

# Appendix B

## E-UTRA Band 17

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## 1. Main Test Instruments

| RE in Chamber                              |                                          |                   |               |              |              |
|--------------------------------------------|------------------------------------------|-------------------|---------------|--------------|--------------|
| Test Equipment                             | Manufacturer                             | Model No.         | Inventory No. | Cal. date    | Cal.Due date |
|                                            |                                          |                   |               | (yyyy-mm-dd) | (yyyy-mm-dd) |
| 3m Semi-Anechoic Chamber                   | AUDIX                                    | N/A               | SEM001-02     | 2018/3/13    | 2021/3/12    |
| Spectrum Analyzer (20Hz-43GHz)             | Rohde & Schwarz                          | FSU43             | SEM004-08     | 2019/3/2     | 2020/3/1     |
| BiConiLog Antenna (26-3000MHz)             | ETS-Lindgren                             | 3142C             | SEM003-01     | 2017/6/27    | 2020/6/26    |
| Horn Antenna (800MHz-18GHz)                | Rohde & Schwarz                          | HF907             | SEM003-07     | 2018/4/13    | 2021/4/12    |
| Horn Antenna (15-40GHz)                    | Schwarzbeck                              | BBHA 9170         | SEM003-15     | 2017/10/17   | 2020/10/16   |
| Amplifier (0.1-1300MHz)                    | HP                                       | 8447D             | SEM005-02     | 2018/9/2     | 2019/9/2     |
| Low Noise Amplifier (100MHz-18GHz)         | Black Diamond Series                     | BDLNA-0118-352810 | SEM005-05     | 2018/9/2     | 2019/9/2     |
| Pre-Amplifier (0.1-26.5GHz)                | Compliance Directions Systems Inc.       | PAP-0126          | EMC2063       | 2018/10/20   | 2019/10/19   |
| Pre-amplifier (26-40GHz)                   | Compliance Directions Systems Inc.       | PAP-2640-50       | SEM005-08     | 2019/3/2     | 2020/3/1     |
| Band filter                                | N/A                                      | N/A               | N/A           | N/A          | N/A          |
| Measurement Software                       | AUDIX                                    | e3 V8.2014-6-27   | N/A           | N/A          | N/A          |
| Coaxial Cable                              | SGS                                      | N/A               | SEM026-01     | 2019/6/12    | 2020/6/11    |
| Wideband Radio CommunicationTeste          | Anristu                                  | MT8821C           | 6201462742    | 2019/4/3     | 2020/4/3     |
| Wideband Radio CommunicationTester         | Rohde & Schwarz                          | CMW500            | W005-02       | 2019/1/13    | 2020/1/12    |
| RF conducted test                          |                                          |                   |               |              |              |
| Test Equipment                             | Manufacturer                             | Model No.         | Inventory No. | Cal. date    | Cal.Due date |
|                                            |                                          |                   |               | (yyyy-mm-dd) | (yyyy-mm-dd) |
| Dual Output Mobile Communication DC Source | Agilent Technologies Inc                 | 66311B            | W009-09       | 2018/11/2    | 2019/11/1    |
| Signal Analyzer                            | Rohde & Schwarz                          | FSV               | W005-02       | 2019/3/2     | 2020/3/1     |
| Coaxial Cable                              | SGS                                      | N/A               | SEM031-01     | 2019/6/12    | 2020/6/11    |
| Attenuator                                 | Weinschel Associates                     | WA41              | SEM021-09     | N/A          | N/A          |
| Signal Generator                           | KEYSIGHT                                 | N5173B            | SEM006-05     | 2018/11/2    | 2019/11/1    |
| Humidity/ Temperature Indicator            | Shanghai Meteorological Industry Factory | HTC-1             | W006-17       | 2018/11/2    | 2019/11/1    |
| Temperature Chamber                        | GIANT FORCE                              | ICT-150-40-CP-AR  | W027-03       | 2018/11/2    | 2019/11/1    |
| Wideband Radio CommunicationTeste          | Anristu                                  | MT8821C           | 6201462742    | 2019/3/2     | 2020/3/1     |
| Wideband Radio CommunicationTester         | Rohde & Schwarz                          | CMW500            | W005-02       | 2018/11/2    | 2019/11/1    |

## 2. Measurement Uncertainty

For a 95% confidence level ( $k = 2$ ), the measurement expanded uncertainties for defined systems, in accordance with the recommendations of ISO 17025 as following:

| Test Item                     | Extended Uncertainty     | Data                       |
|-------------------------------|--------------------------|----------------------------|
| Transmit Output Power Data    | Power [dBm]              | $U = \pm 0.37 \text{ dB}$  |
| Bandwidth                     | Magnitude [%]            | $U = \pm 0.2\%$            |
| Band Edge Compliance          | Disturbance Power [dBm]  | $U = \pm 2.0 \text{ dB}$   |
| Spurious Emissions, Conducted | Disturbance Power [dBm]  | $U = \pm 2.0 \text{ dB}$   |
| Frequency Stability           | Frequency Accuracy [ppm] | $U = \pm 0.24 \text{ ppm}$ |

### 3. Effective (Isotropic) Radiated Power

#### 3.1. Test Result

| BAND   | Bandwidth | Modulation | Channel | RB Configuration | Conducted Power(dBm) | ERP (dBm) | Limit (dBm) | Verdict |
|--------|-----------|------------|---------|------------------|----------------------|-----------|-------------|---------|
| Band17 | 5MHz      | QPSK       | 23755   | 1RB#0            | 23.97                | 17.92     | 34.77       | PASS    |
| Band17 | 5MHz      | QPSK       | 23755   | 1RB#12           | 24.13                | 18.08     | 34.77       | PASS    |
| Band17 | 5MHz      | QPSK       | 23755   | 1RB#24           | 23.83                | 17.78     | 34.77       | PASS    |
| Band17 | 5MHz      | QPSK       | 23755   | 12RB#0           | 23.05                | 17.00     | 34.77       | PASS    |
| Band17 | 5MHz      | QPSK       | 23755   | 12RB#6           | 23.08                | 17.03     | 34.77       | PASS    |
| Band17 | 5MHz      | QPSK       | 23755   | 12RB#13          | 23.07                | 17.02     | 34.77       | PASS    |
| Band17 | 5MHz      | QPSK       | 23755   | 25RB#0           | 23.11                | 17.06     | 34.77       | PASS    |
| Band17 | 5MHz      | QPSK       | 23790   | 1RB#0            | 23.89                | 17.84     | 34.77       | PASS    |
| Band17 | 5MHz      | QPSK       | 23790   | 1RB#12           | 24.17                | 18.12     | 34.77       | PASS    |
| Band17 | 5MHz      | QPSK       | 23790   | 1RB#24           | 23.85                | 17.80     | 34.77       | PASS    |
| Band17 | 5MHz      | QPSK       | 23790   | 12RB#0           | 22.95                | 16.90     | 34.77       | PASS    |
| Band17 | 5MHz      | QPSK       | 23790   | 12RB#6           | 23.01                | 16.96     | 34.77       | PASS    |
| Band17 | 5MHz      | QPSK       | 23790   | 12RB#13          | 22.94                | 16.89     | 34.77       | PASS    |
| Band17 | 5MHz      | QPSK       | 23790   | 25RB#0           | 23.02                | 16.97     | 34.77       | PASS    |
| Band17 | 5MHz      | QPSK       | 23825   | 1RB#0            | 23.89                | 17.84     | 34.77       | PASS    |
| Band17 | 5MHz      | QPSK       | 23825   | 1RB#12           | 24.07                | 18.02     | 34.77       | PASS    |
| Band17 | 5MHz      | QPSK       | 23825   | 1RB#24           | 23.78                | 17.73     | 34.77       | PASS    |
| Band17 | 5MHz      | QPSK       | 23825   | 12RB#0           | 23.05                | 17.00     | 34.77       | PASS    |
| Band17 | 5MHz      | QPSK       | 23825   | 12RB#6           | 23.01                | 16.96     | 34.77       | PASS    |
| Band17 | 5MHz      | QPSK       | 23825   | 12RB#13          | 22.88                | 16.83     | 34.77       | PASS    |
| Band17 | 5MHz      | QPSK       | 23825   | 25RB#0           | 23.05                | 17.00     | 34.77       | PASS    |
| Band17 | 5MHz      | 16QAM      | 23755   | 1RB#0            | 23.05                | 17.00     | 34.77       | PASS    |
| Band17 | 5MHz      | 16QAM      | 23755   | 1RB#12           | 23.33                | 17.28     | 34.77       | PASS    |
| Band17 | 5MHz      | 16QAM      | 23755   | 1RB#24           | 22.98                | 16.93     | 34.77       | PASS    |
| Band17 | 5MHz      | 16QAM      | 23755   | 12RB#0           | 22.04                | 15.99     | 34.77       | PASS    |
| Band17 | 5MHz      | 16QAM      | 23755   | 12RB#6           | 22.05                | 16.00     | 34.77       | PASS    |
| Band17 | 5MHz      | 16QAM      | 23755   | 12RB#13          | 22.04                | 15.99     | 34.77       | PASS    |
| Band17 | 5MHz      | 16QAM      | 23755   | 25RB#0           | 22.01                | 15.96     | 34.77       | PASS    |
| Band17 | 5MHz      | 16QAM      | 23790   | 1RB#0            | 22.99                | 16.94     | 34.77       | PASS    |
| Band17 | 5MHz      | 16QAM      | 23790   | 1RB#12           | 23.15                | 17.10     | 34.77       | PASS    |
| Band17 | 5MHz      | 16QAM      | 23790   | 1RB#24           | 22.94                | 16.89     | 34.77       | PASS    |
| Band17 | 5MHz      | 16QAM      | 23790   | 12RB#0           | 21.90                | 15.85     | 34.77       | PASS    |
| Band17 | 5MHz      | 16QAM      | 23790   | 12RB#6           | 21.95                | 15.90     | 34.77       | PASS    |
| Band17 | 5MHz      | 16QAM      | 23790   | 12RB#13          | 21.90                | 15.85     | 34.77       | PASS    |
| Band17 | 5MHz      | 16QAM      | 23790   | 25RB#0           | 21.94                | 15.89     | 34.77       | PASS    |
| Band17 | 5MHz      | 16QAM      | 23825   | 1RB#0            | 22.98                | 16.93     | 34.77       | PASS    |
| Band17 | 5MHz      | 16QAM      | 23825   | 1RB#12           | 23.16                | 17.11     | 34.77       | PASS    |

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|        |       |       |       |         |       |       |       |      |
|--------|-------|-------|-------|---------|-------|-------|-------|------|
| Band17 | 5MHz  | 16QAM | 23825 | 1RB#24  | 22.86 | 16.81 | 34.77 | PASS |
| Band17 | 5MHz  | 16QAM | 23825 | 12RB#0  | 22.02 | 15.97 | 34.77 | PASS |
| Band17 | 5MHz  | 16QAM | 23825 | 12RB#6  | 21.98 | 15.93 | 34.77 | PASS |
| Band17 | 5MHz  | 16QAM | 23825 | 12RB#13 | 21.83 | 15.78 | 34.77 | PASS |
| Band17 | 5MHz  | 16QAM | 23825 | 25RB#0  | 21.94 | 15.89 | 34.77 | PASS |
| Band17 | 10MHz | QPSK  | 23780 | 1RB#0   | 24.04 | 17.99 | 34.77 | PASS |
| Band17 | 10MHz | QPSK  | 23780 | 1RB#24  | 24.08 | 18.03 | 34.77 | PASS |
| Band17 | 10MHz | QPSK  | 23780 | 1RB#49  | 23.86 | 17.81 | 34.77 | PASS |
| Band17 | 10MHz | QPSK  | 23780 | 25RB#0  | 23.03 | 16.98 | 34.77 | PASS |
| Band17 | 10MHz | QPSK  | 23780 | 25RB#12 | 23.08 | 17.03 | 34.77 | PASS |
| Band17 | 10MHz | QPSK  | 23780 | 25RB#25 | 23.04 | 16.99 | 34.77 | PASS |
| Band17 | 10MHz | QPSK  | 23780 | 50RB#0  | 23.02 | 16.97 | 34.77 | PASS |
| Band17 | 10MHz | QPSK  | 23790 | 1RB#0   | 24.02 | 17.97 | 34.77 | PASS |
| Band17 | 10MHz | QPSK  | 23790 | 1RB#24  | 24.08 | 18.03 | 34.77 | PASS |
| Band17 | 10MHz | QPSK  | 23790 | 1RB#49  | 23.88 | 17.83 | 34.77 | PASS |
| Band17 | 10MHz | QPSK  | 23790 | 25RB#0  | 23.00 | 16.95 | 34.77 | PASS |
| Band17 | 10MHz | QPSK  | 23790 | 25RB#12 | 23.06 | 17.01 | 34.77 | PASS |
| Band17 | 10MHz | QPSK  | 23790 | 25RB#25 | 22.94 | 16.89 | 34.77 | PASS |
| Band17 | 10MHz | QPSK  | 23790 | 50RB#0  | 22.98 | 16.93 | 34.77 | PASS |
| Band17 | 10MHz | QPSK  | 23800 | 1RB#0   | 24.00 | 17.95 | 34.77 | PASS |
| Band17 | 10MHz | QPSK  | 23800 | 1RB#24  | 24.03 | 17.98 | 34.77 | PASS |
| Band17 | 10MHz | QPSK  | 23800 | 1RB#49  | 23.85 | 17.80 | 34.77 | PASS |
| Band17 | 10MHz | QPSK  | 23800 | 25RB#0  | 22.98 | 16.93 | 34.77 | PASS |
| Band17 | 10MHz | QPSK  | 23800 | 25RB#12 | 23.06 | 17.01 | 34.77 | PASS |
| Band17 | 10MHz | QPSK  | 23800 | 25RB#25 | 22.89 | 16.84 | 34.77 | PASS |
| Band17 | 10MHz | QPSK  | 23800 | 50RB#0  | 22.96 | 16.91 | 34.77 | PASS |
| Band17 | 10MHz | 16QAM | 23780 | 1RB#0   | 23.11 | 17.06 | 34.77 | PASS |
| Band17 | 10MHz | 16QAM | 23780 | 1RB#24  | 23.17 | 17.12 | 34.77 | PASS |
| Band17 | 10MHz | 16QAM | 23780 | 1RB#49  | 22.88 | 16.83 | 34.77 | PASS |
| Band17 | 10MHz | 16QAM | 23780 | 25RB#0  | 21.97 | 15.92 | 34.77 | PASS |
| Band17 | 10MHz | 16QAM | 23780 | 25RB#12 | 21.97 | 15.92 | 34.77 | PASS |
| Band17 | 10MHz | 16QAM | 23780 | 25RB#25 | 21.91 | 15.86 | 34.77 | PASS |
| Band17 | 10MHz | 16QAM | 23780 | 50RB#0  | 21.93 | 15.88 | 34.77 | PASS |
| Band17 | 10MHz | 16QAM | 23790 | 1RB#0   | 23.05 | 17.00 | 34.77 | PASS |
| Band17 | 10MHz | 16QAM | 23790 | 1RB#24  | 23.07 | 17.02 | 34.77 | PASS |
| Band17 | 10MHz | 16QAM | 23790 | 1RB#49  | 22.86 | 16.81 | 34.77 | PASS |
| Band17 | 10MHz | 16QAM | 23790 | 25RB#0  | 21.90 | 15.85 | 34.77 | PASS |
| Band17 | 10MHz | 16QAM | 23790 | 25RB#12 | 21.95 | 15.90 | 34.77 | PASS |
| Band17 | 10MHz | 16QAM | 23790 | 25RB#25 | 21.83 | 15.78 | 34.77 | PASS |
| Band17 | 10MHz | 16QAM | 23790 | 50RB#0  | 21.85 | 15.80 | 34.77 | PASS |
| Band17 | 10MHz | 16QAM | 23800 | 1RB#0   | 23.13 | 17.08 | 34.77 | PASS |
| Band17 | 10MHz | 16QAM | 23800 | 1RB#24  | 23.12 | 17.07 | 34.77 | PASS |
| Band17 | 10MHz | 16QAM | 23800 | 1RB#49  | 22.87 | 16.82 | 34.77 | PASS |
| Band17 | 10MHz | 16QAM | 23800 | 25RB#0  | 21.86 | 15.81 | 34.77 | PASS |

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|        |       |       |       |         |       |       |       |      |
|--------|-------|-------|-------|---------|-------|-------|-------|------|
| Band17 | 10MHz | 16QAM | 23800 | 25RB#12 | 21.94 | 15.89 | 34.77 | PASS |
| Band17 | 10MHz | 16QAM | 23800 | 25RB#25 | 21.76 | 15.71 | 34.77 | PASS |
| Band17 | 10MHz | 16QAM | 23800 | 50RB#0  | 21.85 | 15.80 | 34.77 | PASS |

Remark:

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

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

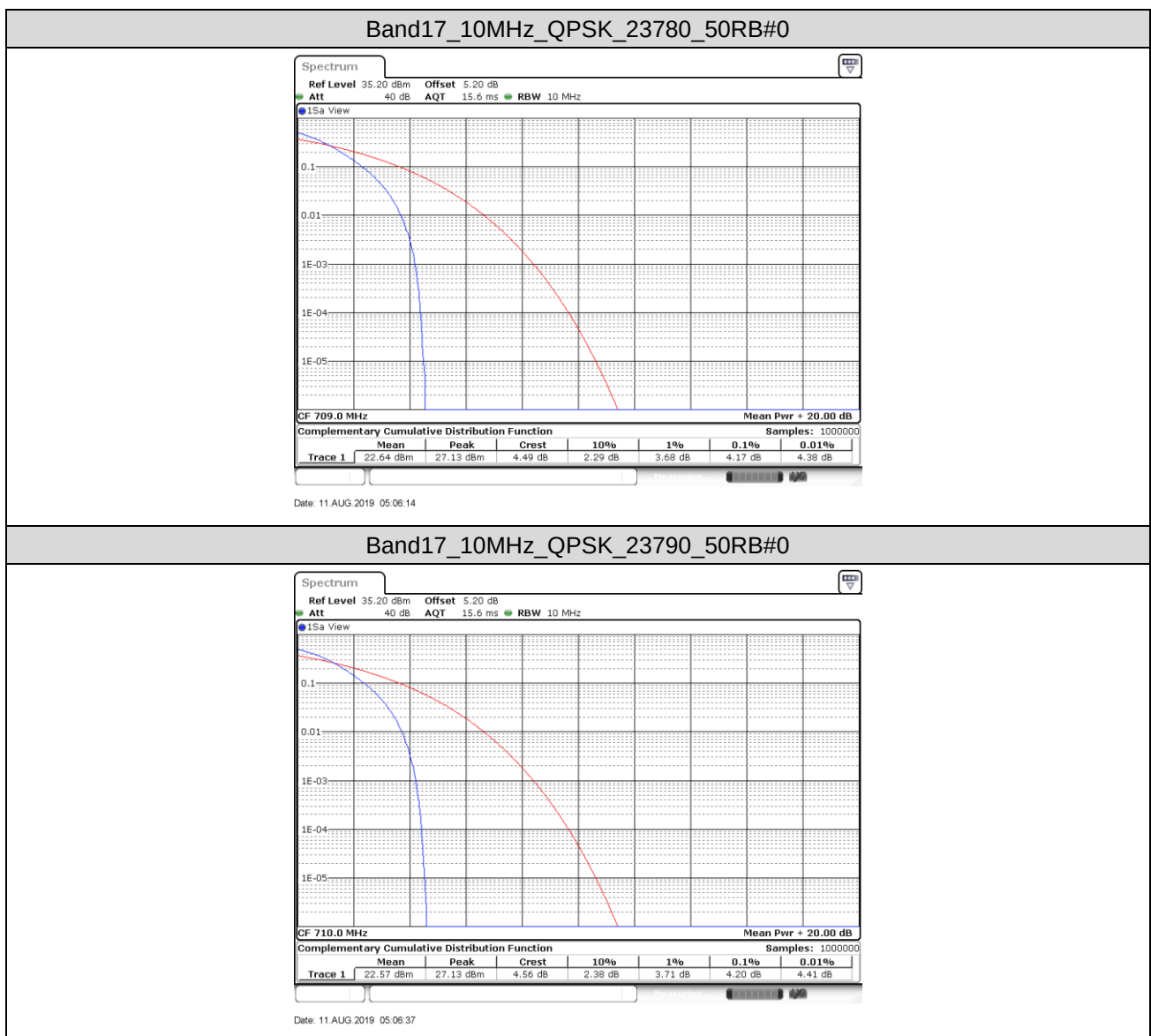
EIRP [dBm] = Conducted Power [dBm] + Gain [dBi]

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

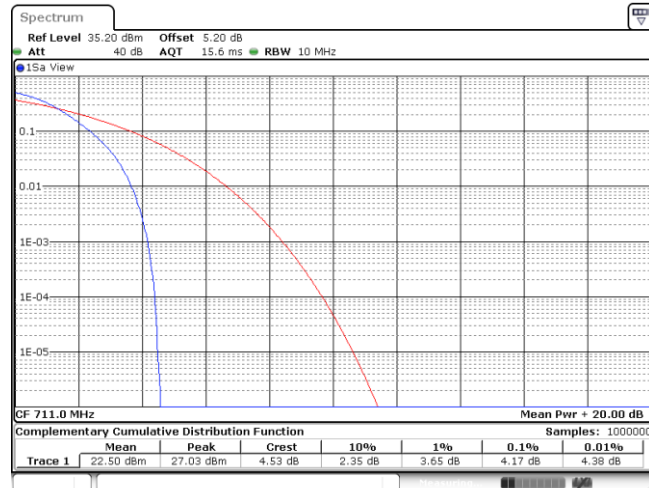
### 4.1. Test Result

| BAND   | Bandwidth | Modulation | Channel | RB Configuration | Result(dB) | Limit(dB) | Verdict |
|--------|-----------|------------|---------|------------------|------------|-----------|---------|
| Band17 | 10MHz     | QPSK       | 23780   | 50RB#0           | 4.17       | 13        | PASS    |
| Band17 | 10MHz     | QPSK       | 23790   | 50RB#0           | 4.20       | 13        | PASS    |
| Band17 | 10MHz     | QPSK       | 23800   | 50RB#0           | 4.17       | 13        | PASS    |
| Band17 | 10MHz     | 16QAM      | 23780   | 50RB#0           | 5.19       | 13        | PASS    |
| Band17 | 10MHz     | 16QAM      | 23790   | 50RB#0           | 5.22       | 13        | PASS    |
| Band17 | 10MHz     | 16QAM      | 23800   | 50RB#0           | 5.19       | 13        | PASS    |

### 4.2. Test Plots

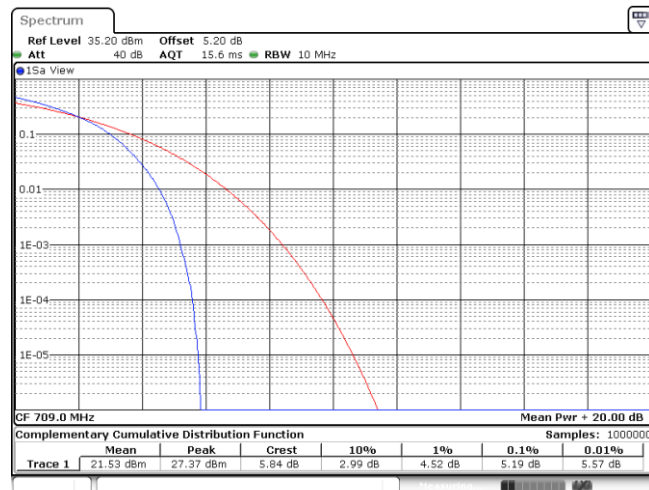


## Band17\_10MHz\_QPSK\_23800\_50RB#0



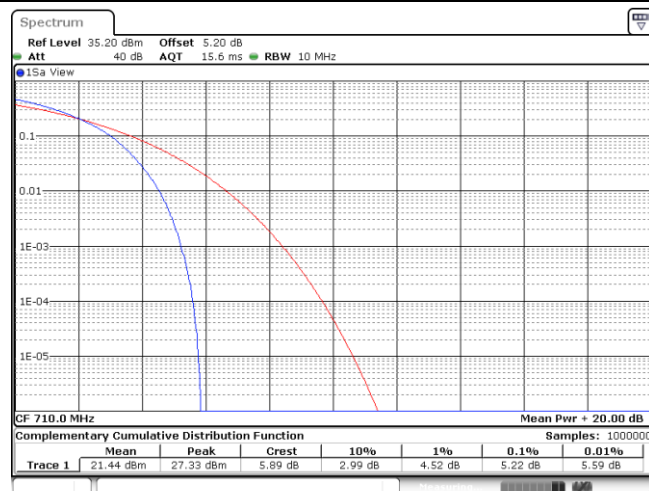
Date: 11 AUG.2019 05:07:00

## Band17\_10MHz\_16QAM\_23780\_50RB#0



Date: 11 AUG.2019 05:06:25

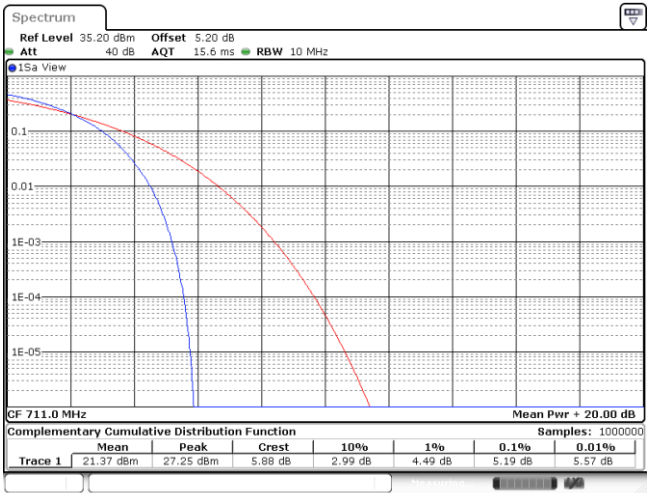
## Band17\_10MHz\_16QAM\_23790\_50RB#0



Date: 11 AUG.2019 05:06:48



Band17\_10MHz\_16QAM\_23800\_50RB#0



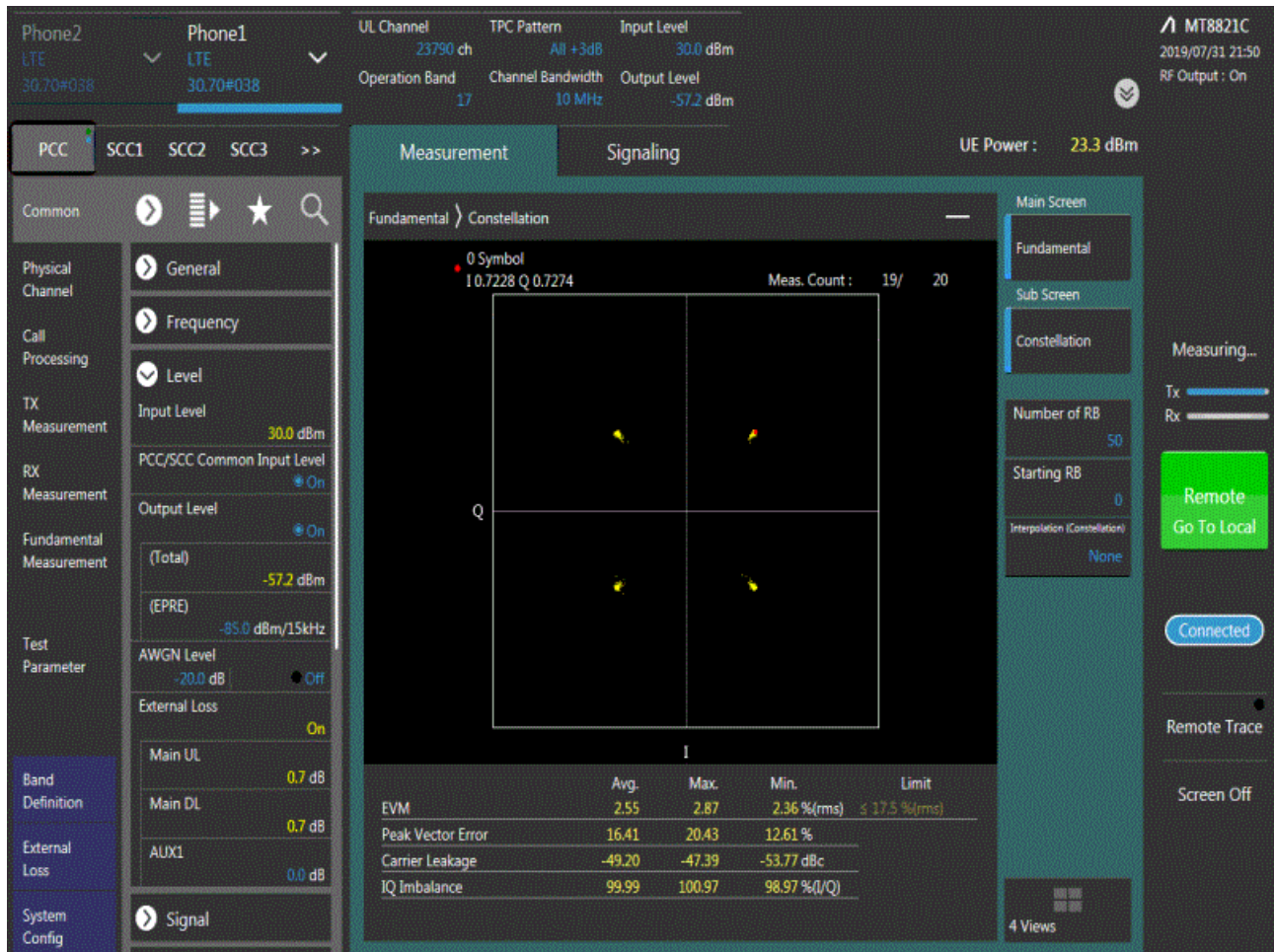
Date: 11.AUG.2019 05:07:12

## 5. Modulation Characteristics

### 5.1. Test BAND = LTE Band 17

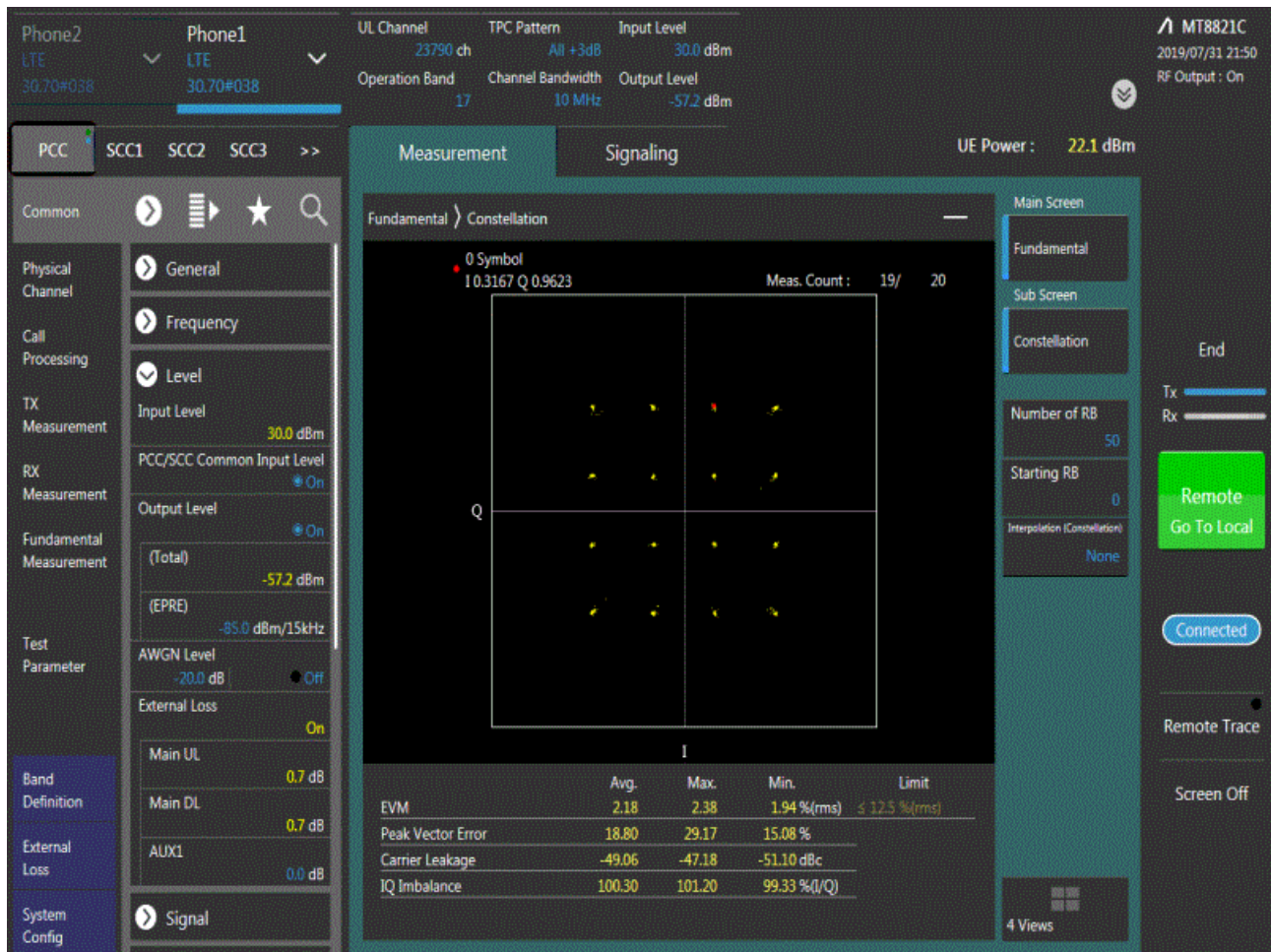
### 5.2. Test Mode = LTE /TM1 10MHz

#### 5.2.1. Test Channel = MCH



### 5.3. Test Mode = LTE /TM2 10MHz

#### 5.3.1. Test Channel = MCH

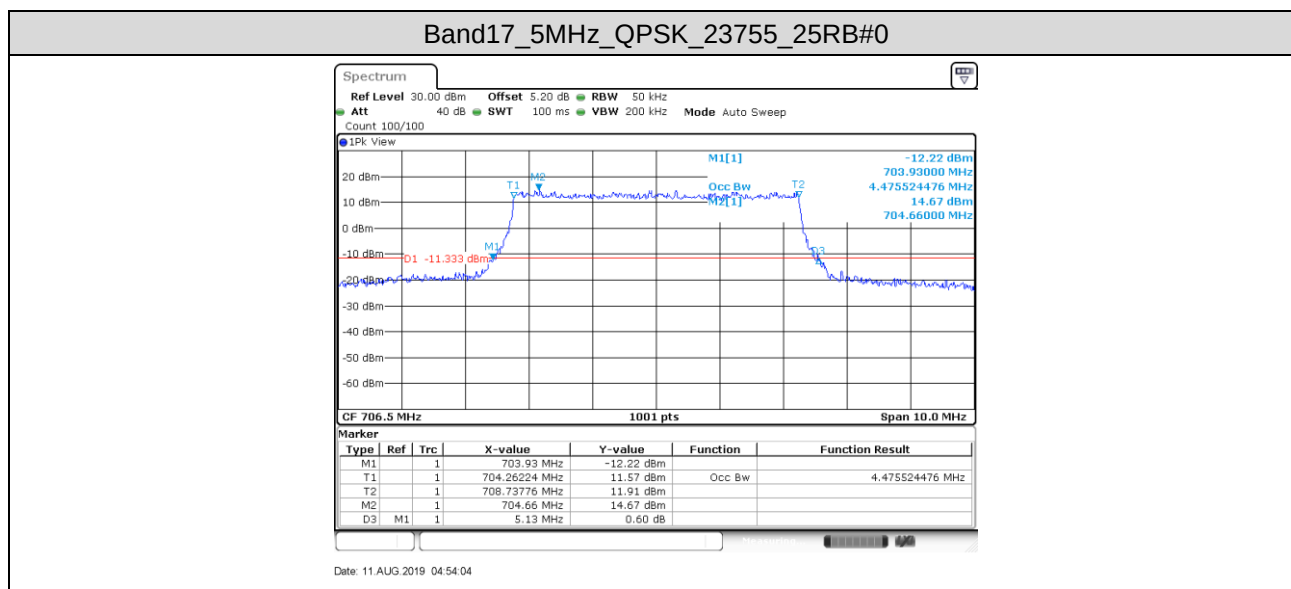


## 6. 26dB Bandwidth and Occupied Bandwidth

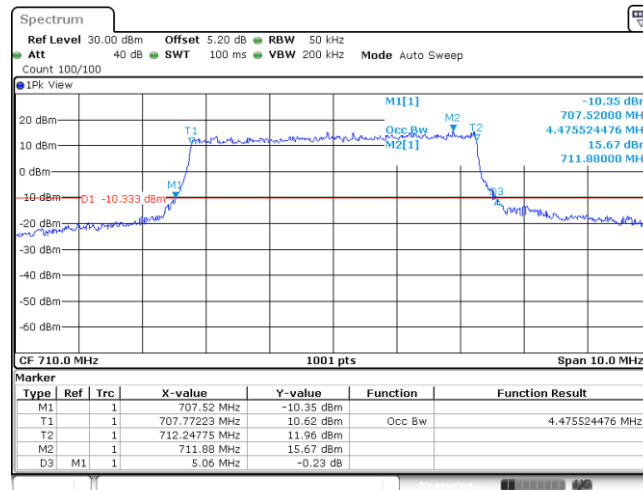
### 6.1. Test Result

| BAND   | Bandwidth | Modulation | Channel | RB Configuration | Occupied Bandwidth (MHz) | 26dB Bandwidth (MHz) | Verdict |
|--------|-----------|------------|---------|------------------|--------------------------|----------------------|---------|
| Band17 | 5MHz      | QPSK       | 23755   | 25RB#0           | 4.476                    | 5.130                | PASS    |
| Band17 | 5MHz      | QPSK       | 23790   | 25RB#0           | 4.476                    | 5.060                | PASS    |
| Band17 | 5MHz      | QPSK       | 23825   | 25RB#0           | 4.476                    | 5.070                | PASS    |
| Band17 | 5MHz      | 16QAM      | 23755   | 25RB#0           | 4.496                    | 5.110                | PASS    |
| Band17 | 5MHz      | 16QAM      | 23790   | 25RB#0           | 4.496                    | 5.080                | PASS    |
| Band17 | 5MHz      | 16QAM      | 23825   | 25RB#0           | 4.496                    | 5.050                | PASS    |
| Band17 | 10MHz     | QPSK       | 23780   | 50RB#0           | 8.951                    | 10.040               | PASS    |
| Band17 | 10MHz     | QPSK       | 23790   | 50RB#0           | 8.931                    | 9.920                | PASS    |
| Band17 | 10MHz     | QPSK       | 23800   | 50RB#0           | 8.931                    | 9.820                | PASS    |
| Band17 | 10MHz     | 16QAM      | 23780   | 50RB#0           | 8.971                    | 9.940                | PASS    |
| Band17 | 10MHz     | 16QAM      | 23790   | 50RB#0           | 8.951                    | 9.900                | PASS    |
| Band17 | 10MHz     | 16QAM      | 23800   | 50RB#0           | 8.931                    | 9.800                | PASS    |

### 6.2. Test Plots

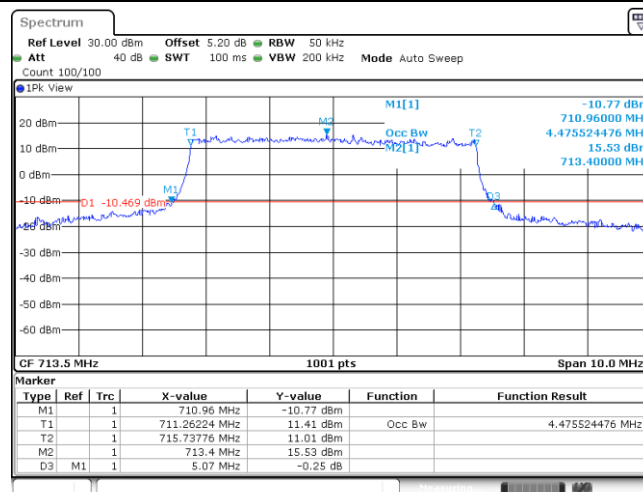


## Band17\_5MHz\_QPSK\_23790\_25RB#0



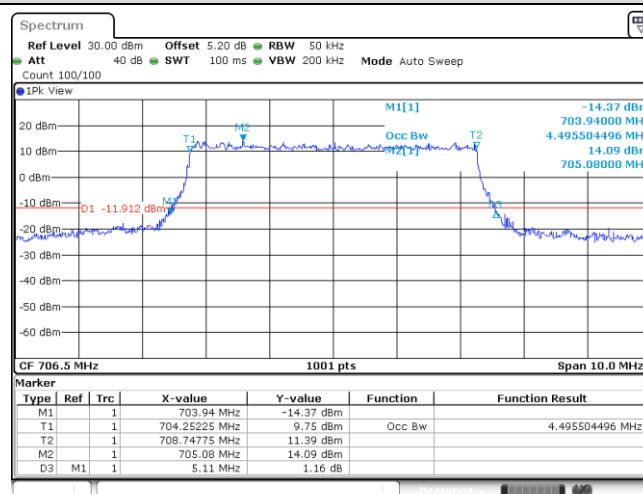
Date: 11 AUG 2019 04:54:44

## Band17\_5MHz\_QPSK\_23825\_25RB#0



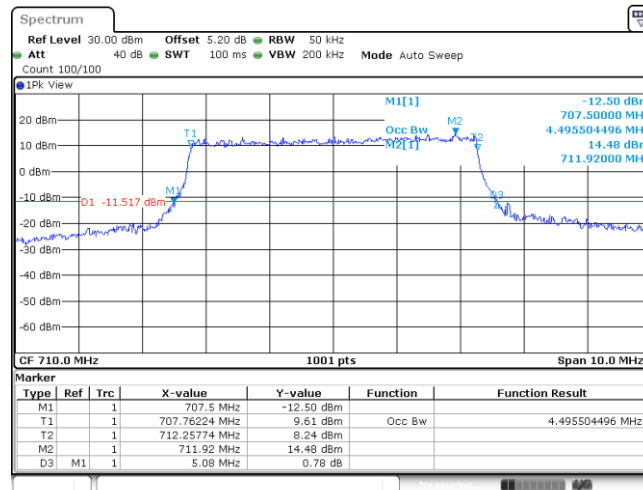
Date: 11 AUG 2019 04:55:24

## Band17\_5MHz\_16QAM\_23755\_25RB#0



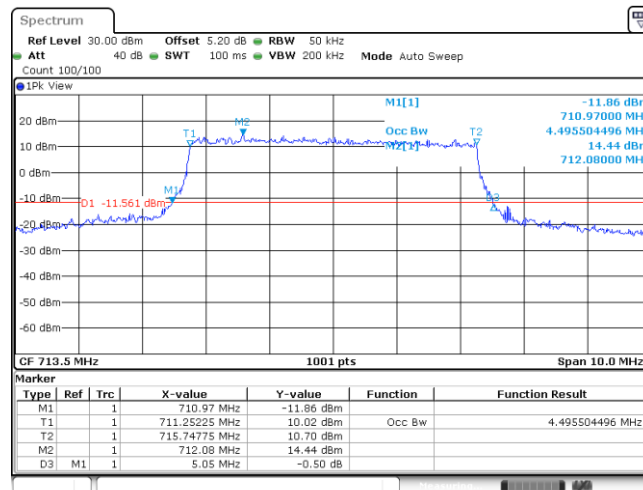
Date: 11 AUG 2019 04:54:24

## Band17\_5MHz\_16QAM\_23790\_25RB#0



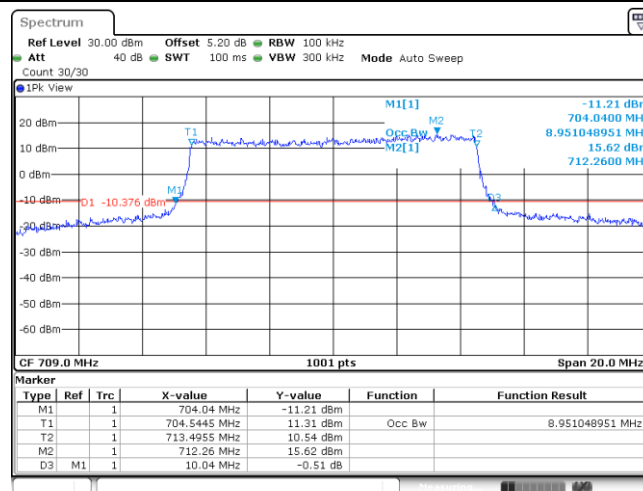
Date: 11 AUG 2019 04:55:04

## Band17\_5MHz\_16QAM\_23825\_25RB#0



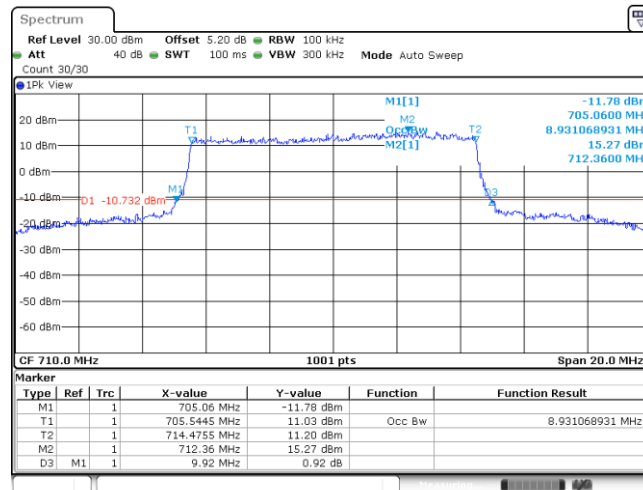
Date: 11 AUG 2019 04:55:44

## Band17\_10MHz\_QPSK\_23780\_50RB#0



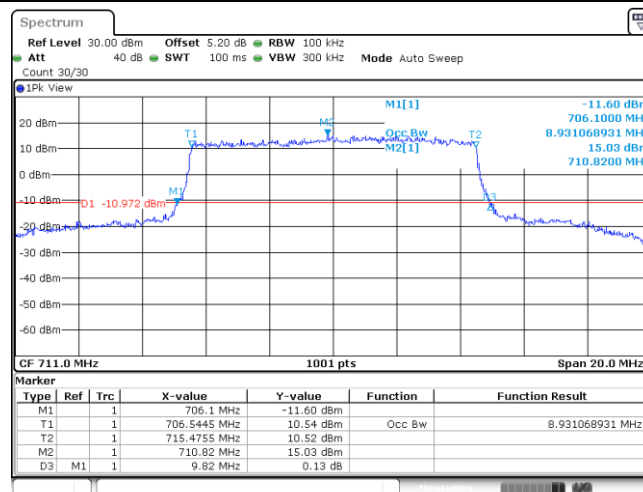
Date: 11 AUG 2019 04:56:02

## Band17\_10MHz\_QPSK\_23790\_50RB#0



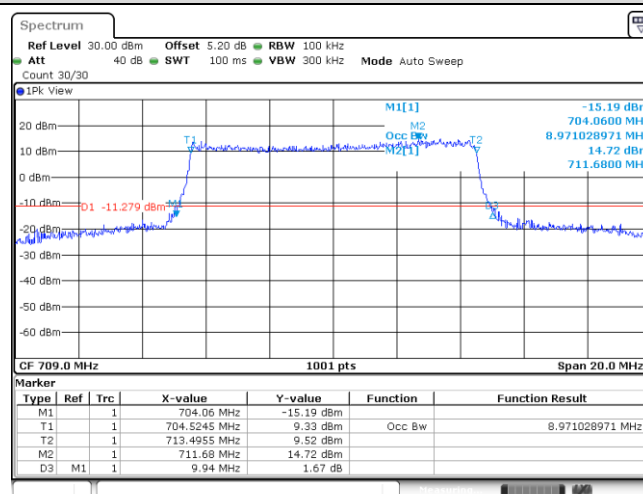
Date: 11 AUG 2019 04:56:29

## Band17\_10MHz\_QPSK\_23800\_50RB#0



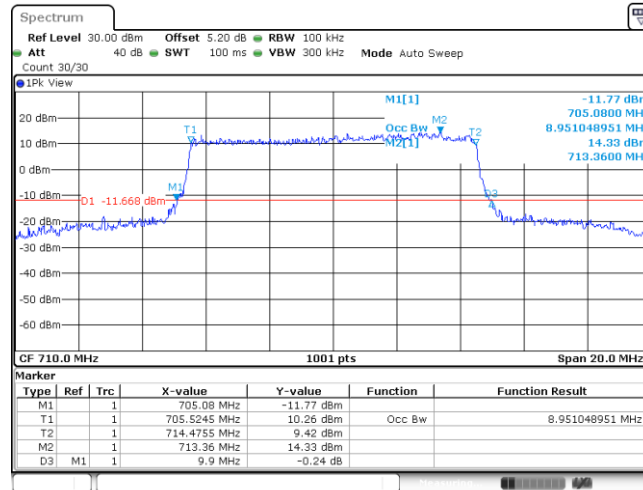
Date: 11 AUG 2019 04:56:54

## Band17\_10MHz\_16QAM\_23780\_50RB#0



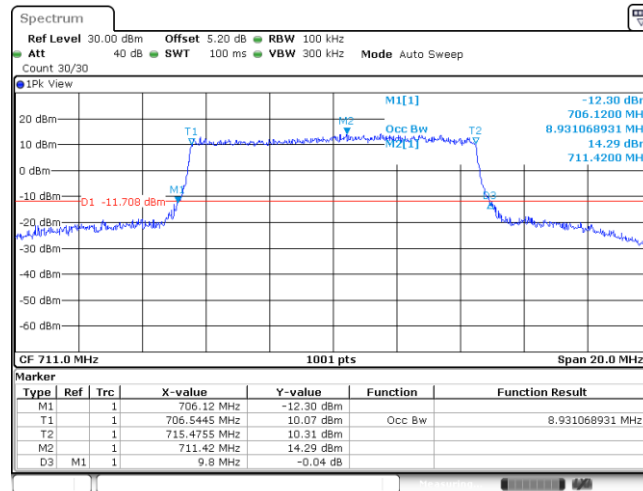
Date: 11 AUG 2019 04:56:15

## Band17\_10MHz\_16QAM\_23790\_50RB#0



Date: 11 AUG 2019 04:56:41

## Band17\_10MHz\_16QAM\_23800\_50RB#0



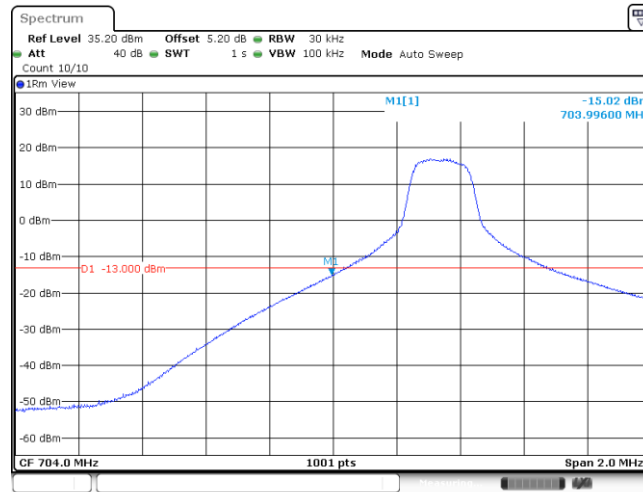
Date: 11 AUG 2019 04:57:07



## 7. Band Edge Compliance

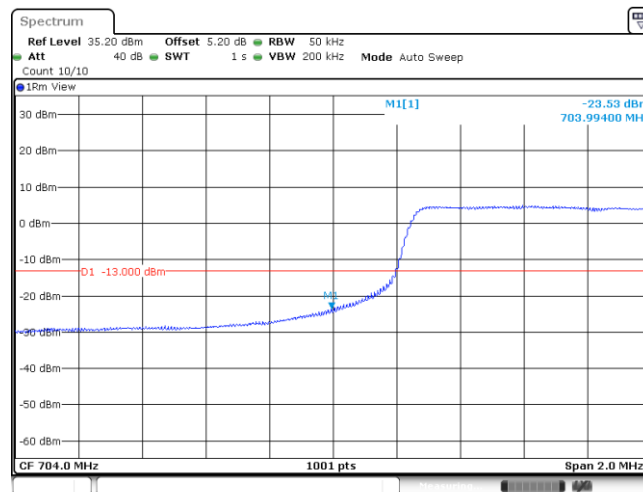
### 7.1. Test Plots

Band17\_5MHz\_QPSK\_23755\_1RB#0



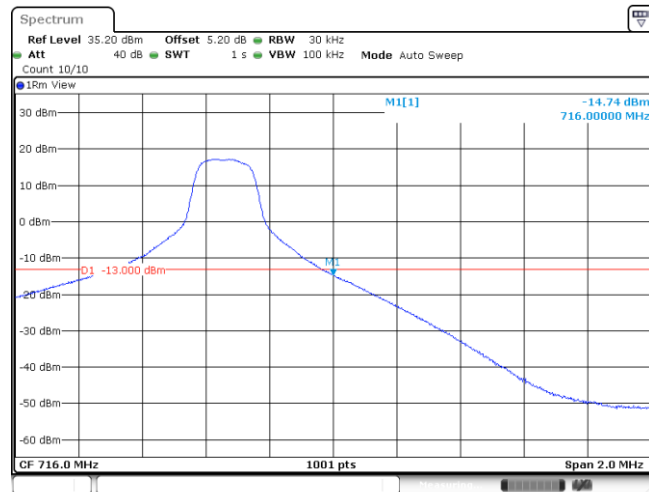
Date: 10 AUG 2019 22:54:18

Band17\_5MHz\_QPSK\_23755\_25RB#0



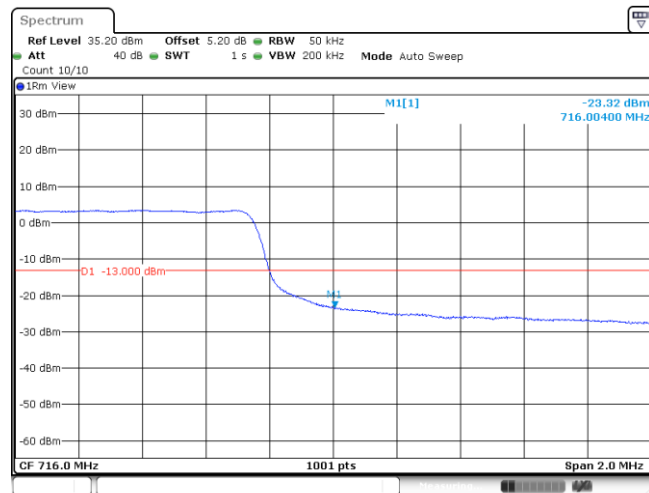
Date: 10 AUG 2019 22:55:45

## Band17\_5MHz\_QPSK\_23825\_1RB#24



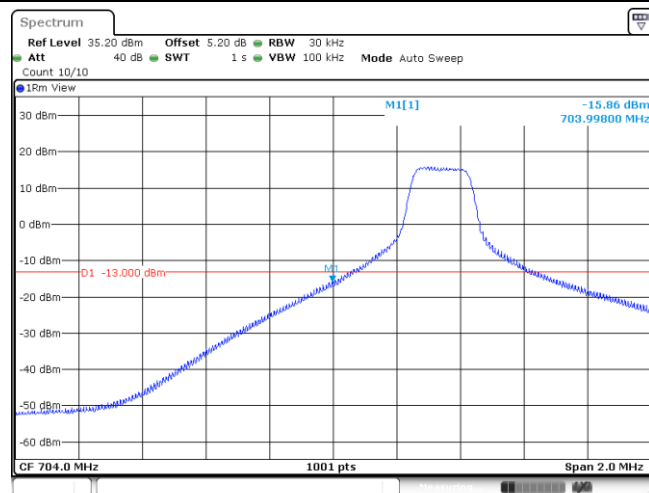
Date: 10 AUG.2019 22:55:01

## Band17\_5MHz\_QPSK\_23825\_25RB#0



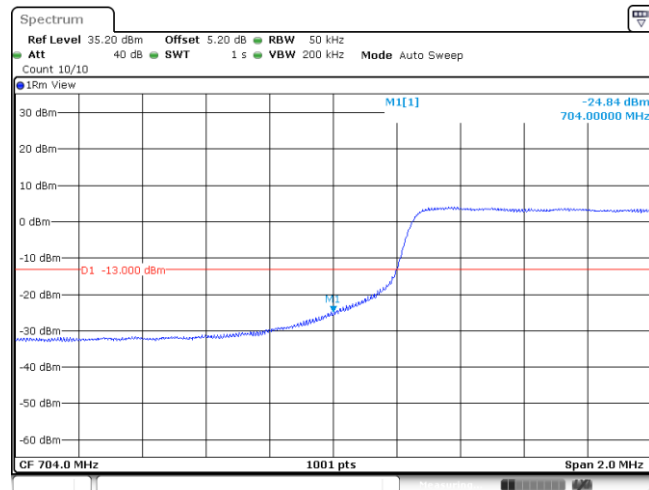
Date: 10 AUG.2019 22:56:24

## Band17\_5MHz\_16QAM\_23755\_1RB#0



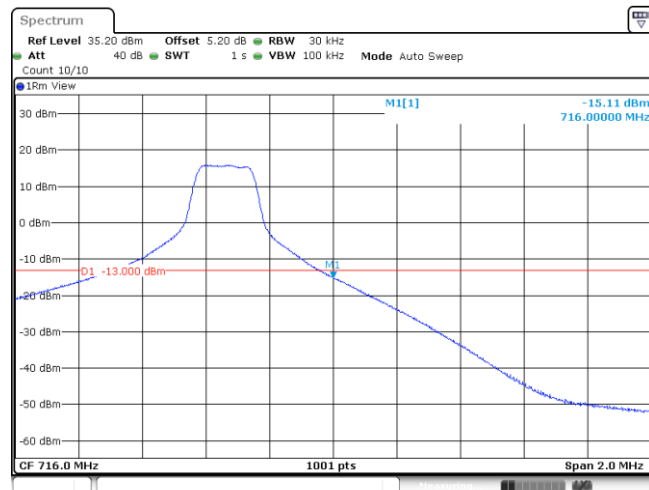
Date: 10 AUG.2019 22:54:37

## Band17\_5MHz\_16QAM\_23755\_25RB#0



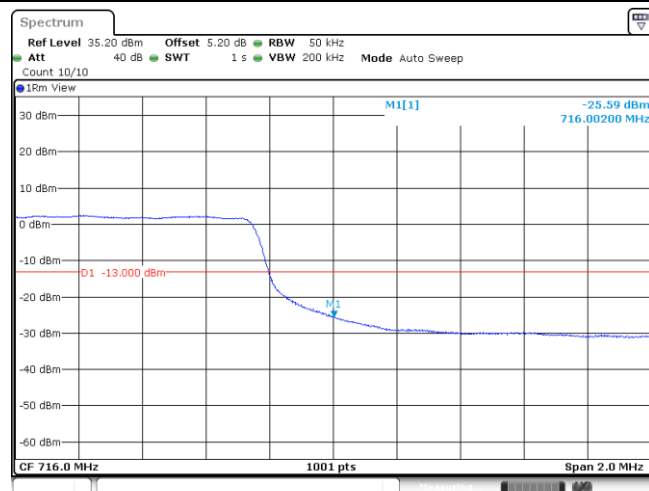
Date: 10 AUG.2019 22:56:04

## Band17\_5MHz\_16QAM\_23825\_1RB#24



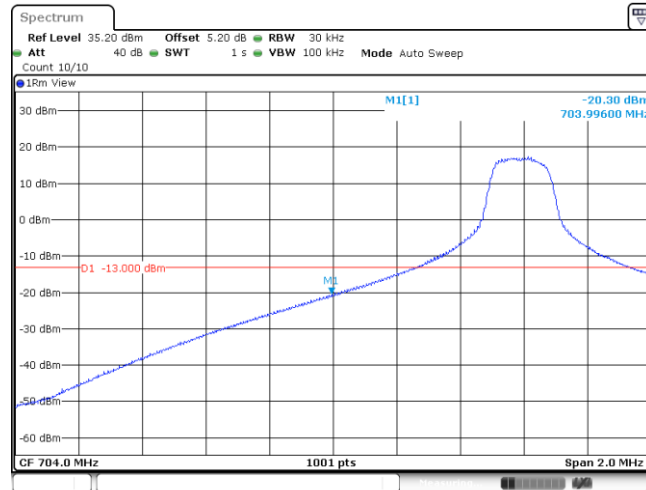
Date: 10 AUG.2019 22:55:21

## Band17\_5MHz\_16QAM\_23825\_25RB#0



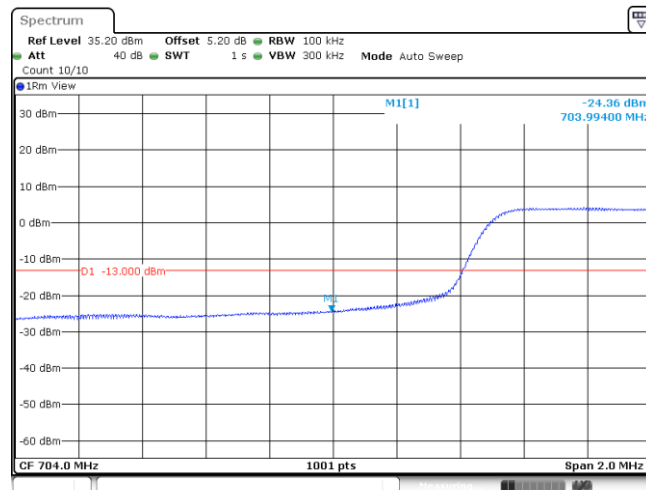
Date: 10 AUG.2019 22:56:43

## Band17\_10MHz\_QPSK\_23780\_1RB#0



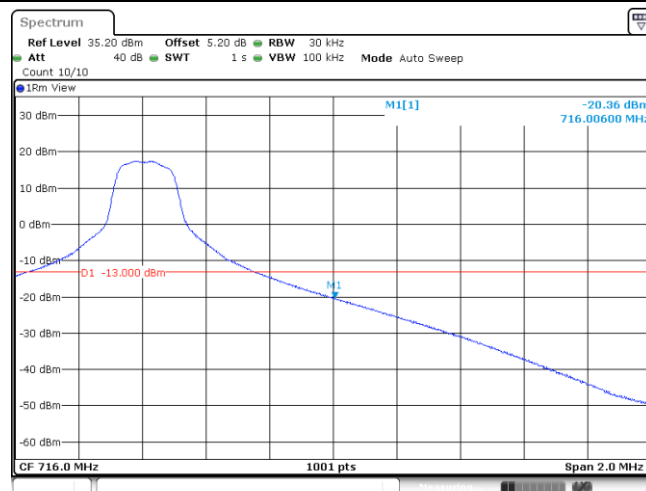
Date: 10 AUG.2019 22:57:08

## Band17\_10MHz\_QPSK\_23780\_50RB#0



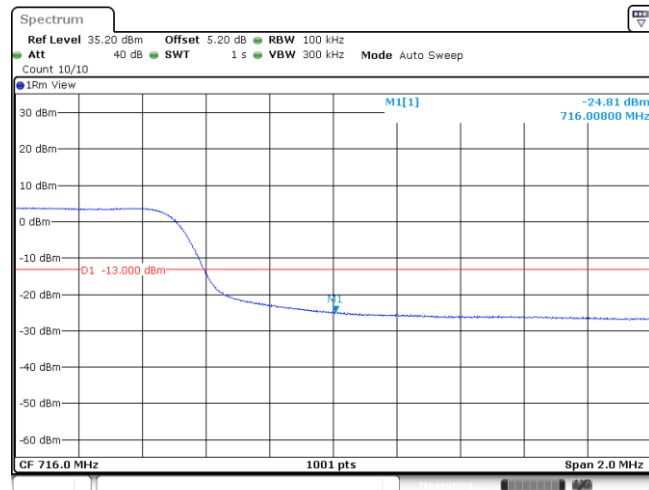
Date: 10 AUG.2019 22:58:35

## Band17\_10MHz\_QPSK\_23800\_1RB#49



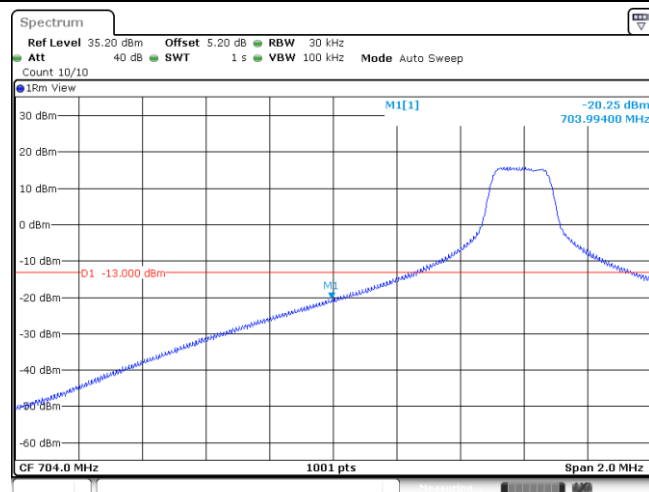
Date: 10 AUG.2019 22:57:51

## Band17\_10MHz\_QPSK\_23800\_50RB#0



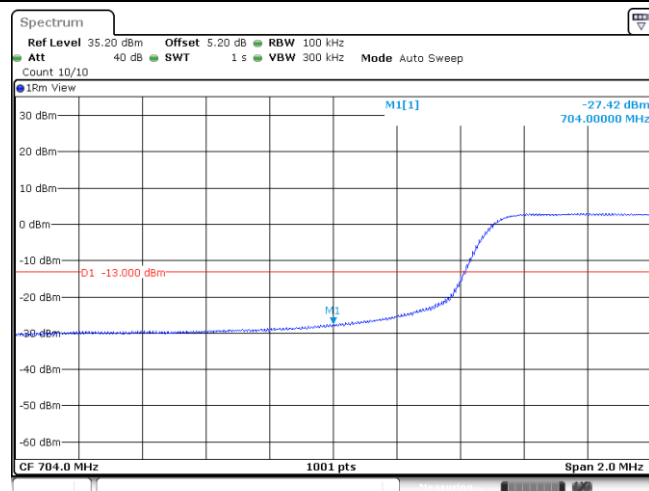
Date: 10 AUG.2019 22:59:14

## Band17\_10MHz\_16QAM\_23780\_1RB#0



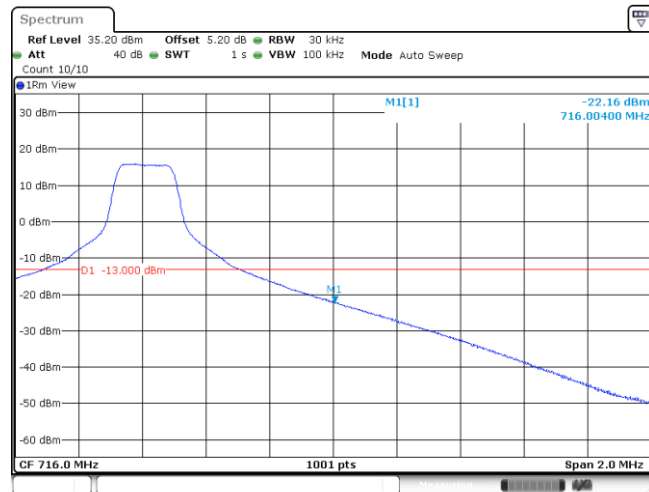
Date: 10 AUG.2019 22:57:27

## Band17\_10MHz\_16QAM\_23780\_50RB#0



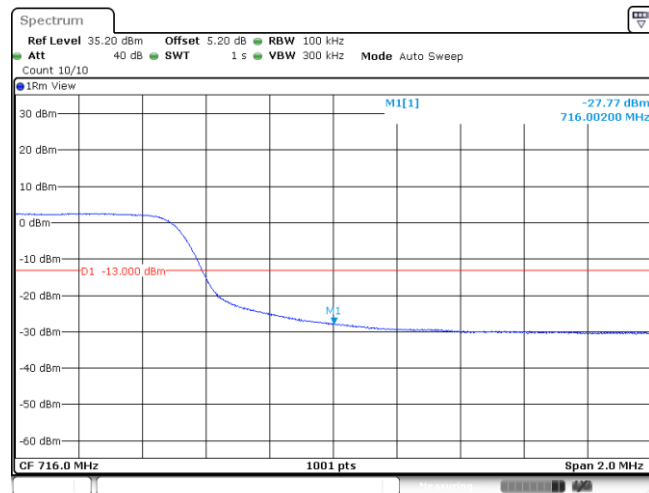
Date: 10 AUG.2019 22:58:54

## Band17\_10MHz\_16QAM\_23800\_1RB#49



Date: 10 AUG.2019 22:58:11

## Band17\_10MHz\_16QAM\_23800\_50RB#0



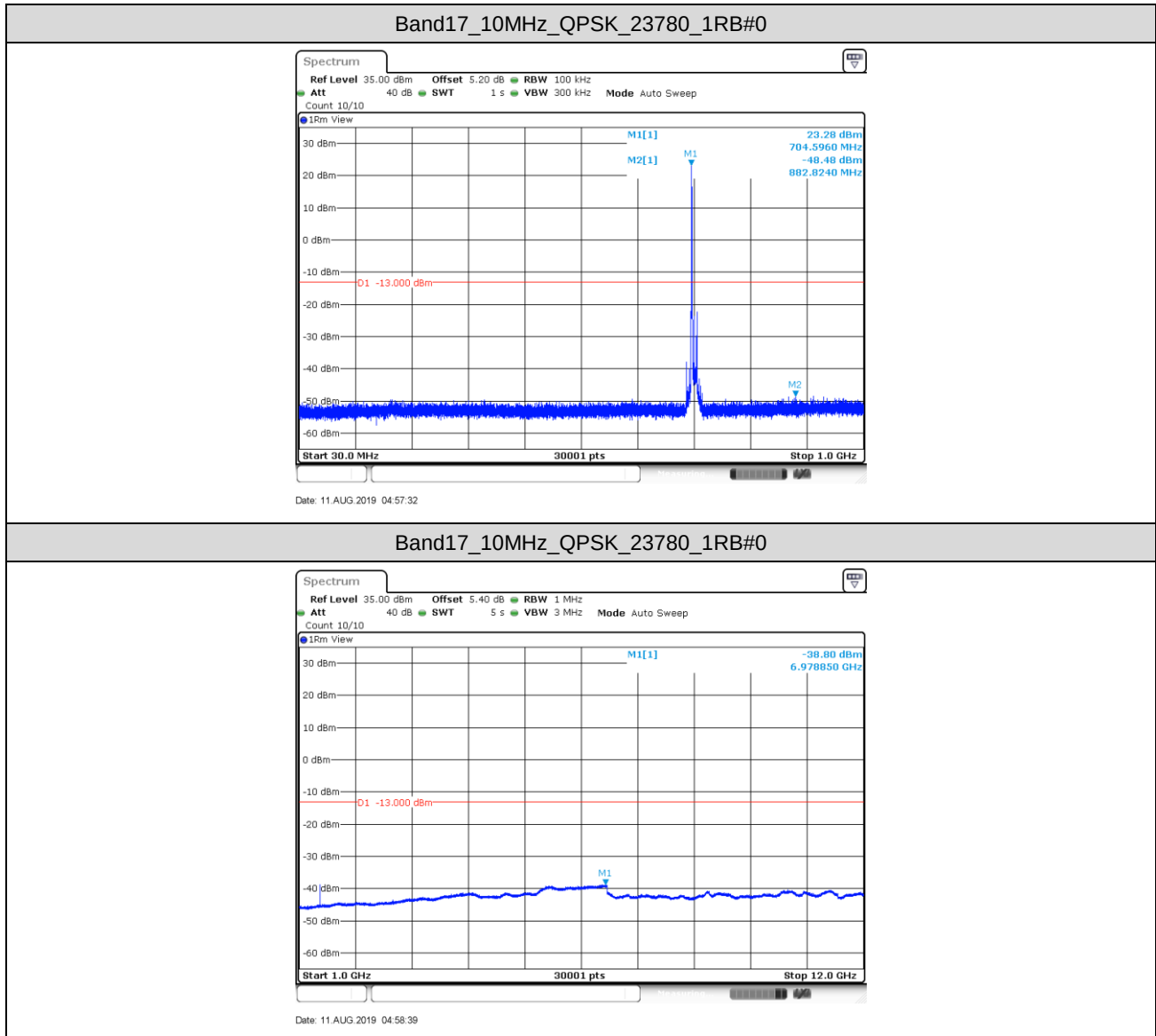
Date: 10 AUG.2019 22:59:33

## 8. Spurious Emission at Antenna Terminal

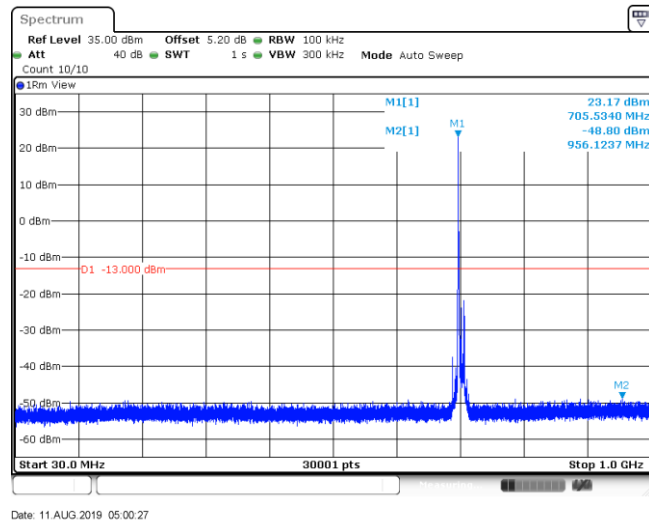
Remark1: For the averaged unwanted emissions measurements, the measurement points in each sweep is greater than twice the Span/RBW in order to ensure bin-to-bin spacing of  $< RBW/2$  so that narrowband signals are not lost between frequency bins. As to the present test item, the "Measurement Points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

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

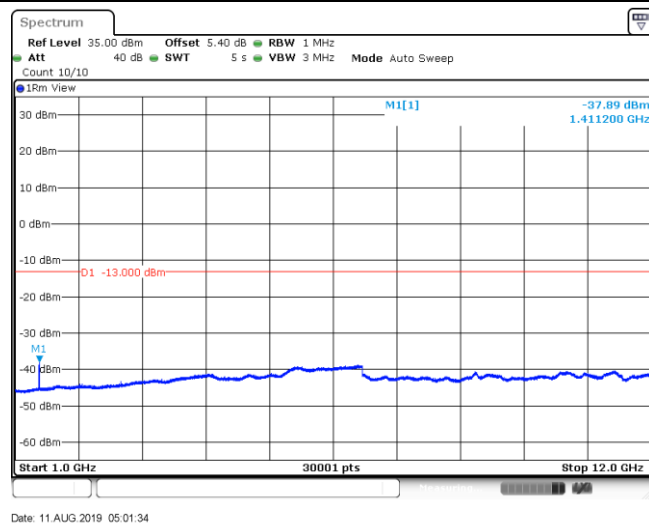
### 8.1. Test Plots



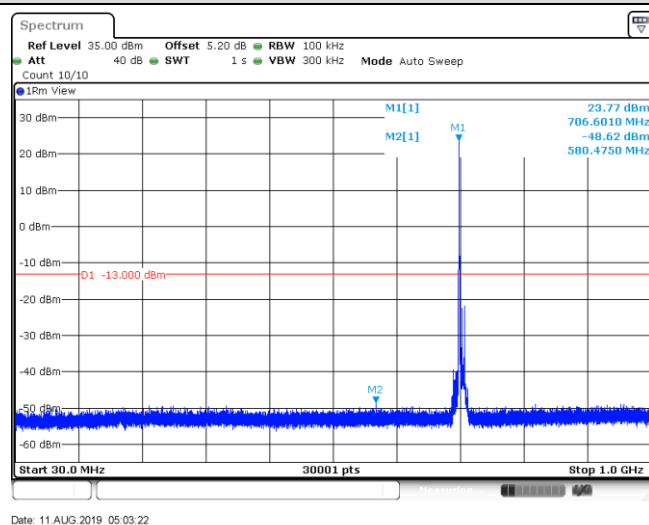
## Band17\_10MHz\_QPSK\_23790\_1RB#0



## Band17\_10MHz\_QPSK\_23790\_1RB#0

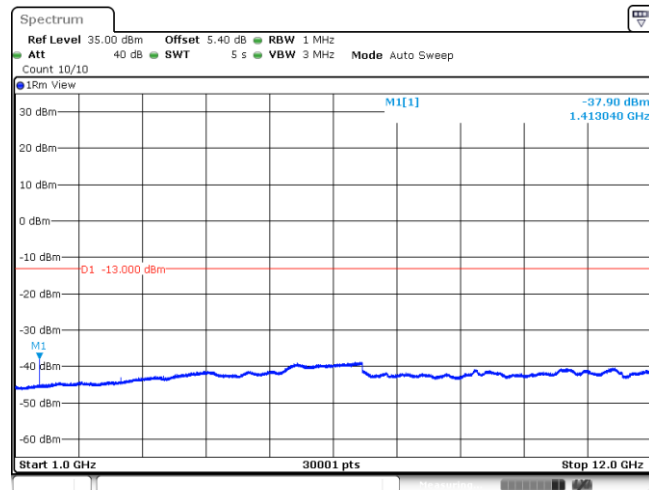


## Band17\_10MHz\_QPSK\_23800\_1RB#0



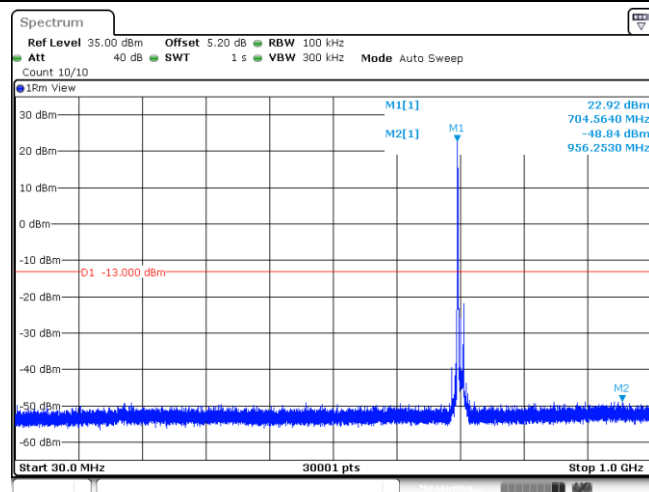


## Band17\_10MHz\_QPSK\_23800\_1RB#0



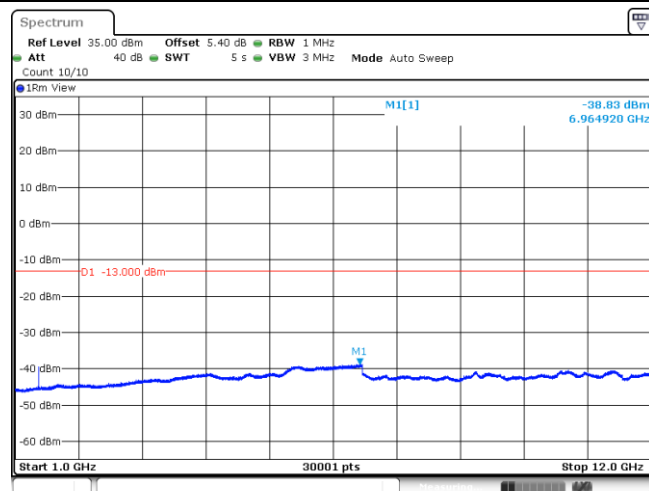
Date: 11 AUG.2019 05:04:30

## Band17\_10MHz\_16QAM\_23780\_1RB#0



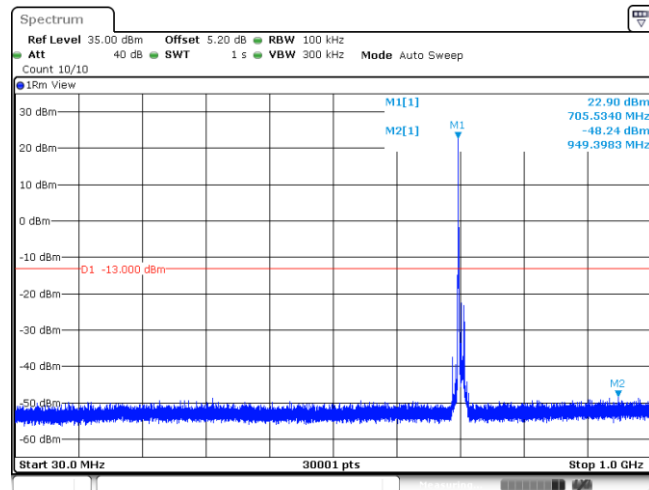
Date: 11 AUG.2019 04:58:59

## Band17\_10MHz\_16QAM\_23780\_1RB#0



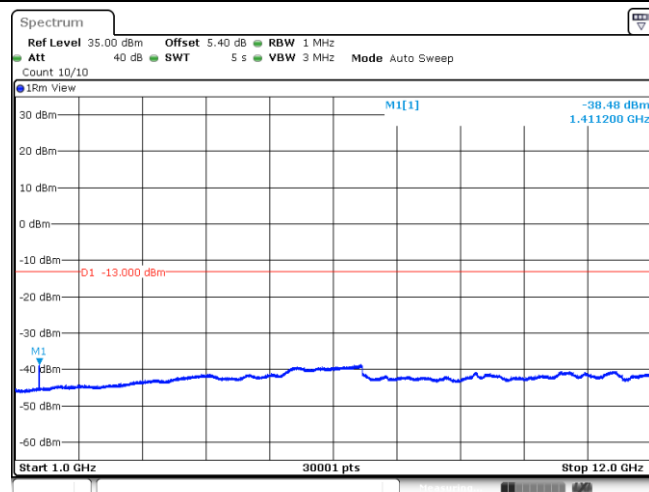
Date: 11 AUG.2019 05:00:07

## Band17\_10MHz\_16QAM\_23790\_1RB#0



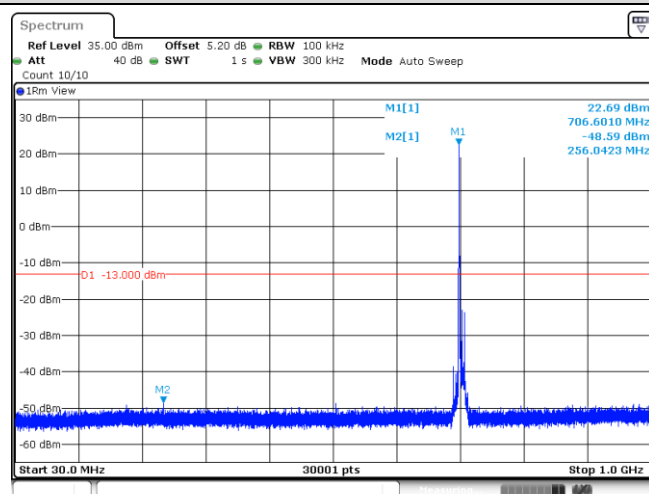
Date: 11 AUG.2019 05:01:55

## Band17\_10MHz\_16QAM\_23790\_1RB#0



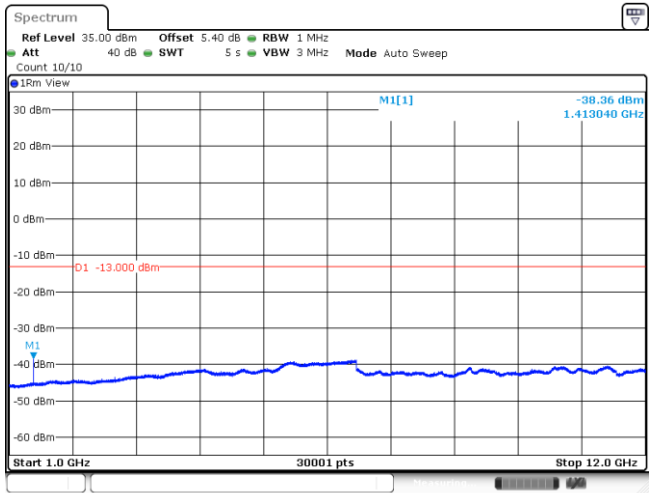
Date: 11 AUG.2019 05:03:02

## Band17\_10MHz\_16QAM\_23800\_1RB#0



Date: 11 AUG.2019 05:04:50

Band17\_10MHz\_16QAM\_23800\_1RB#0



Date: 11.AUG.2019 05:05:58

## 9. Frequency Stability

### 9.1. Frequency Vs Voltage

| Voltage |           |            |         |                 |                  |                     |                   |                    |                |         |
|---------|-----------|------------|---------|-----------------|------------------|---------------------|-------------------|--------------------|----------------|---------|
| BAND    | Bandwidth | Modulation | Channel | RB<br>Configure | Voltage<br>[Vdc] | Temperature<br>(°C) | Deviation<br>(Hz) | Deviation<br>(ppm) | Limit<br>(ppm) | Verdict |
| Band17  | 10MHz     | QPSK       | 23780   | 50RB#0          | VL               | NT                  | -4.70             | -0.006629          | ±2.5           | PASS    |
| Band17  | 10MHz     | QPSK       | 23780   | 50RB#0          | VN               | NT                  | -1.60             | -0.002257          | ±2.5           | PASS    |
| Band17  | 10MHz     | QPSK       | 23780   | 50RB#0          | VH               | NT                  | -1.40             | -0.001975          | ±2.5           | PASS    |
| Band17  | 10MHz     | QPSK       | 23790   | 50RB#0          | VL               | NT                  | -7.00             | -0.009859          | ±2.5           | PASS    |
| Band17  | 10MHz     | QPSK       | 23790   | 50RB#0          | VN               | NT                  | -6.40             | -0.009014          | ±2.5           | PASS    |
| Band17  | 10MHz     | QPSK       | 23790   | 50RB#0          | VH               | NT                  | -8.50             | -0.011972          | ±2.5           | PASS    |
| Band17  | 10MHz     | QPSK       | 23800   | 50RB#0          | VL               | NT                  | -6.10             | -0.008579          | ±2.5           | PASS    |
| Band17  | 10MHz     | QPSK       | 23800   | 50RB#0          | VN               | NT                  | -7.20             | -0.010127          | ±2.5           | PASS    |
| Band17  | 10MHz     | QPSK       | 23800   | 50RB#0          | VH               | NT                  | -6.10             | -0.008579          | ±2.5           | PASS    |
| Band17  | 10MHz     | 16QAM      | 23780   | 50RB#0          | VL               | NT                  | -9.40             | -0.013258          | ±2.5           | PASS    |
| Band17  | 10MHz     | 16QAM      | 23780   | 50RB#0          | VN               | NT                  | -5.40             | -0.007616          | ±2.5           | PASS    |
| Band17  | 10MHz     | 16QAM      | 23780   | 50RB#0          | VH               | NT                  | -10.20            | -0.014386          | ±2.5           | PASS    |
| Band17  | 10MHz     | 16QAM      | 23790   | 50RB#0          | VL               | NT                  | -9.00             | -0.012676          | ±2.5           | PASS    |
| Band17  | 10MHz     | 16QAM      | 23790   | 50RB#0          | VN               | NT                  | -7.40             | -0.010423          | ±2.5           | PASS    |
| Band17  | 10MHz     | 16QAM      | 23790   | 50RB#0          | VH               | NT                  | -1.00             | -0.001408          | ±2.5           | PASS    |
| Band17  | 10MHz     | 16QAM      | 23800   | 50RB#0          | VL               | NT                  | -1.70             | -0.002391          | ±2.5           | PASS    |
| Band17  | 10MHz     | 16QAM      | 23800   | 50RB#0          | VN               | NT                  | -0.40             | -0.000563          | ±2.5           | PASS    |
| Band17  | 10MHz     | 16QAM      | 23800   | 50RB#0          | VH               | NT                  | -5.60             | -0.007876          | ±2.5           | PASS    |

## 9.2. Frequency Vs Temperature

| Temperature |           |            |         |              |               |                  |                |                 |             |         |
|-------------|-----------|------------|---------|--------------|---------------|------------------|----------------|-----------------|-------------|---------|
| BAND        | Bandwidth | Modulation | Channel | RB Configure | Voltage [Vdc] | Temperature (°C) | Deviation (Hz) | Deviation (ppm) | Limit (ppm) | Verdict |
| Band17      | 10MHz     | QPSK       | 23780   | 50RB#0       | NV            | -30              | -12.30         | -0.017348       | ± 2.5       | PASS    |
| Band17      | 10MHz     | QPSK       | 23780   | 50RB#0       | NV            | -20              | -9.00          | -0.012694       | ± 2.5       | PASS    |
| Band17      | 10MHz     | QPSK       | 23780   | 50RB#0       | NV            | 0                | -6.80          | -0.009591       | ± 2.5       | PASS    |
| Band17      | 10MHz     | QPSK       | 23780   | 50RB#0       | NV            | 10               | -9.60          | -0.013540       | ± 2.5       | PASS    |
| Band17      | 10MHz     | QPSK       | 23780   | 50RB#0       | NV            | 20               | -9.10          | -0.012835       | ± 2.5       | PASS    |
| Band17      | 10MHz     | QPSK       | 23780   | 50RB#0       | NV            | 30               | -6.20          | -0.008745       | ± 2.5       | PASS    |
| Band17      | 10MHz     | QPSK       | 23780   | 50RB#0       | NV            | 40               | -5.90          | -0.008322       | ± 2.5       | PASS    |
| Band17      | 10MHz     | QPSK       | 23780   | 50RB#0       | NV            | 50               | -6.30          | -0.008886       | ± 2.5       | PASS    |
| Band17      | 10MHz     | QPSK       | 23790   | 50RB#0       | NV            | -30              | -6.50          | -0.009155       | ± 2.5       | PASS    |
| Band17      | 10MHz     | QPSK       | 23790   | 50RB#0       | NV            | -20              | -6.30          | -0.008873       | ± 2.5       | PASS    |
| Band17      | 10MHz     | QPSK       | 23790   | 50RB#0       | NV            | 0                | -8.50          | -0.011972       | ± 2.5       | PASS    |
| Band17      | 10MHz     | QPSK       | 23790   | 50RB#0       | NV            | 10               | -7.40          | -0.010423       | ± 2.5       | PASS    |
| Band17      | 10MHz     | QPSK       | 23790   | 50RB#0       | NV            | 20               | -9.90          | -0.013944       | ± 2.5       | PASS    |
| Band17      | 10MHz     | QPSK       | 23790   | 50RB#0       | NV            | 30               | -6.80          | -0.009577       | ± 2.5       | PASS    |
| Band17      | 10MHz     | QPSK       | 23790   | 50RB#0       | NV            | 40               | -9.50          | -0.013380       | ± 2.5       | PASS    |
| Band17      | 10MHz     | QPSK       | 23790   | 50RB#0       | NV            | 50               | -9.40          | -0.013239       | ± 2.5       | PASS    |
| Band17      | 10MHz     | QPSK       | 23800   | 50RB#0       | NV            | -30              | -6.50          | -0.009142       | ± 2.5       | PASS    |
| Band17      | 10MHz     | QPSK       | 23800   | 50RB#0       | NV            | -20              | -6.60          | -0.009283       | ± 2.5       | PASS    |
| Band17      | 10MHz     | QPSK       | 23800   | 50RB#0       | NV            | 0                | -3.60          | -0.005063       | ± 2.5       | PASS    |
| Band17      | 10MHz     | QPSK       | 23800   | 50RB#0       | NV            | 10               | -5.50          | -0.007736       | ± 2.5       | PASS    |
| Band17      | 10MHz     | QPSK       | 23800   | 50RB#0       | NV            | 20               | -0.80          | -0.001125       | ± 2.5       | PASS    |
| Band17      | 10MHz     | QPSK       | 23800   | 50RB#0       | NV            | 30               | -2.00          | -0.002813       | ± 2.5       | PASS    |
| Band17      | 10MHz     | QPSK       | 23800   | 50RB#0       | NV            | 40               | -5.20          | -0.007314       | ± 2.5       | PASS    |
| Band17      | 10MHz     | QPSK       | 23800   | 50RB#0       | NV            | 50               | -5.30          | -0.007454       | ± 2.5       | PASS    |
| Band17      | 10MHz     | 16QAM      | 23780   | 50RB#0       | NV            | -30              | -5.50          | -0.007757       | ± 2.5       | PASS    |
| Band17      | 10MHz     | 16QAM      | 23780   | 50RB#0       | NV            | -20              | -3.20          | -0.004513       | ± 2.5       | PASS    |
| Band17      | 10MHz     | 16QAM      | 23780   | 50RB#0       | NV            | 0                | -5.50          | -0.007757       | ± 2.5       | PASS    |
| Band17      | 10MHz     | 16QAM      | 23780   | 50RB#0       | NV            | 10               | -3.70          | -0.005219       | ± 2.5       | PASS    |
| Band17      | 10MHz     | 16QAM      | 23780   | 50RB#0       | NV            | 20               | -3.50          | -0.004937       | ± 2.5       | PASS    |
| Band17      | 10MHz     | 16QAM      | 23780   | 50RB#0       | NV            | 30               | -7.90          | -0.011142       | ± 2.5       | PASS    |
| Band17      | 10MHz     | 16QAM      | 23780   | 50RB#0       | NV            | 40               | -4.80          | -0.006770       | ± 2.5       | PASS    |
| Band17      | 10MHz     | 16QAM      | 23780   | 50RB#0       | NV            | 50               | -1.50          | -0.002116       | ± 2.5       | PASS    |
| Band17      | 10MHz     | 16QAM      | 23790   | 50RB#0       | NV            | -30              | -5.00          | -0.007042       | ± 2.5       | PASS    |
| Band17      | 10MHz     | 16QAM      | 23790   | 50RB#0       | NV            | -20              | -6.00          | -0.008451       | ± 2.5       | PASS    |
| Band17      | 10MHz     | 16QAM      | 23790   | 50RB#0       | NV            | 0                | -7.10          | -0.010000       | ± 2.5       | PASS    |
| Band17      | 10MHz     | 16QAM      | 23790   | 50RB#0       | NV            | 10               | -6.10          | -0.008592       | ± 2.5       | PASS    |
| Band17      | 10MHz     | 16QAM      | 23790   | 50RB#0       | NV            | 20               | -7.90          | -0.011127       | ± 2.5       | PASS    |
| Band17      | 10MHz     | 16QAM      | 23790   | 50RB#0       | NV            | 30               | -3.70          | -0.005211       | ± 2.5       | PASS    |

# JianYan Testing Group Shenzhen Co., Ltd.

Report No: JYTSZ-R12-2200350

|        |       |       |       |        |    |     |        |           |       |      |
|--------|-------|-------|-------|--------|----|-----|--------|-----------|-------|------|
| Band17 | 10MHz | 16QAM | 23790 | 50RB#0 | NV | 40  | -7.10  | -0.010000 | ± 2.5 | PASS |
| Band17 | 10MHz | 16QAM | 23790 | 50RB#0 | NV | 50  | -10.20 | -0.014366 | ± 2.5 | PASS |
| Band17 | 10MHz | 16QAM | 23800 | 50RB#0 | NV | -30 | -7.80  | -0.010970 | ± 2.5 | PASS |
| Band17 | 10MHz | 16QAM | 23800 | 50RB#0 | NV | -20 | -5.30  | -0.007454 | ± 2.5 | PASS |
| Band17 | 10MHz | 16QAM | 23800 | 50RB#0 | NV | 0   | -8.60  | -0.012096 | ± 2.5 | PASS |
| Band17 | 10MHz | 16QAM | 23800 | 50RB#0 | NV | 10  | -12.60 | -0.017722 | ± 2.5 | PASS |
| Band17 | 10MHz | 16QAM | 23800 | 50RB#0 | NV | 20  | -2.20  | -0.003094 | ± 2.5 | PASS |
| Band17 | 10MHz | 16QAM | 23800 | 50RB#0 | NV | 30  | -1.90  | -0.002672 | ± 2.5 | PASS |
| Band17 | 10MHz | 16QAM | 23800 | 50RB#0 | NV | 40  | -0.80  | -0.001125 | ± 2.5 | PASS |
| Band17 | 10MHz | 16QAM | 23800 | 50RB#0 | NV | 50  | -5.10  | -0.007173 | ± 2.5 | PASS |

The End