



# Appendix B

## E-UTRA Band 7



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## 1 Effective (Isotropic) Radiated Power

### 1.1. Test Result

| Band  | Bandwidth | Modulation | Channel | RB Configuration | Conducted Power(dBm) | EIRP (dBm) | Limit (dBm) | Verdict |
|-------|-----------|------------|---------|------------------|----------------------|------------|-------------|---------|
| Band7 | 5MHz      | QPSK       | 20775   | 1RB#0            | 22.89                | 24.89      | 33.00       | PASS    |
| Band7 | 5MHz      | QPSK       | 20775   | 1RB#12           | 23.01                | 25.01      | 33.00       | PASS    |
| Band7 | 5MHz      | QPSK       | 20775   | 1RB#24           | 22.86                | 24.86      | 33.00       | PASS    |
| Band7 | 5MHz      | QPSK       | 20775   | 12RB#0           | 22.08                | 24.08      | 33.00       | PASS    |
| Band7 | 5MHz      | QPSK       | 20775   | 12RB#6           | 22.04                | 24.04      | 33.00       | PASS    |
| Band7 | 5MHz      | QPSK       | 20775   | 12RB#13          | 22.13                | 24.13      | 33.00       | PASS    |
| Band7 | 5MHz      | QPSK       | 20775   | 25RB#0           | 22.06                | 24.06      | 33.00       | PASS    |
| Band7 | 5MHz      | QPSK       | 21100   | 1RB#0            | 23.02                | 25.02      | 33.00       | PASS    |
| Band7 | 5MHz      | QPSK       | 21100   | 1RB#24           | 23.16                | 25.16      | 33.00       | PASS    |
| Band7 | 5MHz      | QPSK       | 21100   | 1RB#12           | 22.90                | 24.90      | 33.00       | PASS    |
| Band7 | 5MHz      | QPSK       | 21100   | 12RB#0           | 22.32                | 24.32      | 33.00       | PASS    |
| Band7 | 5MHz      | QPSK       | 21100   | 12RB#6           | 22.23                | 24.23      | 33.00       | PASS    |
| Band7 | 5MHz      | QPSK       | 21100   | 12RB#13          | 22.27                | 24.27      | 33.00       | PASS    |
| Band7 | 5MHz      | QPSK       | 21100   | 25RB#0           | 22.22                | 24.22      | 33.00       | PASS    |
| Band7 | 5MHz      | QPSK       | 21425   | 1RB#24           | 22.84                | 24.84      | 33.00       | PASS    |
| Band7 | 5MHz      | QPSK       | 21425   | 1RB#0            | 22.95                | 24.95      | 33.00       | PASS    |
| Band7 | 5MHz      | QPSK       | 21425   | 1RB#12           | 22.78                | 24.78      | 33.00       | PASS    |
| Band7 | 5MHz      | QPSK       | 21425   | 12RB#0           | 21.97                | 23.97      | 33.00       | PASS    |
| Band7 | 5MHz      | QPSK       | 21425   | 12RB#6           | 21.87                | 23.87      | 33.00       | PASS    |
| Band7 | 5MHz      | QPSK       | 21425   | 12RB#13          | 21.89                | 23.89      | 33.00       | PASS    |
| Band7 | 5MHz      | QPSK       | 21425   | 25RB#0           | 21.90                | 23.90      | 33.00       | PASS    |
| Band7 | 5MHz      | 16QAM      | 20775   | 1RB#0            | 22.48                | 24.48      | 33.00       | PASS    |
| Band7 | 5MHz      | 16QAM      | 20775   | 1RB#12           | 21.85                | 23.85      | 33.00       | PASS    |
| Band7 | 5MHz      | 16QAM      | 20775   | 1RB#24           | 22.16                | 24.16      | 33.00       | PASS    |
| Band7 | 5MHz      | 16QAM      | 20775   | 12RB#6           | 21.02                | 23.02      | 33.00       | PASS    |
| Band7 | 5MHz      | 16QAM      | 20775   | 12RB#0           | 21.13                | 23.13      | 33.00       | PASS    |
| Band7 | 5MHz      | 16QAM      | 20775   | 12RB#13          | 21.17                | 23.17      | 33.00       | PASS    |
| Band7 | 5MHz      | 16QAM      | 20775   | 25RB#0           | 21.15                | 23.15      | 33.00       | PASS    |
| Band7 | 5MHz      | 16QAM      | 21100   | 1RB#0            | 22.44                | 24.44      | 33.00       | PASS    |
| Band7 | 5MHz      | 16QAM      | 21100   | 1RB#12           | 22.30                | 24.30      | 33.00       | PASS    |
| Band7 | 5MHz      | 16QAM      | 21100   | 1RB#24           | 22.41                | 24.41      | 33.00       | PASS    |
| Band7 | 5MHz      | 16QAM      | 21100   | 12RB#13          | 21.33                | 23.33      | 33.00       | PASS    |
| Band7 | 5MHz      | 16QAM      | 21100   | 12RB#0           | 21.34                | 23.34      | 33.00       | PASS    |
| Band7 | 5MHz      | 16QAM      | 21100   | 12RB#6           | 21.30                | 23.30      | 33.00       | PASS    |
| Band7 | 5MHz      | 16QAM      | 21100   | 25RB#0           | 21.24                | 23.24      | 33.00       | PASS    |
| Band7 | 5MHz      | 16QAM      | 21425   | 1RB#12           | 22.05                | 24.05      | 33.00       | PASS    |
| Band7 | 5MHz      | 16QAM      | 21425   | 1RB#0            | 22.33                | 24.33      | 33.00       | PASS    |
| Band7 | 5MHz      | 16QAM      | 21425   | 1RB#24           | 21.75                | 23.75      | 33.00       | PASS    |



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|       |       |       |       |         |       |       |       |      |
|-------|-------|-------|-------|---------|-------|-------|-------|------|
| Band7 | 5MHz  | 16QAM | 21425 | 12RB#0  | 21.03 | 23.03 | 33.00 | PASS |
| Band7 | 5MHz  | 16QAM | 21425 | 12RB#6  | 20.98 | 22.98 | 33.00 | PASS |
| Band7 | 5MHz  | 16QAM | 21425 | 12RB#13 | 20.93 | 22.93 | 33.00 | PASS |
| Band7 | 5MHz  | 16QAM | 21425 | 25RB#0  | 20.88 | 22.88 | 33.00 | PASS |
| Band7 | 10MHz | QPSK  | 20800 | 1RB#24  | 22.78 | 24.78 | 33.00 | PASS |
| Band7 | 10MHz | QPSK  | 20800 | 1RB#49  | 23.18 | 25.18 | 33.00 | PASS |
| Band7 | 10MHz | QPSK  | 20800 | 1RB#0   | 22.90 | 24.90 | 33.00 | PASS |
| Band7 | 10MHz | QPSK  | 20800 | 25RB#0  | 22.10 | 24.10 | 33.00 | PASS |
| Band7 | 10MHz | QPSK  | 20800 | 25RB#12 | 22.16 | 24.16 | 33.00 | PASS |
| Band7 | 10MHz | QPSK  | 20800 | 25RB#25 | 22.34 | 24.34 | 33.00 | PASS |
| Band7 | 10MHz | QPSK  | 20800 | 50RB#0  | 22.21 | 24.21 | 33.00 | PASS |
| Band7 | 10MHz | QPSK  | 21100 | 1RB#0   | 23.15 | 25.15 | 33.00 | PASS |
| Band7 | 10MHz | QPSK  | 21100 | 1RB#49  | 23.24 | 25.24 | 33.00 | PASS |
| Band7 | 10MHz | QPSK  | 21100 | 1RB#24  | 23.17 | 25.17 | 33.00 | PASS |
| Band7 | 10MHz | QPSK  | 21100 | 25RB#25 | 22.39 | 24.39 | 33.00 | PASS |
| Band7 | 10MHz | QPSK  | 21100 | 25RB#0  | 22.33 | 24.33 | 33.00 | PASS |
| Band7 | 10MHz | QPSK  | 21100 | 25RB#12 | 22.33 | 24.33 | 33.00 | PASS |
| Band7 | 10MHz | QPSK  | 21100 | 50RB#0  | 22.42 | 24.42 | 33.00 | PASS |
| Band7 | 10MHz | QPSK  | 21400 | 1RB#24  | 22.92 | 24.92 | 33.00 | PASS |
| Band7 | 10MHz | QPSK  | 21400 | 1RB#0   | 23.09 | 25.09 | 33.00 | PASS |
| Band7 | 10MHz | QPSK  | 21400 | 1RB#49  | 22.82 | 24.82 | 33.00 | PASS |
| Band7 | 10MHz | QPSK  | 21400 | 25RB#0  | 22.02 | 24.02 | 33.00 | PASS |
| Band7 | 10MHz | QPSK  | 21400 | 25RB#25 | 22.02 | 24.02 | 33.00 | PASS |
| Band7 | 10MHz | QPSK  | 21400 | 25RB#12 | 22.00 | 24.00 | 33.00 | PASS |
| Band7 | 10MHz | QPSK  | 21400 | 50RB#0  | 22.12 | 24.12 | 33.00 | PASS |
| Band7 | 10MHz | 16QAM | 20800 | 1RB#49  | 21.91 | 23.91 | 33.00 | PASS |
| Band7 | 10MHz | 16QAM | 20800 | 1RB#0   | 22.21 | 24.21 | 33.00 | PASS |
| Band7 | 10MHz | 16QAM | 20800 | 1RB#24  | 22.30 | 24.30 | 33.00 | PASS |
| Band7 | 10MHz | 16QAM | 20800 | 25RB#25 | 21.11 | 23.11 | 33.00 | PASS |
| Band7 | 10MHz | 16QAM | 20800 | 25RB#12 | 21.29 | 23.29 | 33.00 | PASS |
| Band7 | 10MHz | 16QAM | 20800 | 25RB#0  | 21.27 | 23.27 | 33.00 | PASS |
| Band7 | 10MHz | 16QAM | 20800 | 50RB#0  | 21.15 | 23.15 | 33.00 | PASS |
| Band7 | 10MHz | 16QAM | 21100 | 1RB#49  | 22.45 | 24.45 | 33.00 | PASS |
| Band7 | 10MHz | 16QAM | 21100 | 1RB#0   | 22.32 | 24.32 | 33.00 | PASS |
| Band7 | 10MHz | 16QAM | 21100 | 1RB#24  | 22.31 | 24.31 | 33.00 | PASS |
| Band7 | 10MHz | 16QAM | 21100 | 25RB#25 | 21.38 | 23.38 | 33.00 | PASS |
| Band7 | 10MHz | 16QAM | 21100 | 25RB#0  | 21.37 | 23.37 | 33.00 | PASS |
| Band7 | 10MHz | 16QAM | 21100 | 25RB#12 | 21.38 | 23.38 | 33.00 | PASS |
| Band7 | 10MHz | 16QAM | 21100 | 50RB#0  | 21.37 | 23.37 | 33.00 | PASS |
| Band7 | 10MHz | 16QAM | 21400 | 1RB#24  | 22.31 | 24.31 | 33.00 | PASS |
| Band7 | 10MHz | 16QAM | 21400 | 1RB#0   | 21.98 | 23.98 | 33.00 | PASS |
| Band7 | 10MHz | 16QAM | 21400 | 1RB#49  | 21.91 | 23.91 | 33.00 | PASS |
| Band7 | 10MHz | 16QAM | 21400 | 25RB#0  | 20.99 | 22.99 | 33.00 | PASS |
| Band7 | 10MHz | 16QAM | 21400 | 25RB#12 | 21.06 | 23.06 | 33.00 | PASS |
| Band7 | 10MHz | 16QAM | 21400 | 25RB#25 | 21.08 | 23.08 | 33.00 | PASS |
| Band7 | 10MHz | 16QAM | 21400 | 50RB#0  | 21.11 | 23.11 | 33.00 | PASS |
| Band7 | 15MHz | QPSK  | 20825 | 1RB#0   | 22.78 | 24.78 | 33.00 | PASS |



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|       |       |       |       |         |       |       |       |      |
|-------|-------|-------|-------|---------|-------|-------|-------|------|
| Band7 | 15MHz | QPSK  | 20825 | 1RB#38  | 23.02 | 25.02 | 33.00 | PASS |
| Band7 | 15MHz | QPSK  | 20825 | 1RB#74  | 22.95 | 24.95 | 33.00 | PASS |
| Band7 | 15MHz | QPSK  | 20825 | 36RB#0  | 22.14 | 24.14 | 33.00 | PASS |
| Band7 | 15MHz | QPSK  | 20825 | 36RB#18 | 22.21 | 24.21 | 33.00 | PASS |
| Band7 | 15MHz | QPSK  | 20825 | 36RB#39 | 22.26 | 24.26 | 33.00 | PASS |
| Band7 | 15MHz | QPSK  | 20825 | 75RB#0  | 22.24 | 24.24 | 33.00 | PASS |
| Band7 | 15MHz | QPSK  | 21100 | 1RB#0   | 23.07 | 25.07 | 33.00 | PASS |
| Band7 | 15MHz | QPSK  | 21100 | 1RB#74  | 23.06 | 25.06 | 33.00 | PASS |
| Band7 | 15MHz | QPSK  | 21100 | 1RB#38  | 23.02 | 25.02 | 33.00 | PASS |
| Band7 | 15MHz | QPSK  | 21100 | 36RB#0  | 22.39 | 24.39 | 33.00 | PASS |
| Band7 | 15MHz | QPSK  | 21100 | 36RB#18 | 22.34 | 24.34 | 33.00 | PASS |
| Band7 | 15MHz | QPSK  | 21100 | 36RB#39 | 22.31 | 24.31 | 33.00 | PASS |
| Band7 | 15MHz | QPSK  | 21100 | 75RB#0  | 22.27 | 24.27 | 33.00 | PASS |
| Band7 | 15MHz | QPSK  | 21375 | 1RB#74  | 22.95 | 24.95 | 33.00 | PASS |
| Band7 | 15MHz | QPSK  | 21375 | 1RB#0   | 22.99 | 24.99 | 33.00 | PASS |
| Band7 | 15MHz | QPSK  | 21375 | 1RB#38  | 22.69 | 24.69 | 33.00 | PASS |
| Band7 | 15MHz | QPSK  | 21375 | 36RB#0  | 22.21 | 24.21 | 33.00 | PASS |
| Band7 | 15MHz | QPSK  | 21375 | 36RB#18 | 22.11 | 24.11 | 33.00 | PASS |
| Band7 | 15MHz | QPSK  | 21375 | 36RB#39 | 21.94 | 23.94 | 33.00 | PASS |
| Band7 | 15MHz | QPSK  | 21375 | 75RB#0  | 22.08 | 24.08 | 33.00 | PASS |
| Band7 | 15MHz | 16QAM | 20825 | 1RB#0   | 21.93 | 23.93 | 33.00 | PASS |
| Band7 | 15MHz | 16QAM | 20825 | 1RB#38  | 22.29 | 24.29 | 33.00 | PASS |
| Band7 | 15MHz | 16QAM | 20825 | 1RB#74  | 22.03 | 24.03 | 33.00 | PASS |
| Band7 | 15MHz | 16QAM | 20825 | 36RB#18 | 21.07 | 23.07 | 33.00 | PASS |
| Band7 | 15MHz | 16QAM | 20825 | 36RB#0  | 21.18 | 23.18 | 33.00 | PASS |
| Band7 | 15MHz | 16QAM | 20825 | 36RB#39 | 21.07 | 23.07 | 33.00 | PASS |
| Band7 | 15MHz | 16QAM | 20825 | 75RB#0  | 21.26 | 23.26 | 33.00 | PASS |
| Band7 | 15MHz | 16QAM | 21100 | 1RB#0   | 22.32 | 24.32 | 33.00 | PASS |
| Band7 | 15MHz | 16QAM | 21100 | 1RB#38  | 22.45 | 24.45 | 33.00 | PASS |
| Band7 | 15MHz | 16QAM | 21100 | 1RB#74  | 22.35 | 24.35 | 33.00 | PASS |
| Band7 | 15MHz | 16QAM | 21100 | 36RB#39 | 21.32 | 23.32 | 33.00 | PASS |
| Band7 | 15MHz | 16QAM | 21100 | 36RB#0  | 21.40 | 23.40 | 33.00 | PASS |
| Band7 | 15MHz | 16QAM | 21100 | 36RB#18 | 21.35 | 23.35 | 33.00 | PASS |
| Band7 | 15MHz | 16QAM | 21100 | 75RB#0  | 21.38 | 23.38 | 33.00 | PASS |
| Band7 | 15MHz | 16QAM | 21375 | 1RB#38  | 22.15 | 24.15 | 33.00 | PASS |
| Band7 | 15MHz | 16QAM | 21375 | 1RB#0   | 22.10 | 24.10 | 33.00 | PASS |
| Band7 | 15MHz | 16QAM | 21375 | 1RB#74  | 21.93 | 23.93 | 33.00 | PASS |
| Band7 | 15MHz | 16QAM | 21375 | 36RB#0  | 21.03 | 23.03 | 33.00 | PASS |
| Band7 | 15MHz | 16QAM | 21375 | 36RB#18 | 21.03 | 23.03 | 33.00 | PASS |
| Band7 | 15MHz | 16QAM | 21375 | 36RB#39 | 20.99 | 22.99 | 33.00 | PASS |
| Band7 | 15MHz | 16QAM | 21375 | 75RB#0  | 21.12 | 23.12 | 33.00 | PASS |
| Band7 | 20MHz | QPSK  | 20850 | 1RB#99  | 22.77 | 24.77 | 33.00 | PASS |
| Band7 | 20MHz | QPSK  | 20850 | 1RB#49  | 23.14 | 25.14 | 33.00 | PASS |
| Band7 | 20MHz | QPSK  | 20850 | 1RB#0   | 22.86 | 24.86 | 33.00 | PASS |
| Band7 | 20MHz | QPSK  | 20850 | 50RB#0  | 22.11 | 24.11 | 33.00 | PASS |
| Band7 | 20MHz | QPSK  | 20850 | 50RB#25 | 22.28 | 24.28 | 33.00 | PASS |
| Band7 | 20MHz | QPSK  | 20850 | 50RB#50 | 22.33 | 24.33 | 33.00 | PASS |



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|       |       |       |       |         |       |       |       |      |
|-------|-------|-------|-------|---------|-------|-------|-------|------|
| Band7 | 20MHz | QPSK  | 20850 | 100RB#0 | 22.16 | 24.16 | 33.00 | PASS |
| Band7 | 20MHz | QPSK  | 21100 | 1RB#0   | 22.80 | 24.80 | 33.00 | PASS |
| Band7 | 20MHz | QPSK  | 21100 | 1RB#99  | 23.08 | 25.08 | 33.00 | PASS |
| Band7 | 20MHz | QPSK  | 21100 | 1RB#49  | 22.79 | 24.79 | 33.00 | PASS |
| Band7 | 20MHz | QPSK  | 21100 | 50RB#50 | 22.37 | 24.37 | 33.00 | PASS |
| Band7 | 20MHz | QPSK  | 21100 | 50RB#0  | 22.35 | 24.35 | 33.00 | PASS |
| Band7 | 20MHz | QPSK  | 21100 | 50RB#25 | 22.31 | 24.31 | 33.00 | PASS |
| Band7 | 20MHz | QPSK  | 21100 | 100RB#0 | 22.29 | 24.29 | 33.00 | PASS |
| Band7 | 20MHz | QPSK  | 21350 | 1RB#49  | 23.02 | 25.02 | 33.00 | PASS |
| Band7 | 20MHz | QPSK  | 21350 | 1RB#0   | 22.99 | 24.99 | 33.00 | PASS |
| Band7 | 20MHz | QPSK  | 21350 | 1RB#99  | 22.63 | 24.63 | 33.00 | PASS |
| Band7 | 20MHz | QPSK  | 21350 | 50RB#0  | 22.27 | 24.27 | 33.00 | PASS |
| Band7 | 20MHz | QPSK  | 21350 | 50RB#50 | 22.17 | 24.17 | 33.00 | PASS |
| Band7 | 20MHz | QPSK  | 21350 | 50RB#25 | 21.96 | 23.96 | 33.00 | PASS |
| Band7 | 20MHz | QPSK  | 21350 | 100RB#0 | 22.06 | 24.06 | 33.00 | PASS |
| Band7 | 20MHz | 16QAM | 20850 | 1RB#99  | 22.35 | 24.35 | 33.00 | PASS |
| Band7 | 20MHz | 16QAM | 20850 | 1RB#0   | 22.32 | 24.32 | 33.00 | PASS |
| Band7 | 20MHz | 16QAM | 20850 | 1RB#49  | 22.15 | 24.15 | 33.00 | PASS |
| Band7 | 20MHz | 16QAM | 20850 | 50RB#50 | 21.15 | 23.15 | 33.00 | PASS |
| Band7 | 20MHz | 16QAM | 20850 | 50RB#25 | 21.25 | 23.25 | 33.00 | PASS |
| Band7 | 20MHz | 16QAM | 20850 | 50RB#0  | 21.20 | 23.20 | 33.00 | PASS |
| Band7 | 20MHz | 16QAM | 20850 | 100RB#0 | 21.25 | 23.25 | 33.00 | PASS |
| Band7 | 20MHz | 16QAM | 21100 | 1RB#99  | 22.16 | 24.16 | 33.00 | PASS |
| Band7 | 20MHz | 16QAM | 21100 | 1RB#0   | 22.14 | 24.14 | 33.00 | PASS |
| Band7 | 20MHz | 16QAM | 21100 | 1RB#49  | 22.46 | 24.46 | 33.00 | PASS |
| Band7 | 20MHz | 16QAM | 21100 | 50RB#50 | 21.39 | 23.39 | 33.00 | PASS |
| Band7 | 20MHz | 16QAM | 21100 | 50RB#0  | 21.40 | 23.40 | 33.00 | PASS |
| Band7 | 20MHz | 16QAM | 21100 | 50RB#25 | 21.40 | 23.40 | 33.00 | PASS |
| Band7 | 20MHz | 16QAM | 21100 | 100RB#0 | 21.38 | 23.38 | 33.00 | PASS |
| Band7 | 20MHz | 16QAM | 21350 | 1RB#49  | 22.03 | 24.03 | 33.00 | PASS |
| Band7 | 20MHz | 16QAM | 21350 | 1RB#0   | 22.13 | 24.13 | 33.00 | PASS |
| Band7 | 20MHz | 16QAM | 21350 | 1RB#99  | 22.23 | 24.23 | 33.00 | PASS |
| Band7 | 20MHz | 16QAM | 21350 | 50RB#0  | 21.26 | 23.26 | 33.00 | PASS |
| Band7 | 20MHz | 16QAM | 21350 | 50RB#25 | 21.09 | 23.09 | 33.00 | PASS |
| Band7 | 20MHz | 16QAM | 21350 | 50RB#50 | 20.92 | 22.92 | 33.00 | PASS |
| Band7 | 20MHz | 16QAM | 21350 | 100RB#0 | 21.08 | 23.08 | 33.00 | PASS |

Remark:

a: For getting the EIRP (Efficient Isotropic Radiated Power), the following formula should be taken to calculate it,

ERP [dBm] = Conducted Power [dBm] + Gain [dBd]

EIRP [dBm] = Conducted Power [dBm] + Gain [dBi]



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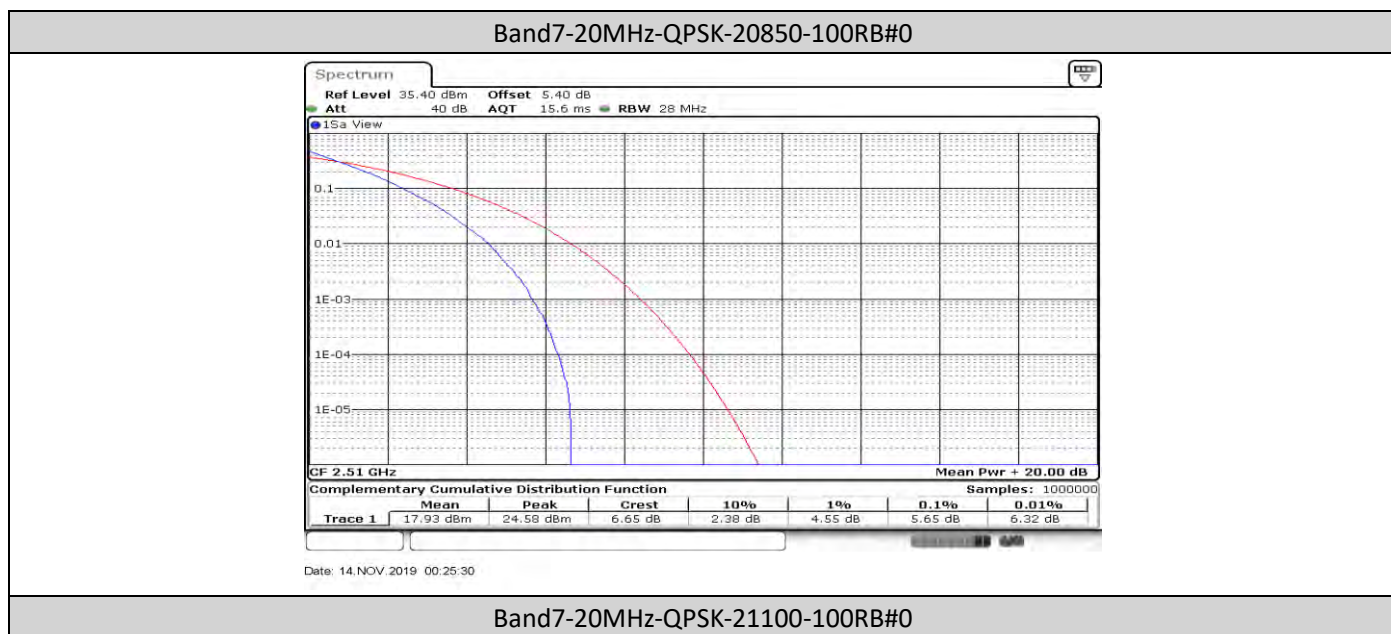
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## 2. Peak-to-Average Ratio (CCDF)

## 2.1. Test Result

| Band  | Bandwidth | Modulation | Channel | RB Configuration | Result(dB) | Limit(dB) | Verdict |
|-------|-----------|------------|---------|------------------|------------|-----------|---------|
| Band7 | 20MHz     | QPSK       | 20850   | 100RB#0          | 5.65       | 13        | PASS    |
| Band7 | 20MHz     | QPSK       | 21100   | 100RB#0          | 5.88       | 13        | PASS    |
| Band7 | 20MHz     | QPSK       | 21350   | 100RB#0          | 5.88       | 13        | PASS    |
| Band7 | 20MHz     | 16QAM      | 20850   | 100RB#0          | 6.29       | 13        | PASS    |
| Band7 | 20MHz     | 16QAM      | 21100   | 100RB#0          | 6.58       | 13        | PASS    |
| Band7 | 20MHz     | 16QAM      | 21350   | 100RB#0          | 6.41       | 13        | PASS    |

## 2.2. Test Plots



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Band7-20MHz-QPSK-21350-100RB#0



Band7-20MHz-16QAM-20850-100RB#0



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Band7-20MHz-16QAM-21100-100RB#0



Band7-20MHz-16QAM-21350-100RB#0

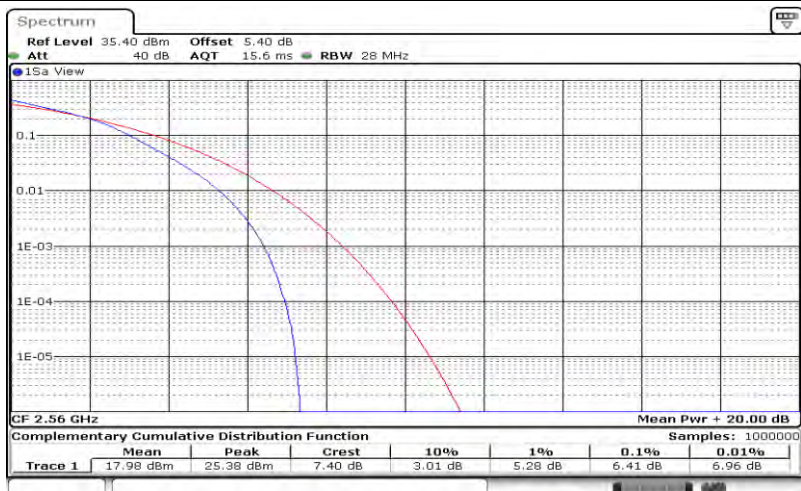


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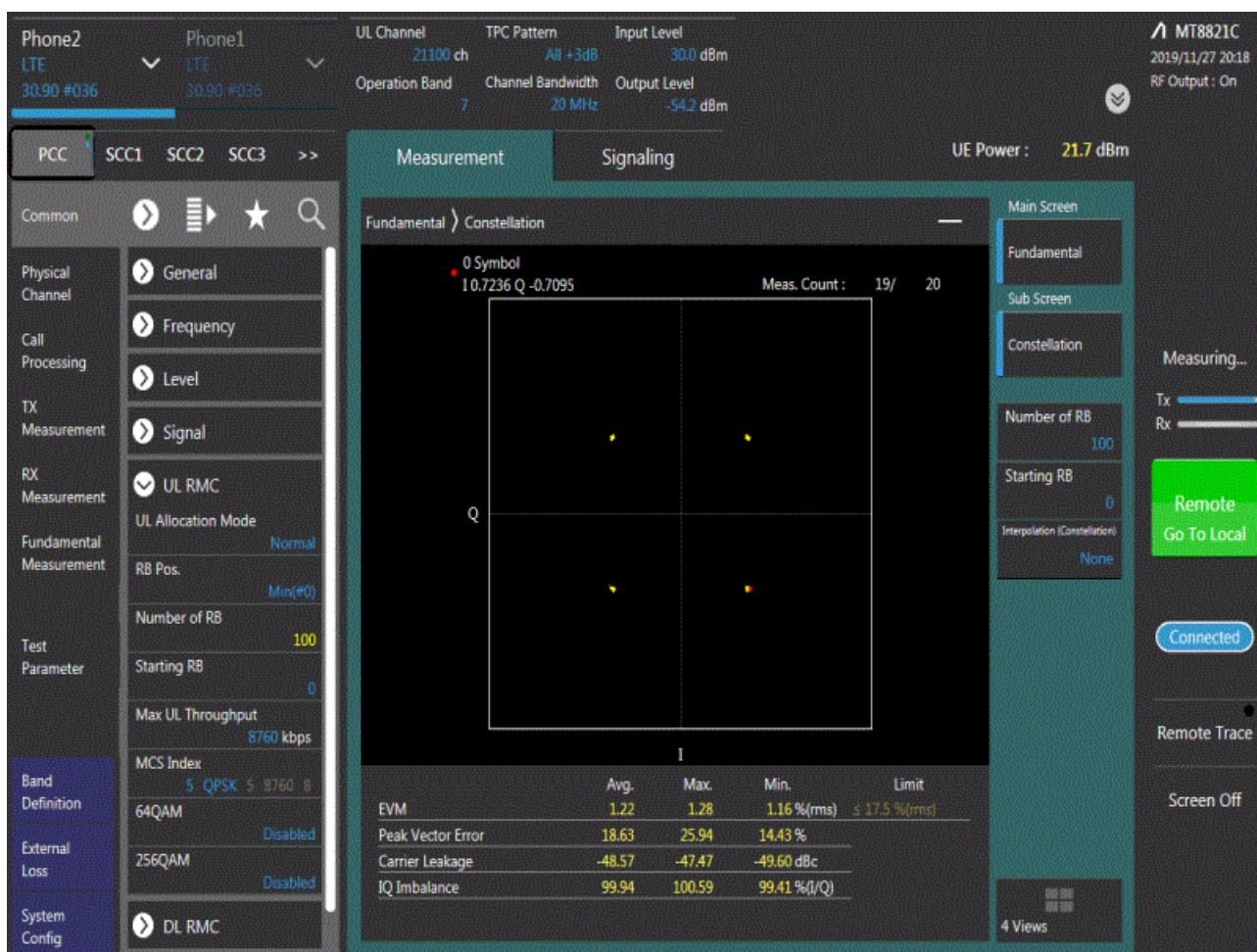


### 3. Modulation Characteristics

#### 3.1. Test Band = LTE Band 7

##### 3.1.1. Test Mode = LTE /TM1 20MHz

##### 3.1.1.1. Test Channel = MCH



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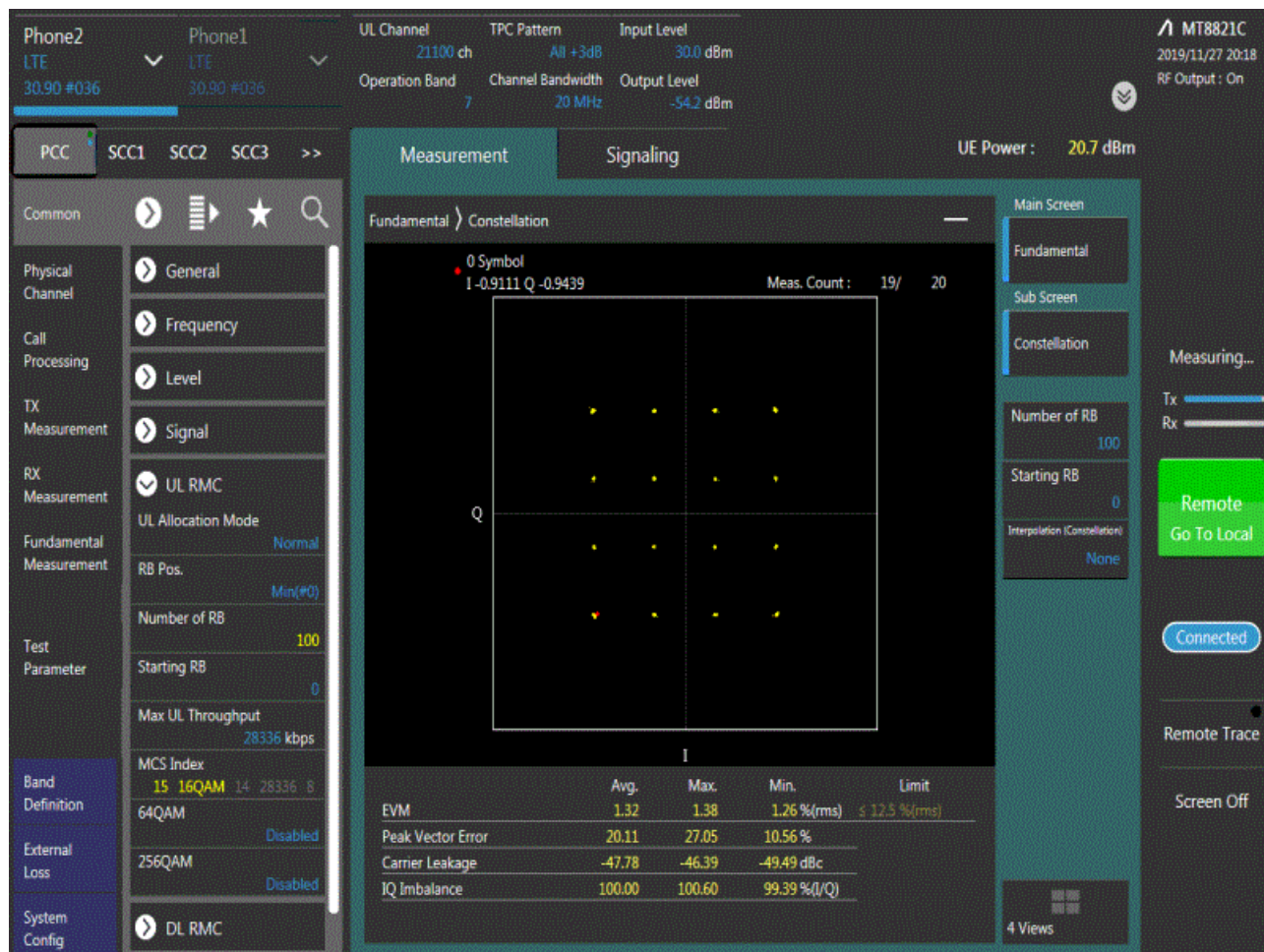
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### 3.1.2. Test Mode = LTE /TM2 20MHz

#### 3.1.2.1. Test Channel = MCH



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## 4. 26dB Bandwidth and Occupied Bandwidth

### 4.1. Test Result

| Band  | Bandwidth | Modulation | Channel | RB Configuration | Occupied Bandwidth (MHz) | 26dB Bandwidth (MHz) | Verdict |
|-------|-----------|------------|---------|------------------|--------------------------|----------------------|---------|
| Band7 | 5MHz      | QPSK       | 20775   | 25RB#0           | 4.476                    | 4.870                | PASS    |
| Band7 | 5MHz      | QPSK       | 21100   | 25RB#0           | 4.466                    | 4.840                | PASS    |
| Band7 | 5MHz      | QPSK       | 21425   | 25RB#0           | 4.486                    | 4.860                | PASS    |
| Band7 | 5MHz      | 16QAM      | 20775   | 25RB#0           | 4.466                    | 4.800                | PASS    |
| Band7 | 5MHz      | 16QAM      | 21100   | 25RB#0           | 4.466                    | 4.880                | PASS    |
| Band7 | 5MHz      | 16QAM      | 21425   | 25RB#0           | 4.476                    | 4.860                | PASS    |
| Band7 | 10MHz     | QPSK       | 20800   | 50RB#0           | 8.951                    | 9.620                | PASS    |
| Band7 | 10MHz     | QPSK       | 21100   | 50RB#0           | 8.951                    | 9.600                | PASS    |
| Band7 | 10MHz     | QPSK       | 21400   | 50RB#0           | 8.951                    | 9.640                | PASS    |
| Band7 | 10MHz     | 16QAM      | 20800   | 50RB#0           | 8.911                    | 9.620                | PASS    |
| Band7 | 10MHz     | 16QAM      | 21100   | 50RB#0           | 8.951                    | 9.960                | PASS    |
| Band7 | 10MHz     | 16QAM      | 21400   | 50RB#0           | 8.911                    | 9.560                | PASS    |
| Band7 | 15MHz     | QPSK       | 20825   | 75RB#0           | 13.457                   | 14.820               | PASS    |
| Band7 | 15MHz     | QPSK       | 21100   | 75RB#0           | 13.427                   | 14.910               | PASS    |
| Band7 | 15MHz     | QPSK       | 21375   | 75RB#0           | 13.487                   | 15.030               | PASS    |
| Band7 | 15MHz     | 16QAM      | 20825   | 75RB#0           | 13.457                   | 14.940               | PASS    |
| Band7 | 15MHz     | 16QAM      | 21100   | 75RB#0           | 13.487                   | 15.840               | PASS    |
| Band7 | 15MHz     | 16QAM      | 21375   | 75RB#0           | 13.457                   | 14.760               | PASS    |
| Band7 | 20MHz     | QPSK       | 20850   | 100RB#0          | 17.902                   | 19.280               | PASS    |
| Band7 | 20MHz     | QPSK       | 21100   | 100RB#0          | 17.862                   | 19.280               | PASS    |
| Band7 | 20MHz     | QPSK       | 21350   | 100RB#0          | 17.942                   | 19.320               | PASS    |
| Band7 | 20MHz     | 16QAM      | 20850   | 100RB#0          | 17.902                   | 19.240               | PASS    |
| Band7 | 20MHz     | 16QAM      | 21100   | 100RB#0          | 17.902                   | 19.400               | PASS    |
| Band7 | 20MHz     | 16QAM      | 21350   | 100RB#0          | 17.942                   | 19.320               | PASS    |



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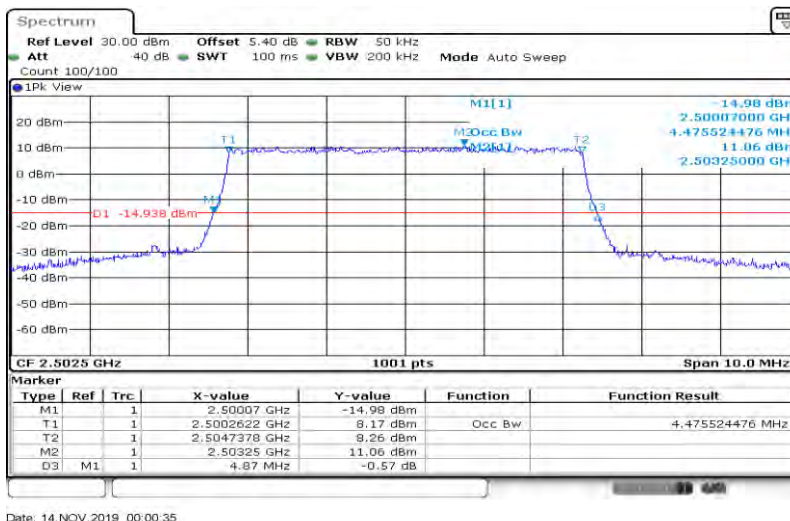
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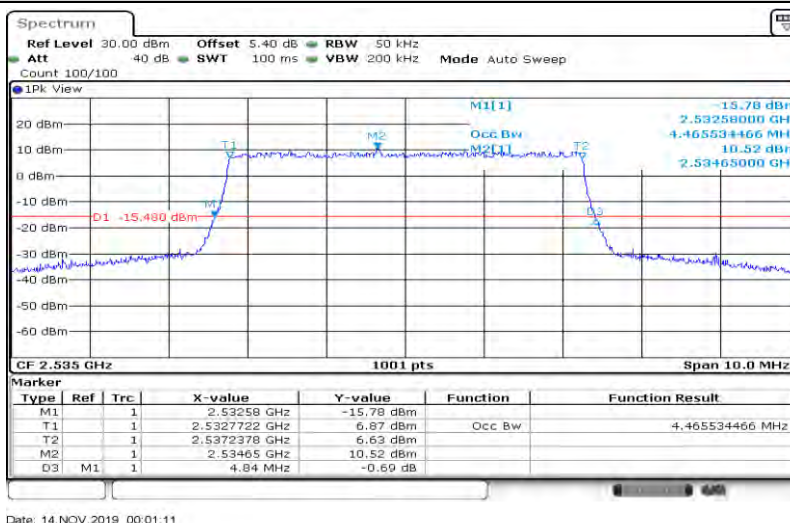


## 4.2. Test Plots

Band7-5MHz-QPSK-20775-25RB#0-4.476



Band7-5MHz-QPSK-21100-25RB#0-4.466

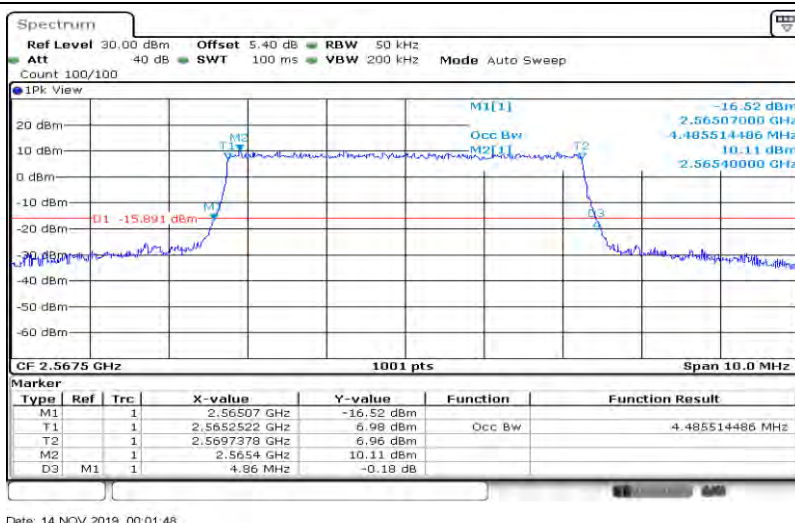


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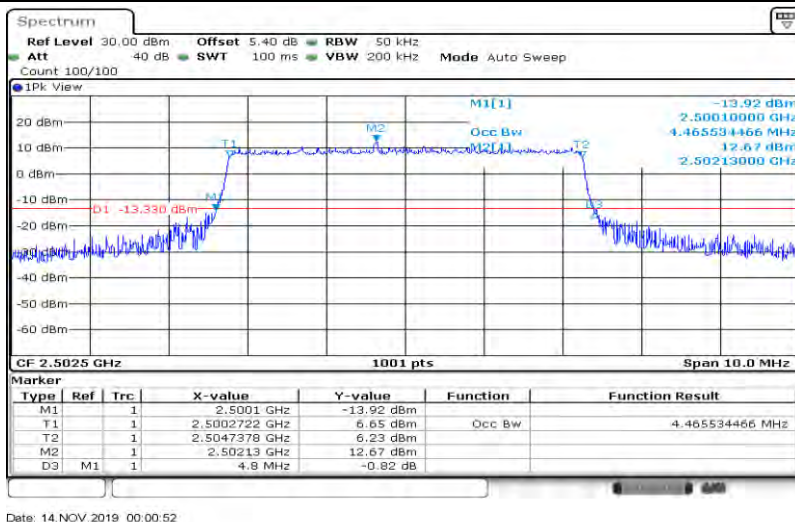


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Band7-5MHz-16QAM-20775-25RB#0-4.466



Band7-5MHz-16QAM-21100-25RB#0-4.466

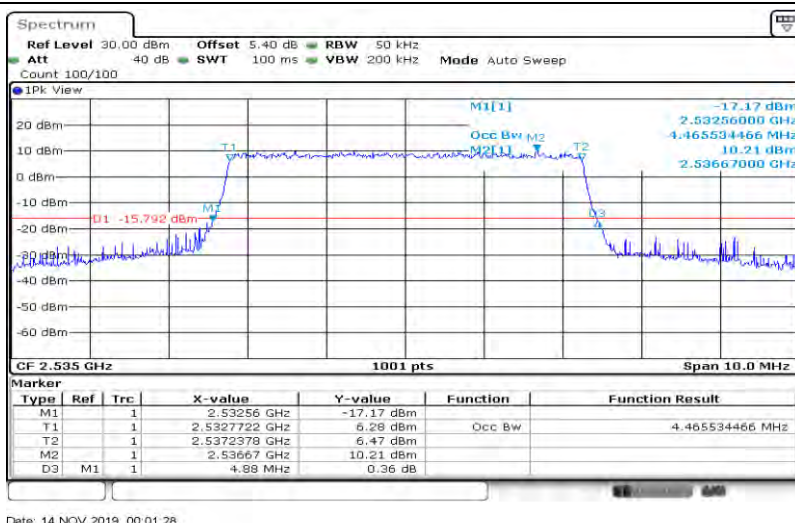


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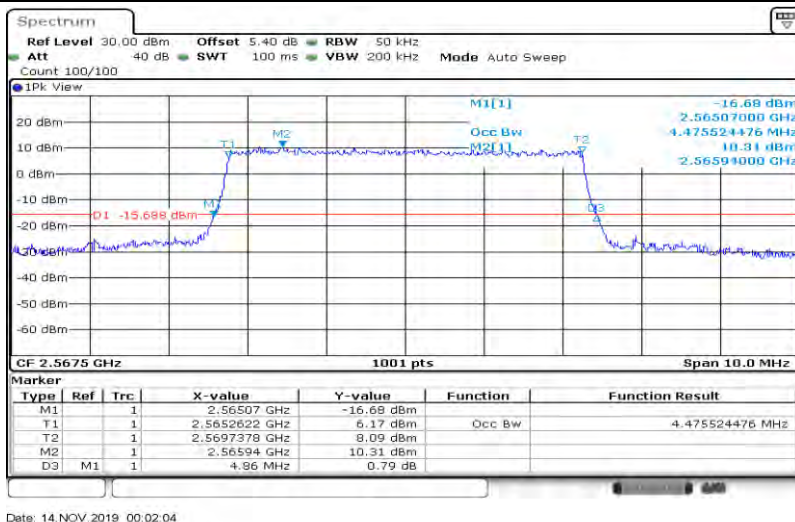
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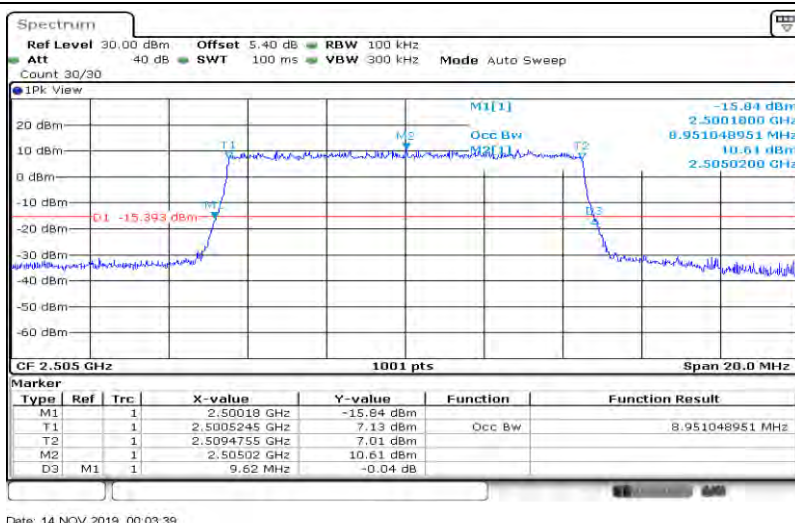
Band7-10MHz-QPSK-20800-50RB#0-8.951



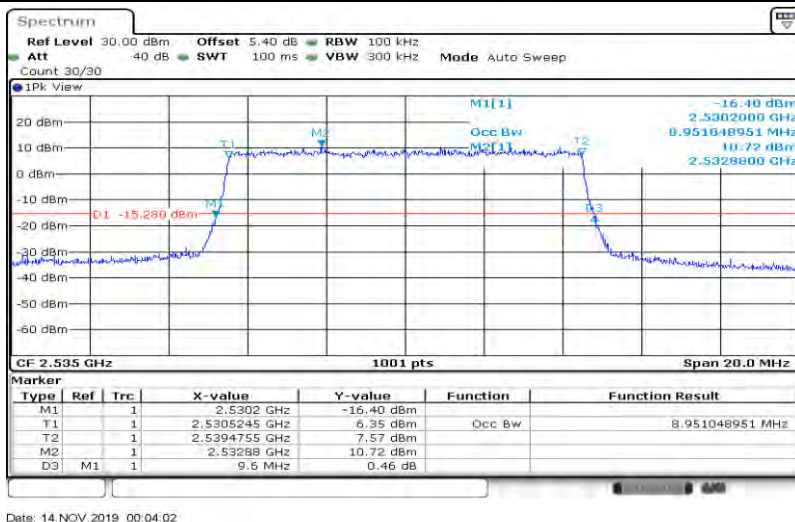
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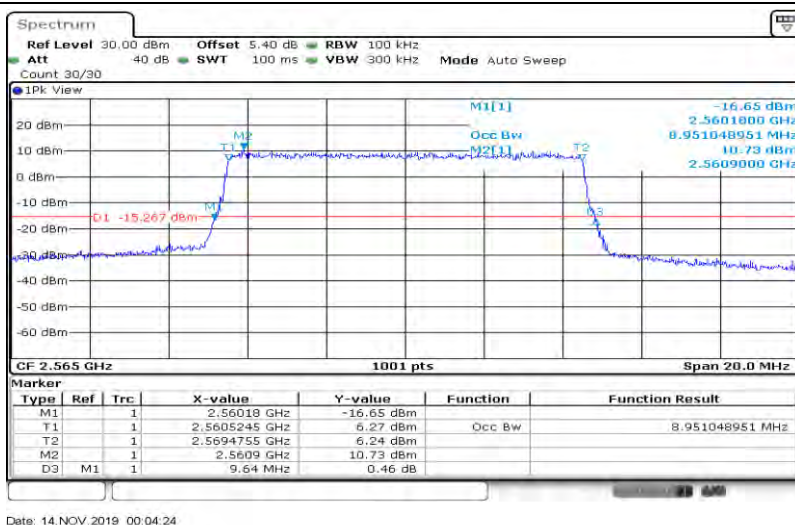


Band7-10MHz-QPSK-21100-50RB#0-8.951

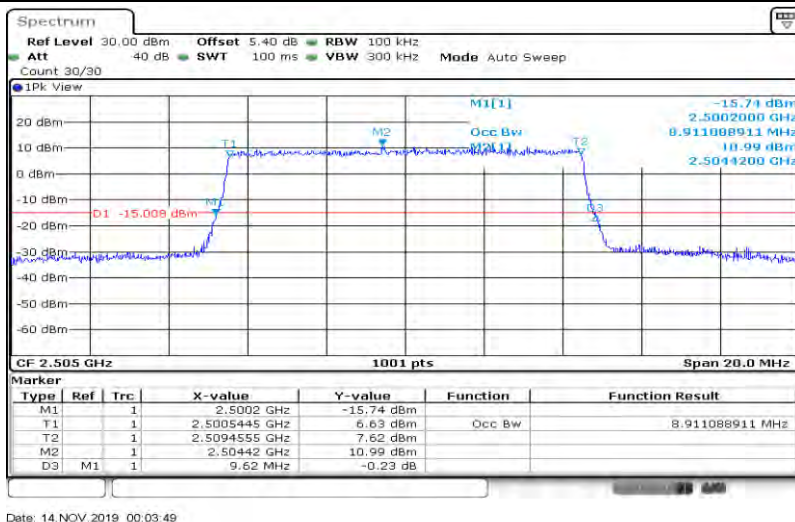


Band7-10MHz-QPSK-21400-50RB#0-8.951





Band7-10MHz-16QAM-20800-50RB#0-8.911



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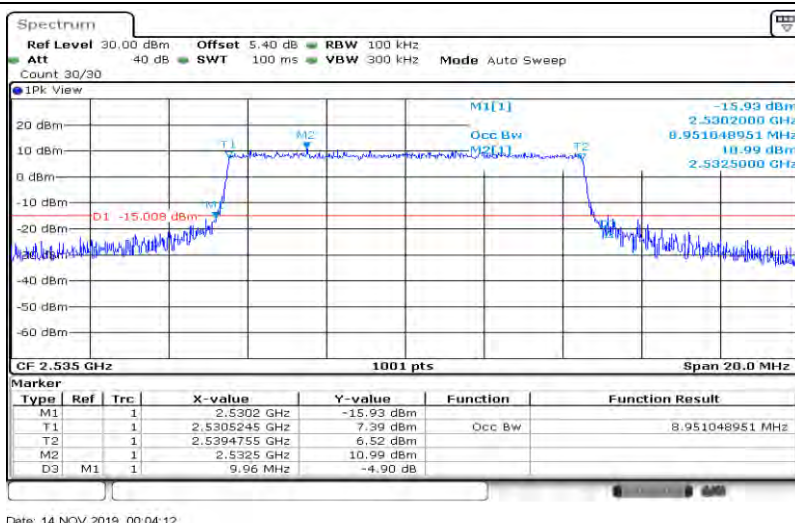


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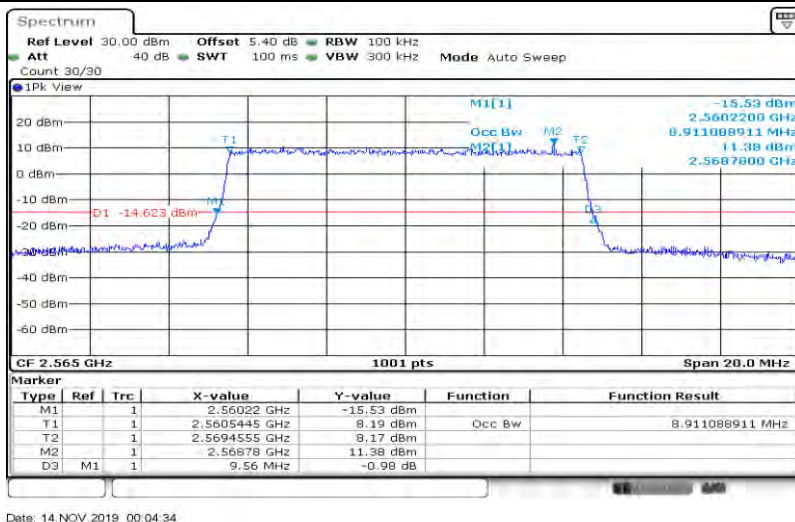
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Band7-10MHz-16QAM-21400-50RB#0-8.911

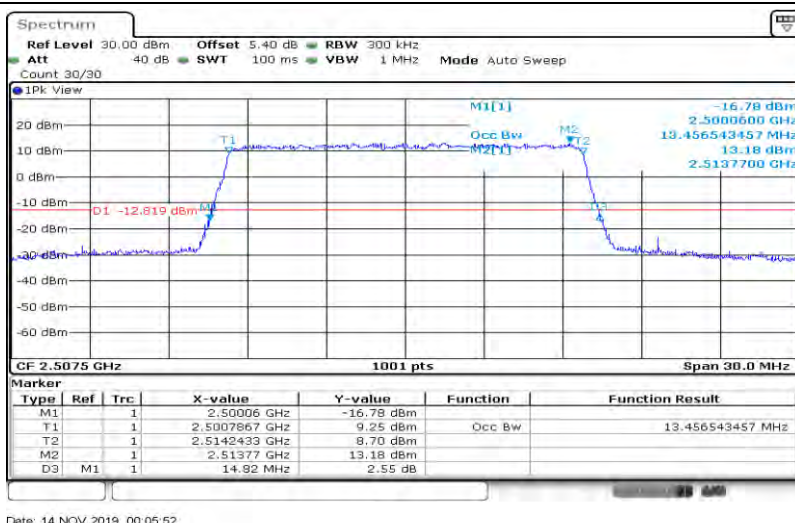


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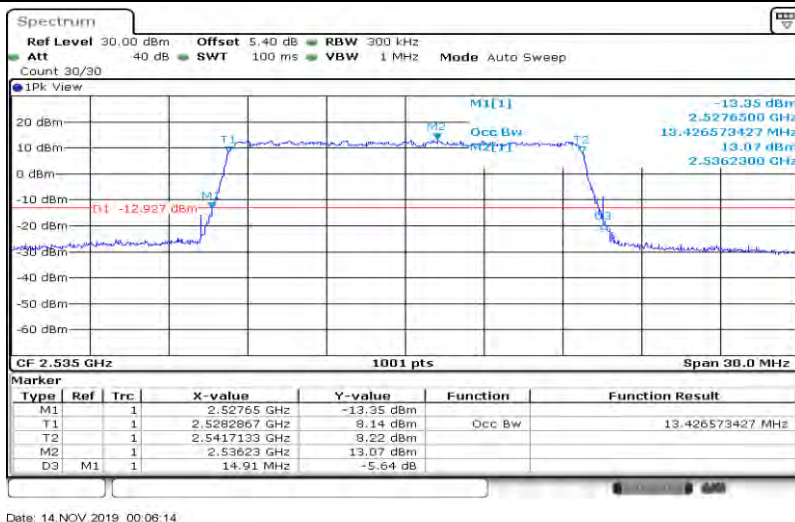


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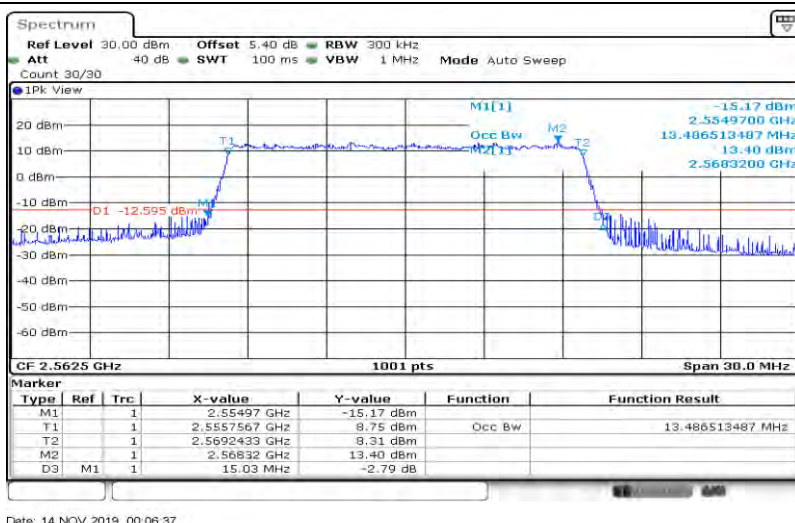


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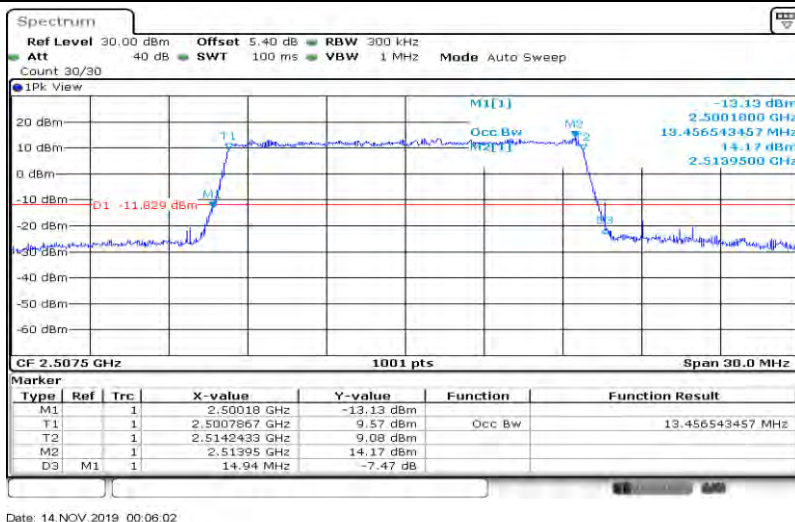


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Band7-15MHz-16QAM-20825-75RB#0-13.457

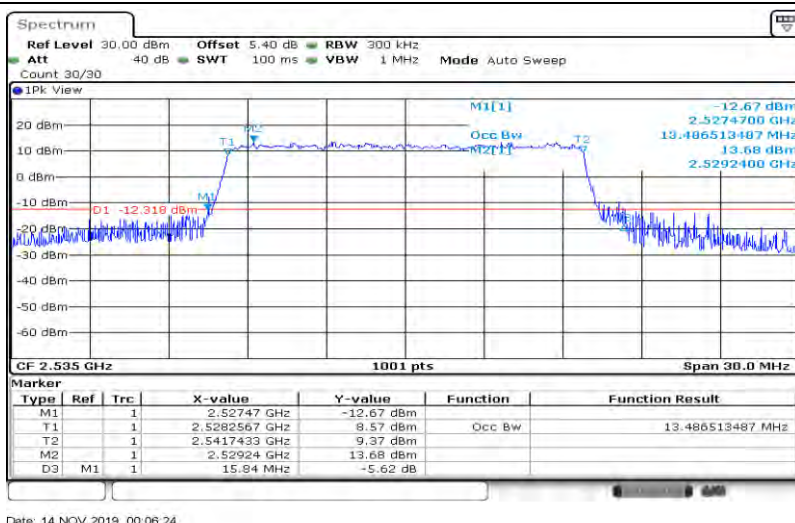


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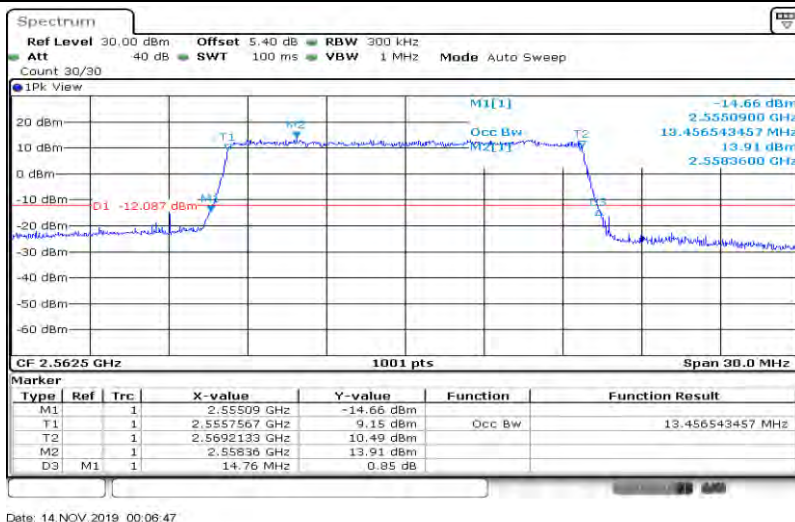


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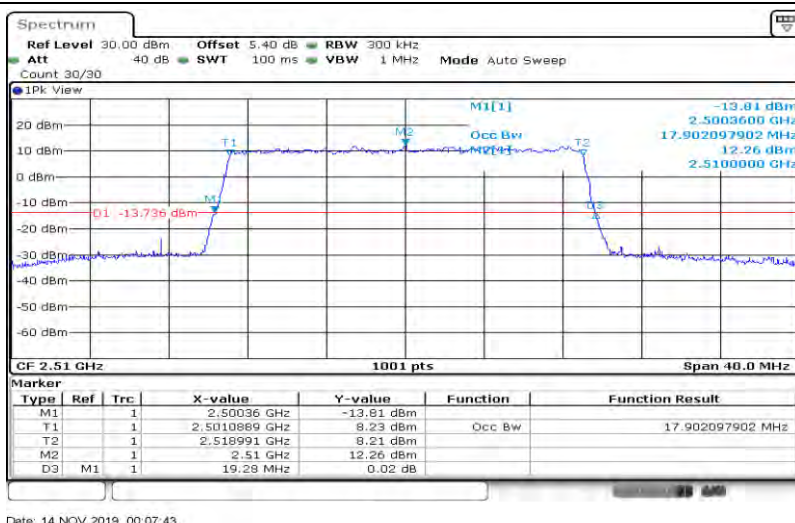


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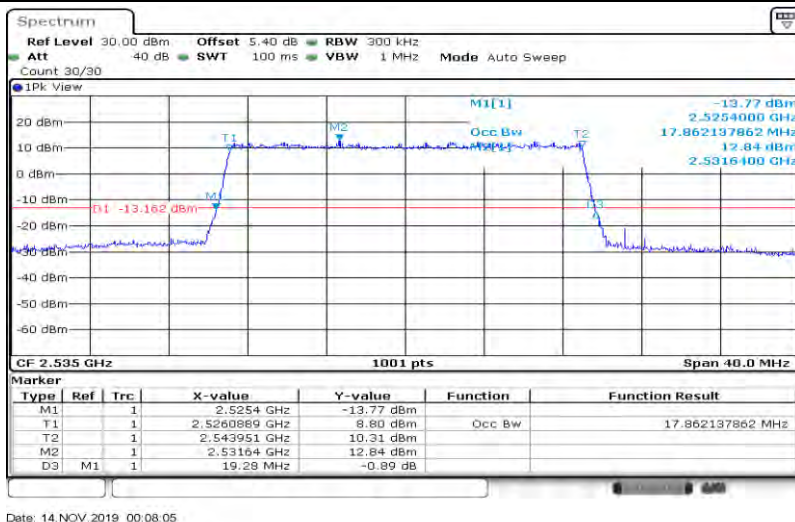


Band7-20MHz-QPSK-20850-100RB#0-17.902





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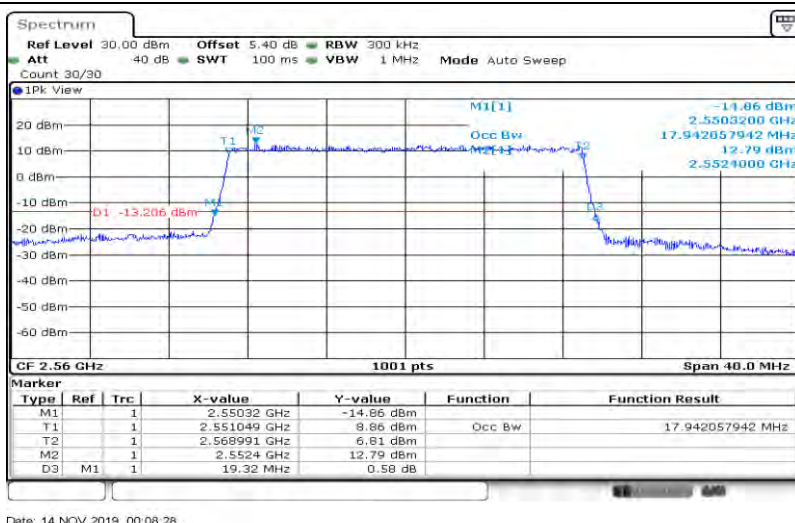
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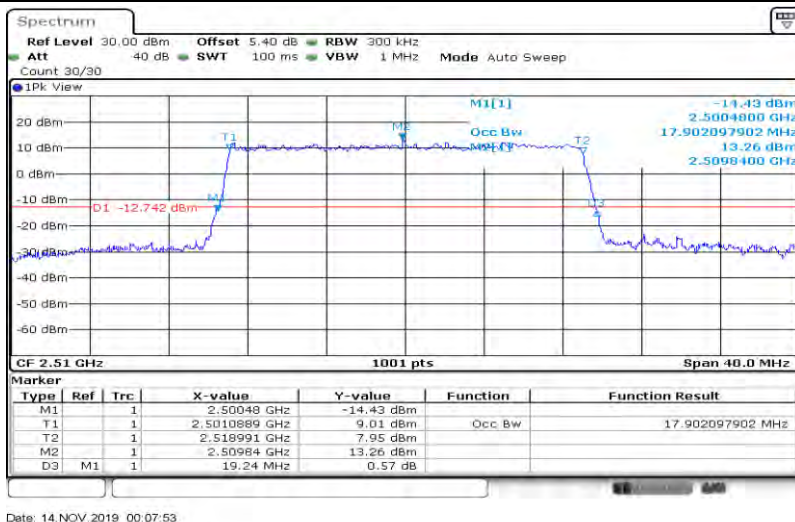
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Band7-20MHz-16QAM-20850-100RB#0-17.902



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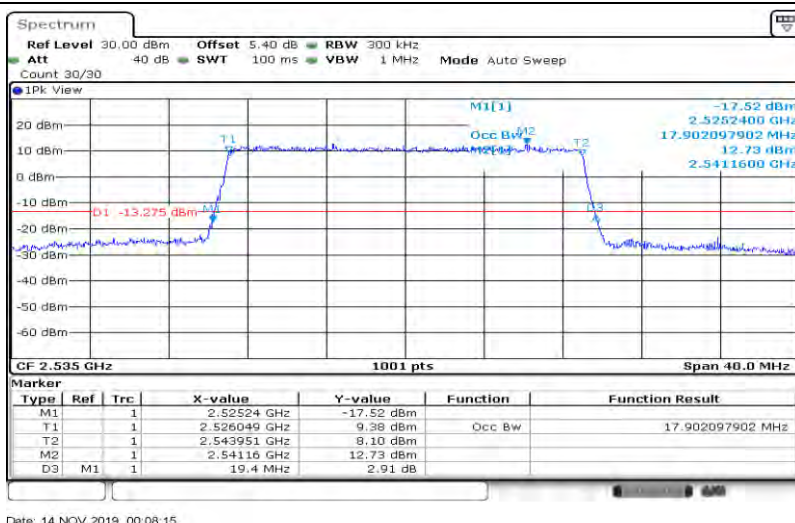


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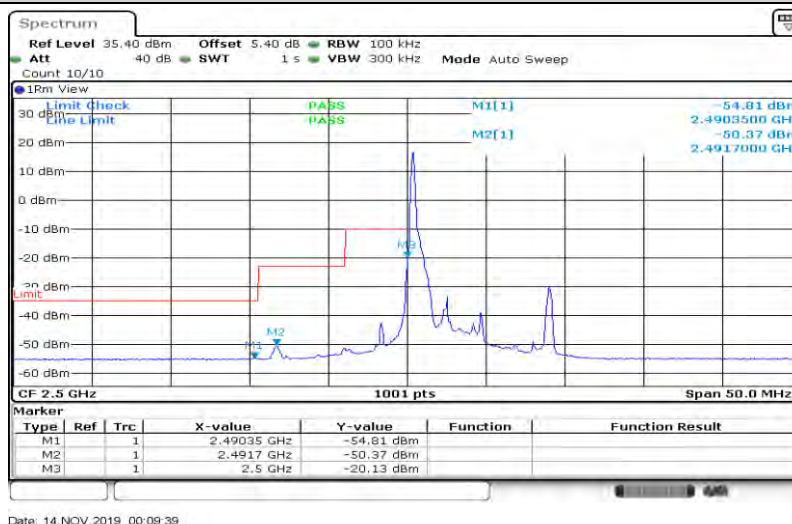
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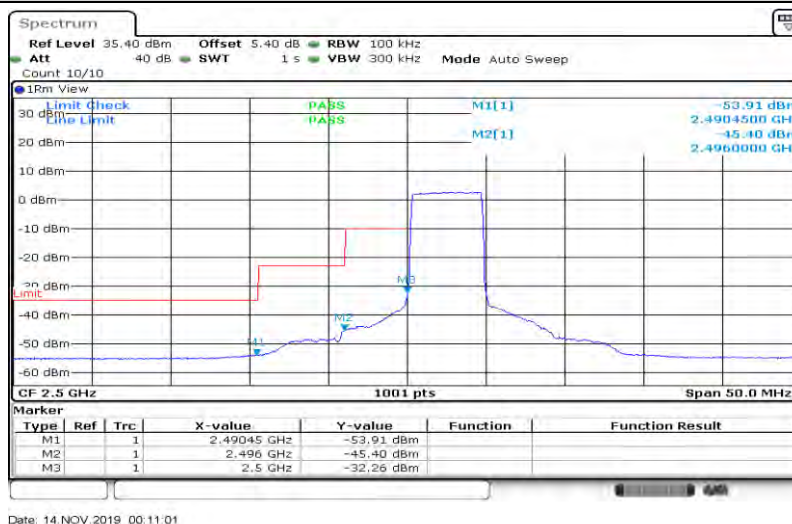
## 5. Band Edge Compliance

### 5.1. Test Plots

Band7-5MHz-QPSK-20775-1RB#0



Band7-5MHz-QPSK-20775-25RB#0

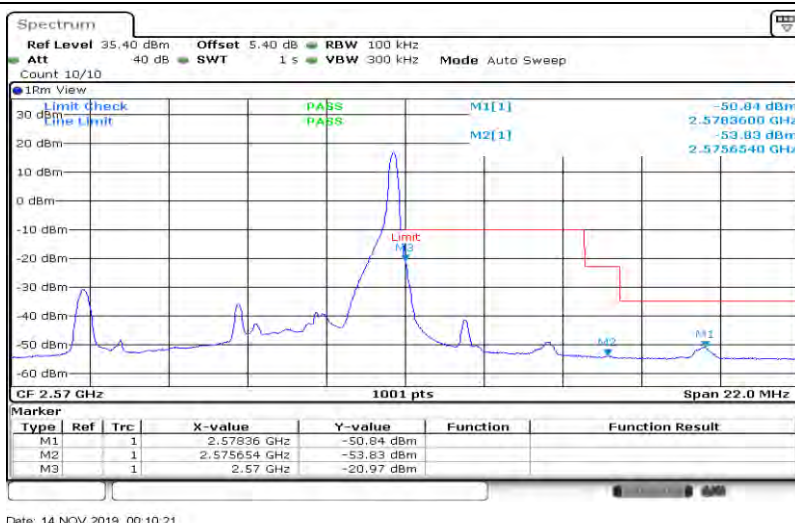


Band7-5MHz-QPSK-21425-1RB#24



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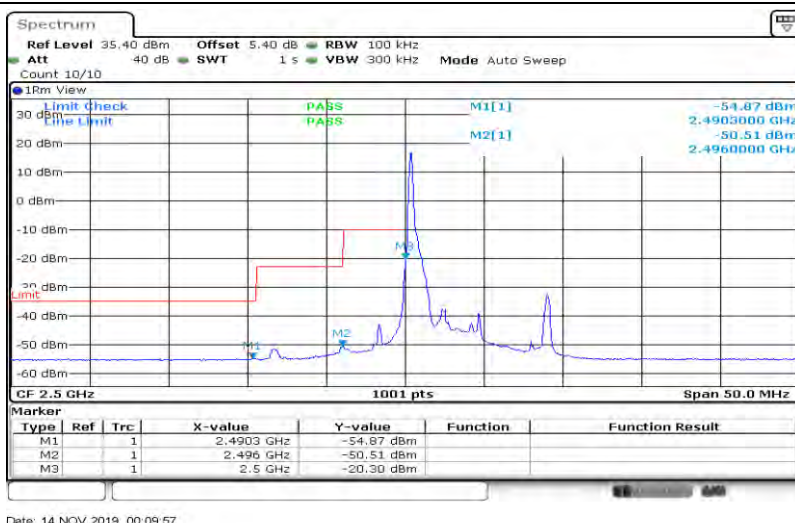
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## Band7-5MHz-16QAM-20775-1RB#0



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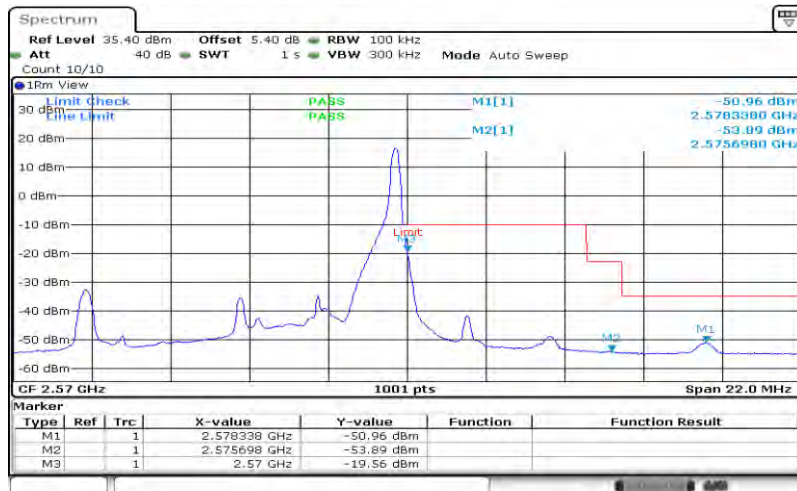


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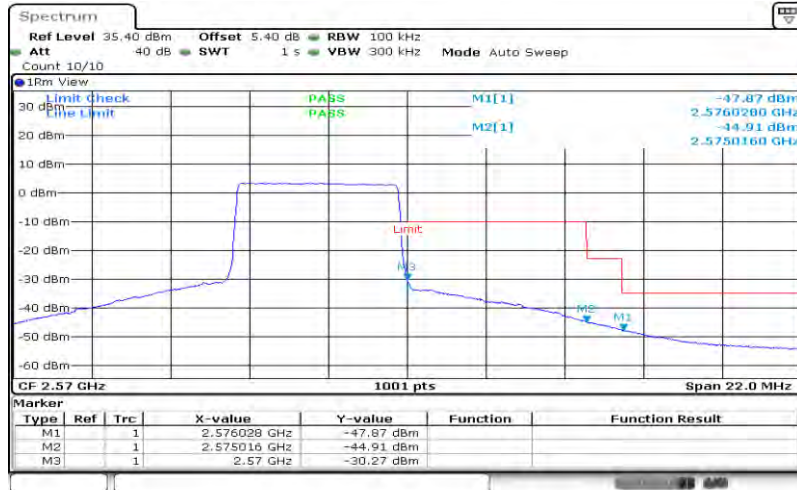
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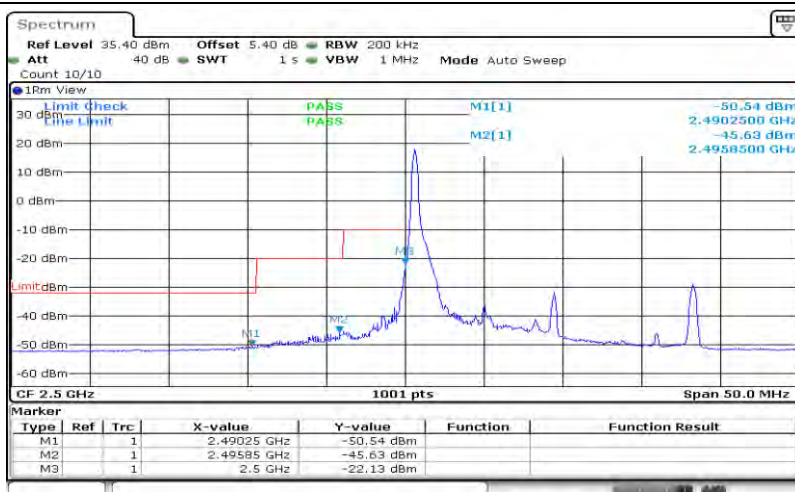
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Band7-10MHz-QPSK-20800-1RB#0



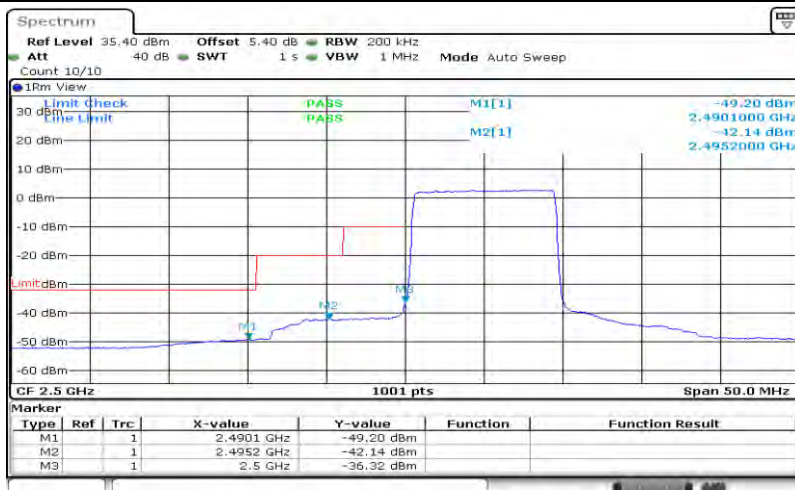
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Date: 14 NOV 2019 00:12:47

## Band7-10MHz-QPSK-20800-50RB#0



Date: 14.NOV.2019 00:14:10

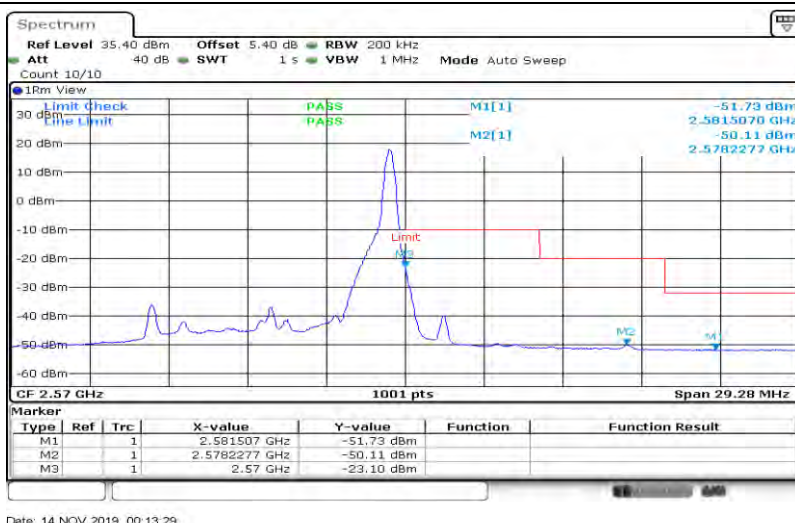
## Band7-10MHz-QPSK-21400-1RB#49



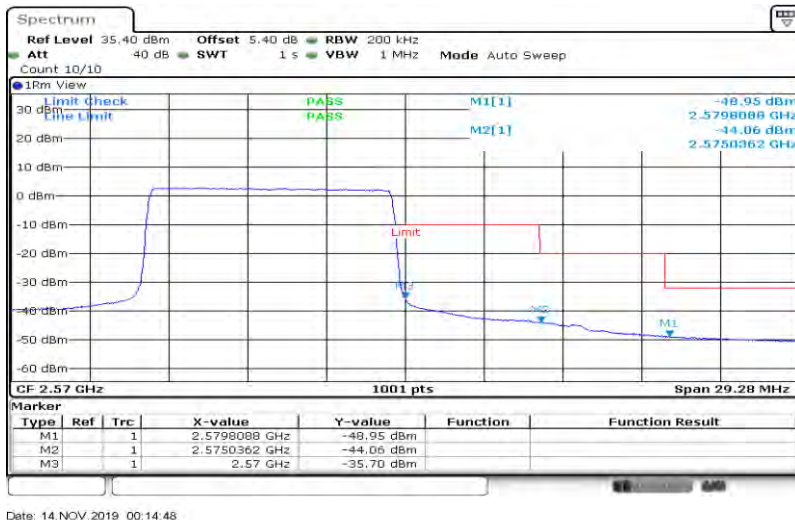
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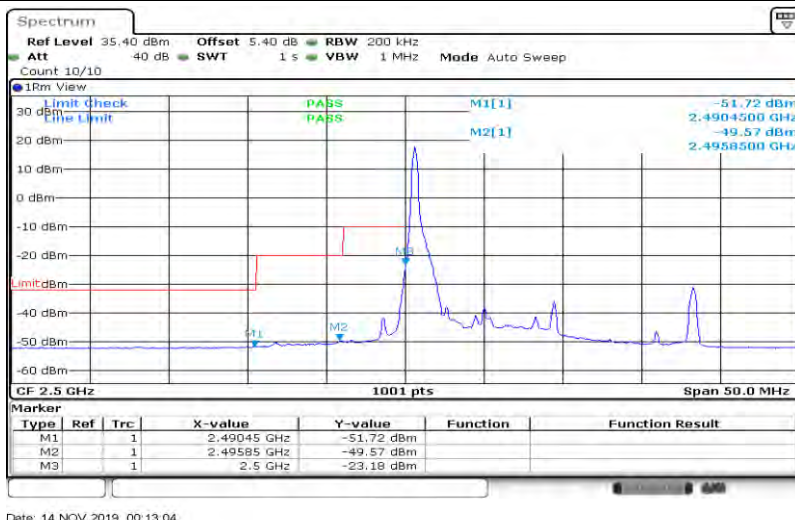
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## Band7-10MHz-QPSK-21400-50RB#0



## Band7-10MHz-16QAM-20800-1RB#0



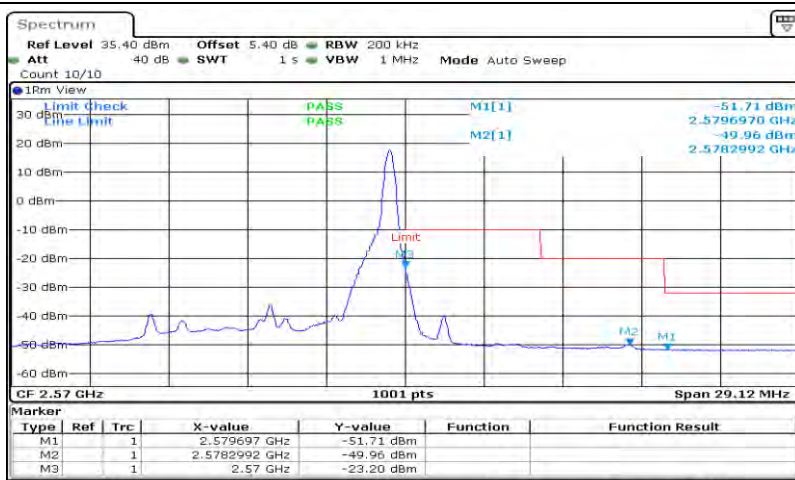
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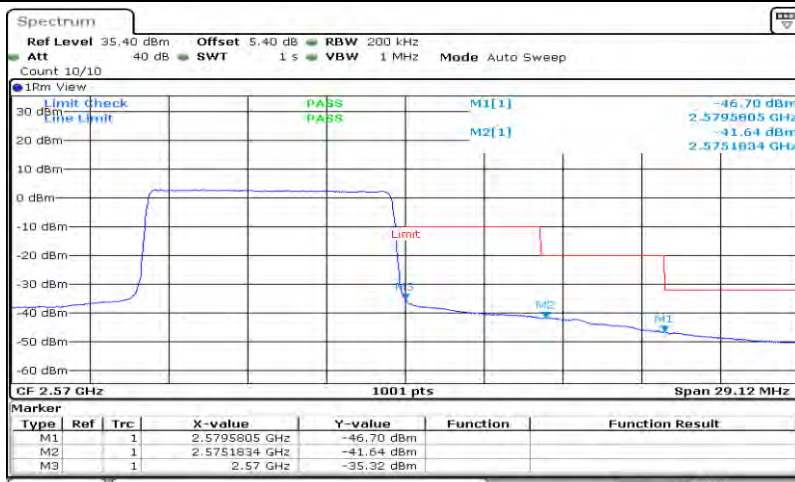
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### Band7-10MHz-16QAM-21400-1RB#49



Date: 14.NOV.2019 00:13:47

## Band7-10MHz-16QAM-21400-50RB#0



Date: 14.NOV.2019 00:15:06

## Band7-15MHz-QPSK-20825-1RB#0

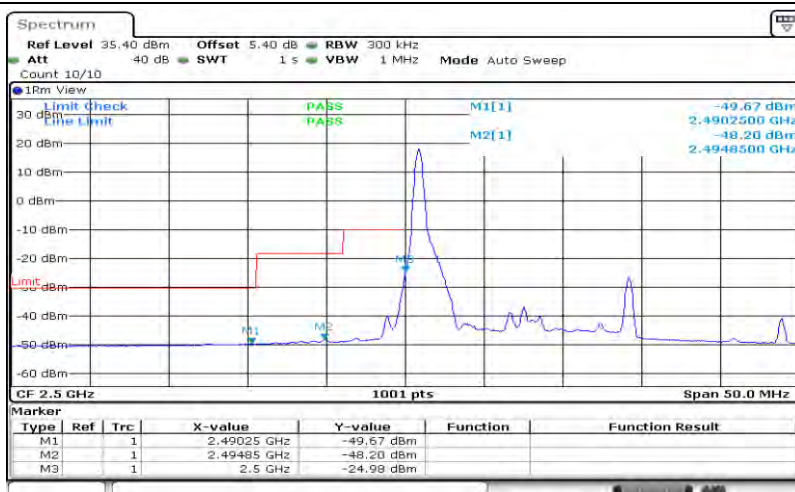


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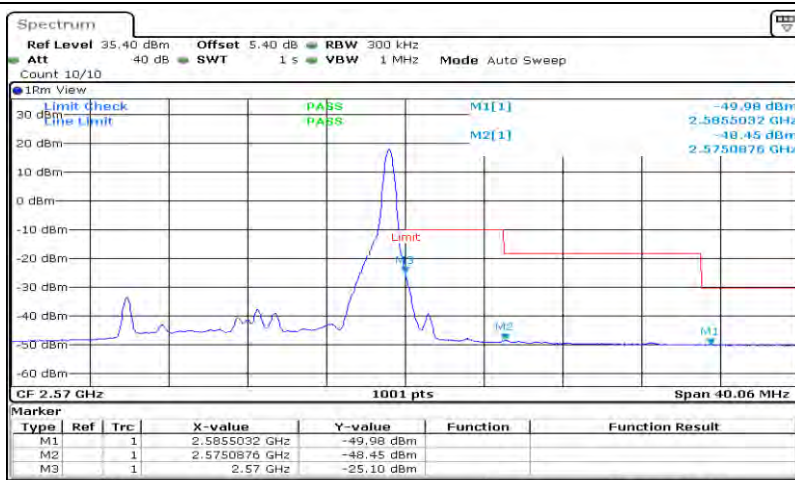
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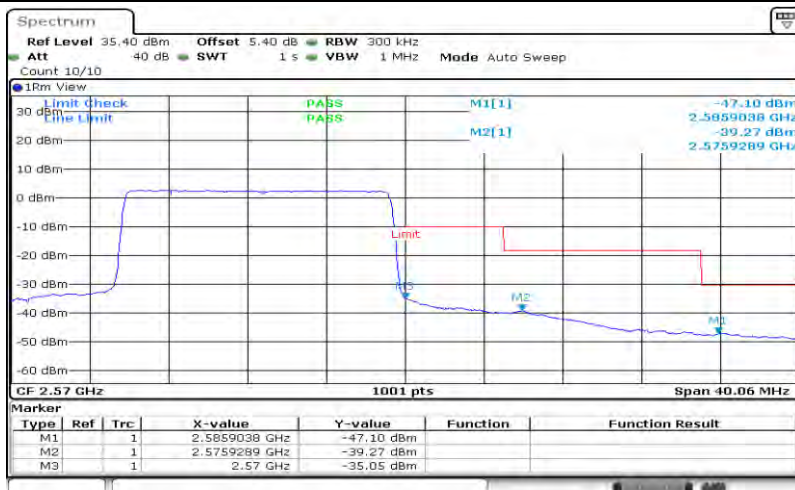
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Date: 14.NOV.2019 00:17:04

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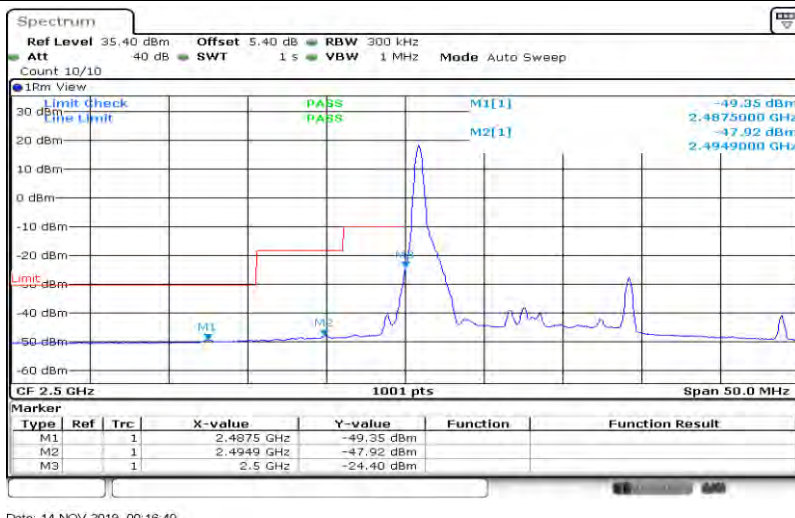
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Date: 14.NOV.2019 00:16:40

### Band7-15MHz-16QAM-20825-75RB#0



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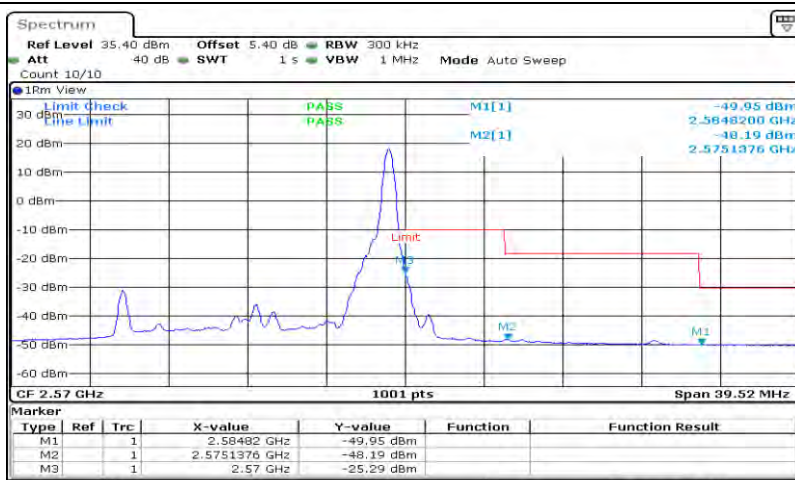
### Band7-15MHz-16QAM-21375-1RB#74



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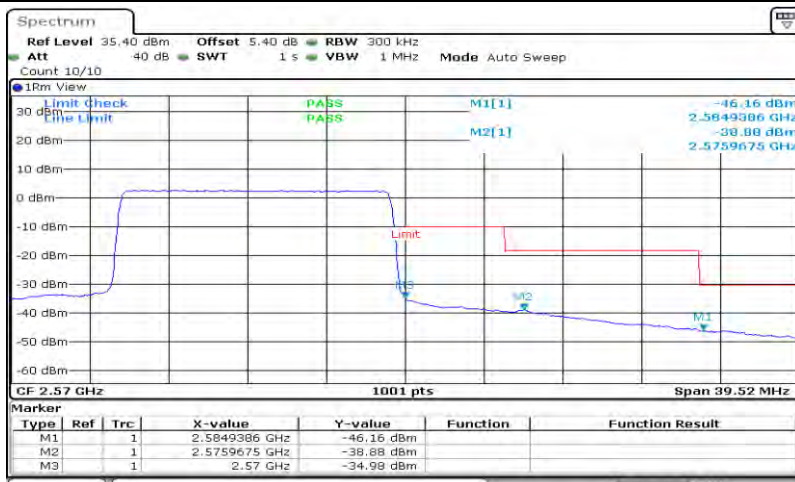
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Date: 14.NOV.2019 00:17:22

### Band7-15MHz-16QAM-21375-75RB#0



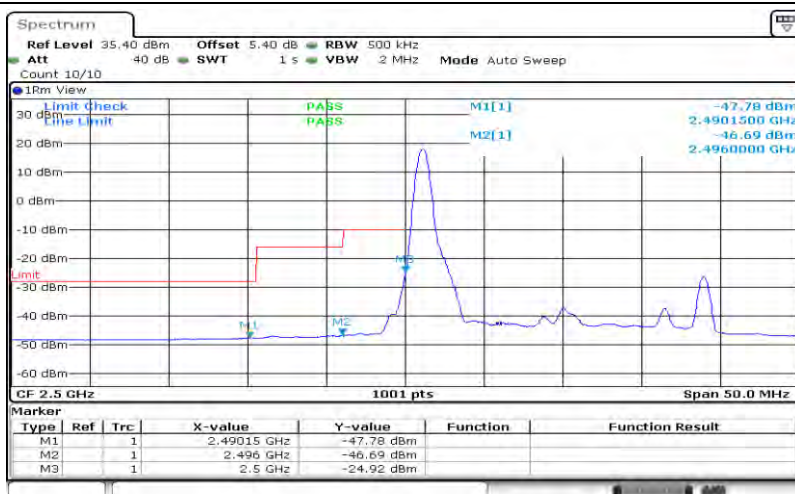
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### Band7-20MHz-QPSK-20850-1RB#0



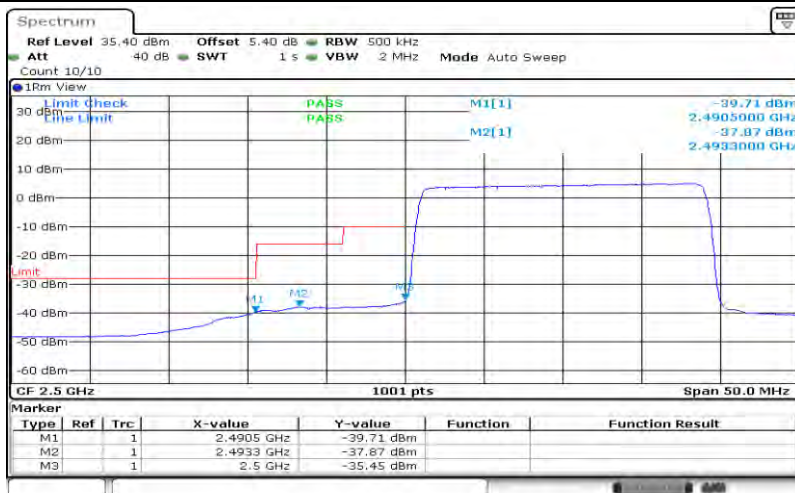
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Date: 14.NOV.2019 00:19:32

Band7-20MHz-QPSK-20850-100RB#0



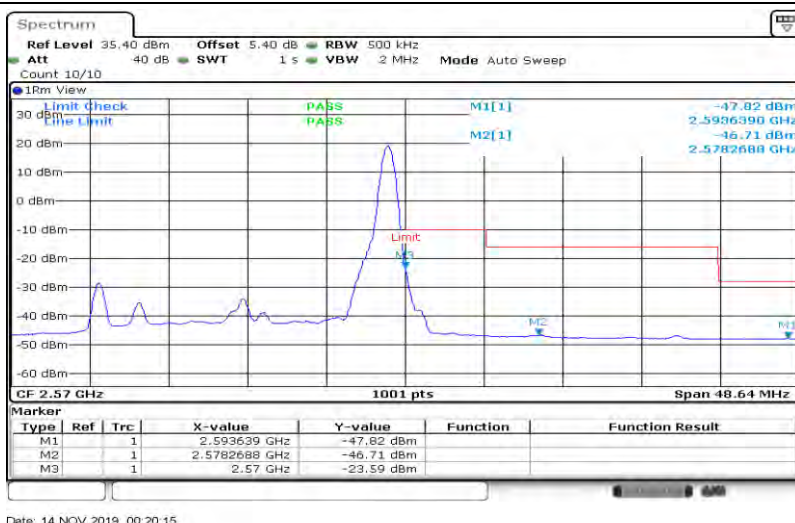
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Band7-20MHz-QPSK-21350-1RB#99



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### Band7-20MHz-QPSK-21350-100RB#0

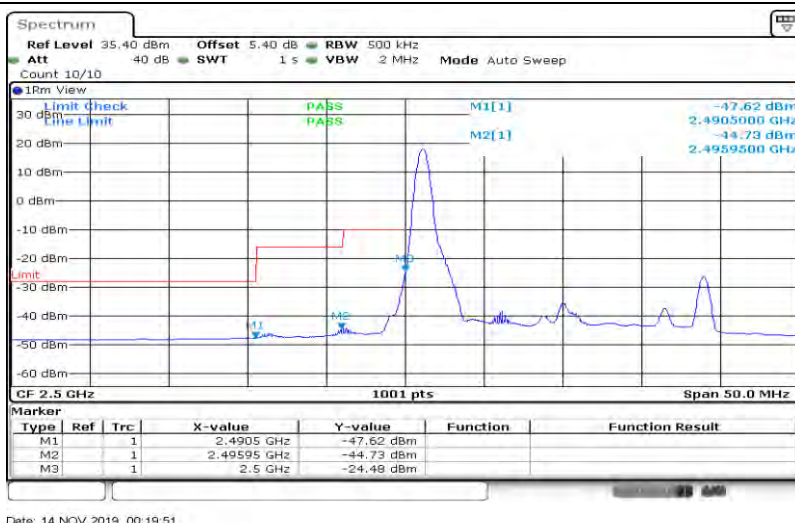


### Band7-20MHz-16QAM-20850-1RB#0



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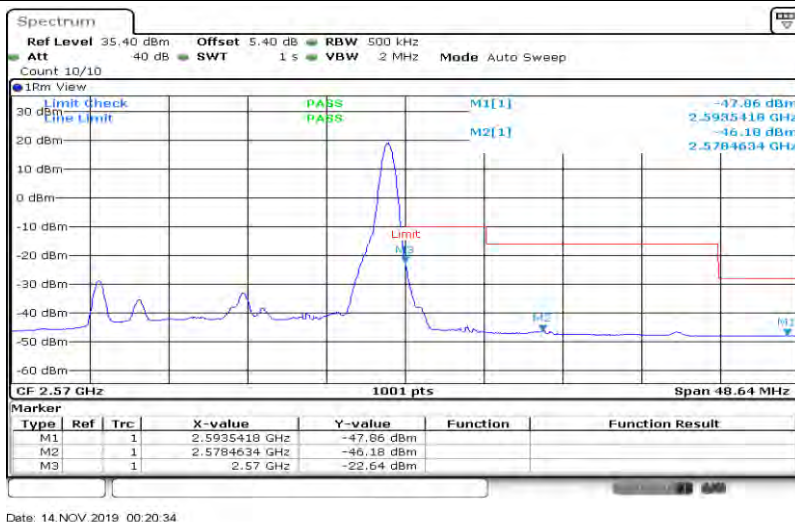


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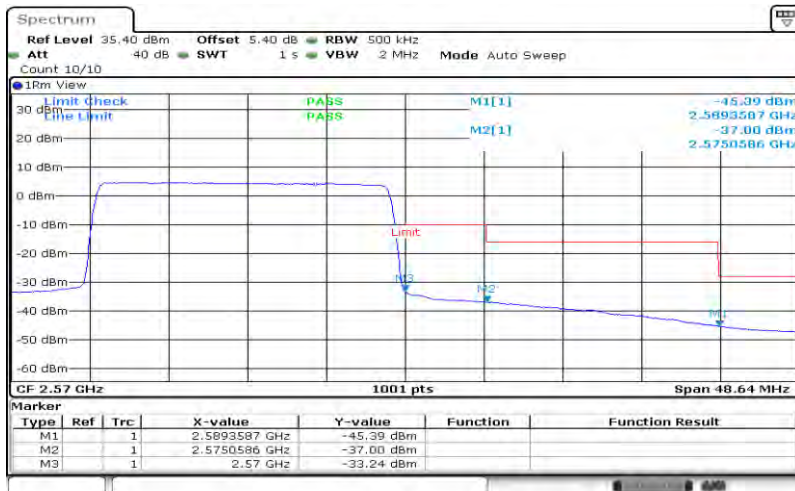
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Date: 14.NOV.2019 00:21:57



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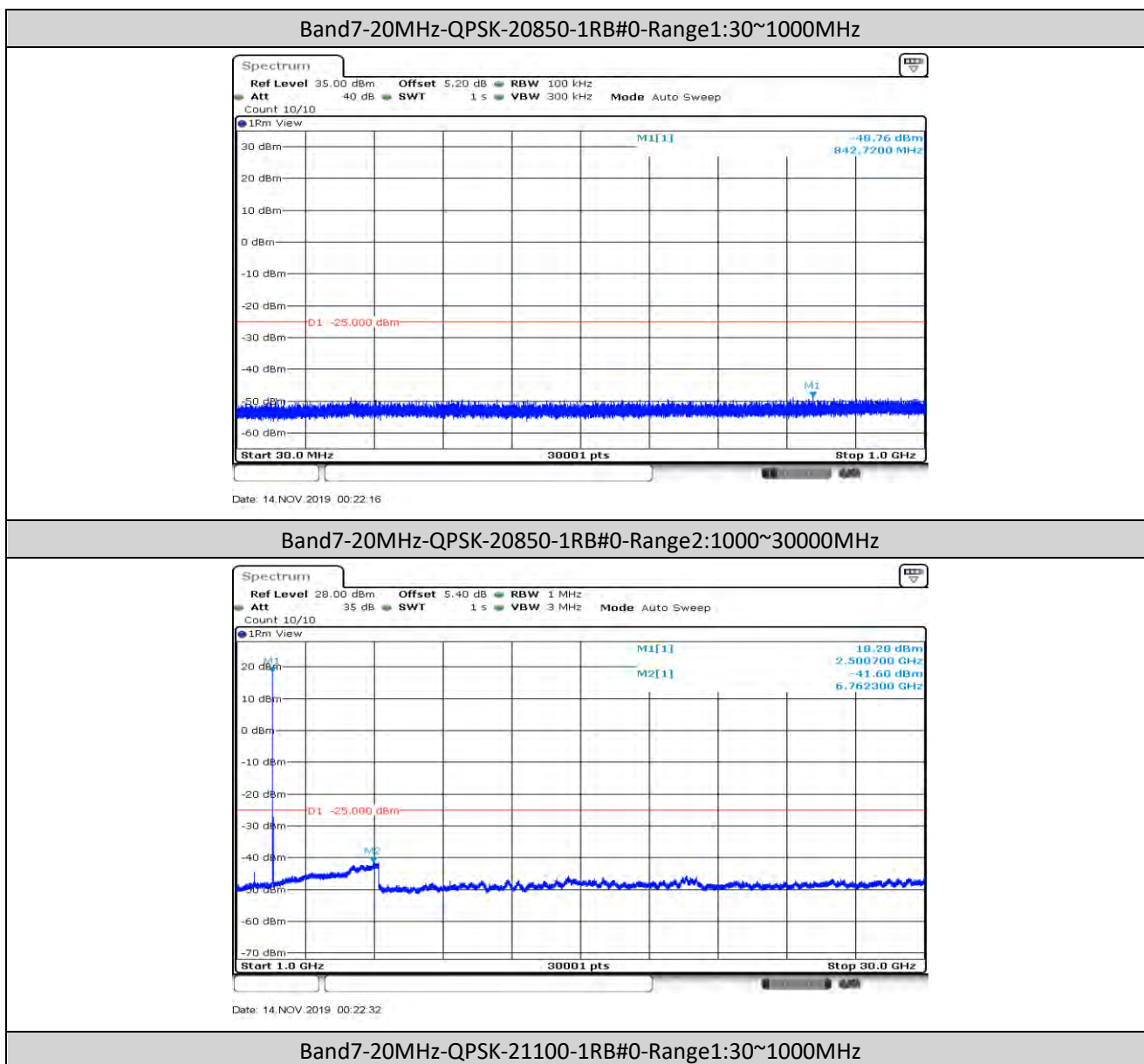
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## 6. Spurious Emission at Antenna Terminal

Remark1: For the averaged unwanted emissions measurements, the measurement points in each sweep is greater than twice the Span/RBW in order to ensure bin-to-bin spacing of  $< RBW/2$  so that narrowband signals are not lost between frequency bins. As to the present test item, the "Measurement Points =  $k * (\text{Span} / RBW)$ " with  $k$  between 4 and 5, which results in an acceptable level error of less than 0.5 dB.

Remark2: only the worst case data displayed in this report.

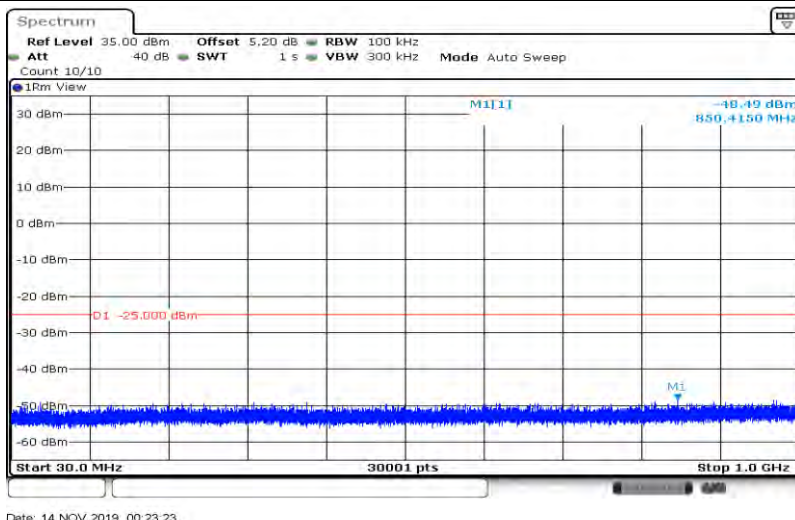
### 6.1. Test Plots



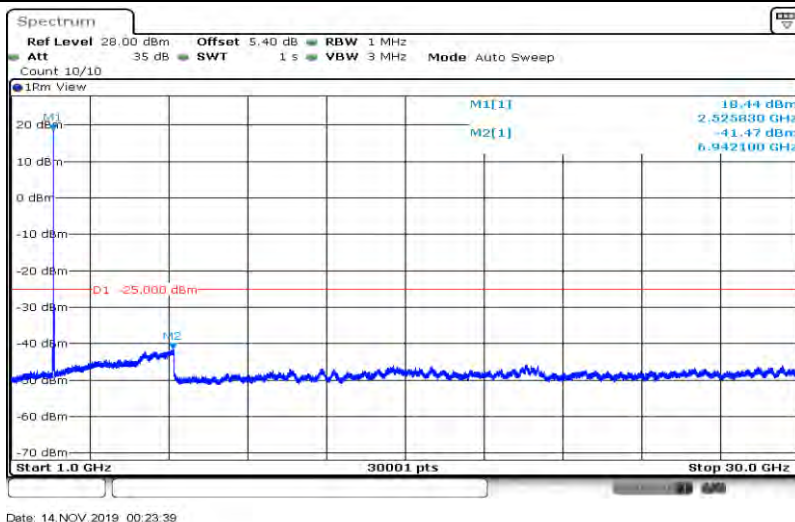
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**Band7-20MHz-QPSK-21100-1RB#0-Range2:1000~30000MHz**

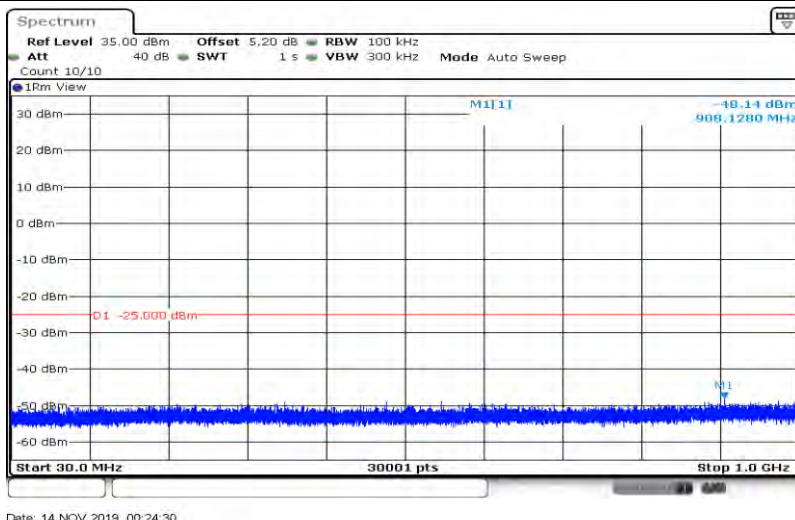


**Band7-20MHz-QPSK-21350-1RB#0-Range1:30~1000MHz**

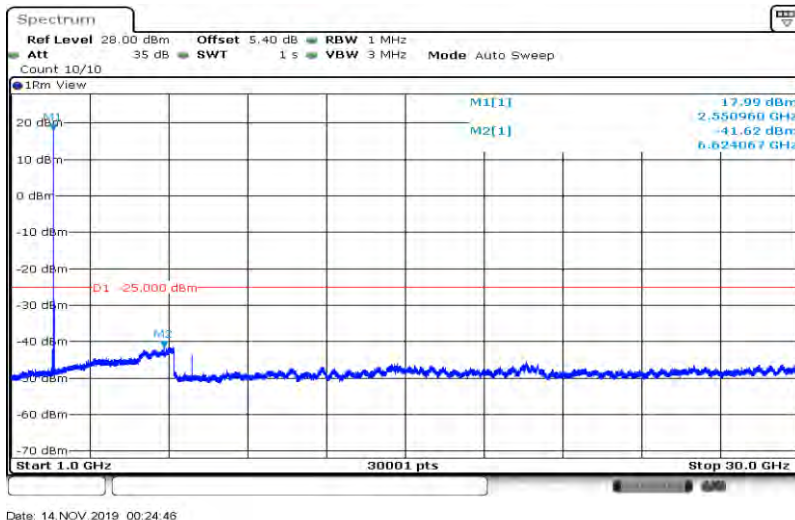


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Band7-20MHz-QPSK-21350-1RB#0-Range2:1000~30000MHz



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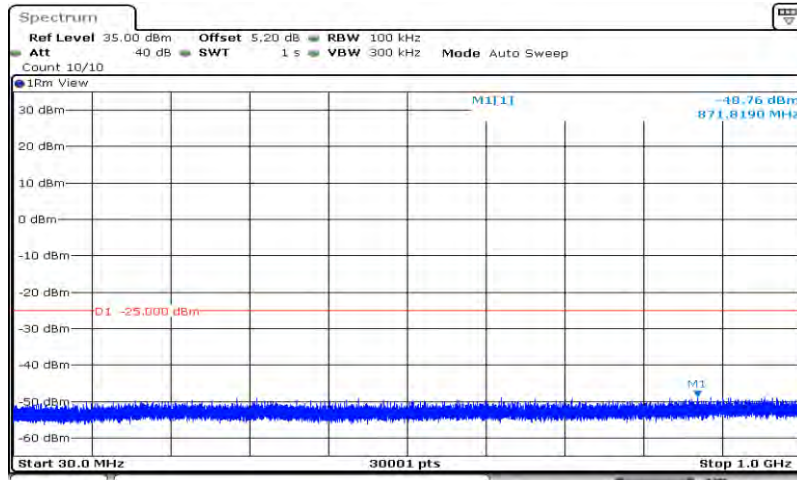


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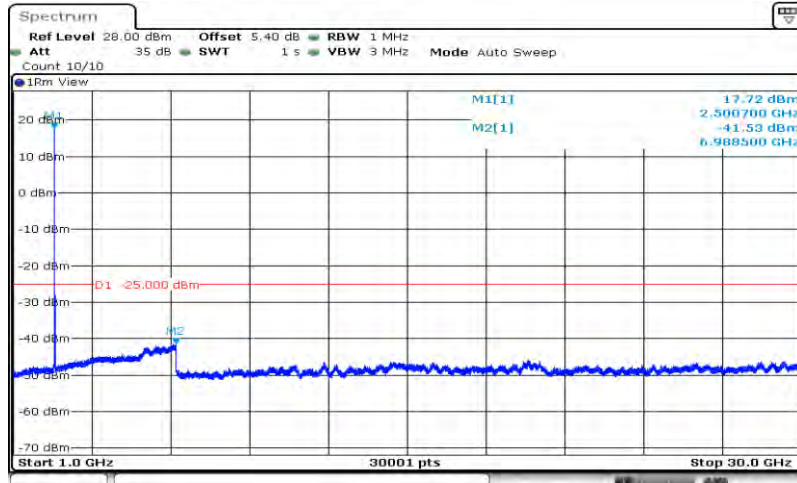
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Date: 14.NOV.2019 00:22:48

Band7-20MHz-16QAM-20850-1RB#0-Range2:1000~30000MHz



Date: 14.NOV.2019 00:23:05

Band7-20MHz-16QAM-21100-1RB#0-Range1:30~1000MHz

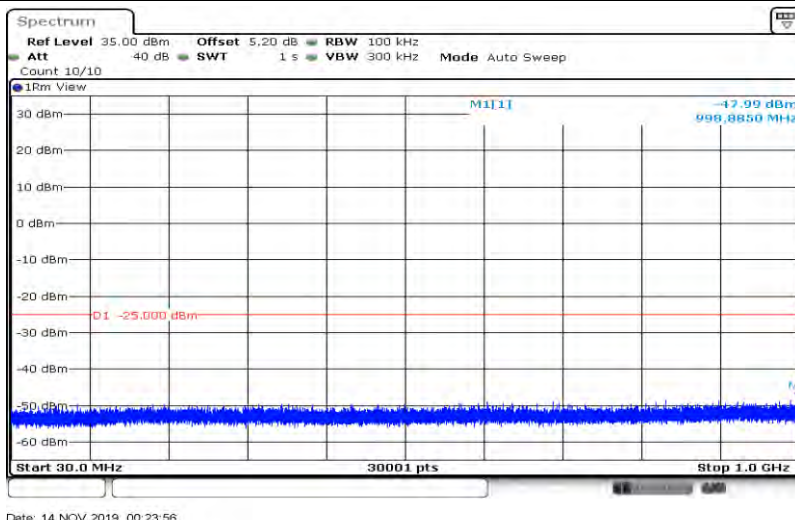


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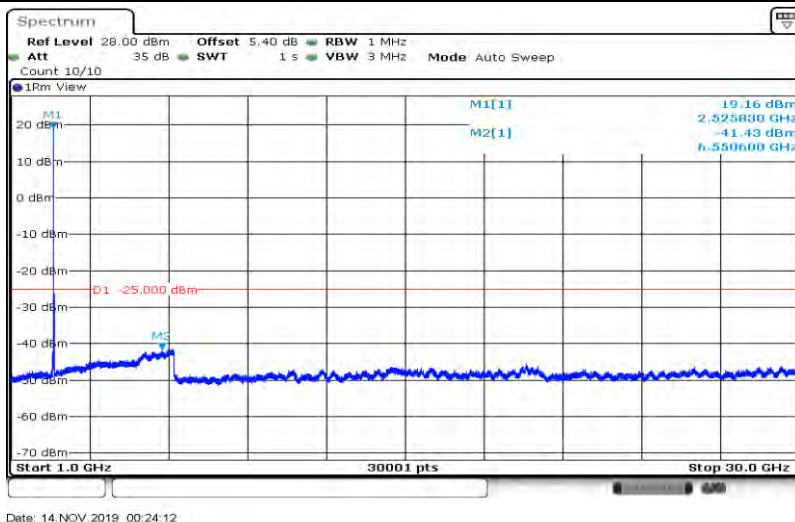
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Band7-20MHz-16QAM-21100-1RB#0-Range2:1000~30000MHz

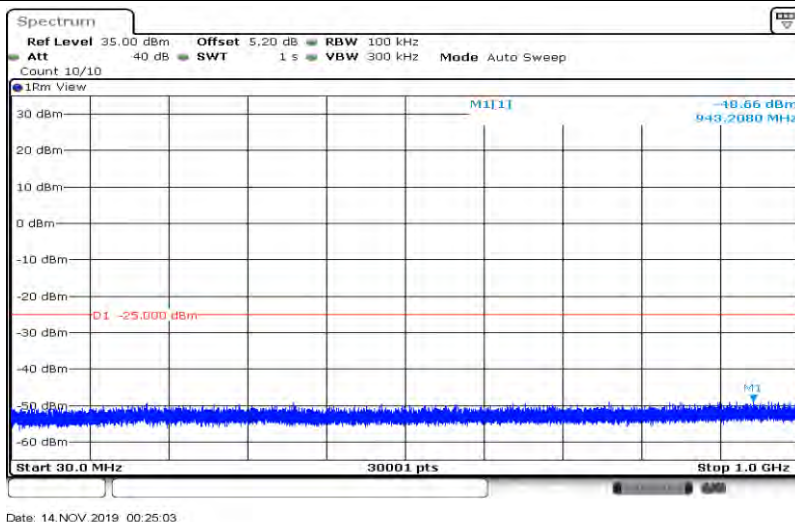


Band7-20MHz-16QAM-21350-1RB#0-Range1:30~1000MHz

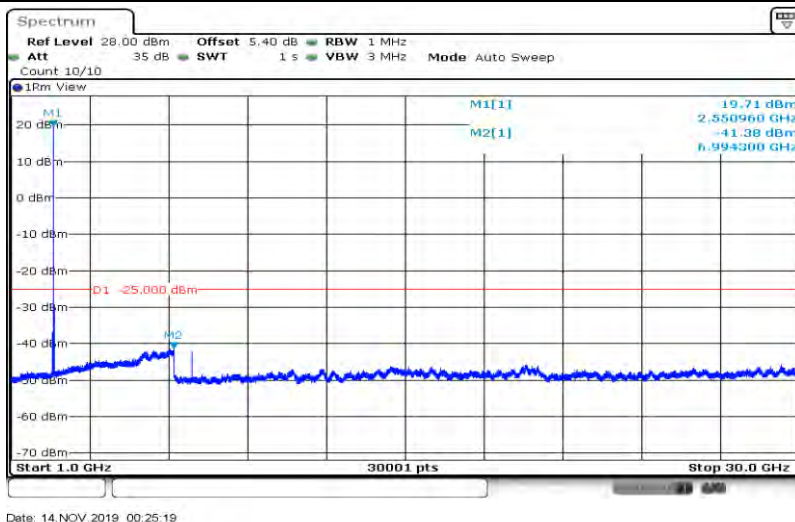


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## Band7-20MHz-16QAM-21350-1RB#0-Range2:1000~30000MHz



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## 7. Field Strength of Spurious Radiation

### 7.1. Test Band = LTE Band 4

#### 7.1.1. Test Mode = LTE/TM1 20MHz

##### 7.1.1.1. Test Channel = LCH

| Frequency (MHz) | Level (dBm) | Limit Line (dBm) | Margin (dB) | Polarization |
|-----------------|-------------|------------------|-------------|--------------|
| 109.6410        | -66.20      | -25.00           | 41.20       | Vertical     |
| 610.0405        | -65.43      | -25.00           | 40.43       | Vertical     |
| 5002.2801       | -52.86      | -25.00           | 27.86       | Vertical     |
| 7503.1801       | -41.71      | -25.00           | 16.71       | Vertical     |
| 10004.6802      | -37.78      | -25.00           | 12.78       | Vertical     |
| 17996.9999      | -35.46      | -25.00           | 10.46       | Vertical     |
| 44.5992         | -65.99      | -25.00           | 40.99       | Horizontal   |
| 230.0725        | -69.71      | -25.00           | 44.71       | Horizontal   |
| 726.7373        | -64.29      | -25.00           | 39.29       | Horizontal   |
| 7503.1801       | -47.45      | -25.00           | 22.45       | Horizontal   |
| 11297.1319      | -49.01      | -25.00           | 24.01       | Horizontal   |
| 16390.1356      | -38.70      | -25.00           | 13.70       | Horizontal   |

##### 7.1.1.2. Test Channel = MCH

| Frequency (MHz) | Level (dBm) | Limit Line (dBm) | Margin (dB) | Polarization |
|-----------------|-------------|------------------|-------------|--------------|
| 110.7080        | -66.67      | -25.00           | 41.67       | Vertical     |
| 745.1683        | -63.39      | -25.00           | 38.39       | Vertical     |
| 5052.0821       | -54.82      | -25.00           | 29.82       | Vertical     |
| 7578.1831       | -44.29      | -25.00           | 19.29       | Vertical     |
| 10104.2842      | -41.28      | -25.00           | 16.28       | Vertical     |
| 17989.1996      | -35.79      | -25.00           | 10.79       | Vertical     |
| 43.9202         | -64.97      | -25.00           | 39.97       | Horizontal   |
| 230.9941        | -69.03      | -25.00           | 44.03       | Horizontal   |
| 858.2759        | -62.01      | -25.00           | 37.01       | Horizontal   |
| 7578.1831       | -49.27      | -25.00           | 24.27       | Horizontal   |
| 12416.7767      | -47.97      | -25.00           | 22.97       | Horizontal   |
| 16392.5357      | -39.62      | -25.00           | 14.62       | Horizontal   |



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### 7.1.1.3. Test Channel = HCH

| Frequency (MHz) | Level (dBm) | Limit Line (dBm) | Margin (dB) | Polarization |
|-----------------|-------------|------------------|-------------|--------------|
| 108.0404        | -66.31      | -25.00           | 41.31       | Vertical     |
| 692.4461        | -64.40      | -25.00           | 39.40       | Vertical     |
| 5102.4841       | -55.17      | -25.00           | 30.17       | Vertical     |
| 7653.1861       | -44.73      | -25.00           | 19.73       | Vertical     |
| 10204.4882      | -43.65      | -25.00           | 18.65       | Vertical     |
| 17998.1999      | -35.24      | -25.00           | 10.24       | Vertical     |
| 43.9202         | -65.32      | -25.00           | 40.32       | Horizontal   |
| 239.7245        | -68.84      | -25.00           | 43.84       | Horizontal   |
| 773.9302        | -62.36      | -25.00           | 37.36       | Horizontal   |
| 7653.1861       | -51.56      | -25.00           | 26.56       | Horizontal   |
| 12403.5761      | -47.72      | -25.00           | 22.72       | Horizontal   |
| 16403.9362      | -39.43      | -25.00           | 14.43       | Horizontal   |

#### Remark:

- 1 According to 971168 D01 Power Meas License Digital Systems, The amplitudes of unwanted emissions that are attenuated more than 20 dB below the applicable limit are not required to be reported.
- 2 The disturbance below 30MHz was very low, and the above harmonics were the highest point could be found when testing, so only the worst case data displayed in this report.
- 3 all modulation and all Bandwidth had been tested, but only the worst case data displayed in this report.



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## 8. Frequency Stability

### 8.1. Frequency Vs Voltage

| Band  | Bandwidth | Modulation | Channel | RB Configure | Voltage [Vdc] | Temperature (°C) | Deviation (Hz) | Deviation (ppm) | Limit (ppm) | Verdict |
|-------|-----------|------------|---------|--------------|---------------|------------------|----------------|-----------------|-------------|---------|
| Band7 | 20MHz     | QPSK       | 20850   | 100RB#0      | VL            | NT               | 9.20           | 0.003665        | ±2.5        | PASS    |
| Band7 | 20MHz     | QPSK       | 20850   | 100RB#0      | VN            | NT               | -11.80         | -0.004701       | ±2.5        | PASS    |
| Band7 | 20MHz     | QPSK       | 20850   | 100RB#0      | VH            | NT               | 2.90           | 0.001155        | ±2.5        | PASS    |
| Band7 | 20MHz     | QPSK       | 21100   | 100RB#0      | VL            | NT               | -4.70          | -0.001854       | ±2.5        | PASS    |
| Band7 | 20MHz     | QPSK       | 21100   | 100RB#0      | VN            | NT               | -1.50          | -0.000592       | ±2.5        | PASS    |
| Band7 | 20MHz     | QPSK       | 21100   | 100RB#0      | VH            | NT               | 4.40           | 0.001736        | ±2.5        | PASS    |
| Band7 | 20MHz     | QPSK       | 21350   | 100RB#0      | VL            | NT               | -8.10          | -0.003164       | ±2.5        | PASS    |
| Band7 | 20MHz     | QPSK       | 21350   | 100RB#0      | VN            | NT               | -7.50          | -0.002930       | ±2.5        | PASS    |
| Band7 | 20MHz     | QPSK       | 21350   | 100RB#0      | VH            | NT               | -6.00          | -0.002344       | ±2.5        | PASS    |
| Band7 | 20MHz     | 16QAM      | 20850   | 100RB#0      | VL            | NT               | 0.30           | 0.000120        | ±2.5        | PASS    |
| Band7 | 20MHz     | 16QAM      | 20850   | 100RB#0      | VN            | NT               | 1.60           | 0.000637        | ±2.5        | PASS    |
| Band7 | 20MHz     | 16QAM      | 20850   | 100RB#0      | VH            | NT               | 8.70           | 0.003466        | ±2.5        | PASS    |
| Band7 | 20MHz     | 16QAM      | 21100   | 100RB#0      | VL            | NT               | -8.10          | -0.003195       | ±2.5        | PASS    |
| Band7 | 20MHz     | 16QAM      | 21100   | 100RB#0      | VN            | NT               | -9.60          | -0.003787       | ±2.5        | PASS    |
| Band7 | 20MHz     | 16QAM      | 21100   | 100RB#0      | VH            | NT               | 0.30           | 0.000118        | ±2.5        | PASS    |
| Band7 | 20MHz     | 16QAM      | 21350   | 100RB#0      | VL            | NT               | -1.30          | -0.000508       | ±2.5        | PASS    |
| Band7 | 20MHz     | 16QAM      | 21350   | 100RB#0      | VN            | NT               | -2.70          | -0.001055       | ±2.5        | PASS    |
| Band7 | 20MHz     | 16QAM      | 21350   | 100RB#0      | VH            | NT               | -10.70         | -0.004180       | ±2.5        | PASS    |

### 8.2. Frequency Vs Temperature

| Band  | Bandwidth | Modulation | Channel | RB Configure | Voltage [Vdc] | Temperature (°C) | Deviation (Hz) | Deviation (ppm) | Limit (ppm) | Verdict |
|-------|-----------|------------|---------|--------------|---------------|------------------|----------------|-----------------|-------------|---------|
| Band7 | 20MHz     | QPSK       | 20850   | 100RB#0      | NV            | -30              | -8.10          | -0.003227       | ±2.5        | PASS    |
| Band7 | 20MHz     | QPSK       | 20850   | 100RB#0      | NV            | -20              | -6.00          | -0.002390       | ±2.5        | PASS    |
| Band7 | 20MHz     | QPSK       | 20850   | 100RB#0      | NV            | 0                | -2.30          | -0.000916       | ±2.5        | PASS    |
| Band7 | 20MHz     | QPSK       | 20850   | 100RB#0      | NV            | 10               | -1.60          | -0.000637       | ±2.5        | PASS    |
| Band7 | 20MHz     | QPSK       | 20850   | 100RB#0      | NV            | 20               | 3.50           | 0.001394        | ±2.5        | PASS    |
| Band7 | 20MHz     | QPSK       | 20850   | 100RB#0      | NV            | 30               | -0.60          | -0.000239       | ±2.5        | PASS    |
| Band7 | 20MHz     | QPSK       | 20850   | 100RB#0      | NV            | 40               | 6.70           | 0.002669        | ±2.5        | PASS    |
| Band7 | 20MHz     | QPSK       | 20850   | 100RB#0      | NV            | 50               | 5.30           | 0.002112        | ±2.5        | PASS    |
| Band7 | 20MHz     | QPSK       | 21100   | 100RB#0      | NV            | -30              | -5.50          | -0.002170       | ±2.5        | PASS    |
| Band7 | 20MHz     | QPSK       | 21100   | 100RB#0      | NV            | -20              | -2.40          | -0.000947       | ±2.5        | PASS    |
| Band7 | 20MHz     | QPSK       | 21100   | 100RB#0      | NV            | 0                | -2.80          | -0.001105       | ±2.5        | PASS    |
| Band7 | 20MHz     | QPSK       | 21100   | 100RB#0      | NV            | 10               | -7.70          | -0.003037       | ±2.5        | PASS    |
| Band7 | 20MHz     | QPSK       | 21100   | 100RB#0      | NV            | 20               | -5.20          | -0.002051       | ±2.5        | PASS    |
| Band7 | 20MHz     | QPSK       | 21100   | 100RB#0      | NV            | 30               | 8.80           | 0.003471        | ±2.5        | PASS    |
| Band7 | 20MHz     | QPSK       | 21100   | 100RB#0      | NV            | 40               | 8.20           | 0.003235        | ±2.5        | PASS    |
| Band7 | 20MHz     | QPSK       | 21100   | 100RB#0      | NV            | 50               | 2.50           | 0.000986        | ±2.5        | PASS    |



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|       |       |       |       |         |    |     |        |           |      |      |
|-------|-------|-------|-------|---------|----|-----|--------|-----------|------|------|
| Band7 | 20MHz | QPSK  | 21350 | 100RB#0 | NV | -30 | -4.40  | -0.001719 | ±2.5 | PASS |
| Band7 | 20MHz | QPSK  | 21350 | 100RB#0 | NV | -20 | -7.70  | -0.003008 | ±2.5 | PASS |
| Band7 | 20MHz | QPSK  | 21350 | 100RB#0 | NV | 0   | -6.00  | -0.002344 | ±2.5 | PASS |
| Band7 | 20MHz | QPSK  | 21350 | 100RB#0 | NV | 10  | -9.80  | -0.003828 | ±2.5 | PASS |
| Band7 | 20MHz | QPSK  | 21350 | 100RB#0 | NV | 20  | -4.10  | -0.001602 | ±2.5 | PASS |
| Band7 | 20MHz | QPSK  | 21350 | 100RB#0 | NV | 30  | -14.20 | -0.005547 | ±2.5 | PASS |
| Band7 | 20MHz | QPSK  | 21350 | 100RB#0 | NV | 40  | 0.70   | 0.000273  | ±2.5 | PASS |
| Band7 | 20MHz | QPSK  | 21350 | 100RB#0 | NV | 50  | -0.30  | -0.000117 | ±2.5 | PASS |
| Band7 | 20MHz | 16QAM | 20850 | 100RB#0 | NV | -30 | -4.10  | -0.001633 | ±2.5 | PASS |
| Band7 | 20MHz | 16QAM | 20850 | 100RB#0 | NV | -20 | -6.30  | -0.002510 | ±2.5 | PASS |
| Band7 | 20MHz | 16QAM | 20850 | 100RB#0 | NV | 0   | -5.60  | -0.002231 | ±2.5 | PASS |
| Band7 | 20MHz | 16QAM | 20850 | 100RB#0 | NV | 10  | -1.70  | -0.000677 | ±2.5 | PASS |
| Band7 | 20MHz | 16QAM | 20850 | 100RB#0 | NV | 20  | -7.60  | -0.003028 | ±2.5 | PASS |
| Band7 | 20MHz | 16QAM | 20850 | 100RB#0 | NV | 30  | 6.60   | 0.002629  | ±2.5 | PASS |
| Band7 | 20MHz | 16QAM | 20850 | 100RB#0 | NV | 40  | 4.00   | 0.001594  | ±2.5 | PASS |
| Band7 | 20MHz | 16QAM | 20850 | 100RB#0 | NV | 50  | -3.90  | -0.001554 | ±2.5 | PASS |
| Band7 | 20MHz | 16QAM | 21100 | 100RB#0 | NV | -30 | 8.00   | 0.003156  | ±2.5 | PASS |
| Band7 | 20MHz | 16QAM | 21100 | 100RB#0 | NV | -20 | -5.20  | -0.002051 | ±2.5 | PASS |
| Band7 | 20MHz | 16QAM | 21100 | 100RB#0 | NV | 0   | 0.30   | 0.000118  | ±2.5 | PASS |
| Band7 | 20MHz | 16QAM | 21100 | 100RB#0 | NV | 10  | -5.30  | -0.002091 | ±2.5 | PASS |
| Band7 | 20MHz | 16QAM | 21100 | 100RB#0 | NV | 20  | -4.90  | -0.001933 | ±2.5 | PASS |
| Band7 | 20MHz | 16QAM | 21100 | 100RB#0 | NV | 30  | -8.50  | -0.003353 | ±2.5 | PASS |
| Band7 | 20MHz | 16QAM | 21100 | 100RB#0 | NV | 40  | -5.20  | -0.002051 | ±2.5 | PASS |
| Band7 | 20MHz | 16QAM | 21100 | 100RB#0 | NV | 50  | -7.20  | -0.002840 | ±2.5 | PASS |
| Band7 | 20MHz | 16QAM | 21350 | 100RB#0 | NV | -30 | -6.10  | -0.002383 | ±2.5 | PASS |
| Band7 | 20MHz | 16QAM | 21350 | 100RB#0 | NV | -20 | -4.50  | -0.001758 | ±2.5 | PASS |
| Band7 | 20MHz | 16QAM | 21350 | 100RB#0 | NV | 0   | -3.70  | -0.001445 | ±2.5 | PASS |
| Band7 | 20MHz | 16QAM | 21350 | 100RB#0 | NV | 10  | -4.00  | -0.001563 | ±2.5 | PASS |
| Band7 | 20MHz | 16QAM | 21350 | 100RB#0 | NV | 20  | -3.70  | -0.001445 | ±2.5 | PASS |
| Band7 | 20MHz | 16QAM | 21350 | 100RB#0 | NV | 30  | -6.20  | -0.002422 | ±2.5 | PASS |
| Band7 | 20MHz | 16QAM | 21350 | 100RB#0 | NV | 40  | -4.60  | -0.001797 | ±2.5 | PASS |
| Band7 | 20MHz | 16QAM | 21350 | 100RB#0 | NV | 50  | -0.60  | -0.000234 | ±2.5 | PASS |



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