
LTE Band 12 1.4MHz CH-Low 30MHz~1GHz



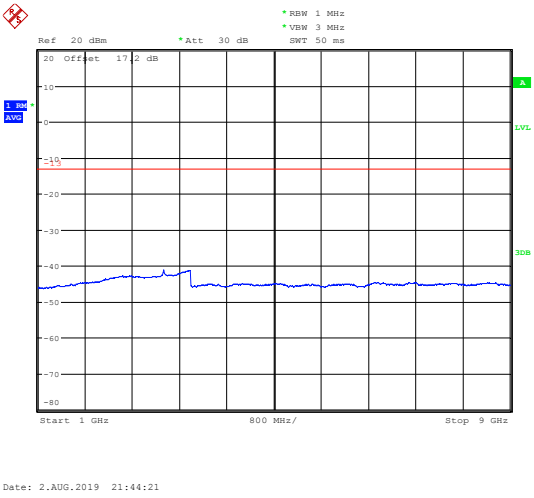
LTE Band 12 1.4MHz CH-Low 1GHz~9GHz



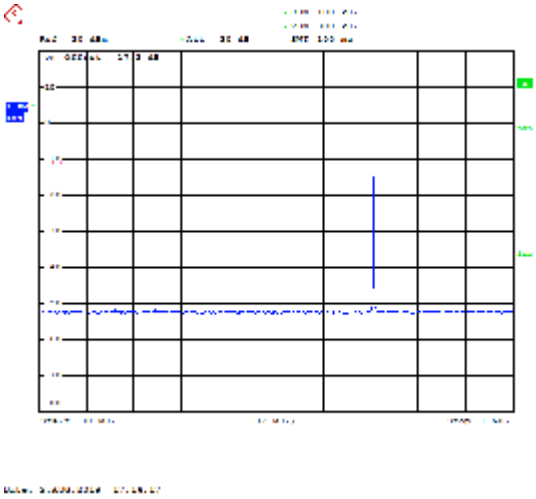

LTE Band 12 1.4MHz CH- Middle 30MHz~1GHz



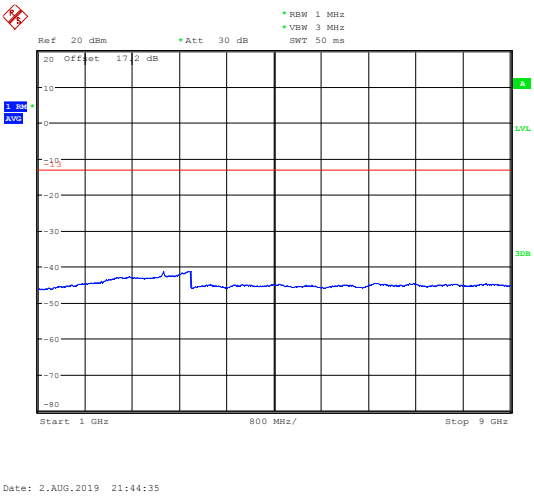
LTE Band 12 1.4MHz CH- Middle 1GHz~9GHz




LTE Band 12 1.4MHz CH-High 30MHz~1GHz



LTE Band 12 1.4MHz CH-High 1GHz~9GHz





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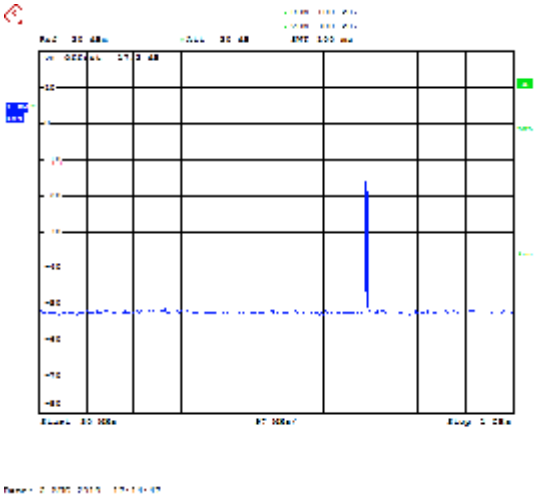
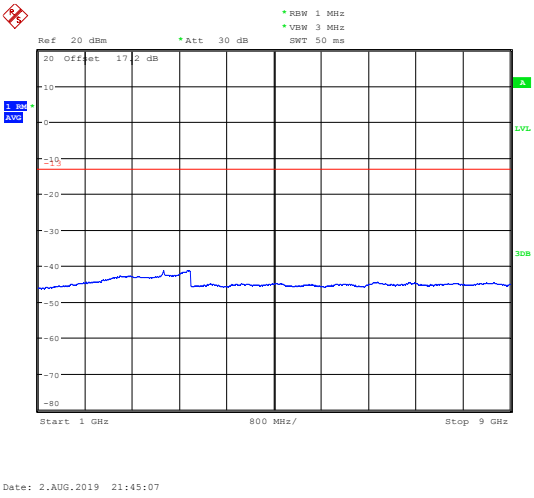
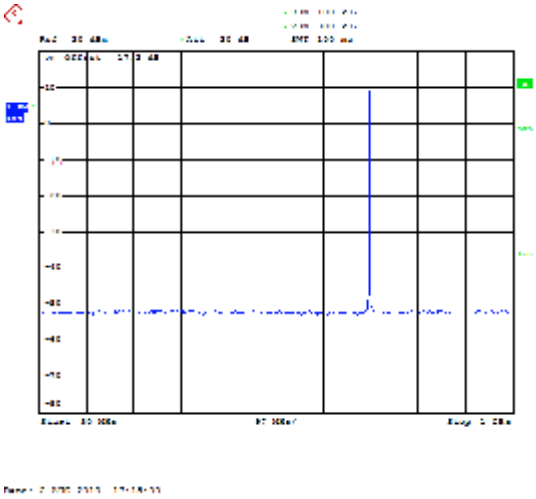
LTE Band 12 3MHz CH-Low 30MHz~1GHz



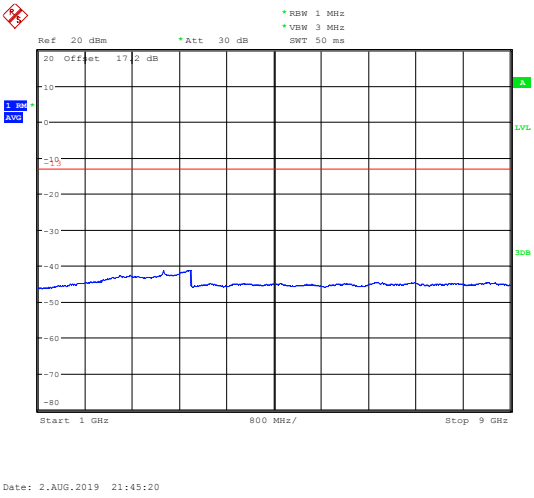
LTE Band 12 3MHz CH-Low 1GHz~9GHz



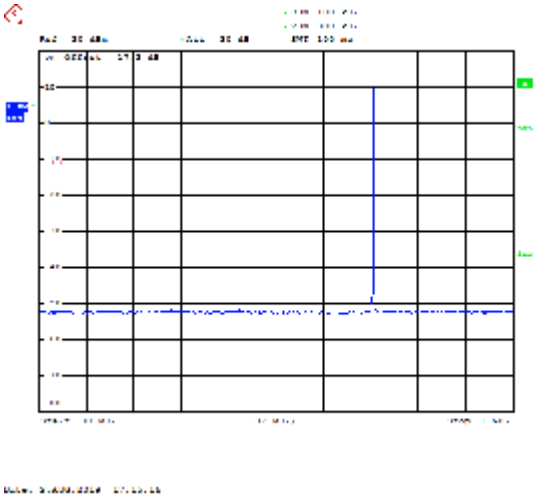

LTE Band 12 3MHz CH- Middle 30MHz~1GHz



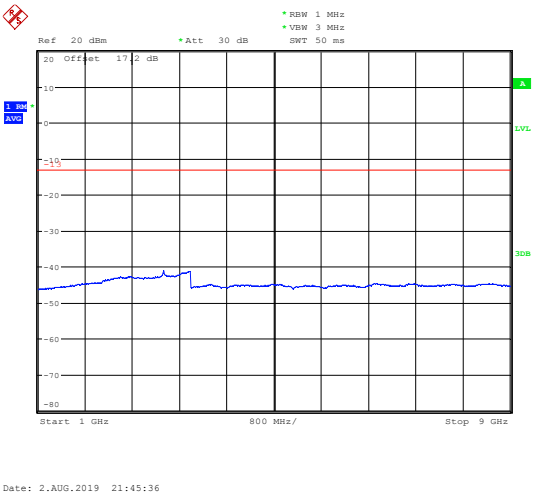
LTE Band 12 3MHz CH- Middle 1GHz~9GHz




LTE Band 12 3MHz CH-High 30MHz~1GHz



LTE Band 12 3MHz CH-High 1GHz~9GHz





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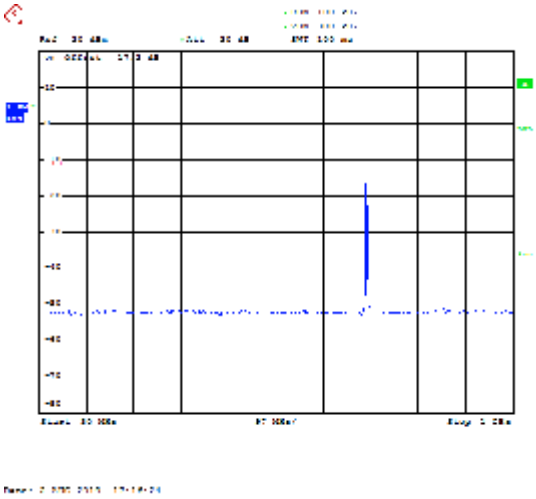
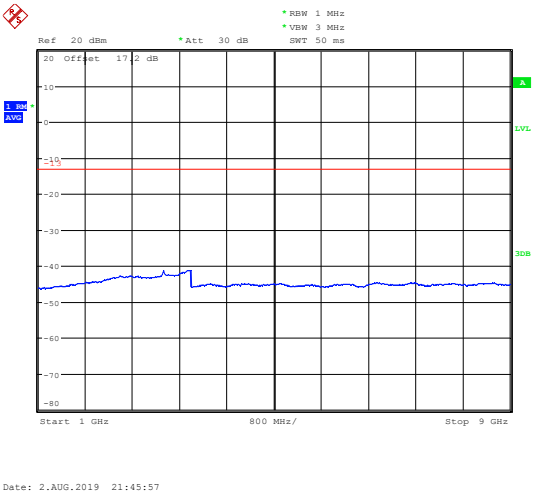
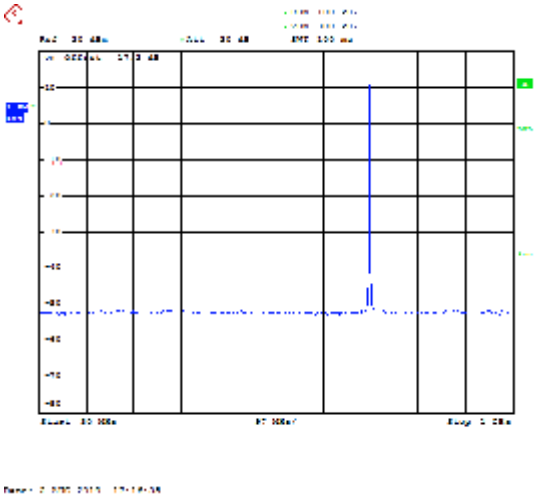
LTE Band 12 5MHz CH-Low 30MHz~1GHz



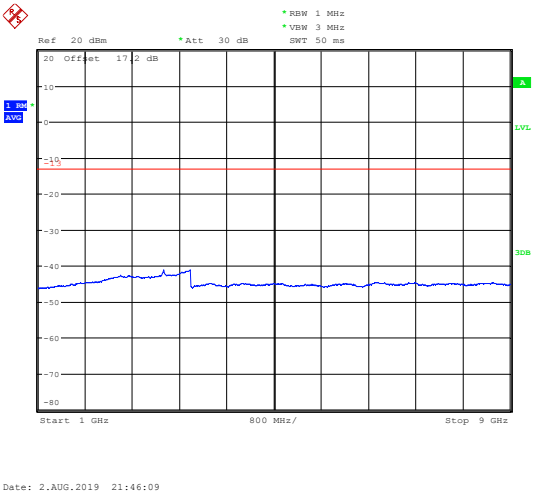
LTE Band 12 5MHz CH-Low 1GHz~9GHz



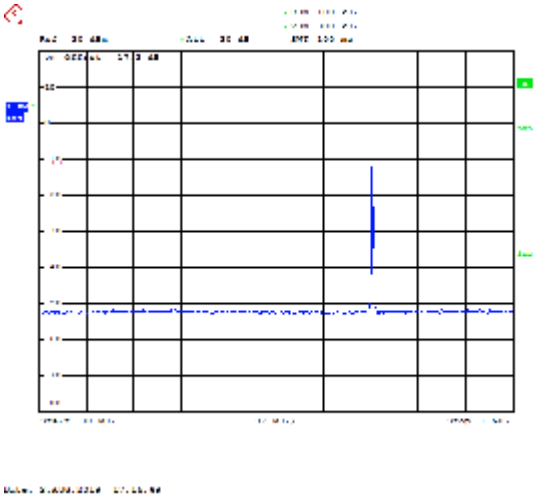

LTE Band 12 5MHz CH- Middle 30MHz~1GHz



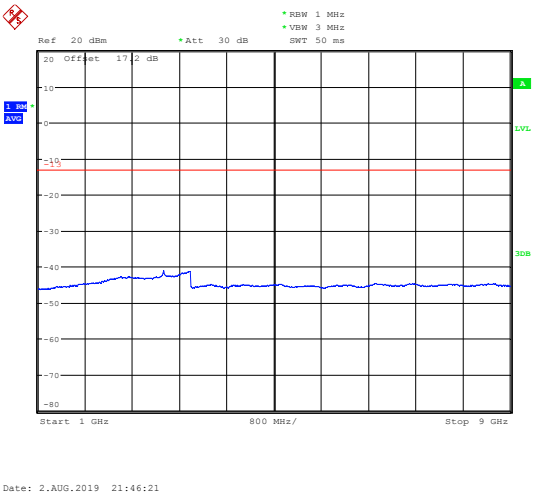
LTE Band 12 5MHz CH- Middle 1GHz~9GHz




LTE Band 12 5MHz CH-High 30MHz~1GHz



LTE Band 12 5MHz CH-High 1GHz~9GHz





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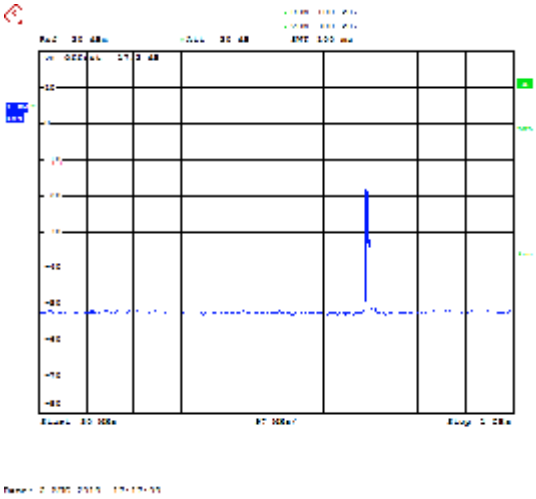
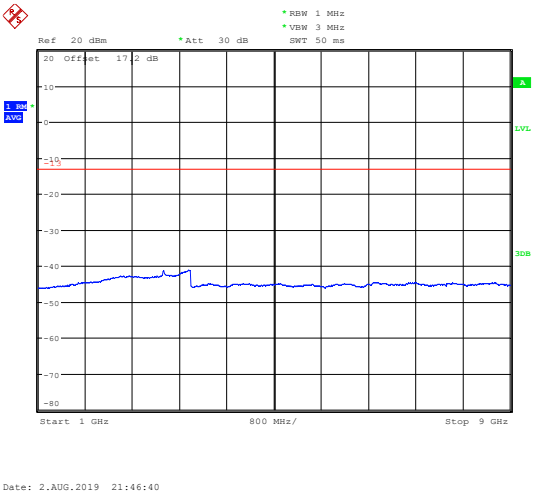
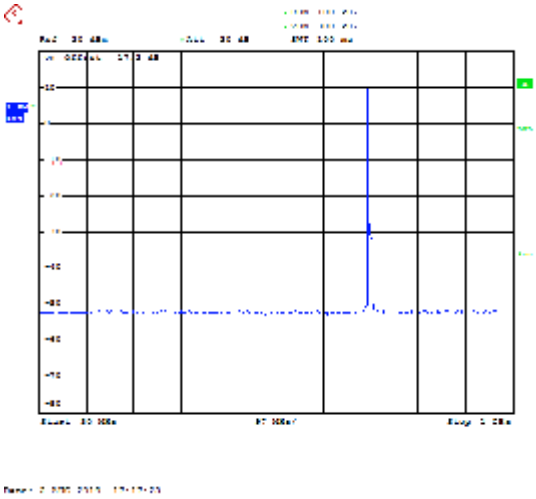
LTE Band 12 10MHz CH-Low 30MHz~1GHz



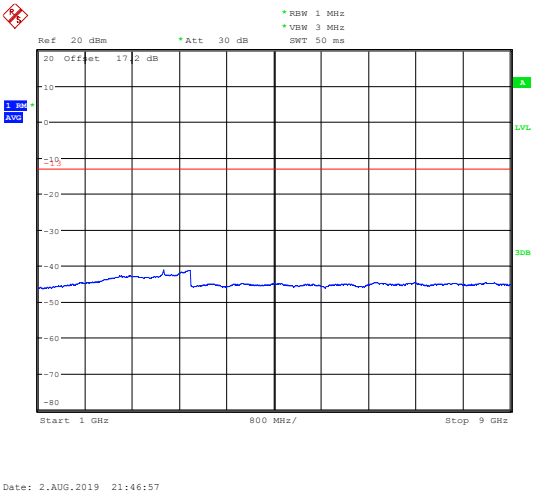
LTE Band 12 10MHz CH-Low 1GHz~9GHz



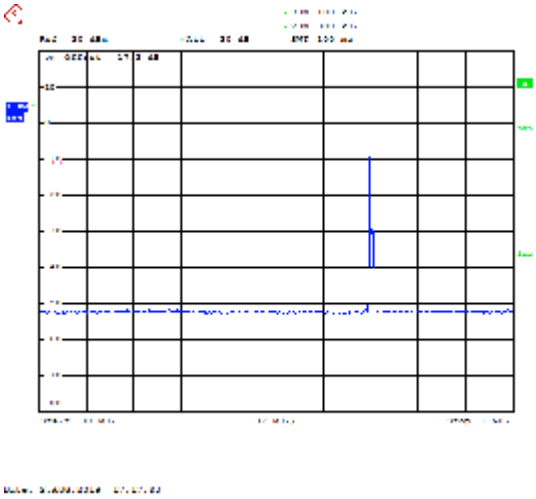

LTE Band 12 10MHz CH- Middle 30MHz~1GHz



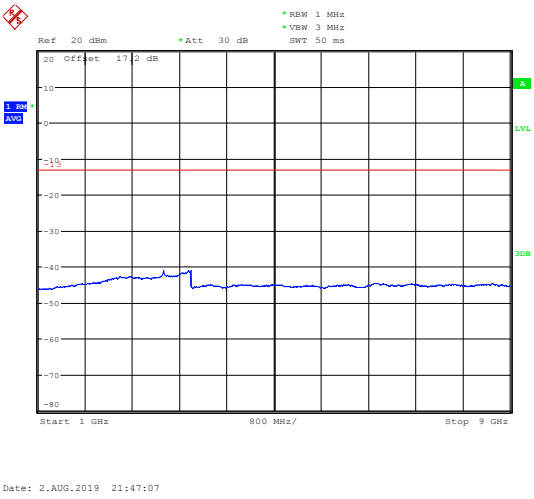
LTE Band 12 10MHz CH- Middle 1GHz~9GHz




LTE Band 12 10MHz CH-High 30MHz~1GHz



LTE Band 12 10MHz CH-High 1GHz~9GHz





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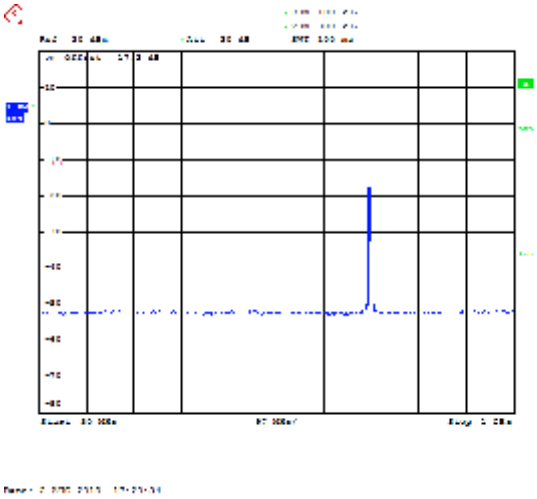
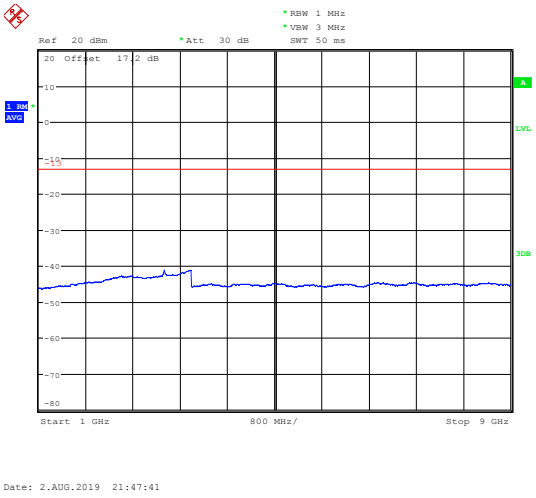
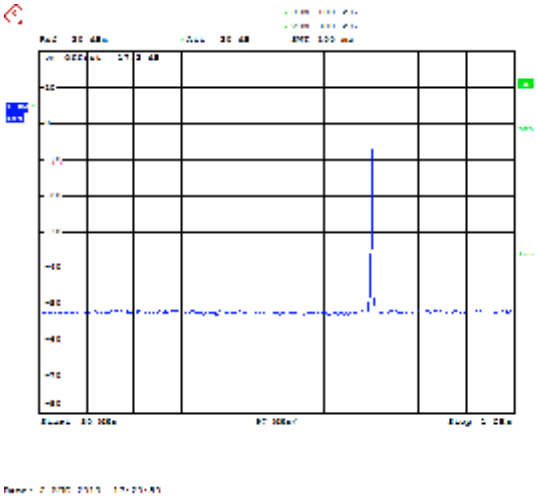
LTE Band 17 5MHz CH-Low 30MHz~1GHz



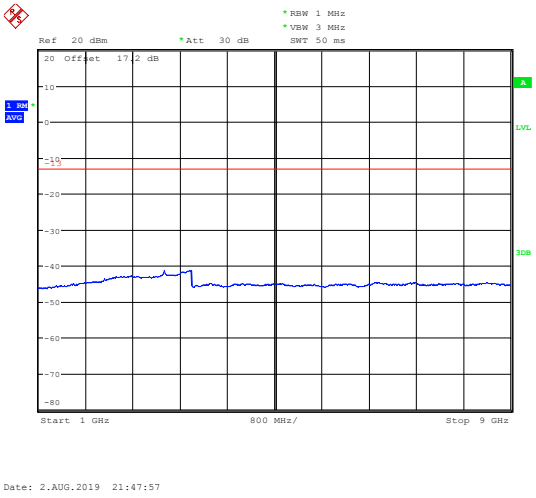
LTE Band 17 5MHz CH-Low 1GHz~9GHz



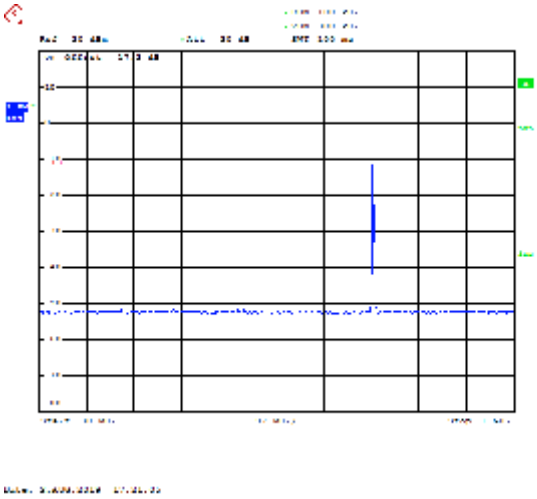

LTE Band 17 5MHz CH-Middle 30MHz~1GHz



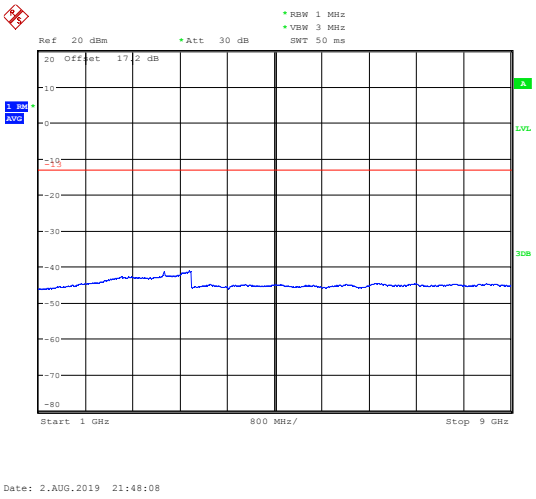
LTE Band 17 5MHz CH-Middle 1GHz~9GHz




LTE Band 17 5MHz CH-High 30MHz~1GHz



LTE Band 17 5MHz CH-High 1GHz~9GHz





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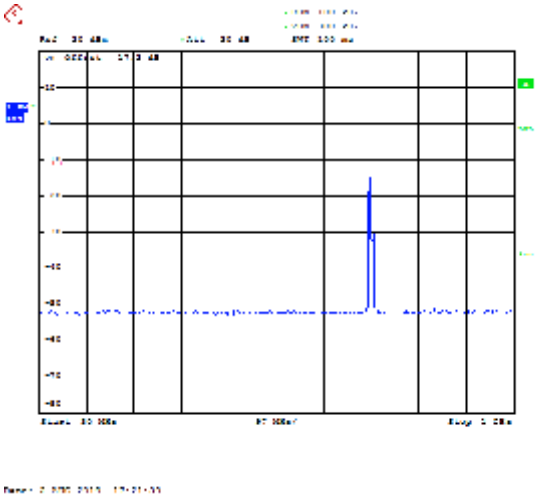
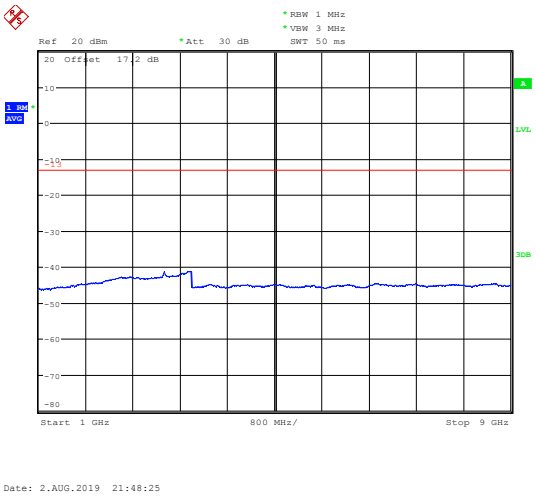
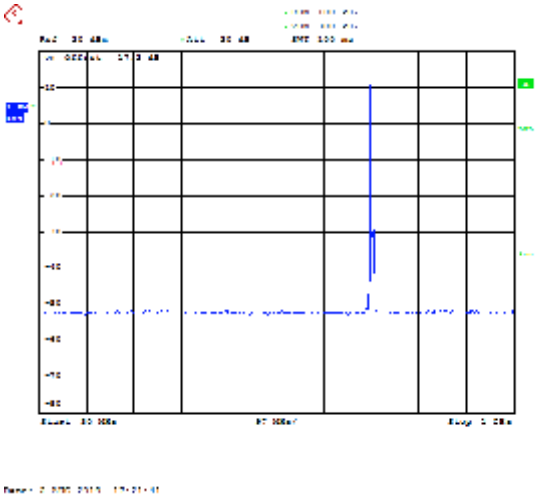
LTE Band 17 10MHz CH-Low 30MHz~1GHz



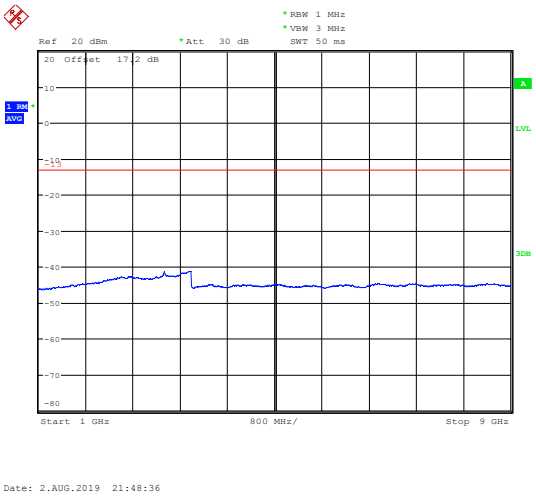
LTE Band 17 10MHz CH-Low 1GHz~9GHz



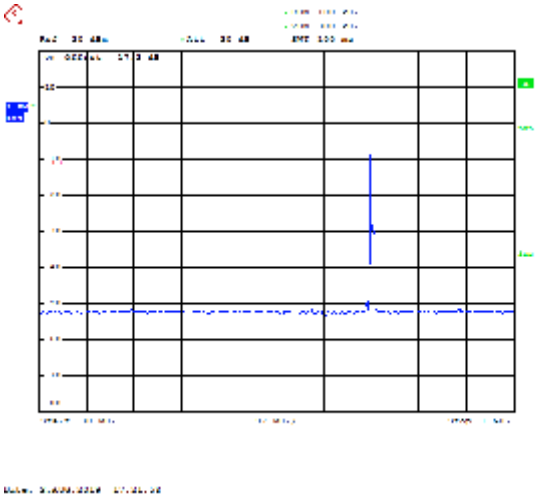

LTE Band 17 10MHz CH-Middle 30MHz~1GHz



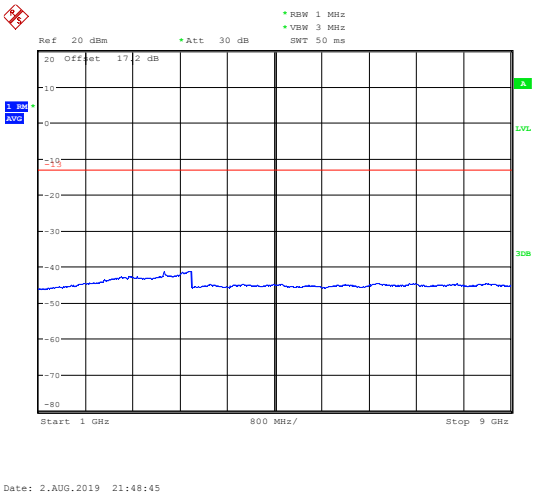
LTE Band 17 10MHz CH-Middle 1GHz~9GHz




LTE Band 17 10MHz CH-High 30MHz~1GHz



LTE Band 17 10MHz CH-High 1GHz~9GHz





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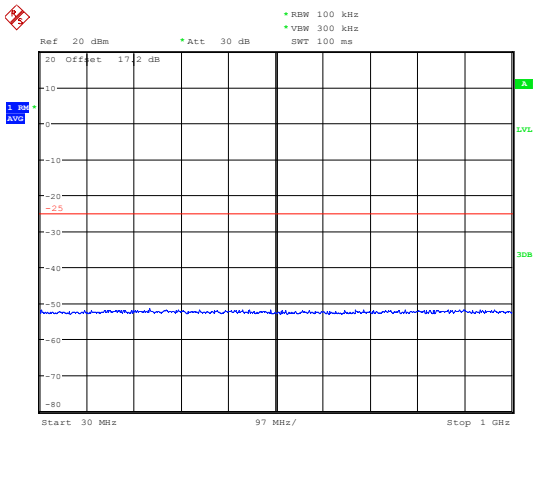
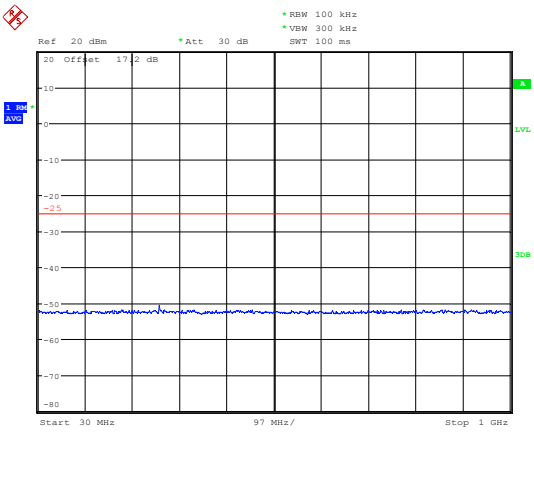
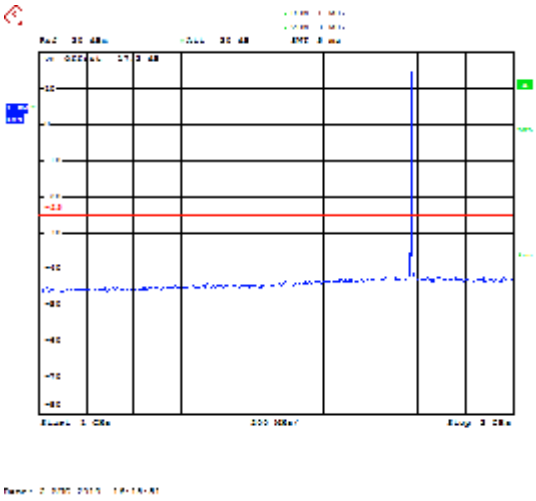
LTE Band 38 5MHz CH-Low 30MHz~1GHz



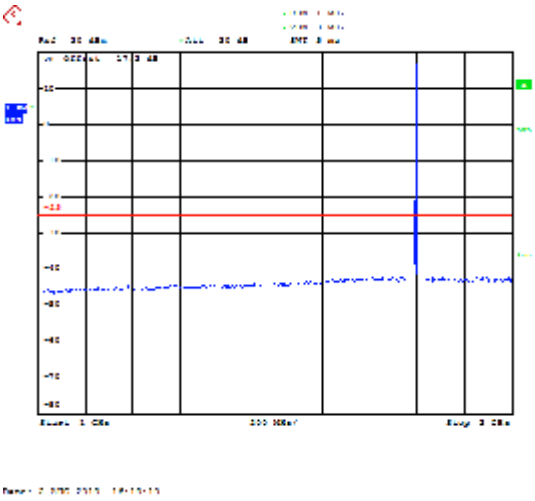

LTE Band 38 5MHz CH-Middle 30MHz~1GHz



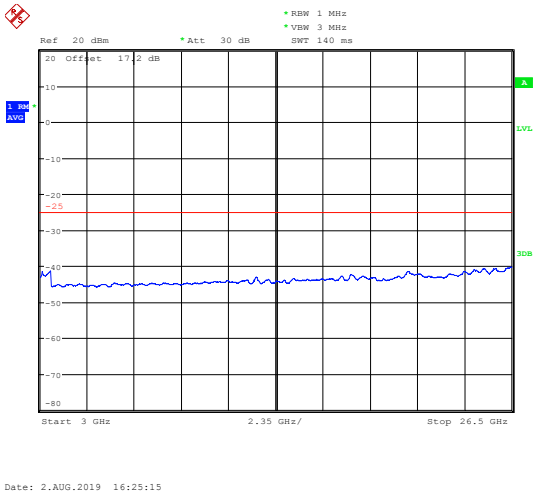

LTE Band 38 5MHz CH-Low 1GHz~3GHz



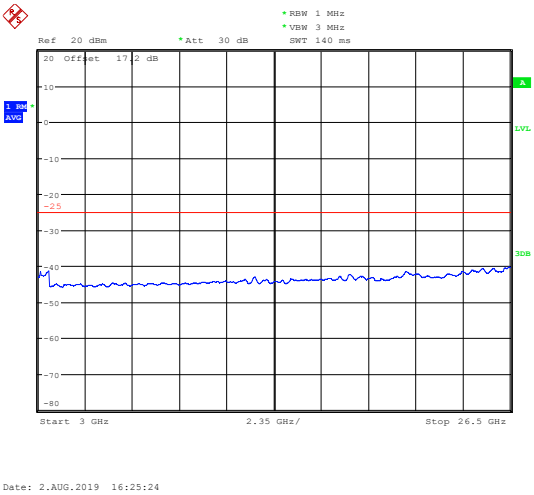
LTE Band 38 5MHz CH-Middle 1GHz~3GHz



LTE Band 38 5MHz CH-Low 3GHz~26.5GHz




LTE Band 38 5MHz CH-Middle 3GHz~26.5GHz





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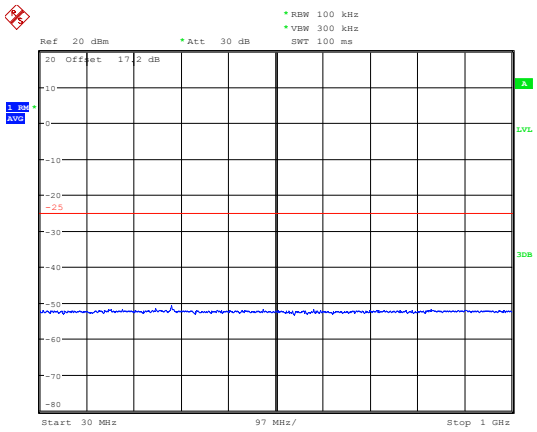
LTE Band 38 5MHz CH-High 30MHz~1GHz

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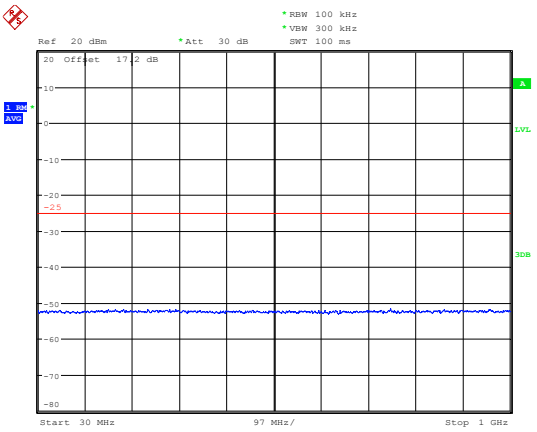
LTE Band 38 10MHz CH-Low 30MHz~1GHz

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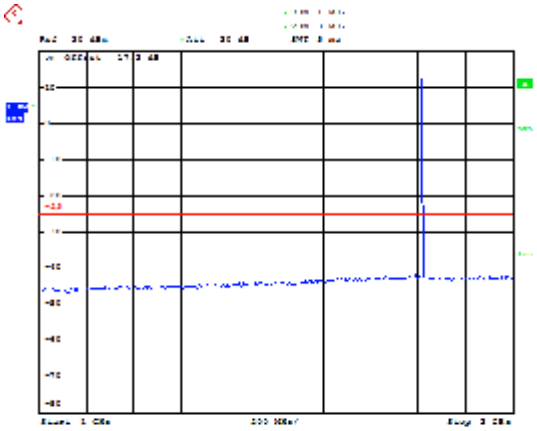
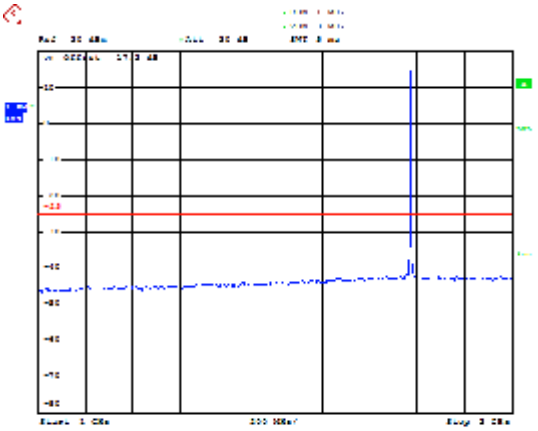
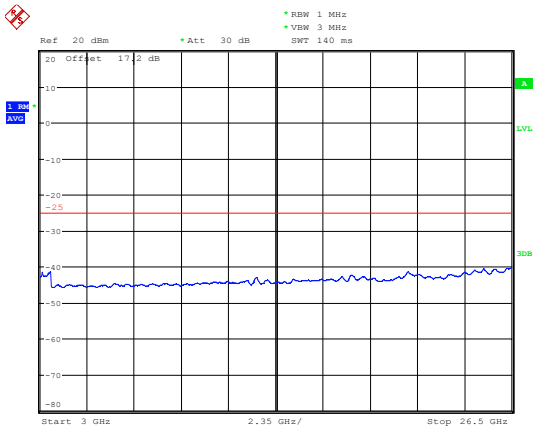
LTE Band 38 5MHz CH-High 1GHz~3GHz



LTE Band 38 10MHz CH-Low 1GHz~3GHz

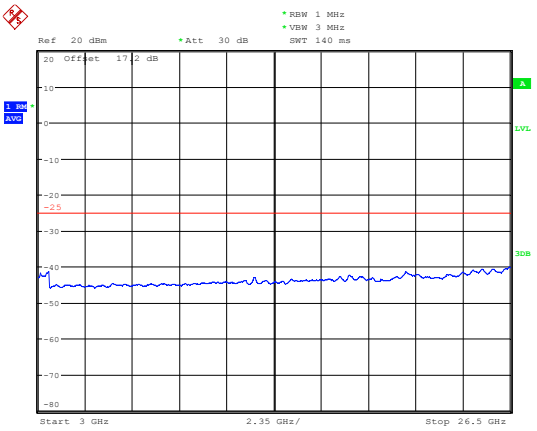


LTE Band 38 5MHz CH-High 3GHz~26.5GHz




Date: 2.AUG.2019 16:25:35

LTE Band 38 10MHz CH-Low 3GHz~26.5GHz

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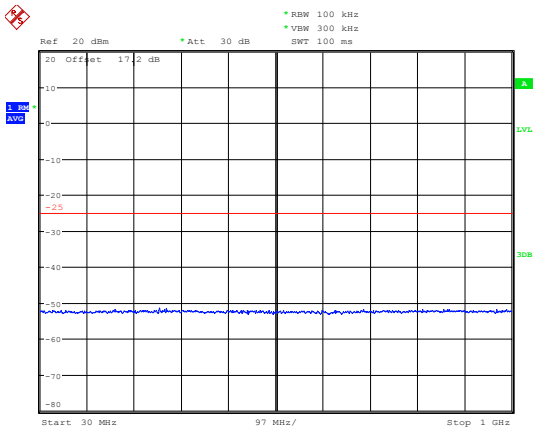
LTE Band 38 10MHz CH-Middle 30MHz~1GHz

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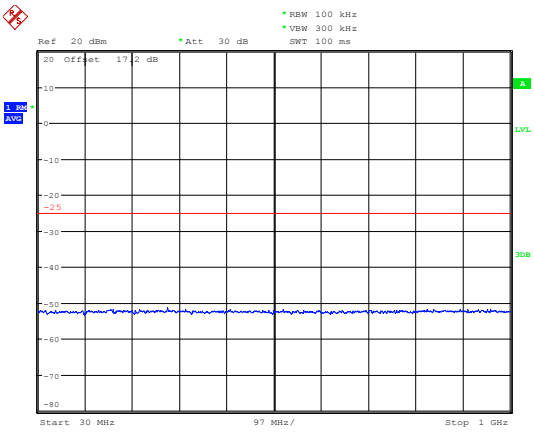
LTE Band 38 10MHz CH-High 30MHz~1GHz

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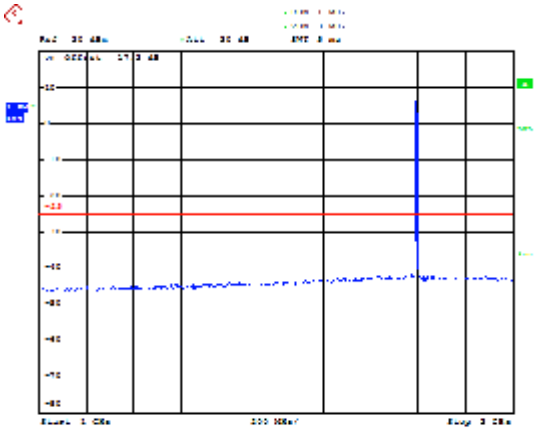
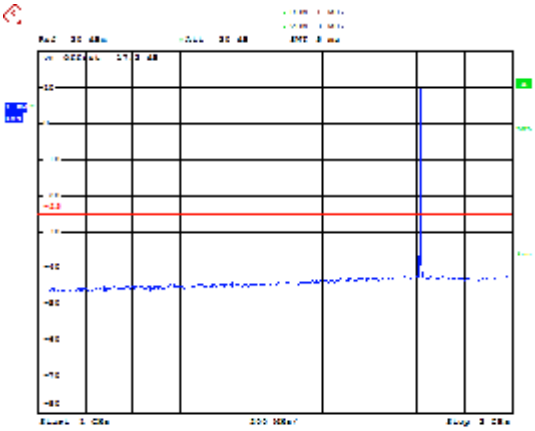
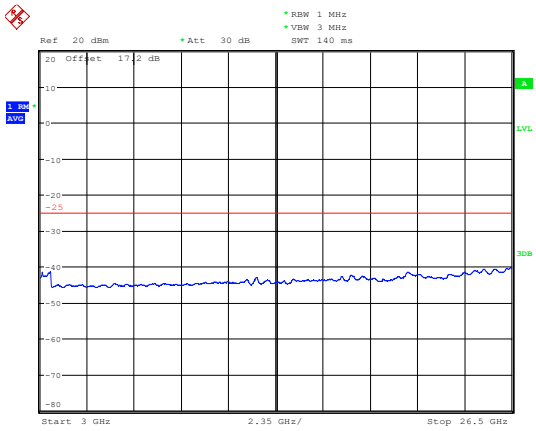
LTE Band 38 10MHz CH-Middle 1GHz~3GHz



LTE Band 38 10MHz CH-High 1GHz~3GHz



LTE Band 38 10MHz CH-Middle 3GHz~26.5GHz

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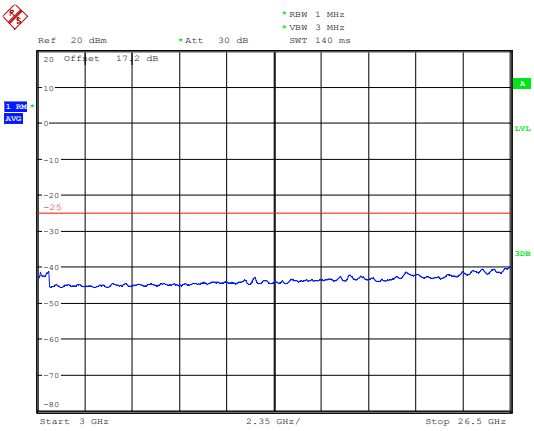
LTE Band 38 10MHz CH-High 3GHz~26.5GHz

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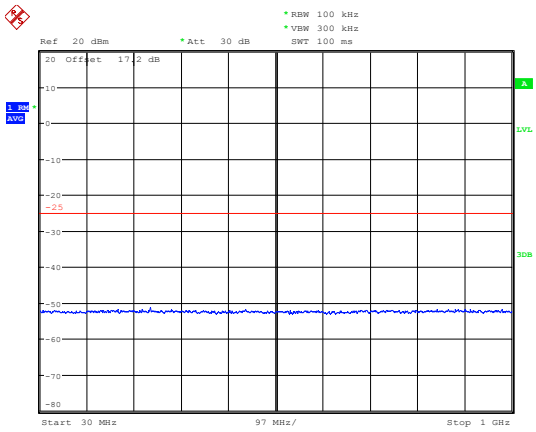
LTE Band 38 15MHz CH-Low 30MHz~1GHz

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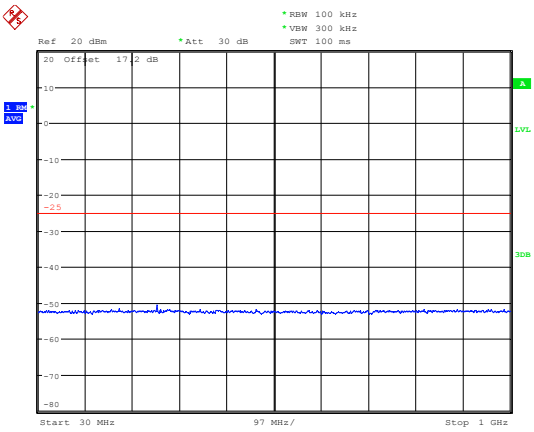
LTE Band 38 15MHz CH-Middle 30MHz~1GHz

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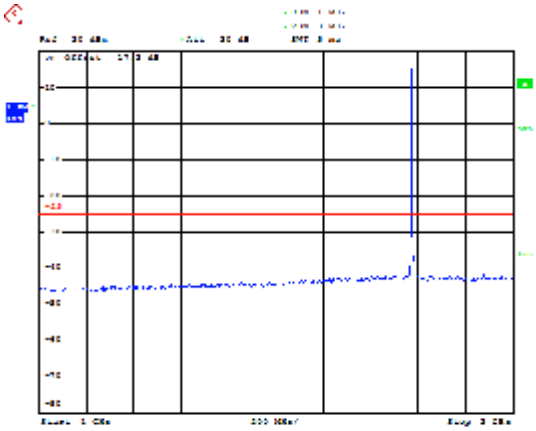
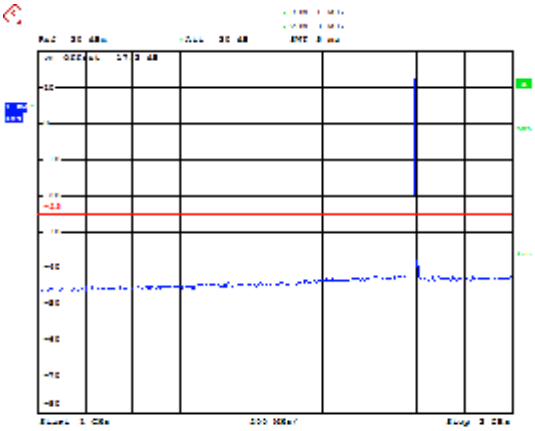
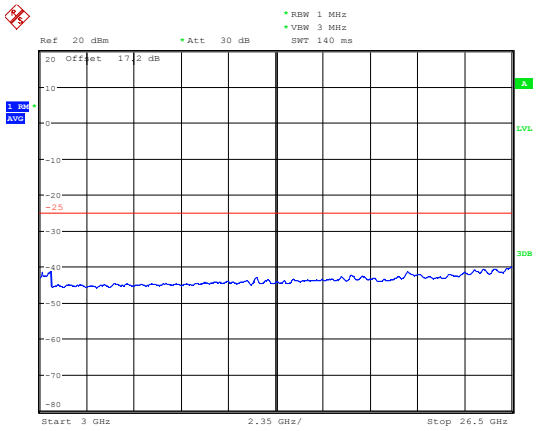
LTE Band 38 15MHz CH-Low 1GHz~3GHz



LTE Band 38 15MHz CH-Middle 1GHz~3GHz



LTE Band 38 15MHz CH-Low 3GHz~26.5GHz

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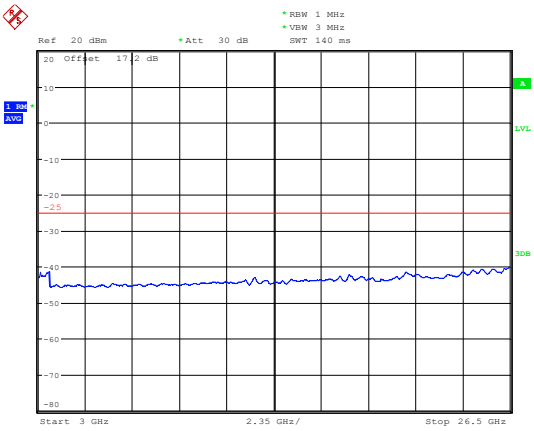
LTE Band 38 15MHz CH-Middle 3GHz~26.5GHz

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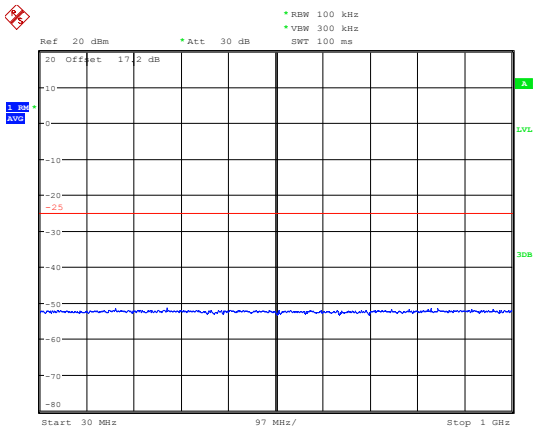
LTE Band 38 15MHz CH-High 30MHz~1GHz

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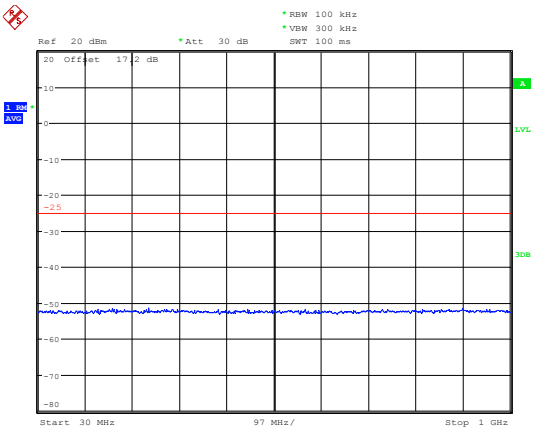
LTE Band 38 20MHz CH-Low 30MHz~1GHz

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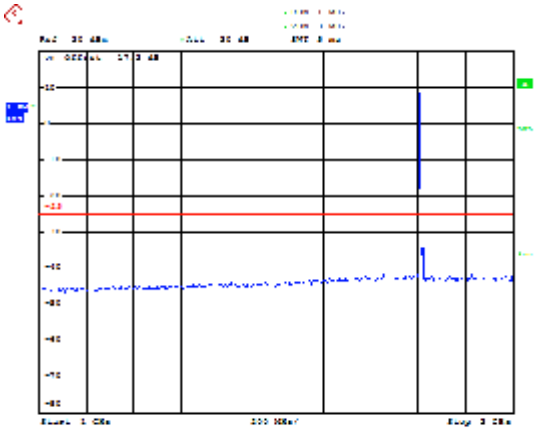
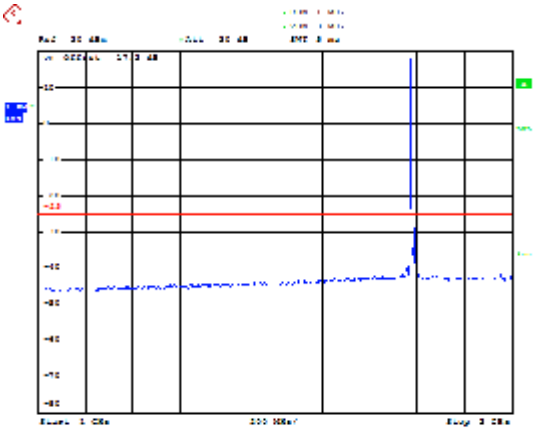
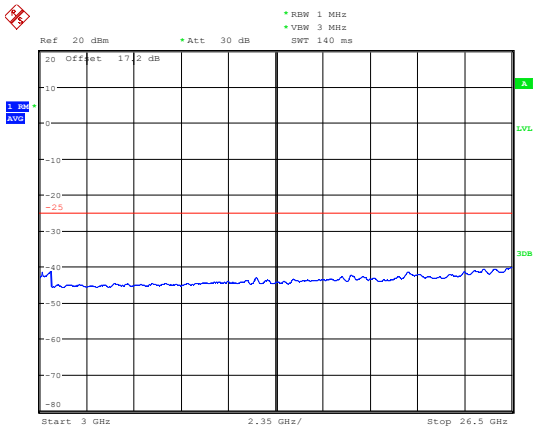
LTE Band 38 15MHz CH-High 1GHz~3GHz



LTE Band 38 20MHz CH-Low 1GHz~3GHz



LTE Band 38 15MHz CH-High 3GHz~26.5GHz

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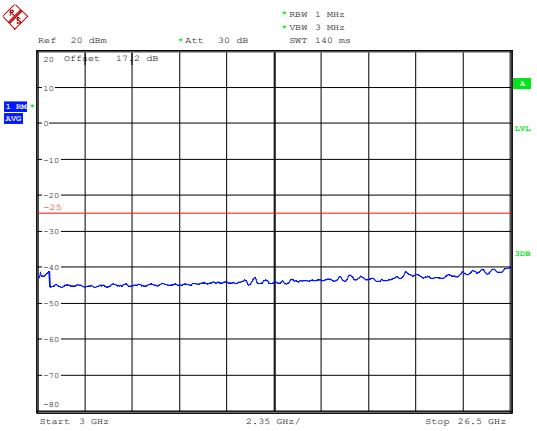
LTE Band 38 20MHz CH-Low 3GHz~26.5GHz

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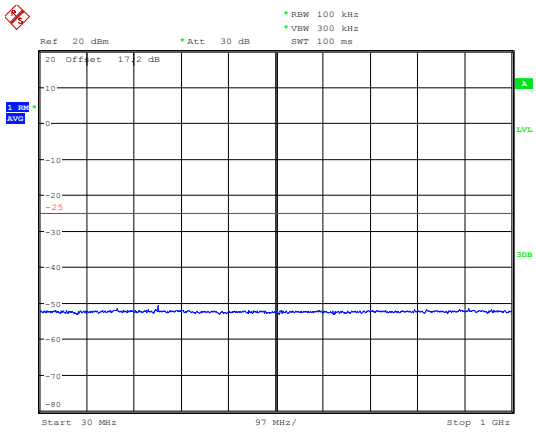
LTE Band 38 20MHz CH-Middle 30MHz~1GHz

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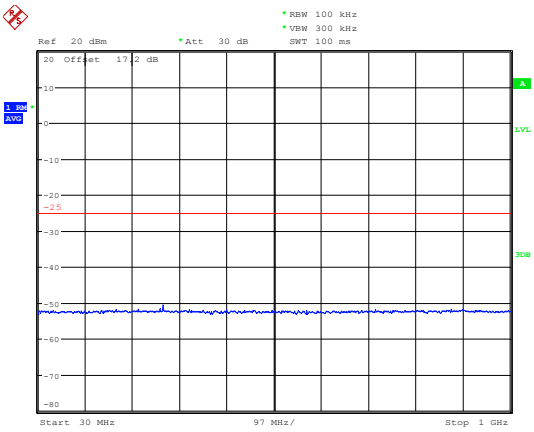
LTE Band 38 20MHz CH-High 30MHz~1GHz

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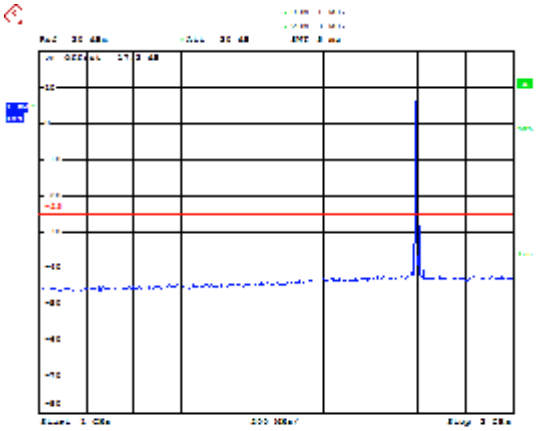
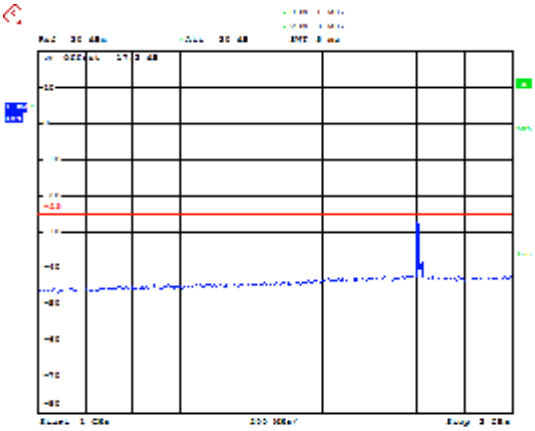
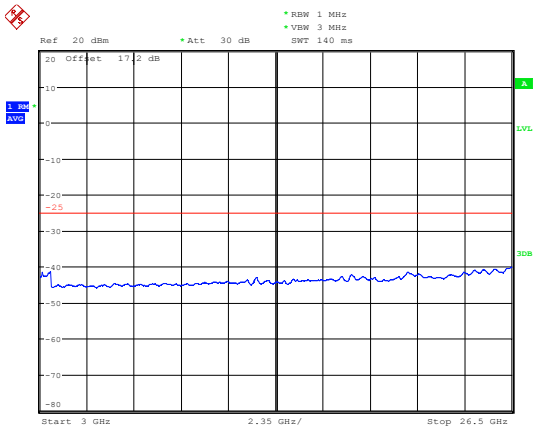
LTE Band 38 20MHz CH-Middle 1GHz~3GHz



LTE Band 38 20MHz CH-High 1GHz~3GHz



LTE Band 38 20MHz CH-Middle 3GHz~26.5GHz

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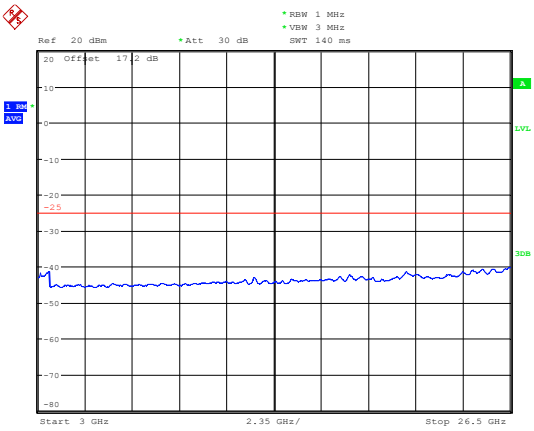
LTE Band 38 20MHz CH-High 3GHz~26.5GHz

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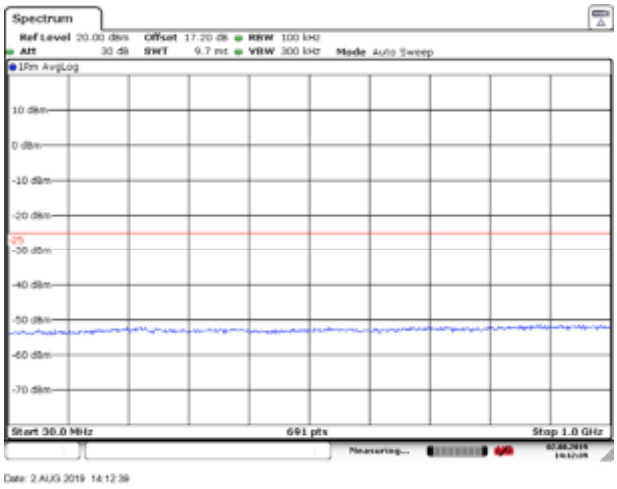
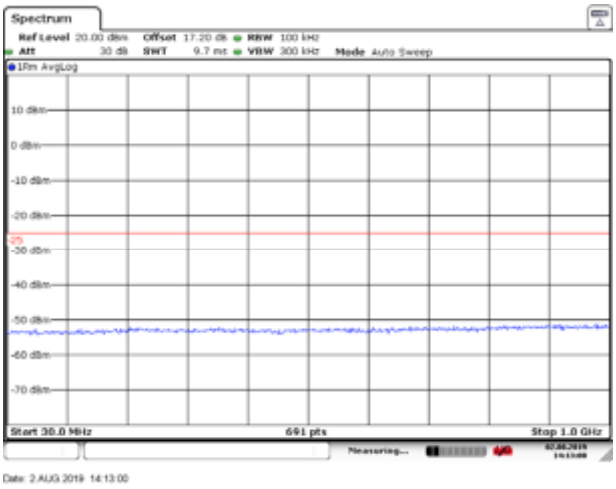
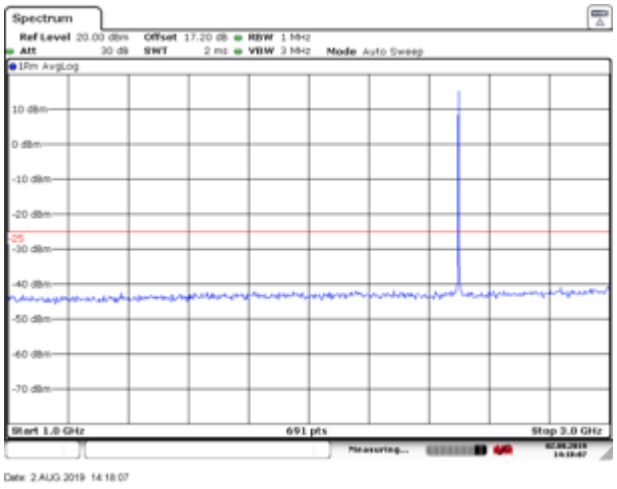
LTE Band 41 5MHz CH-Low 30MHz~1GHz



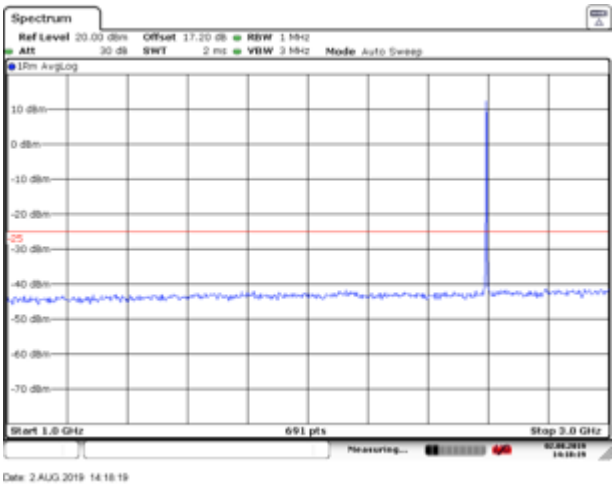

LTE Band 41 5MHz CH-Middle 30MHz~1GHz



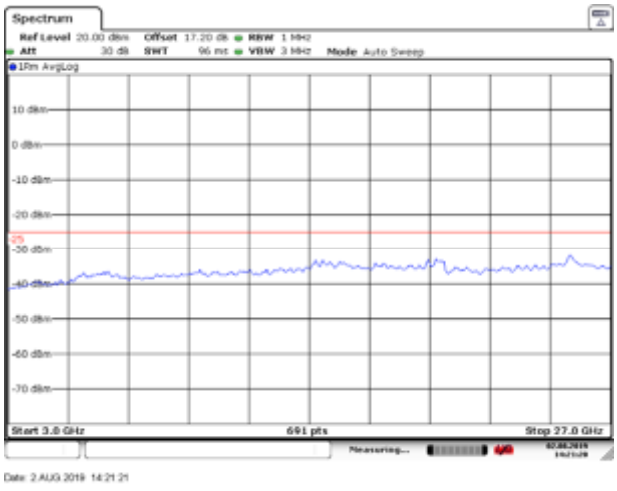

LTE Band 41 5MHz CH Low 1GHz~3GHz



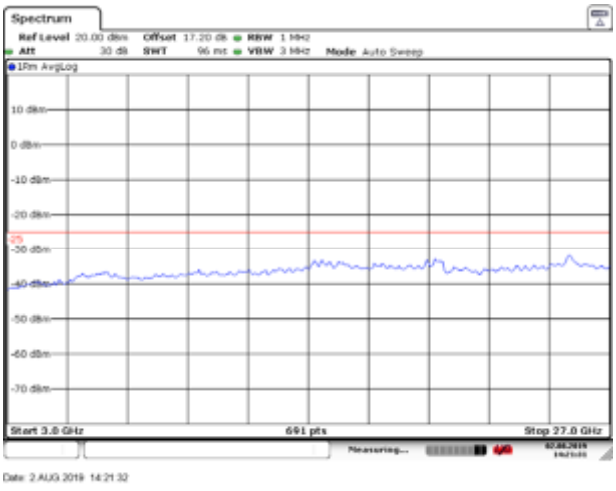

LTE Band 41 5MHz CH-Middle 1GHz~3GHz




LTE Band 41 5MHz CH-Low 3GHz~27GHz




LTE Band 41 5MHz CH-Middle 3GHz~27GHz





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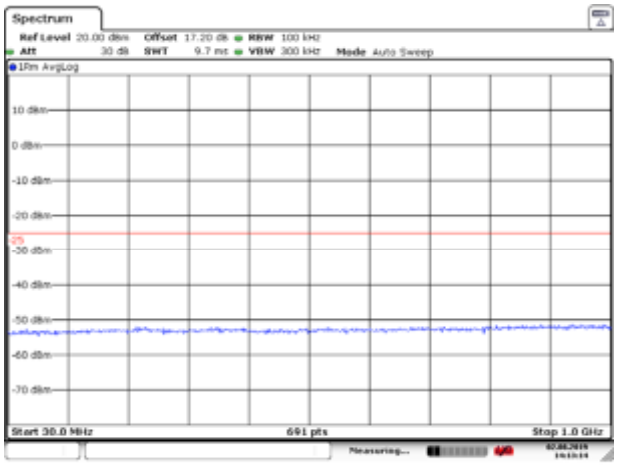
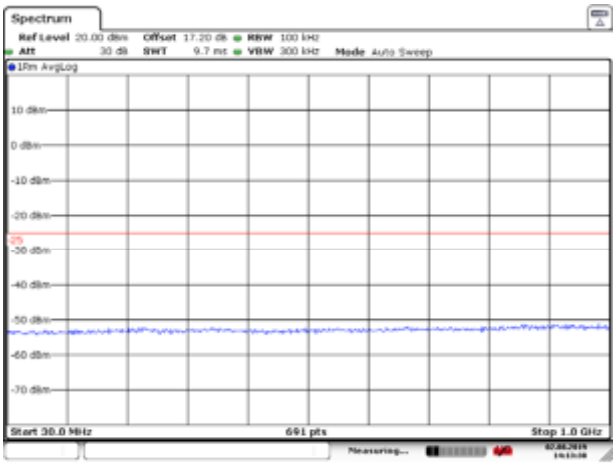
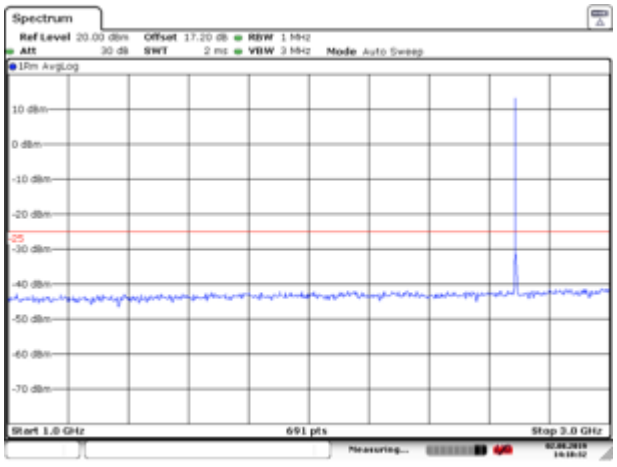
LTE Band 41 5MHz CH-High 30MHz~1GHz



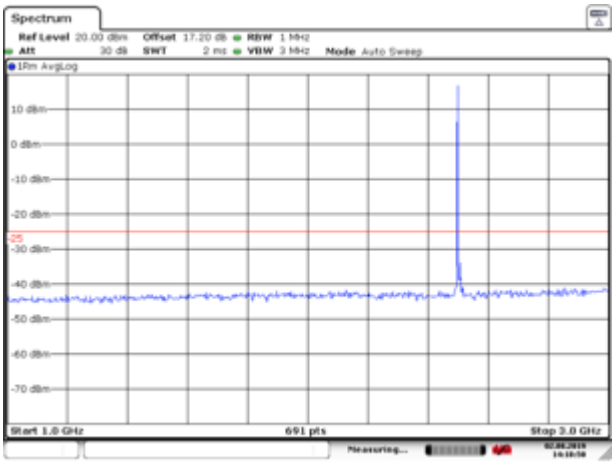

LTE Band 41 10MHz CH-Low 30MHz~1GHz



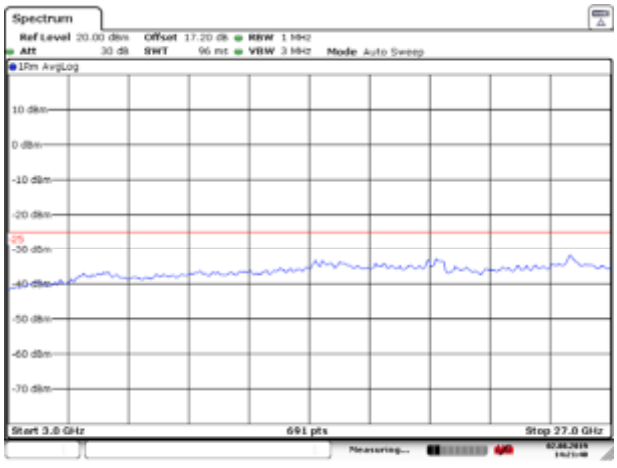

LTE Band 41 5MHz CH-High 1GHz~3GHz



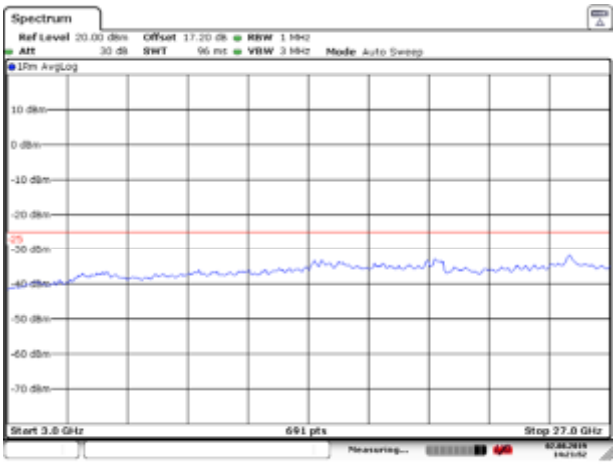

LTE Band 41 10MHz CH-Low 1GHz~3GHz




LTE Band 41 5MHz CH-High 3GHz~27GHz




LTE Band 41 10MHz CH-Low 3GHz~27GHz





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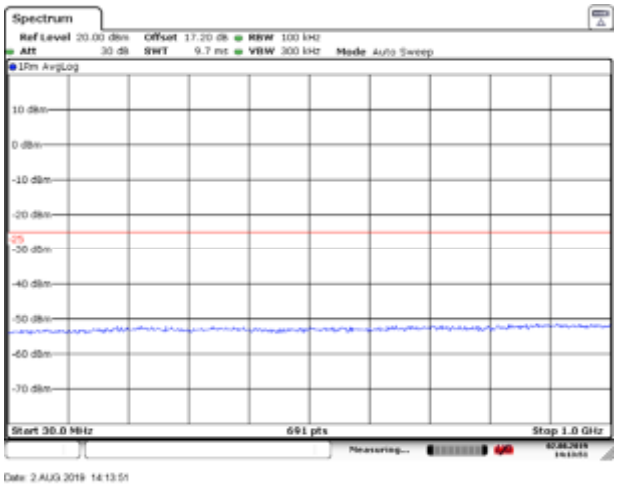
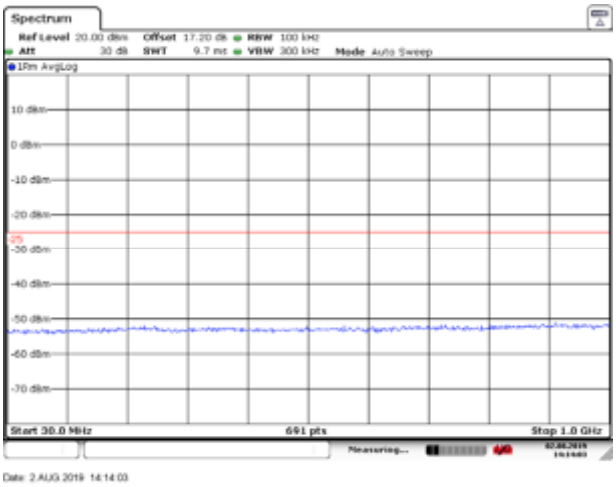
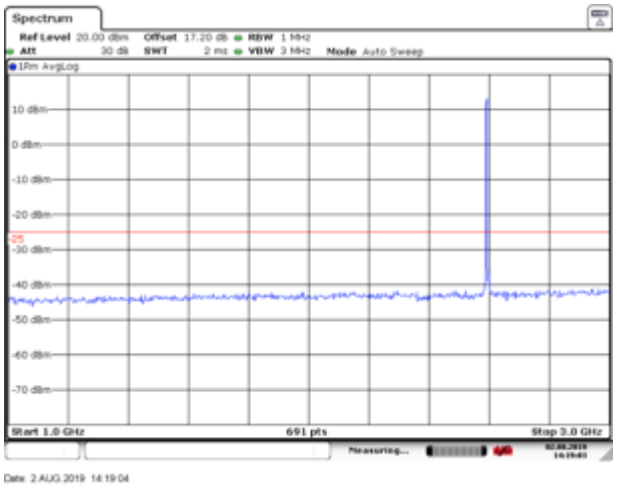
LTE Band 41 10MHz CH-Middle 30MHz~1GHz



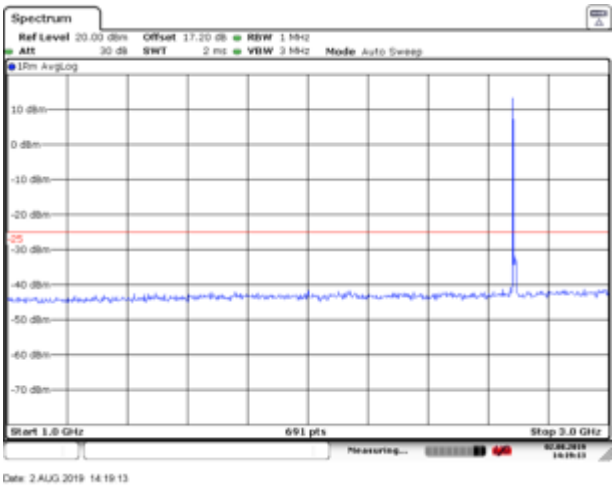

LTE Band 41 10MHz CH-High 30MHz~1GHz



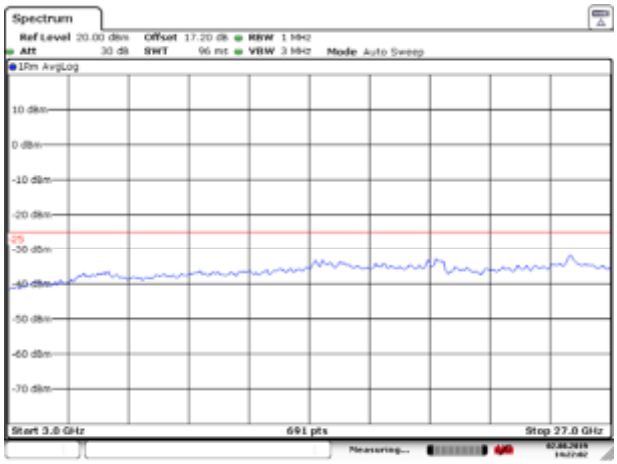

LTE Band 41 10MHz CH-Middle 1GHz~3GHz



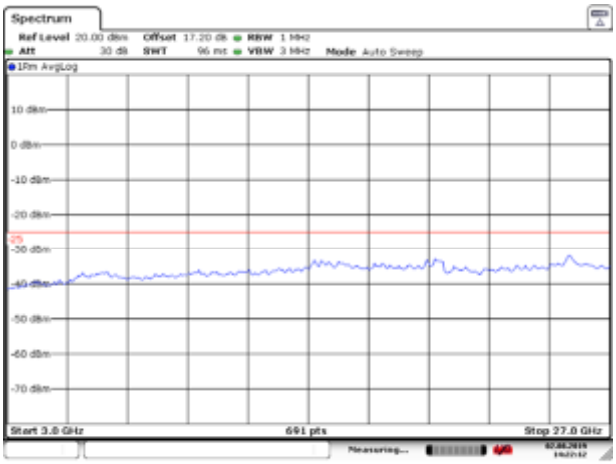

LTE Band 41 10MHz CH-High 1GHz~3GHz




LTE Band 41 10MHz CH-Middle 3GHz~27GHz




LTE Band 4110MHz CH-High 3GHz~27GHz





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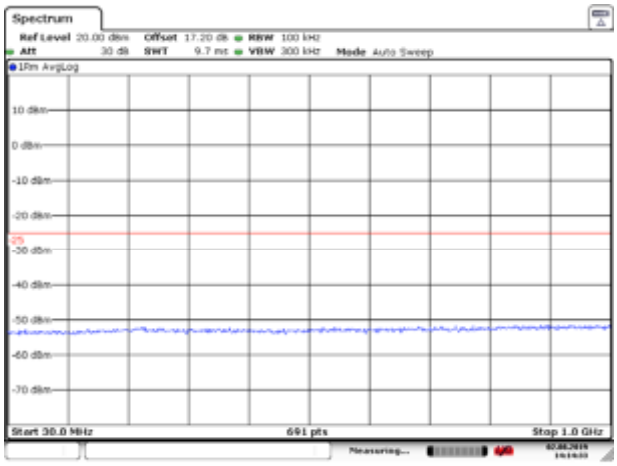
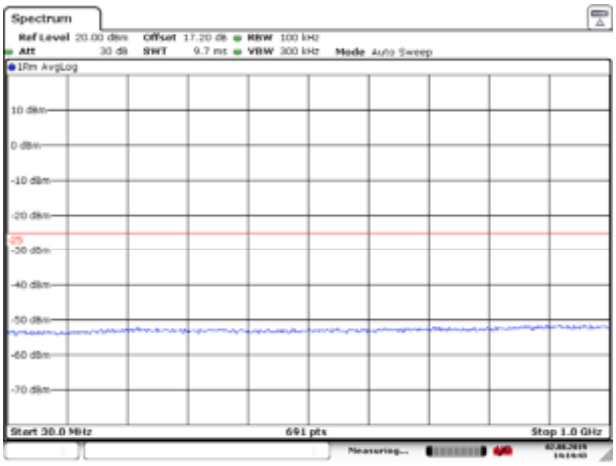
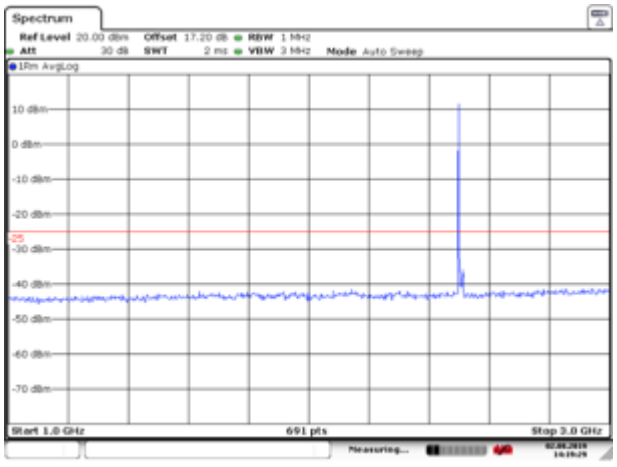
LTE Band 41 15MHz CH-Low 30MHz~1GHz



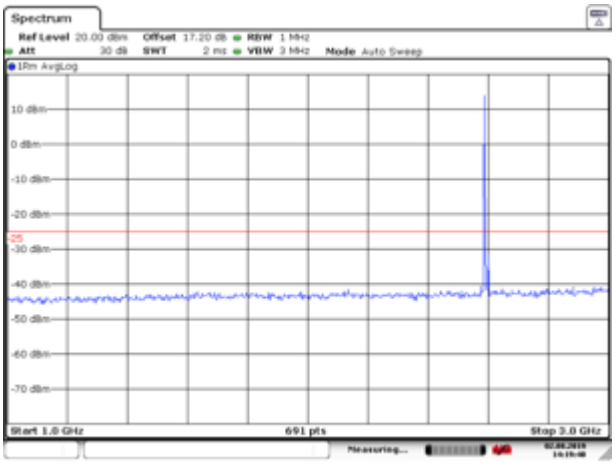

LTE Band 41 15MHz CH-Middle 30MHz~1GHz



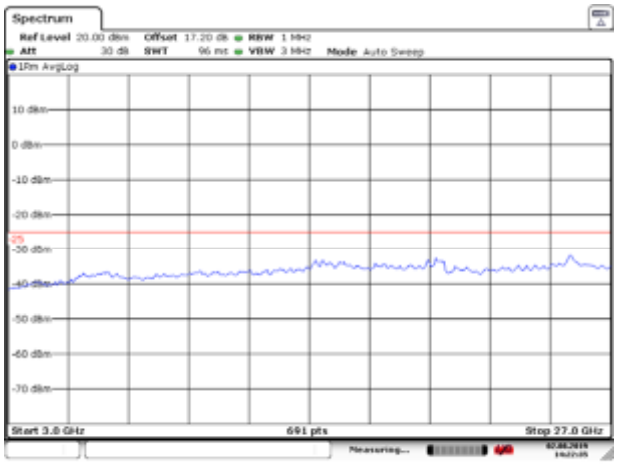

LTE Band 41 15MHz CH-Low 1GHz~3GHz



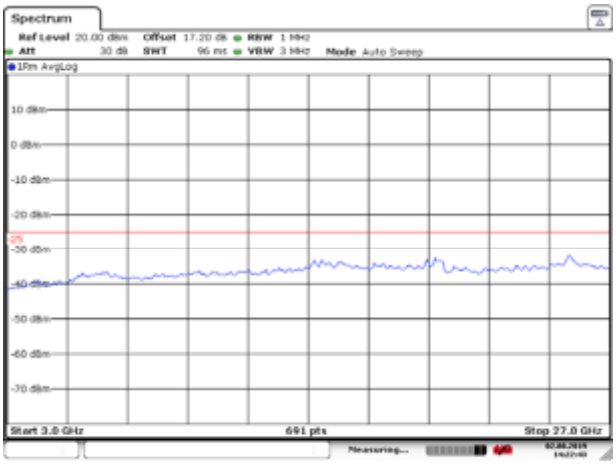

LTE Band 41 15MHz CH-Middle 1GHz~3GHz




LTE Band 41 15MHz CH-Low 3GHz~27GHz




LTE Band 41 15MHz CH-Middle 3GHz~27GHz





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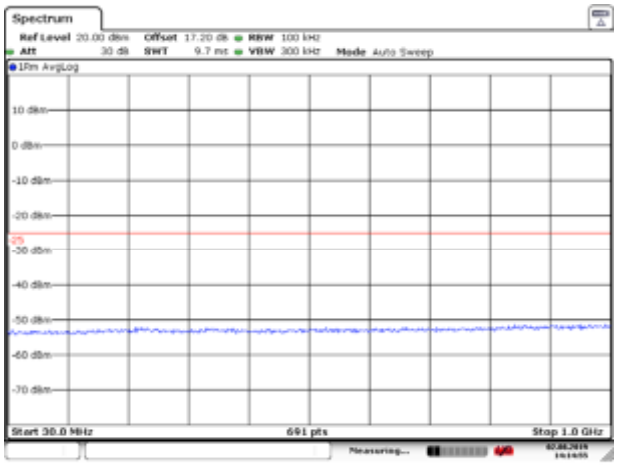
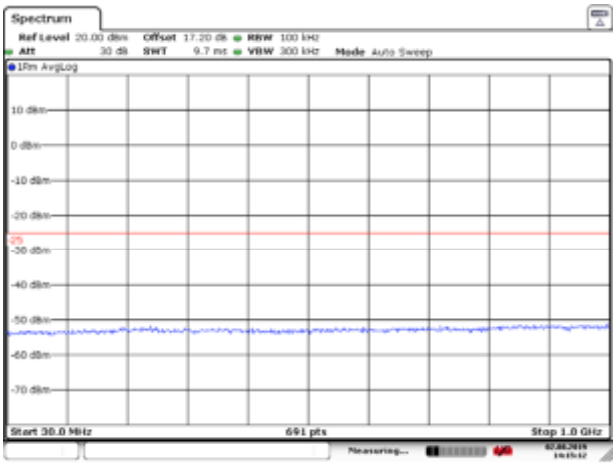
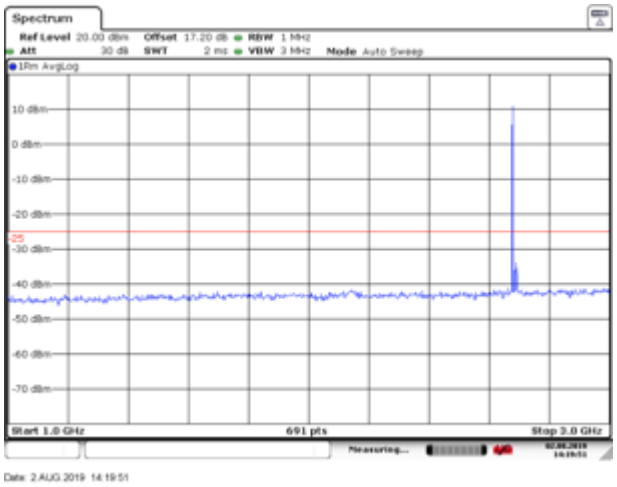
LTE Band 41 15MHz CH-High 30MHz~1GHz



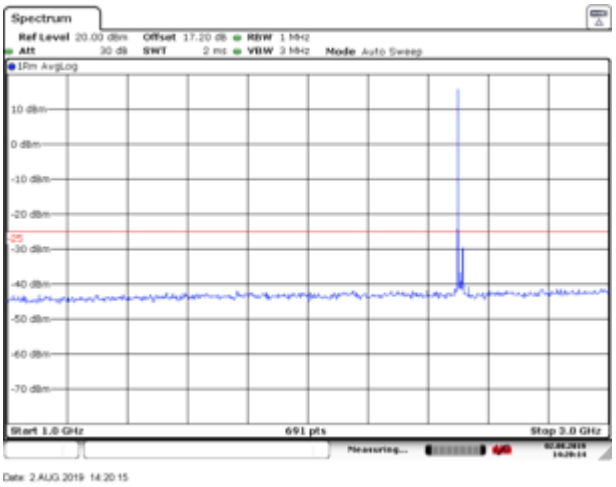

LTE Band 41 20MHz CH-Low 30MHz~1GHz



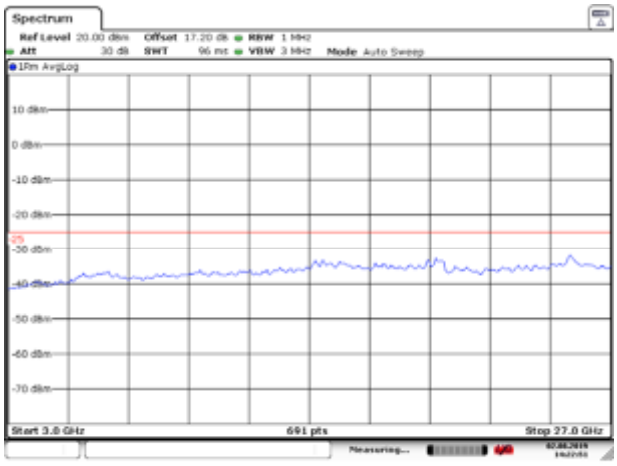

LTE Band 41 15MHz CH-High 1GHz~3GHz



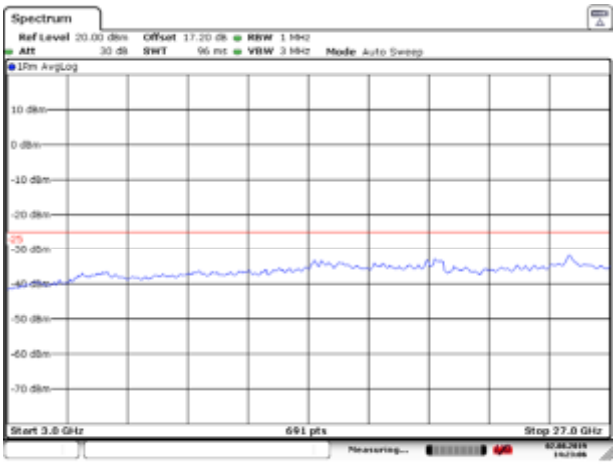

LTE Band 41 20MHz CH-Low 1GHz~3GHz




LTE Band 41 15MHz CH-High 3GHz~27GHz




LTE Band 41 20MHz CH-Low 3GHz~27GHz





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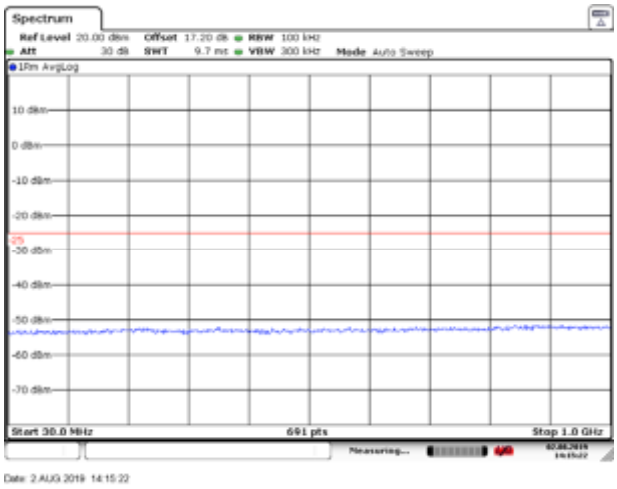
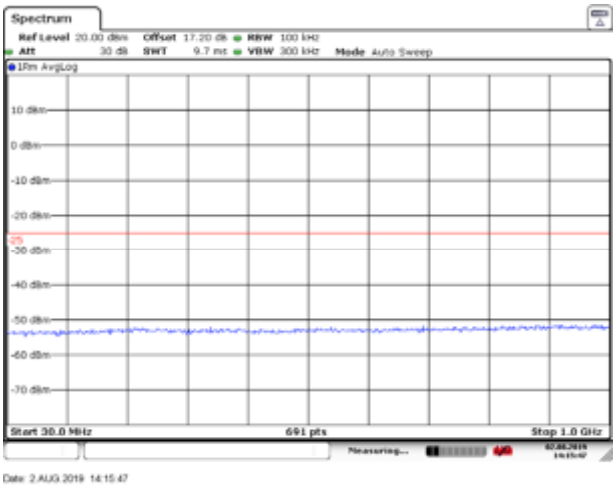
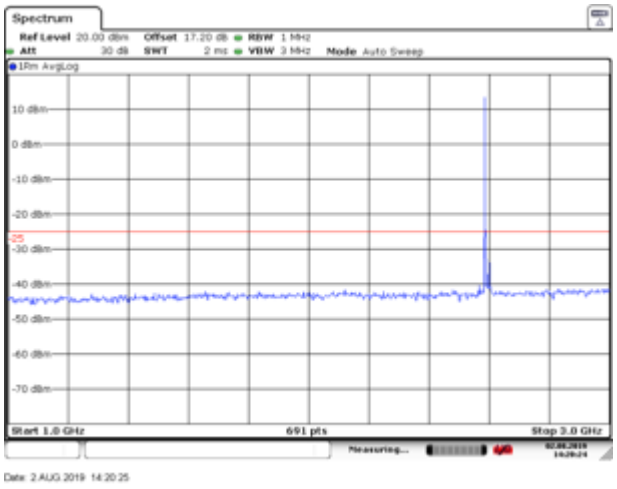
LTE Band 41 20MHz CH-Middle 30MHz~1GHz



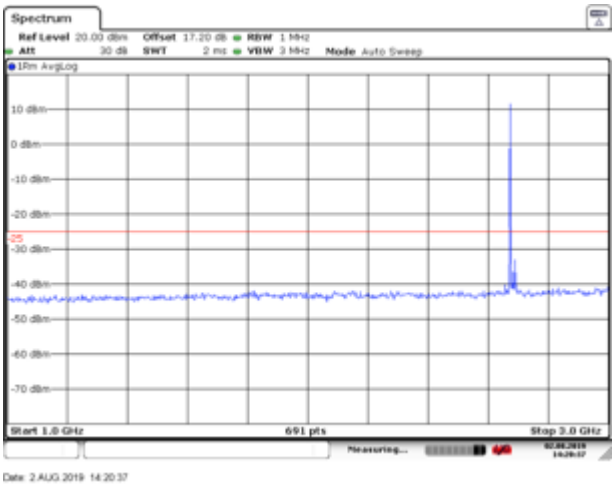

LTE Band 41 20MHz CH-High 30MHz~1GHz



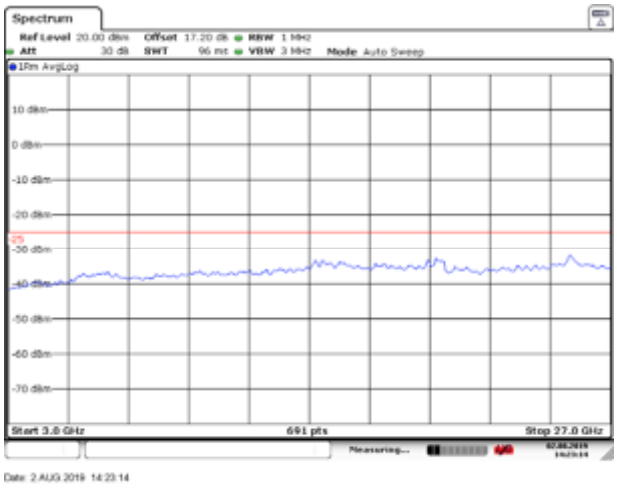

LTE Band 41 20MHz CH-Middle 1GHz~3GHz



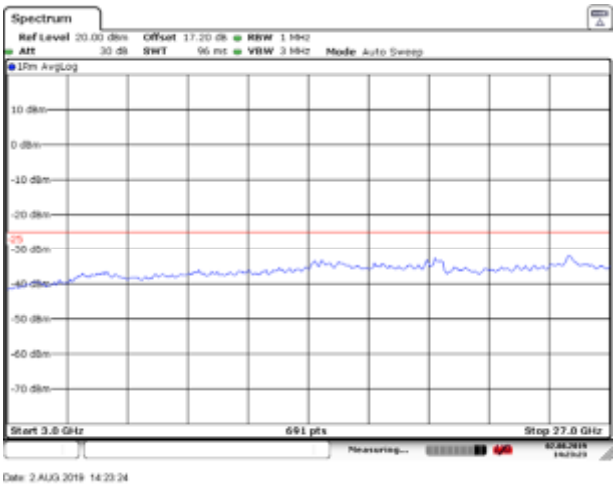

LTE Band 41 20MHz CH-High 1GHz~3GHz




LTE Band 41 20MHz CH-Middle 3GHz~27GHz




LTE Band 41 20MHz CH-High 3GHz~27GHz





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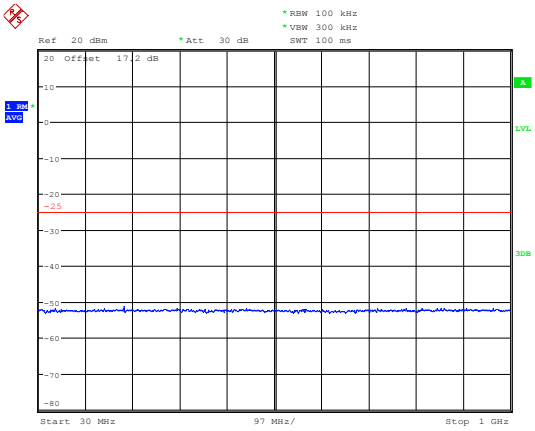
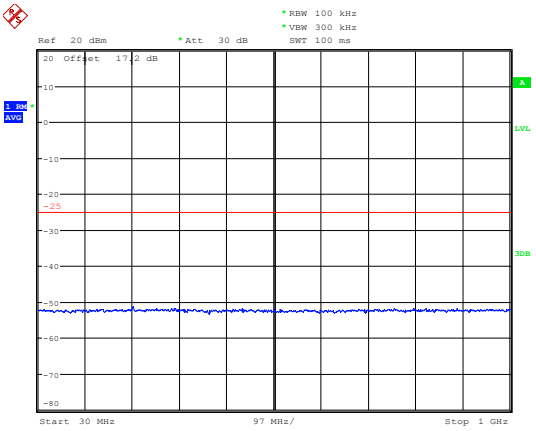
CA-7C 20MHz+10MHz CH-Low QPSK
30MHz~1GHz



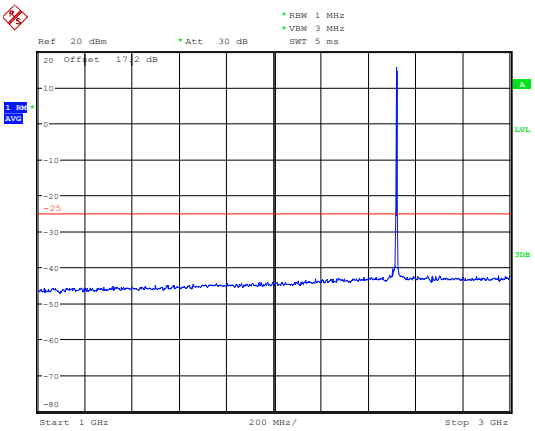

Date: 5.AUG.2019 18:55:34

CA-7C 20MHz+10MHz CH-Middle QPSK
30MHz~1GHz



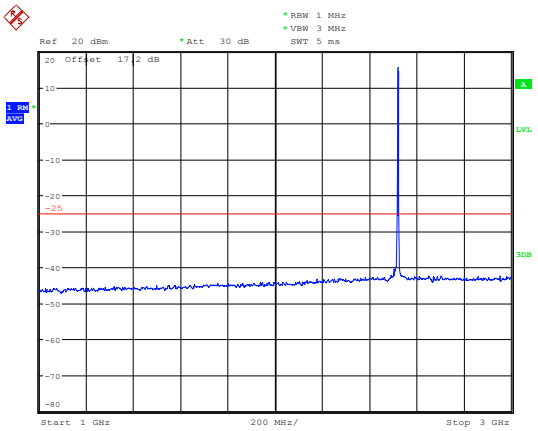

Date: 5.AUG.2019 19:21:20

CA-7C 20MHz+10MHz CH-Low QPSK
1GHz~3GHz



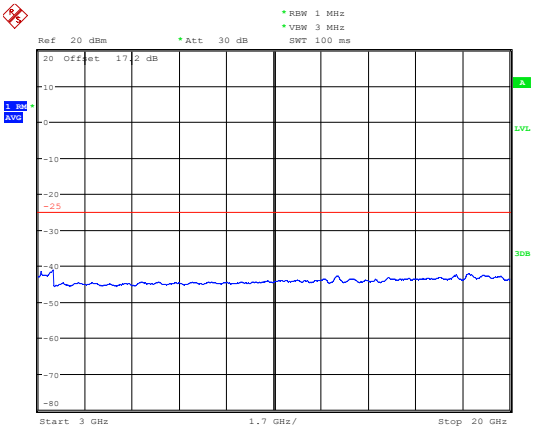

Date: 5.AUG.2019 18:57:25

CA-7C 20MHz+10MHz CH-Middle QPSK
1GHz~3GHz



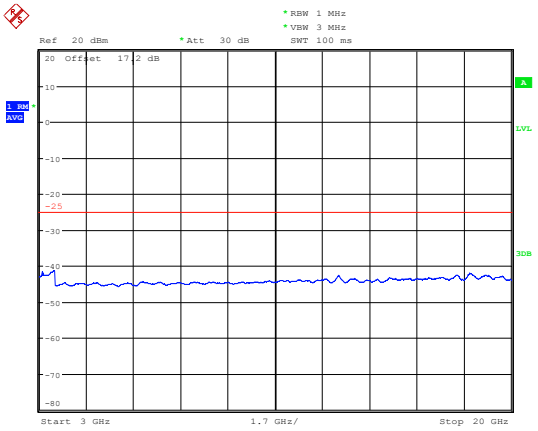

Date: 5.AUG.2019 18:57:25

CA-7C 20MHz+10MHz CH-Low QPSK
3GHz~26GHz




Date: 5.AUG.2019 18:58:22

CA-7C 20MHz+10MHz CH-Middle QPSK
3GHz~26GHz




Date: 5.AUG.2019 19:19:37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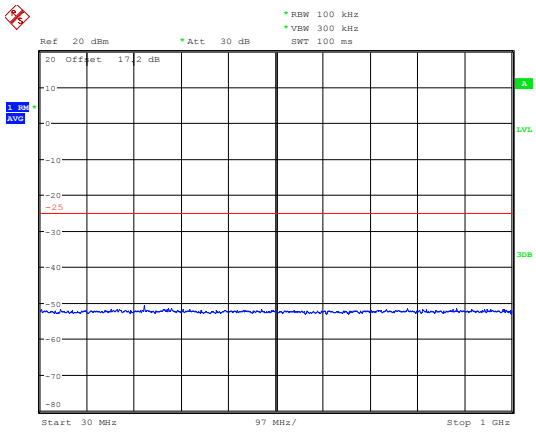
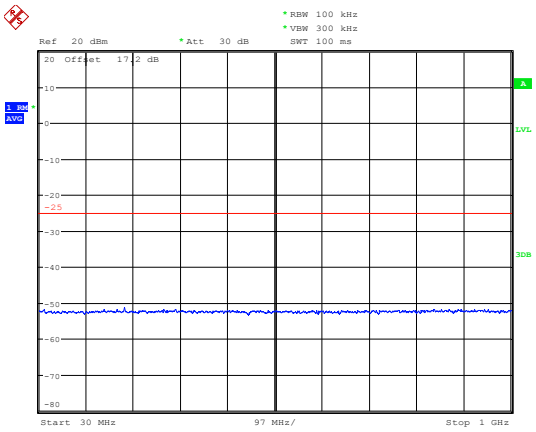
CA-7C 20MHz+10MHz CH-High QPSK
30MHz~1GHz



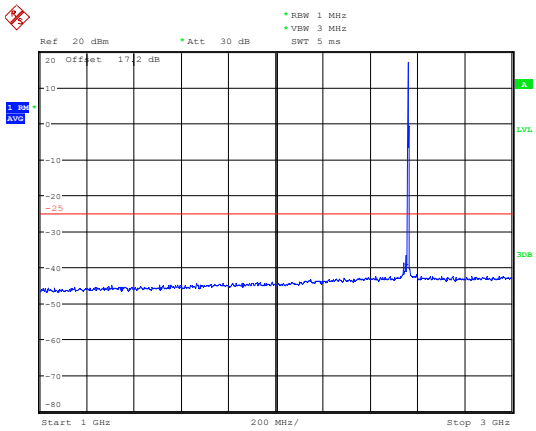

Date: 5.AUG.2019 19:25:43

CA-7C 20MHz+10MHz CH-Low 16QAM
30MHz~1GHz



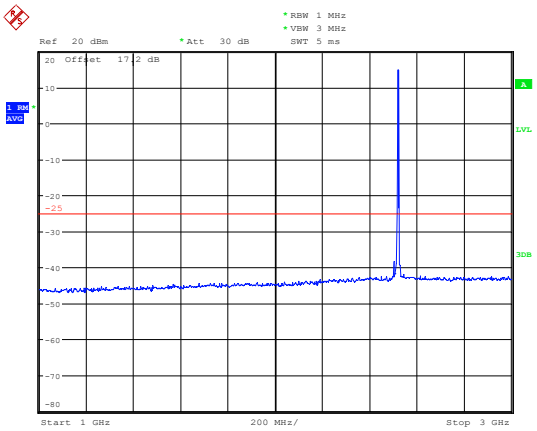

Date: 5.AUG.2019 18:56:04

CA-7C 20MHz+10MHzCH-High QPSK
1GHz~3GHz



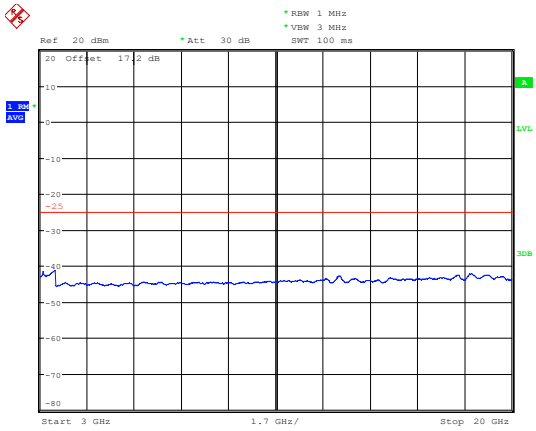

Date: 5.AUG.2019 19:26:58

CA-7C 20MHz+10MHz CH-Low 16QAM
1GHz~3GHz



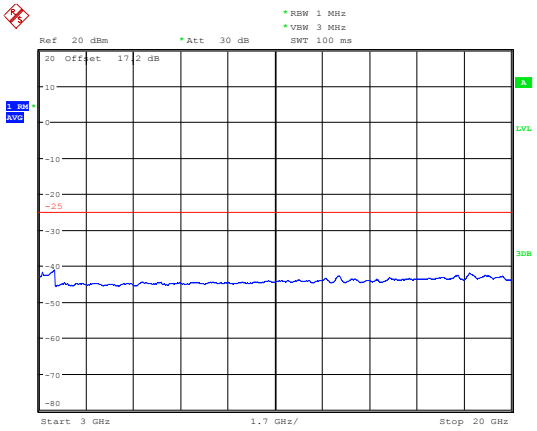

Date: 5.AUG.2019 18:57:42

CA-7C 20MHz+10MHz CH-High QPSK
3GHz~26GHz




Date: 5.AUG.2019 19:27:46

CA-7C 20MHz+10MHz CH-Low 16QAM
3GHz~26GHz




Date: 5.AUG.2019 18:58:35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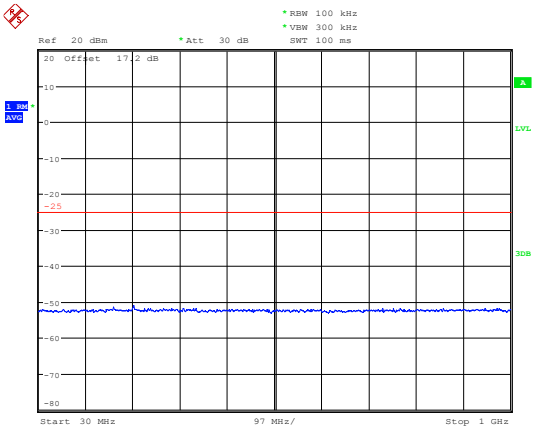
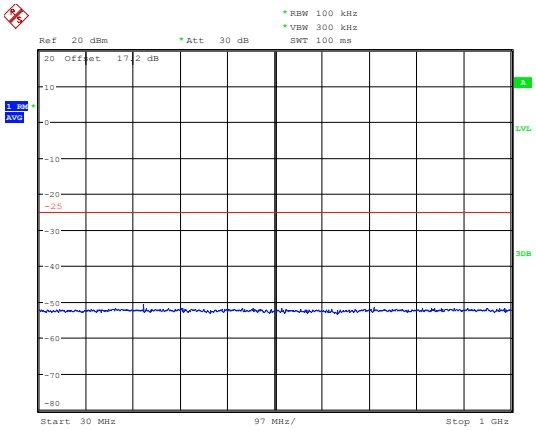
CA-7C 20MHz+10MHz CH-Middle 16QAM
30MHz~1GHz



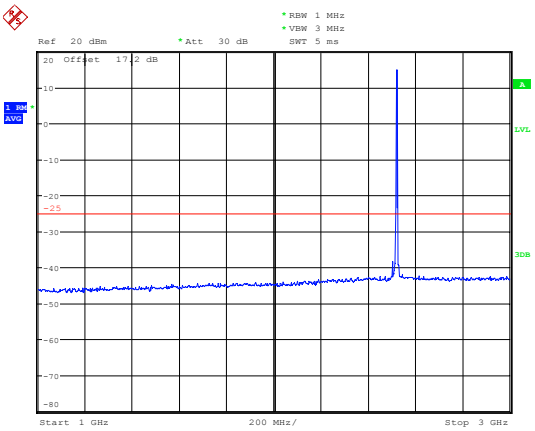

Date: 5.AUG.2019 19:22:32

CA-7C 20MHz+10MHz CH- High 16QAM
30MHz~1GHz



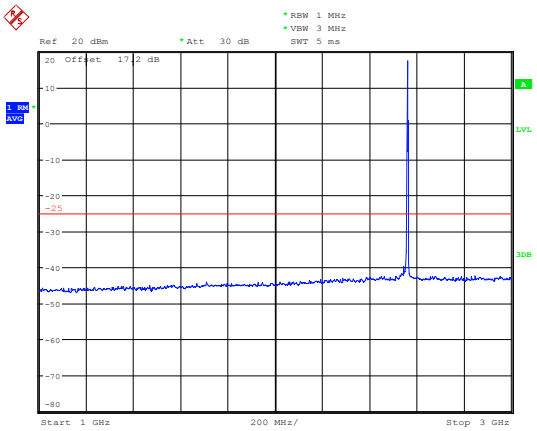

Date: 5.AUG.2019 19:26:10

CA-7C 20MHz+10MHz CH-Middle 16QAM
1GHz~3GHz



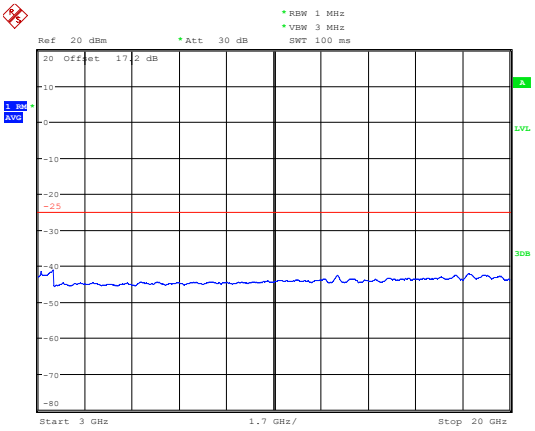

Date: 5.AUG.2019 18:57:42

CA-7C 20MHz+10MHz CH- High 16QAM
1GHz~3GHz



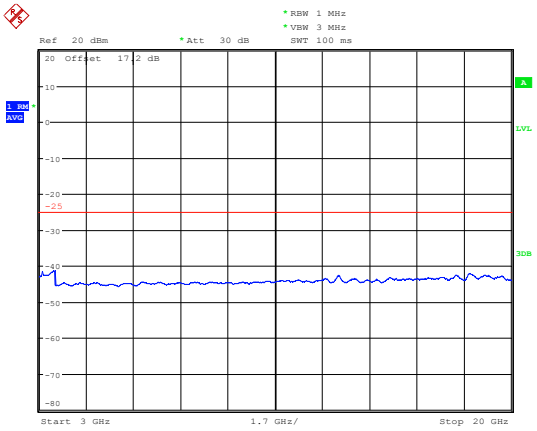

Date: 5.AUG.2019 19:27:10

CA-7C 20MHz+10MHz CH-Middle 16QAM
3GHz~26GHz




Date: 5.AUG.2019 19:19:46

CA-7C 20MHz+10MHz CH- High 16QAM
3GHz~26GHz




Date: 5.AUG.2019 19:28:17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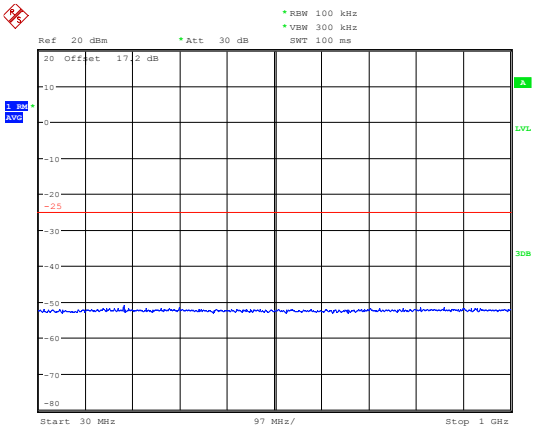
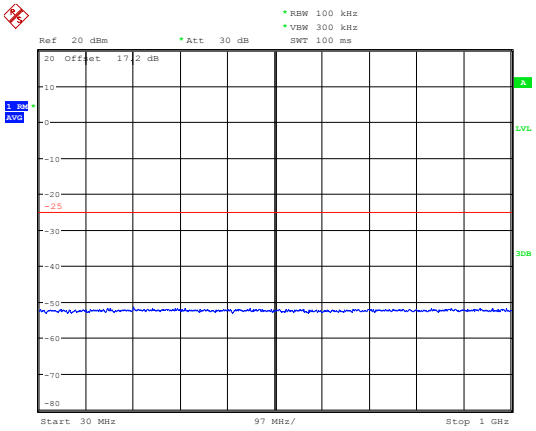
CA-7C 20MHz+10MHz CH-Low 64QAM
30MHz~1GHz



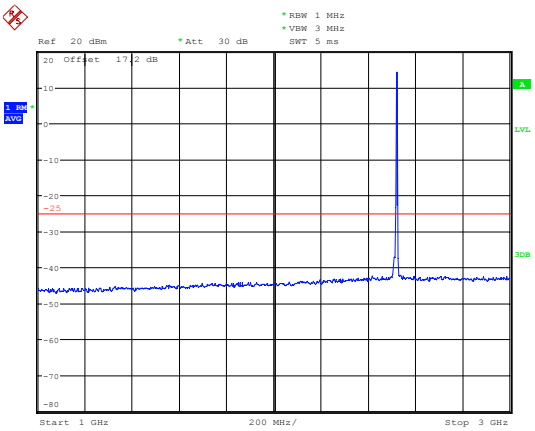

Date: 5.AUG.2019 18:56:17

CA-7C 20MHz+10MHz CH-Middle 64QAM
30MHz~1GHz



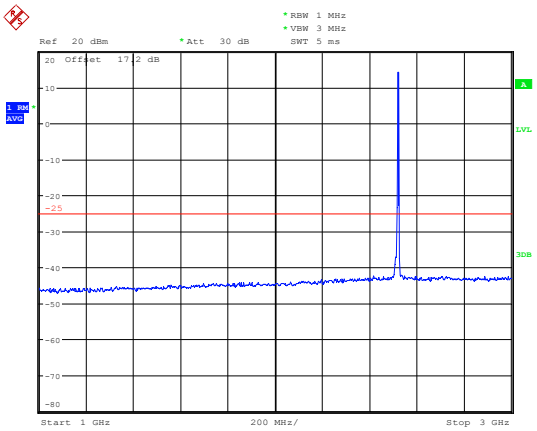

Date: 5.AUG.2019 19:22:50

CA-7C 20MHz+10MHz CH-Low 64QAM
1GHz~3GHz



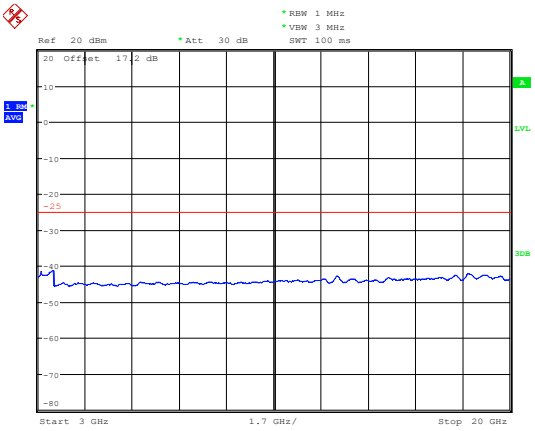

Date: 5.AUG.2019 18:58:04

CA-7C 20MHz+10MHz CH-Middle 64QAM
1GHz~3GHz




Date: 5.AUG.2019 18:58:04

CA-7C 20MHz+10MHz CH-Low 64QAM
3GHz~26GHz

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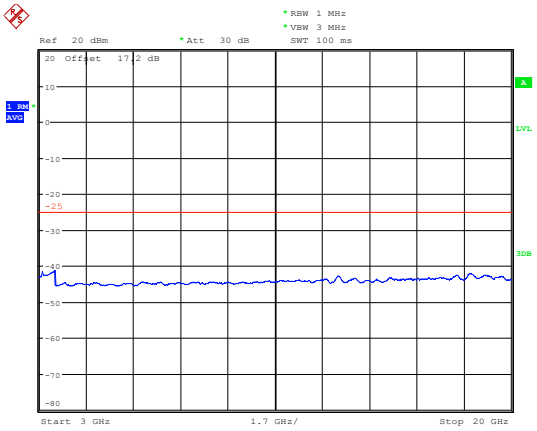
CA-7C 20MHz+10MHz CH-Middle 64QAM
3GHz~26GHz




Date: 5.AUG.2019 19:19:59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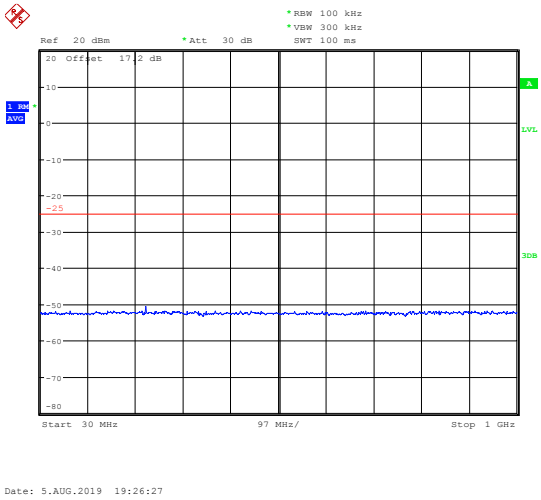
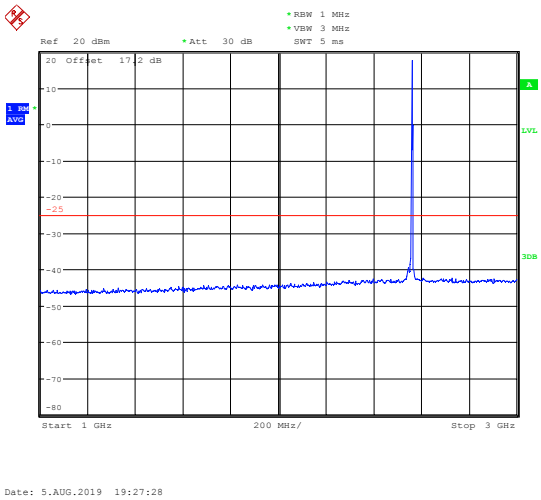
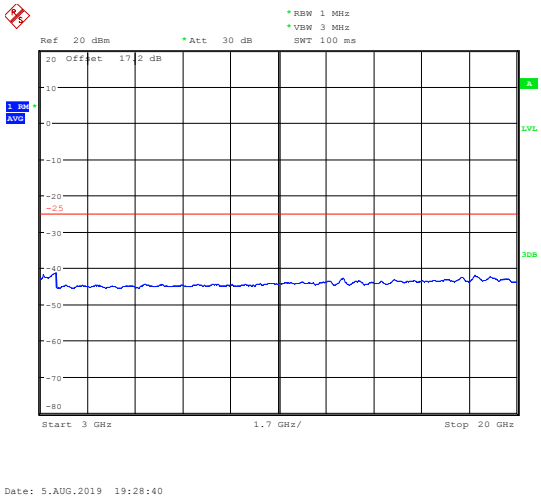
CA-7C 20MHz+10MHz CH-High 64QAM
30MHz~1GHz




CA-7C 20MHz+10MHz CH-High 64QAM
1GHz~3GHz




CA-7C 20MHz+10MHz CH-High 64QAM
3GHz~26GHz





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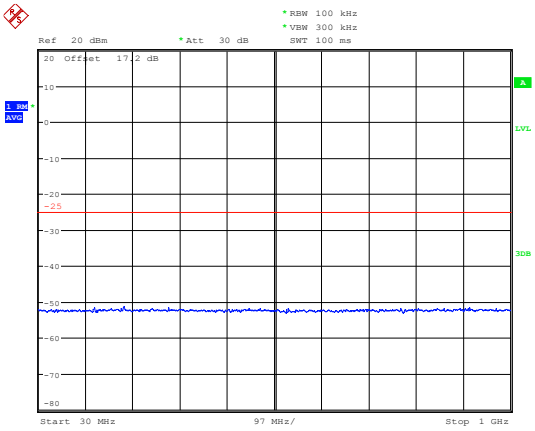
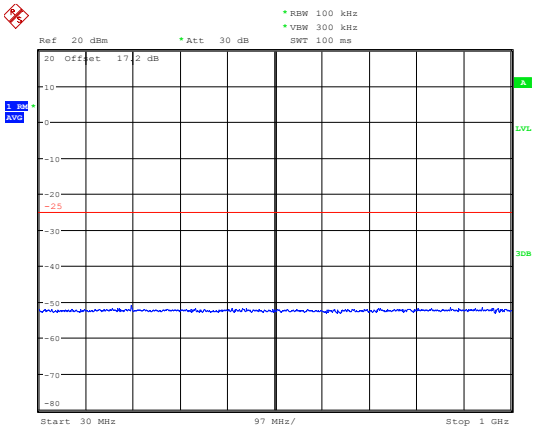
CA-7C 20MHz+20MHz CH-Low QPSK
30MHz~1GHz



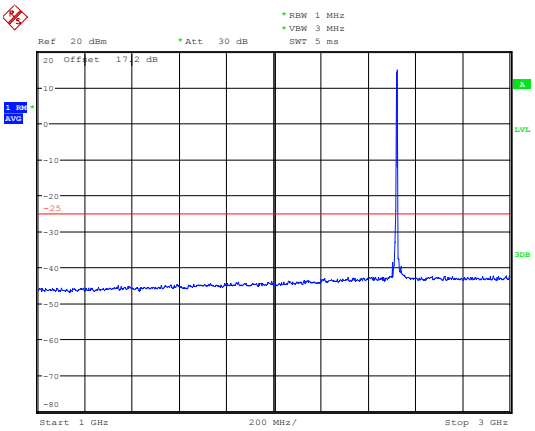

Date: 5.AUG.2019 21:11:30

CA-7C 20MHz+20MHz CH-Middle QPSK
30MHz~1GHz



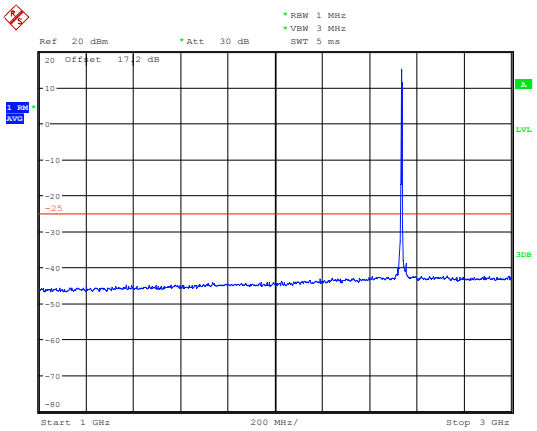

Date: 5.AUG.2019 21:15:38

CA-7C 20MHz+20MHz CH-Low QPSK
1GHz~3GHz



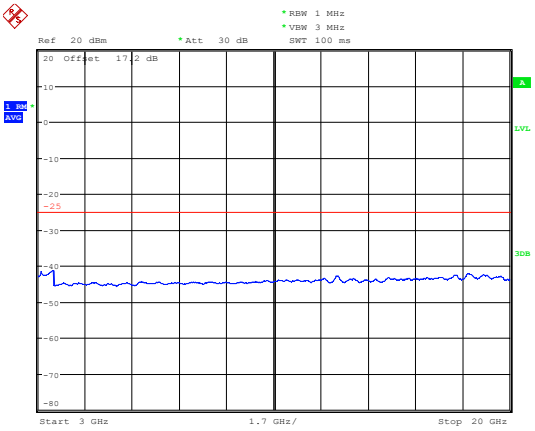

Date: 5.AUG.2019 21:09:53

CA-7C 20MHz+20MHz CH-Middle QPSK
1GHz~3GHz



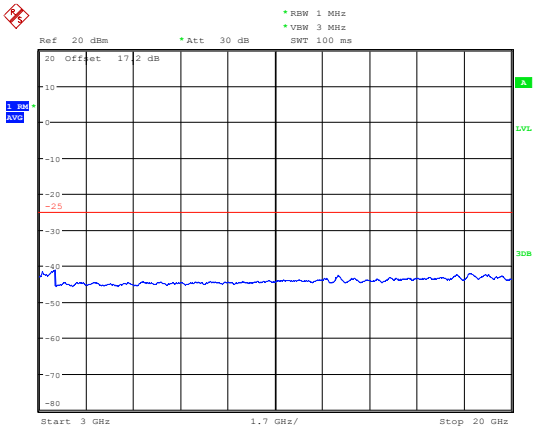

Date: 5.AUG.2019 21:16:31

CA-7C 20MHz+20MHz CH-Low QPSK
3GHz~26GHz




Date: 5.AUG.2019 21:05:26

CA-7C 20MHz+20MHz CH-Middle QPSK
3GHz~26GHz




Date: 5.AUG.2019 21:17:07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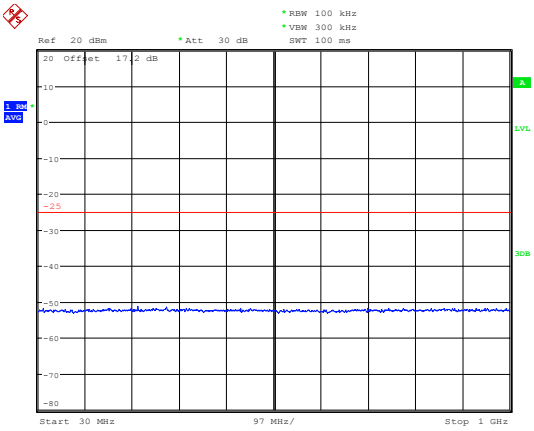
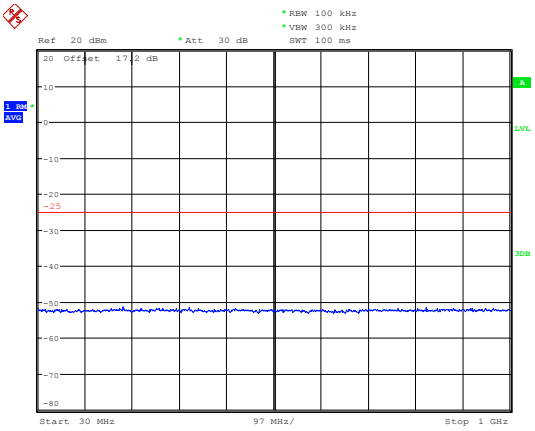
CA-7C 20MHz+20MHz CH-High QPSK
30MHz~1GHz



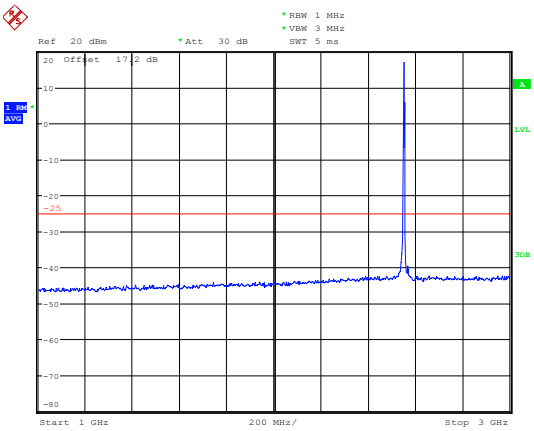

Date: 5.AUG.2019 21:24:20

CA-7C 20MHz+20MHz CH-Low 16QAM
30MHz~1GHz




Date: 5.AUG.2019 21:13:01

CA-7C 20MHz+20MHzCH-High QPSK
1GHz~3GHz

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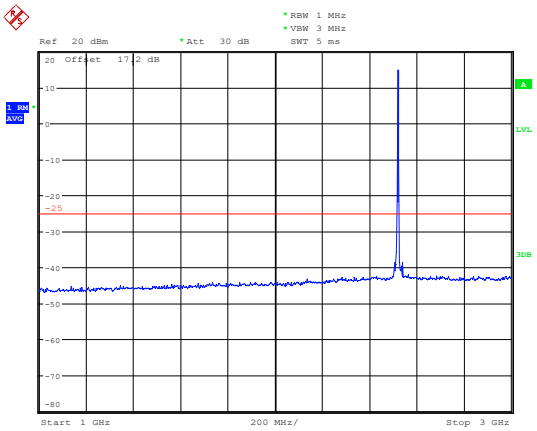
CA-7C 20MHz+20MHz CH-Low 16QAM
1GHz~3GHz

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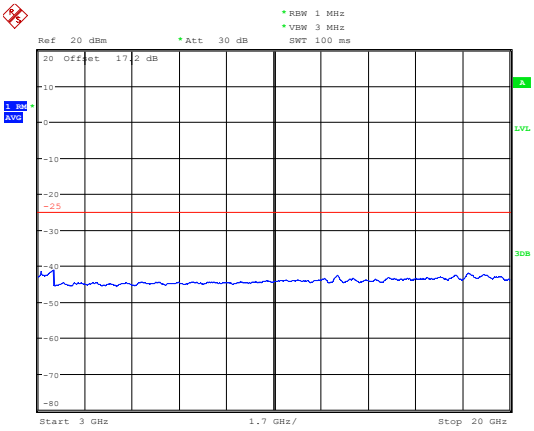
CA-7C 20MHz+20MHz CH-High QPSK
3GHz~26GHz

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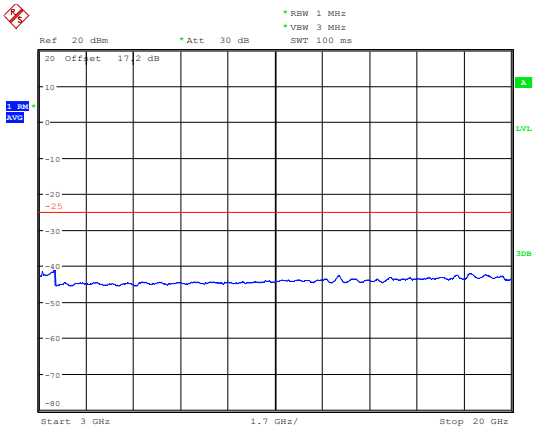
CA-7C 20MHz+20MHz CH-Low 16QAM
3GHz~26GHz




Date: 5.AUG.2019 21:05:39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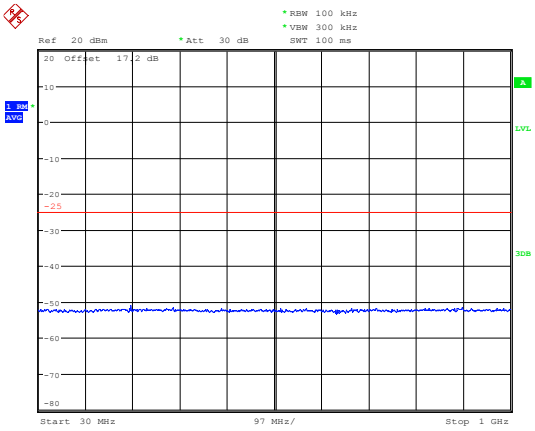
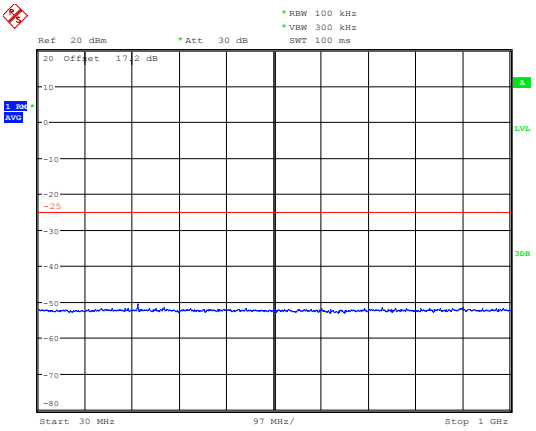
CA-7C 20MHz+20MHz CH-Middle 16QAM
30MHz~1GHz



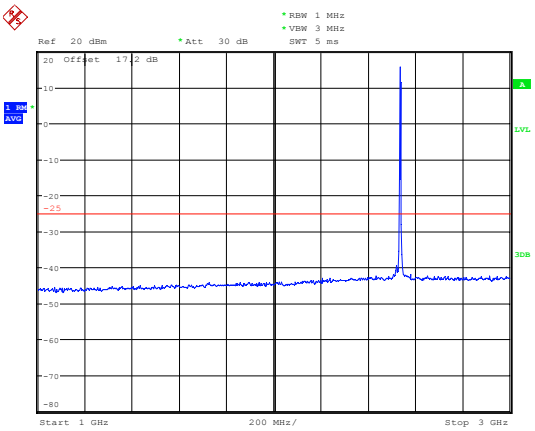

Date: 5.AUG.2019 21:15:52

CA-7C 20MHz+20MHz CH- High 16QAM
30MHz~1GHz



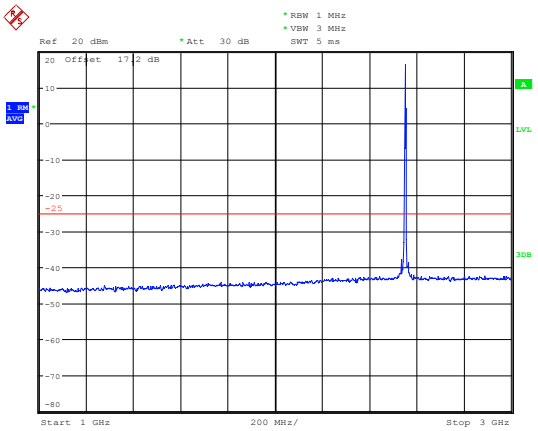

Date: 5.AUG.2019 21:24:39

CA-7C 20MHz+20MHz CH-Middle 16QAM
1GHz~3GHz



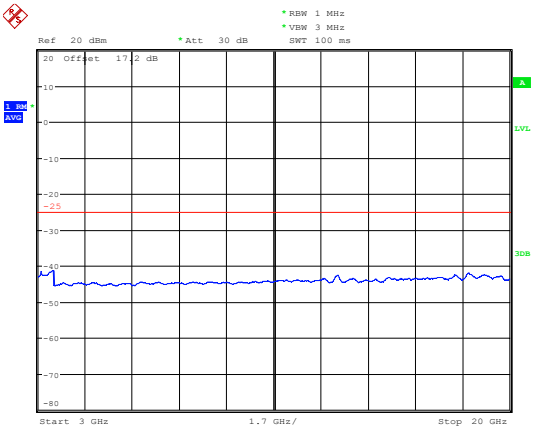

Date: 5.AUG.2019 21:16:42

CA-7C 20MHz+20MHz CH- High 16QAM
1GHz~3GHz



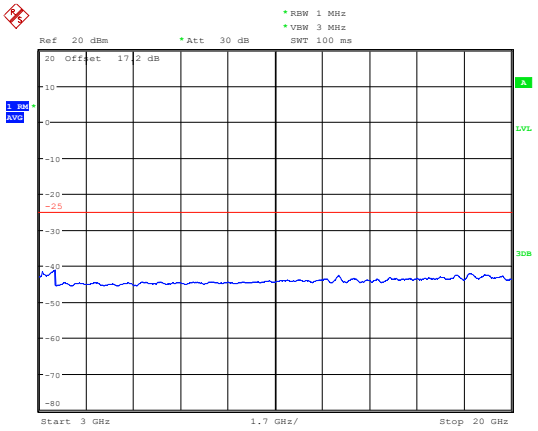

Date: 5.AUG.2019 21:23:37

CA-7C 20MHz+20MHz CH-Middle 16QAM
3GHz~26GHz




Date: 5.AUG.2019 21:17:26

CA-7C 20MHz+20MHz CH- High 16QAM
3GHz~26GHz




Date: 5.AUG.2019 21:21:39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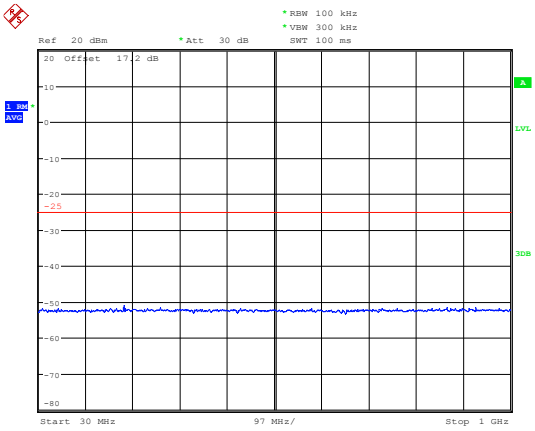
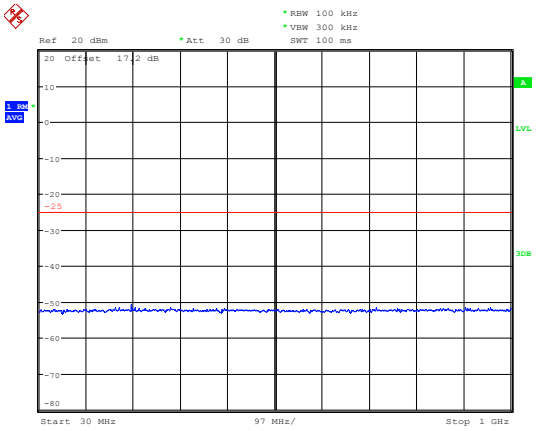
CA-7C 20MHz+20MHz CH-Low 64QAM 30MHz~1GHz



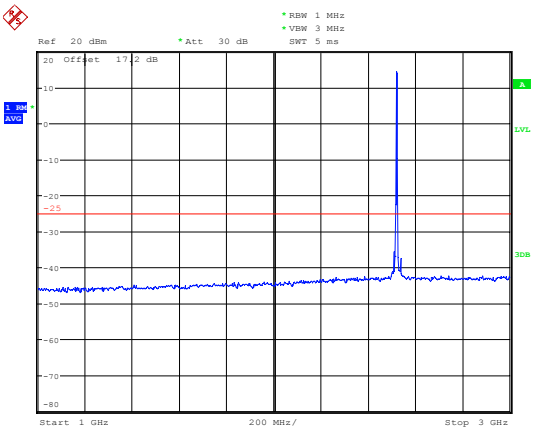

Date: 5.AUG.2019 21:13:20

CA-7C 20MHz+20MHz CH-Middle 64QAM 30MHz~1GHz



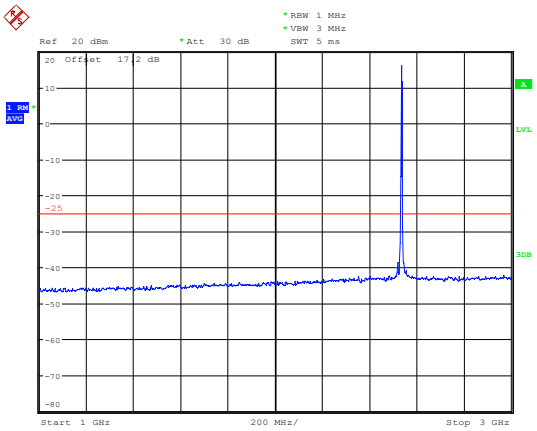

Date: 5.AUG.2019 21:16:06

CA-7C 20MHz+20MHz CH-Low 64QAM 1GHz~3GHz



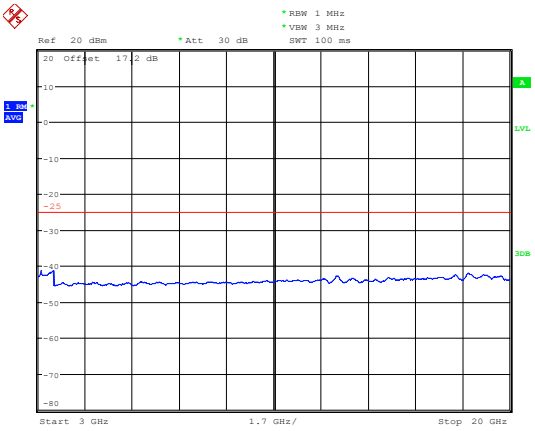

Date: 5.AUG.2019 21:10:34

CA-7C 20MHz+20MHz CH-Middle 64QAM 1GHz~3GHz




Date: 5.AUG.2019 21:16:51

CA-7C 20MHz+20MHz CH-Low 64QAM 3GHz~26GHz

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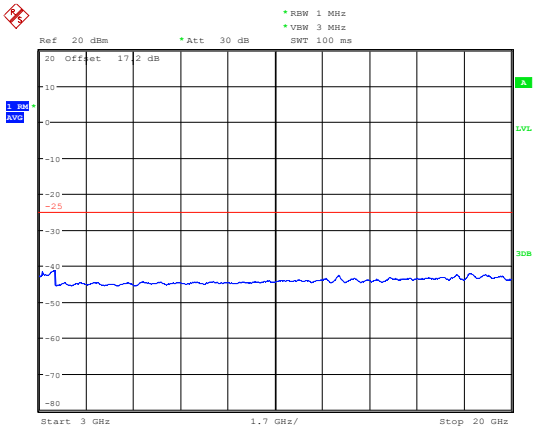
CA-7C 20MHz+20MHz CH-Middle 64QAM 3GHz~26GHz




Date: 5.AUG.2019 21:17:47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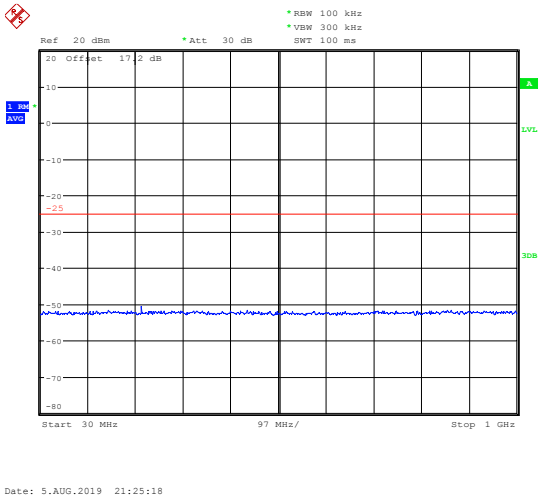
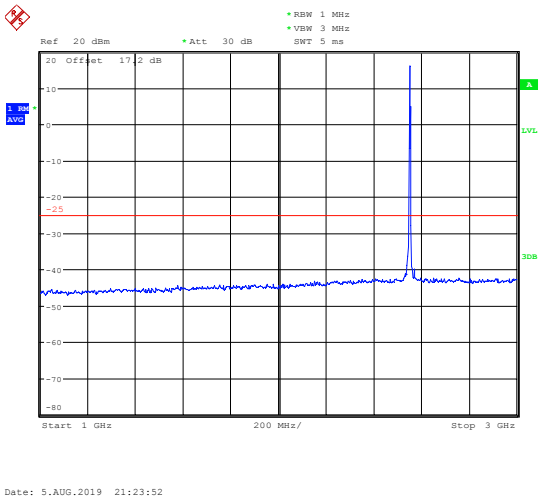
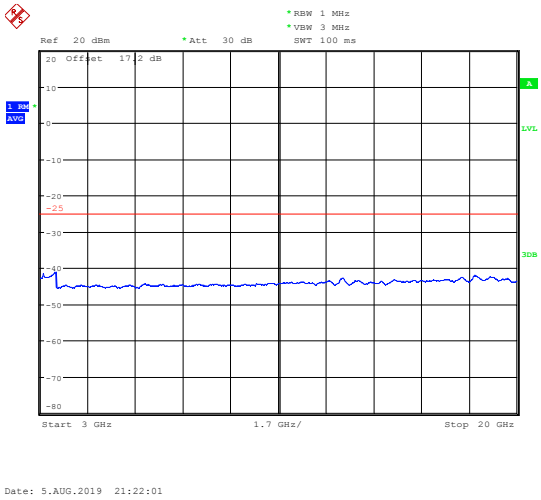
CA-7C 20MHz+20MHz CH-High 64QAM
30MHz~1GHz




CA-7C 20MHz+20MHz CH-High 64QAM
1GHz~3GHz




CA-7C 20MHz+20MHz CH-High 64QAM
3GHz~26GHz





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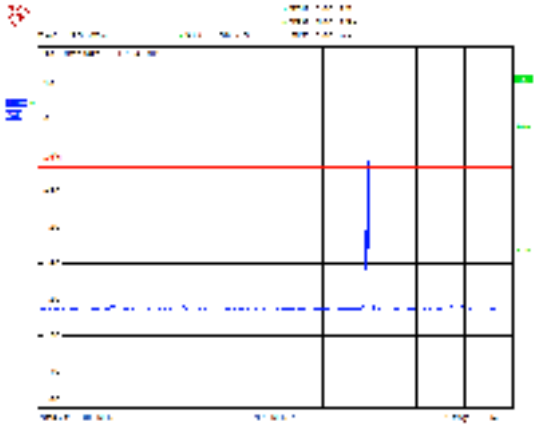
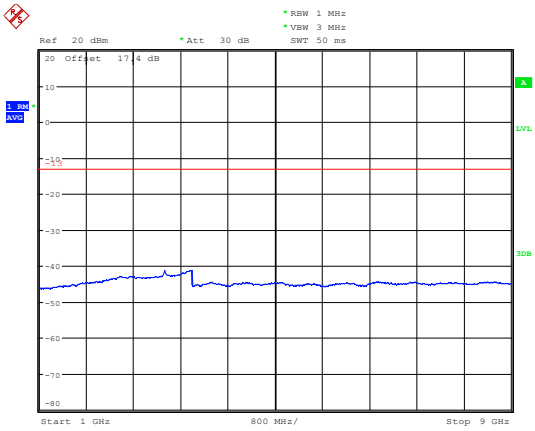
CA-12B 5MHz+5MHz CH-Low QPSK
30MHz~1GHz

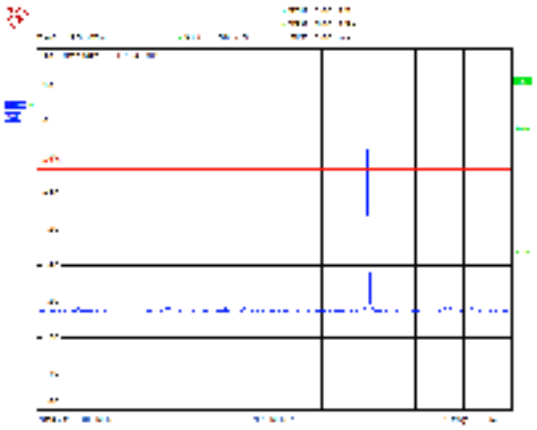


CA-12B 5MHz+5MHz CH-Low QPSK
1GHz~9GHz

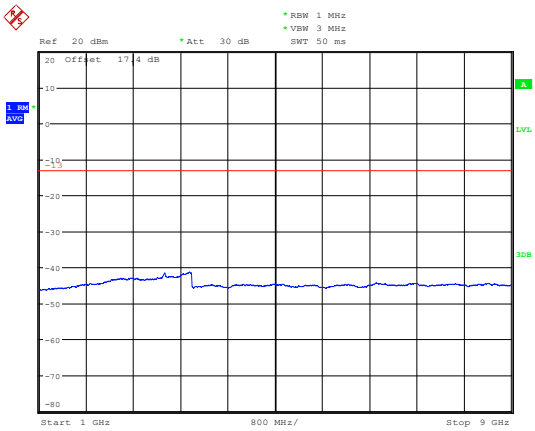



Date: 11.AUG.2019 17:49:19

CA-12B 5MHz+5MHz CH-Middle QPSK
30MHz~1GHz

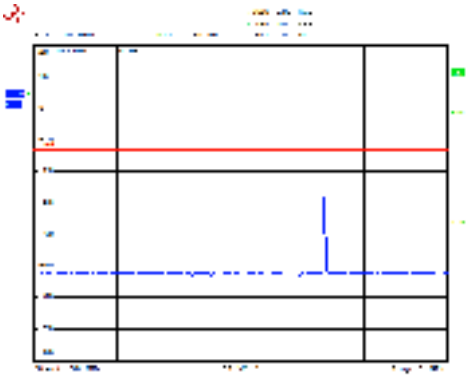


CA-12B 5MHz+5MHz CH-Middle QPSK
1GHz~9GHz

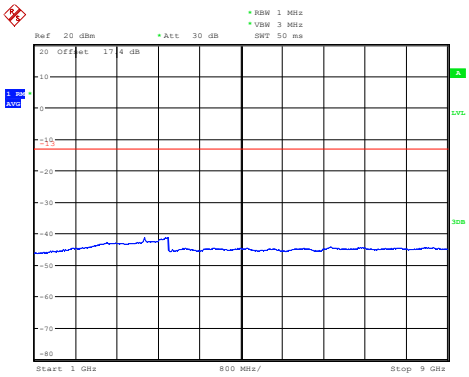



Date: 11.AUG.2019 17:51:55

CA-12B 5MHz+5MHz CH-High QPSK
30MHz~1GHz



CA-12B 5MHz+5MHzCH-High QPSK
1GHz~9GHz




Date: 11.AUG.2019 17:54:29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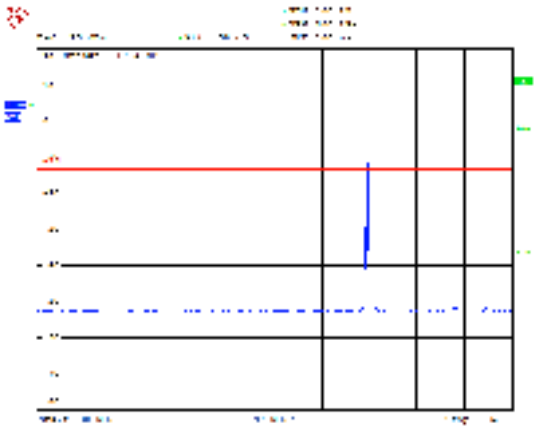
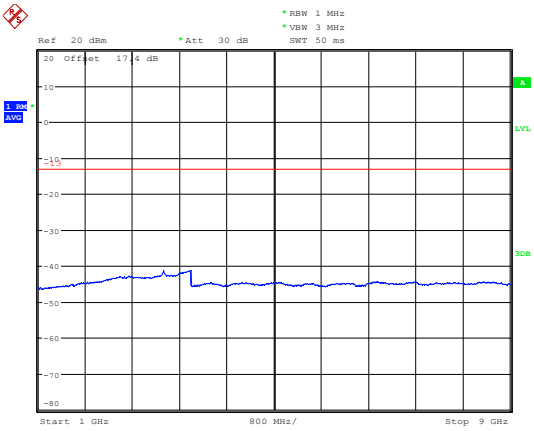
CA-12B 5MHz+5MHz CH-Low 16QAM
30MHz~1GHz

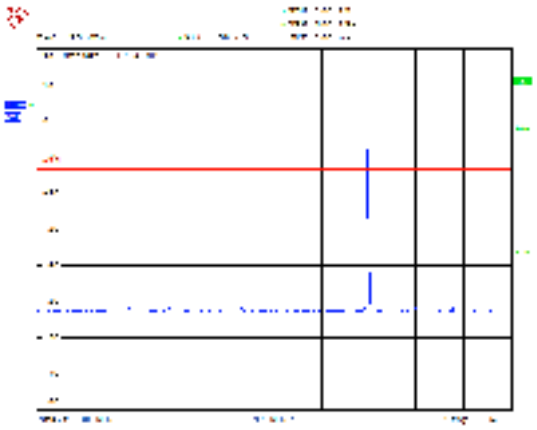


CA-12B 5MHz+5MHz CH-Low 16QAM
1GHz~9GHz

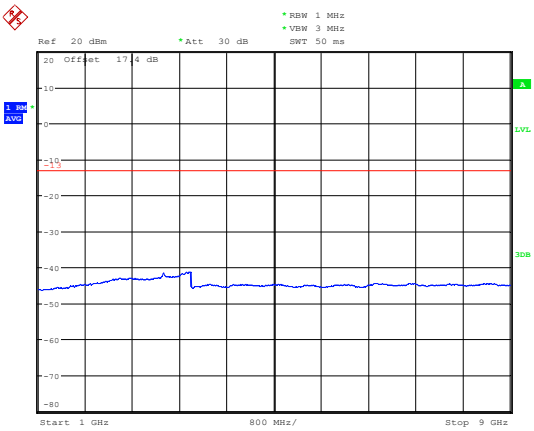



Date: 11.AUG.2019 17:50:05

CA-12B 5MHz+5MHz CH-Middle 16QAM
30MHz~1GHz

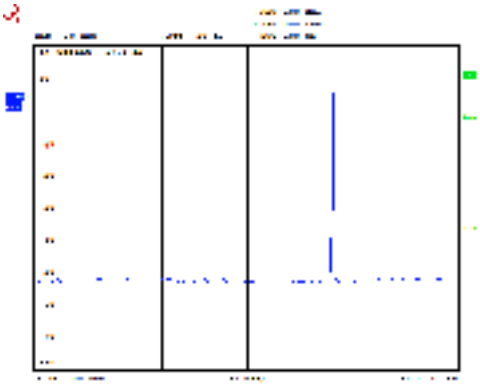


CA-12B 5MHz+5MHz CH-Middle 16QAM
1GHz~9GHz

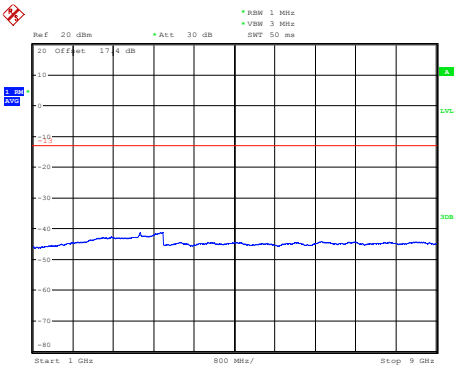



Date: 11.AUG.2019 17:52:28

CA-12B 5MHz+5MHz CH-High 16QAM
30MHz~1GHz



CA-12B 5MHz+5MHzCH-High 16QAM
1GHz~9GHz




Date: 11.AUG.2019 17:54:56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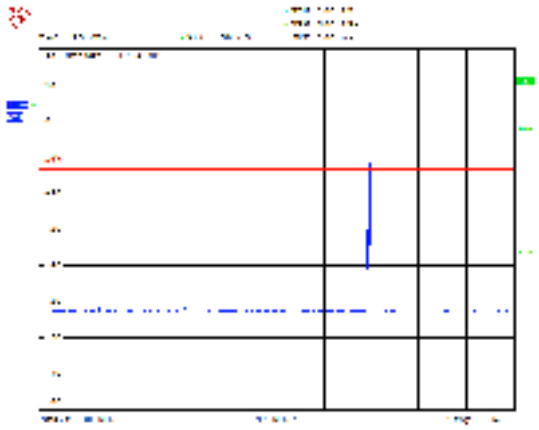
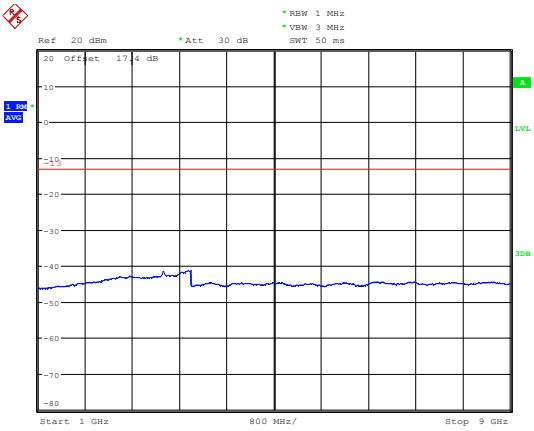
CA-12B 5MHz+5MHz CH-Low 64QAM
30MHz~1GHz



CA-12B 5MHz+5MHz CH-Low 64QAM
1GHz~9GHz

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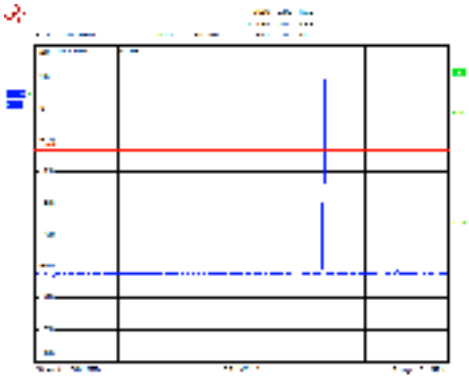
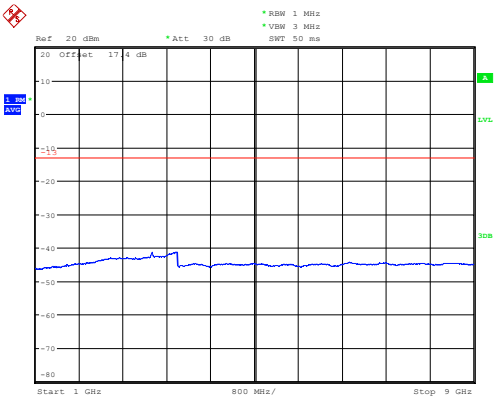
CA-12B 5MHz+5MHz CH-Middle 64QAM
30MHz~1GHz

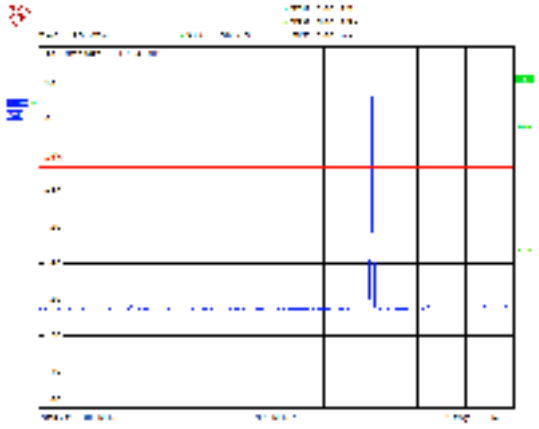


CA-12B 5MHz+5MHz CH-Middle 64QAM
1GHz~9GHz

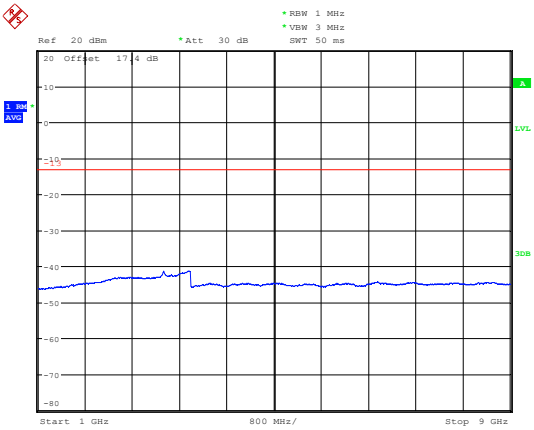



Date: 11.AUG.2019 17:53:34

CA-12B 5MHz+5MHz CH-High 64QAM
30MHz~1GHz



CA-12B 5MHz+5MHzCH-High 64QAM
1GHz~9GHz




Date: 11.AUG.2019 17:55:16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