




# TEST REPORT

|   |   |   |
|---|---|---|
| <b>KCTL Inc.</b><br>65, Sinwon-ro, Yeongtong-gu,<br>Suwon-si, Gyeonggi-do, 16677, Korea<br>TEL: 82-31-285-0894 FAX: 82-505-299-8311<br><a href="http://www.kctl.co.kr">www.kctl.co.kr</a>   | Report No.:<br><b>KR21-SRF0085-D</b><br>Page (1) of (265) |  |
| <b>1. Client</b>  |   |   |
| <ul style="list-style-type: none"> <li>◦ Name : Samsung Electronics Co., Ltd.</li> <li>◦ Address : 129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Rep. of Korea</li> <li>◦ Date of Receipt : 2021-04-12</li> </ul>                |   |   |
| <b>2. Use of Report</b> : Certification   |   |   |
| <b>3. Name of Product / Model</b> : Smart Wearable / SM-R885U (Alt. SM-R885F)   |   |   |
| <b>4. Manufacturer / Country of Origin</b> : Samsung Electronics Co., Ltd. / Vietnam  |   |   |
| <b>5. FCC ID (Model)</b> : A3LSMR885 (SM-R885U, SM-R885F)   |   |   |
| <b>6. IC Certificate No. (Model)</b> : 649E-SMR885 (SM-R885F)   |   |   |
| <b>7. Date of Test</b> : 2021-04-28 to 2021-05-31   |   |   |
| <b>8. Location of Test</b> : <input checked="" type="checkbox"/> Permanent Testing Lab <input type="checkbox"/> On Site Testing<br>(Address:65, Sinwon-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Korea)                                   |   |   |
| <b>9. Test method used</b> : FCC Part 2 / RSS-Gen Issue 5<br>FCC Part 22 subpart H / RSS-132 Issue 3<br>FCC Part 24 subpart E / RSS-133 Issue 6<br>FCC Part 27 subpart C / RSS-130 Issue 2, RSS-139 Issue 3                                     |   |   |
| <b>10. Test Result</b> : Refer to the test result in the test report  |   |   |
| Affirmation   | Tested by<br><br>Name : Taeyoung Kim (Signature)          | Technical Manager<br><br>Name : Seungyong Kim (Signature)                           |
| 2021-06-11  |   |   |
| <h2>KCTL Inc.</h2> <p>As a test result of the sample which was submitted from the client, this report does not guarantee the whole product quality. This test report should not be used and copied without a written agreement by KCTL Inc.</p> |   |   |

**REPORT REVISION HISTORY**

| Date       | Revision          | Page No                   |
|------------|-------------------|---------------------------|
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| 2021-06-04 | Updated           | 4, 9, 11, 14,<br>248, 251 |
| 2021-06-07 | Updated           | 11                        |
| 2021-06-08 | Updated           | 8, 244,<br>247 ~ 253, 256 |
| 2021-06-11 | Updated           | 1, 8 ~ 12                 |

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Note. The report No. KR21-SRF0085-C is superseded by the report No. KR21-SRF0085-D.

**General remarks for test reports**

**Statement concerning the uncertainty of the measurement systems used for the tests**

(may be required by the product standard or client)

Internal procedure used for type testing through which traceability of the measuring uncertainty has been established:

**Procedure number, issue date and title:**

Calculations leading to the reported values are on file with the testing laboratory that conducted the testing.

Statement not required by the standard or client used for type testing

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# KCTL

### 1. General information

Client : Samsung Electronics Co., Ltd.  
Address : 129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677,  
Rep. of Korea  
Manufacturer : Samsung Electronics Co., Ltd.  
Address : 129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677,  
Rep. of Korea  
Laboratory : KCTL Inc.  
Address : 65, Sinwon-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Korea  
Accreditations : FCC Site Designation No: KR0040, FCC Site Registration No: 687132  
VCCI Registration No. : R-20080, G-20078, C-20059, T-20056  
CAB Identifier: KR0040  
ISED Number: 8035A  
KOLAS No.: KT231

### 2. Device information

Equipment under test : Smart Wearable  
Model : SM-R885U  
Derivative model : SM-R885F  
Modulation technique : Bluetooth(BDR/EDR)\_GFSK,  $\pi/4$ DQPSK, 8DPSK  
Bluetooth(BLE)\_GFSK  
WIFI(802.11a/b/g/n)\_DSSS, OFDM  
LTE\_QPSK, 16QAM  
WCDMA\_QPSK  
Number of channels : Bluetooth(BDR/EDR)\_79 ch / Bluetooth(BLE)\_40 ch  
802.11b/g/n\_HT20 : 13 ch  
UNII-1: 4 ch (20 MHz)  
UNII-2A: 4 ch (20 MHz)  
UNII-2C: 12 ch (20 MHz)  
UNII-3: 5 ch (20 MHz)  
Power source : DC 3.88 V  
Antenna specification : LTE/WCDMA\_PIFA (Housing metal) Antenna  
WIFI/Bluetooth(BDR/EDR/BLE)\_LDS Antenna  
Antenna gain : WIFI/Bluetooth(BDR/EDR/BLE)\_-5.10 dBi  
UNII-1 : -4.10 dBi  
UNII-2A : -5.90 dBi  
UNII-2C : -6.70 dBi  
UNII-3 : -5.00 dBi  
Frequency range : Bluetooth(BDR/EDR/BLE)\_2 402 MHz ~ 2 480 MHz  
2 412 MHz ~ 2 472 MHz (802.11b/g/n\_HT20)  
UNII-1: 5 180 MHz ~ 5 240 MHz (802.11a/n\_HT20)

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UNII-2A: 5 260 MHz ~ 5 320 MHz (802.11a/n\_HT20)  
UNII-2C: 5 500 MHz ~ 5 720 MHz (802.11a/n\_HT20)  
UNII-3: 5 745 MHz ~ 5 825 MHz (802.11a/n\_HT20)  
LTE Band 2\_1 850.7 MHz ~ 1 909.3 MHz  
LTE Band 4\_1 710.7 MHz ~ 1 754.3 MHz  
LTE Band 5\_824.7 MHz ~ 848.3 MHz  
LTE Band 12\_699.7 MHz ~ 715.3 MHz  
LTE Band 13\_779.5 MHz ~ 784.5 MHz  
LTE Band 25\_1 850.7 MHz ~ 1 914.3 MHz  
LTE Band 26\_824.7 MHz ~ 848.3 MHz, 814.7 MHz ~ 823.3 MHz  
LTE Band 66\_1 710.7 MHz ~ 1 779.3 MHz  
LTE Band 71\_665.5 MHz ~ 695.5 MHz  
WCDMA 850\_826.4 MHz ~ 846.6 MHz  
WCDMA 1700\_1 712.4 MHz ~ 1 752.6 MHz  
WCDMA 1900\_1 852.4 MHz ~ 1 907.6 MHz

Software version : SM-R885U\_R885U.001, SM-R885F\_R885F.001  
Hardware version : REV1.0  
Test device serial No. : Conducted(R3AR301J3GT, R3AR404R1EJ, R3AR404QW8W)  
Radiated(R3AR301JDBW, R3AR404QA9K, R3AR301JDDJ,  
R3AR404Q8JB, R3AR404Q88X)  
Operation temperature : -30 °C ~ 50 °C

**Note.**

1. Due to marketing purpose, derivative model SM-R885F will be filed for ISED approval and the test reports remain valid for Model SM-R885F ISED submission.
2. The product equality letter includes detailed information about the differences between basic and derivative model.

## 2.1. Frequency/channel operations

This device contains the following capabilities:

WiFi (802.11a/b/g/n), Bluetooth (BDR/EDR/BLE), LTE Band 2, LTE Band 4, LTE Band 5,  
LTE Band 12, LTE Band 13, LTE Band 25, LTE Band 26, LTE Band 66, LTE Band 71, WCDMA 850,  
WCDMA 1700, WCDMA 1900

### LTE Band 2

| Ch.   | Frequency (MHz) |
|-------|-----------------|
| 18607 | 1 850.7         |
| 18900 | 1 880.0         |
| 19193 | 1 909.3         |

Table 2.3.1. 1.4M BW

| Ch.   | Frequency (MHz) |
|-------|-----------------|
| 18615 | 1 851.5         |
| 18900 | 1 880.0         |
| 19185 | 1 908.5         |

Table 2.3.2. 3M BW

| Ch.   | Frequency (MHz) |
|-------|-----------------|
| 18625 | 1 852.5         |
| 18900 | 1 880.0         |
| 19175 | 1 907.5         |

Table 2.3.3. 5M BW

| Ch.   | Frequency (MHz) |
|-------|-----------------|
| 18650 | 1 855.0         |
| 18900 | 1 880.0         |
| 19150 | 1 905.0         |

Table 2.3.4. 10M BW

| Ch.   | Frequency (MHz) |
|-------|-----------------|
| 18675 | 1 857.5         |
| 18900 | 1 880.0         |
| 19125 | 1 902.5         |

Table 2.3.5. 15M BW

| Ch.   | Frequency (MHz) |
|-------|-----------------|
| 18700 | 1 860.0         |
| 18900 | 1 880.0         |
| 19100 | 1 900.0         |

Table 2.3.6. 20M BW

### LTE Band 4

| Ch.   | Frequency (MHz) |
|-------|-----------------|
| 19957 | 1 710.7         |
| 20175 | 1 732.5         |
| 20393 | 1 754.3         |

Table 2.3.7. 1.4M BW

| Ch.   | Frequency (MHz) |
|-------|-----------------|
| 19965 | 1 711.5         |
| 20175 | 1 732.5         |
| 20385 | 1 753.5         |

Table 2.3.8. 3M BW

| Ch.   | Frequency (MHz) |
|-------|-----------------|
| 19975 | 1 712.5         |
| 20175 | 1 732.5         |
| 20375 | 1 752.5         |

Table 2.3.9. 5M BW

| Ch.   | Frequency (MHz) |
|-------|-----------------|
| 20000 | 1 715.0         |
| 20175 | 1 732.5         |
| 20350 | 1 750.0         |

Table 2.3.10. 10M BW

| Ch.   | Frequency (MHz) |
|-------|-----------------|
| 20025 | 1 717.5         |
| 20175 | 1 732.5         |
| 20325 | 1 747.5         |

Table 2.3.11. 15M BW

| Ch.   | Frequency (MHz) |
|-------|-----------------|
| 20050 | 1 720.0         |
| 20175 | 1 732.5         |
| 20300 | 1 745.0         |

Table 2.3.12. 20M BW

### LTE Band 5

| Ch.   | Frequency (MHz) |
|-------|-----------------|
| 20407 | 824.7           |
| 20525 | 836.5           |
| 20643 | 848.3           |

Table 2.3.13. 1.4M BW

| Ch.   | Frequency (MHz) |
|-------|-----------------|
| 20415 | 825.5           |
| 20525 | 836.5           |
| 20635 | 847.5           |

Table 2.3.14. 3M BW

| Ch.   | Frequency (MHz) |
|-------|-----------------|
| 20425 | 826.5           |
| 20525 | 836.5           |
| 20625 | 846.5           |

Table 2.3.15. 5M BW

| Ch.   | Frequency (MHz) |
|-------|-----------------|
| 20450 | 829.0           |
| 20525 | 836.5           |
| 20600 | 844.0           |

Table 2.3.16. 10M BW

**LTE Band 12**

| Ch.   | Frequency (MHz) |
|-------|-----------------|
| 23017 | 699.7           |
| 23095 | 707.5           |
| 23173 | 715.3           |

Table 2.3.17. 1.4M BW

| Ch.   | Frequency (MHz) |
|-------|-----------------|
| 23025 | 700.5           |
| 23095 | 707.5           |
| 23165 | 714.5           |

Table 2.3.18. 3M BW

| Ch.   | Frequency (MHz) |
|-------|-----------------|
| 23035 | 701.5           |
| 23095 | 707.5           |
| 23155 | 713.5           |

Table 2.3.19. 5M BW

| Ch.   | Frequency (MHz) |
|-------|-----------------|
| 23060 | 704.0           |
| 23095 | 707.5           |
| 23130 | 711.0           |

Table 2.3.20. 10M BW

**LTE Band 13**

| Ch.   | Frequency (MHz) |
|-------|-----------------|
| 23205 | 779.5           |
| 23230 | 782.0           |
| 23255 | 784.5           |

Table 2.3.21. 5M BW

| Ch.   | Frequency (MHz) |
|-------|-----------------|
| -     | -               |
| 23230 | 782.0           |
| -     | -               |

Table 2.3.22. 10M BW

**LTE Band 25**

| Ch.   | Frequency (MHz) |
|-------|-----------------|
| 26047 | 1 850.7         |
| 26365 | 1 882.5         |
| 26683 | 1 914.3         |

Table 2.3.23. 1.4M BW

| Ch.   | Frequency (MHz) |
|-------|-----------------|
| 26055 | 1 851.5         |
| 26365 | 1 882.5         |
| 26675 | 1 913.5         |

Table 2.3.24. 3M BW

| Ch.   | Frequency (MHz) |
|-------|-----------------|
| 26065 | 1 852.5         |
| 26365 | 1 882.5         |
| 26665 | 1 912.5         |

Table 2.3.25. 5M BW

| Ch.   | Frequency (MHz) |
|-------|-----------------|
| 26090 | 1 855.0         |
| 26365 | 1 882.5         |
| 26640 | 1 910.0         |

Table 2.3.26. 10M BW

| Ch.   | Frequency (MHz) |
|-------|-----------------|
| 26115 | 1 857.5         |
| 26365 | 1 882.5         |
| 26615 | 1 907.5         |

Table 2.3.27. 15M BW

| Ch.   | Frequency (MHz) |
|-------|-----------------|
| 26140 | 1 860.0         |
| 26365 | 1 882.5         |
| 26590 | 1 905.0         |

Table 2.3.28. 20M BW

**LTE Band 26**

| Ch.   | Frequency (MHz) |
|-------|-----------------|
| 26797 | 824.7           |
| 26915 | 836.5           |
| 27033 | 848.3           |

Table 2.3.29. 1.4M BW

| Ch.   | Frequency (MHz) |
|-------|-----------------|
| 26805 | 825.5           |
| 26915 | 836.5           |
| 27025 | 847.5           |

Table 2.3.30. 3M BW

| Ch.   | Frequency (MHz) |
|-------|-----------------|
| 26815 | 826.5           |
| 26915 | 836.5           |
| 27015 | 846.5           |

Table 2.3.31. 5M BW

| Ch.   | Frequency (MHz) |
|-------|-----------------|
| 26840 | 829.0           |
| 26915 | 836.5           |
| 26990 | 844.0           |

Table 2.3.32. 10M BW

| Ch.   | Frequency (MHz) |
|-------|-----------------|
| 26865 | 831.5           |
| 26915 | 836.5           |
| 26965 | 841.5           |

Table 2.3.33. 15M BW

**LTE Band 66**

| Ch.    | Frequency (MHz) |
|--------|-----------------|
| 131979 | 1 710.7         |
| 132322 | 1 745.0         |
| 132665 | 1 779.3         |

Table 2.3.34. 1.4M BW

| Ch.    | Frequency (MHz) |
|--------|-----------------|
| 131987 | 1 711.5         |
| 132322 | 1 745.0         |
| 132657 | 1 778.5         |

Table 2.3.35. 3M BW

| Ch.    | Frequency (MHz) |
|--------|-----------------|
| 131997 | 1 712.5         |
| 132322 | 1 745.0         |
| 132647 | 1 777.5         |

Table 2.3.36. 5M BW

| Ch.    | Frequency (MHz) |
|--------|-----------------|
| 132022 | 1 715.0         |
| 132322 | 1 745.0         |
| 132622 | 1 775.0         |

Table 2.3.37. 10M BW

| Ch.    | Frequency (MHz) |
|--------|-----------------|
| 132047 | 1 717.5         |
| 132322 | 1 745.0         |
| 132597 | 1 772.5         |

Table 2.3.38. 15M BW

| Ch.    | Frequency (MHz) |
|--------|-----------------|
| 132072 | 1 720.0         |
| 132322 | 1 745.0         |
| 132572 | 1 770.0         |

Table 2.3.39. 20M BW

**LTE Band 71**

| Ch.    | Frequency (MHz) |
|--------|-----------------|
| 133147 | 665.5           |
| 133297 | 680.5           |
| 133447 | 695.5           |

Table 2.3.40. 5M BW

| Ch.    | Frequency (MHz) |
|--------|-----------------|
| 133172 | 668.0           |
| 133297 | 680.5           |
| 133422 | 693.0           |

Table 2.3.41. 10M BW

| Ch.    | Frequency (MHz) |
|--------|-----------------|
| 133197 | 670.5           |
| 133297 | 680.5           |
| 133397 | 690.5           |

Table 2.3.42. 15M BW

| Ch.    | Frequency (MHz) |
|--------|-----------------|
| 133222 | 673.0           |
| 133297 | 680.5           |
| 133372 | 688.0           |

Table 2.3.43. 20M BW

**Notes:**

1. The LTE band 13, 25, 26 and 71 are not supported in Canada.
2. LTE Band 66(1 710 - 1 780 MHz) overlaps the entire frequency range of LTE Band 4(1 710 - 1 755 MHz) and they have same maximum tune-up power. Therefore, test data provided in this report covers Band 4 as well as Band 66 subpart to Part27.



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### 3. Maximum ERP/EIRP power

#### LTE Band 2 (FCC Model: SM-R885U, Alt. SM-R885F / IC Model: SM-R885F)

| Mode       | Tx frequency (MHz) | Emission designator | EIRP             |                |
|------------|--------------------|---------------------|------------------|----------------|
|            |                    |                     | Max. power (dBm) | Max. power (W) |
| LTE Band 2 | 1 850.7 ~ 1 909.3  | 1M12G7D             | 19.17            | 0.083          |
|            |                    | 1M11W7D             | 18.29            | 0.067          |
|            | 1 851.5 ~ 1 908.5  | 2M71G7D             | 18.56            | 0.072          |
|            |                    | 2M71W7D             | 17.88            | 0.061          |
|            | 1 852.5 ~ 1 907.5  | 4M55G7D             | 17.84            | 0.061          |
|            |                    | 4M53W7D             | 17.13            | 0.052          |
|            | 1 855.0 ~ 1 905.0  | 8M99G7D             | 19.23            | 0.084          |
|            |                    | 9M02W7D             | 18.04            | 0.064          |
|            | 1 857.5 ~ 1 902.5  | 13M5G7D             | 19.37            | 0.086          |
|            |                    | 13M5W7D             | 18.22            | 0.066          |
|            | 1 860.0 ~ 1 900.0  | 18M1G7D             | 19.30            | 0.085          |
|            |                    | 18M1W7D             | 18.36            | 0.069          |

#### LTE Band 5 (FCC Model: SM-R885U, Alt. SM-R885F / IC Model: SM-R885F)

| Mode       | Tx frequency (MHz) | Emission designator | ERP (FCC)        |                | EIRP (IC)        |                |
|------------|--------------------|---------------------|------------------|----------------|------------------|----------------|
|            |                    |                     | Max. power (dBm) | Max. power (W) | Max. power (dBm) | Max. power (W) |
| LTE Band 5 | 824.7 ~ 848.3      | 1M10G7D             | 14.58            | 0.029          | 16.73            | 0.047          |
|            |                    | 1M10W7D             | 12.99            | 0.020          | 15.14            | 0.033          |
|            | 825.5 ~ 847.5      | 2M72G7D             | 16.00            | 0.040          | 18.15            | 0.065          |
|            |                    | 2M71W7D             | 14.66            | 0.029          | 16.81            | 0.048          |
|            | 826.5 ~ 846.5      | 4M55G7D             | 15.53            | 0.036          | 17.68            | 0.059          |
|            |                    | 4M56W7D             | 15.22            | 0.033          | 17.37            | 0.055          |
|            | 829.0 ~ 844.0      | 8M99G7D             | 15.83            | 0.038          | 17.98            | 0.063          |
|            |                    | 9M02W7D             | 14.34            | 0.027          | 16.49            | 0.045          |

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**LTE Band 12 (FCC Model: SM-R885U, Alt. SM-R885F / IC Model: SM-R885F)**

| Mode        | Tx frequency (MHz) | Emission designator | ERP              |                |
|-------------|--------------------|---------------------|------------------|----------------|
|             |                    |                     | Max. power (dBm) | Max. power (W) |
| LTE Band 12 | 699.7 ~ 715.3      | 1M10G7D             | 13.90            | 0.025          |
|             |                    | 1M10W7D             | 12.52            | 0.018          |
|             | 700.5 ~ 714.5      | 2M72G7D             | 13.29            | 0.021          |
|             |                    | 2M71W7D             | 11.76            | 0.015          |
|             | 701.5 ~ 713.5      | 4M56G7D             | 13.75            | 0.024          |
|             |                    | 4M55W7D             | 12.49            | 0.018          |
|             | 704.0 ~ 711.0      | 8M99G7D             | 13.57            | 0.023          |
|             |                    | 9M02W7D             | 12.18            | 0.017          |

**LTE Band 13 (FCC Model: SM-R885U, Alt. SM-R885F)**

| Mode        | Tx frequency (MHz) | Emission designator | ERP              |                |
|-------------|--------------------|---------------------|------------------|----------------|
|             |                    |                     | Max. power (dBm) | Max. power (W) |
| LTE Band 13 | 779.5 ~ 784.5      | 4M53G7D             | 14.97            | 0.031          |
|             |                    | 4M55W7D             | 13.56            | 0.023          |
|             | 782.0              | 8M97G7D             | 15.15            | 0.033          |
|             |                    | 8M99W7D             | 13.80            | 0.024          |

**LTE Band 25 (FCC Model: SM-R885U, Alt. SM-R885F)**

| Mode        | Tx frequency (MHz) | Emission designator | EIRP             |                |
|-------------|--------------------|---------------------|------------------|----------------|
|             |                    |                     | Max. power (dBm) | Max. power (W) |
| LTE Band 25 | 1 850.7 ~ 1 914.3  | 1M11G7D             | 20.42            | 0.110          |
|             |                    | 1M10W7D             | 19.51            | 0.089          |
|             | 1 851.5 ~ 1 913.5  | 2M72G7D             | 20.14            | 0.103          |
|             |                    | 2M71W7D             | 18.82            | 0.076          |
|             | 1 852.5 ~ 1 912.5  | 4M53G7D             | 19.79            | 0.095          |
|             |                    | 4M56W7D             | 18.58            | 0.072          |
|             | 1 855.0 ~ 1 910.0  | 8M99G7D             | 19.76            | 0.095          |
|             |                    | 9M02W7D             | 18.75            | 0.075          |
|             | 1 857.5 ~ 1 907.5  | 13M5G7D             | 19.11            | 0.081          |
|             |                    | 13M5W7D             | 18.43            | 0.070          |
|             | 1 860.0 ~ 1 905.0  | 18M0G7D             | 18.96            | 0.079          |
|             |                    | 17M9W7D             | 18.32            | 0.068          |

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**KCTL****LTE Band 25 (FCC Model: SM-R885U, Alt. SM-R885F)**

| Mode        | Tx frequency (MHz) | Emission designator | ERP              |                |
|-------------|--------------------|---------------------|------------------|----------------|
|             |                    |                     | Max. power (dBm) | Max. power (W) |
| LTE Band 26 | 824.7 ~ 848.3      | 1M10G7D             | 15.56            | 0.036          |
|             |                    | 1M10W7D             | 14.10            | 0.026          |
|             | 825.5 ~ 847.5      | 2M73G7D             | 15.10            | 0.032          |
|             |                    | 2M71W7D             | 13.66            | 0.023          |
|             | 826.5 ~ 846.5      | 4M55G7D             | 14.85            | 0.031          |
|             |                    | 4M56W7D             | 13.29            | 0.021          |
|             | 829.0 ~ 844.0      | 9M04G7D             | 15.05            | 0.032          |
|             |                    | 9M04W7D             | 13.68            | 0.023          |
|             | 831.5 ~ 841.5      | 13M5G7D             | 15.28            | 0.034          |
|             |                    | 13M6W7D             | 14.03            | 0.025          |

**LTE Band 66/4 (FCC Model: SM-R885U, Alt. SM-R885F / IC Model: SM-R885F)**

| Mode          | Tx frequency (MHz) | Emission designator | EIRP             |                |
|---------------|--------------------|---------------------|------------------|----------------|
|               |                    |                     | Max. power (dBm) | Max. power (W) |
| LTE Band 66/4 | 1 710.7 ~ 1 779.3  | 1M11G7D             | 15.74            | 0.037          |
|               |                    | 1M11W7D             | 15.40            | 0.035          |
|               | 1 711.5 ~ 1 778.5  | 2M71G7D             | 16.58            | 0.045          |
|               |                    | 2M72W7D             | 15.26            | 0.034          |
|               | 1 712.5 ~ 1 777.5  | 4M53G7D             | 17.22            | 0.053          |
|               |                    | 4M53W7D             | 16.10            | 0.041          |
|               | 1 715.0 ~ 1 775.0  | 9M02G7D             | 17.47            | 0.056          |
|               |                    | 9M04W7D             | 16.39            | 0.044          |
|               | 1 717.5 ~ 1 772.5  | 13M6G7D             | 17.72            | 0.059          |
|               |                    | 13M5W7D             | 15.79            | 0.038          |
|               | 1 720.0 ~ 1 770.0  | 18M1G7D             | 17.57            | 0.057          |
|               |                    | 18M2W7D             | 16.53            | 0.045          |

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**LTE Band 71 (FCC Model: SM-R885U, Alt. SM-R885F)**

| Mode        | Tx frequency (MHz) | Emission designator | ERP              |                |
|-------------|--------------------|---------------------|------------------|----------------|
|             |                    |                     | Max. power (dBm) | Max. power (W) |
| LTE Band 71 | 665.5 ~ 695.5      | 4M52G7D             | 11.60            | 0.014          |
|             |                    | 4M55W7D             | 10.43            | 0.011          |
|             | 668.0 ~ 693.0      | 9M02G7D             | 12.09            | 0.016          |
|             |                    | 9M02W7D             | 11.02            | 0.013          |
|             | 670.5 ~ 690.5      | 13M5G7D             | 11.82            | 0.015          |
|             |                    | 13M6W7D             | 10.56            | 0.011          |
|             | 673.0 ~ 688.0      | 18M2G7D             | 10.91            | 0.012          |
|             |                    | 18M2W7D             | 10.10            | 0.010          |

#### 4. Summary of tests

| FCC Part section(s)                                      | RSS Section(s)   | Parameter                               | Test Limit   | Test Condition | Test results |
|--|--|---|--|----------------|--------------|
| 2.1046   | RSS-130(4.6)<br>RSS-132(5.4)<br>RSS-133(4.1)<br>RSS-139(4.1) | Conducted Output Power                  | N/A  | Conducted      | Pass         |
| 2.1049   | RSS-Gen(6.7)<br>RSS-132(2.3)                                 | Occupied Bandwidth & 26 dB Bandwidth    | N/A  |                | Pass         |
| 2.1051<br>22.917(a)<br>24.238(a)<br>27.53(c),(f),(g),(h) | RSS-130(4.7)<br>RSS-132(5.5)<br>RSS-133(6.5)<br>RSS-139(6.6) | Band Edge Emissions at Antenna Terminal | <43 + 10Log <sub>10</sub> (P) dB for all out of band emissions,  |                | Pass         |
|  |  | Spurious Emissions at Antenna Terminal  | <65 + 10Log <sub>10</sub> (P) dB   |                | Pass         |
| 24.232(d)<br>27.50(d)(5)                                 | RSS-133(6.4)<br>RSS-139(6.5)                                 | Peak to Average Power Ratio             | < 13 dB  |                | Pass         |
| 2.1055<br>22.355   | RSS-132(5.3)<br>RSS-133(6.3)                                 | Frequency stability                     | < 2.5 ppm  |                | Pass         |
| 24.235   | RSS-130(4.5)   |   | Emission must remain in band   |                |              |
| 27.54  | RSS-139(6.4)   |   |  |                |              |
| 22.913(a)(5)   | RSS-132(5.4)   | Effective Radiated Power                | < 7 Watts max. ERP (FCC)<br><11.5 Watts max. EIRP (IC)   | Radiated       | Pass         |
| 27.50(b)(10)<br>27.50(c)(10)                             | RSS-130(4.6)   |   | < 3 Watts max. ERP   |                | Pass         |
| 24.232(c)  | RSS-133(6.4)   | Equivalent Isotropic Radiated Power     | < 2 Watts max. EIRP  |                | Pass         |
| 27.50(d)(4)  | RSS-139(6.5)   |   | < 1 Watts max. EIRP  |                | Pass         |
| 2.1053<br>22.917(a)<br>24.238(a)<br>27.53(c),(f),(g),(h) | RSS-130(4.7)<br>RSS-132(5.5)<br>RSS-133(6.5)<br>RSS-139(6.6) | Radiated Spurious Emissions             | <43 + 10Log <sub>10</sub> (P) dB for all out of band emissions,<br><-70 dBW/MHz<br>EIRP - Wideband<br><-80 dBW/MHz<br>EIRP- Narrowband |                | Pass         |

**Notes:**

- The test procedure(s) in this report were performed in accordance as following.
  - ◆ ANSI C63.26-2015
  - ◆ ANSI/TIA-603-E-2016
  - ◆ KDB 971168 D01 v03r01

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### 4.1. Worst case orientation

1. All modes of operation were investigated and the worst case emissions are reported with the EUT positioning, modulations, RB sizes and offsets, and channel bandwidth configurations in the test data.
2. All final radiated testing was performed with the EUT in worst case orientation.
3. All the radiated tests have been performed two modes (with charger and without charger)
4. For LTE Band 5, 12, 13, 26, and 71 the mode with charger is the worst case mode.
5. For LTE Band 2, 25 and 66/4 the mode without charger is the worst case mode.
6. For LTE Band 5, 12, 13, 26, and 71 The fundamental of the EUT was investigated in three orthogonal orientations X, Y and Z. It was determined that **X** orientation was worst-case orientation. Therefore, all final radiated testing was performed with the EUT in **X** orientation.
7. For LTE Band 2, 25 and 66/4 The fundamental of the EUT was investigated in three orthogonal orientations X, Y and Z. It was determined that **Y** orientation was worst-case orientation. Therefore, all final radiated testing was performed with the EUT in **Y** orientation.

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| Test condition | LTE Band | Modulation    | Bandwidth (MHz)          | RB size | RB offset                   |
|----------------|----------|---------------|--------------------------|---------|-----------------------------|
| Radiated       | B2       | QPSK          | 15                       | 1       | 0, 36, 74                   |
|                | B5       |               | 3                        | 1       | 0, 8, 14                    |
|                | B12      |               | 1.4                      | 1       | 0, 3, 5                     |
|                | B13      |               | 10                       | 1       | 0, 25, 49                   |
|                | B25      |               | 1.4                      | 1       | 0, 3, 5                     |
|                | B26      |               | 1.4                      | 1       | 0, 3, 5                     |
|                | B66/4    |               | 15                       | 1       | 0, 36, 74                   |
|                | B71      |               | 10                       | 1       | 0, 25, 49                   |
| Conducted      | B2       | QPSK<br>16QAM | 1.4, 3, 5, 10,<br>15, 20 | 1       | 0, 5, 14, 24, 49,<br>74, 99 |
|                |          |               |                          | Full    | 0                           |
|                | B5       |               | 1.4, 3, 5, 10            | 1       | 0, 5, 14, 24, 49            |
|                |          |               |                          | Full    | 0                           |
|                | B12      |               | 1.4, 3, 5, 10            | 1       | 0, 5, 14, 24, 49            |
|                |          |               |                          | Full    | 0                           |
|                | B13      |               | 5, 10                    | 1       | 0, 24, 49                   |
|                |          |               |                          | Full    | 0                           |
|                | B25      |               | 1.4, 3, 5, 10,<br>15, 20 | 1       | 0, 5, 14, 24, 49,<br>74, 99 |
|                |          |               |                          | Full    | 0                           |
|                | B26      |               | 1.4, 3, 5, 10, 15        | 1       | 0, 5, 14, 24, 49,<br>74     |
|                |          |               |                          | Full    | 0                           |
|                | B66/4    |               | 1.4, 3, 5, 10,<br>15, 20 | 1       | 0, 5, 14, 24, 49,<br>74, 99 |
|                |          |               |                          | Full    | 0                           |
|                | B71      |               | 5, 10, 15, 20            | 1       | 0, 24, 49, 74, 99           |
|                |          |               |                          | Full    | 0                           |

## 5. Measurement uncertainty

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI C63.4-2014.

All measurement uncertainty values are shown with a coverage factor of  $k=2$  to indicated a 95 % level of confidence. The measurement data shown herein meets or exceeds the  $U_{CISPR}$  measurement uncertainty values specified in CISPR 16-4-2 and thus, can be compared directly to specified limits to determine compliance.

| Parameter                    | Expanded uncertainty ( $\pm$ ) |        |
|------------------------------|--------------------------------|--------|
| Conducted RF power           | 0.9 dB                         |        |
| Conducted spurious emissions | 1.6 dB                         |        |
| Radiated spurious emissions  | Below 1 000 MHz                | 4.3 dB |
|                              | 1 000 MHz ~ 18 000 MHz         | 3.8 dB |
|                              | Above 1 8000 MHz               | 3.8 dB |



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## 6. Measurement results explanation example

| Frequency (MHz) | Factor(dB) | Frequency (MHz) | Factor(dB) |
|-----------------|------------|-----------------|------------|
| 30              | 6.55       | 11 000          | 8.53       |
| 50              | 6.58       | 12 000          | 8.43       |
| 100             | 6.61       | 13 000          | 8.70       |
| 200             | 6.60       | 14 000          | 9.14       |
| 300             | 6.61       | 15 000          | 9.10       |
| 400             | 6.68       | 16 000          | 9.16       |
| 500             | 6.70       | 17 000          | 9.28       |
| 600             | 6.73       | 18 000          | 8.80       |
| 700             | 6.77       | 19 000          | 9.98       |
| 800             | 6.81       | 20 000          | 9.23       |
| 900             | 6.84       | 21 000          | 8.96       |
| 1 000           | 6.87       | 22 000          | 9.66       |
| 2 000           | 7.40       | 23 000          | 9.01       |
| 3 000           | 7.28       | 24 000          | 9.50       |
| 4 000           | 7.35       | 25 000          | 10.05      |
| 5 000           | 7.46       | 26 000          | 8.93       |
| 6 000           | 7.47       | 26 500          | 8.81       |
| 7 000           | 7.91       | 27 000          | 8.71       |
| 8 000           | 8.33       | 28 000          | 8.97       |
| 9 000           | 8.30       | 29 000          | 10.26      |
| 10 000          | 8.45       | 30 000          | 10.70      |

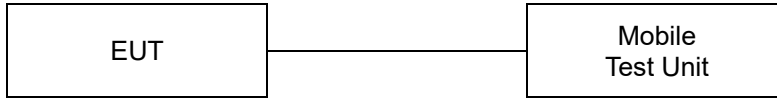
**Note.**

Offset(dB) = RF cable loss(dB) + Divider(dB)

## 7. Test results

### 7.1. Conducted output power

#### Test setup



#### Test procedure

971168 D01 v03r01 – Section 5.2  
ANSI C63.26-2015 – Section 5.2.4.2  
CFR 47, - Section §2.1046

#### Test settings

When an average power meter is used to perform RF output power measurements, the fundamental condition that measurement be performed only over durations of active transmissions at maximum output power level applies. Thus, an average power meter can always be used to perform the measurement when the EUT can be configured to transmit continuously.

If the EUT cannot be configured to transmit continuously (i.e., burst duty cycle < 98%), then the following options can be implemented to facilitate measurement of the average power with an average power meter:

- a) A gated average power meter can be used to perform the measurement if the gating parameters can be adjusted such that the power is measured only during active transmission bursts at maximum output power levels.
- b) A conventional average power meter with no signal gating capability can also be used if the measured burst duty cycle is constant (i.e., duty cycle variations are less than or equal to  $\pm 2\%$ ) by performing the measurement over the on/off burst cycles and then correcting (increasing) the measured level by a factor equal to  $[10\log (1/\text{duty cycle})]$ . See 5.2.4.3.4 for guidance with respect to measuring the transmitter duty cycle.

See item r) of 4.1 for more information regarding power meter functional requirements and limitations, and consult the instrumentation-specific application literature for proper set-up and use.

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**Test results**

| Test Band  | Bandwidth (MHz) | Test mode | RB size | RB offset | MPR   | Maximum power   |        |       |       |
|------------|-----------------|-----------|---------|-----------|-------|-----------------|--------|-------|-------|
|            |                 |           |         |           |       | Frequency (MHz) |        |       |       |
|            |                 |           |         |           |       | Low             | Middle | High  |       |
| LTE Band 2 | 1.4             | QPSK      | 1       | 0         | 0     | 22.73           | 22.83  | 23.00 |       |
|            |                 |           | 1       | 3         | 0     | 22.51           | 22.80  | 22.98 |       |
|            |                 |           | 1       | 5         | 0     | 22.74           | 22.70  | 23.06 |       |
|            |                 |           | 3       | 0         | 0     | 22.53           | 22.61  | 22.93 |       |
|            |                 |           | 3       | 1         | 0     | 22.54           | 22.61  | 22.86 |       |
|            |                 |           | 3       | 3         | 0     | 22.48           | 22.56  | 22.91 |       |
|            |                 | 16QAM     | 6       | 0         | 1     | 22.00           | 22.14  | 22.38 |       |
|            |                 |           | 1       | 0         | 1     | 21.90           | 22.03  | 22.26 |       |
|            |                 |           | 1       | 3         | 1     | 21.74           | 22.20  | 22.08 |       |
|            |                 |           | 1       | 5         | 1     | 21.94           | 22.08  | 22.22 |       |
|            |                 |           | 3       | 0         | 1     | 21.91           | 22.04  | 22.50 |       |
|            |                 |           | 3       | 1         | 1     | 21.99           | 22.04  | 22.41 |       |
|            |                 | 3         | QPSK    | 3         | 3     | 1               | 21.93  | 21.90 | 22.41 |
|            |                 |           |         | 6         | 0     | 2               | 21.08  | 21.12 | 21.45 |
|            |                 |           |         | 1         | 0     | 0               | 22.32  | 22.65 | 23.03 |
|            |                 |           |         | 1         | 8     | 0               | 22.43  | 22.67 | 23.06 |
|            |                 |           |         | 1         | 14    | 0               | 22.85  | 22.64 | 22.92 |
|            |                 |           |         | 8         | 0     | 1               | 21.87  | 22.05 | 22.42 |
|            | 16QAM           |           | 8       | 4         | 1     | 21.86           | 22.10  | 22.23 |       |
|            |                 |           | 8       | 7         | 1     | 21.88           | 22.12  | 22.37 |       |
|            |                 |           | 8       | 7         | 1     | 21.88           | 22.12  | 22.37 |       |
|            |                 |           | 15      | 0         | 1     | 21.92           | 22.03  | 22.36 |       |
|            |                 |           | 1       | 0         | 1     | 21.38           | 21.90  | 22.10 |       |
|            |                 |           | 1       | 8         | 1     | 22.01           | 22.15  | 22.43 |       |
|            | 5               |           | QPSK    | 1         | 14    | 1               | 21.85  | 21.93 | 21.93 |
|            |                 |           |         | 8         | 0     | 2               | 21.02  | 21.08 | 21.37 |
|            |                 |           |         | 8         | 4     | 2               | 20.94  | 21.06 | 21.38 |
|            |                 |           |         | 8         | 7     | 2               | 21.02  | 21.00 | 21.35 |
|            |                 |           |         | 8         | 7     | 2               | 21.02  | 21.00 | 21.35 |
|            |                 |           |         | 15        | 0     | 2               | 20.82  | 21.06 | 21.30 |
|            |                 | 16QAM     | 1       | 0         | 0     | 22.88           | 23.06  | 22.83 |       |
|            |                 |           | 1       | 12        | 0     | 22.87           | 22.67  | 22.79 |       |
|            |                 |           | 1       | 24        | 0     | 22.48           | 22.67  | 22.70 |       |
|            |                 |           | 12      | 0         | 1     | 21.78           | 22.10  | 22.34 |       |
|            |                 |           | 12      | 7         | 1     | 21.81           | 22.08  | 22.31 |       |
|            |                 |           | 12      | 13        | 1     | 21.75           | 22.05  | 22.24 |       |
|            |                 | 16QAM     | 25      | 0         | 1     | 21.80           | 22.09  | 22.31 |       |
|            |                 |           | 1       | 0         | 1     | 21.73           | 22.19  | 22.33 |       |
|            |                 |           | 1       | 12        | 1     | 21.59           | 22.15  | 22.27 |       |
|            |                 |           | 1       | 24        | 1     | 21.65           | 22.11  | 22.29 |       |
|            |                 |           | 12      | 0         | 2     | 20.72           | 20.99  | 21.33 |       |
|            |                 |           | 12      | 7         | 2     | 20.67           | 20.99  | 21.21 |       |
|            | 12              |           | 13      | 2         | 20.69 | 20.98           | 21.25  |       |       |
|            | 25              |           | 0       | 2         | 20.49 | 21.00           | 21.29  |       |       |

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| Test Band  | Bandwidth (MHz) | Test mode | RB size | RB offset | MPR   | Maximum power   |        |       |       |
|------------|-----------------|-----------|---------|-----------|-------|-----------------|--------|-------|-------|
|            |                 |           |         |           |       | Frequency (MHz) |        |       |       |
|            |                 |           |         |           |       | Low             | Middle | High  |       |
| LTE Band 2 | 10              | QPSK      | 1       | 0         | 0     | 22.60           | 22.55  | 22.82 |       |
|            |                 |           | 1       | 25        | 0     | 22.34           | 22.51  | 22.77 |       |
|            |                 |           | 1       | 49        | 0     | 22.37           | 22.48  | 22.75 |       |
|            |                 |           | 25      | 0         | 1     | 21.87           | 22.01  | 22.29 |       |
|            |                 |           | 25      | 12        | 1     | 21.87           | 22.02  | 22.24 |       |
|            |                 |           | 25      | 25        | 1     | 21.86           | 21.99  | 22.23 |       |
|            |                 | 50        | 0       | 1         | 21.88 | 22.00           | 22.25  |       |       |
|            |                 | 16QAM     | 1       | 0         | 1     | 21.96           | 22.01  | 22.27 |       |
|            |                 |           | 1       | 25        | 1     | 22.08           | 21.95  | 22.29 |       |
|            |                 |           | 1       | 49        | 1     | 21.93           | 21.93  | 22.16 |       |
|            |                 |           | 25      | 0         | 2     | 20.62           | 20.90  | 21.14 |       |
|            |                 |           | 25      | 12        | 2     | 20.78           | 20.99  | 21.26 |       |
|            |                 |           | 25      | 25        | 2     | 20.72           | 21.01  | 21.23 |       |
|            |                 | 50        | 0       | 2         | 20.85 | 20.93           | 21.22  |       |       |
|            |                 | 15        | QPSK    | 1         | 0     | 0               | 22.51  | 22.70 | 22.79 |
|            |                 |           |         | 1         | 36    | 0               | 22.38  | 22.51 | 22.67 |
|            |                 |           |         | 1         | 74    | 0               | 22.29  | 22.88 | 22.66 |
|            |                 |           |         | 36        | 0     | 1               | 21.96  | 22.05 | 22.26 |
|            | 36              |           |         | 18        | 1     | 21.94           | 22.03  | 22.24 |       |
|            | 36              |           |         | 37        | 1     | 21.94           | 22.02  | 22.19 |       |
|            | 75              |           | 0       | 1         | 21.93 | 22.01           | 22.21  |       |       |
|            | 16QAM           |           | 1       | 0         | 1     | 22.08           | 21.89  | 22.26 |       |
|            |                 |           | 1       | 36        | 1     | 22.00           | 21.78  | 22.17 |       |
|            |                 |           | 1       | 74        | 1     | 21.89           | 21.74  | 22.08 |       |
|            |                 |           | 36      | 0         | 2     | 20.94           | 21.06  | 21.14 |       |
|            |                 |           | 36      | 18        | 2     | 20.91           | 21.03  | 21.14 |       |
|            |                 |           | 36      | 37        | 2     | 20.91           | 21.03  | 21.12 |       |
|            | 75              |           | 0       | 2         | 20.96 | 21.00           | 21.16  |       |       |
|            | 20              |           | QPSK    | 1         | 0     | 0               | 22.51  | 22.59 | 22.69 |
|            |                 |           |         | 1         | 49    | 0               | 22.46  | 22.38 | 22.55 |
|            |                 |           |         | 1         | 99    | 0               | 22.36  | 22.50 | 22.63 |
|            |                 |           |         | 50        | 0     | 1               | 21.99  | 22.02 | 22.18 |
|            |                 | 50        |         | 24        | 1     | 21.89           | 22.00  | 22.17 |       |
|            |                 | 50        |         | 50        | 1     | 21.91           | 21.93  | 22.10 |       |
|            |                 | 100       | 0       | 1         | 21.93 | 21.99           | 22.14  |       |       |
|            |                 | 16QAM     | 1       | 0         | 1     | 22.28           | 22.04  | 22.27 |       |
|            |                 |           | 1       | 49        | 1     | 22.16           | 22.01  | 22.07 |       |
|            |                 |           | 1       | 99        | 1     | 21.66           | 21.95  | 22.08 |       |
|            |                 |           | 50      | 0         | 2     | 20.97           | 21.00  | 21.15 |       |
|            |                 |           | 50      | 24        | 2     | 20.91           | 20.94  | 21.12 |       |
|            |                 |           | 50      | 50        | 2     | 20.87           | 20.90  | 21.06 |       |
|            |                 | 100       | 0       | 2         | 20.97 | 20.97           | 21.16  |       |       |

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| Test Band  | Bandwidth (MHz) | Test mode | RB size | RB offset | MPR | Maximum power   |        |       |       |
|------------|-----------------|-----------|---------|-----------|-----|-----------------|--------|-------|-------|
|            |                 |           |         |           |     | Frequency (MHz) |        |       |       |
|            |                 |           |         |           |     | Low             | Middle | High  |       |
| LTE Band 4 | 1.4             | QPSK      | 1       | 0         | 0   | 22.40           | 22.63  | 22.43 |       |
|            |                 |           | 1       | 3         | 0   | 22.32           | 22.43  | 22.40 |       |
|            |                 |           | 1       | 5         | 0   | 22.47           | 22.70  | 22.48 |       |
|            |                 |           | 3       | 0         | 0   | 22.90           | 22.98  | 23.00 |       |
|            |                 |           | 3       | 1         | 0   | 22.93           | 22.94  | 23.03 |       |
|            |                 |           | 3       | 3         | 0   | 22.67           | 22.96  | 23.01 |       |
|            |                 | 16QAM     | 6       | 0         | 1   | 22.00           | 21.97  | 22.04 |       |
|            |                 |           | 1       | 0         | 1   | 22.00           | 22.00  | 21.83 |       |
|            |                 |           | 1       | 3         | 1   | 21.93           | 21.83  | 21.72 |       |
|            |                 |           | 1       | 5         | 1   | 21.94           | 21.94  | 21.90 |       |
|            |                 |           | 3       | 0         | 1   | 21.85           | 21.66  | 22.04 |       |
|            |                 |           | 3       | 1         | 1   | 21.84           | 21.77  | 22.11 |       |
|            |                 | 3         | QPSK    | 3         | 3   | 1               | 21.93  | 21.64 | 22.09 |
|            |                 |           |         | 6         | 0   | 2               | 21.06  | 21.02 | 21.01 |
|            |                 |           |         | 1         | 0   | 0               | 22.40  | 22.51 | 22.68 |
|            |                 |           |         | 1         | 8   | 0               | 22.38  | 22.92 | 22.57 |
|            |                 |           |         | 1         | 14  | 0               | 22.43  | 22.52 | 22.64 |
|            |                 |           |         | 8         | 0   | 1               | 21.97  | 21.95 | 22.00 |
|            | 16QAM           |           | 8       | 4         | 1   | 21.97           | 21.99  | 22.03 |       |
|            |                 |           | 8       | 7         | 1   | 21.99           | 21.98  | 22.02 |       |
|            |                 |           | 15      | 0         | 1   | 21.97           | 21.95  | 21.98 |       |
|            |                 |           | 1       | 0         | 1   | 22.11           | 21.99  | 21.87 |       |
|            |                 |           | 1       | 8         | 1   | 21.69           | 21.93  | 21.83 |       |
|            |                 |           | 1       | 14        | 1   | 22.02           | 21.92  | 21.85 |       |
|            | 5               |           | QPSK    | 8         | 0   | 2               | 21.07  | 20.96 | 20.93 |
|            |                 |           |         | 8         | 4   | 2               | 21.08  | 20.93 | 20.96 |
|            |                 |           |         | 8         | 7   | 2               | 21.03  | 20.92 | 20.97 |
|            |                 |           |         | 15        | 0   | 2               | 20.93  | 20.93 | 20.98 |
|            |                 |           |         | 1         | 0   | 0               | 22.96  | 22.53 | 22.47 |
|            |                 |           |         | 1         | 12  | 0               | 22.65  | 22.64 | 22.38 |
|            |                 | 16QAM     | 1       | 24        | 0   | 22.53           | 22.87  | 22.43 |       |
|            |                 |           | 12      | 0         | 1   | 21.97           | 21.93  | 21.95 |       |
|            |                 |           | 12      | 7         | 1   | 21.98           | 21.95  | 21.95 |       |
|            |                 |           | 12      | 13        | 1   | 21.96           | 21.94  | 21.93 |       |
|            |                 |           | 25      | 0         | 1   | 21.94           | 21.88  | 21.96 |       |
|            |                 |           | 1       | 0         | 1   | 21.92           | 21.79  | 22.02 |       |
|            |                 | 16QAM     | 1       | 12        | 1   | 21.93           | 21.94  | 21.71 |       |
|            |                 |           | 1       | 24        | 1   | 21.93           | 21.78  | 21.99 |       |
|            |                 |           | 12      | 0         | 2   | 20.83           | 20.86  | 20.86 |       |
|            |                 |           | 12      | 7         | 2   | 20.86           | 20.85  | 20.83 |       |
|            |                 |           | 12      | 13        | 2   | 20.84           | 20.87  | 20.82 |       |
|            |                 |           | 25      | 0         | 2   | 20.86           | 20.88  | 20.92 |       |

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| Test Band  | Bandwidth (MHz) | Test mode | RB size | RB offset | MPR   | Maximum power   |        |       |
|------------|-----------------|-----------|---------|-----------|-------|-----------------|--------|-------|
|            |                 |           |         |           |       | Frequency (MHz) |        |       |
|            |                 |           |         |           |       | Low             | Middle | High  |
| LTE Band 4 | 10              | QPSK      | 1       | 0         | 0     | 22.53           | 22.82  | 22.56 |
|            |                 |           | 1       | 25        | 0     | 22.45           | 22.56  | 22.55 |
|            |                 |           | 1       | 49        | 0     | 22.49           | 22.59  | 22.48 |
|            |                 |           | 25      | 0         | 1     | 21.94           | 21.93  | 22.08 |
|            |                 |           | 25      | 12        | 1     | 21.95           | 21.95  | 22.05 |
|            |                 |           | 25      | 25        | 1     | 21.91           | 21.96  | 22.02 |
|            |                 | 50        | 0       | 1         | 21.97 | 21.89           | 22.06  |       |
|            |                 | 16QAM     | 1       | 0         | 1     | 22.02           | 22.02  | 21.97 |
|            |                 |           | 1       | 25        | 1     | 22.01           | 22.00  | 21.97 |
|            |                 |           | 1       | 49        | 1     | 21.89           | 21.93  | 21.84 |
|            |                 |           | 25      | 0         | 2     | 20.87           | 20.96  | 20.97 |
|            |                 |           | 25      | 12        | 2     | 20.89           | 20.90  | 20.94 |
|            |                 |           | 25      | 25        | 2     | 20.83           | 20.95  | 20.93 |
|            |                 |           | 50      | 0         | 2     | 20.91           | 20.92  | 21.01 |
|            |                 |           | 1       | 0         | 0     | 22.92           | 22.85  | 22.64 |
|            | 1               |           | 36      | 0         | 22.40 | 22.49           | 22.64  |       |
|            | 1               | 74        | 0       | 22.33     | 22.37 | 22.52           |        |       |
|            | QPSK            | 36        | 0       | 1         | 21.98 | 21.97           | 22.08  |       |
|            |                 | 36        | 18      | 1         | 21.99 | 21.94           | 22.05  |       |
|            |                 | 36        | 37      | 1         | 21.97 | 21.93           | 22.03  |       |
|            |                 | 75        | 0       | 1         | 21.98 | 21.98           | 22.03  |       |
|            |                 | 1         | 0       | 1         | 21.97 | 21.96           | 22.06  |       |
|            |                 | 1         | 36      | 1         | 21.93 | 21.89           | 21.92  |       |
|            |                 | 1         | 74      | 1         | 21.89 | 21.85           | 21.93  |       |
|            |                 | 36        | 0       | 2         | 20.89 | 20.96           | 20.97  |       |
|            |                 | 36        | 18      | 2         | 20.84 | 20.94           | 20.94  |       |
|            | 36              | 37        | 2       | 20.80     | 20.94 | 20.88           |        |       |
|            | 16QAM           | 75        | 0       | 2         | 20.88 | 20.94           | 20.94  |       |
|            |                 | 1         | 0       | 0         | 22.55 | 22.55           | 22.59  |       |
|            |                 | 1         | 49      | 0         | 22.48 | 22.51           | 22.50  |       |
|            |                 | 1         | 99      | 0         | 22.38 | 22.29           | 22.52  |       |
|            |                 | 50        | 0       | 1         | 21.93 | 21.99           | 22.05  |       |
|            |                 | 50        | 24      | 1         | 21.91 | 21.95           | 22.02  |       |
|            |                 | 50        | 50      | 1         | 21.86 | 21.94           | 21.95  |       |
|            |                 | 100       | 0       | 1         | 21.86 | 21.95           | 22.03  |       |
|            |                 | 1         | 0       | 1         | 21.90 | 21.76           | 22.39  |       |
|            | 16QAM           | 1         | 49      | 1         | 21.82 | 21.97           | 22.09  |       |
|            |                 | 1         | 99      | 1         | 21.97 | 21.61           | 22.07  |       |
|            |                 | 50        | 0       | 2         | 20.90 | 20.90           | 20.95  |       |
|            |                 | 50        | 24      | 2         | 20.87 | 20.89           | 20.92  |       |
|            |                 | 50        | 50      | 2         | 20.82 | 20.82           | 20.88  |       |
|            |                 | 100       | 0       | 2         | 20.87 | 20.91           | 20.98  |       |

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| Test Band  | Bandwidth (MHz) | Test mode | RB size | RB offset | MPR | Maximum power   |        |       |
|------------|-----------------|-----------|---------|-----------|-----|-----------------|--------|-------|
|            |                 |           |         |           |     | Frequency (MHz) |        |       |
|            |                 |           |         |           |     | Low             | Middle | High  |
| LTE Band 5 | 1.4             | QPSK      | 1       | 0         | 0   | 22.24           | 21.96  | 21.99 |
|            |                 |           | 1       | 3         | 0   | 22.07           | 21.88  | 22.01 |
|            |                 |           | 1       | 5         | 0   | 22.19           | 21.93  | 21.99 |
|            |                 |           | 3       | 0         | 0   | 22.50           | 22.57  | 22.61 |
|            |                 |           | 3       | 1         | 0   | 22.47           | 22.54  | 22.58 |
|            |                 |           | 3       | 3         | 0   | 22.49           | 22.52  | 22.58 |
|            |                 | 16QAM     | 6       | 0         | 1   | 21.49           | 21.52  | 21.57 |
|            |                 |           | 1       | 0         | 1   | 21.30           | 21.32  | 21.62 |
|            |                 |           | 1       | 3         | 1   | 21.23           | 21.36  | 21.62 |
|            |                 |           | 1       | 5         | 1   | 21.20           | 21.32  | 21.63 |
|            |                 |           | 3       | 0         | 1   | 21.48           | 21.37  | 21.51 |
|            |                 |           | 3       | 1         | 1   | 21.51           | 21.34  | 21.48 |
|            | 3               | QPSK      | 3       | 3         | 1   | 21.51           | 21.34  | 21.52 |
|            |                 |           | 6       | 0         | 2   | 20.44           | 20.47  | 20.61 |
|            |                 |           | 1       | 0         | 0   | 21.87           | 21.97  | 22.24 |
|            |                 |           | 1       | 8         | 0   | 21.86           | 21.96  | 22.15 |
|            |                 |           | 1       | 14        | 0   | 21.82           | 21.89  | 22.12 |
|            |                 |           | 8       | 0         | 1   | 21.45           | 21.52  | 21.43 |
|            |                 | 16QAM     | 8       | 4         | 1   | 21.46           | 21.51  | 21.39 |
|            |                 |           | 8       | 7         | 1   | 21.47           | 21.50  | 21.40 |
|            |                 |           | 15      | 0         | 1   | 21.45           | 21.48  | 21.42 |
|            |                 |           | 1       | 0         | 1   | 21.41           | 21.42  | 21.30 |
|            |                 |           | 1       | 8         | 1   | 21.40           | 21.47  | 21.26 |
|            |                 |           | 1       | 14        | 1   | 21.38           | 21.45  | 21.20 |
|            |                 |           | 8       | 0         | 2   | 20.46           | 20.42  | 20.28 |
|            |                 |           | 8       | 4         | 2   | 20.49           | 20.42  | 20.27 |
|            |                 |           | 8       | 7         | 2   | 20.50           | 20.40  | 20.30 |
|            |                 |           | 15      | 0         | 2   | 20.39           | 20.46  | 20.38 |

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| Test Band  | Bandwidth (MHz) | Test mode | RB size | RB offset | MPR   | Maximum power   |        |       |
|------------|-----------------|-----------|---------|-----------|-------|-----------------|--------|-------|
|            |                 |           |         |           |       | Frequency (MHz) |        |       |
|            |                 |           |         |           |       | Low             | Middle | High  |
| LTE Band 5 | 5               | QPSK      | 1       | 0         | 0     | 22.19           | 22.54  | 22.09 |
|            |                 |           | 1       | 12        | 0     | 22.19           | 22.49  | 22.02 |
|            |                 |           | 1       | 24        | 0     | 22.08           | 22.42  | 22.03 |
|            |                 |           | 12      | 0         | 1     | 21.46           | 21.72  | 21.60 |
|            |                 |           | 12      | 7         | 1     | 21.64           | 21.73  | 21.63 |
|            |                 |           | 12      | 13        | 1     | 21.53           | 21.73  | 21.56 |
|            |                 | 25        | 0       | 1         | 22.00 | 21.71           | 21.56  |       |
|            |                 | 16QAM     | 1       | 0         | 1     | 21.92           | 21.71  | 21.45 |
|            |                 |           | 1       | 12        | 1     | 21.62           | 21.62  | 21.10 |
|            |                 |           | 1       | 24        | 1     | 21.87           | 21.71  | 21.40 |
|            |                 |           | 12      | 0         | 2     | 20.80           | 20.71  | 20.58 |
|            |                 |           | 12      | 7         | 2     | 20.70           | 20.69  | 20.52 |
|            |                 |           | 12      | 13        | 2     | 20.80           | 20.62  | 20.60 |
|            |                 |           | 25      | 0         | 2     | 20.83           | 20.61  | 20.59 |
|            | 10              |           | QPSK    | 1         | 0     | 0               | 22.26  | 22.44 |
|            |                 | 1         |         | 25        | 0     | 22.08           | 22.40  | 22.10 |
|            |                 | 1         |         | 49        | 0     | 22.04           | 22.28  | 22.05 |
|            |                 | 25        |         | 0         | 1     | 21.52           | 21.70  | 21.59 |
|            |                 | 25        |         | 12        | 1     | 21.45           | 21.67  | 21.57 |
|            |                 | 25        |         | 25        | 1     | 21.40           | 21.62  | 21.58 |
|            |                 | 16QAM     | 50      | 0         | 1     | 21.34           | 21.64  | 21.56 |
|            |                 |           | 1       | 0         | 1     | 21.60           | 21.61  | 21.47 |
|            |                 |           | 1       | 25        | 1     | 21.45           | 21.58  | 21.34 |
|            |                 |           | 1       | 49        | 1     | 21.45           | 21.55  | 21.23 |
|            |                 |           | 25      | 0         | 2     | 20.32           | 20.66  | 20.57 |
|            |                 |           | 25      | 12        | 2     | 20.30           | 20.63  | 20.50 |
|            |                 |           | 25      | 25        | 2     | 20.23           | 20.62  | 20.50 |
|            |                 |           | 50      | 0         | 2     | 20.31           | 20.60  | 20.61 |



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| Test Band   | Bandwidth (MHz) | Test mode | RB size | RB offset | MPR | Maximum power   |        |       |
|-------------|-----------------|-----------|---------|-----------|-----|-----------------|--------|-------|
|             |                 |           |         |           |     | Frequency (MHz) |        |       |
|             |                 |           |         |           |     | Low             | Middle | High  |
| LTE Band 12 | 1.4             | QPSK      | 1       | 0         | 0   | 21.73           | 21.87  | 21.56 |
|             |                 |           | 1       | 3         | 0   | 21.74           | 21.71  | 21.55 |
|             |                 |           | 1       | 5         | 0   | 21.75           | 21.86  | 21.51 |
|             |                 |           | 3       | 0         | 0   | 21.83           | 21.80  | 21.58 |
|             |                 |           | 3       | 1         | 0   | 21.78           | 21.77  | 21.58 |
|             |                 |           | 3       | 3         | 0   | 21.79           | 21.74  | 21.58 |
|             |                 | 16QAM     | 6       | 0         | 1   | 21.17           | 21.10  | 20.86 |
|             |                 |           | 1       | 0         | 1   | 21.15           | 21.07  | 20.95 |
|             |                 |           | 1       | 3         | 1   | 21.11           | 21.03  | 20.84 |
|             |                 |           | 1       | 5         | 1   | 21.13           | 21.09  | 20.84 |
|             |                 |           | 3       | 0         | 1   | 21.12           | 21.01  | 20.87 |
|             |                 |           | 3       | 1         | 1   | 21.14           | 20.90  | 20.87 |
|             | 3               | QPSK      | 3       | 3         | 1   | 21.16           | 20.98  | 20.86 |
|             |                 |           | 6       | 0         | 2   | 20.15           | 20.04  | 19.76 |
|             |                 |           | 1       | 0         | 0   | 21.52           | 21.81  | 21.81 |
|             |                 |           | 1       | 8         | 0   | 21.51           | 21.75  | 21.73 |
|             |                 |           | 1       | 14        | 0   | 21.58           | 21.75  | 21.68 |
|             |                 |           | 8       | 0         | 1   | 21.02           | 21.04  | 20.91 |
|             |                 | 16QAM     | 8       | 4         | 1   | 21.03           | 21.02  | 20.89 |
|             |                 |           | 8       | 7         | 1   | 21.00           | 21.02  | 20.89 |
|             |                 |           | 15      | 0         | 1   | 20.97           | 21.01  | 20.85 |
|             |                 |           | 1       | 0         | 1   | 20.94           | 21.19  | 20.95 |
|             |                 |           | 1       | 8         | 1   | 20.93           | 21.15  | 20.94 |
|             |                 |           | 1       | 14        | 1   | 20.84           | 21.11  | 20.90 |
|             |                 | QPSK      | 8       | 0         | 2   | 19.88           | 19.89  | 19.67 |
|             |                 |           | 8       | 4         | 2   | 19.91           | 19.90  | 19.66 |
|             |                 |           | 8       | 7         | 2   | 19.88           | 19.82  | 19.71 |
|             |                 |           | 15      | 0         | 2   | 19.62           | 19.91  | 19.67 |

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| Test Band   | Bandwidth (MHz) | Test mode | RB size | RB offset | MPR | Maximum power   |        |       |
|-------------|-----------------|-----------|---------|-----------|-----|-----------------|--------|-------|
|             |                 |           |         |           |     | Frequency (MHz) |        |       |
|             |                 |           |         |           |     | Low             | Middle | High  |
| LTE Band 12 | 5               | QPSK      | 1       | 0         | 0   | 21.85           | 21.80  | 21.61 |
|             |                 |           | 1       | 12        | 0   | 21.79           | 21.75  | 21.56 |
|             |                 |           | 1       | 24        | 0   | 21.70           | 21.76  | 21.50 |
|             |                 |           | 12      | 0         | 1   | 20.93           | 20.97  | 20.89 |
|             |                 |           | 12      | 7         | 1   | 20.96           | 20.96  | 20.62 |
|             |                 |           | 12      | 13        | 1   | 20.90           | 20.95  | 20.89 |
|             |                 |           | 25      | 0         | 1   | 20.97           | 20.95  | 20.93 |
|             |                 | 16QAM     | 1       | 0         | 1   | 20.91           | 21.08  | 21.18 |
|             |                 |           | 1       | 12        | 1   | 20.81           | 21.08  | 21.07 |
|             |                 |           | 1       | 24        | 1   | 20.82           | 21.00  | 21.00 |
|             |                 |           | 12      | 0         | 2   | 19.68           | 19.75  | 19.69 |
|             |                 |           | 12      | 7         | 2   | 19.69           | 19.83  | 19.63 |
|             |                 |           | 12      | 13        | 2   | 19.51           | 19.78  | 19.75 |
|             |                 |           | 25      | 0         | 2   | 19.69           | 19.80  | 19.74 |
|             | 10              | QPSK      | 1       | 0         | 0   | 21.60           | 21.69  | 21.58 |
|             |                 |           | 1       | 25        | 0   | 21.55           | 21.66  | 21.54 |
|             |                 |           | 1       | 49        | 0   | 21.51           | 21.56  | 21.50 |
|             |                 |           | 25      | 0         | 1   | 20.80           | 20.96  | 20.92 |
|             |                 |           | 25      | 12        | 1   | 20.79           | 20.72  | 20.90 |
|             |                 |           | 25      | 25        | 1   | 20.75           | 20.83  | 20.84 |
|             |                 |           | 50      | 0         | 1   | 20.83           | 20.91  | 20.87 |
|             |                 | 16QAM     | 1       | 0         | 1   | 20.65           | 20.71  | 20.86 |
|             |                 |           | 1       | 25        | 1   | 20.60           | 20.66  | 20.98 |
|             |                 |           | 1       | 49        | 1   | 20.57           | 20.63  | 20.89 |
|             |                 |           | 25      | 0         | 2   | 19.73           | 19.74  | 19.64 |
|             |                 |           | 25      | 12        | 2   | 19.66           | 19.76  | 19.62 |
|             |                 |           | 25      | 25        | 2   | 19.67           | 19.76  | 19.60 |
|             |                 |           | 50      | 0         | 2   | 19.74           | 19.65  | 19.69 |

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| Test Band   | Bandwidth (MHz) | Test mode | RB size | RB offset | MPR | Maximum power   |        |       |
|-------------|-----------------|-----------|---------|-----------|-----|-----------------|--------|-------|
|             |                 |           |         |           |     | Frequency (MHz) |        |       |
|             |                 |           |         |           |     | Low             | Middle | High  |
| LTE Band 13 | 5               | QPSK      | 1       | 0         | 0   | 22.24           | 21.74  | 21.90 |
|             |                 |           | 1       | 12        | 0   | 22.21           | 21.67  | 21.89 |
|             |                 |           | 1       | 24        | 0   | 22.17           | 21.62  | 21.86 |
|             |                 |           | 12      | 0         | 1   | 21.50           | 21.29  | 21.50 |
|             |                 |           | 12      | 7         | 1   | 21.49           | 21.25  | 21.43 |
|             |                 |           | 12      | 13        | 1   | 21.47           | 21.27  | 21.44 |
|             |                 |           | 25      | 0         | 1   | 21.41           | 21.29  | 21.44 |
|             |                 | 16QAM     | 1       | 0         | 1   | 21.25           | 21.35  | 21.37 |
|             |                 |           | 1       | 12        | 1   | 21.16           | 21.29  | 21.34 |
|             |                 |           | 1       | 24        | 1   | 21.19           | 21.28  | 21.37 |
|             |                 |           | 12      | 0         | 2   | 20.33           | 20.24  | 20.46 |
|             |                 |           | 12      | 7         | 2   | 20.35           | 20.24  | 20.42 |
|             |                 |           | 12      | 13        | 2   | 20.35           | 20.22  | 20.45 |
|             |                 |           | 25      | 0         | 2   | 20.36           | 20.25  | 20.45 |
|             | 10              | QPSK      | 1       | 0         | 0   | -               | 21.88  | -     |
|             |                 |           | 1       | 25        | 0   | -               | 21.70  | -     |
|             |                 |           | 1       | 49        | 0   | -               | 21.67  | -     |
|             |                 |           | 25      | 0         | 1   | -               | 21.20  | -     |
|             |                 |           | 25      | 12        | 1   | -               | 21.18  | -     |
|             |                 |           | 25      | 25        | 1   | -               | 21.16  | -     |
|             |                 |           | 50      | 0         | 1   | -               | 21.12  | -     |
|             |                 | 16QAM     | 1       | 0         | 1   | -               | 21.37  | -     |
|             |                 |           | 1       | 25        | 1   | -               | 21.20  | -     |
|             |                 |           | 1       | 49        | 1   | -               | 21.17  | -     |
|             |                 |           | 25      | 0         | 2   | -               | 20.14  | -     |
|             |                 |           | 25      | 12        | 2   | -               | 20.12  | -     |
|             |                 |           | 25      | 25        | 2   | -               | 20.10  | -     |
|             |                 |           | 50      | 0         | 2   | -               | 20.23  | -     |

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| Test Band   | Bandwidth (MHz) | Test mode | RB size | RB offset | MPR | Maximum power   |        |       |       |
|-------------|-----------------|-----------|---------|-----------|-----|-----------------|--------|-------|-------|
|             |                 |           |         |           |     | Frequency (MHz) |        |       |       |
|             |                 |           |         |           |     | Low             | Middle | High  |       |
| LTE Band 25 | 1.4             | QPSK      | 1       | 0         | 0   | 22.60           | 22.44  | 22.96 |       |
|             |                 |           | 1       | 3         | 0   | 22.44           | 22.39  | 22.77 |       |
|             |                 |           | 1       | 5         | 0   | 22.60           | 22.42  | 22.90 |       |
|             |                 |           | 3       | 0         | 0   | 22.38           | 22.54  | 22.76 |       |
|             |                 |           | 3       | 1         | 0   | 22.38           | 22.55  | 22.74 |       |
|             |                 |           | 3       | 3         | 0   | 22.39           | 22.51  | 22.76 |       |
|             |                 | 16QAM     | 6       | 0         | 1   | 21.94           | 22.08  | 22.26 |       |
|             |                 |           | 1       | 0         | 1   | 21.93           | 22.11  | 22.15 |       |
|             |                 |           | 1       | 3         | 1   | 21.96           | 22.08  | 22.26 |       |
|             |                 |           | 1       | 5         | 1   | 21.88           | 22.14  | 22.19 |       |
|             |                 |           | 3       | 0         | 1   | 21.93           | 22.07  | 22.32 |       |
|             |                 |           | 3       | 1         | 1   | 21.76           | 22.10  | 22.19 |       |
|             |                 | 3         | QPSK    | 3         | 3   | 1               | 21.94  | 21.76 | 22.32 |
|             |                 |           |         | 6         | 0   | 2               | 20.95  | 21.05 | 21.21 |
|             |                 |           |         | 1         | 0   | 0               | 22.33  | 22.44 | 22.75 |
|             |                 |           |         | 1         | 8   | 0               | 22.36  | 22.40 | 22.81 |
|             |                 |           |         | 1         | 14  | 0               | 22.36  | 22.39 | 22.75 |
|             |                 |           |         | 8         | 0   | 1               | 21.92  | 22.01 | 22.34 |
|             | 16QAM           |           | 8       | 4         | 1   | 21.92           | 22.06  | 22.31 |       |
|             |                 |           | 8       | 7         | 1   | 21.92           | 22.04  | 22.30 |       |
|             |                 |           | 15      | 0         | 1   | 21.71           | 21.98  | 22.28 |       |
|             |                 |           | 1       | 0         | 1   | 21.77           | 22.09  | 22.27 |       |
|             |                 |           | 1       | 8         | 1   | 21.75           | 22.07  | 22.05 |       |
|             |                 |           | 1       | 14        | 1   | 21.73           | 22.08  | 22.18 |       |
|             | 5               |           | QPSK    | 8         | 0   | 2               | 20.97  | 20.97 | 21.30 |
|             |                 |           |         | 8         | 4   | 2               | 21.00  | 20.94 | 21.21 |
|             |                 |           |         | 8         | 7   | 2               | 21.01  | 20.90 | 21.20 |
|             |                 |           |         | 15        | 0   | 2               | 20.87  | 20.94 | 21.22 |
|             |                 |           |         | 1         | 0   | 0               | 22.88  | 22.61 | 22.89 |
|             |                 |           |         | 1         | 12  | 0               | 22.85  | 22.50 | 22.95 |
|             |                 | 16QAM     | 1       | 24        | 0   | 22.50           | 22.47  | 22.93 |       |
|             |                 |           | 12      | 0         | 1   | 21.91           | 22.02  | 22.32 |       |
|             |                 |           | 12      | 7         | 1   | 21.86           | 22.03  | 22.31 |       |
|             |                 |           | 12      | 13        | 1   | 21.87           | 22.05  | 22.34 |       |
|             |                 |           | 25      | 0         | 1   | 21.86           | 22.02  | 22.29 |       |
|             |                 |           | 1       | 0         | 1   | 21.65           | 22.00  | 21.99 |       |
|             |                 | 16QAM     | 1       | 12        | 1   | 21.61           | 21.90  | 22.21 |       |
|             |                 |           | 1       | 24        | 1   | 21.60           | 21.96  | 22.21 |       |
|             |                 |           | 12      | 0         | 2   | 20.93           | 21.00  | 21.24 |       |
|             |                 |           | 12      | 7         | 2   | 20.91           | 20.96  | 21.27 |       |
|             |                 |           | 12      | 13        | 2   | 20.92           | 20.99  | 21.24 |       |
|             |                 |           | 25      | 0         | 2   | 20.87           | 20.96  | 21.25 |       |

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| Test Band   | Bandwidth (MHz) | Test mode | RB size | RB offset | MPR   | Maximum power   |        |       |       |
|-------------|-----------------|-----------|---------|-----------|-------|-----------------|--------|-------|-------|
|             |                 |           |         |           |       | Frequency (MHz) |        |       |       |
|             |                 |           |         |           |       | Low             | Middle | High  |       |
| LTE Band 25 | 10              | QPSK      | 1       | 0         | 0     | 22.43           | 22.55  | 22.80 |       |
|             |                 |           | 1       | 25        | 0     | 22.40           | 22.50  | 22.66 |       |
|             |                 |           | 1       | 49        | 0     | 22.59           | 22.56  | 22.76 |       |
|             |                 |           | 25      | 0         | 1     | 21.91           | 22.04  | 22.18 |       |
|             |                 |           | 25      | 12        | 1     | 21.90           | 22.06  | 22.16 |       |
|             |                 |           | 25      | 25        | 1     | 21.90           | 22.04  | 22.06 |       |
|             |                 | 50        | 0       | 1         | 21.91 | 22.02           | 22.12  |       |       |
|             |                 | 16QAM     | 1       | 0         | 1     | 22.17           | 21.92  | 22.19 |       |
|             |                 |           | 1       | 25        | 1     | 21.89           | 21.86  | 22.10 |       |
|             |                 |           | 1       | 49        | 1     | 21.85           | 21.88  | 22.37 |       |
|             |                 |           | 25      | 0         | 2     | 20.88           | 21.07  | 21.10 |       |
|             |                 |           | 25      | 12        | 2     | 20.86           | 21.04  | 21.05 |       |
|             |                 |           | 25      | 25        | 2     | 20.82           | 21.02  | 21.07 |       |
|             |                 |           | 50      | 0         | 2     | 20.89           | 21.00  | 21.12 |       |
|             |                 |           | 15      | QPSK      | 1     | 0               | 0      | 22.97 | 22.70 |
|             | 1               |           |         |           | 36    | 0               | 22.49  | 22.70 | 22.80 |
|             | 1               | 74        |         |           | 0     | 22.40           | 22.46  | 22.57 |       |
|             | 36              | 0         |         |           | 1     | 21.98           | 22.08  | 22.33 |       |
|             | 36              | 18        |         |           | 1     | 21.96           | 22.05  | 22.28 |       |
|             | 36              | 37        |         |           | 1     | 21.95           | 22.05  | 22.14 |       |
|             | 75              | 0         |         | 1         | 21.95 | 22.07           | 22.26  |       |       |
|             | 16QAM           | 1         |         | 0         | 1     | 22.10           | 22.01  | 22.25 |       |
|             |                 | 1         |         | 36        | 1     | 21.97           | 21.88  | 22.22 |       |
|             |                 | 1         |         | 74        | 1     | 21.96           | 21.88  | 21.71 |       |
|             |                 | 36        |         | 0         | 2     | 20.93           | 21.11  | 21.20 |       |
|             |                 | 36        |         | 18        | 2     | 20.89           | 21.11  | 21.16 |       |
|             |                 | 36        |         | 37        | 2     | 20.90           | 21.05  | 21.14 |       |
|             |                 | 75        |         | 0         | 2     | 20.93           | 21.04  | 21.20 |       |
|             |                 | 20        |         | QPSK      | 1     | 0               | 0      | 22.59 | 22.64 |
|             |                 |           | 1       |           | 49    | 0               | 22.43  | 22.61 | 22.76 |
|             | 1               |           | 99      |           | 0     | 22.39           | 22.55  | 22.62 |       |
|             | 50              |           | 0       |           | 1     | 21.97           | 22.06  | 22.31 |       |
|             | 50              |           | 24      |           | 1     | 21.91           | 22.03  | 22.27 |       |
|             | 50              |           | 50      |           | 1     | 21.88           | 21.95  | 22.19 |       |
|             | 100             |           | 0       |           | 1     | 21.92           | 21.98  | 22.26 |       |
|             | 16QAM           |           | 1       | 0         | 1     | 21.97           | 22.27  | 22.27 |       |
|             |                 |           | 1       | 49        | 1     | 21.93           | 21.83  | 22.17 |       |
|             |                 |           | 1       | 99        | 1     | 21.76           | 21.97  | 21.97 |       |
|             |                 |           | 50      | 0         | 2     | 20.94           | 21.02  | 21.22 |       |
|             |                 |           | 50      | 24        | 2     | 20.88           | 21.03  | 21.19 |       |
|             |                 |           | 50      | 50        | 2     | 20.87           | 20.88  | 21.13 |       |
|             |                 |           | 100     | 0         | 2     | 20.90           | 21.05  | 21.17 |       |

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| Test Band   | Bandwidth (MHz) | Test mode | RB size | RB offset | MPR | Maximum power   |        |       |       |
|-------------|-----------------|-----------|---------|-----------|-----|-----------------|--------|-------|-------|
|             |                 |           |         |           |     | Frequency (MHz) |        |       |       |
|             |                 |           |         |           |     | Low             | Middle | High  |       |
| LTE Band 26 | 1.4             | QPSK      | 1       | 0         | 0   | 22.16           | 22.35  | 22.46 |       |
|             |                 |           | 1       | 3         | 0   | 22.07           | 22.30  | 22.32 |       |
|             |                 |           | 1       | 5         | 0   | 22.07           | 22.31  | 22.31 |       |
|             |                 |           | 3       | 0         | 0   | 22.74           | 22.76  | 22.63 |       |
|             |                 |           | 3       | 1         | 0   | 22.78           | 22.69  | 22.65 |       |
|             |                 |           | 3       | 3         | 0   | 22.73           | 22.72  | 22.60 |       |
|             |                 | 16QAM     | 6       | 0         | 1   | 21.69           | 21.62  | 21.55 |       |
|             |                 |           | 1       | 0         | 1   | 21.66           | 21.58  | 21.45 |       |
|             |                 |           | 1       | 3         | 1   | 21.54           | 21.47  | 21.38 |       |
|             |                 |           | 1       | 5         | 1   | 21.56           | 21.51  | 21.42 |       |
|             |                 |           | 3       | 0         | 1   | 21.68           | 21.55  | 21.51 |       |
|             |                 |           | 3       | 1         | 1   | 21.58           | 21.57  | 21.44 |       |
|             |                 | 3         | QPSK    | 3         | 3   | 1               | 21.59  | 21.54 | 21.49 |
|             |                 |           |         | 6         | 0   | 2               | 20.37  | 20.60 | 20.54 |
|             |                 |           |         | 1         | 0   | 0               | 22.34  | 22.08 | 22.37 |
|             |                 |           |         | 1         | 8   | 0               | 22.29  | 22.12 | 22.34 |
|             |                 |           |         | 1         | 14  | 0               | 22.26  | 21.98 | 22.27 |
|             |                 |           |         | 8         | 0   | 1               | 21.61  | 21.34 | 21.59 |
|             | 16QAM           |           | 8       | 4         | 1   | 21.55           | 21.26  | 21.55 |       |
|             |                 |           | 8       | 7         | 1   | 21.54           | 21.23  | 21.58 |       |
|             |                 |           | 15      | 0         | 1   | 21.55           | 21.23  | 21.54 |       |
|             |                 |           | 1       | 0         | 1   | 21.80           | 21.48  | 21.60 |       |
|             |                 |           | 1       | 8         | 1   | 21.68           | 21.40  | 21.58 |       |
|             |                 |           | 1       | 14        | 1   | 21.71           | 21.38  | 21.59 |       |
|             | 5               |           | QPSK    | 8         | 0   | 2               | 20.40  | 20.11 | 20.51 |
|             |                 |           |         | 8         | 4   | 2               | 20.47  | 20.21 | 20.50 |
|             |                 |           |         | 8         | 7   | 2               | 20.43  | 20.17 | 20.49 |
|             |                 |           |         | 15        | 0   | 2               | 20.58  | 20.24 | 20.51 |
|             |                 |           |         | 1         | 0   | 0               | 22.35  | 22.32 | 22.35 |
|             |                 |           |         | 1         | 12  | 0               | 22.32  | 22.41 | 22.36 |
|             |                 | 16QAM     | 1       | 24        | 0   | 22.29           | 22.28  | 22.34 |       |
|             |                 |           | 12      | 0         | 1   | 21.59           | 21.64  | 21.54 |       |
|             |                 |           | 12      | 7         | 1   | 21.61           | 21.66  | 21.53 |       |
|             |                 |           | 12      | 13        | 1   | 21.58           | 21.56  | 21.51 |       |
|             |                 |           | 25      | 0         | 1   | 21.51           | 21.58  | 21.56 |       |
|             |                 |           | 1       | 0         | 1   | 21.45           | 21.46  | 21.52 |       |
|             |                 | 16QAM     | 1       | 12        | 1   | 21.41           | 21.45  | 21.39 |       |
|             |                 |           | 1       | 24        | 1   | 21.42           | 21.39  | 21.45 |       |
|             |                 |           | 12      | 0         | 2   | 20.43           | 20.47  | 20.50 |       |
|             |                 |           | 12      | 7         | 2   | 20.21           | 20.22  | 20.55 |       |
|             |                 |           | 12      | 13        | 2   | 20.46           | 20.56  | 20.44 |       |
|             |                 |           | 25      | 0         | 2   | 20.48           | 20.49  | 20.51 |       |

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| Test Band   | Bandwidth (MHz) | Test mode | RB size | RB offset | MPR | Maximum power   |        |       |
|-------------|-----------------|-----------|---------|-----------|-----|-----------------|--------|-------|
|             |                 |           |         |           |     | Frequency (MHz) |        |       |
|             |                 |           |         |           |     | Low             | Middle | High  |
| LTE Band 26 | 10              | QPSK      | 1       | 0         | 0   | 21.81           | 22.13  | 22.09 |
|             |                 |           | 1       | 25        | 0   | 21.87           | 22.18  | 22.02 |
|             |                 |           | 1       | 49        | 0   | 21.82           | 22.07  | 22.00 |
|             |                 |           | 25      | 0         | 1   | 21.07           | 21.38  | 21.52 |
|             |                 |           | 25      | 12        | 1   | 21.14           | 21.46  | 21.49 |
|             |                 |           | 25      | 25        | 1   | 21.07           | 21.34  | 21.42 |
|             |                 |           | 50      | 0         | 1   | 21.06           | 21.36  | 21.38 |
|             |                 | 16QAM     | 1       | 0         | 1   | 21.14           | 21.45  | 21.40 |
|             |                 |           | 1       | 25        | 1   | 21.16           | 21.44  | 21.36 |
|             |                 |           | 1       | 49        | 1   | 21.01           | 21.32  | 21.26 |
|             |                 |           | 25      | 0         | 2   | 20.07           | 20.38  | 20.45 |
|             |                 |           | 25      | 12        | 2   | 20.11           | 20.44  | 20.45 |
|             |                 |           | 25      | 25        | 2   | 20.00           | 20.36  | 20.41 |
|             |                 |           | 50      | 0         | 2   | 20.01           | 20.40  | 20.48 |
|             | 15              | QPSK      | 1       | 0         | 0   | 22.69           | 22.80  | 22.45 |
|             |                 |           | 1       | 36        | 0   | 22.64           | 22.76  | 22.38 |
|             |                 |           | 1       | 74        | 0   | 22.47           | 22.52  | 22.15 |
|             |                 |           | 36      | 0         | 1   | 22.09           | 22.23  | 21.74 |
|             |                 |           | 36      | 18        | 1   | 21.94           | 21.98  | 21.74 |
|             |                 |           | 36      | 37        | 1   | 21.96           | 22.08  | 21.71 |
|             |                 |           | 75      | 0         | 1   | 21.97           | 22.03  | 21.73 |
|             |                 | 16QAM     | 1       | 0         | 1   | 22.12           | 22.23  | 21.69 |
|             |                 |           | 1       | 36        | 1   | 21.85           | 21.90  | 21.59 |
|             |                 |           | 1       | 74        | 1   | 21.72           | 21.76  | 21.75 |
|             |                 |           | 36      | 0         | 2   | 20.88           | 20.93  | 20.78 |
|             |                 |           | 36      | 18        | 2   | 20.85           | 20.89  | 20.73 |
|             |                 |           | 36      | 37        | 2   | 20.83           | 20.96  | 20.69 |
|             |                 |           | 75      | 0         | 2   | 20.85           | 20.94  | 20.70 |

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| Test Band   | Bandwidth (MHz) | Test mode | RB size | RB offset | MPR | Maximum power   |        |       |       |
|-------------|-----------------|-----------|---------|-----------|-----|-----------------|--------|-------|-------|
|             |                 |           |         |           |     | Frequency (MHz) |        |       |       |
|             |                 |           |         |           |     | Low             | Middle | High  |       |
| LTE Band 66 | 1.4             | QPSK      | 1       | 0         | 0   | 22.43           | 22.63  | 22.74 |       |
|             |                 |           | 1       | 3         | 0   | 22.41           | 22.53  | 22.64 |       |
|             |                 |           | 1       | 5         | 0   | 22.48           | 22.69  | 22.68 |       |
|             |                 |           | 3       | 0         | 0   | 22.92           | 23.00  | 23.10 |       |
|             |                 |           | 3       | 1         | 0   | 22.98           | 23.04  | 23.05 |       |
|             |                 |           | 3       | 3         | 0   | 23.01           | 22.98  | 23.08 |       |
|             |                 | 16QAM     | 6       | 0         | 1   | 22.00           | 21.99  | 21.89 |       |
|             |                 |           | 1       | 0         | 1   | 21.92           | 21.82  | 22.01 |       |
|             |                 |           | 1       | 3         | 1   | 21.93           | 21.88  | 21.90 |       |
|             |                 |           | 1       | 5         | 1   | 22.04           | 21.81  | 22.00 |       |
|             |                 |           | 3       | 0         | 1   | 21.92           | 21.79  | 22.11 |       |
|             |                 |           | 3       | 1         | 1   | 21.89           | 21.80  | 21.99 |       |
|             |                 | 3         | QPSK    | 3         | 3   | 1               | 21.88  | 21.74 | 22.05 |
|             |                 |           |         | 6         | 0   | 2               | 20.90  | 21.00 | 20.96 |
|             |                 |           |         | 1         | 0   | 0               | 22.48  | 22.65 | 22.69 |
|             |                 |           |         | 1         | 8   | 0               | 22.48  | 22.56 | 22.63 |
|             |                 |           |         | 1         | 14  | 0               | 22.46  | 22.63 | 23.11 |
|             |                 |           |         | 8         | 0   | 1               | 21.96  | 21.98 | 22.05 |
|             | 16QAM           |           | 8       | 4         | 1   | 21.95           | 21.99  | 22.06 |       |
|             |                 |           | 8       | 7         | 1   | 21.94           | 21.98  | 22.04 |       |
|             |                 |           | 15      | 0         | 1   | 21.91           | 21.91  | 22.04 |       |
|             |                 |           | 1       | 0         | 1   | 21.95           | 21.76  | 22.03 |       |
|             |                 |           | 1       | 8         | 1   | 21.91           | 21.94  | 21.96 |       |
|             |                 |           | 1       | 14        | 1   | 21.59           | 21.77  | 21.91 |       |
|             | 5               |           | QPSK    | 8         | 0   | 2               | 20.95  | 20.86 | 21.00 |
|             |                 |           |         | 8         | 4   | 2               | 21.02  | 20.85 | 20.98 |
|             |                 |           |         | 8         | 7   | 2               | 20.92  | 20.90 | 20.97 |
|             |                 |           |         | 15        | 0   | 2               | 20.93  | 20.95 | 20.93 |
|             |                 |           |         | 1         | 0   | 0               | 22.51  | 22.62 | 22.87 |
|             |                 |           |         | 1         | 12  | 0               | 22.52  | 22.25 | 22.84 |
|             |                 | 16QAM     | 1       | 24        | 0   | 22.49           | 22.64  | 22.90 |       |
|             |                 |           | 12      | 0         | 1   | 21.95           | 21.81  | 22.10 |       |
|             |                 |           | 12      | 7         | 1   | 21.93           | 21.61  | 22.11 |       |
|             |                 |           | 12      | 13        | 1   | 21.93           | 21.47  | 22.09 |       |
|             |                 |           | 25      | 0         | 1   | 21.89           | 21.61  | 22.10 |       |
|             |                 |           | 1       | 0         | 1   | 21.90           | 21.71  | 21.96 |       |
|             |                 | 16QAM     | 1       | 12        | 1   | 21.83           | 21.64  | 22.01 |       |
|             |                 |           | 1       | 24        | 1   | 22.25           | 21.50  | 21.94 |       |
|             |                 |           | 12      | 0         | 2   | 20.90           | 20.85  | 21.00 |       |
|             |                 |           | 12      | 7         | 2   | 20.82           | 20.67  | 21.00 |       |
|             |                 |           | 12      | 13        | 2   | 20.84           | 20.61  | 20.98 |       |
|             |                 |           | 25      | 0         | 2   | 20.89           | 20.75  | 21.04 |       |



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| Test Band   | Bandwidth (MHz) | Test mode | RB size | RB offset | MPR   | Maximum power   |        |       |
|-------------|-----------------|-----------|---------|-----------|-------|-----------------|--------|-------|
|             |                 |           |         |           |       | Frequency (MHz) |        |       |
|             |                 |           |         |           |       | Low             | Middle | High  |
| LTE Band 66 | 10              | QPSK      | 1       | 0         | 0     | 22.57           | 22.46  | 22.50 |
|             |                 |           | 1       | 25        | 0     | 22.48           | 22.43  | 22.43 |
|             |                 |           | 1       | 49        | 0     | 22.66           | 22.41  | 22.43 |
|             |                 |           | 25      | 0         | 1     | 22.00           | 21.99  | 21.98 |
|             |                 |           | 25      | 12        | 1     | 21.96           | 21.92  | 21.96 |
|             |                 |           | 25      | 25        | 1     | 21.99           | 21.93  | 21.97 |
|             |                 | 50        | 0       | 1         | 21.99 | 21.92           | 21.97  |       |
|             |                 | 16QAM     | 1       | 0         | 1     | 22.16           | 22.01  | 21.92 |
|             |                 |           | 1       | 25        | 1     | 22.09           | 21.92  | 21.60 |
|             |                 |           | 1       | 49        | 1     | 21.98           | 21.98  | 21.85 |
|             |                 |           | 25      | 0         | 2     | 20.93           | 20.93  | 20.96 |
|             |                 |           | 25      | 12        | 2     | 20.95           | 20.95  | 20.93 |
|             | 25              |           | 25      | 2         | 20.95 | 20.92           | 20.95  |       |
|             | 50              | 0         | 2       | 21.02     | 20.91 | 20.91           |        |       |
|             | 15              | QPSK      | 1       | 0         | 0     | 22.50           | 22.57  | 22.65 |
|             |                 |           | 1       | 36        | 0     | 22.47           | 22.42  | 22.50 |
|             |                 |           | 1       | 74        | 0     | 22.44           | 22.79  | 22.46 |
|             |                 |           | 36      | 0         | 1     | 22.05           | 21.99  | 22.06 |
|             |                 |           | 36      | 18        | 1     | 22.03           | 21.98  | 21.99 |
|             |                 |           | 36      | 37        | 1     | 22.01           | 21.97  | 21.92 |
|             |                 | 75        | 0       | 1         | 22.03 | 22.00           | 22.00  |       |
|             |                 | 16QAM     | 1       | 0         | 1     | 22.01           | 21.88  | 22.14 |
|             |                 |           | 1       | 36        | 1     | 22.00           | 21.83  | 21.99 |
|             |                 |           | 1       | 74        | 1     | 21.85           | 21.81  | 21.95 |
|             |                 |           | 36      | 0         | 2     | 20.98           | 20.95  | 20.91 |
|             |                 |           | 36      | 18        | 2     | 20.94           | 20.75  | 20.86 |
|             | 36              |           | 37      | 2         | 20.88 | 20.95           | 20.86  |       |
|             | 75              | 0         | 2       | 20.98     | 20.96 | 20.75           |        |       |
|             | 20              | QPSK      | 1       | 0         | 0     | 22.41           | 22.42  | 22.49 |
|             |                 |           | 1       | 49        | 0     | 22.48           | 22.53  | 22.72 |
|             |                 |           | 1       | 99        | 0     | 22.33           | 22.48  | 22.46 |
|             |                 |           | 50      | 0         | 1     | 21.94           | 21.89  | 22.02 |
|             |                 |           | 50      | 24        | 1     | 21.96           | 21.92  | 22.10 |
|             |                 |           | 50      | 50        | 1     | 21.88           | 21.94  | 21.91 |
|             |                 | 100       | 0       | 1         | 21.92 | 21.80           | 22.02  |       |
|             |                 | 16QAM     | 1       | 0         | 1     | 22.01           | 22.10  | 21.97 |
| 1           |                 |           | 49      | 1         | 21.69 | 21.87           | 21.99  |       |
| 1           |                 |           | 99      | 1         | 21.98 | 21.67           | 21.78  |       |
| 50          |                 |           | 0       | 2         | 20.88 | 20.92           | 20.98  |       |
| 50          |                 |           | 24      | 2         | 20.88 | 20.87           | 20.95  |       |
| 50          | 50              |           | 2       | 20.88     | 20.63 | 20.83           |        |       |
| 100         | 0               | 2         | 20.91   | 20.95     | 20.99 |                 |        |       |

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| Test Band   | Bandwidth (MHz) | Test mode | RB size | RB offset | MPR | Maximum power   |        |       |
|-------------|-----------------|-----------|---------|-----------|-----|-----------------|--------|-------|
|             |                 |           |         |           |     | Frequency (MHz) |        |       |
|             |                 |           |         |           |     | Low             | Middle | High  |
| LTE Band 71 | 5               | QPSK      | 1       | 0         | 0   | 22.86           | 22.40  | 22.22 |
|             |                 |           | 1       | 12        | 0   | 22.81           | 22.33  | 22.17 |
|             |                 |           | 1       | 24        | 0   | 22.68           | 22.30  | 22.16 |
|             |                 |           | 12      | 0         | 1   | 21.48           | 21.24  | 20.88 |
|             |                 |           | 12      | 7         | 1   | 21.47           | 21.18  | 21.04 |
|             |                 |           | 12      | 13        | 1   | 21.49           | 21.15  | 21.04 |
|             |                 |           | 25      | 0         | 1   | 21.41           | 21.25  | 21.02 |
|             |                 | 16QAM     | 1       | 0         | 1   | 21.24           | 21.33  | 21.03 |
|             |                 |           | 1       | 12        | 1   | 21.24           | 21.40  | 20.89 |
|             |                 |           | 1       | 24        | 1   | 21.20           | 21.31  | 21.03 |
|             |                 |           | 12      | 0         | 2   | 20.15           | 20.12  | 19.82 |
|             |                 |           | 12      | 7         | 2   | 20.14           | 20.13  | 19.86 |
|             |                 |           | 12      | 13        | 2   | 20.16           | 20.13  | 19.82 |
|             |                 |           | 25      | 0         | 2   | 20.17           | 20.11  | 19.87 |
|             | 10              | QPSK      | 1       | 0         | 0   | 22.46           | 22.29  | 22.26 |
|             |                 |           | 1       | 25        | 0   | 22.32           | 22.16  | 22.14 |
|             |                 |           | 1       | 49        | 0   | 22.25           | 22.08  | 22.12 |
|             |                 |           | 25      | 0         | 1   | 21.16           | 20.86  | 21.01 |
|             |                 |           | 25      | 12        | 1   | 21.14           | 21.02  | 20.96 |
|             |                 |           | 25      | 25        | 1   | 21.12           | 20.99  | 20.91 |
|             |                 |           | 50      | 0         | 1   | 21.12           | 21.01  | 20.87 |
|             |                 | 16QAM     | 1       | 0         | 1   | 21.01           | 21.02  | 20.67 |
|             |                 |           | 1       | 25        | 1   | 21.14           | 20.95  | 20.67 |
|             |                 |           | 1       | 49        | 1   | 21.04           | 20.86  | 20.84 |
|             |                 |           | 25      | 0         | 2   | 19.95           | 19.93  | 19.80 |
|             |                 |           | 25      | 12        | 2   | 19.89           | 19.86  | 19.73 |
|             |                 |           | 25      | 25        | 2   | 19.93           | 19.85  | 19.69 |
|             |                 |           | 50      | 0         | 2   | 20.00           | 19.88  | 19.78 |

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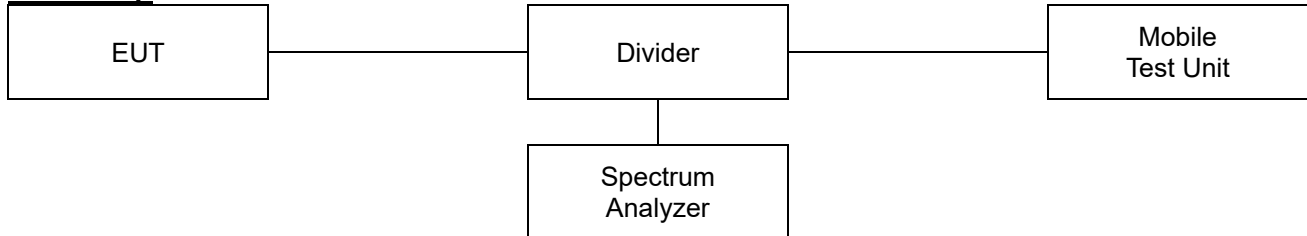
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| Test Band   | Bandwidth (MHz) | Test mode | RB size | RB offset | MPR | Maximum power   |        |       |
|-------------|-----------------|-----------|---------|-----------|-----|-----------------|--------|-------|
|             |                 |           |         |           |     | Frequency (MHz) |        |       |
|             |                 |           |         |           |     | Low             | Middle | High  |
| LTE Band 71 | 15              | QPSK      | 1       | 0         | 0   | 22.22           | 22.20  | 22.18 |
|             |                 |           | 1       | 36        | 0   | 22.11           | 22.06  | 22.00 |
|             |                 |           | 1       | 74        | 0   | 22.03           | 21.95  | 22.01 |
|             |                 |           | 36      | 0         | 1   | 21.01           | 20.95  | 20.89 |
|             |                 |           | 36      | 18        | 1   | 21.01           | 20.89  | 20.85 |
|             |                 |           | 36      | 37        | 1   | 20.91           | 20.83  | 20.80 |
|             |                 |           | 75      | 0         | 1   | 20.96           | 20.92  | 20.84 |
|             |                 | 16QAM     | 1       | 0         | 1   | 21.07           | 20.83  | 21.00 |
|             |                 |           | 1       | 36        | 1   | 20.97           | 20.68  | 20.84 |
|             |                 |           | 1       | 74        | 1   | 20.85           | 20.74  | 20.69 |
|             |                 |           | 36      | 0         | 2   | 19.87           | 19.84  | 19.64 |
|             |                 |           | 36      | 18        | 2   | 19.81           | 19.82  | 19.61 |
|             |                 |           | 36      | 37        | 2   | 19.76           | 19.82  | 19.51 |
|             |                 |           | 75      | 0         | 2   | 19.84           | 19.84  | 19.67 |
|             | 20              | QPSK      | 1       | 0         | 0   | 22.60           | 22.74  | 22.61 |
|             |                 |           | 1       | 49        | 0   | 22.58           | 22.64  | 22.57 |
|             |                 |           | 1       | 99        | 0   | 22.49           | 22.47  | 22.43 |
|             |                 |           | 50      | 0         | 1   | 21.30           | 21.32  | 21.31 |
|             |                 |           | 50      | 24        | 1   | 21.22           | 21.30  | 21.22 |
|             |                 |           | 50      | 50        | 1   | 21.17           | 21.13  | 21.13 |
|             |                 |           | 100     | 0         | 1   | 21.21           | 21.24  | 21.17 |
|             |                 | 16QAM     | 1       | 0         | 1   | 20.95           | 21.14  | 21.30 |
|             |                 |           | 1       | 49        | 1   | 20.91           | 20.90  | 21.02 |
|             |                 |           | 1       | 99        | 1   | 20.83           | 20.92  | 20.96 |
|             |                 |           | 50      | 0         | 2   | 19.90           | 19.87  | 19.92 |
|             |                 |           | 50      | 24        | 2   | 19.86           | 19.86  | 19.84 |
|             |                 |           | 50      | 50        | 2   | 19.83           | 19.84  | 19.76 |
|             |                 |           | 100     | 0         | 2   | 19.89           | 19.89  | 19.87 |

## 7.2. 99% Occupied Bandwidth & 26 dB Bandwidth

### Test setup



### Limit

The occupied bandwidth, that is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power radiated by a given emission shall be measured.

### Test procedure

971168 D01 v03r01 – Section 4.2 and 4.3  
ANSI C63.26-2015 – Section 5.4.3 and 5.4.4

### Test settings

#### ◆ 26dB Bandwidth

- a) The spectrum analyzer center frequency is set to the nominal EUT channel center frequency. The span range for the spectrum analyzer shall be wide enough to see sufficient roll off of the signal to make the measurement.
- b) The nominal RBW shall be in the range of 1% to 5% of the anticipated OBW, and the VBW shall be set  $\geq 3 \times \text{RBW}$ .
- c) Set the reference level of the instrument as required to prevent the signal amplitude from exceeding the maximum spectrum analyzer input mixer level for linear operation. See guidance provided in 4.2.3.
- d) The dynamic range of the spectrum analyzer at the selected RBW shall be more than 10 dB below the target “-X dB” requirement, i.e., if the requirement calls for measuring the -26 dB OBW, the spectrum analyzer noise floor at the selected RBW shall be at least 36 dB below the reference level.
- e) Set spectrum analyzer detection mode to peak, and the trace mode to max hold.
- f) Determine the reference value by either of the following:
  - 1) Set the EUT to transmit a modulated signal. Allow the trace to stabilize. Set the spectrum analyzer marker to the highest level of the displayed trace (this is the reference value).
  - 2) Set the EUT to transmit an unmodulated carrier. Set the spectrum analyzer marker to the level of the carrier.
- g) Determine the “-X dB amplitude” as equal to (Reference Value - X). Alternatively, this calculation can be performed on the spectrum analyzer using the delta-marker measurement function.
- h) If the reference value was determined using an unmodulated carrier, turn the EUT modulation on, then either clear the existing trace or start a new trace on the spectrum analyzer and allow the new trace to stabilize. Otherwise the trace from step f) shall be used for step i).

- i) Place two markers, one at the lowest and the other at the highest frequency of the envelope of the spectral display such that each marker is at or slightly below the “-X dB amplitude” determined in step f). If a marker is below this “-X dB amplitude” value it should be as close as possible to this value. The OBW is the positive frequency difference between the two markers.
- j) The spectral envelope can cross the “-X dB amplitude” at multiple points. The lowest or highest frequency shall be selected as the frequencies that are the farthest away from the center frequency at which the spectral envelope crosses the “-X dB amplitude.”
- k) The OBW shall be reported by providing plot(s) of the measuring instrument display, to include markers depicting the relevant frequency and amplitude information (e.g., marker table). The frequency and amplitude axis and scale shall be clearly labeled. Tabular data may be reported in addition to the plot(s).

### ◆ 99% Occupied Bandwidth

- a) The spectrum analyzer center frequency is set to the nominal EUT channel center frequency. The frequency span for the spectrum analyzer shall be set wide enough to capture all modulation products including the emission skirts (typically a span of  $1.5 \times \text{OBW}$  is sufficient).
- b) The nominal IF filter 3 dB bandwidth (RBW) shall be in the range of 1% to 5% of the anticipated OBW, and the VBW shall be set  $\geq 3 \times \text{RBW}$ .
- c) Set the reference level of the instrument as required to prevent the signal amplitude from exceeding the maximum spectrum analyzer input mixer level for linear operation. See guidance provided in 4.2.3.
- d) Set the detection mode to peak, and the trace mode to max-hold.
- e) If the instrument does not have a 99% OBW function, recover the trace data points and sum directly in linear power terms. Place the recovered amplitude data points, beginning at the lowest frequency, in a running sum until 0.5% of the total is reached. Record that frequency as the lower OBW frequency. Repeat the process until 99.5% of the total is reached and record that frequency as the upper OBW frequency. The 99% power OBW can be determined by computing the difference these two frequencies.
- f) The OBW shall be reported and plot(s) of the measuring instrument display shall be provided with the test report. The frequency and amplitude axis and scale shall be clearly labeled. Tabular data can be reported in addition to the plot(s).

### Notes:

1. The EUT was setup to maximum output power as its lowest and highest channel with all bandwidth, Modulation.

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**KCTL****Test results**

| Test Band  | Bandwidth (MHz) | Frequency (MHz) | Test mode | 26dB bandwidth (MHz) | 99 % bandwidth (MHz) |
|------------|-----------------|-----------------|-----------|----------------------|----------------------|
| LTE Band 2 | 1.4             | 1 850.7         | QPSK      | 1.35                 | 1.12                 |
|            |                 |                 | 16QAM     | 1.34                 | 1.10                 |
|            |                 | 1 880.0         | QPSK      | 1.34                 | 1.10                 |
|            |                 |                 | 16QAM     | 1.35                 | 1.11                 |
|            |                 | 1 909.3         | QPSK      | 1.35                 | 1.10                 |
|            |                 |                 | 16QAM     | 1.34                 | 1.10                 |
|            | 3               | 1 851.5         | QPSK      | 3.04                 | 2.70                 |
|            |                 |                 | 16QAM     | 3.09                 | 2.70                 |
|            |                 | 1 880.0         | QPSK      | 3.13                 | 2.71                 |
|            |                 |                 | 16QAM     | 3.15                 | 2.71                 |
|            |                 | 1 908.5         | QPSK      | 3.12                 | 2.70                 |
|            |                 |                 | 16QAM     | 3.10                 | 2.71                 |
|            | 5               | 1 852.5         | QPSK      | 5.46                 | 4.55                 |
|            |                 |                 | 16QAM     | 5.40                 | 4.53                 |
|            |                 | 1 880.0         | QPSK      | 5.40                 | 4.52                 |
|            |                 |                 | 16QAM     | 5.43                 | 4.53                 |
|            |                 | 1 907.5         | QPSK      | 5.32                 | 4.52                 |
|            |                 |                 | 16QAM     | 5.47                 | 4.52                 |
|            | 10              | 1 855.0         | QPSK      | 9.92                 | 8.97                 |
|            |                 |                 | 16QAM     | 10.32                | 8.99                 |
|            |                 | 1 880.0         | QPSK      | 10.29                | 8.99                 |
|            |                 |                 | 16QAM     | 10.24                | 8.99                 |
|            |                 | 1 905.0         | QPSK      | 10.39                | 8.97                 |
|            |                 |                 | 16QAM     | 10.07                | 9.02                 |
|            | 15              | 1 857.5         | QPSK      | 15.02                | 13.45                |
|            |                 |                 | 16QAM     | 14.87                | 13.41                |
|            |                 | 1 880.0         | QPSK      | 15.06                | 13.49                |
|            |                 |                 | 16QAM     | 14.87                | 13.45                |
|            |                 | 1 902.5         | QPSK      | 14.99                | 13.49                |
|            |                 |                 | 16QAM     | 15.32                | 13.52                |
| 20         | 1 860.0         | QPSK            | 19.98     | 17.93                |                      |
|            |                 | 16QAM           | 19.68     | 18.03                |                      |
|            | 1 880.0         | QPSK            | 19.93     | 18.08                |                      |
|            |                 | 16QAM           | 19.88     | 17.98                |                      |
|            | 1 900.0         | QPSK            | 20.08     | 18.08                |                      |
|            |                 | 16QAM           | 20.13     | 18.08                |                      |

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| Test Band  | Bandwidth (MHz) | Frequency (MHz) | Test mode | 26dB bandwidth (MHz) | 99 % bandwidth (MHz) |
|------------|-----------------|-----------------|-----------|----------------------|----------------------|
| LTE Band 5 | 1.4             | 824.7           | QPSK      | 1.33                 | 1.10                 |
|            |                 |                 | 16QAM     | 1.35                 | 1.10                 |
|            |                 | 836.5           | QPSK      | 1.35                 | 1.10                 |
|            |                 |                 | 16QAM     | 1.35                 | 1.10                 |
|            |                 | 848.3           | QPSK      | 1.34                 | 1.10                 |
|            |                 |                 | 16QAM     | 1.34                 | 1.10                 |
|            | 3               | 825.5           | QPSK      | 3.12                 | 2.72                 |
|            |                 |                 | 16QAM     | 3.12                 | 2.71                 |
|            |                 | 836.5           | QPSK      | 3.10                 | 2.71                 |
|            |                 |                 | 16QAM     | 3.12                 | 2.70                 |
|            |                 | 847.5           | QPSK      | 3.12                 | 2.71                 |
|            |                 |                 | 16QAM     | 3.12                 | 2.70                 |
|            | 5               | 826.5           | QPSK      | 5.25                 | 4.55                 |
|            |                 |                 | 16QAM     | 5.37                 | 4.53                 |
|            |                 | 836.5           | QPSK      | 5.35                 | 4.52                 |
|            |                 |                 | 16QAM     | 5.30                 | 4.53                 |
|            |                 | 846.5           | QPSK      | 5.42                 | 4.51                 |
|            |                 |                 | 16QAM     | 5.33                 | 4.56                 |
|            | 10              | 829.0           | QPSK      | 10.29                | 8.99                 |
|            |                 |                 | 16QAM     | 10.19                | 8.99                 |
|            |                 | 836.5           | QPSK      | 10.14                | 8.99                 |
|            |                 |                 | 16QAM     | 10.09                | 8.94                 |
|            |                 | 844.0           | QPSK      | 10.14                | 8.97                 |
|            |                 |                 | 16QAM     | 10.24                | 9.02                 |

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| Test Band   | Bandwidth (MHz) | Frequency (MHz) | Test mode | 26dB bandwidth (MHz) | 99 % bandwidth (MHz) |
|-------------|-----------------|-----------------|-----------|----------------------|----------------------|
| LTE Band 12 | 1.4             | 699.7           | QPSK      | 1.34                 | 1.10                 |
|             |                 |                 | 16QAM     | 1.32                 | 1.10                 |
|             |                 | 707.5           | QPSK      | 1.36                 | 1.10                 |
|             |                 |                 | 16QAM     | 1.36                 | 1.10                 |
|             |                 | 715.3           | QPSK      | 1.34                 | 1.10                 |
|             |                 |                 | 16QAM     | 1.36                 | 1.10                 |
|             | 3               | 700.5           | QPSK      | 3.09                 | 2.70                 |
|             |                 |                 | 16QAM     | 3.07                 | 2.71                 |
|             |                 | 707.5           | QPSK      | 3.15                 | 2.72                 |
|             |                 |                 | 16QAM     | 3.12                 | 2.71                 |
|             |                 | 714.5           | QPSK      | 3.12                 | 2.70                 |
|             |                 |                 | 16QAM     | 3.06                 | 2.71                 |
|             | 5               | 701.5           | QPSK      | 5.48                 | 4.56                 |
|             |                 |                 | 16QAM     | 5.35                 | 4.55                 |
|             |                 | 707.5           | QPSK      | 5.47                 | 4.51                 |
|             |                 |                 | 16QAM     | 5.42                 | 4.55                 |
|             |                 | 713.5           | QPSK      | 5.37                 | 4.55                 |
|             |                 |                 | 16QAM     | 5.30                 | 4.52                 |
|             | 10              | 704.0           | QPSK      | 10.17                | 8.97                 |
|             |                 |                 | 16QAM     | 10.47                | 8.99                 |
| 707.5       |                 | QPSK            | 10.04     | 8.99                 |                      |
|             |                 | 16QAM           | 10.04     | 9.02                 |                      |
| 711.0       |                 | QPSK            | 9.94      | 8.99                 |                      |
|             |                 | 16QAM           | 10.07     | 8.97                 |                      |
| LTE Band 13 | 5               | 779.5           | QPSK      | 5.37                 | 4.52                 |
|             |                 |                 | 16QAM     | 5.30                 | 4.52                 |
|             |                 | 782.0           | QPSK      | 5.37                 | 4.53                 |
|             |                 |                 | 16QAM     | 5.43                 | 4.55                 |
|             |                 | 784.5           | QPSK      | 5.30                 | 4.52                 |
|             |                 |                 | 16QAM     | 5.36                 | 4.52                 |
|             | 10              | 782.0           | QPSK      | 10.12                | 8.97                 |
|             |                 |                 | 16QAM     | 10.19                | 8.99                 |



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| Test Band      | Bandwidth (MHz) | Frequency (MHz) | Test mode | 26dB bandwidth (MHz) | 99 % bandwidth (MHz) |
|----------------|-----------------|-----------------|-----------|----------------------|----------------------|
| LTE<br>Band 25 | 1.4             | 1 850.7         | QPSK      | 1.31                 | 1.10                 |
|                |                 |                 | 16QAM     | 1.35                 | 1.10                 |
|                |                 | 1 882.5         | QPSK      | 1.37                 | 1.11                 |
|                |                 |                 | 16QAM     | 1.34                 | 1.10                 |
|                |                 | 1 914.3         | QPSK      | 1.37                 | 1.10                 |
|                |                 |                 | 16QAM     | 1.36                 | 1.10                 |
|                | 3               | 1 851.5         | QPSK      | 3.12                 | 2.71                 |
|                |                 |                 | 16QAM     | 3.06                 | 2.71                 |
|                |                 | 1 882.5         | QPSK      | 3.11                 | 2.70                 |
|                |                 |                 | 16QAM     | 3.11                 | 2.70                 |
|                |                 | 1 913.5         | QPSK      | 3.11                 | 2.72                 |
|                |                 |                 | 16QAM     | 3.12                 | 2.71                 |
|                | 5               | 1 852.5         | QPSK      | 5.40                 | 4.53                 |
|                |                 |                 | 16QAM     | 5.38                 | 4.53                 |
|                |                 | 1 882.5         | QPSK      | 5.31                 | 4.52                 |
|                |                 |                 | 16QAM     | 5.36                 | 4.56                 |
|                |                 | 1 912.5         | QPSK      | 5.40                 | 4.53                 |
|                |                 |                 | 16QAM     | 5.32                 | 4.53                 |
|                | 10              | 1 855.0         | QPSK      | 9.99                 | 8.99                 |
|                |                 |                 | 16QAM     | 9.82                 | 8.97                 |
|                |                 | 1 882.5         | QPSK      | 10.39                | 8.99                 |
|                |                 |                 | 16QAM     | 10.09                | 9.02                 |
|                |                 | 1 910.0         | QPSK      | 9.97                 | 8.94                 |
|                |                 |                 | 16QAM     | 10.02                | 8.97                 |
|                | 15              | 1 857.5         | QPSK      | 15.32                | 13.45                |
|                |                 |                 | 16QAM     | 15.06                | 13.41                |
|                |                 | 1 882.5         | QPSK      | 15.21                | 13.41                |
|                |                 |                 | 16QAM     | 15.36                | 13.45                |
|                |                 | 1 907.5         | QPSK      | 15.17                | 13.37                |
|                |                 |                 | 16QAM     | 15.02                | 13.45                |
| 20             | 1 860.0         | QPSK            | 19.68     | 17.93                |                      |
|                |                 | 16QAM           | 19.93     | 17.93                |                      |
|                | 1 882.5         | QPSK            | 20.23     | 17.93                |                      |
|                |                 | 16QAM           | 20.08     | 17.93                |                      |
|                | 1 905.0         | QPSK            | 19.63     | 17.98                |                      |
|                |                 | 16QAM           | 19.78     | 17.93                |                      |

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| Test Band   | Bandwidth (MHz) | Frequency (MHz) | Test mode | 26dB bandwidth (MHz) | 99 % bandwidth (MHz) |
|-------------|-----------------|-----------------|-----------|----------------------|----------------------|
| LTE Band 26 | 1.4             | 824.7           | QPSK      | 1.35                 | 1.10                 |
|             |                 |                 | 16QAM     | 1.36                 | 1.10                 |
|             |                 | 836.5           | QPSK      | 1.36                 | 1.10                 |
|             |                 |                 | 16QAM     | 1.34                 | 1.10                 |
|             |                 | 848.3           | QPSK      | 1.33                 | 1.10                 |
|             |                 |                 | 16QAM     | 1.34                 | 1.10                 |
|             | 3               | 825.5           | QPSK      | 3.17                 | 2.71                 |
|             |                 |                 | 16QAM     | 3.09                 | 2.71                 |
|             |                 | 836.5           | QPSK      | 3.12                 | 2.71                 |
|             |                 |                 | 16QAM     | 3.12                 | 2.70                 |
|             |                 | 847.5           | QPSK      | 3.12                 | 2.73                 |
|             |                 |                 | 16QAM     | 3.09                 | 2.70                 |
|             | 5               | 826.5           | QPSK      | 5.35                 | 4.52                 |
|             |                 |                 | 16QAM     | 5.47                 | 4.55                 |
|             |                 | 836.5           | QPSK      | 5.33                 | 4.52                 |
|             |                 |                 | 16QAM     | 5.42                 | 4.56                 |
|             |                 | 846.5           | QPSK      | 5.40                 | 4.55                 |
|             |                 |                 | 16QAM     | 5.47                 | 4.55                 |
|             | 10              | 829.0           | QPSK      | 10.47                | 8.99                 |
|             |                 |                 | 16QAM     | 10.04                | 9.02                 |
|             |                 | 836.5           | QPSK      | 10.37                | 9.04                 |
|             |                 |                 | 16QAM     | 10.14                | 8.99                 |
|             |                 | 844.0           | QPSK      | 10.24                | 8.97                 |
|             |                 |                 | 16QAM     | 10.32                | 9.04                 |
| 15          | 831.5           | QPSK            | 15.51     | 13.49                |                      |
|             |                 | 16QAM           | 15.10     | 13.49                |                      |
|             | 836.5           | QPSK            | 15.06     | 13.49                |                      |
|             |                 | 16QAM           | 15.10     | 13.45                |                      |
|             | 841.5           | QPSK            | 15.32     | 13.49                |                      |
|             |                 | 16QAM           | 15.47     | 13.56                |                      |

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| Test Band        | Bandwidth (MHz) | Frequency (MHz) | Test mode | 26dB bandwidth (MHz) | 99 % bandwidth (MHz) |
|------------------|-----------------|-----------------|-----------|----------------------|----------------------|
| LTE<br>Band 66/4 | 1.4             | 1 710.7         | QPSK      | 1.34                 | 1.10                 |
|                  |                 |                 | 16QAM     | 1.35                 | 1.11                 |
|                  |                 | 1 745.0         | QPSK      | 1.35                 | 1.10                 |
|                  |                 |                 | 16QAM     | 1.34                 | 1.10                 |
|                  |                 | 1 779.3         | QPSK      | 1.34                 | 1.11                 |
|                  |                 |                 | 16QAM     | 1.35                 | 1.11                 |
|                  | 3               | 1 711.5         | QPSK      | 3.15                 | 2.71                 |
|                  |                 |                 | 16QAM     | 3.11                 | 2.71                 |
|                  |                 | 1 745.0         | QPSK      | 3.09                 | 2.70                 |
|                  |                 |                 | 16QAM     | 3.13                 | 2.70                 |
|                  |                 | 1 778.5         | QPSK      | 3.15                 | 2.71                 |
|                  |                 |                 | 16QAM     | 3.15                 | 2.72                 |
|                  | 5               | 1 712.5         | QPSK      | 5.45                 | 4.53                 |
|                  |                 |                 | 16QAM     | 5.36                 | 4.52                 |
|                  |                 | 1 745.0         | QPSK      | 5.42                 | 4.53                 |
|                  |                 |                 | 16QAM     | 5.43                 | 4.53                 |
|                  |                 | 1 777.5         | QPSK      | 5.40                 | 4.53                 |
|                  |                 |                 | 16QAM     | 5.37                 | 4.53                 |
|                  | 10              | 1 715.0         | QPSK      | 10.32                | 9.02                 |
|                  |                 |                 | 16QAM     | 9.97                 | 9.04                 |
|                  |                 | 1 745.0         | QPSK      | 10.22                | 9.02                 |
|                  |                 |                 | 16QAM     | 10.24                | 8.97                 |
|                  |                 | 1 775.0         | QPSK      | 10.07                | 9.02                 |
|                  |                 |                 | 16QAM     | 10.49                | 8.99                 |
|                  | 15              | 1 717.5         | QPSK      | 15.25                | 13.52                |
|                  |                 |                 | 16QAM     | 15.47                | 13.49                |
|                  |                 | 1 745.0         | QPSK      | 15.40                | 13.60                |
|                  |                 |                 | 16QAM     | 15.14                | 13.45                |
|                  |                 | 1 772.5         | QPSK      | 15.40                | 13.56                |
|                  |                 |                 | 16QAM     | 15.17                | 13.52                |
|                  | 20              | 1 720.0         | QPSK      | 19.88                | 18.13                |
|                  |                 |                 | 16QAM     | 19.88                | 18.18                |
|                  |                 | 1 745.0         | QPSK      | 20.03                | 18.08                |
|                  |                 |                 | 16QAM     | 19.93                | 18.03                |
|                  |                 | 1 770.0         | QPSK      | 19.98                | 18.03                |
|                  |                 |                 | 16QAM     | 19.88                | 17.98                |

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| Test Band   | Bandwidth (MHz) | Frequency (MHz) | Test mode | 26dB bandwidth (MHz) | 99 % bandwidth (MHz) |
|-------------|-----------------|-----------------|-----------|----------------------|----------------------|
| LTE Band 71 | 5               | 665.5           | QPSK      | 5.36                 | 4.51                 |
|             |                 |                 | 16QAM     | 5.40                 | 4.55                 |
|             |                 | 680.5           | QPSK      | 5.43                 | 4.52                 |
|             |                 |                 | 16QAM     | 5.36                 | 4.52                 |
|             |                 | 695.5           | QPSK      | 5.35                 | 4.52                 |
|             |                 |                 | 16QAM     | 5.36                 | 4.52                 |
|             | 10              | 668.0           | QPSK      | 10.04                | 9.02                 |
|             |                 |                 | 16QAM     | 10.29                | 9.02                 |
|             |                 | 680.5           | QPSK      | 10.37                | 9.02                 |
|             |                 |                 | 16QAM     | 10.32                | 8.94                 |
|             |                 | 693.0           | QPSK      | 10.24                | 8.97                 |
|             |                 |                 | 16QAM     | 10.19                | 8.99                 |
|             | 15              | 670.5           | QPSK      | 15.06                | 13.49                |
|             |                 |                 | 16QAM     | 15.10                | 13.56                |
|             |                 | 680.5           | QPSK      | 14.95                | 13.49                |
|             |                 |                 | 16QAM     | 15.17                | 13.45                |
|             |                 | 690.5           | QPSK      | 15.36                | 13.52                |
|             |                 |                 | 16QAM     | 15.10                | 13.52                |
|             | 20              | 673.0           | QPSK      | 19.73                | 17.98                |
|             |                 |                 | 16QAM     | 19.78                | 17.98                |
|             |                 | 680.5           | QPSK      | 20.03                | 17.98                |
|             |                 |                 | 16QAM     | 20.08                | 18.03                |
|             |                 | 688.0           | QPSK      | 20.03                | 18.18                |
|             |                 |                 | 16QAM     | 19.83                | 18.23                |

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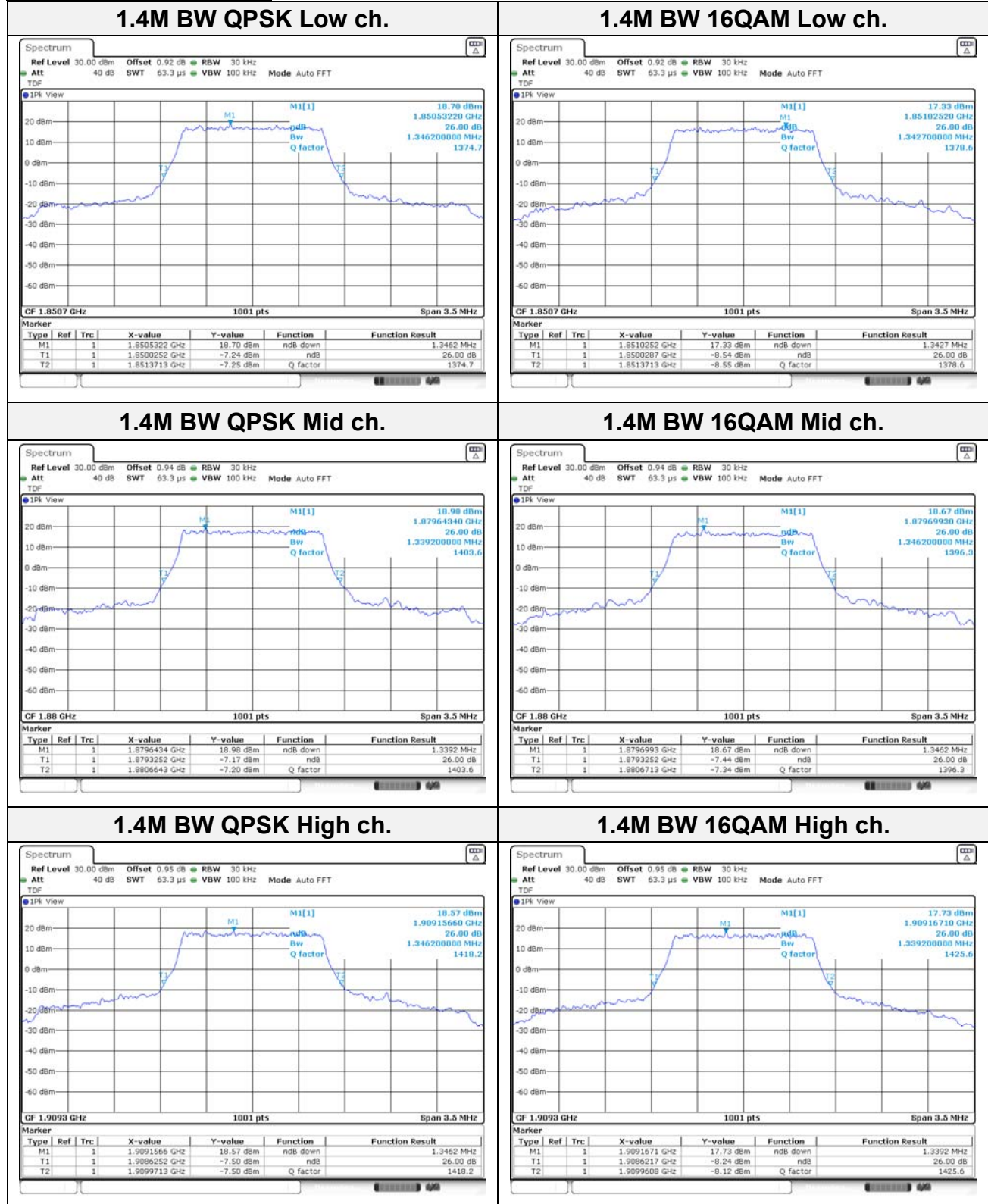
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## 26dB Bandwidth

### Test mode: LTE Band 2



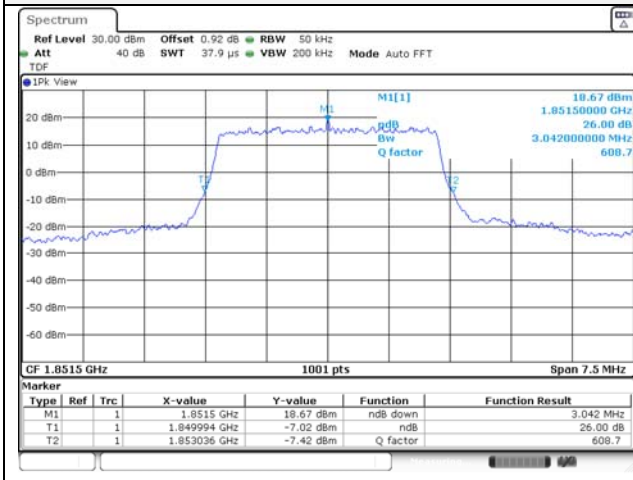
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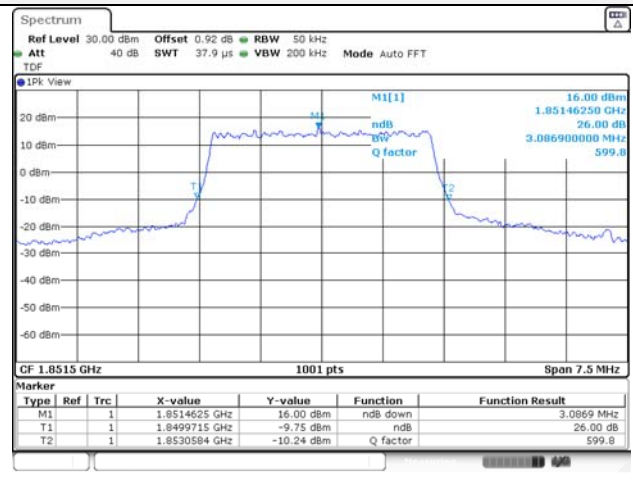
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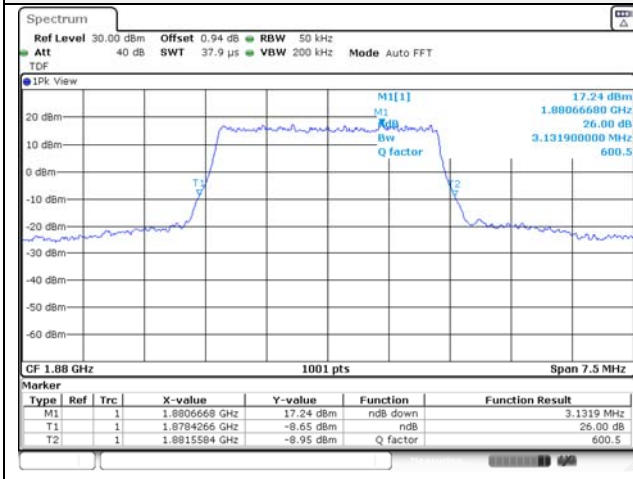
## 3M BW QPSK Low ch.



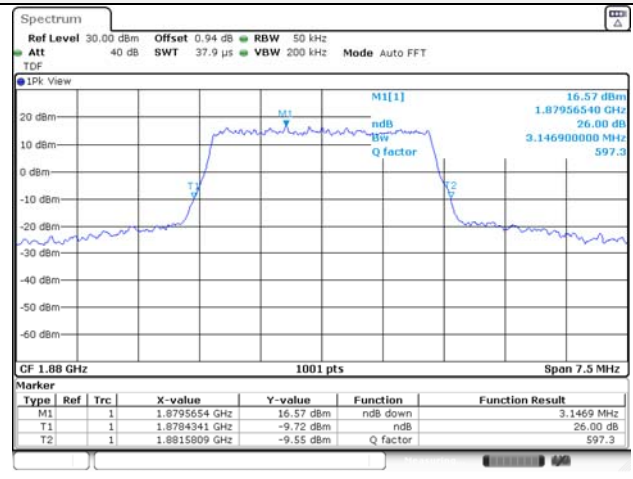
## 3M BW 16QAM Low ch.



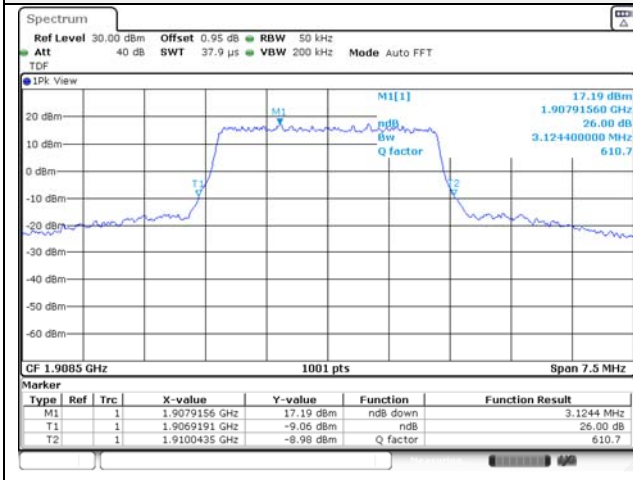
## 3M BW QPSK Mid ch.



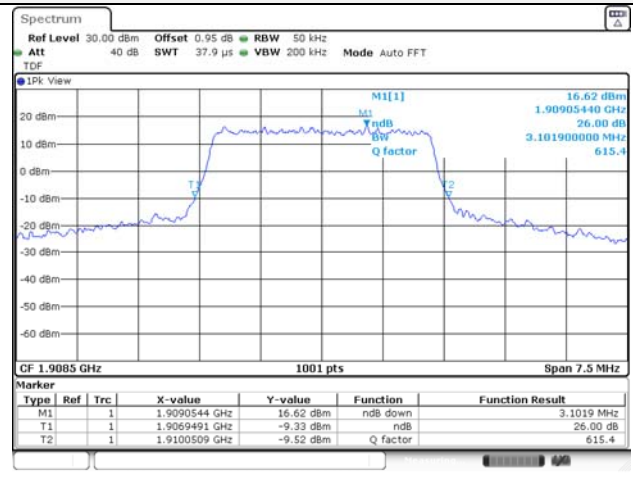
## 3M BW 16QAM Mid ch.



## 3M BW QPSK High ch.



## 3M BW 16QAM High ch.



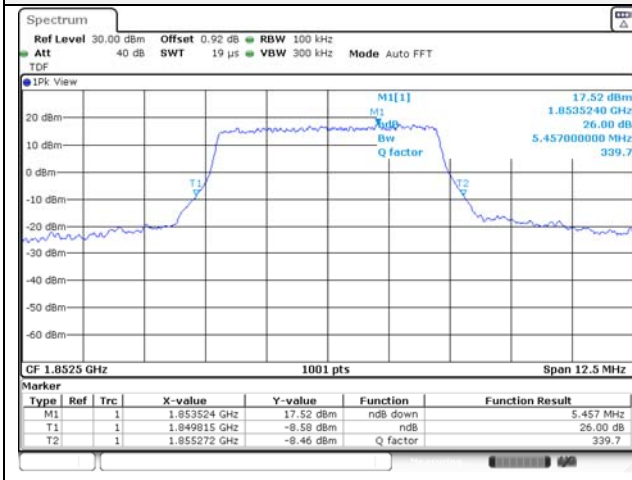
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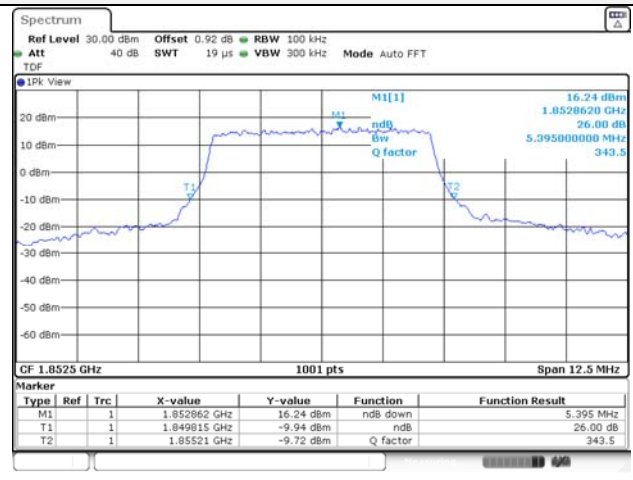
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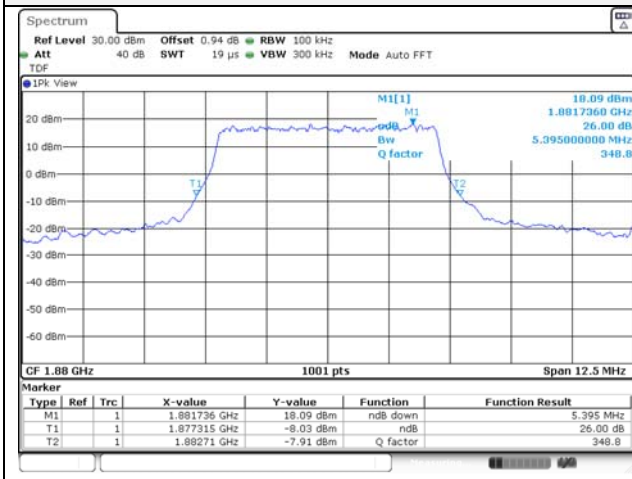
## 5M BW QPSK Low ch.



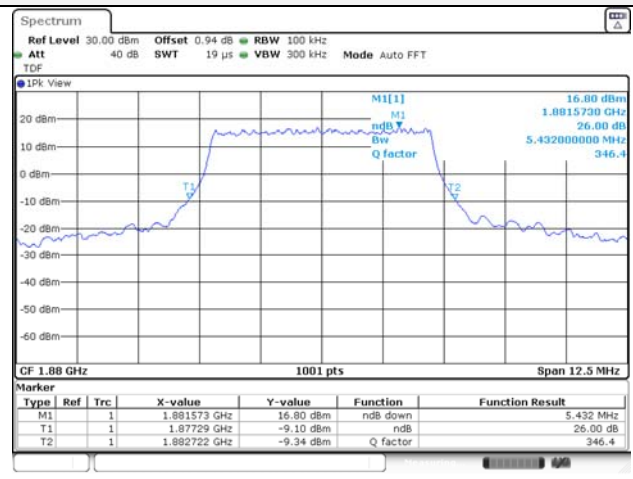
## 5M BW 16QAM Low ch.



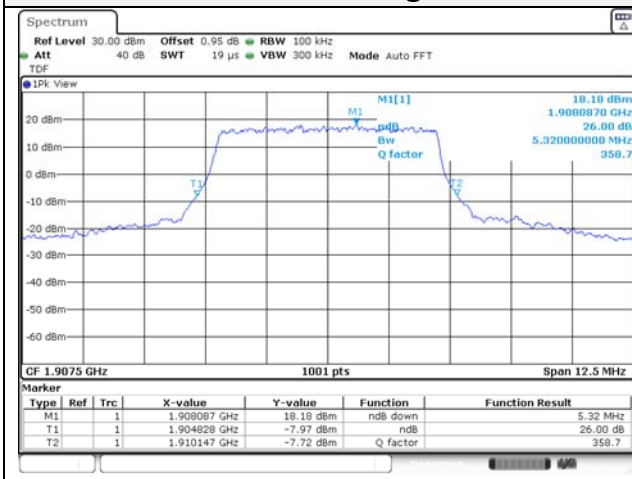
## 5M BW QPSK Mid ch.



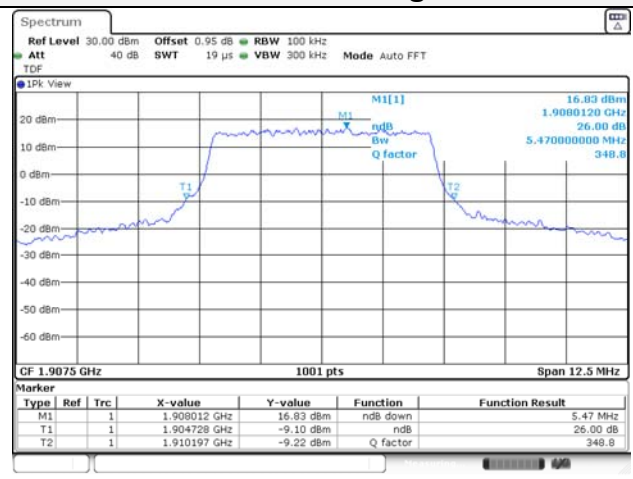
## 5M BW 16QAM Mid ch.



## 5M BW QPSK High ch.



## 5M BW 16QAM High ch.





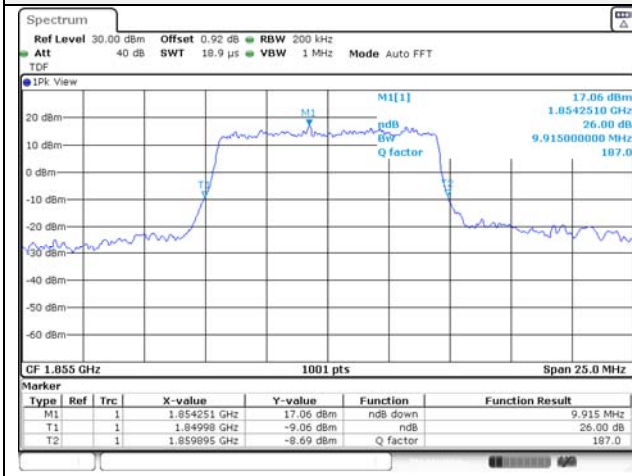
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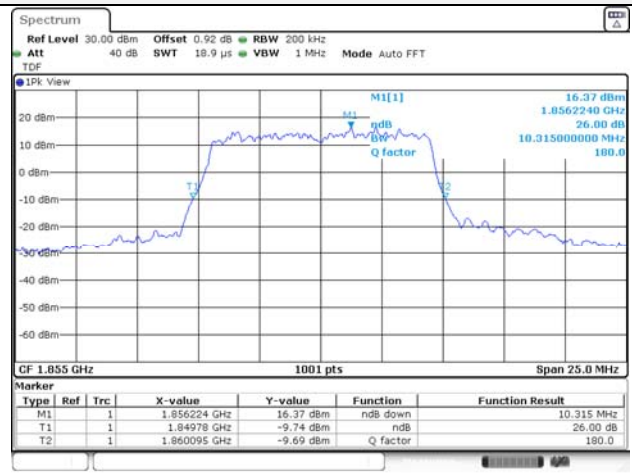
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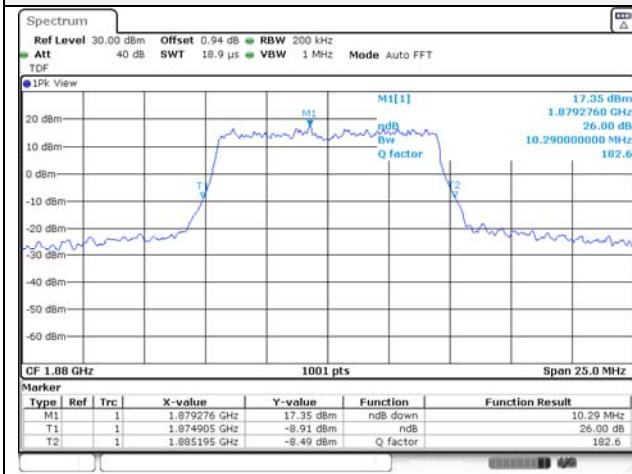
## 10M BW QPSK Low ch.



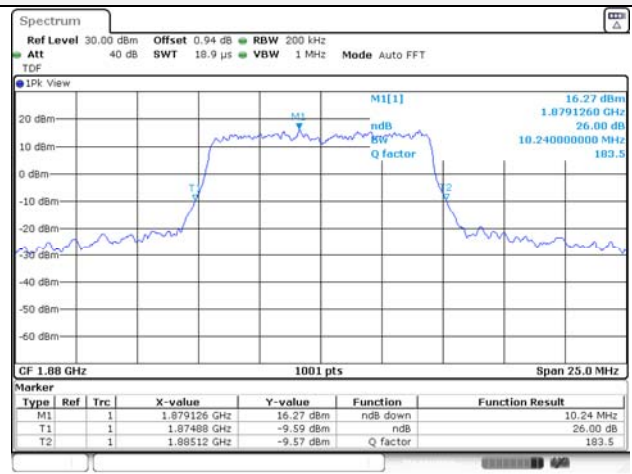
## 10M BW 16QAM Low ch.



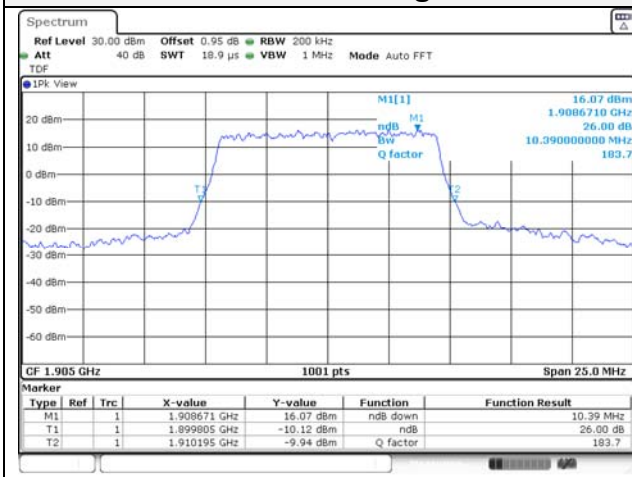
## 10M BW QPSK Mid ch.



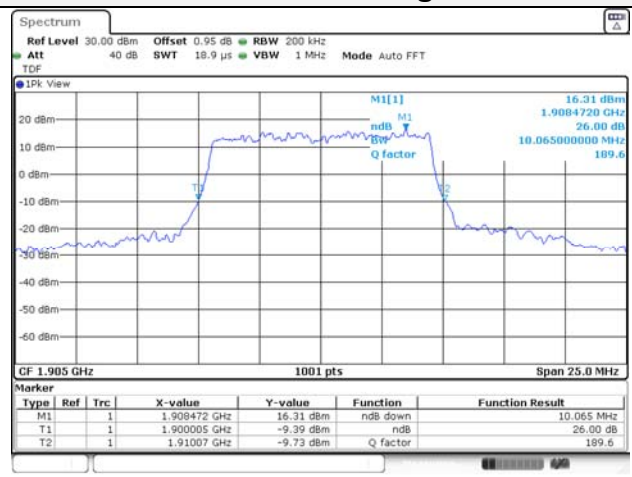
## 10M BW 16QAM Mid ch.



## 10M BW QPSK High ch.



## 10M BW 16QAM High ch.





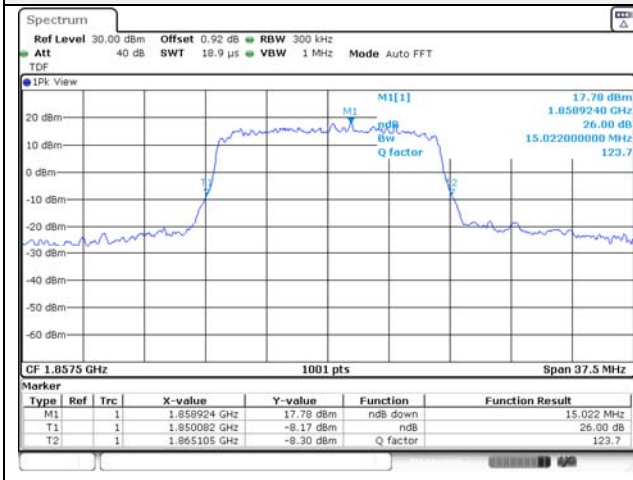
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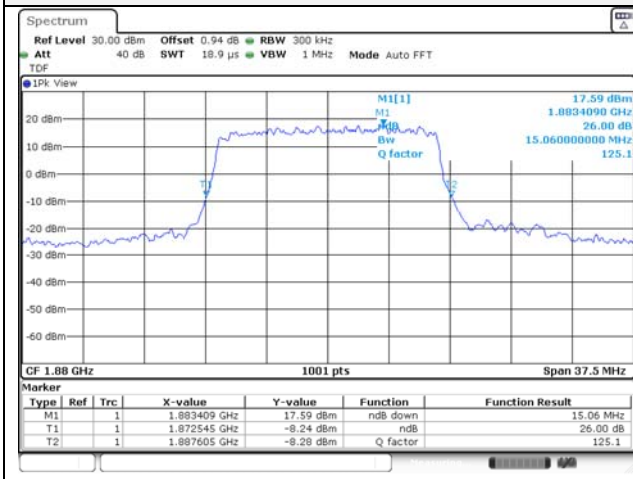
## 15M BW QPSK Low ch.



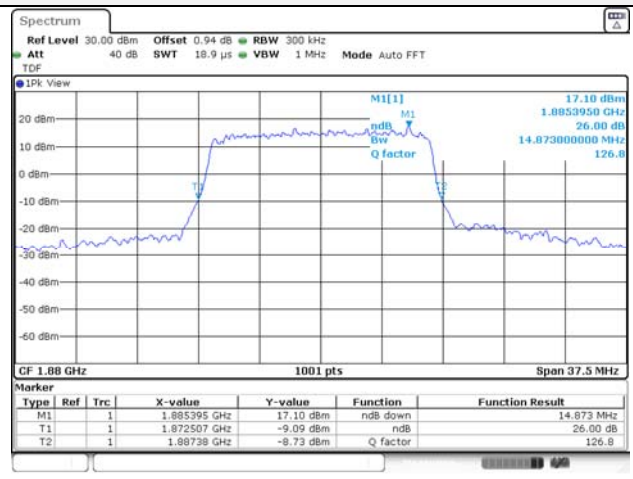
## 15M BW 16QAM Low ch.



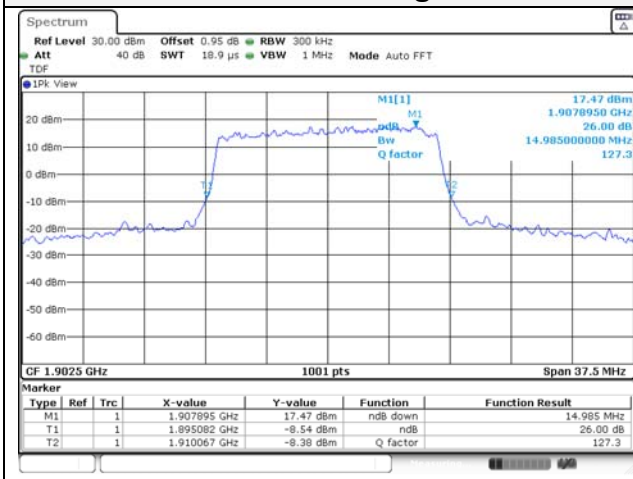
## 15M BW QPSK Mid ch.



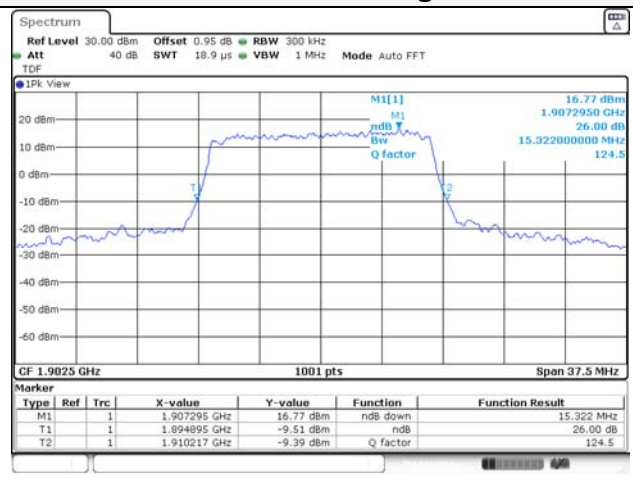
## 15M BW 16QAM Mid ch.



## 15M BW QPSK High ch.



## 15M BW 16QAM High ch.



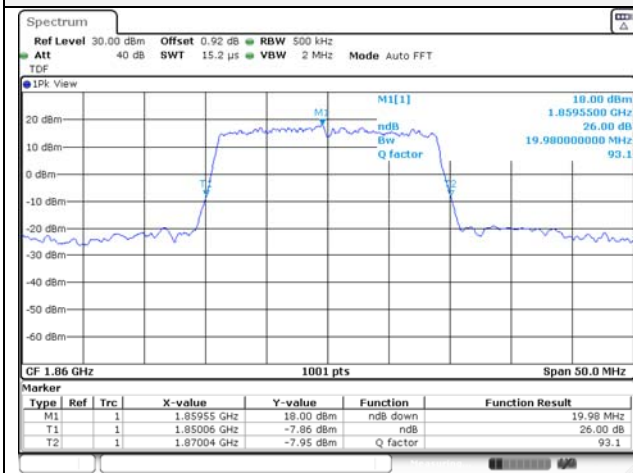
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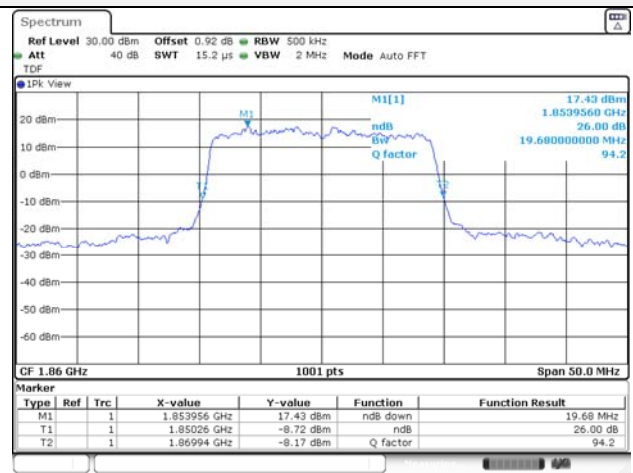
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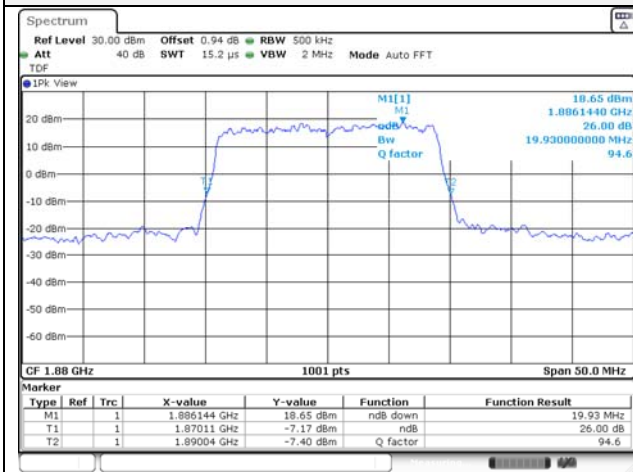
## 20M BW QPSK Low ch.



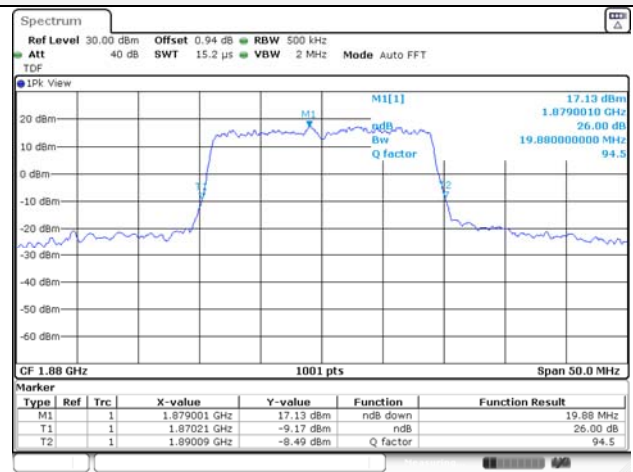
## 20M BW 16QAM Low ch.



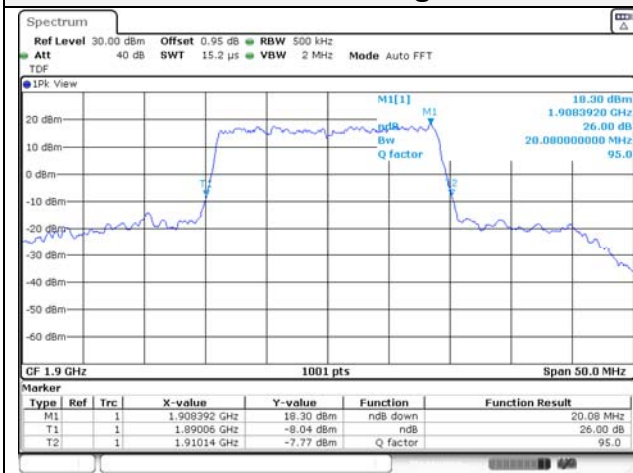
## 20M BW QPSK Mid ch.



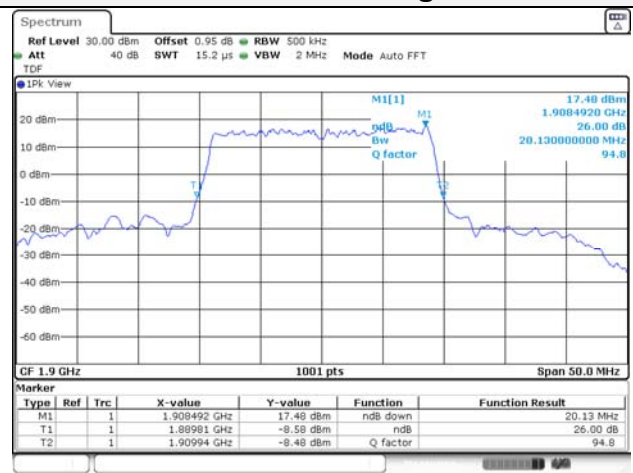
## 20M BW 16QAM Mid ch.



## 20M BW QPSK High ch.



## 20M BW 16QAM High ch.



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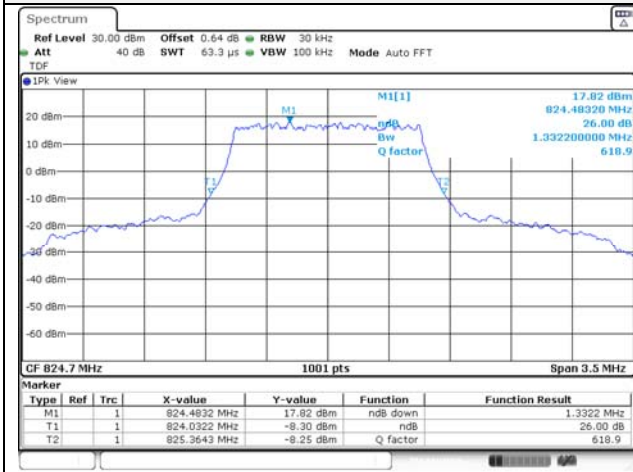
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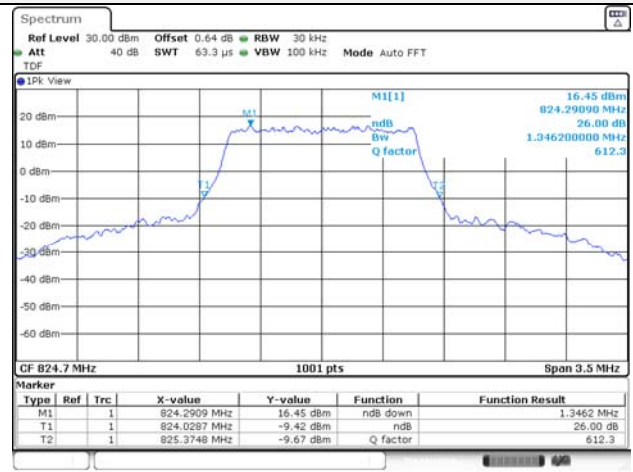


## Test mode: LTE Band 5

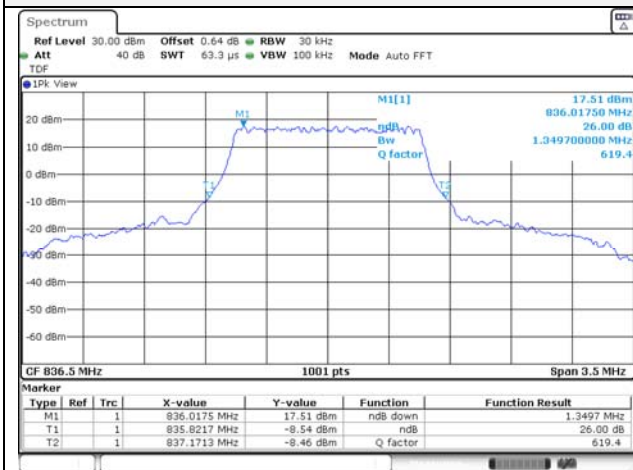
### 1.4M BW QPSK Low ch.



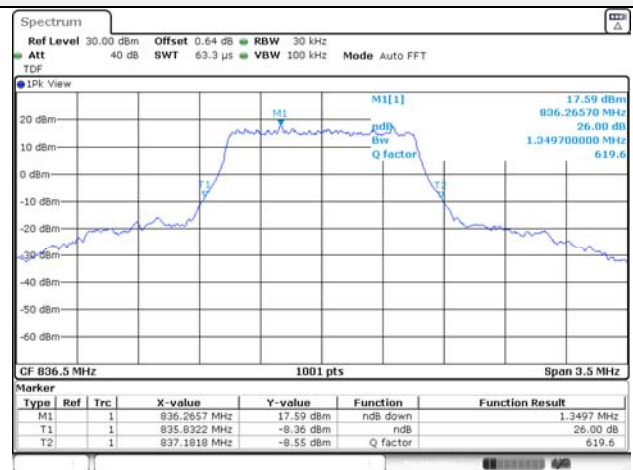
### 1.4M BW 16QAM Low ch.



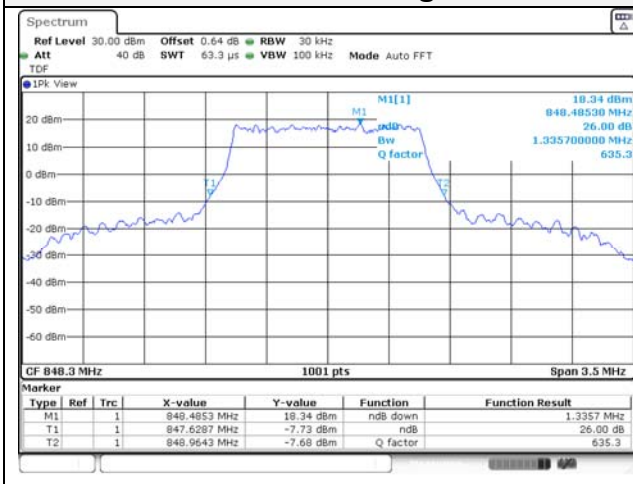
### 1.4M BW QPSK Mid ch.



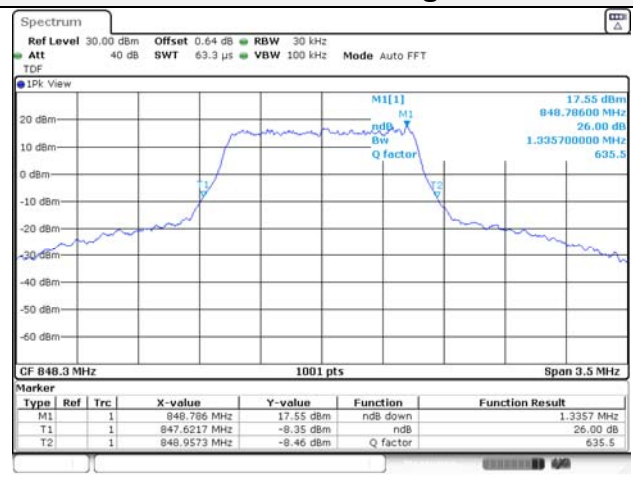
### 1.4M BW 16QAM Mid ch.



### 1.4M BW QPSK High ch.



### 1.4M BW 16QAM High ch.



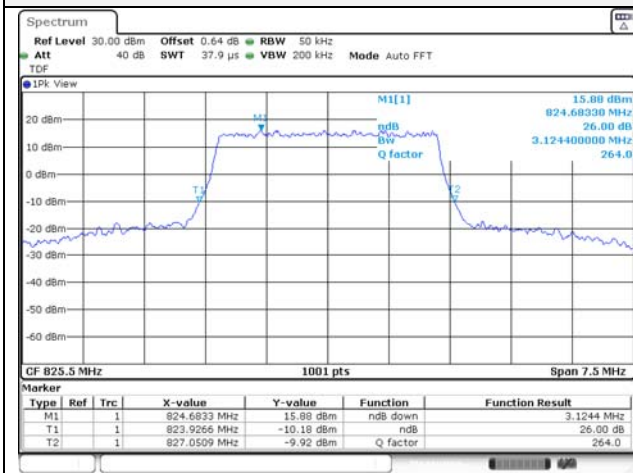
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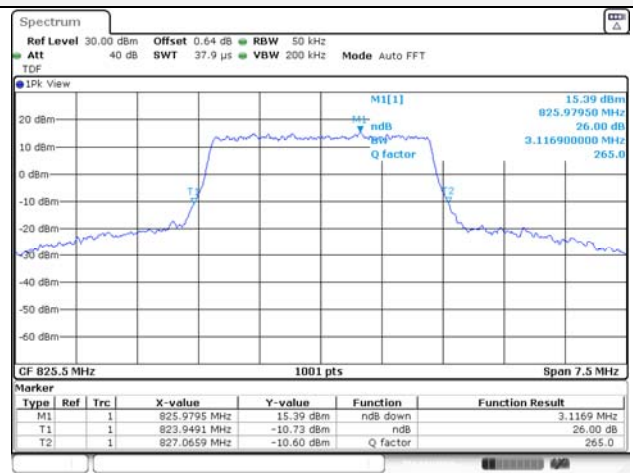
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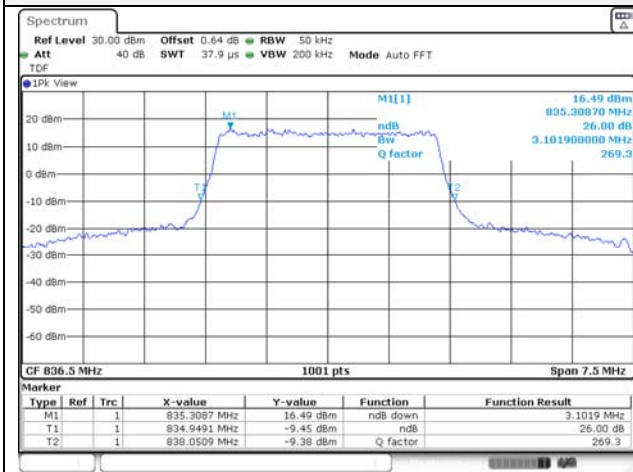
## 3M BW QPSK Low ch.



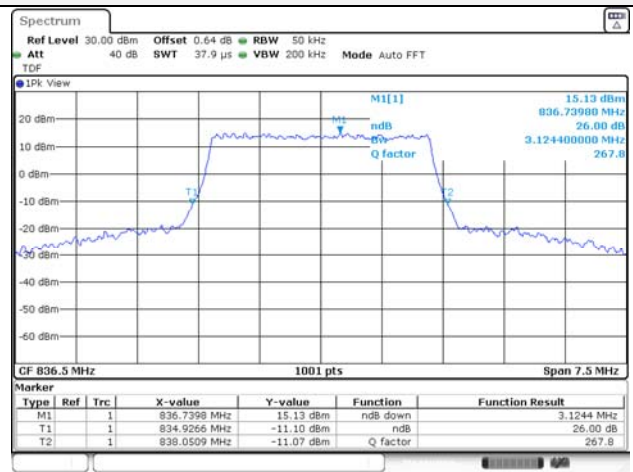
## 3M BW 16QAM Low ch.



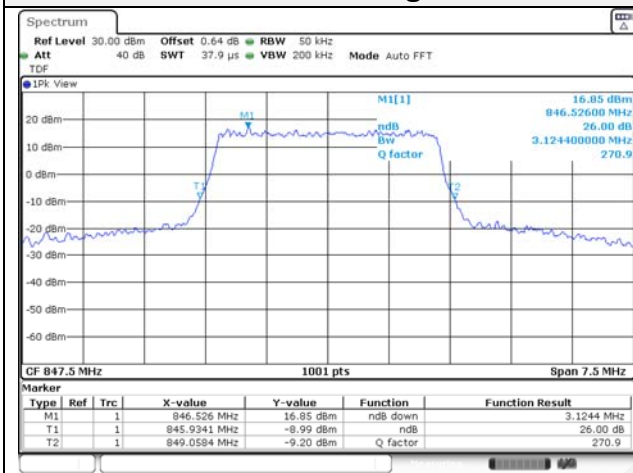
## 3M BW QPSK Mid ch.



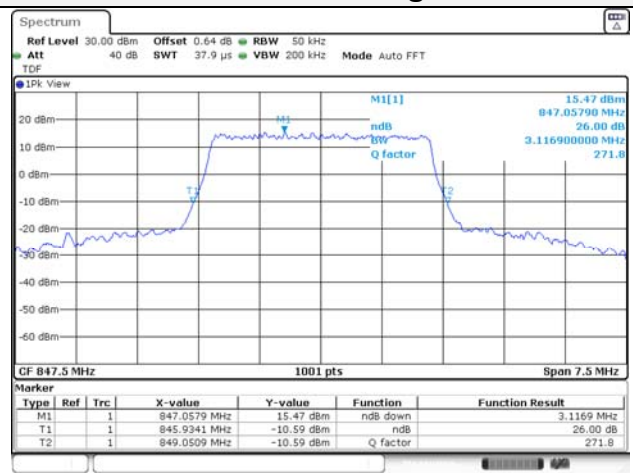
## 3M BW 16QAM Mid ch.



## 3M BW QPSK High ch.



## 3M BW 16QAM High ch.





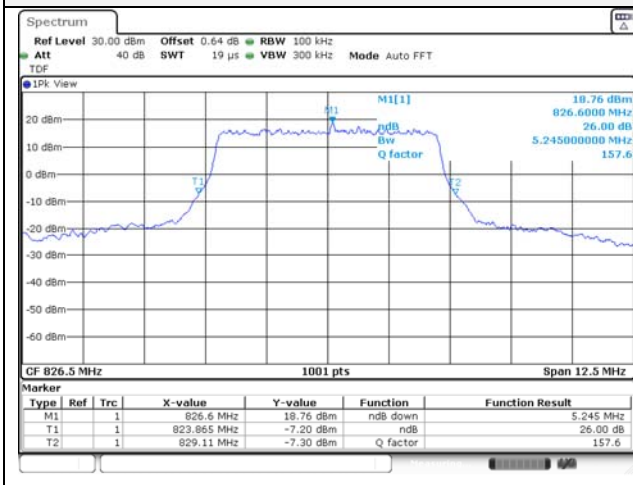
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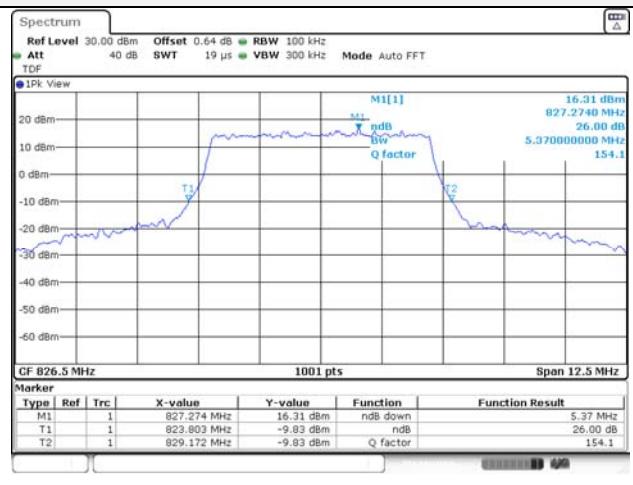
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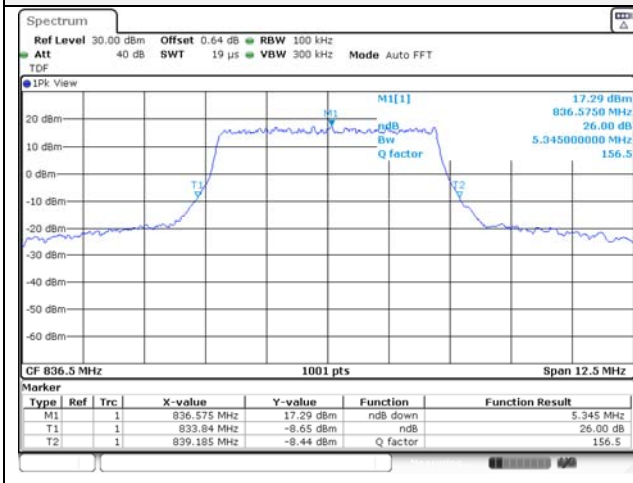
## 5M BW QPSK Low ch.



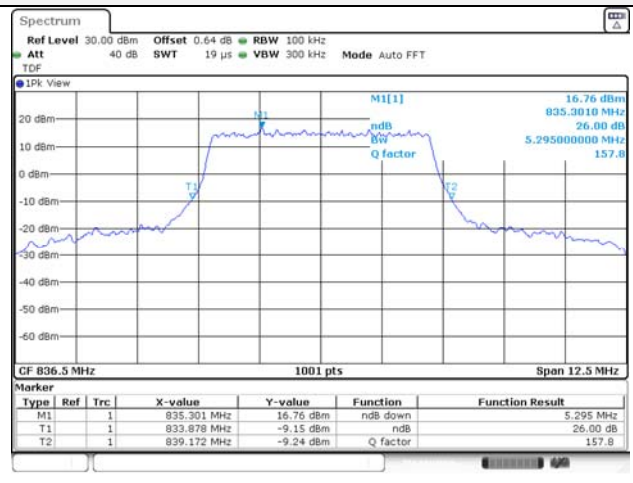
## 5M BW 16QAM Low ch.



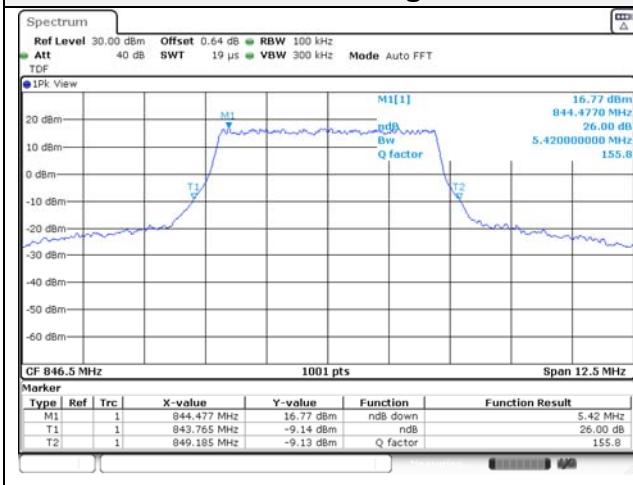
## 5M BW QPSK Mid ch.



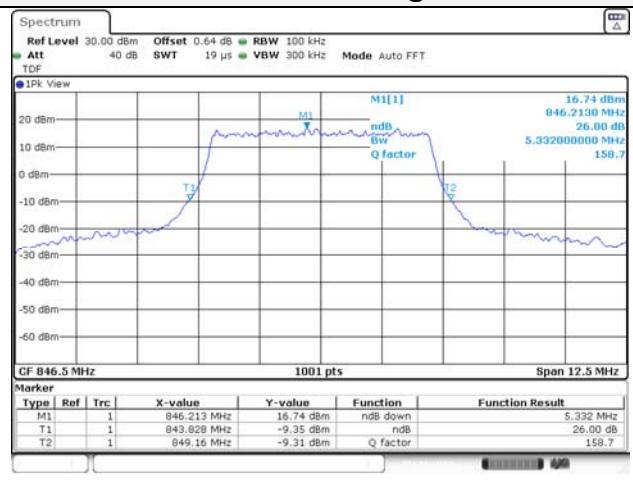
## 5M BW 16QAM Mid ch.



## 5M BW QPSK High ch.



## 5M BW 16QAM High ch.



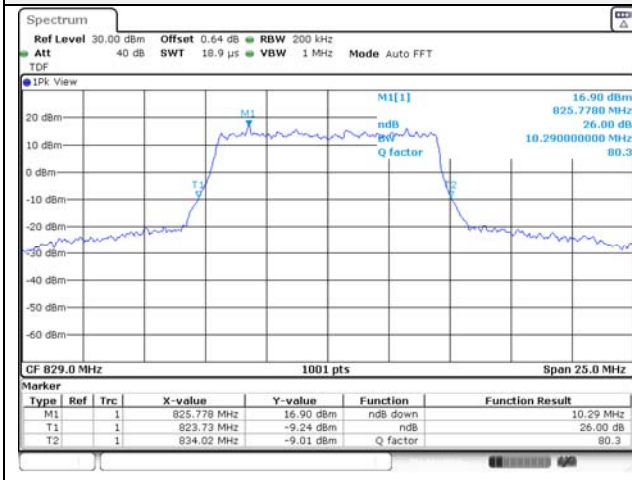
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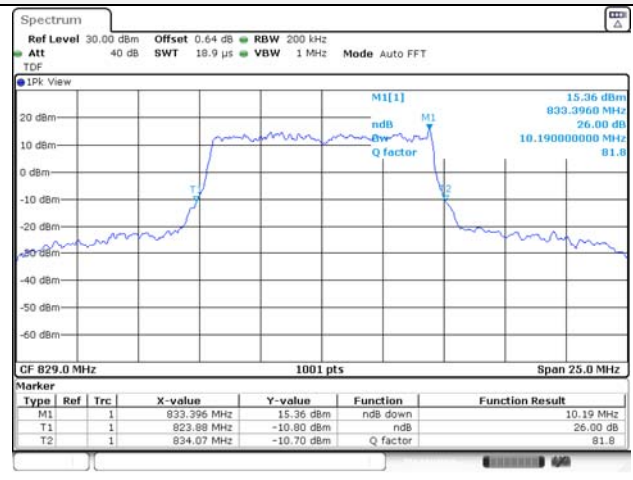
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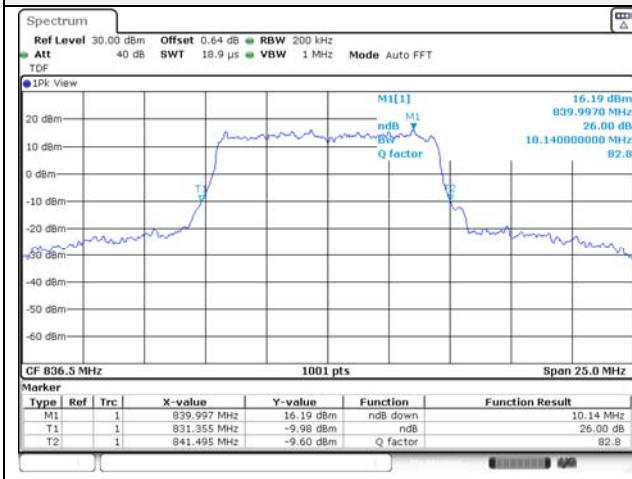
## 10M BW QPSK Low ch.



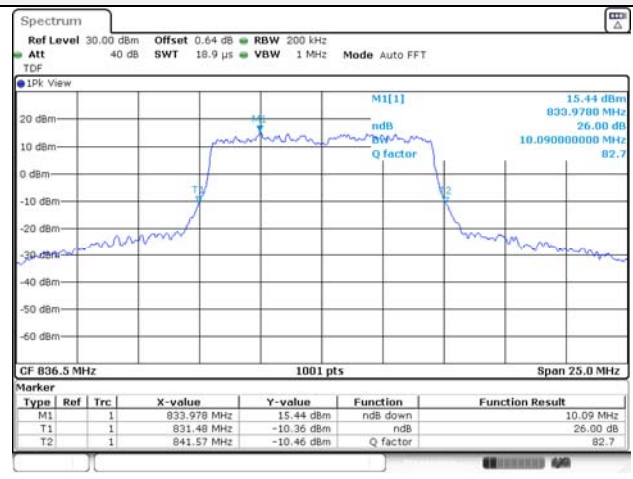
## 10M BW 16QAM Low ch.



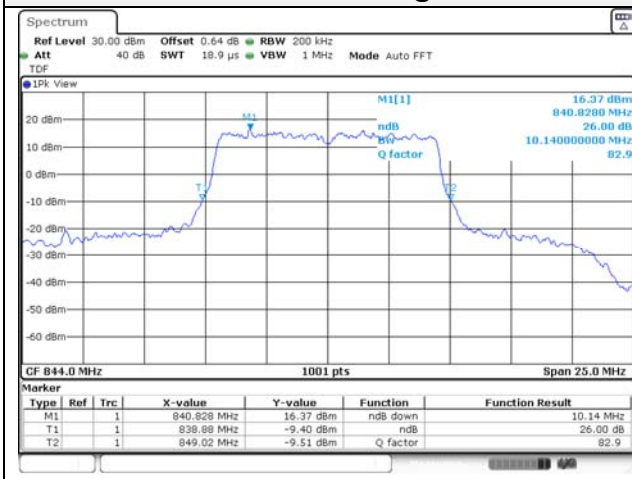
## 10M BW QPSK Mid ch.



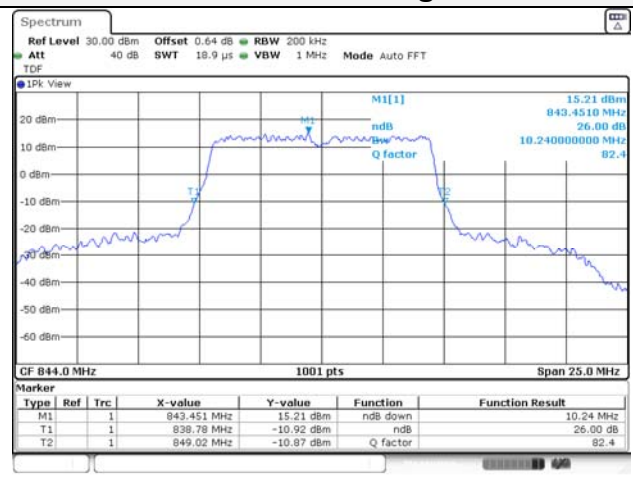
## 10M BW 16QAM Mid ch.



## 10M BW QPSK High ch.



## 10M BW 16QAM High ch.



# KCTL Inc.

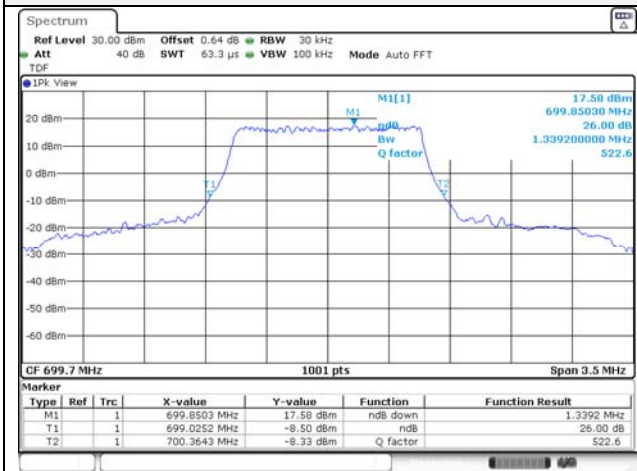
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Suwon-si, Gyeonggi-do, 16677, Korea  
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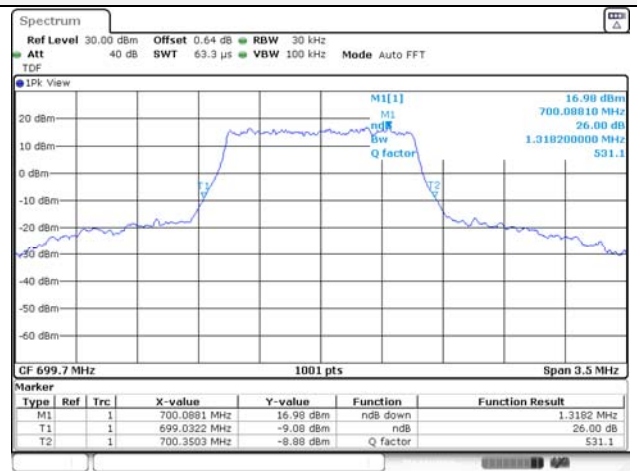


## Test mode: LTE Band 12

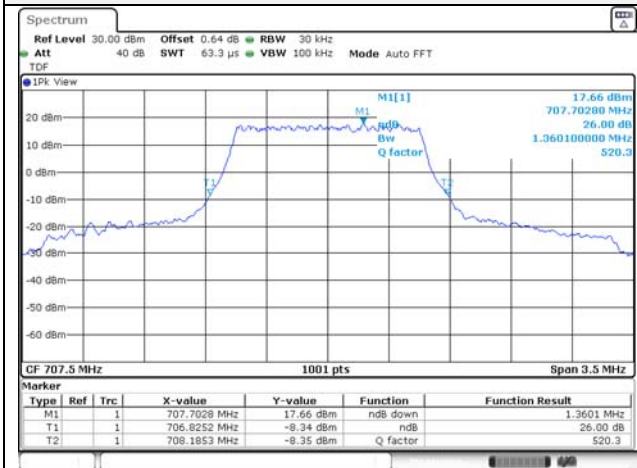
### 1.4M BW QPSK Low ch.



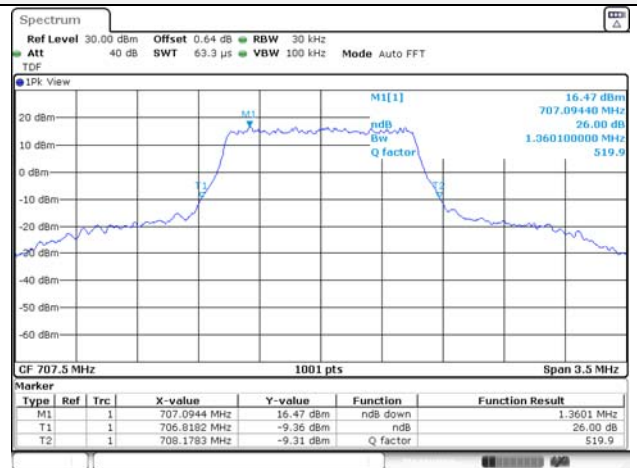
### 1.4M BW 16QAM Low ch.



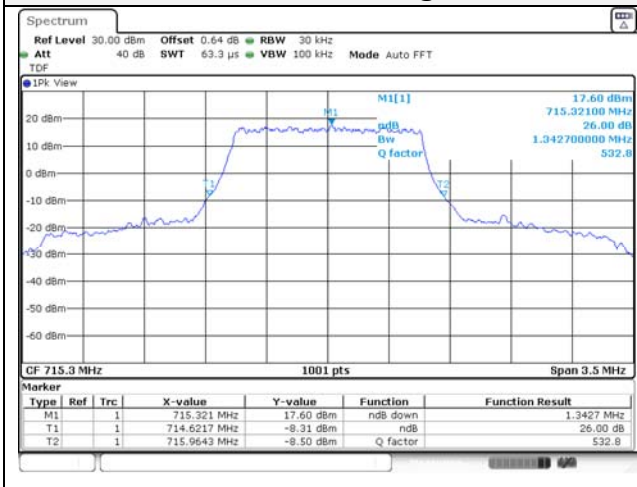
### 1.4M BW QPSK Mid ch.



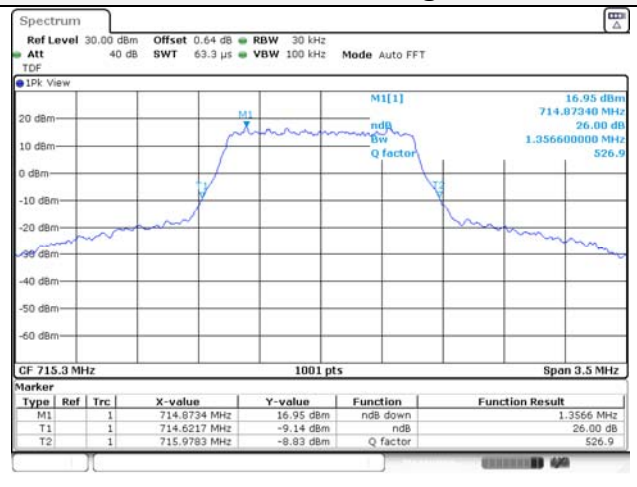
### 1.4M BW 16QAM Mid ch.



### 1.4M BW QPSK High ch.



### 1.4M BW 16QAM High ch.



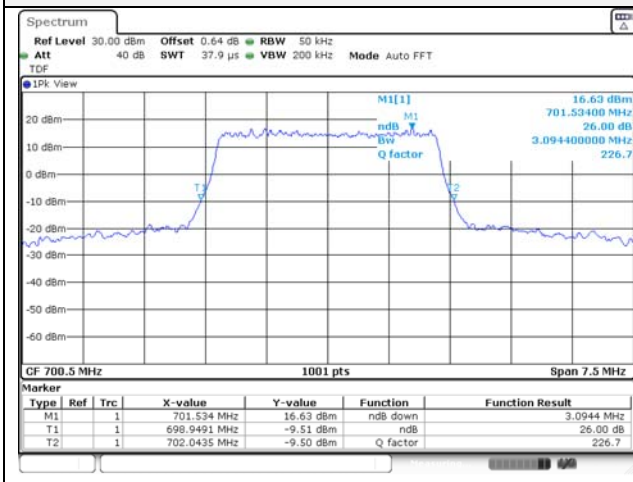
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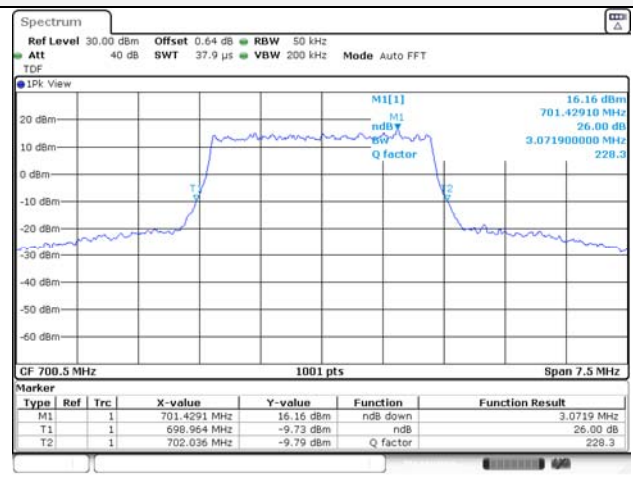
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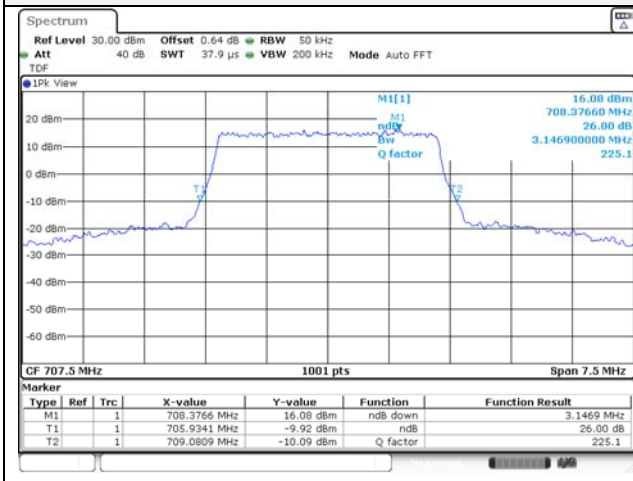
## 3M BW QPSK Low ch.



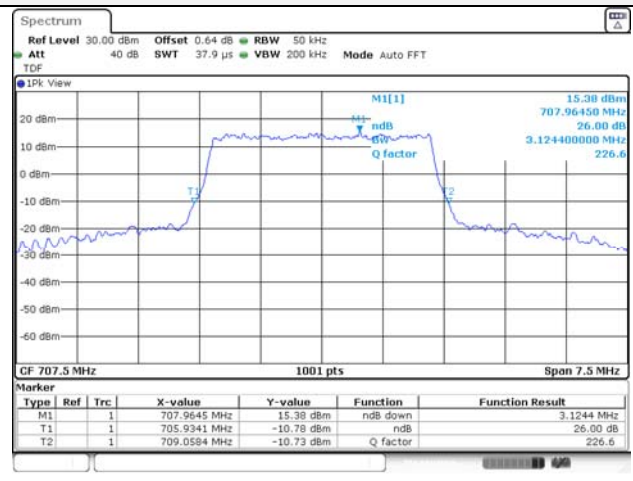
## 3M BW 16QAM Low ch.



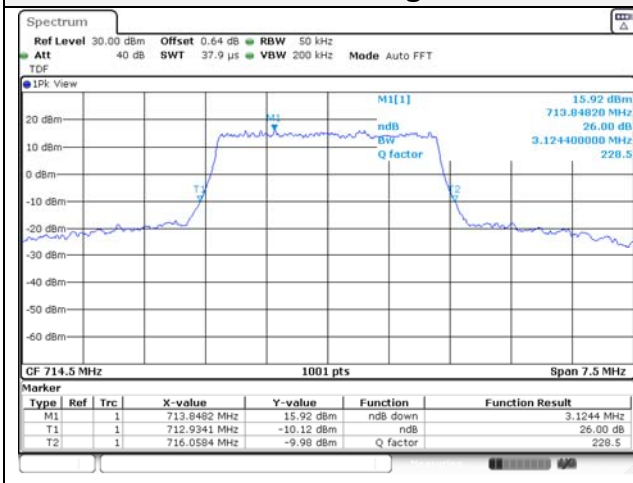
## 3M BW QPSK Mid ch.



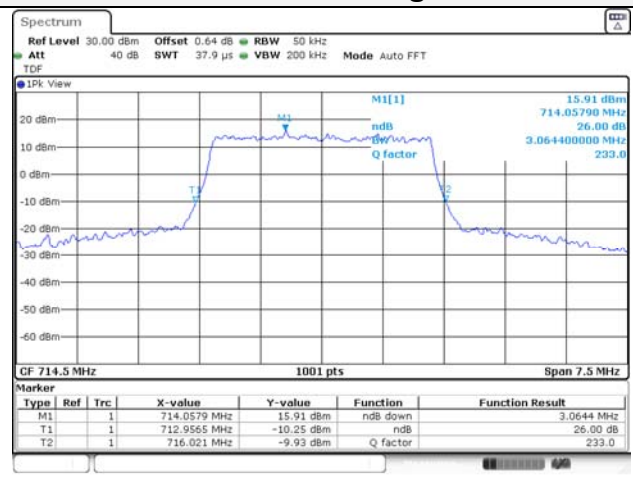
## 3M BW 16QAM Mid ch.



## 3M BW QPSK High ch.



## 3M BW 16QAM High ch.





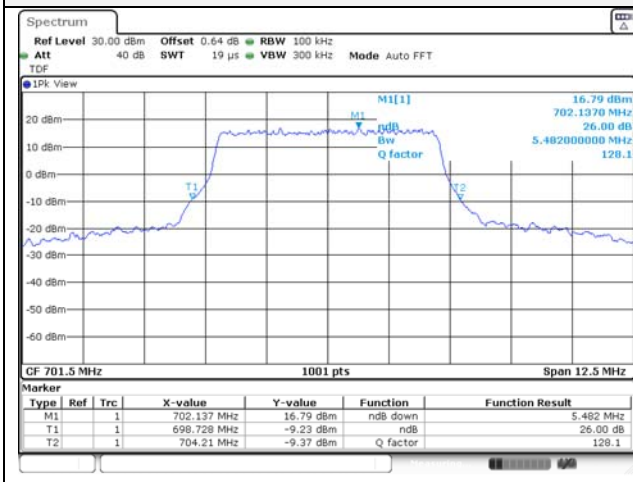
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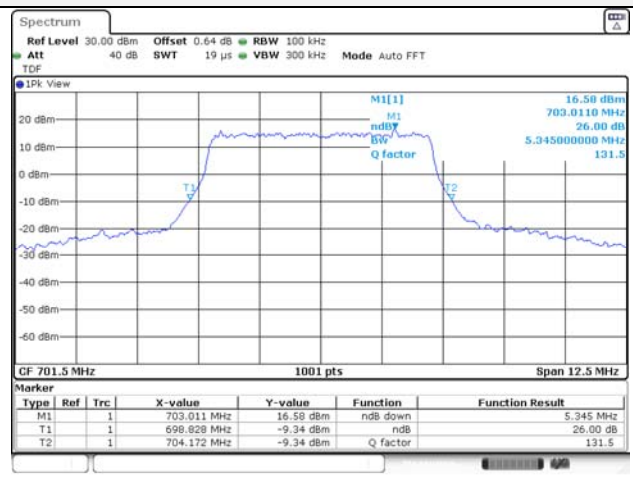
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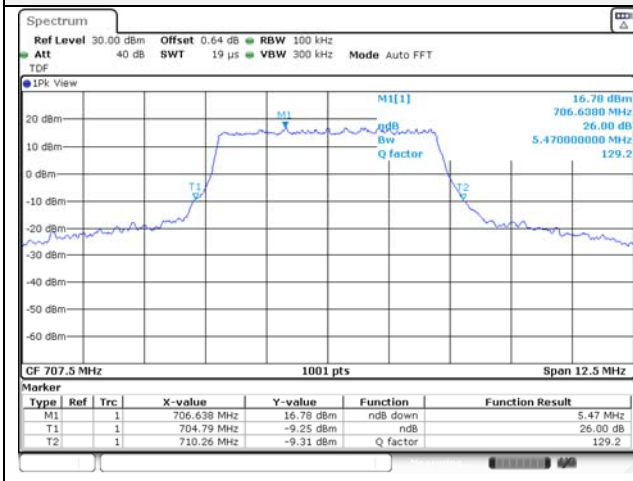
## 5M BW QPSK Low ch.



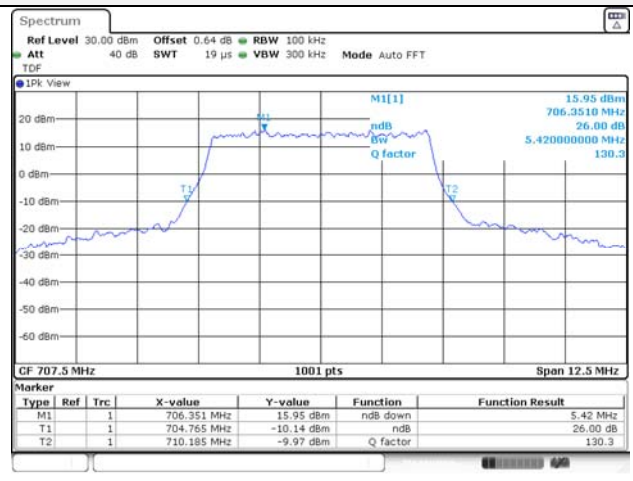
## 5M BW 16QAM Low ch.



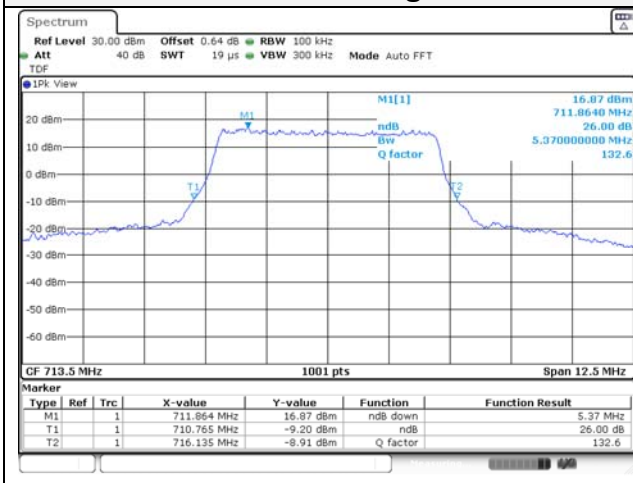
## 5M BW QPSK Mid ch.



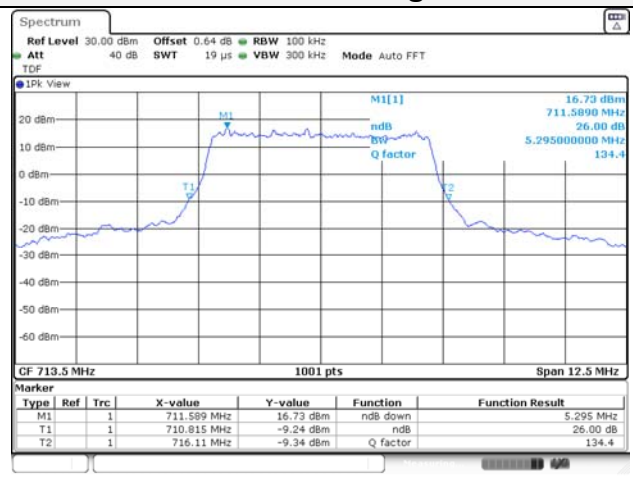
## 5M BW 16QAM Mid ch.



## 5M BW QPSK High ch.



## 5M BW 16QAM High ch.



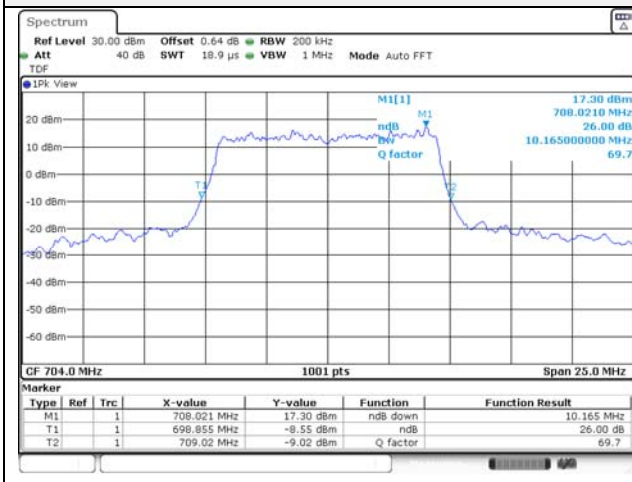
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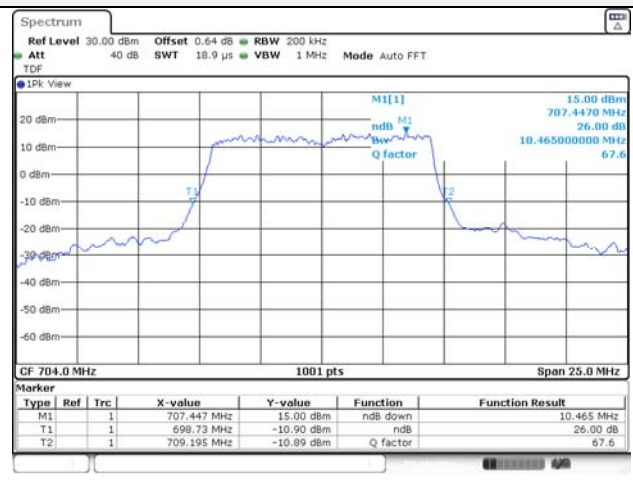
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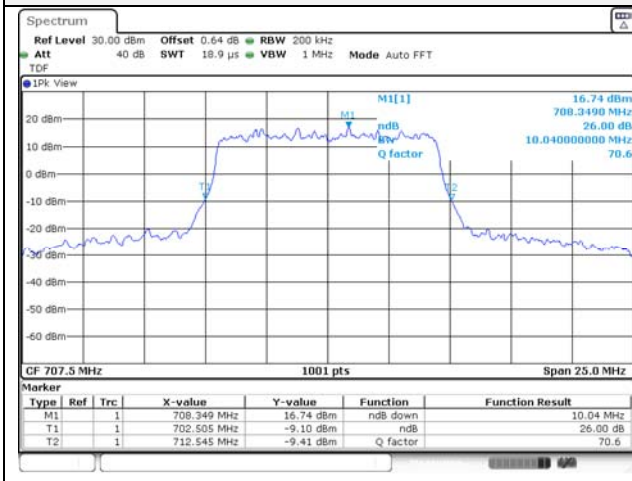
## 10M BW QPSK Low ch.



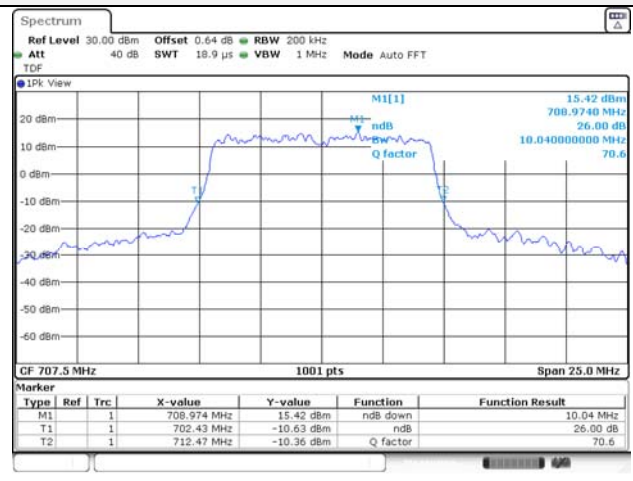
## 10M BW 16QAM Low ch.



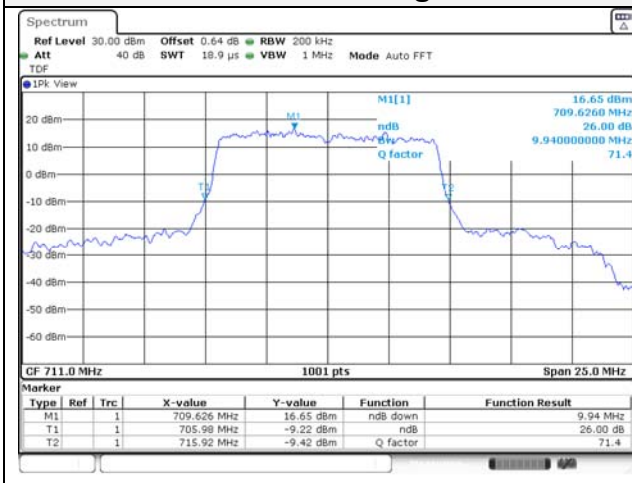
## 10M BW QPSK Mid ch.



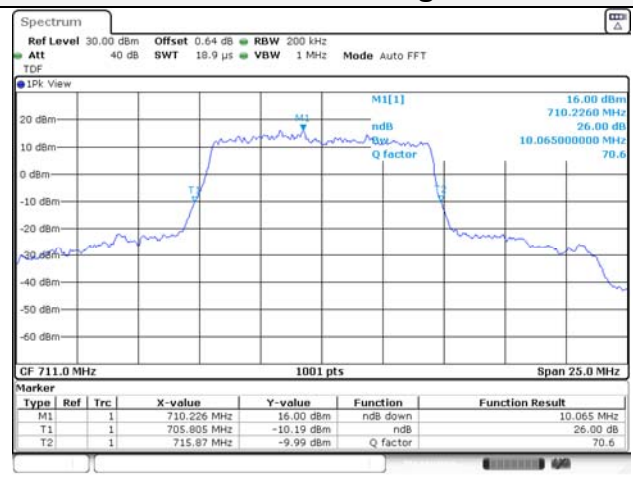
## 10M BW 16QAM Mid ch.



## 10M BW QPSK High ch.



## 10M BW 16QAM High ch.



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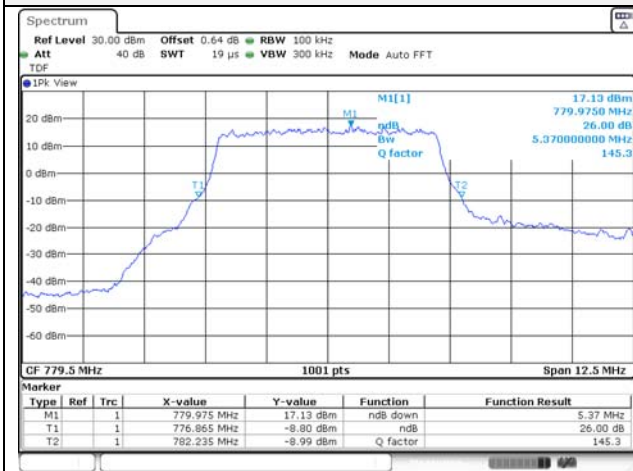
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## Test mode: LTE Band 13

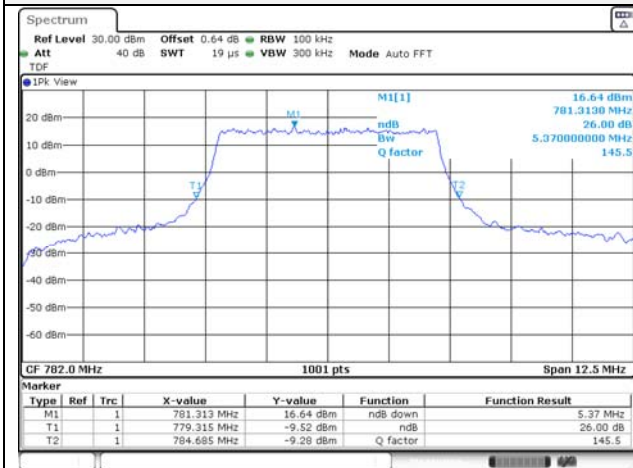
### 5M BW QPSK Low ch.



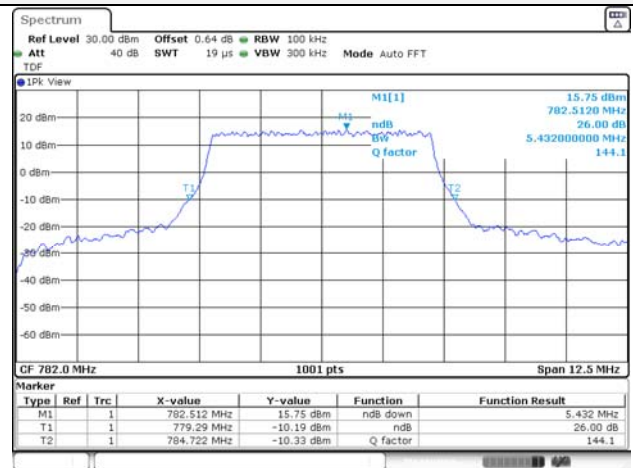
### 5M BW 16QAM Low ch.



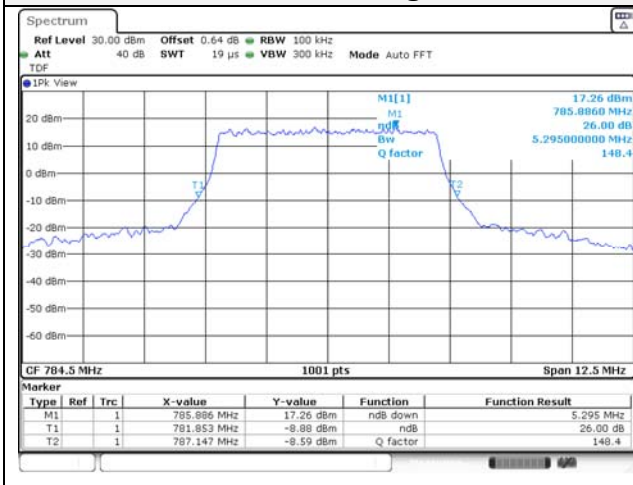
### 5M BW QPSK Mid ch.



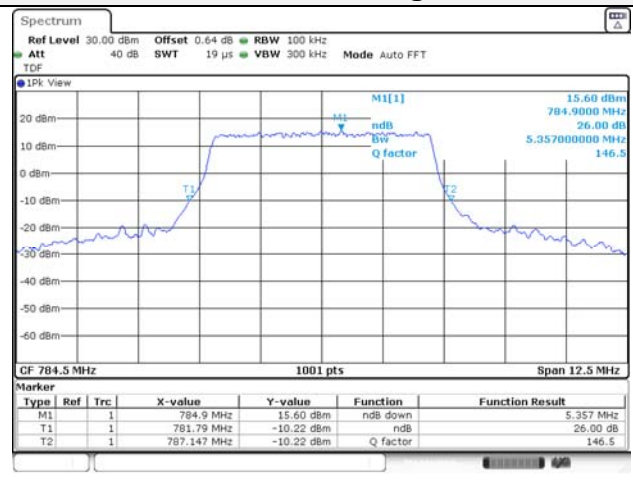
### 5M BW 16QAM Mid ch.



### 5M BW QPSK High ch.



### 5M BW 16QAM High ch.



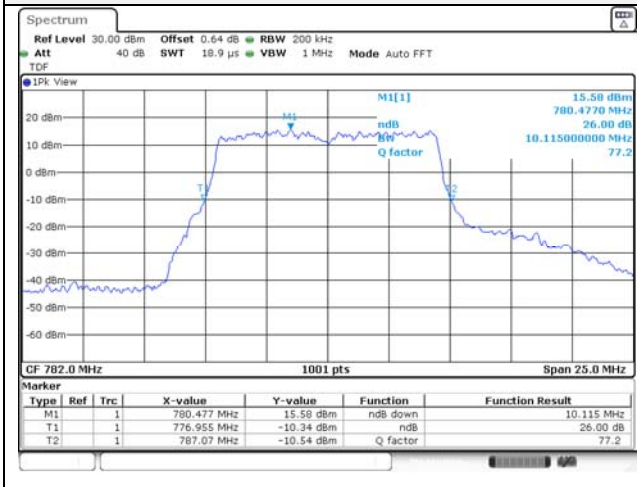
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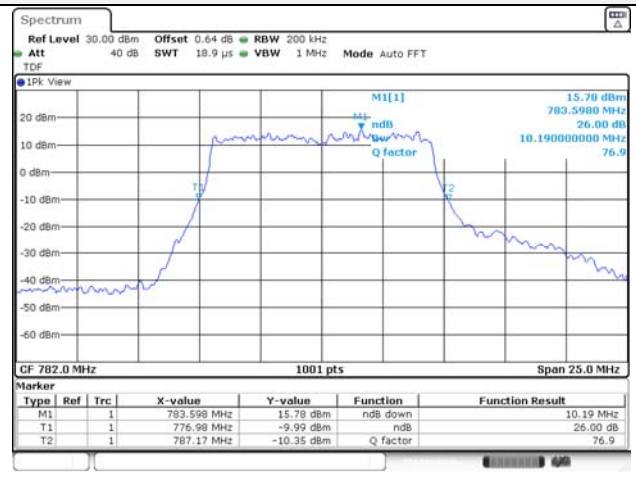
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## 10M BW QPSK Mid ch.



## 10M BW 16QAM Mid ch.



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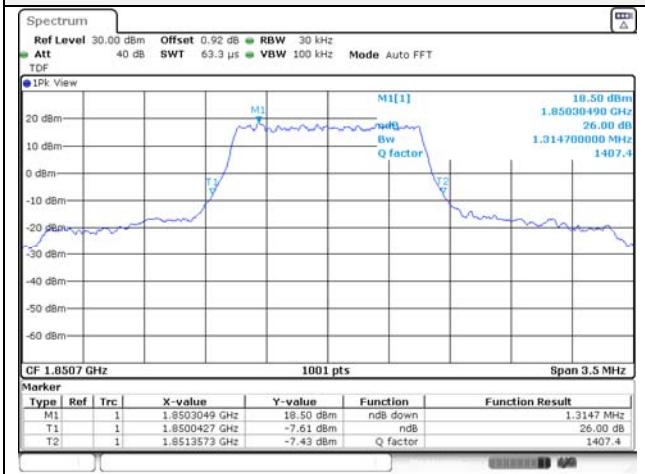
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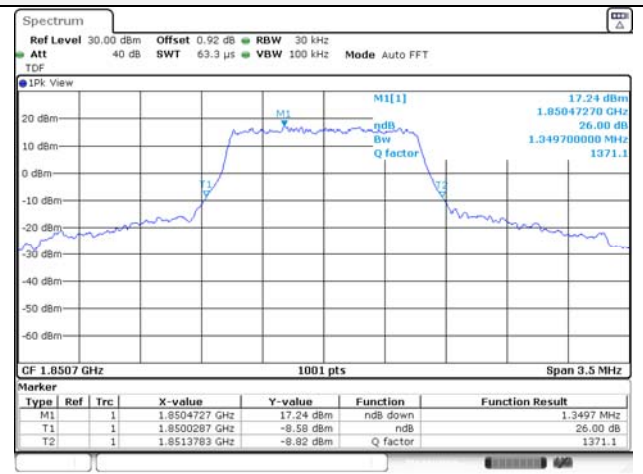


## Test mode: LTE Band 25

### 1.4M BW QPSK Low ch.



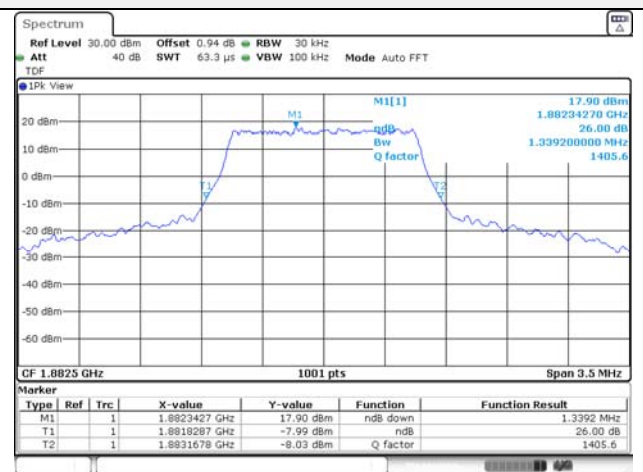
### 1.4M BW 16QAM Low ch.



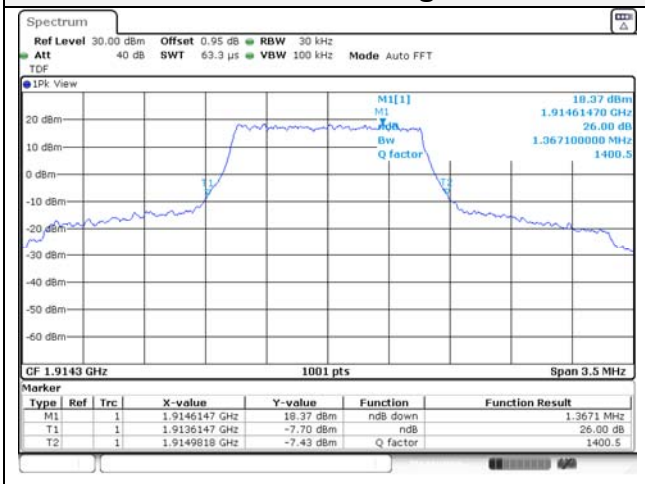
### 1.4M BW QPSK Mid ch.



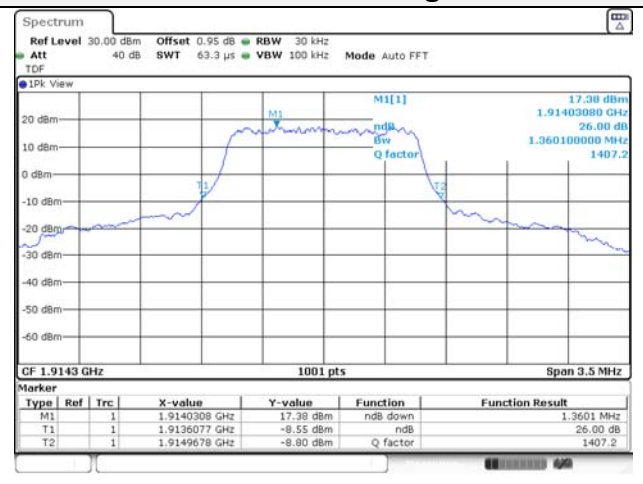
### 1.4M BW 16QAM Mid ch.



### 1.4M BW QPSK High ch.



### 1.4M BW 16QAM High ch.





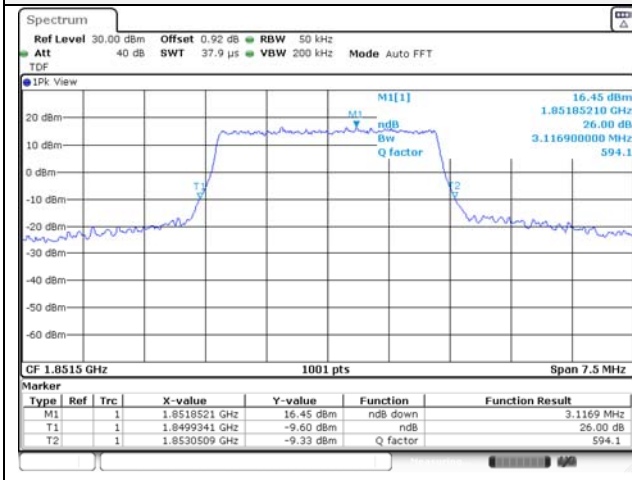
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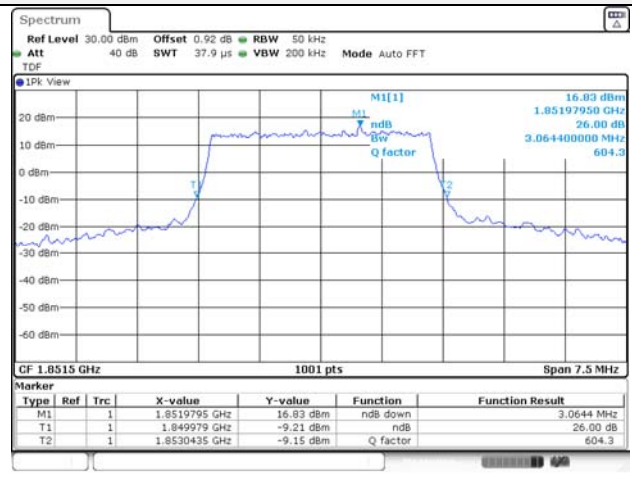
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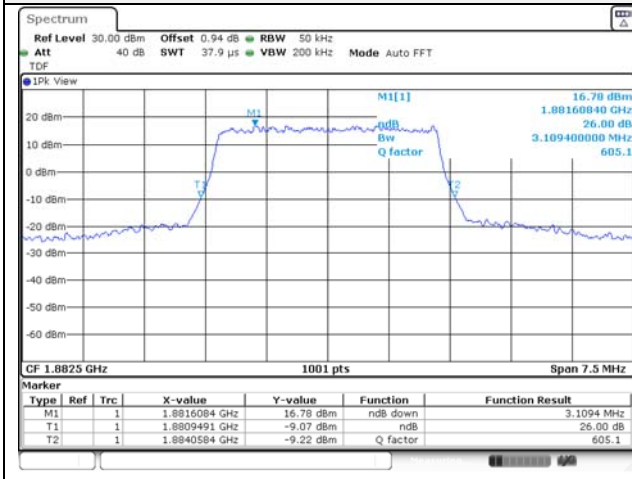
## 3M BW QPSK Low ch.



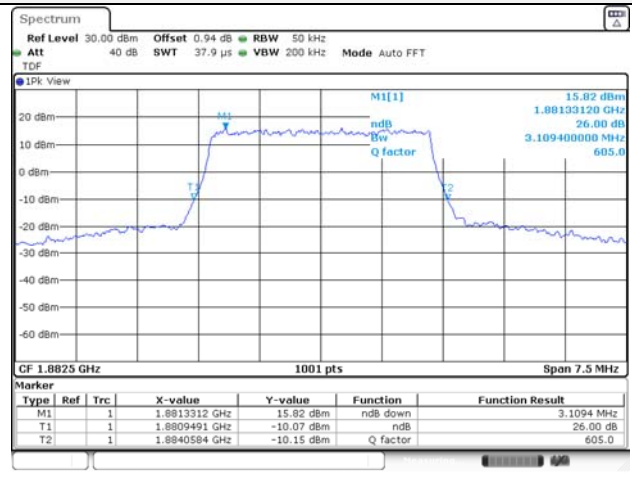
## 3M BW 16QAM Low ch.



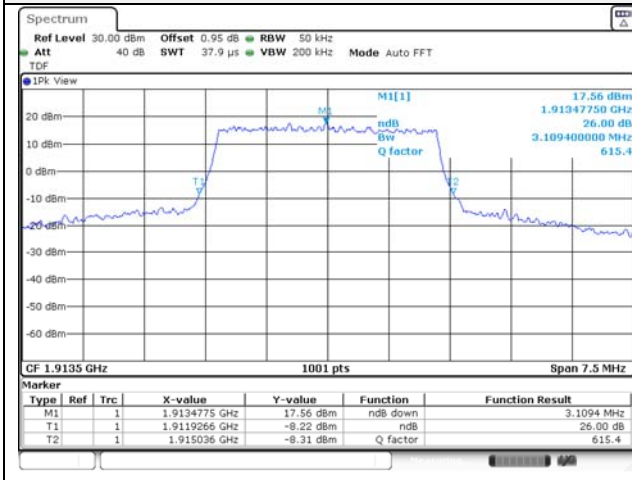
## 3M BW QPSK Mid ch.



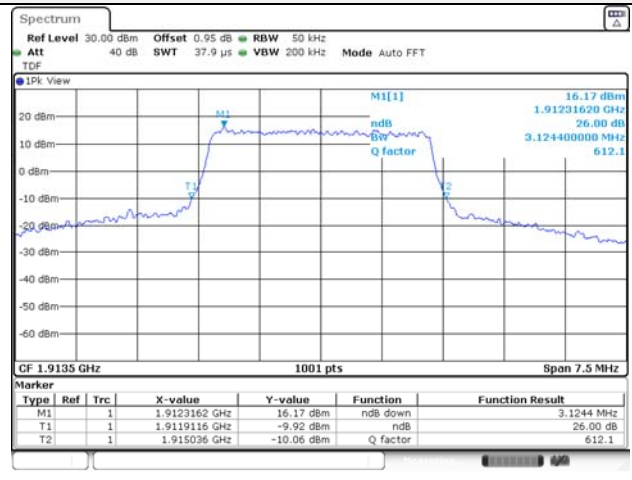
## 3M BW 16QAM Mid ch.



## 3M BW QPSK High ch.



## 3M BW 16QAM High ch.



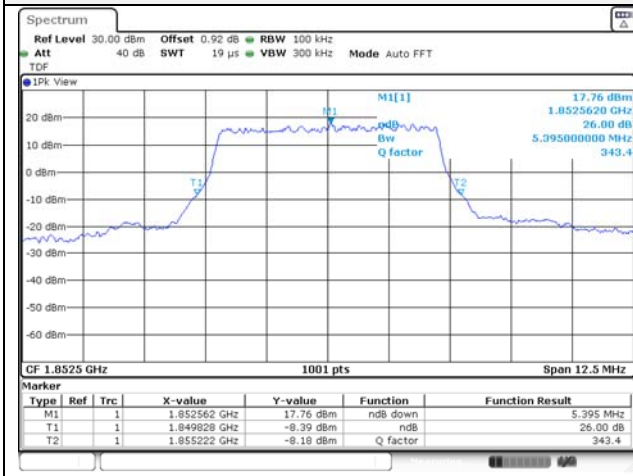
# KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,  
Suwon-si, Gyeonggi-do, 16677, Korea  
TEL: 82-31-285-0894 FAX: 82-505-299-8311  
[www.kctl.co.kr](http://www.kctl.co.kr)

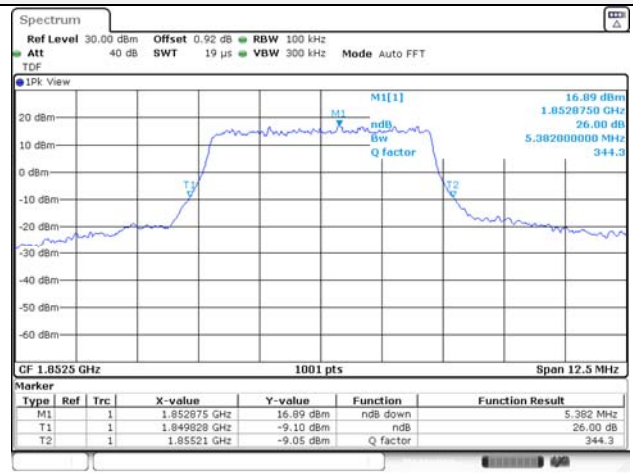
Report No.:  
KR21-SRF0085-D  
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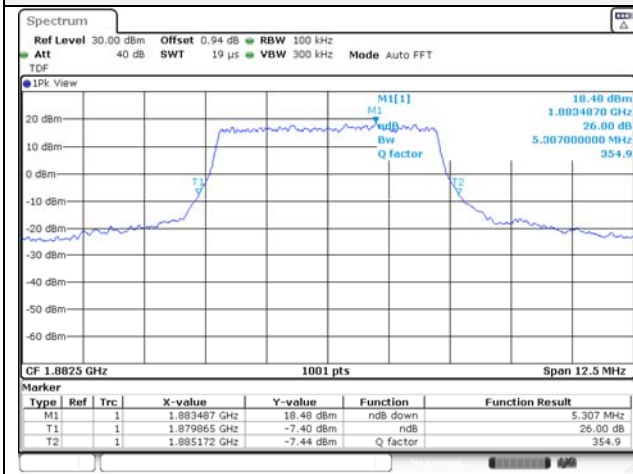
## 5M BW QPSK Low ch.



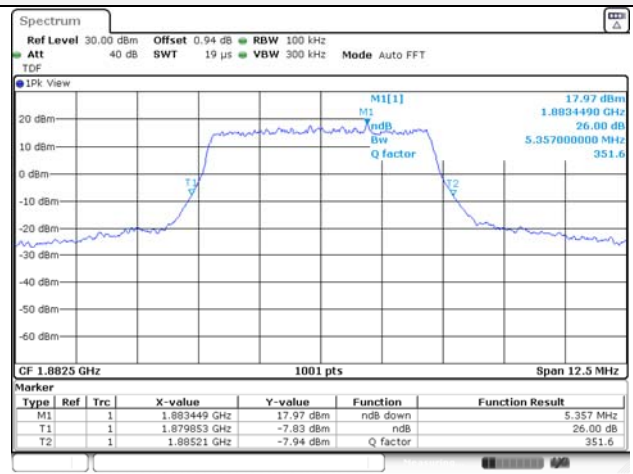
## 5M BW 16QAM Low ch.



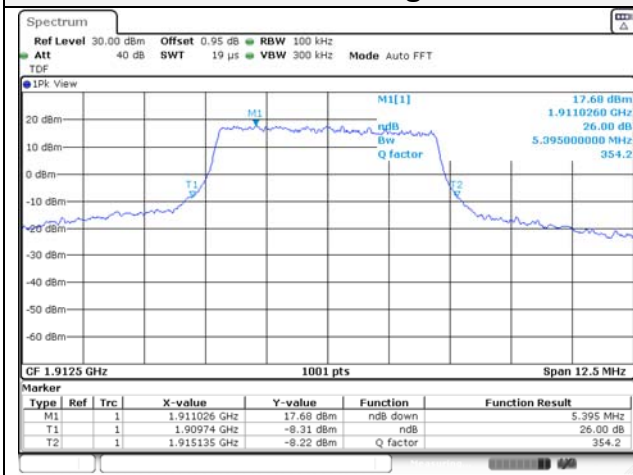
## 5M BW QPSK Mid ch.



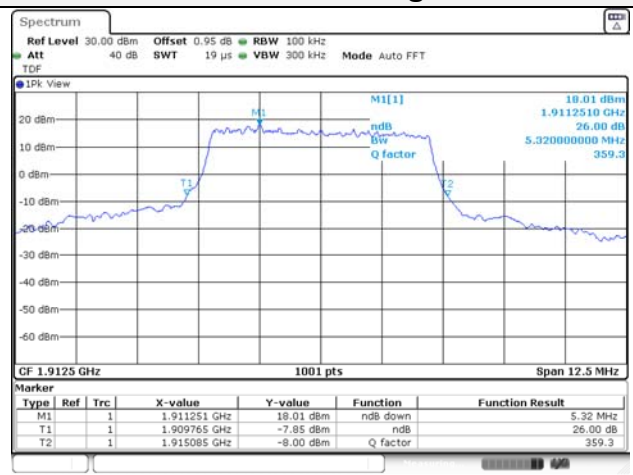
## 5M BW 16QAM Mid ch.



## 5M BW QPSK High ch.



## 5M BW 16QAM High ch.



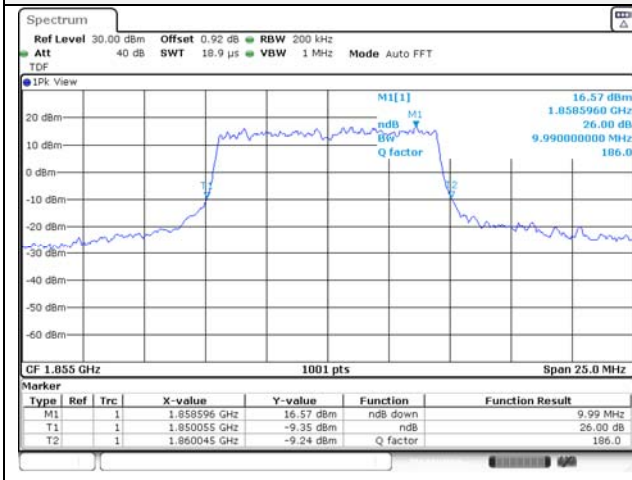
# KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,  
Suwon-si, Gyeonggi-do, 16677, Korea  
TEL: 82-31-285-0894 FAX: 82-505-299-8311  
[www.kctl.co.kr](http://www.kctl.co.kr)

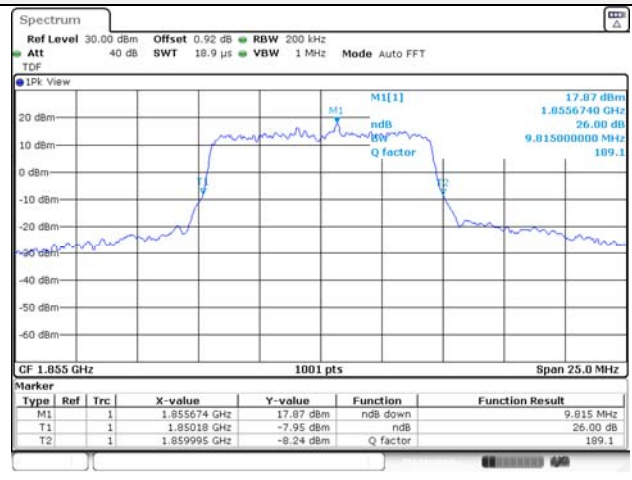
Report No.:  
KR21-SRF0085-D  
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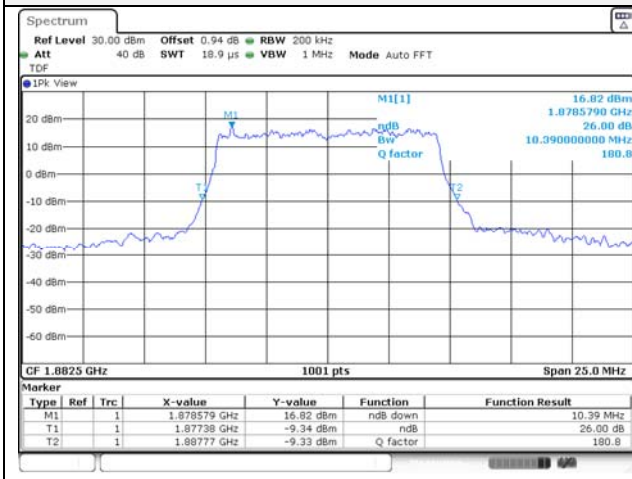
## 10M BW QPSK Low ch.



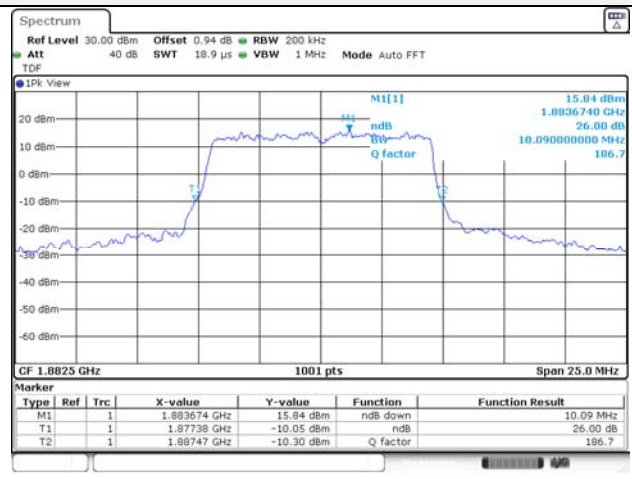
## 10M BW 16QAM Low ch.



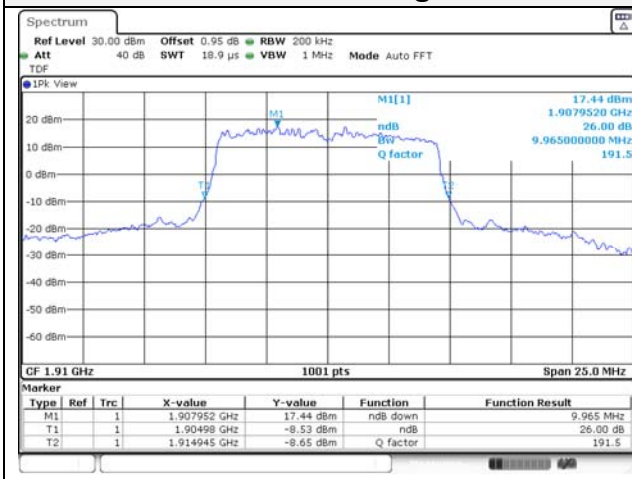
## 10M BW QPSK Mid ch.



## 10M BW 16QAM Mid ch.



## 10M BW QPSK High ch.



## 10M BW 16QAM High ch.

