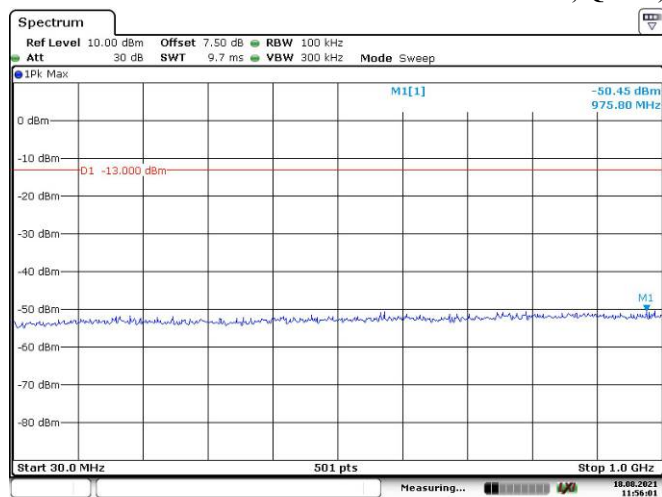
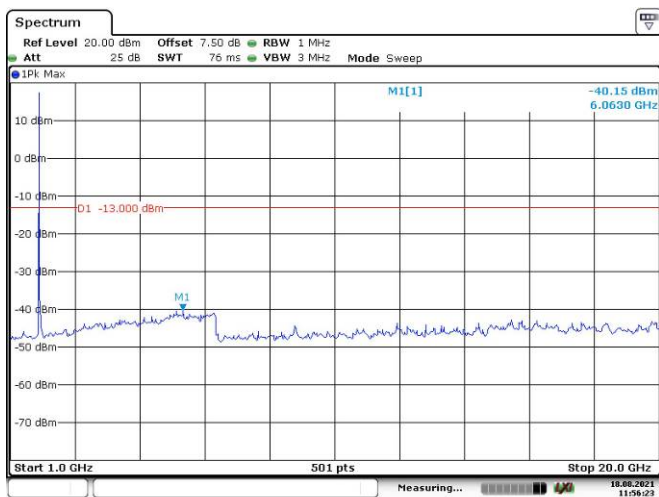


## 10M, QPSK, Low Channel

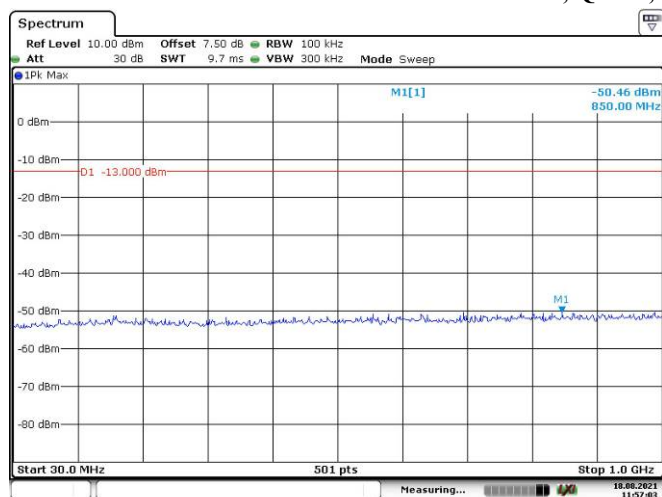


Date: 18.AUG.2021 11:56:01

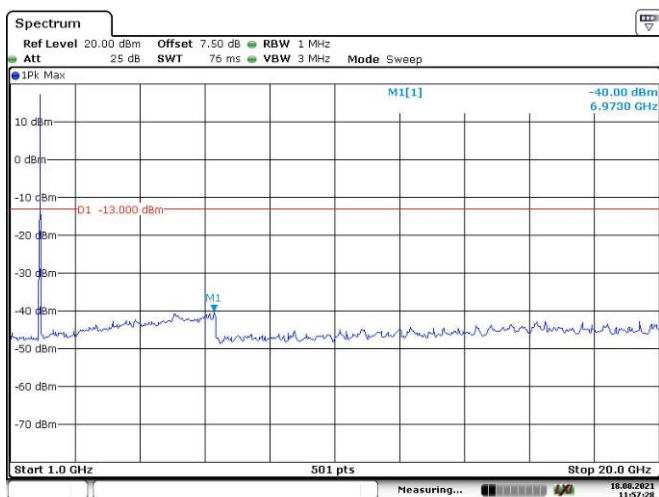


Date: 18.AUG.2021 11:56:23

## 10M, QPSK, Middle Channel

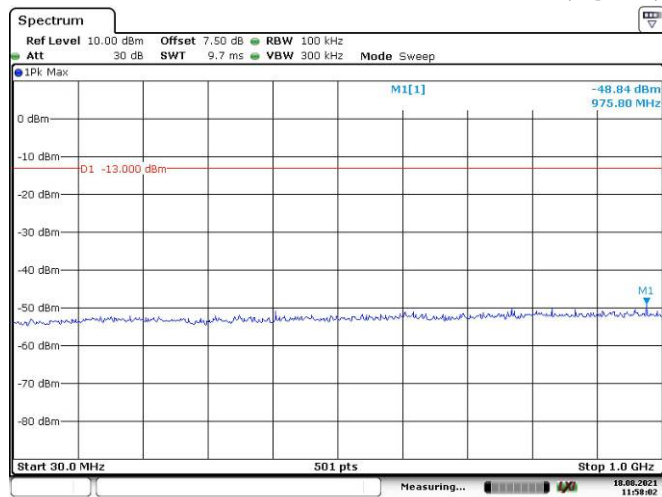


Date: 18.AUG.2021 11:57:03

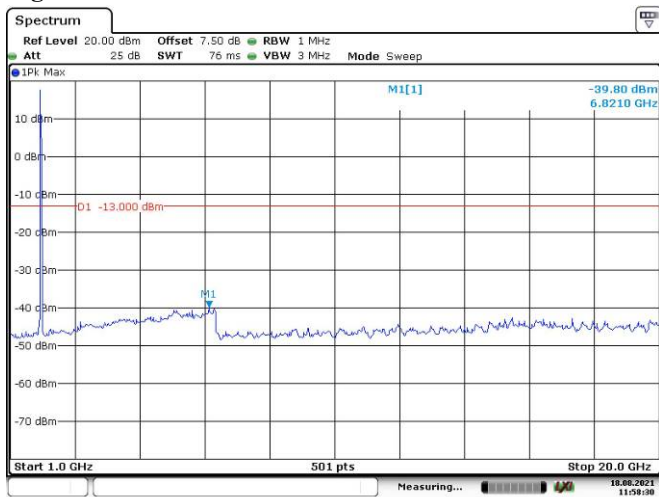


Date: 18.AUG.2021 11:57:28

## 10M, QPSK, High Channel

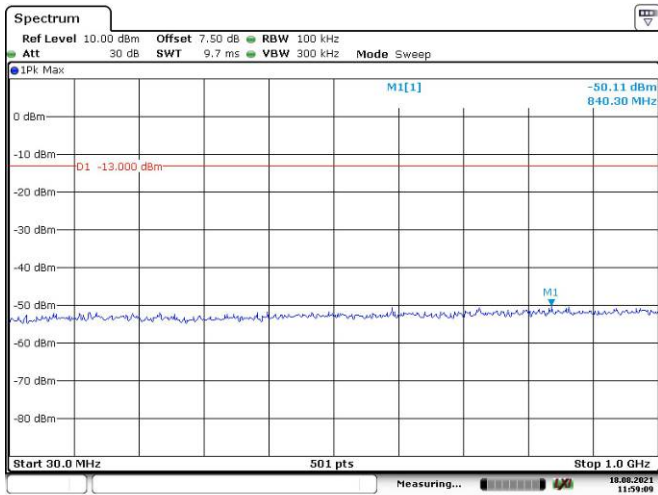


Date: 18.AUG.2021 11:58:02

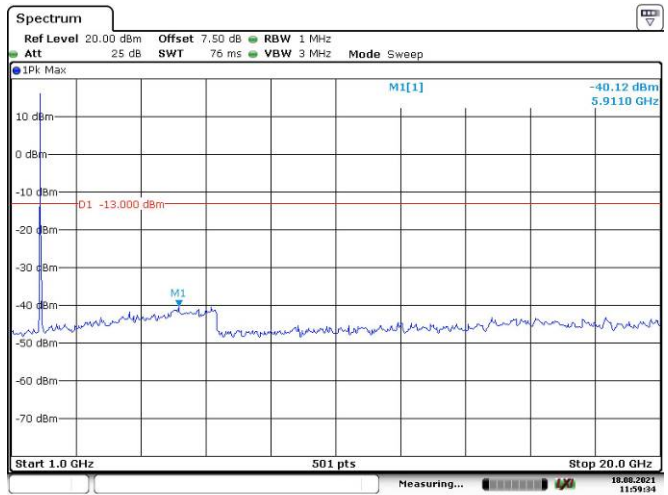


Date: 18.AUG.2021 11:58:31

## 15M, QPSK, Low Channel

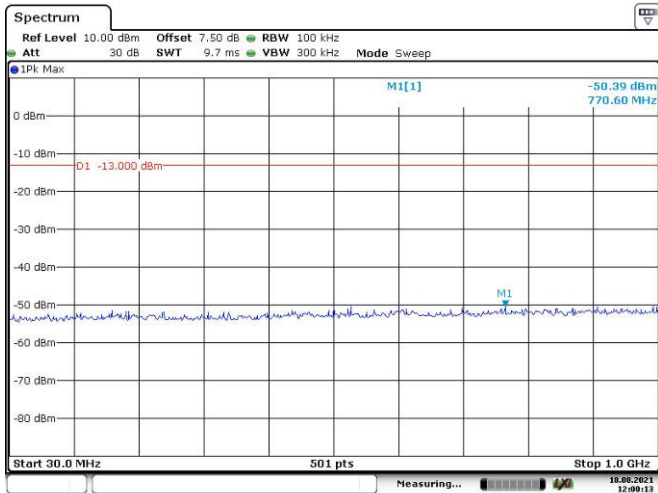


Date: 18.AUG.2021 11:59:09

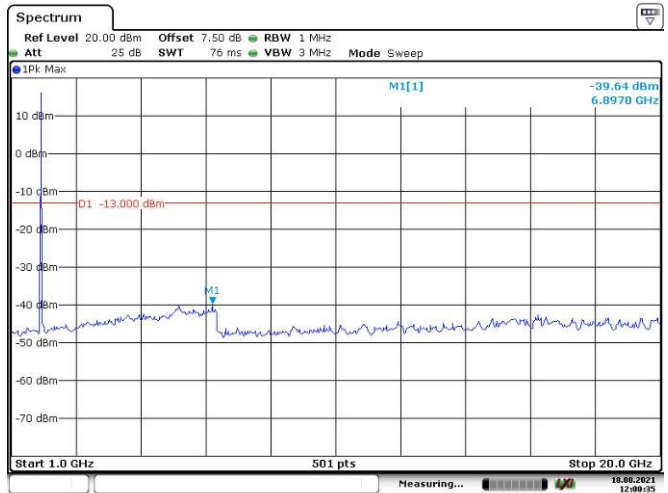


Date: 18.AUG.2021 11:59:34

## 15M, QPSK, Middle Channel

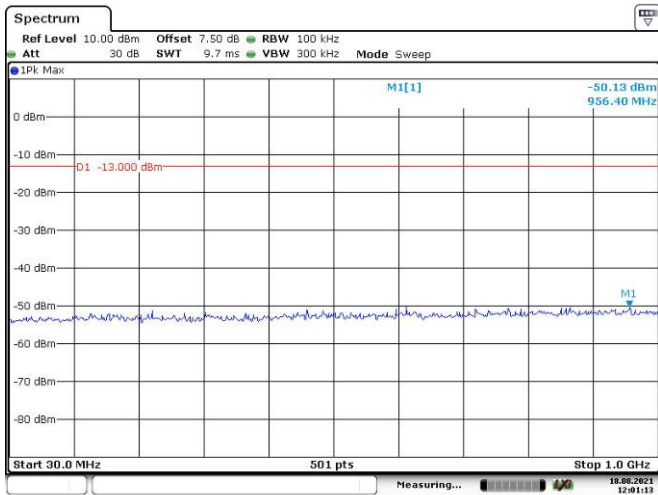


Date: 18.AUG.2021 12:00:13

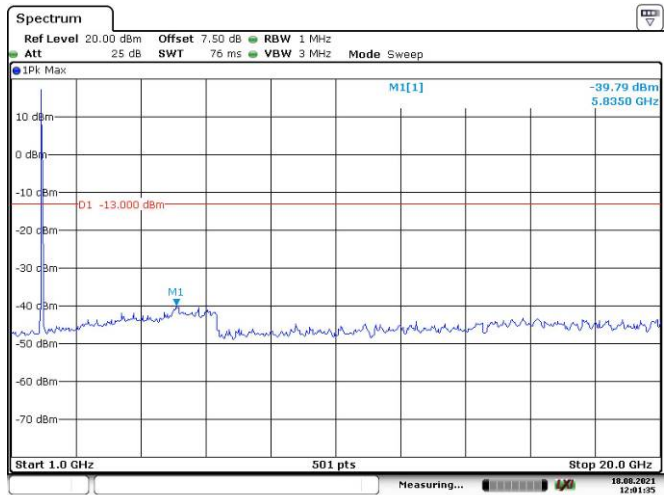


Date: 18.AUG.2021 12:00:35

## 15M, QPSK, High Channel

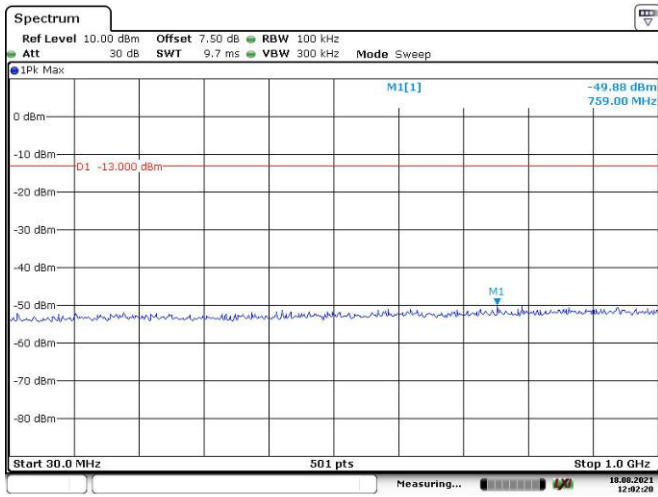


Date: 18.AUG.2021 12:01:13

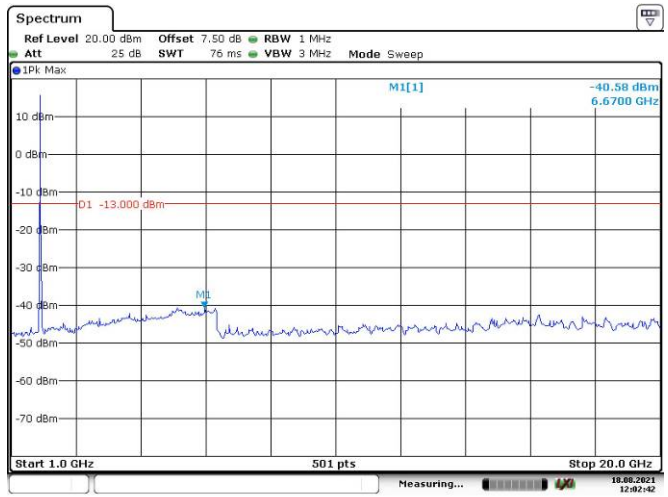


Date: 18.AUG.2021 12:01:35

## 20M, QPSK, Low Channel

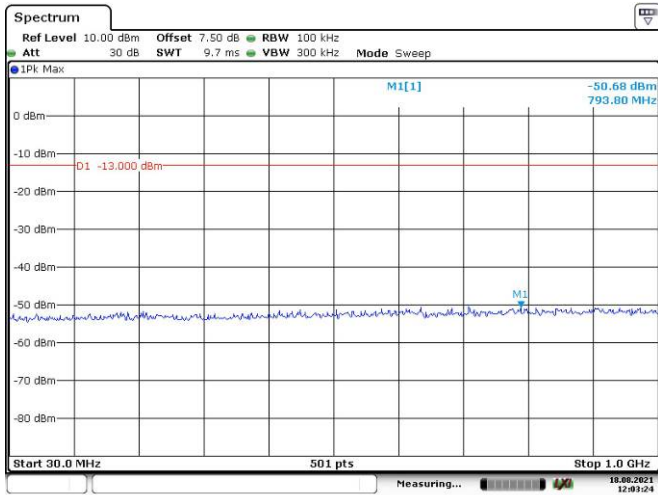


Date: 18.AUG.2021 12:02:20

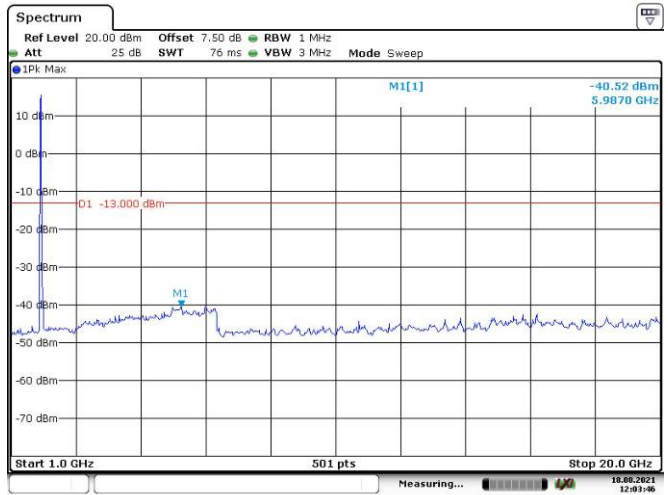


Date: 18.AUG.2021 12:02:42

## 20M, QPSK, Middle Channel

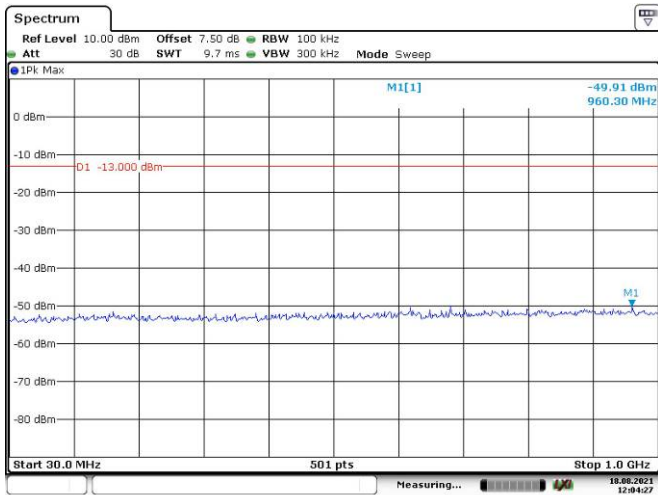


Date: 18.AUG.2021 12:03:24

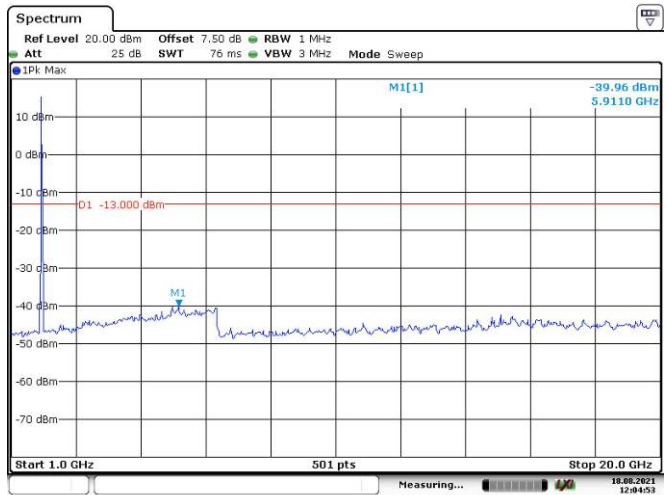


Date: 18.AUG.2021 12:03:46

## 20M, QPSK, High Channel



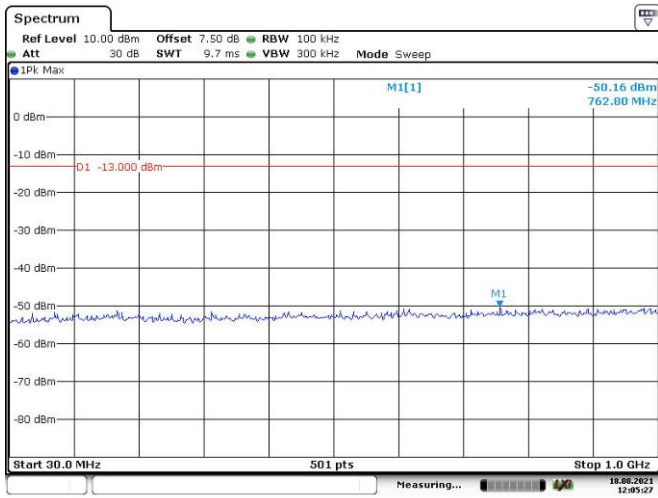
Date: 18.AUG.2021 12:04:27



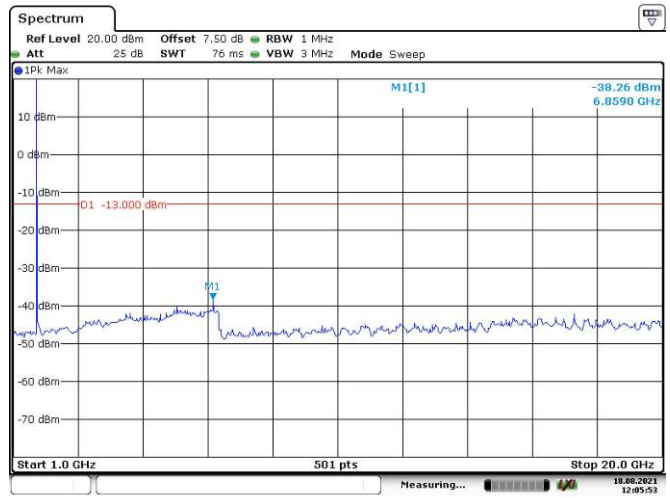
Date: 18.AUG.2021 12:04:53

## LTE Band 4:

## 1.4M, QPSK, Low Channel

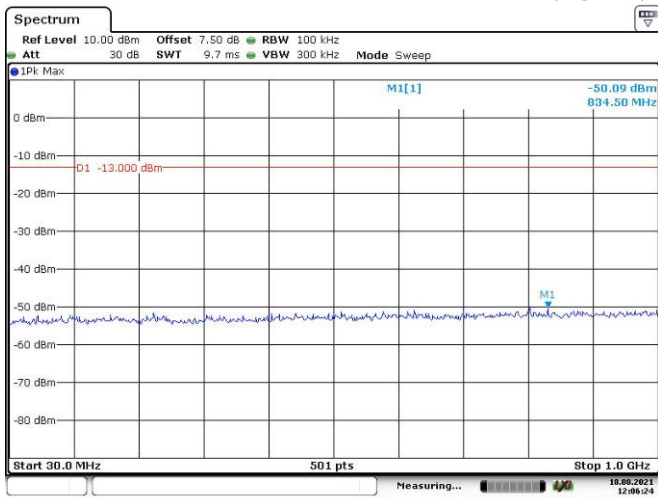


Date: 18.AUG.2021 12:05:28

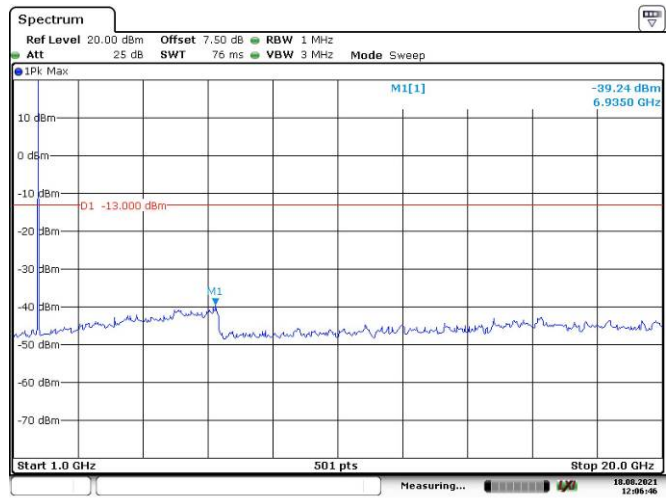


Date: 18.AUG.2021 12:05:53

## 1.4M, QPSK, Middle Channel

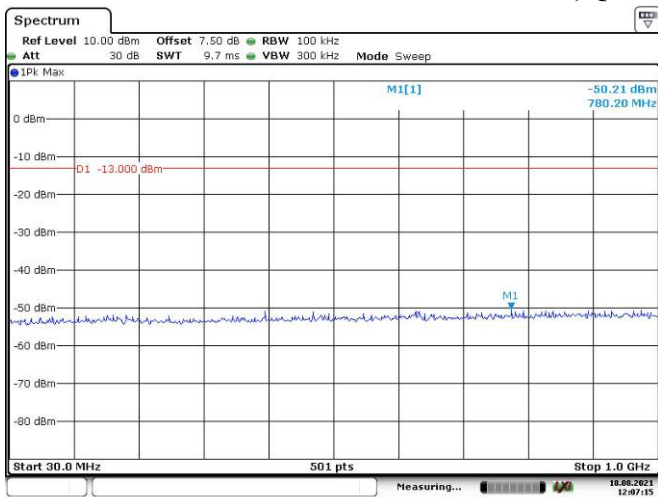


Date: 18.AUG.2021 12:06:24

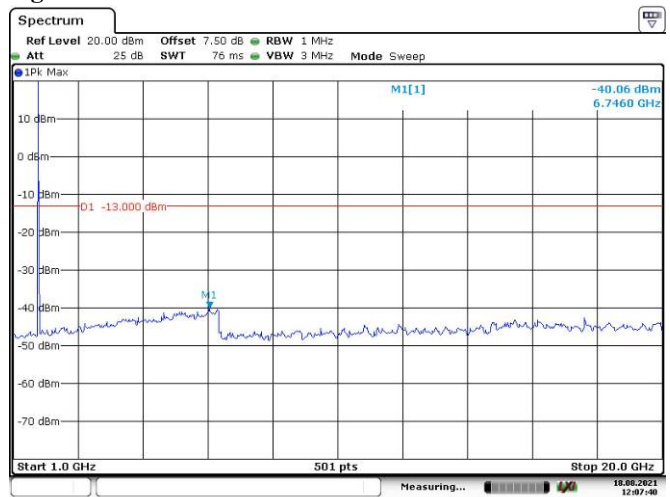


Date: 18.AUG.2021 12:06:46

## 1.4M, QPSK, High Channel

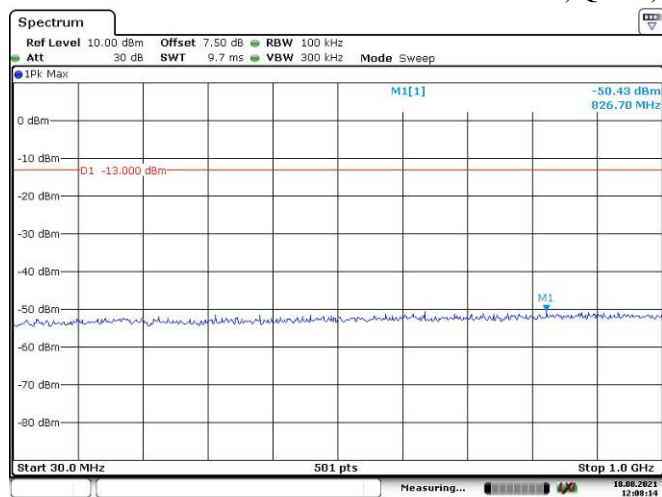


Date: 18.AUG.2021 12:07:15

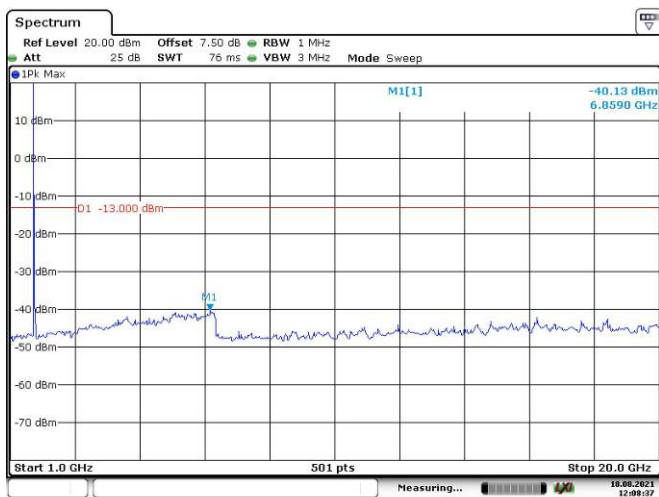


Date: 18.AUG.2021 12:07:40

## 3M, QPSK, Low Channel

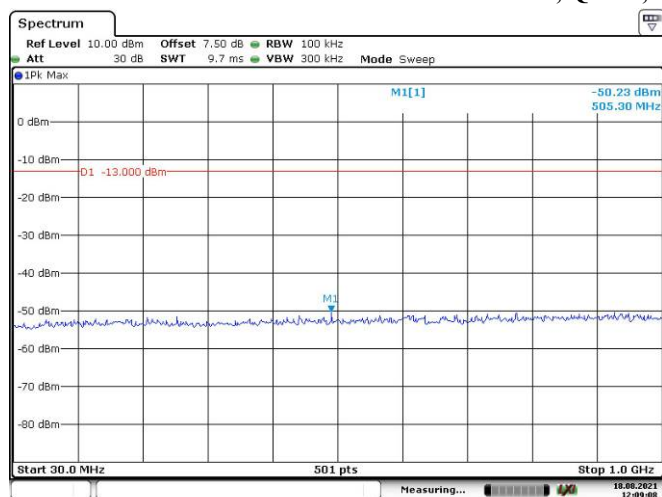


Date: 18.AUG.2021 12:08:15

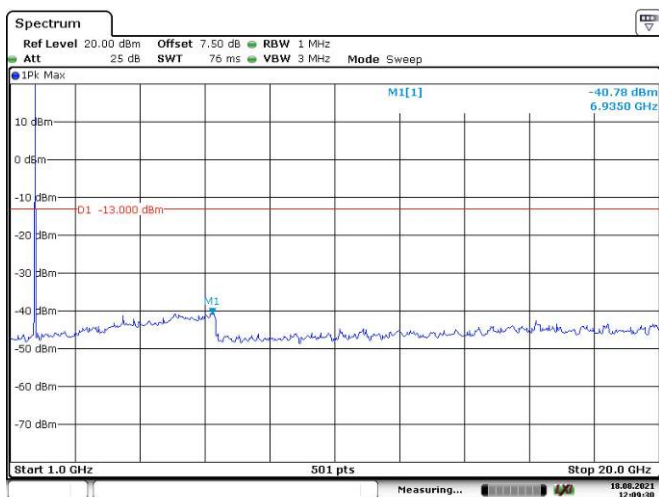


Date: 18.AUG.2021 12:08:37

## 3M, QPSK, Middle Channel

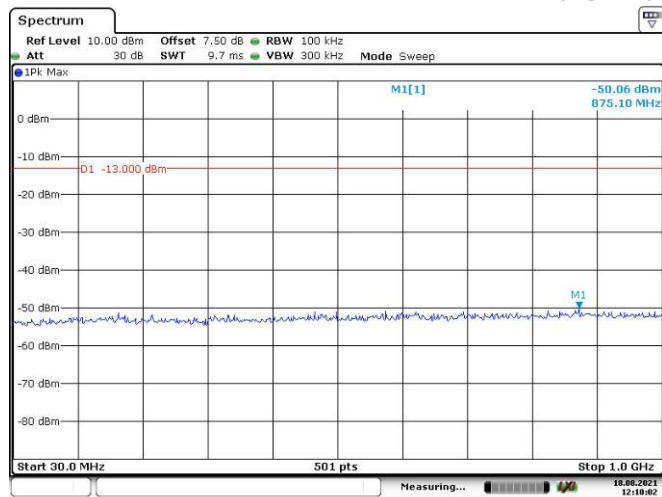


Date: 18.AUG.2021 12:09:08

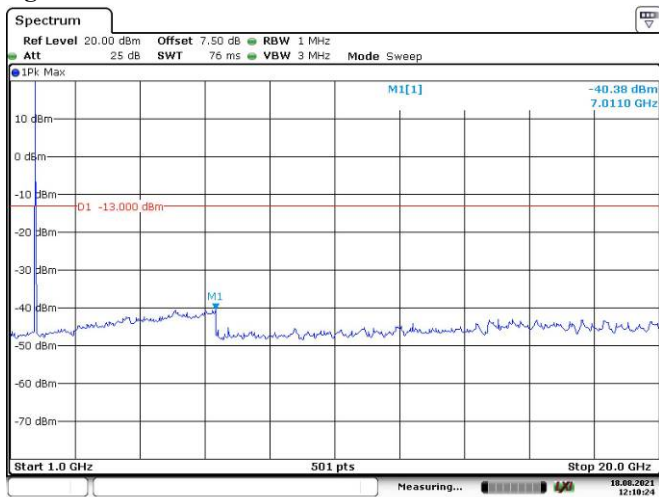


Date: 18.AUG.2021 12:09:31

## 3M, QPSK, High Channel

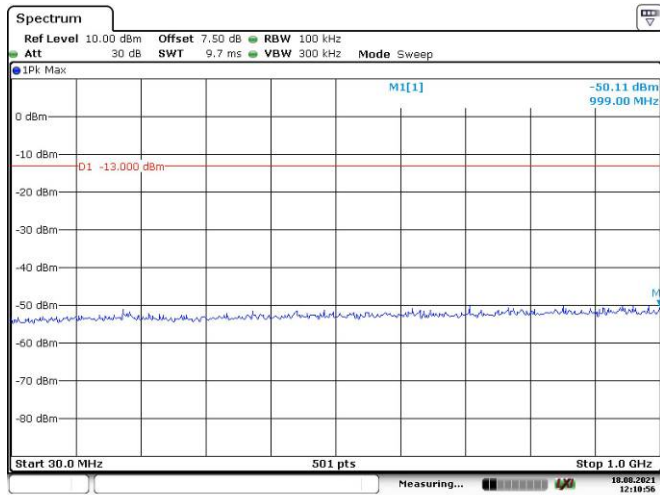


Date: 18.AUG.2021 12:10:02

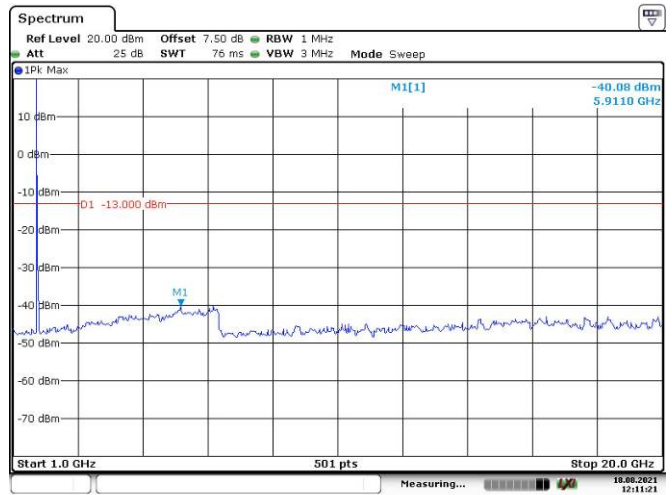


Date: 18.AUG.2021 12:10:24

## 5M, QPSK, Low Channel

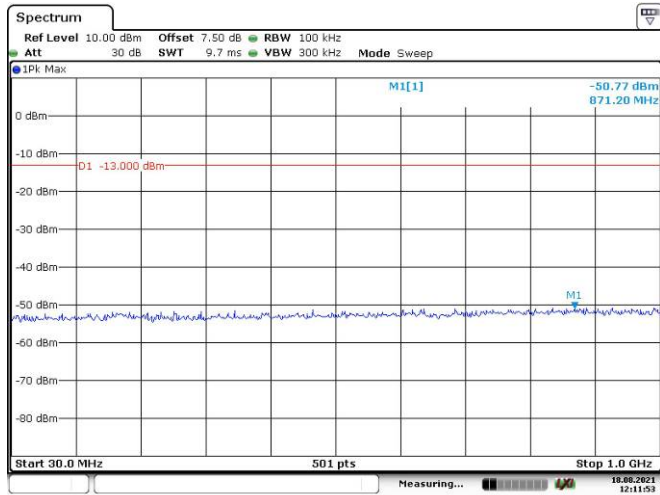


Date: 18.AUG.2021 12:10:56

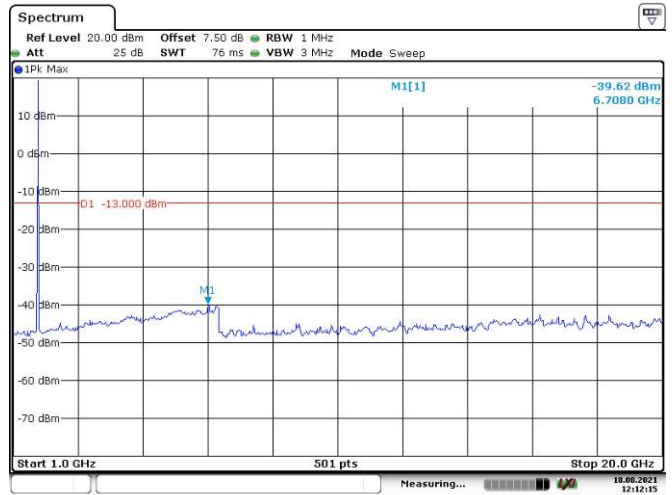


Date: 18.AUG.2021 12:11:21

## 5M, QPSK, Middle Channel

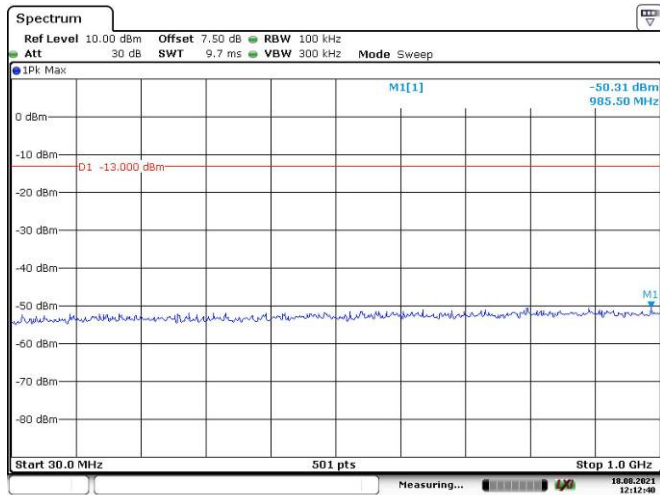


Date: 18.AUG.2021 12:11:53

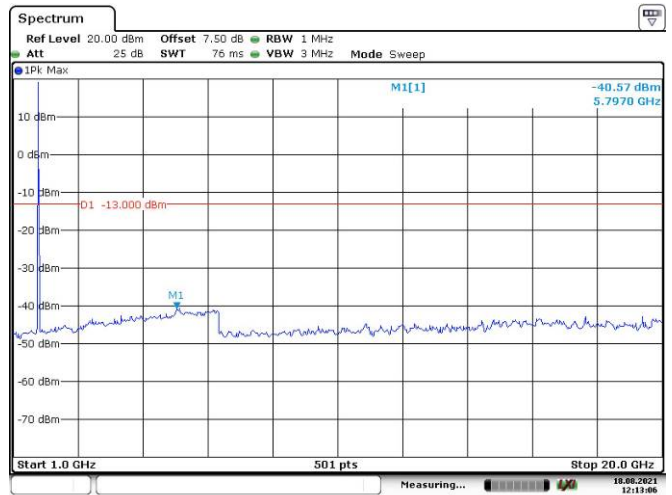


Date: 18.AUG.2021 12:12:15

## 5M, QPSK, High Channel



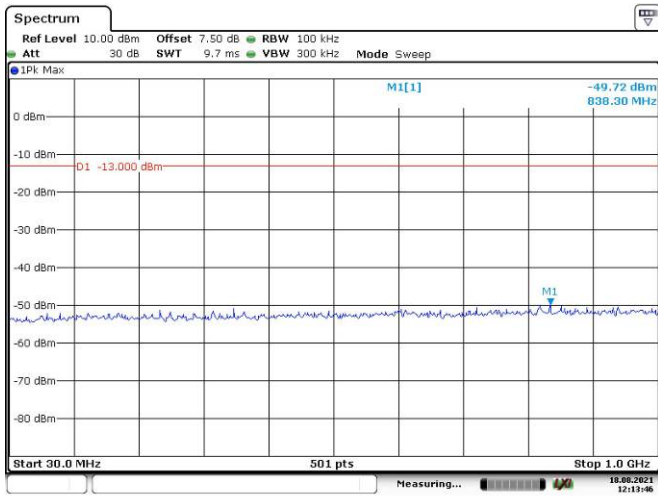
Date: 18.AUG.2021 12:12:41



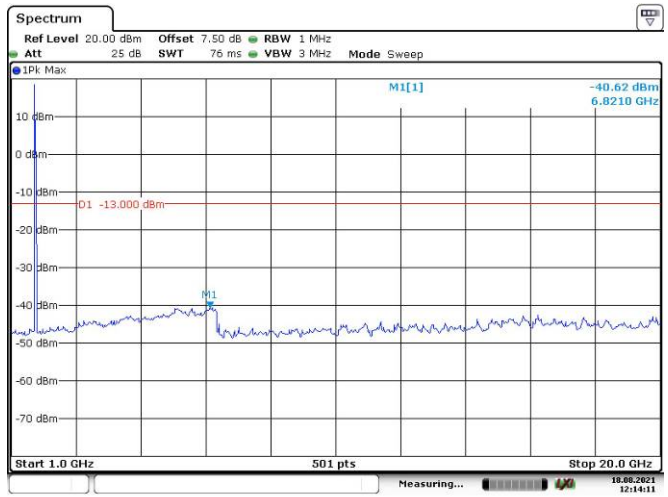
Date: 18.AUG.2021 12:13:06



## 10M, QPSK, Low Channel

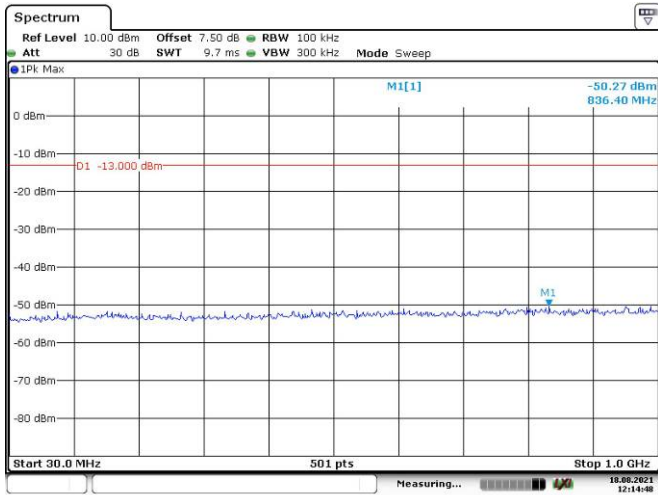


Date: 18.AUG.2021 12:13:46

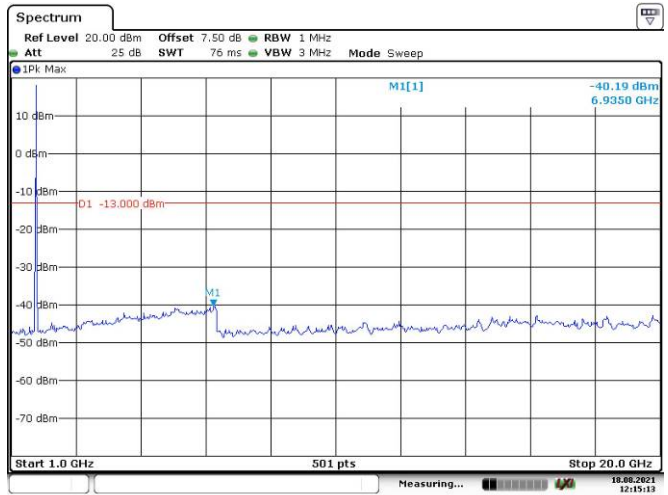


Date: 18.AUG.2021 12:14:11

## 10M, QPSK, Middle Channel

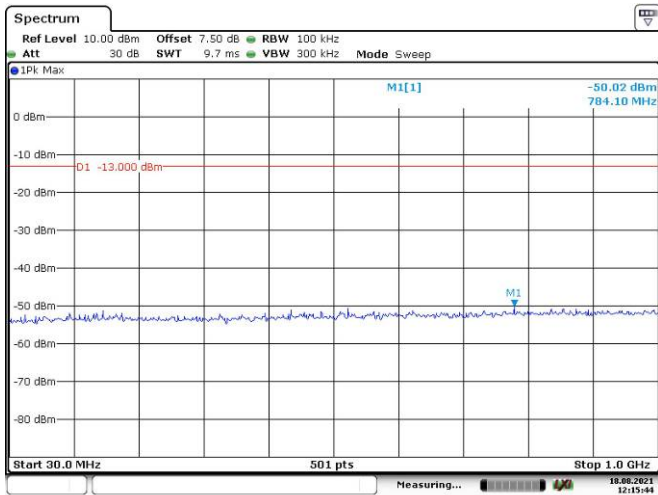


Date: 18.AUG.2021 12:14:48

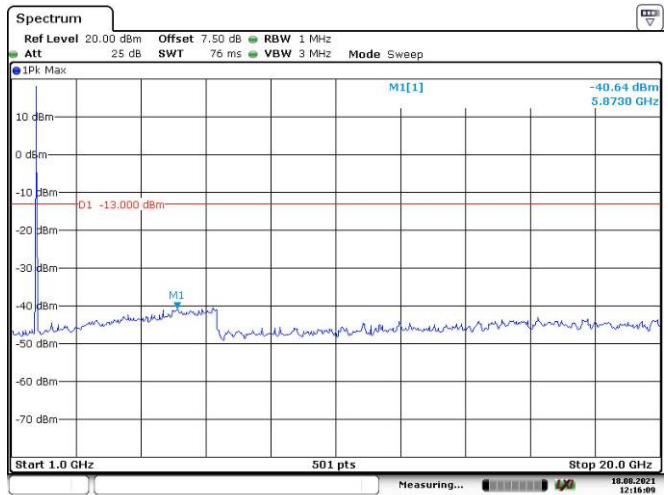


Date: 18.AUG.2021 12:15:13

## 10M, QPSK, High Channel

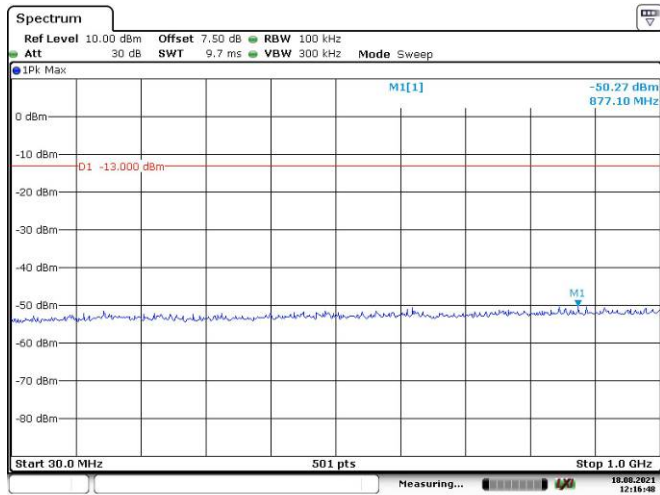


Date: 18.AUG.2021 12:15:44

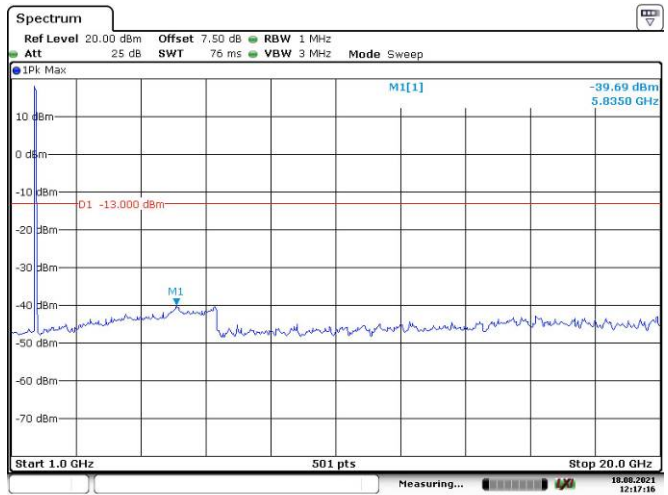


Date: 18.AUG.2021 12:16:09

## 15M, QPSK, Low Channel

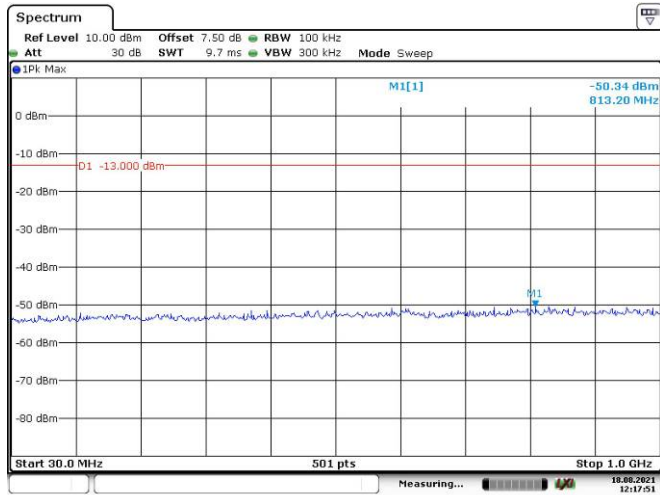


Date: 18.AUG.2021 12:16:48

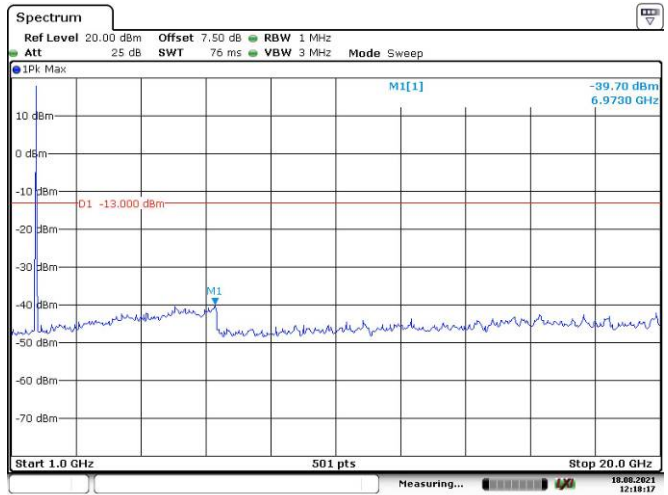


Date: 18.AUG.2021 12:17:16

## 15M, QPSK, Middle Channel

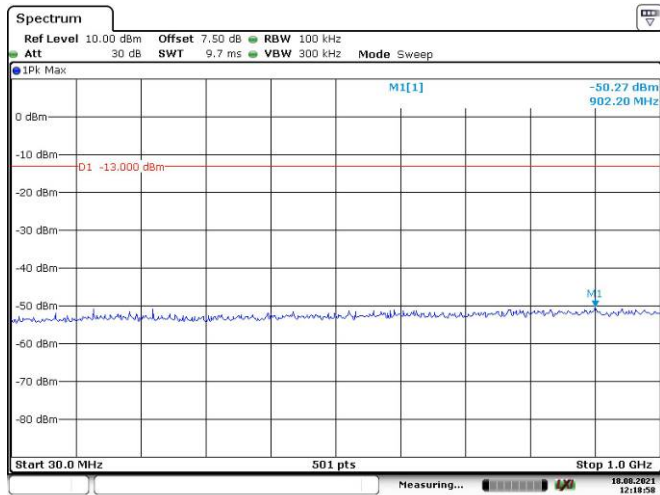


Date: 18.AUG.2021 12:17:52

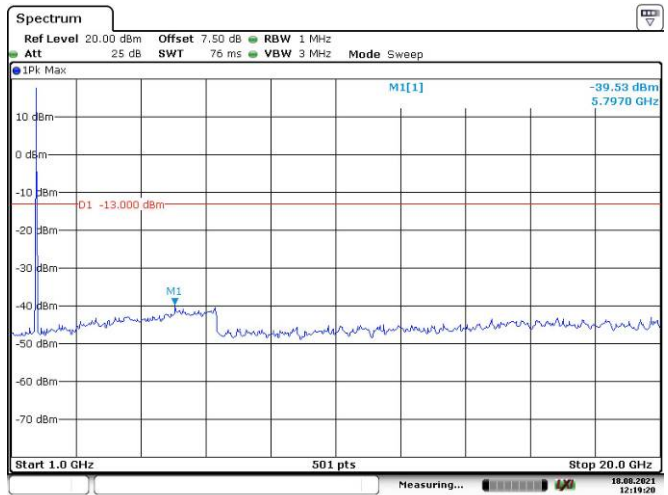


Date: 18.AUG.2021 12:18:17

## 15M, QPSK, High Channel



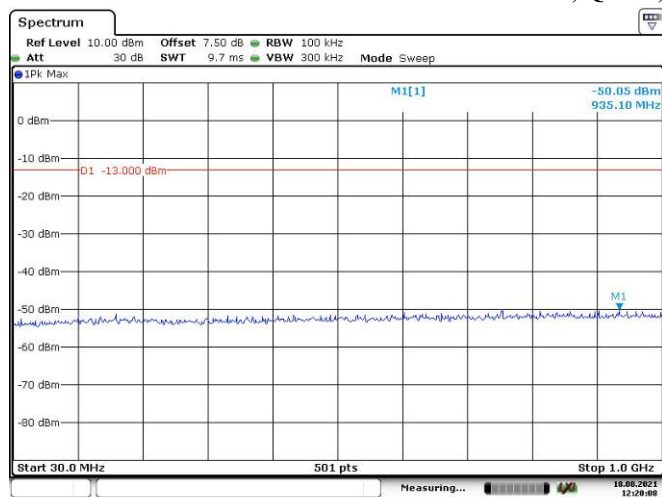
Date: 18.AUG.2021 12:18:58



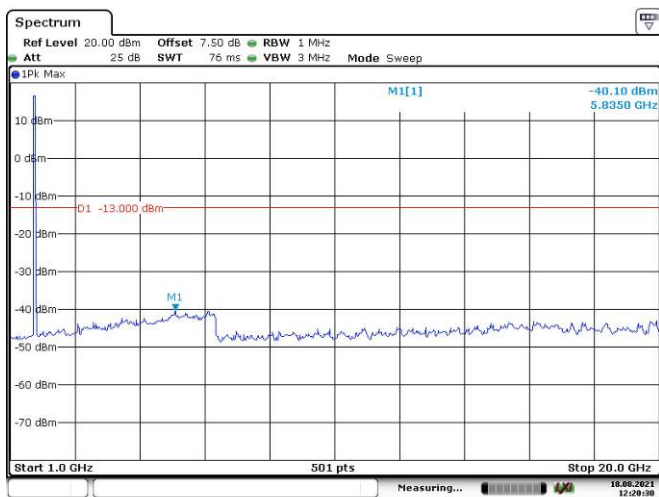
Date: 18.AUG.2021 12:19:21



## 20M, QPSK, Low Channel

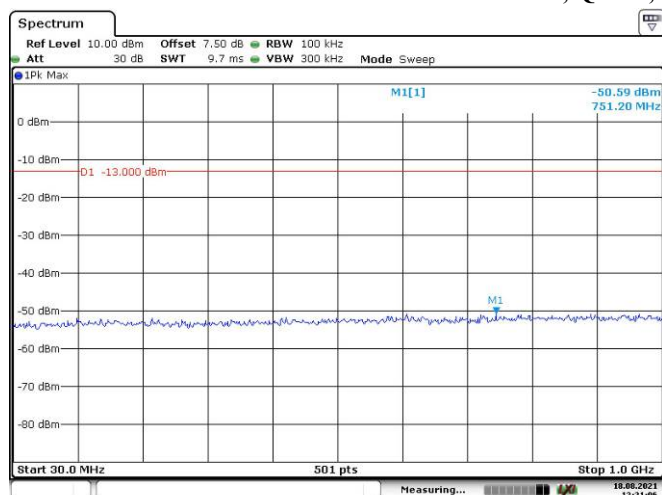


Date: 18.AUG.2021 12:20:09

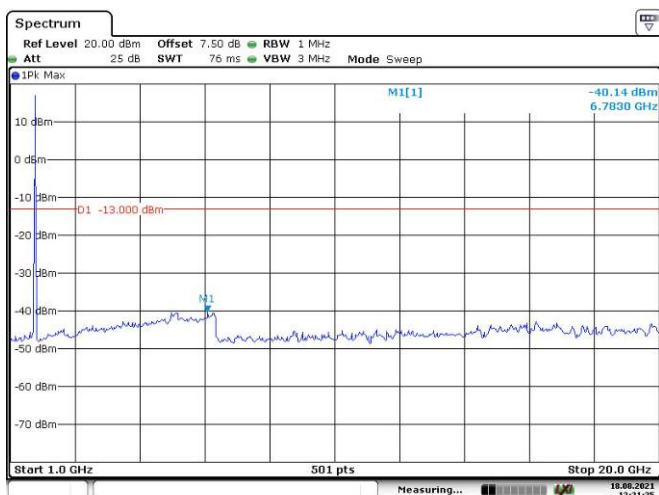


Date: 18.AUG.2021 12:20:31

## 20M, QPSK, Middle Channel

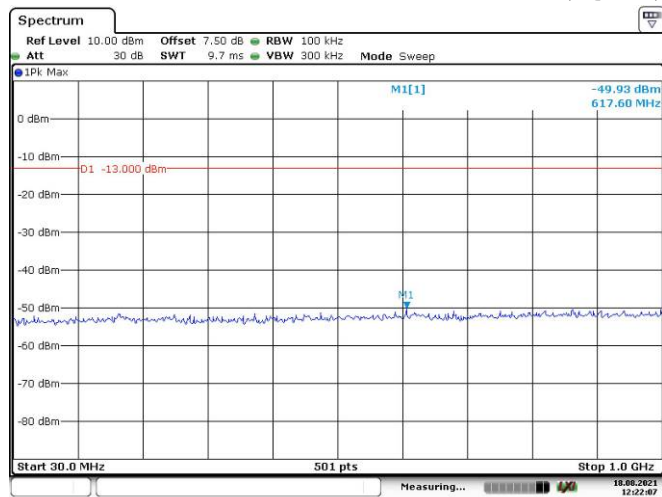


Date: 18.AUG.2021 12:21:06

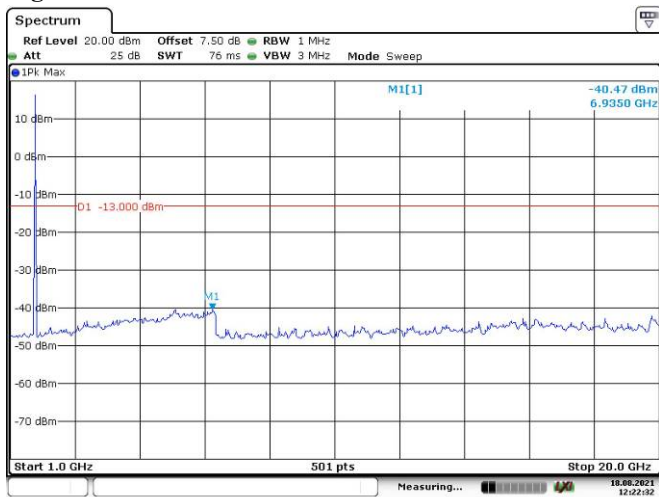


Date: 18.AUG.2021 12:21:25

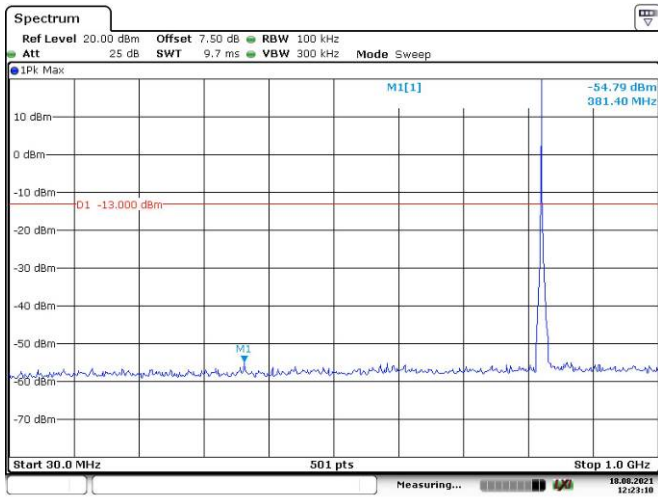
## 20M, QPSK, High Channel



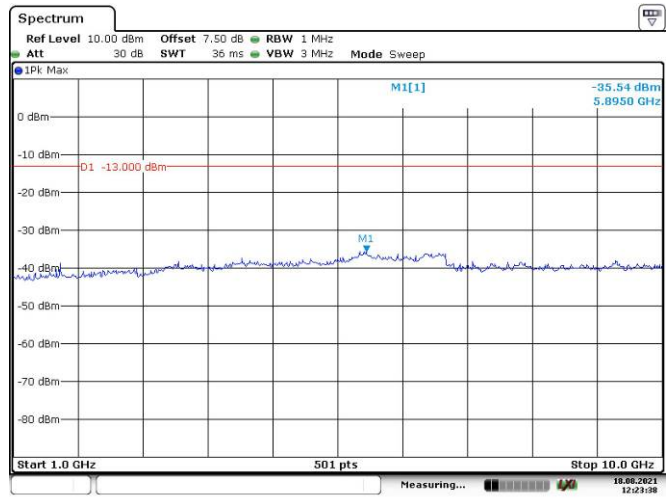
Date: 18.AUG.2021 12:22:07



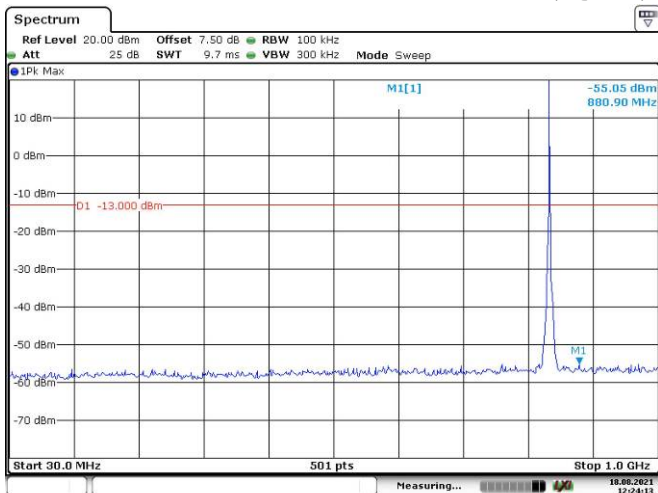
Date: 18.AUG.2021 12:22:32

**LTE Band 5:****1.4M, QPSK, Low Channel**

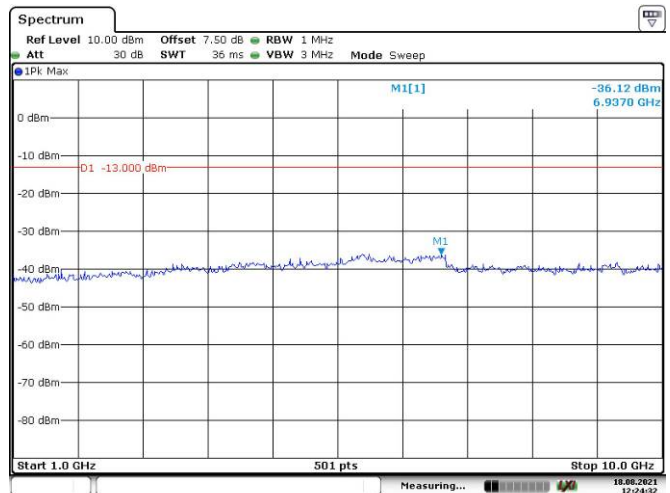
Date: 18.AUG.2021 12:23:10



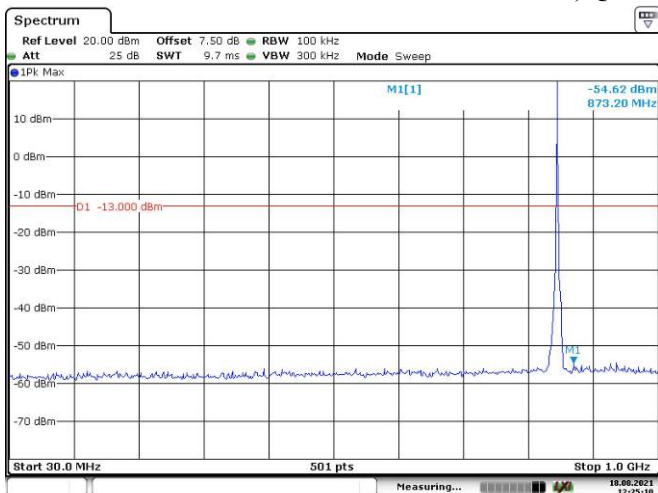
Date: 18.AUG.2021 12:23:18

**1.4M, QPSK, Middle Channel**

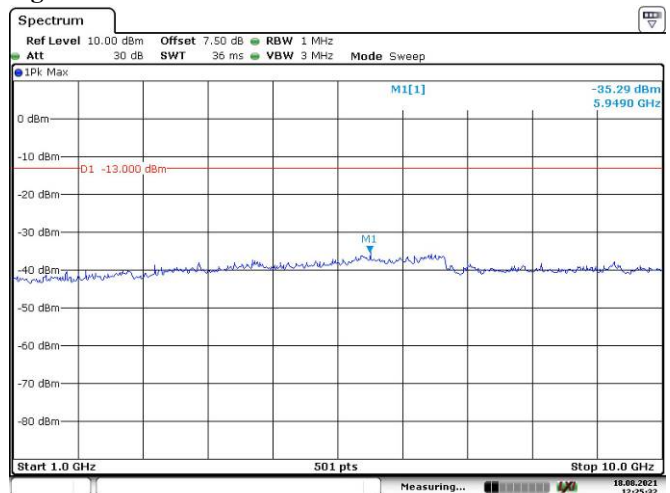
Date: 18.AUG.2021 12:24:13



Date: 18.AUG.2021 12:24:32

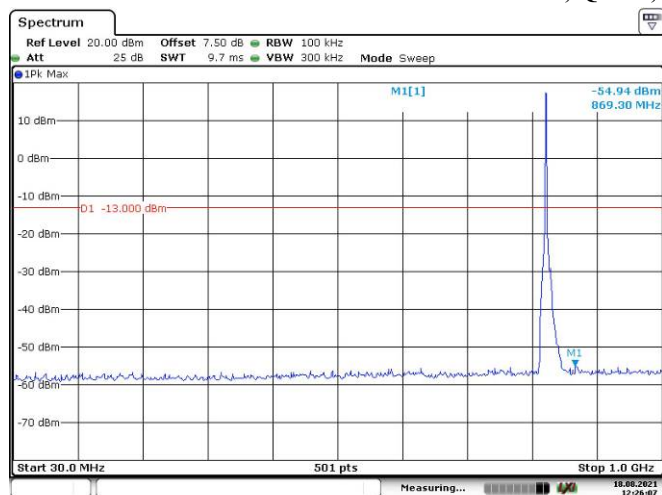
**1.4M, QPSK, High Channel**

Date: 18.AUG.2021 12:25:11

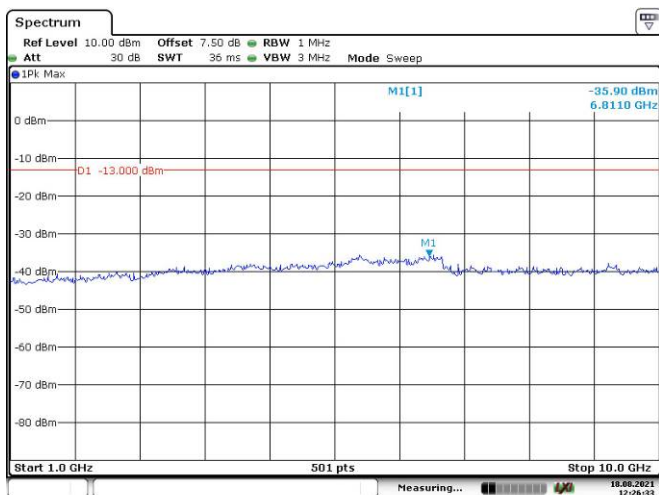


Date: 18.AUG.2021 12:25:32

## 3M, QPSK, Low Channel

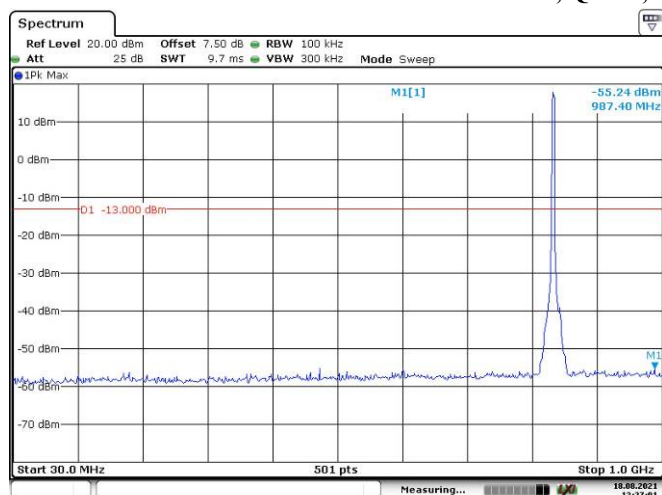


Date: 18.AUG.2021 12:26:08

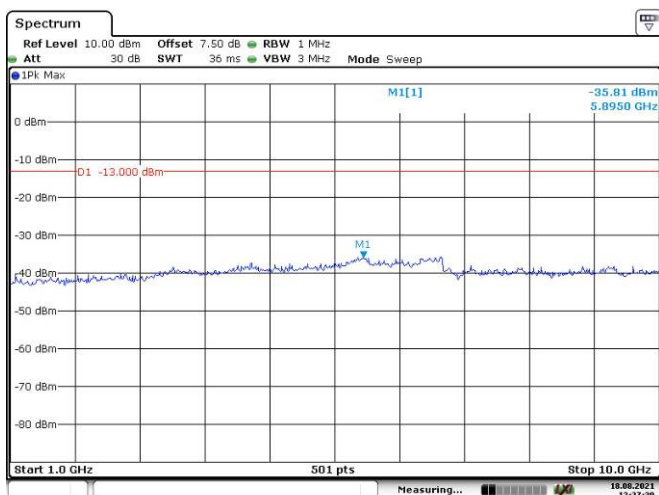


Date: 18.AUG.2021 12:26:33

## 3M, QPSK, Middle Channel

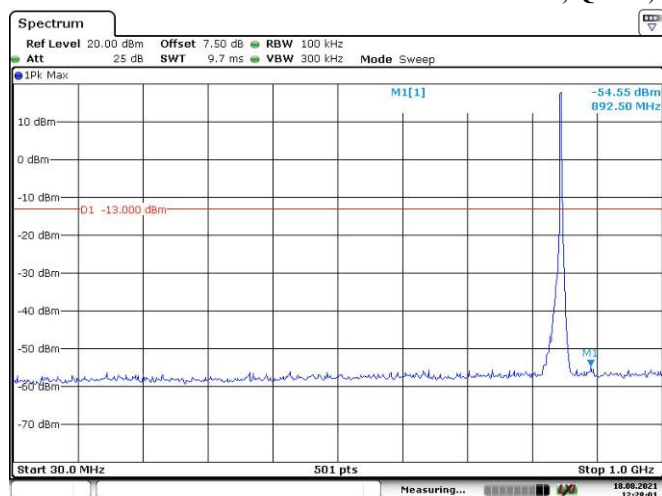


Date: 18.AUG.2021 12:27:02

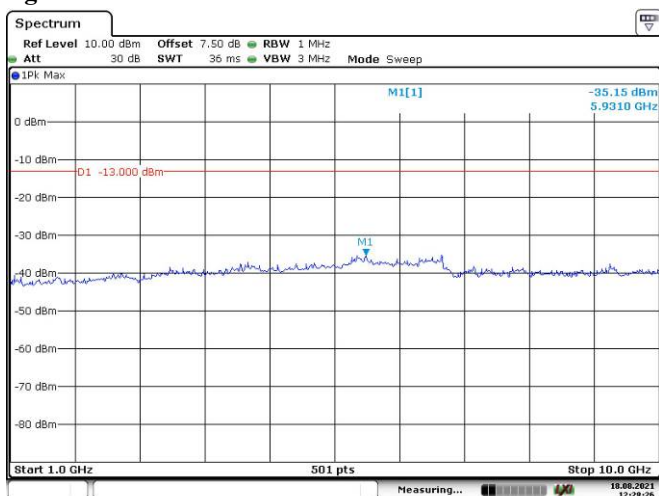


Date: 18.AUG.2021 12:27:30

## 3M, QPSK, High Channel

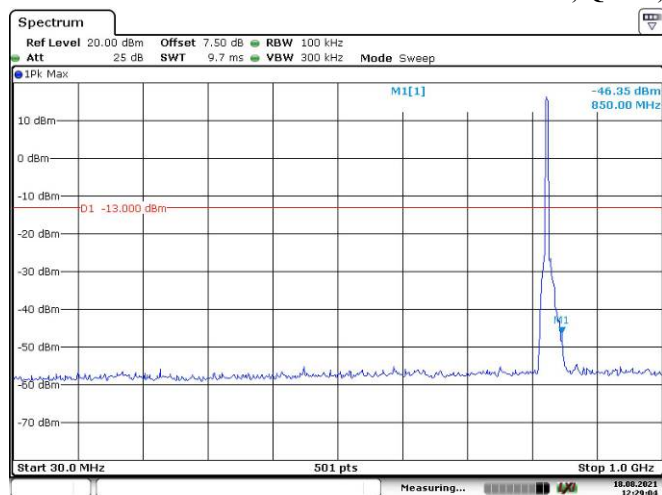


Date: 18.AUG.2021 12:28:02

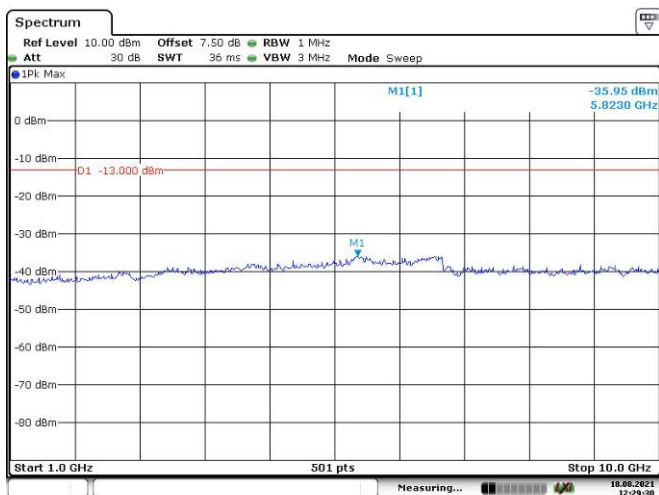


Date: 18.AUG.2021 12:28:27

## 5M, QPSK, Low Channel

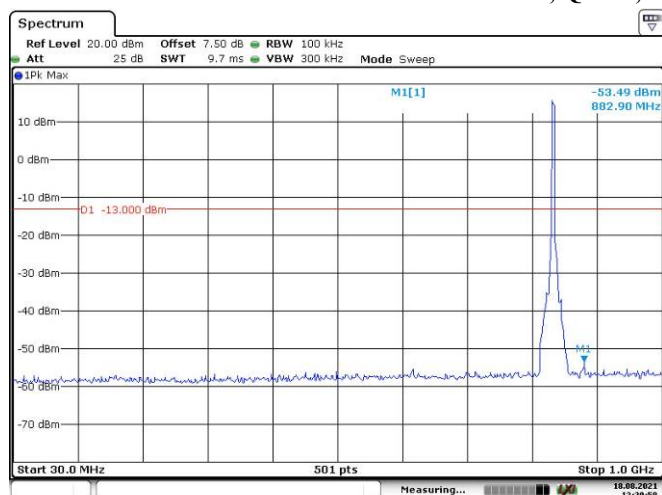


Date: 18.AUG.2021 12:29:05

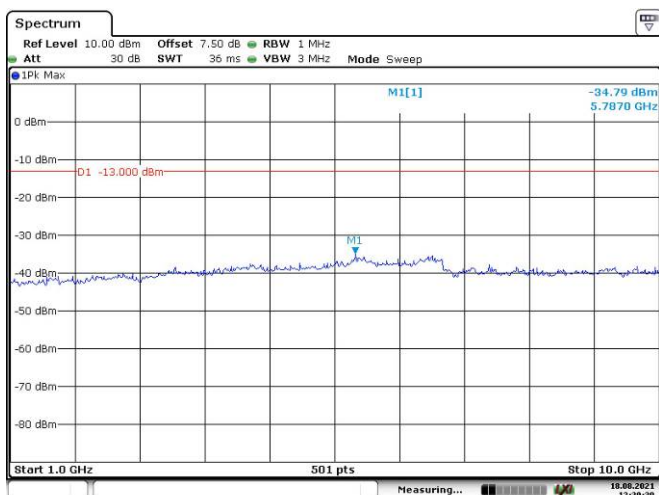


Date: 18.AUG.2021 12:29:30

## 5M, QPSK, Middle Channel

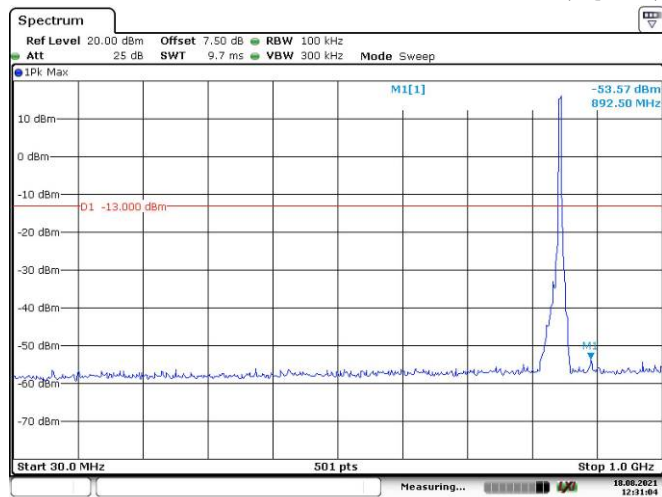


Date: 18.AUG.2021 12:29:59

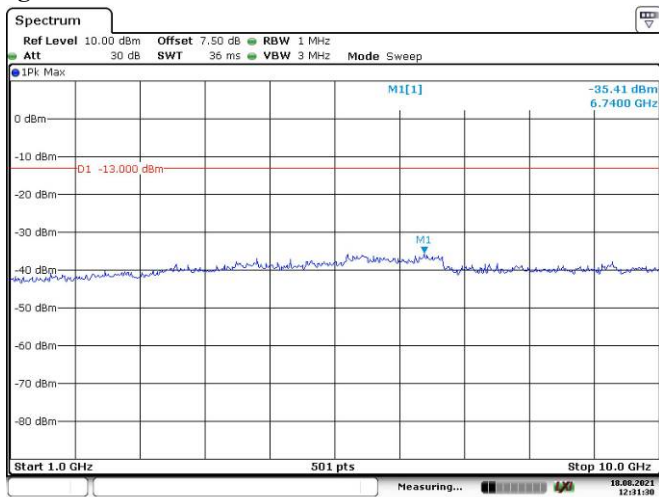


Date: 18.AUG.2021 12:30:30

## 5M, QPSK, High Channel

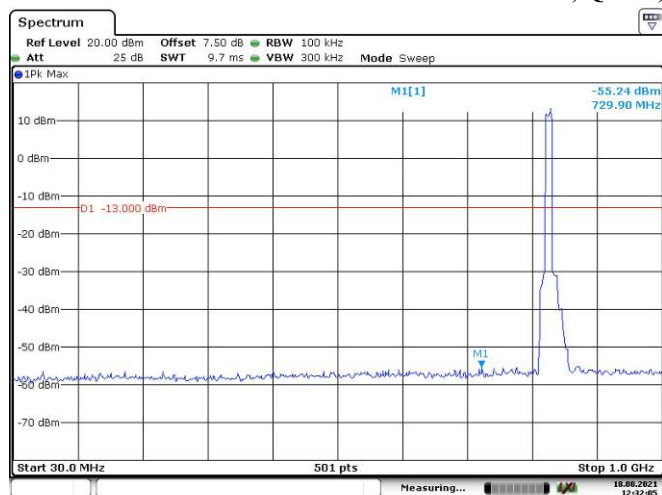


Date: 18.AUG.2021 12:31:05

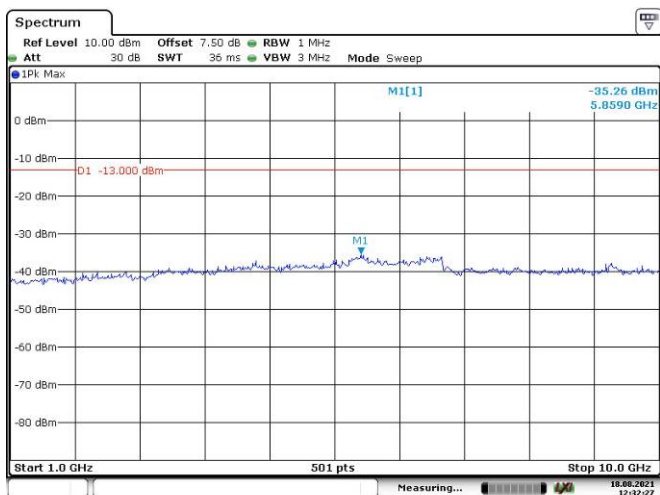


Date: 18.AUG.2021 12:31:30

## 10M, QPSK, Low Channel

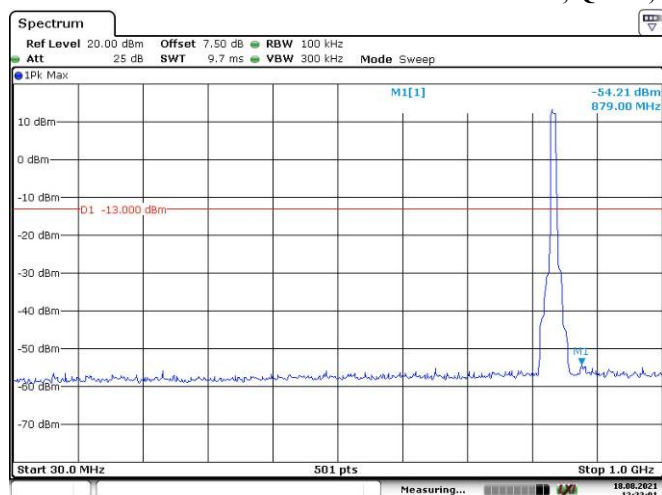


Date: 18.AUG.2021 12:32:06

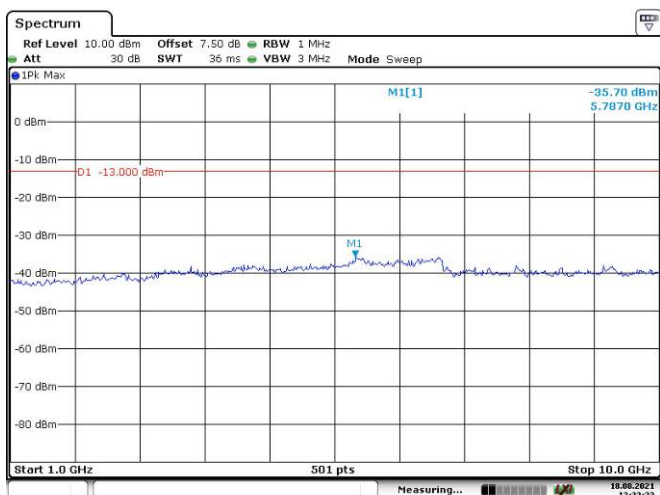


Date: 18.AUG.2021 12:32:28

## 10M, QPSK, Middle Channel

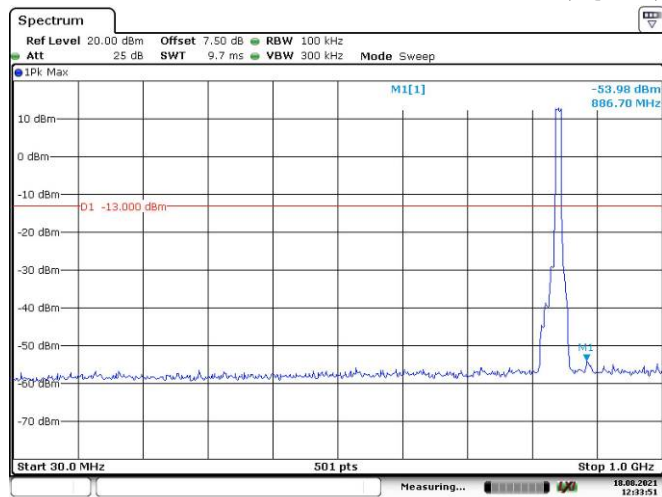


Date: 18.AUG.2021 12:33:02

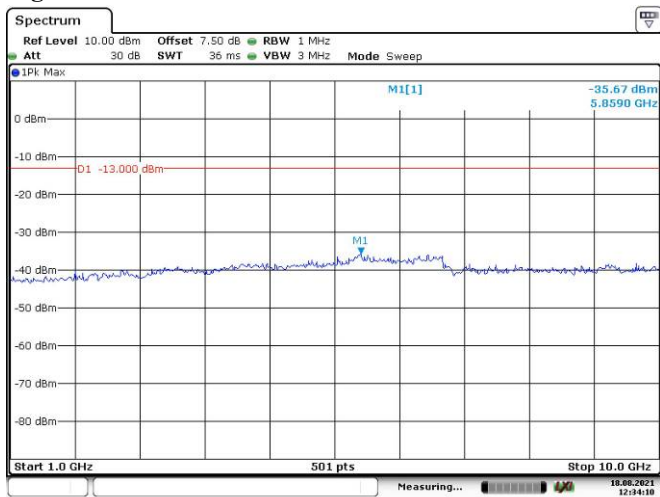


Date: 18.AUG.2021 12:33:24

## 10M, QPSK, High Channel



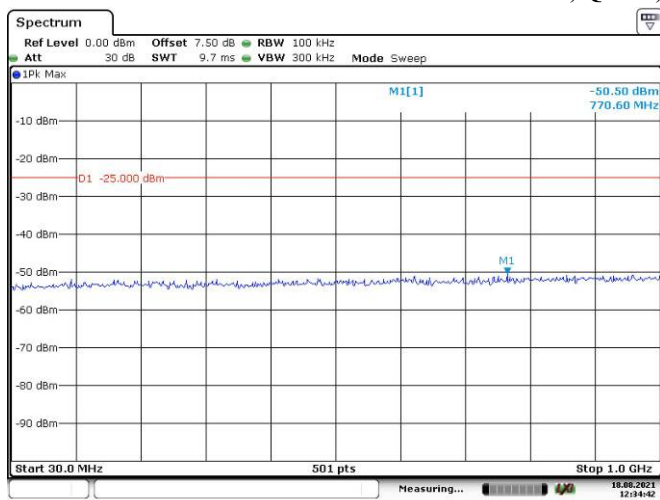
Date: 18.AUG.2021 12:33:52



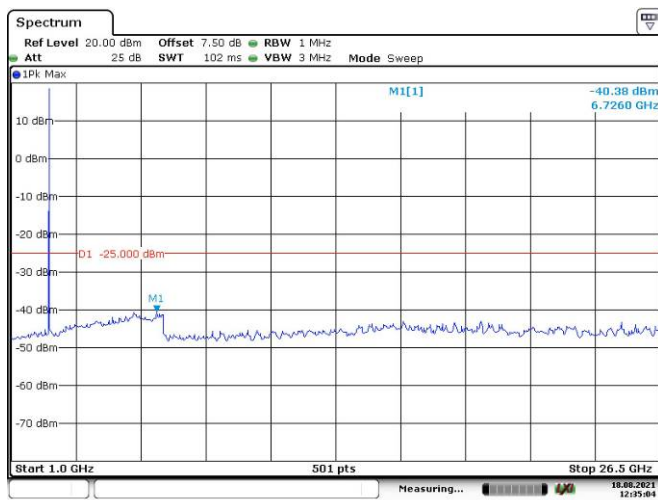
Date: 18.AUG.2021 12:34:11

## LTE Band 7:

## 5M, QPSK, Low Channel

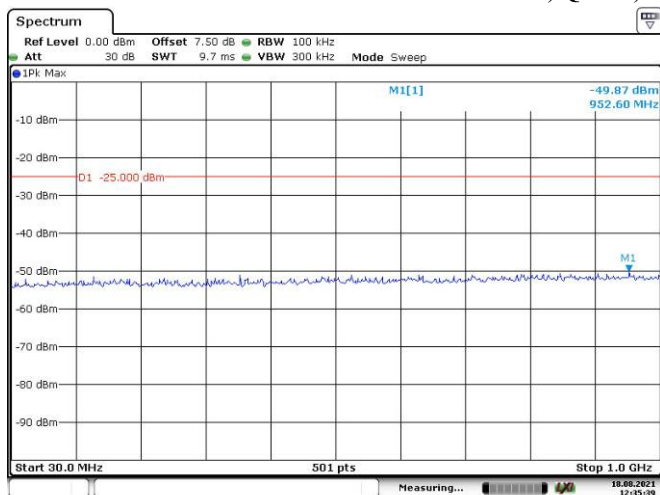


Date: 18.AUG.2021 12:34:42

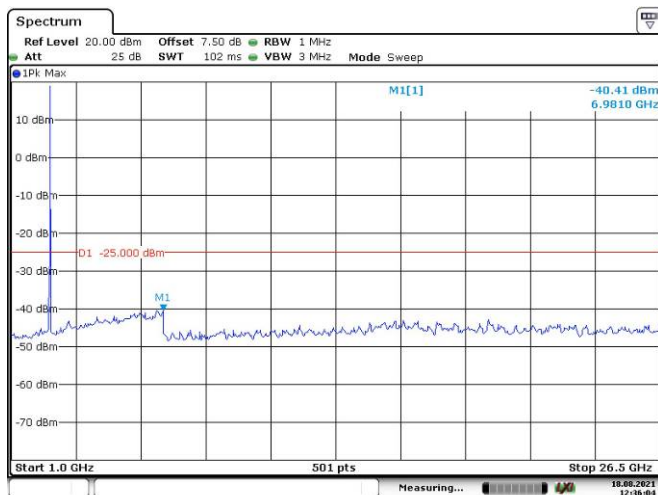


Date: 18.AUG.2021 12:35:04

## 5M, QPSK, Middle Channel

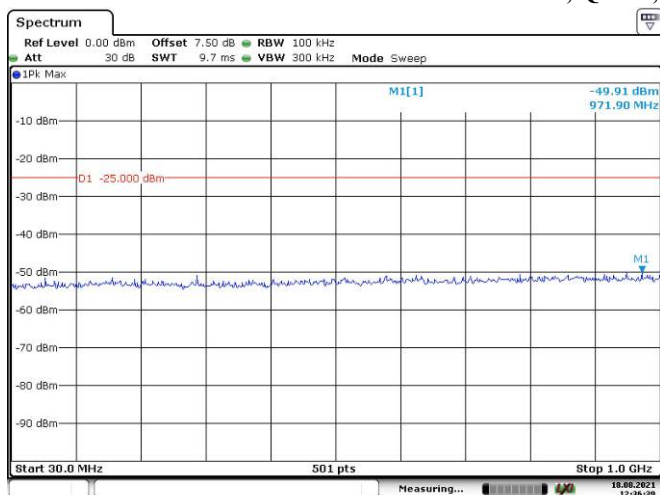


Date: 18.AUG.2021 12:35:39

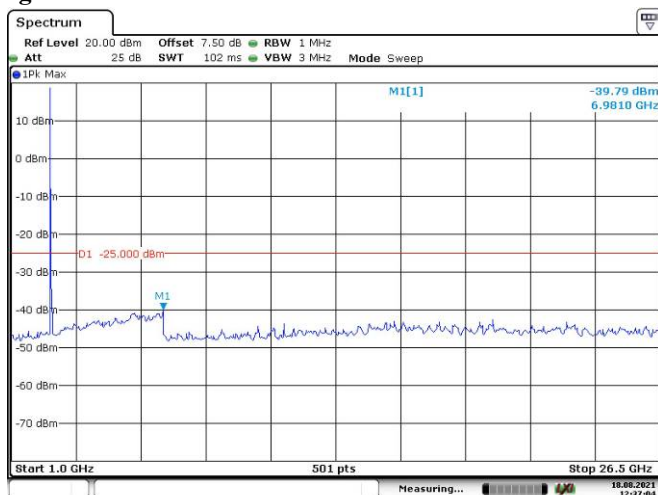


Date: 18.AUG.2021 12:36:04

## 5M, QPSK, High Channel



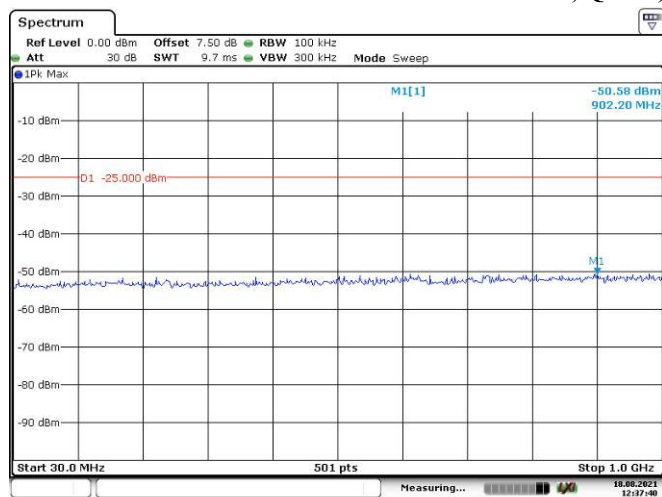
Date: 18.AUG.2021 12:36:39



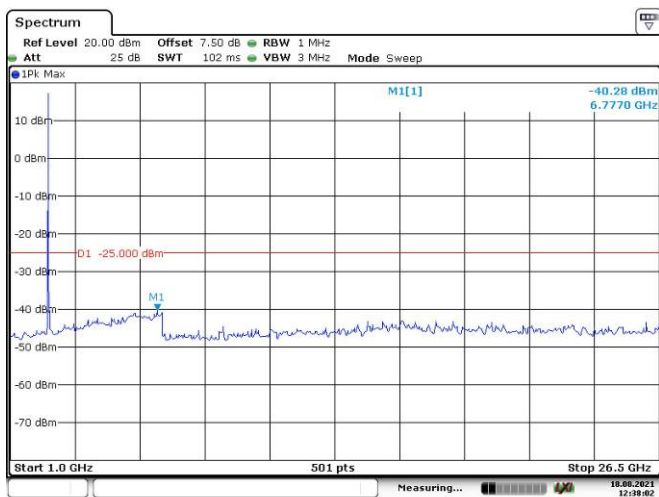
Date: 18.AUG.2021 12:37:04



## 10M, QPSK, Low Channel

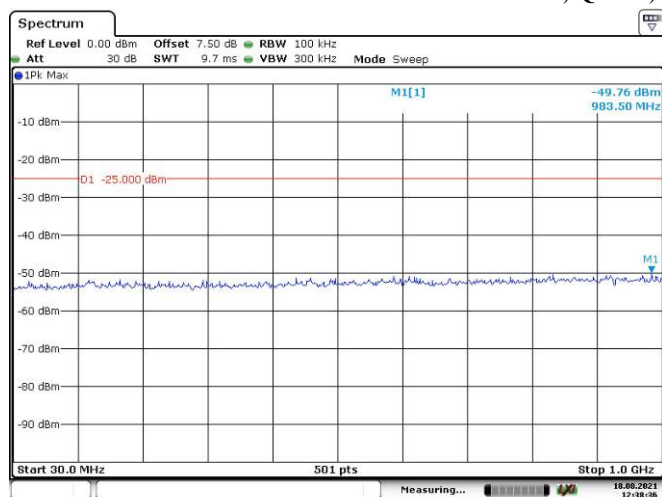


Date: 18.AUG.2021 12:37:40

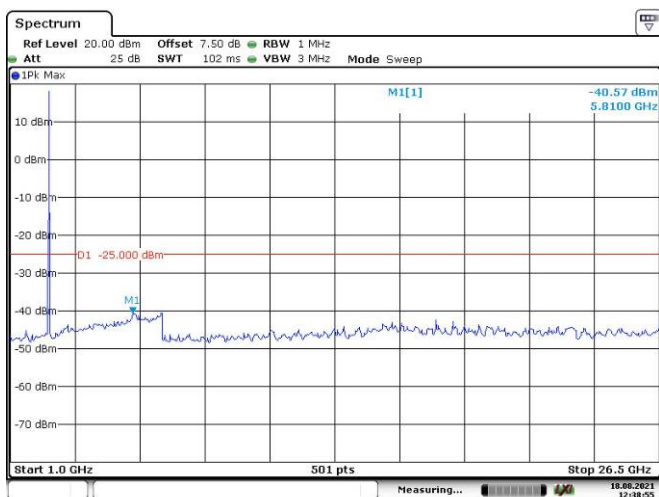


Date: 18.AUG.2021 12:38:02

## 10M, QPSK, Middle Channel

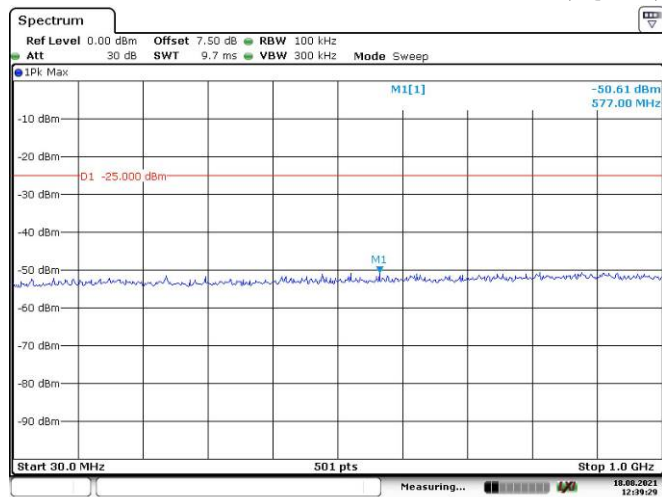


Date: 18.AUG.2021 12:38:37

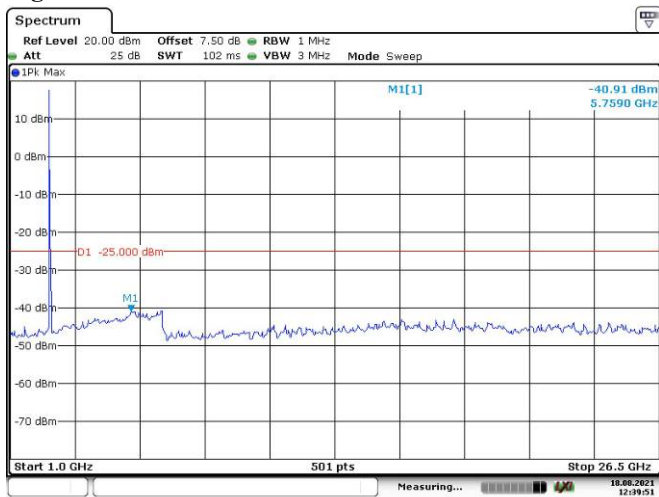


Date: 18.AUG.2021 12:38:55

## 10M, QPSK, High Channel

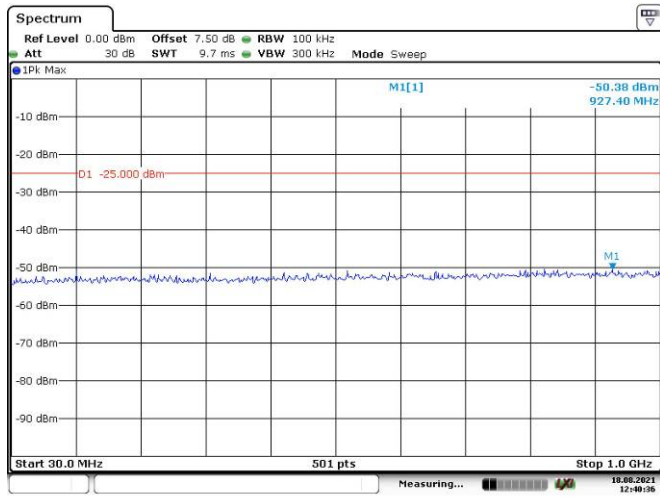


Date: 18.AUG.2021 12:39:29

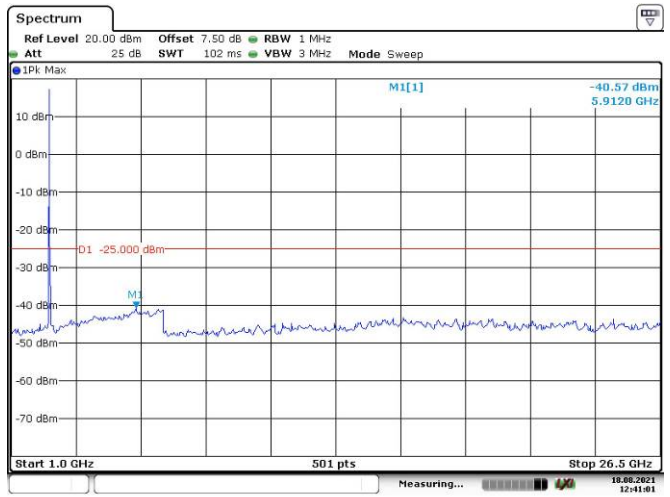


Date: 18.AUG.2021 12:39:51

## 15M, QPSK, Low Channel

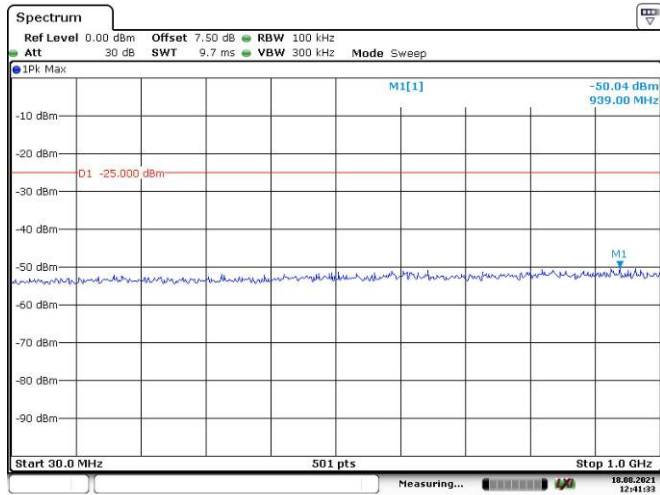


Date: 18.AUG.2021 12:40:36

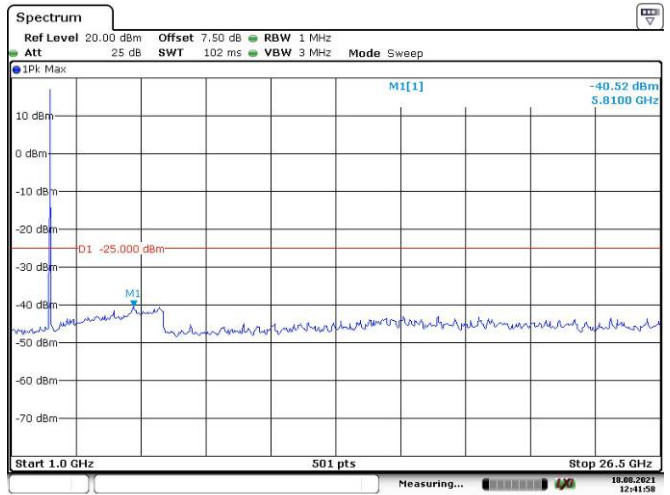


Date: 18.AUG.2021 12:41:01

## 15M, QPSK, Middle Channel

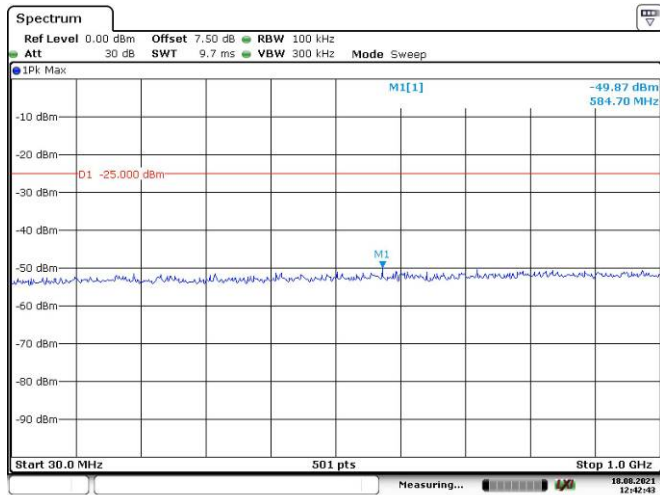


Date: 18.AUG.2021 12:41:34

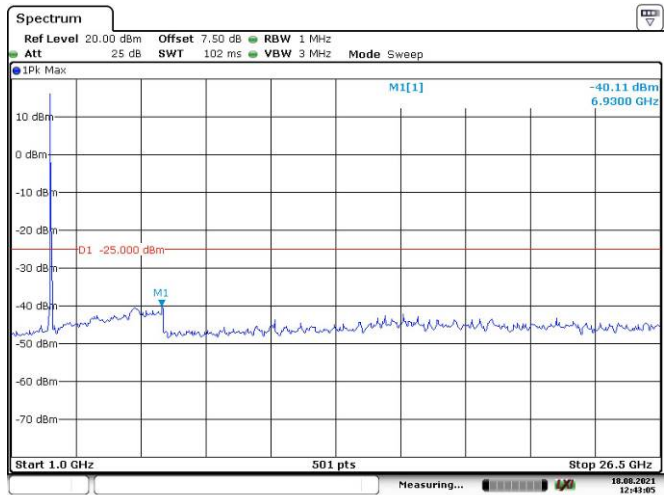


Date: 18.AUG.2021 12:41:58

## 15M, QPSK, High Channel

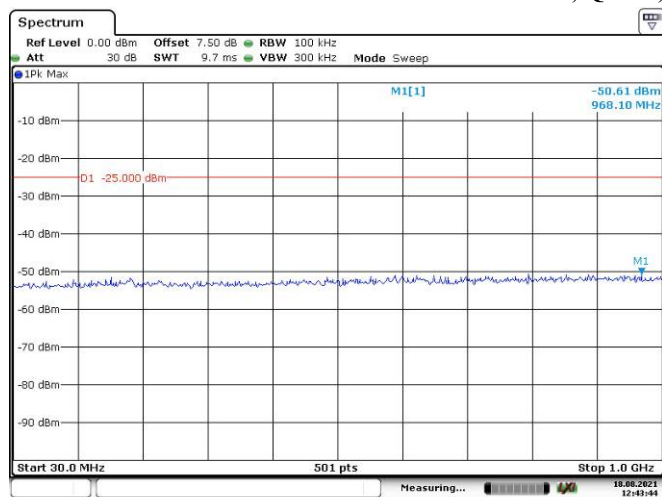


Date: 18.AUG.2021 12:42:43

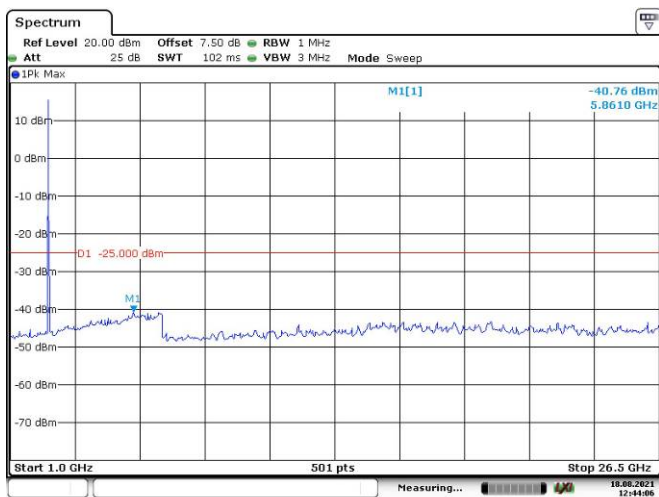


Date: 18.AUG.2021 12:43:05

## 20M, QPSK, Low Channel

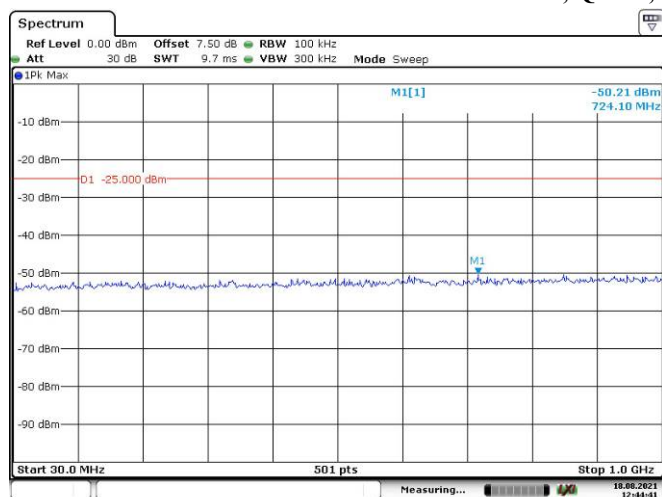


Date: 18.AUG.2021 12:43:44

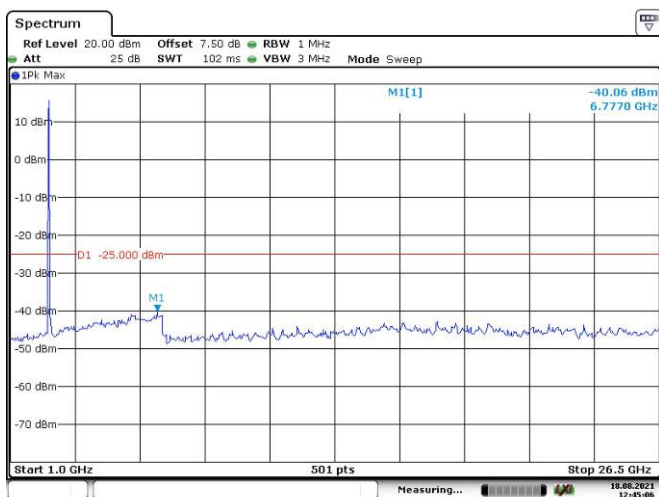


Date: 18.AUG.2021 12:44:06

## 20M, QPSK, Middle Channel

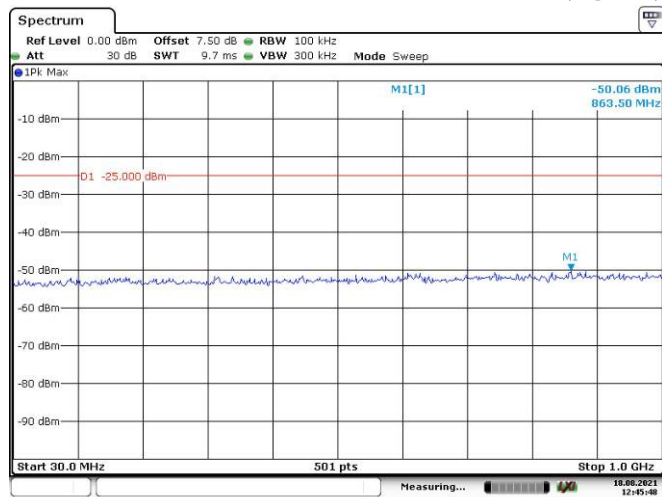


Date: 18.AUG.2021 12:44:41

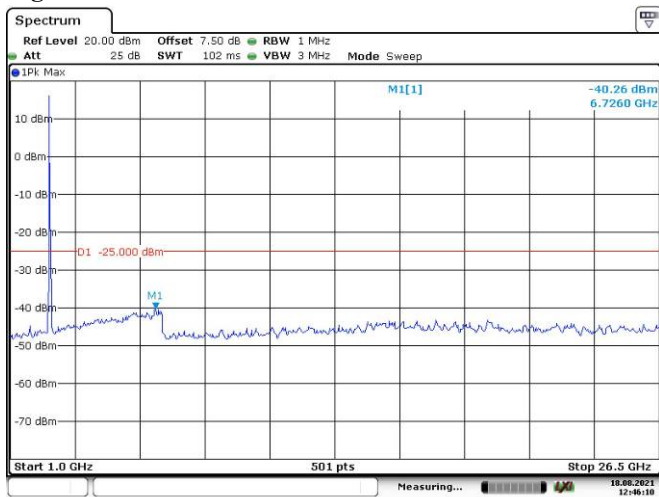


Date: 18.AUG.2021 12:45:06

## 20M, QPSK, High Channel



Date: 18.AUG.2021 12:45:48



Date: 18.AUG.2021 12:46:10

## **FCC §2.1053, §22.917 & §24.238 & §27.53 - SPURIOUS RADIATED EMISSIONS**

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### **Applicable Standard**

FCC § 2.1053, §22.917, § 24.238 and § 27.53

### **Test Procedure**

The transmitter was placed on a wooden turntable, and it was transmitting into a non-radiating load which was also placed on the turntable.

The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and polarization as well as EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. The test was performed by placing the EUT on 3-orthogonal axis.

The frequency range up to tenth harmonic of the fundamental frequency was investigated.

Remove the EUT and replace it with substitution antenna. A signal generator was connected to the substitution antenna by a non-radiating cable. The absolute levels of the spurious emissions were measured by the substitution.

Spurious emissions in dB =  $10 \lg (\text{TXpwr in Watts}/0.001)$  – the absolute level

Spurious attenuation limit in dB =  $43 + 10 \text{Log}_{10} (\text{power out in Watts})$

**Test Equipment List and Details**

| Manufacturer          | Description               | Model                           | Serial Number      | Calibration Date | Calibration Due Date |
|-----------------------|---------------------------|---------------------------------|--------------------|------------------|----------------------|
| Sunol Sciences        | Antenna                   | JB3                             | A060611-1          | 2020-11-10       | 2023-11-10           |
| R&S                   | EMI Test Receiver         | ESR3                            | 102453             | 2020-09-12       | 2021-09-12           |
| Unknown               | Coaxial Cable             | C-NJNJ-50                       | C-0075-01          | 2020-09-05       | 2021-09-05           |
| Unknown               | Coaxial Cable             | C-NJNJ-50                       | C-0400-01          | 2020-09-05       | 2021-09-05           |
| Unknown               | Coaxial Cable             | C-NJNJ-50                       | C-1400-01          | 2021-05-06       | 2022-05-05           |
| Sonoma                | Amplifier                 | 310N                            | 372193             | N/A              | N/A                  |
| EMCO                  | Adjustable Dipole Antenna | 3121C                           | 9109-753           | N/A              | N/A                  |
| Unknown               | Coaxial Cable             | C-NJNJ-50                       | C-0200-02          | 2020-09-05       | 2021-09-05           |
| Agilent               | Signal Generator          | E8247C                          | MY43321350         | 2021-04-25       | 2022-04-24           |
| ETS-Lindgren          | Horn Antenna              | 3115                            | 9912-5985          | 2020-10-13       | 2023-10-12           |
| Ducommun Technologies | Horn Antenna              | ARH-4223-02                     | 1007726-01<br>1304 | 2020-12-05       | 2023-12-04           |
| Agilent               | Spectrum Analyzer         | E4440A                          | MY44303352         | 2021-04-25       | 2022-04-24           |
| HUBER+SUHNER          | Coaxial Cable             | SUCOFLEX<br>126EA               | MY369/26/26E<br>A  | 2020-09-25       | 2021-09-25           |
| Mini                  | Pre-amplifier             | ZVA-183-S+                      | 5969001149         | 2020-09-05       | 2021-09-05           |
| ETS-Lindgren          | Horn Antenna              | 3115                            | 000 527 35         | 2018-10-12       | 2021-10-12           |
| Ducommun Technologies | Horn Antenna              | ARH-4223-02                     | 1007726-02<br>1304 | 2020-12-05       | 2023-12-04           |
| Unknown               | Coaxial Cable             | C-NJNJ-50                       | C-0200-02          | 2020-09-05       | 2021-09-05           |
| Quinstar              | Amplifier                 | QLW-18405536-<br>JO             | 15964001001        | 2021-06-27       | 2022-06-27           |
| Sinoscite             | Band-stop filter          | BSF1710-<br>1785MN-0383-<br>003 | 0383003            | 2021-06-16       | 2022-06-16           |
| Sinoscite             | Band-stop filter          | BSF1850-<br>1910MS-0935V2       | 0935V2             | 2021-06-16       | 2022-06-16           |
| Sinoscite             | Band-stop filter          | BSF824-862MS-<br>1438-001       | 1438001            | 2021-06-16       | 2022-06-16           |
| Sinoscite             | Band-stop filter          | BSF2500-<br>2690MS-1438-002     | 145841             | 2021-06-16       | 2022-06-16           |

\* **Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

**Test Data****Environmental Conditions**

| Test Items         | Radiation Below 1GHz | Radiation Above 1GHz |
|--------------------|----------------------|----------------------|
| Temperature:       | 27°C                 | 28.3°C               |
| Relative Humidity: | 59 %                 | 57%                  |
| ATM Pressure:      | 100.3kPa             | 99.5kPa              |
| Tester:            | Joker Chen           | Alex Hu              |
| Test Date:         | 2021-08-18           | 2021-08-15           |

Test Result: Compliance.

EUT Operation Mode: Transmitting

**Cellular Band (PART 22H)****30 MHz-10 GHz:**

| Frequency<br>(MHz)         | Polar<br>(H/V) | Receiver<br>Reading<br>(dBμV) | Substituted Method            |                              |                    | Absolute<br>Level<br>(dBm) | Limit<br>(dBm) | Margin<br>(dB) |
|----------------------------|----------------|-------------------------------|-------------------------------|------------------------------|--------------------|----------------------------|----------------|----------------|
|                            |                |                               | Substituted<br>Level<br>(dBm) | Antenna<br>Gain<br>(dBd/dBi) | Cable Loss<br>(dB) |                            |                |                |
| GSM 850 Frequency:824.2MHz |                |                               |                               |                              |                    |                            |                |                |
| 1648.40                    | H              | 67.09                         | -51.43                        | 8.68                         | 0.80               | -43.55                     | -13.00         | 30.55          |
| 1648.40                    | V              | 69.70                         | -48.90                        | 8.68                         | 0.80               | -41.02                     | -13.00         | 28.02          |
| 2472.60                    | H              | 62.15                         | -52.69                        | 9.38                         | 1.00               | -44.31                     | -13.00         | 31.31          |
| 2472.60                    | V              | 65.34                         | -49.45                        | 9.38                         | 1.00               | -41.07                     | -13.00         | 28.07          |
| 3296.80                    | H              | 57.50                         | -53.65                        | 10.32                        | 1.15               | -44.48                     | -13.00         | 31.48          |
| 3296.80                    | V              | 61.22                         | -49.69                        | 10.32                        | 1.15               | -40.52                     | -13.00         | 27.52          |
| 776.10                     | H              | 46.75                         | -56.12                        | 0.00                         | 0.55               | -56.67                     | -13.00         | 43.67          |
| 776.10                     | V              | 46.63                         | -52.72                        | 0.00                         | 0.55               | -53.27                     | -13.00         | 40.27          |
| GSM 850 Frequency:836.6MHz |                |                               |                               |                              |                    |                            |                |                |
| 1673.20                    | H              | 65.81                         | -52.68                        | 8.71                         | 0.85               | -44.82                     | -13.00         | 31.82          |
| 1673.20                    | V              | 66.29                         | -52.30                        | 8.71                         | 0.85               | -44.44                     | -13.00         | 31.44          |
| 2509.80                    | H              | 61.89                         | -52.77                        | 9.42                         | 1.01               | -44.36                     | -13.00         | 31.36          |
| 2509.80                    | V              | 61.24                         | -53.43                        | 9.42                         | 1.01               | -45.02                     | -13.00         | 32.02          |
| 3346.40                    | H              | 58.12                         | -53.47                        | 10.34                        | 1.16               | -44.29                     | -13.00         | 31.29          |
| 3346.40                    | V              | 55.83                         | -55.63                        | 10.34                        | 1.16               | -46.45                     | -13.00         | 33.45          |
| 778.90                     | H              | 42.55                         | -60.26                        | 0.00                         | 0.54               | -60.80                     | -13.00         | 47.80          |
| 545.90                     | V              | 46.12                         | -57.04                        | 0.00                         | 0.47               | -57.51                     | -13.00         | 44.51          |
| GSM 850 Frequency:848.8MHz |                |                               |                               |                              |                    |                            |                |                |
| 1697.60                    | H              | 64.23                         | -54.23                        | 8.74                         | 0.90               | -46.39                     | -13.00         | 33.39          |
| 1697.60                    | V              | 66.97                         | -51.62                        | 8.74                         | 0.90               | -43.78                     | -13.00         | 30.78          |
| 2546.40                    | H              | 61.33                         | -53.05                        | 9.47                         | 1.01               | -44.59                     | -13.00         | 31.59          |
| 2546.40                    | V              | 61.14                         | -53.19                        | 9.47                         | 1.01               | -44.73                     | -13.00         | 31.73          |
| 3395.20                    | H              | 58.04                         | -54.04                        | 10.36                        | 1.19               | -44.87                     | -13.00         | 31.87          |
| 3395.20                    | V              | 57.99                         | -54.06                        | 10.36                        | 1.19               | -44.89                     | -13.00         | 31.89          |
| 767.70                     | H              | 42.90                         | -60.17                        | 0.00                         | 0.54               | -60.71                     | -13.00         | 47.71          |
| 545.90                     | V              | 47.80                         | -55.36                        | 0.00                         | 0.47               | -55.83                     | -13.00         | 42.83          |



| Frequency<br>(MHz)               | Polar<br>(H/V) | Receiver<br>Reading<br>(dBμV) | Substituted Method            |                              |                    | Absolute<br>Level<br>(dBm) | Limit<br>(dBm) | Margin<br>(dB) |
|----------------------------------|----------------|-------------------------------|-------------------------------|------------------------------|--------------------|----------------------------|----------------|----------------|
|                                  |                |                               | Substituted<br>Level<br>(dBm) | Antenna<br>Gain<br>(dBd/dBi) | Cable Loss<br>(dB) |                            |                |                |
| WCDMA Band 5 Frequency:826.4 MHz |                |                               |                               |                              |                    |                            |                |                |
| 1652.80                          | H              | 46.85                         | -71.66                        | 8.68                         | 0.81               | -63.79                     | -13.00         | 50.79          |
| 1652.80                          | V              | 48.65                         | -69.94                        | 8.68                         | 0.81               | -62.07                     | -13.00         | 49.07          |
| 2479.20                          | H              | 47.58                         | -67.24                        | 9.39                         | 1.01               | -58.86                     | -13.00         | 45.86          |
| 2479.20                          | V              | 46.39                         | -68.39                        | 9.39                         | 1.01               | -60.01                     | -13.00         | 47.01          |
| 3305.60                          | H              | 47.13                         | -64.06                        | 10.32                        | 1.15               | -54.89                     | -13.00         | 41.89          |
| 3305.60                          | V              | 48.43                         | -62.53                        | 10.32                        | 1.15               | -53.36                     | -13.00         | 40.36          |
| 32.10                            | H              | 38.50                         | -35.38                        | -25.33                       | 0.10               | -60.81                     | -13.00         | 47.81          |
| 30.70                            | V              | 43.90                         | -36.72                        | -25.98                       | 0.10               | -62.80                     | -13.00         | 49.80          |
| WCDMA Band 5 Frequency:836.6MHz  |                |                               |                               |                              |                    |                            |                |                |
| 1673.20                          | H              | 47.25                         | -71.24                        | 8.71                         | 0.85               | -63.38                     | -13.00         | 50.38          |
| 1673.20                          | V              | 47.10                         | -71.49                        | 8.71                         | 0.85               | -63.63                     | -13.00         | 50.63          |
| 2509.80                          | H              | 47.31                         | -67.35                        | 9.42                         | 1.01               | -58.94                     | -13.00         | 45.94          |
| 2509.80                          | V              | 47.27                         | -67.40                        | 9.42                         | 1.01               | -58.99                     | -13.00         | 45.99          |
| 3346.40                          | H              | 48.18                         | -63.41                        | 10.34                        | 1.16               | -54.23                     | -13.00         | 41.23          |
| 3346.40                          | V              | 47.45                         | -64.01                        | 10.34                        | 1.16               | -54.83                     | -13.00         | 41.83          |
| 30.70                            | H              | 38.98                         | -33.22                        | -25.98                       | 0.10               | -59.30                     | -13.00         | 46.30          |
| 30.70                            | V              | 43.49                         | -37.13                        | -25.98                       | 0.10               | -63.21                     | -13.00         | 50.21          |
| WCDMA Band 5 Frequency:846.6MHz  |                |                               |                               |                              |                    |                            |                |                |
| 1693.20                          | H              | 48.52                         | -69.95                        | 8.73                         | 0.89               | -62.11                     | -13.00         | 49.11          |
| 1693.20                          | V              | 48.25                         | -70.34                        | 8.73                         | 0.89               | -62.50                     | -13.00         | 49.50          |
| 2539.80                          | H              | 47.06                         | -67.37                        | 9.46                         | 1.01               | -58.92                     | -13.00         | 45.92          |
| 2539.80                          | V              | 47.40                         | -66.99                        | 9.46                         | 1.01               | -58.54                     | -13.00         | 45.54          |
| 3386.40                          | H              | 47.28                         | -64.71                        | 10.35                        | 1.18               | -55.54                     | -13.00         | 42.54          |
| 3386.40                          | V              | 47.24                         | -64.70                        | 10.35                        | 1.18               | -55.53                     | -13.00         | 42.53          |
| 30.70                            | H              | 39.47                         | -32.73                        | -25.98                       | 0.10               | -58.81                     | -13.00         | 45.81          |
| 54.60                            | V              | 44.85                         | -58.58                        | -12.78                       | 0.13               | -71.49                     | -13.00         | 58.49          |

**PCS Band (PART 24E)****30 MHz-20 GHz:**

| Frequency<br>(MHz)           | Polar<br>(H/V) | Receiver<br>Reading<br>(dBμV) | Substituted Method            |                              |                    | Absolute<br>Level<br>(dBm) | Limit<br>(dBm) | Margin<br>(dB) |
|------------------------------|----------------|-------------------------------|-------------------------------|------------------------------|--------------------|----------------------------|----------------|----------------|
|                              |                |                               | Substituted<br>Level<br>(dBm) | Antenna<br>Gain<br>(dBd/dBi) | Cable Loss<br>(dB) |                            |                |                |
| GSM 1900 Frequency:1850.2MHz |                |                               |                               |                              |                    |                            |                |                |
| 3700.40                      | H              | 54.48                         | -57.60                        | 10.60                        | 1.25               | -48.25                     | -13.00         | 35.25          |
| 3700.40                      | V              | 58.29                         | -53.77                        | 10.60                        | 1.25               | -44.42                     | -13.00         | 31.42          |
| 5550.60                      | H              | 57.33                         | -51.83                        | 11.44                        | 1.49               | -41.88                     | -13.00         | 28.88          |
| 5550.60                      | V              | 59.26                         | -49.74                        | 11.44                        | 1.49               | -39.79                     | -13.00         | 26.79          |
| 41.90                        | H              | 44.49                         | -42.91                        | -23.89                       | 0.12               | -66.92                     | -13.00         | 53.92          |
| 30.70                        | V              | 44.07                         | -36.55                        | -25.98                       | 0.10               | -62.63                     | -13.00         | 49.63          |
| GSM 1900 Frequency:1880MHz   |                |                               |                               |                              |                    |                            |                |                |
| 3760.00                      | H              | 53.47                         | -57.69                        | 10.66                        | 1.24               | -48.27                     | -13.00         | 35.27          |
| 3760.00                      | V              | 54.38                         | -56.66                        | 10.66                        | 1.24               | -47.24                     | -13.00         | 34.24          |
| 5640.00                      | H              | 59.18                         | -50.16                        | 11.33                        | 1.54               | -40.37                     | -13.00         | 27.37          |
| 5640.00                      | V              | 53.93                         | -55.29                        | 11.33                        | 1.54               | -45.50                     | -13.00         | 32.50          |
| 145.80                       | H              | 38.87                         | -73.23                        | 0.00                         | 0.22               | -73.45                     | -13.00         | 60.45          |
| 39.10                        | V              | 47.79                         | -41.15                        | -25.97                       | 0.11               | -67.23                     | -13.00         | 54.23          |
| GSM 1900 Frequency:1909.8MHz |                |                               |                               |                              |                    |                            |                |                |
| 3819.60                      | H              | 52.47                         | -58.10                        | 10.72                        | 1.29               | -48.67                     | -13.00         | 35.67          |
| 3819.60                      | V              | 52.38                         | -58.05                        | 10.72                        | 1.29               | -48.62                     | -13.00         | 35.62          |
| 5729.40                      | H              | 64.56                         | -44.87                        | 11.22                        | 1.59               | -35.24                     | -13.00         | 22.24          |
| 5729.40                      | V              | 55.94                         | -53.36                        | 11.22                        | 1.59               | -43.73                     | -13.00         | 30.73          |
| 172.50                       | H              | 39.89                         | -72.27                        | 0.00                         | 0.24               | -72.51                     | -13.00         | 59.51          |
| 145.80                       | V              | 53.64                         | -54.45                        | 0.00                         | 0.22               | -54.67                     | -13.00         | 41.67          |

| Frequency<br>(MHz)                  | Polar<br>(H/V) | Receiver<br>Reading<br>(dBμV) | Substituted Method            |                              |                    | Absolute<br>Level<br>(dBm) | Limit<br>(dBm) | Margin<br>(dB) |
|-------------------------------------|----------------|-------------------------------|-------------------------------|------------------------------|--------------------|----------------------------|----------------|----------------|
|                                     |                |                               | Substituted<br>Level<br>(dBm) | Antenna<br>Gain<br>(dBd/dBi) | Cable Loss<br>(dB) |                            |                |                |
| WCDMA Band II, Frequency:1852.4 MHz |                |                               |                               |                              |                    |                            |                |                |
| 3704.80                             | H              | 47.89                         | -64.13                        | 10.60                        | 1.25               | -54.78                     | -13.00         | 41.78          |
| 3704.80                             | V              | 47.30                         | -64.69                        | 10.60                        | 1.25               | -55.34                     | -13.00         | 42.34          |
| 5557.20                             | H              | 47.46                         | -61.72                        | 11.43                        | 1.49               | -51.78                     | -13.00         | 38.78          |
| 5557.20                             | V              | 47.47                         | -61.55                        | 11.43                        | 1.49               | -51.61                     | -13.00         | 38.61          |
| 30.70                               | H              | 38.98                         | -33.22                        | -25.98                       | 0.10               | -59.30                     | -13.00         | 46.30          |
| 30.70                               | V              | 43.86                         | -36.76                        | -25.98                       | 0.10               | -62.84                     | -13.00         | 49.84          |
| WCDMA Band II, Frequency:1880 MHz   |                |                               |                               |                              |                    |                            |                |                |
| 3760.00                             | H              | 47.34                         | -63.82                        | 10.66                        | 1.24               | -54.40                     | -13.00         | 41.40          |
| 3760.00                             | V              | 47.89                         | -63.15                        | 10.66                        | 1.24               | -53.73                     | -13.00         | 40.73          |
| 5640.00                             | H              | 47.70                         | -61.64                        | 11.33                        | 1.54               | -51.85                     | -13.00         | 38.85          |
| 5640.00                             | V              | 48.04                         | -61.18                        | 11.33                        | 1.54               | -51.39                     | -13.00         | 38.39          |
| 32.10                               | H              | 37.97                         | -35.91                        | -25.33                       | 0.10               | -61.34                     | -13.00         | 48.34          |
| 30.70                               | V              | 44.87                         | -35.75                        | -25.98                       | 0.10               | -61.83                     | -13.00         | 48.83          |
| WCDMA Band II, Frequency:1907.6MHz  |                |                               |                               |                              |                    |                            |                |                |
| 3815.20                             | H              | 47.08                         | -63.49                        | 10.72                        | 1.29               | -54.06                     | -13.00         | 41.06          |
| 3815.20                             | V              | 48.40                         | -62.01                        | 10.72                        | 1.29               | -52.58                     | -13.00         | 39.58          |
| 5722.80                             | H              | 48.41                         | -61.02                        | 11.23                        | 1.58               | -51.37                     | -13.00         | 38.37          |
| 5722.80                             | V              | 47.22                         | -62.08                        | 11.23                        | 1.58               | -52.43                     | -13.00         | 39.43          |
| 30.70                               | H              | 39.40                         | -32.80                        | -25.98                       | 0.10               | -58.88                     | -13.00         | 45.88          |
| 30.70                               | V              | 44.06                         | -36.56                        | -25.98                       | 0.10               | -62.64                     | -13.00         | 49.64          |

Note:

- 1) The unit of Antenna Gain is dBd for frequency below 1GHz, and the unit of Antenna Gain is dBi for frequency above 1GHz.
- 2) Absolute Level = Substituted Level + Antenna Gain
- 3) Margin = Limit-Absolute Level

**LTE Band 2 (30MHz-20GHz):**

EYE Band 2 (50MHz to 3GHz):

| Frequency<br>(MHz)          | Polar<br>(H/V) | Receiver<br>Reading<br>(dBμV) | Substituted Method            |                              |                    | Absolute<br>Level<br>(dBm) | Limit<br>(dBm) | Margin<br>(dB) |
|-----------------------------|----------------|-------------------------------|-------------------------------|------------------------------|--------------------|----------------------------|----------------|----------------|
|                             |                |                               | Substituted<br>Level<br>(dBm) | Antenna<br>Gain<br>(dBd/dBi) | Cable Loss<br>(dB) |                            |                |                |
| QPSK, Frequency: 1850.7 MHz |                |                               |                               |                              |                    |                            |                |                |
| 3701.40                     | H              | 47.79                         | -64.28                        | 10.60                        | 1.25               | -54.93                     | -13.00         | 41.93          |
| 3701.40                     | V              | 50.35                         | -61.70                        | 10.60                        | 1.25               | -52.35                     | -13.00         | 39.35          |
| 5552.10                     | H              | 47.73                         | -61.44                        | 11.44                        | 1.49               | -51.49                     | -13.00         | 38.49          |
| 5552.10                     | V              | 48.15                         | -60.85                        | 11.44                        | 1.49               | -50.90                     | -13.00         | 37.90          |
| 30.70                       | H              | 37.71                         | -34.49                        | -25.98                       | 0.10               | -60.57                     | -13.00         | 47.57          |
| 30.70                       | V              | 44.44                         | -36.18                        | -25.98                       | 0.10               | -62.26                     | -13.00         | 49.26          |
| QPSK, Frequency: 1880 MHz   |                |                               |                               |                              |                    |                            |                |                |
| 3760.00                     | H              | 47.63                         | -63.53                        | 10.66                        | 1.24               | -54.11                     | -13.00         | 41.11          |
| 3760.00                     | V              | 50.02                         | -61.02                        | 10.66                        | 1.24               | -51.60                     | -13.00         | 38.60          |
| 5640.00                     | H              | 47.87                         | -61.47                        | 11.33                        | 1.54               | -51.68                     | -13.00         | 38.68          |
| 5640.00                     | V              | 48.23                         | -60.99                        | 11.33                        | 1.54               | -51.20                     | -13.00         | 38.20          |
| 32.10                       | H              | 38.76                         | -35.12                        | -25.33                       | 0.10               | -60.55                     | -13.00         | 47.55          |
| 30.70                       | V              | 45.27                         | -35.35                        | -25.98                       | 0.10               | -61.43                     | -13.00         | 48.43          |
| QPSK, Frequency: 1909.3 MHz |                |                               |                               |                              |                    |                            |                |                |
| 3818.60                     | H              | 47.70                         | -62.87                        | 10.72                        | 1.29               | -53.44                     | -13.00         | 40.44          |
| 3818.60                     | V              | 49.76                         | -60.66                        | 10.72                        | 1.29               | -51.23                     | -13.00         | 38.23          |
| 5727.90                     | H              | 49.84                         | -59.59                        | 11.23                        | 1.59               | -49.95                     | -13.00         | 36.95          |
| 5727.90                     | V              | 49.21                         | -60.09                        | 11.23                        | 1.59               | -50.45                     | -13.00         | 37.45          |
| 30.70                       | H              | 38.85                         | -33.35                        | -25.98                       | 0.10               | -59.43                     | -13.00         | 46.43          |
| 30.70                       | V              | 44.93                         | -35.69                        | -25.98                       | 0.10               | -61.77                     | -13.00         | 48.77          |

**LTE Band 4 (30MHz-20GHz):**

| EFT Band 4 (36MHz-26GHz).   |                |                               |                               |                              |                    |                            |                |                |
|-----------------------------|----------------|-------------------------------|-------------------------------|------------------------------|--------------------|----------------------------|----------------|----------------|
| Frequency<br>(MHz)          | Polar<br>(H/V) | Receiver<br>Reading<br>(dBμV) | Substituted Method            |                              |                    | Absolute<br>Level<br>(dBm) | Limit<br>(dBm) | Margin<br>(dB) |
|                             |                |                               | Substituted<br>Level<br>(dBm) | Antenna<br>Gain<br>(dBd/dBi) | Cable Loss<br>(dB) |                            |                |                |
| QPSK, Frequency: 1710.7 MHz |                |                               |                               |                              |                    |                            |                |                |
| 3421.40                     | H              | 48.05                         | -64.08                        | 10.37                        | 1.17               | -54.88                     | -13.00         | 41.88          |
| 3421.40                     | V              | 47.64                         | -64.46                        | 10.37                        | 1.17               | -55.26                     | -13.00         | 42.26          |
| 5132.10                     | H              | 47.52                         | -61.38                        | 11.28                        | 1.47               | -51.57                     | -13.00         | 38.57          |
| 5132.10                     | V              | 47.60                         | -61.19                        | 11.28                        | 1.47               | -51.38                     | -13.00         | 38.38          |
| 30.70                       | H              | 39.16                         | -33.04                        | -25.98                       | 0.10               | -59.12                     | -13.00         | 46.12          |
| 30.70                       | V              | 43.73                         | -36.89                        | -25.98                       | 0.10               | -62.97                     | -13.00         | 49.97          |
| QPSK, Frequency: 1732.5 MHz |                |                               |                               |                              |                    |                            |                |                |
| 3465.00                     | H              | 47.50                         | -64.62                        | 10.39                        | 1.15               | -55.38                     | -13.00         | 42.38          |
| 3465.00                     | V              | 50.20                         | -61.88                        | 10.39                        | 1.15               | -52.64                     | -13.00         | 39.64          |
| 5197.50                     | H              | 48.62                         | -60.71                        | 11.32                        | 1.44               | -50.83                     | -13.00         | 37.83          |
| 5197.50                     | V              | 47.51                         | -61.67                        | 11.32                        | 1.44               | -51.79                     | -13.00         | 38.79          |
| 30.70                       | H              | 38.89                         | -33.31                        | -25.98                       | 0.10               | -59.39                     | -13.00         | 46.39          |
| 30.70                       | V              | 44.83                         | -35.79                        | -25.98                       | 0.10               | -61.87                     | -13.00         | 48.87          |
| QPSK, Frequency: 1754.3 MHz |                |                               |                               |                              |                    |                            |                |                |
| 3508.60                     | H              | 48.85                         | -63.26                        | 10.41                        | 1.19               | -54.04                     | -13.00         | 41.04          |
| 3508.60                     | V              | 51.34                         | -60.70                        | 10.41                        | 1.19               | -51.48                     | -13.00         | 38.48          |
| 5262.90                     | H              | 46.79                         | -62.41                        | 11.36                        | 1.47               | -52.52                     | -13.00         | 39.52          |
| 5262.90                     | V              | 48.26                         | -60.71                        | 11.36                        | 1.47               | -50.82                     | -13.00         | 37.82          |
| 30.70                       | H              | 40.55                         | -31.65                        | -25.98                       | 0.10               | -57.73                     | -13.00         | 44.73          |
| 30.70                       | V              | 43.95                         | -36.67                        | -25.98                       | 0.10               | -62.75                     | -13.00         | 49.75          |

**LTE Band 5(30MHz-10GHz):**

| Frequency<br>(MHz)         | Polar<br>(H/V) | Receiver<br>Reading<br>(dBμV) | Substituted Method            |                              |                    | Absolute<br>Level<br>(dBm) | Limit<br>(dBm) | Margin<br>(dB) |
|----------------------------|----------------|-------------------------------|-------------------------------|------------------------------|--------------------|----------------------------|----------------|----------------|
|                            |                |                               | Substituted<br>Level<br>(dBm) | Antenna<br>Gain<br>(dBd/dBi) | Cable Loss<br>(dB) |                            |                |                |
| QPSK, Frequency: 824.7 MHz |                |                               |                               |                              |                    |                            |                |                |
| 1649.40                    | H              | 57.25                         | -61.27                        | 8.68                         | 0.80               | -53.39                     | -13.00         | 40.39          |
| 1649.40                    | V              | 56.89                         | -61.71                        | 8.68                         | 0.80               | -53.83                     | -13.00         | 40.83          |
| 2474.10                    | H              | 53.18                         | -61.66                        | 9.38                         | 1.00               | -53.28                     | -13.00         | 40.28          |
| 2474.10                    | V              | 53.17                         | -61.62                        | 9.38                         | 1.00               | -53.24                     | -13.00         | 40.24          |
| 3298.80                    | H              | 48.90                         | -62.24                        | 10.32                        | 1.15               | -53.07                     | -13.00         | 40.07          |
| 3298.80                    | V              | 54.29                         | -56.61                        | 10.32                        | 1.15               | -47.44                     | -13.00         | 34.44          |
| 782.43                     | H              | 42.07                         | -60.66                        | 0.00                         | 0.55               | -61.21                     | -13.00         | 48.21          |
| 782.43                     | V              | 48.07                         | -51.12                        | 0.00                         | 0.55               | -51.67                     | -13.00         | 38.67          |
| QPSK, Frequency: 836.5 MHz |                |                               |                               |                              |                    |                            |                |                |
| 1673.00                    | H              | 57.14                         | -61.35                        | 8.71                         | 0.85               | -53.49                     | -13.00         | 40.49          |
| 1673.00                    | V              | 54.80                         | -63.79                        | 8.71                         | 0.85               | -55.93                     | -13.00         | 42.93          |
| 2509.50                    | H              | 55.03                         | -59.63                        | 9.42                         | 1.01               | -51.22                     | -13.00         | 38.22          |
| 2509.50                    | V              | 54.36                         | -60.31                        | 9.42                         | 1.01               | -51.90                     | -13.00         | 38.90          |
| 3346.00                    | H              | 48.85                         | -62.74                        | 10.34                        | 1.16               | -53.56                     | -13.00         | 40.56          |
| 3346.00                    | V              | 48.40                         | -63.05                        | 10.34                        | 1.16               | -53.87                     | -13.00         | 40.87          |
| 791.50                     | H              | 40.39                         | -62.13                        | 0.00                         | 0.61               | -62.74                     | -13.00         | 49.74          |
| 791.50                     | V              | 46.22                         | -52.74                        | 0.00                         | 0.61               | -53.35                     | -13.00         | 40.35          |
| QPSK, Frequency: 848.3 MHz |                |                               |                               |                              |                    |                            |                |                |
| 1696.60                    | H              | 53.50                         | -64.96                        | 8.74                         | 0.89               | -57.11                     | -13.00         | 44.11          |
| 1696.60                    | V              | 58.37                         | -60.22                        | 8.74                         | 0.89               | -52.37                     | -13.00         | 39.37          |
| 2544.90                    | H              | 56.62                         | -57.77                        | 9.47                         | 1.01               | -49.31                     | -13.00         | 36.31          |
| 2544.90                    | V              | 57.36                         | -56.98                        | 9.47                         | 1.01               | -48.52                     | -13.00         | 35.52          |
| 3393.20                    | H              | 53.91                         | -58.15                        | 10.36                        | 1.19               | -48.98                     | -13.00         | 35.98          |
| 3393.20                    | V              | 50.81                         | -61.22                        | 10.36                        | 1.19               | -52.05                     | -13.00         | 39.05          |
| 802.80                     | H              | 39.35                         | -62.90                        | 0.00                         | 0.57               | -63.47                     | -13.00         | 50.47          |
| 802.80                     | V              | 45.45                         | -53.23                        | 0.00                         | 0.57               | -53.80                     | -13.00         | 40.80          |



**LTE Band 7(30MHz-26.5GHz):**

| EPE Band (CONTR. Freqs):    |                |                               |                               |                              |                    |                            |                |                |
|-----------------------------|----------------|-------------------------------|-------------------------------|------------------------------|--------------------|----------------------------|----------------|----------------|
| Frequency<br>(MHz)          | Polar<br>(H/V) | Receiver<br>Reading<br>(dBμV) | Substituted Method            |                              |                    | Absolute<br>Level<br>(dBm) | Limit<br>(dBm) | Margin<br>(dB) |
|                             |                |                               | Substituted<br>Level<br>(dBm) | Antenna<br>Gain<br>(dBd/dBi) | Cable Loss<br>(dB) |                            |                |                |
| QPSK, Frequency: 2502.5 MHz |                |                               |                               |                              |                    |                            |                |                |
| 5005.00                     | H              | 48.31                         | -60.66                        | 11.20                        | 1.47               | -50.93                     | -25.00         | 25.93          |
| 5005.00                     | V              | 48.40                         | -60.44                        | 11.20                        | 1.47               | -50.71                     | -25.00         | 25.71          |
| 7507.50                     | H              | 48.69                         | -57.34                        | 10.90                        | 1.95               | -48.39                     | -25.00         | 23.39          |
| 7507.50                     | V              | 48.26                         | -58.27                        | 10.90                        | 1.95               | -49.32                     | -25.00         | 24.32          |
| 763.50                      | H              | 36.53                         | -66.63                        | 0.00                         | 0.53               | -67.16                     | -25.00         | 42.16          |
| 47.50                       | V              | 42.02                         | -56.75                        | -17.35                       | 0.12               | -74.22                     | -25.00         | 49.22          |
| QPSK, Frequency: 2535 MHz   |                |                               |                               |                              |                    |                            |                |                |
| 5070.00                     | H              | 48.28                         | -60.49                        | 11.24                        | 1.47               | -50.72                     | -25.00         | 25.72          |
| 5070.00                     | V              | 47.47                         | -61.20                        | 11.24                        | 1.47               | -51.43                     | -25.00         | 26.43          |
| 7605.00                     | H              | 49.08                         | -56.98                        | 10.88                        | 2.01               | -48.11                     | -25.00         | 23.11          |
| 7605.00                     | V              | 48.71                         | -58.06                        | 10.88                        | 2.01               | -49.19                     | -25.00         | 24.19          |
| 147.20                      | H              | 36.63                         | -75.42                        | 0.00                         | 0.23               | -75.65                     | -25.00         | 50.65          |
| 47.50                       | V              | 43.97                         | -54.80                        | -17.35                       | 0.12               | -72.27                     | -25.00         | 47.27          |
| QPSK, Frequency: 2567.5 MHz |                |                               |                               |                              |                    |                            |                |                |
| 5135.00                     | H              | 50.06                         | -58.85                        | 11.28                        | 1.47               | -49.04                     | -25.00         | 24.04          |
| 5135.00                     | V              | 48.54                         | -60.26                        | 11.28                        | 1.47               | -50.45                     | -25.00         | 25.45          |
| 7702.50                     | H              | 49.19                         | -56.60                        | 10.86                        | 1.97               | -47.71                     | -25.00         | 22.71          |
| 7702.50                     | V              | 49.77                         | -56.68                        | 10.86                        | 1.97               | -47.79                     | -25.00         | 22.79          |
| 624.50                      | H              | 37.24                         | -67.52                        | 0.00                         | 0.48               | -68.00                     | -25.00         | 43.00          |
| 47.50                       | V              | 44.07                         | -54.70                        | -17.35                       | 0.12               | -72.17                     | -25.00         | 47.17          |

Note:

- 1) The unit of Antenna Gain is dBd for frequency below 1GHz, and the unit of Antenna Gain is dBi for frequency above 1GHz.
- 2) Absolute Level = Substituted Level + Antenna Gain
- 3) Margin = Limit-Absolute Level

## FCC §22.917(a) & §24.238(a) & §27.53 - BAND EDGES

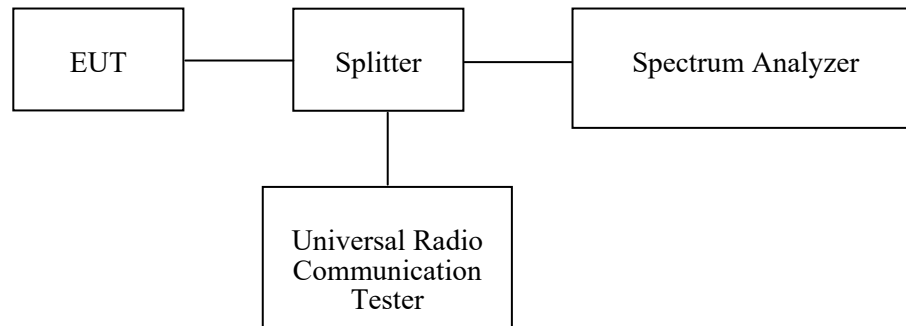
### Applicable Standard

FCC § 2.1053, §22.917, § 24.238 and § 27.53

### Test Procedure

The RF output of the transmitter was connected to the input of the spectrum analyzer through sufficient attenuation.

The center of the spectrum analyzer was set to block edge frequency.



### Test Equipment List and Details

| Manufacturer | Description       | Model         | Serial Number | Calibration Date | Calibration Due Date |
|--------------|-------------------|---------------|---------------|------------------|----------------------|
| R&S          | Spectrum Analyzer | FSV40         | 101474        | 2021/7/22        | 2022/7/21            |
| yzjingcheng  | Coaxial Cable     | KTRFBU-141-50 | 41010012      | Each time        | N/A                  |
| yzjingcheng  | Coaxial Cable     | KTRFBU-141-50 | 41005011      | Each time        | N/A                  |
| Unknown      | Attenuator        | UNAT-3+       | 15529         | Each time        | N/A                  |
| E-Microwave  | Two-way Splitter  | ODP-1-6-2S    | OE0120142     | Each time        | N/A                  |

\* **Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

### Test Data

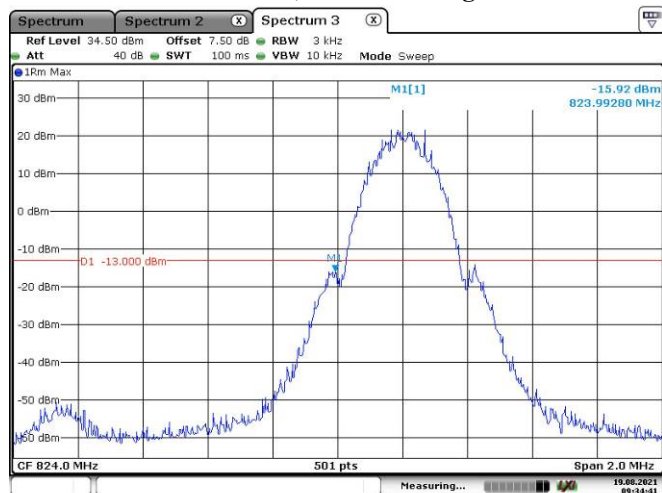
#### Environmental Conditions

|                           |                       |
|---------------------------|-----------------------|
| <b>Temperature:</b>       | 27.2°C ~28.2°C        |
| <b>Relative Humidity:</b> | 51 %~56 %             |
| <b>ATM Pressure:</b>      | 100.1kPa~100.3kPa     |
| <b>Tester:</b>            | Lay Lei               |
| <b>Test Date:</b>         | 2021.08.18~2021.08.19 |

Test Mode: Transmitting

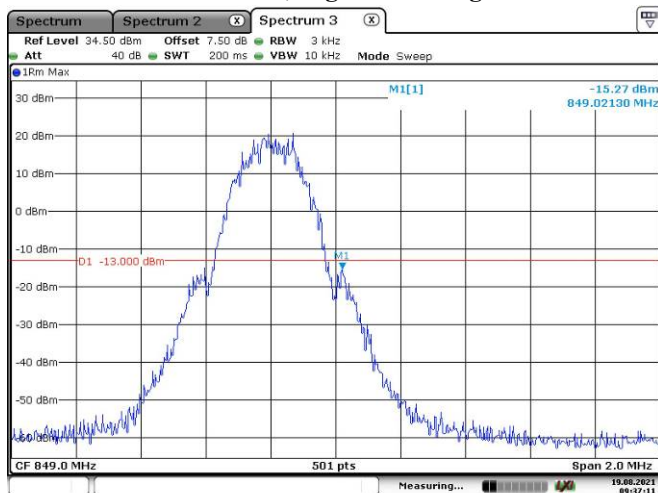
Test Result: Compliance. Please refer to the following plots.

## GSM 850, Left Band Edge



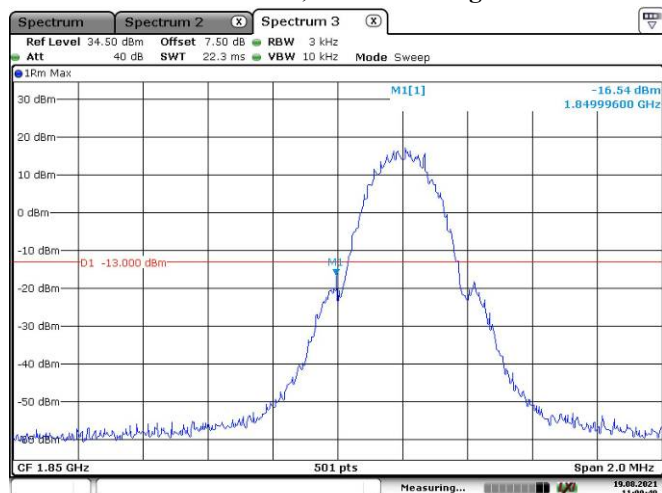
Date: 19.AUG.2021 09:34:41

## GSM 850, Right Band Edge



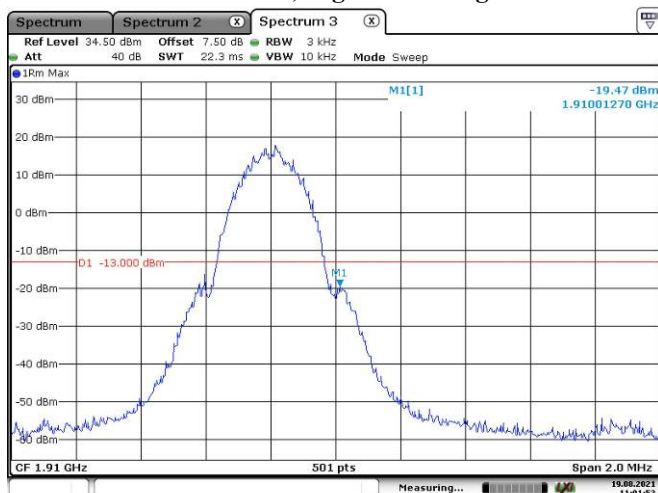
Date: 19.AUG.2021 09:37:11

## GSM 1900, Left Band Edge



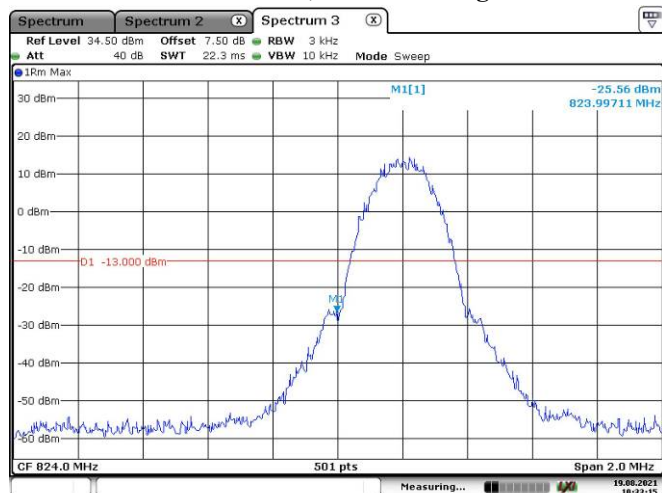
Date: 19.AUG.2021 11:00:49

## GSM 1900, Right Band Edge



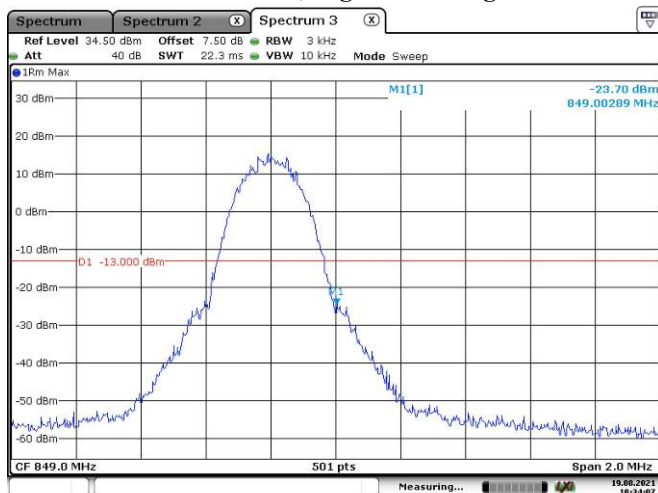
Date: 19.AUG.2021 11:01:53

## EGPRS 850, Left Band Edge



Date: 19.AUG.2021 10:33:15

## EGPRS 850, Right Band Edge



Date: 19.AUG.2021 10:34:07