



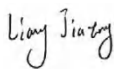
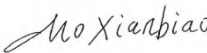
Test Report No.:  
**FCCSZ2024-0011-RF**

## RF Test Report

**FCC ID** : OWWI117756S  
**EUT** : SLW 5G  
**MODEL** : PRO25T-6S-IOT,PRO25T-6S-BTW,PRO20T-6S-BTW  
**BRAND NAME** : N/A  
**APPLICANT** : SHENZHEN HUAPTEC CO., LTD  
**Classification of Test** : N/A

**CVC Testing Technology (Shenzhen) Co., Ltd.**



|                                                                                                         |                                                                                              |                                                                                                                   |                       |
|---------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|-----------------------|
| <b>Applicant</b>                                                                                        |                                                                                              | Name : SHENZHEN HUAPTEC CO., LTD                                                                                  |                       |
|                                                                                                         |                                                                                              | Address :3rd FL,E BLDG, Sogood Science Park, SanWei community, Hangcheng Street, Bao'an District, Shenzhen, China |                       |
| <b>Manufacturer</b>                                                                                     |                                                                                              | Name : SHENZHEN HUAPTEC CO., LTD                                                                                  |                       |
|                                                                                                         |                                                                                              | Address :3rd FL,E BLDG, Sogood Science Park, SanWei community, Hangcheng Street, Bao'an District, Shenzhen, China |                       |
| <b>Equipment Under Test</b>                                                                             |                                                                                              | Name :SLW 5G                                                                                                      |                       |
|                                                                                                         |                                                                                              | Model/Type:PRO25T-6S-IOT                                                                                          |                       |
|                                                                                                         |                                                                                              | Additional Model:PRO25T-6S-BTW,PRO20T-6S-BTW                                                                      |                       |
|                                                                                                         |                                                                                              | Trade mark : N/A                                                                                                  |                       |
|                                                                                                         |                                                                                              | Serial NO.:N/A                                                                                                    |                       |
|                                                                                                         |                                                                                              | Sampe NO.:2-1                                                                                                     |                       |
| Date of Receipt.                                                                                        | 2024.03.12                                                                                   | Date of Testing                                                                                                   | 2024.03.12~2024.03.29 |
| <b>Test Specification</b>                                                                               |                                                                                              | <b>Test Result</b>                                                                                                |                       |
| FCC CFR 47 Part 20                                                                                      |                                                                                              | PASS                                                                                                              |                       |
| <b>Evaluation of Test Result</b>                                                                        | The equipment under test was found to comply with the requirements of the standards applied. |                                                                                                                   |                       |
|                                                                                                         | Seal of CVC                                                                                  |                                                                                                                   |                       |
|                                                                                                         | Issue Date: 2024.03.29                                                                       |                                                                                                                   |                       |
| Tested by:                                                                                              | Reviewed by:                                                                                 | Approved by:                                                                                                      |                       |
|                      |           |                              |                       |
| <u>Liang Jiatong</u>                                                                                    | <u>Mo Xianbiao</u>                                                                           | <u>Dong Sanbi</u>                                                                                                 |                       |
| Name                                                                                                    | Signature                                                                                    | Name                                                                                                              | Signature             |
| <b>Other Aspects: NONE.</b>                                                                             |                                                                                              |                                                                                                                   |                       |
| Abbreviations:OK, Pass= passed Fail = failed N/A= not applicable EUT= equipment, sample(s) under tested |                                                                                              |                                                                                                                   |                       |

This test report relates only to the EUT, and shall not be reproduced except in full, without written approval of CVC.



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## RELEASE CONTROL RECORD

| ISSUE NO.         | REASON FOR CHANGE | DATE ISSUED |
|-------------------|-------------------|-------------|
| FCCSZ2024-0011-RF | Original release  | 2024.03.29  |

## 1 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

| APPLIED STANDARD: FCC Part 20,RSS 131                 |                     |                                                               |        |                           |
|-------------------------------------------------------|---------------------|---------------------------------------------------------------|--------|---------------------------|
| FCC STANDARD SECTION                                  | IC STANDARD SECTION | TEST TYPE AND LIMIT                                           | RESULT | REMARK                    |
| § 2.1046; § 22.913;<br>§ 24.232; § 22.913;<br>§ 27.50 | RSS 131 9.3         | RF Output Power&<br>AGC threshold level                       | PASS   | See section 3.1           |
| § 2.1047                                              | /                   | Modulation Characteristics                                    | N/A    | EUT was a signal booster. |
| § 2.1049; § 22.917;<br>§ 24.238; §27.53               | RSS 131 9.2         | Input-versus-output signal<br>comparison(Bandwidth)           | PASS   | See section 3.2           |
| § 2.1051; § 22.917;<br>§ 24.238; §27.53               | /                   | Spurious Emissions at<br>Antenna Terminal&<br>Intermodulation | PASS   | See section 3.3           |
| § 2.1053; § 22.917;<br>§ 24.238; §27.53               | /                   | Band Edge                                                     | PASS   | See section 3.4           |
| § 2.1053; § 22.917;<br>§ 24.238; §27.53               | /                   | Field Strength of Spurious<br>Radiation                       | PASS   | See section 3.5           |
| § 20.21                                               | RSS 131 9.1         | Out of Band Rejection                                         | PASS   | See section 3.6           |
| § 2.1055; § 22.355;<br>§ 24.235; § 27.54              | RSS 131 9.4         | Frequency stability                                           | N/A    | EUT was a signal booster. |



## 1.1 LIST OF TEST AND MEASUREMENT INSTRUMENTS

| Equipment                                | Manufacturer  | Model No.          | Serial Number | Cal. interval | Cal. Due  |
|------------------------------------------|---------------|--------------------|---------------|---------------|-----------|
| Radiation Spurious(1GHz-40GHz)           |               |                    |               |               | /         |
| Signal&Spectrum Analyzer                 | Rohde&Schwarz | FSV 40             | 101898        | 1 year        | 2024.5.21 |
| EMI Test Receiver                        | Rohde&Schwarz | ESR3               | 102693        | 1 year        | 2024.5.25 |
| Antenna(30MHz~1001MHz)                   | SCHWARZBECK   | VULB 9168          | 1133          | 1 year        | 2025.2.21 |
| Horn antenna(1GHz-18GHz)                 | ETS           | 3117               | 227611        | 1 year        | 2025.3.25 |
| Horn antenna(18GHz-40GHz)                | QMS           | QMS-00880          | 22051         | 1 year        | 2025.3.25 |
| 3m anechoic chamber                      | MORI          | 966                | CS0300011     | 3 year        | 2026.5.18 |
| Filter group(RSE-BT/WiFi)                | Rohde&Schwarz | WiFi /BT Variant 1 | 100820        | 1 year        | 2024.5.21 |
| Filter group(RSE-Cellular)               | Rohde&Schwarz | Cellular Variant 1 | 100768        | 1 year        | 2024.5.21 |
| Preamplifier(10kHz-1GHz)                 | Rohde&Schwarz | SCU-01F            | 100299        | 1 year        | 2024.5.21 |
| Preamplifier(1GHz-18GHz)                 | Rohde&Schwarz | SCU-18F            | 100799        | 1 year        | 2024.5.21 |
| Preamplifier(1GHz-18GHz)                 | Rohde&Schwarz | SCU-18F            | 100801        | 1 year        | 2024.5.21 |
| Preamplifier(18Gz-40GHz)                 | Rohde&Schwarz | SCU-40A            | 101209        | 1 year        | 2024.5.21 |
| #2 control room                          | MORI          | 433                | CS0300028     | 3 year        | 2024.5.21 |
| Temperature and humidity meter           | /             | C193561517         | C193561517    | 1 year        | 2024.5.21 |
| Radiation Spurious(Below 1GHz)           |               |                    |               |               | /         |
| EMI Test Receiver                        | Rohde&Schwarz | ESR 26             | 101718        | 1 year        | 2024.5.25 |
| Loop antenna (8.3k~30MHz)                | Rohde&Schwarz | HFH2-Z2E           | 100951        | 1 year        | 2024.5.26 |
| Antenna(30MHz~1000MHz)                   | SCHWARZBECK   | VULB 9168          | 1132          | 1 year        | 2025.2.14 |
| 3m anechoic chamber                      | MORI          | 966                | CS0200019     | 3 year        | 2026.5.18 |
| Attenuator                               | /             | SJ-5dB             | 607684        | 1 year        | 2025.2.21 |
| #1 control room                          | MORI          | 433                | CS0300028     | 3 year        | 2026.5.16 |
| Temperature and humidity meter           | /             | C193561473         | CS0200071     | 1 year        | 2024.5.21 |
| Antenna Port Test System                 |               |                    |               |               | /         |
| Signal&Spectrum Analyzer                 | Rohde&Schwarz | FSV 30             | 104408        | 1 year        | 2024.5.21 |
| #3Shielding room                         | MORI          | 443                | N/A           | 3 year        | 2026.5.16 |
| Wideband radio communication tester      | Rohde&Schwarz | CMW 500            | 168778        | 1 year        | 2024.5.25 |
| Analog signal Generator (100kHz ~ 40GHz) | Rohde&Schwarz | SMB 100A           | 181934        | 1 year        | 2024.5.21 |
| Vector signal Generator (9kHz ~ 6GHz)    | Keysight      | N5182B             | MY57301451    | 1 year        | 2024.4.25 |
| Vector signal Generator (9kHz ~ 6GHz)    | Rohde&Schwarz | SGT 100A           | 111724        | 1 year        | 2024.5.21 |
| RF control unit(BT/WiFi)                 | Tonscend      | JS0806-2-8CH       | 20E8060261    | 1 year        | 2024.5.21 |



## 1.2 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

| No.                                 | Item                          | Measurement Uncertainty |
|-------------------------------------|-------------------------------|-------------------------|
| 1                                   | Conducted emission test       | +/-2.7 dB               |
| 2                                   | Radiated emission 9kHz-30MHz  | +/-5.6 dB               |
| 3                                   | Radiated emission 30MHz-1GHz  | +/-4.6 dB               |
| 4                                   | Radiated emission 1GHz-18GHz  | +/-4.4 dB               |
| 5                                   | Radiated emission 18GHz-40GHz | +/-5.1 dB               |
| 6                                   | RF power                      | +/-0.9 dB               |
| 7                                   | Power Spectral Density        | +/-0.8 dB               |
| 8                                   | Conducted spurious emissions  | +/-2.7 dB               |
| 9                                   | Transmission Time             | +/-0.27%                |
| 10                                  | Occupied Bandwidth            | +/-1.86%                |
| Remark: 95% Confidence Levels, k=2. |                               |                         |

## 1.3 TEST LOCATION

The tests and measurements refer to this report were performed by EMC testing Lab. of CVC Testing Technology (Shenzhen) Co., Ltd.

Lab Address: No. 1301, Guanguang Road, Xinlan Community, Guanlan Street, Longhua District, Shenzhen City, Guangdong Province 518110 P.R.China

Post Code: 518110 Tel: 0755-23763060-8805

Fax: 0755-23763060 E-mail: sz-kf@cvc.org.cn

FCC(Test firm designation number: CN1363)

IC(Test firm CAB identifier number: CN0137)

CNAS(Test firm designation number: L16091)



## 2 GENERAL INFORMATION

### 2.1 GENERAL PRODUCT INFORMATION

|                                                                                                                                                                                                             |                             |                |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|----------------|
| PRODUCT                                                                                                                                                                                                     | SLW 5G                      |                |
| BRAND                                                                                                                                                                                                       | N/A                         |                |
| TEST MODEL                                                                                                                                                                                                  | PRO25T-6S-IOT               |                |
| ADDITIONAL MODEL                                                                                                                                                                                            | PRO25T-6S-BTW,PRO20T-6S-BTW |                |
| POWER SUPPLY                                                                                                                                                                                                | DC12V from adapter          |                |
| FREQUENCY RANGE                                                                                                                                                                                             | Uplink                      | Downlink       |
|                                                                                                                                                                                                             | 663 ~ 698MHz                | 617 ~ 652MHz   |
|                                                                                                                                                                                                             | 698 ~ 716MHz                | 728 ~ 746MHz   |
|                                                                                                                                                                                                             | 776 ~ 787MHz                | 746 ~ 757MHz   |
|                                                                                                                                                                                                             | 824 ~ 849 MHz               | 869 ~ 894 MHz  |
|                                                                                                                                                                                                             | 1850 ~ 1915MHz              | 1930 ~ 1995MHz |
|                                                                                                                                                                                                             | 1710 ~ 1755MHz              | 2110 ~ 2155MHz |
| ANTENNA TYPE(Note 3)                                                                                                                                                                                        | See section 2.2             |                |
| I/O PORTS                                                                                                                                                                                                   | Refer to user's manual      |                |
| CABLE SUPPLIED                                                                                                                                                                                              | N/A                         |                |
| Note:                                                                                                                                                                                                       |                             |                |
| 1. For more detailed features description, please refer to the manufacturer's specifications or the User's Manual.                                                                                          |                             |                |
| 2. For the test results, the EUT had been tested with all conditions. But only the worst case was shown in test report.                                                                                     |                             |                |
| 3. Since the above data and/or information is provided by the client, CVC is not responsible for the authenticity, integrity and results of the data and information and/or the validity of the conclusion. |                             |                |
| 4. PRO25T-6S-IOT and PRO25T-6S-BTW are same electrically identical, only the appearance is different                                                                                                        |                             |                |
| 5. PRO25T-6S-BTW and PRO20T-6S-BTW are similar in appearance and size, there is only a difference in model name                                                                                             |                             |                |



## 2.2 PRODUCT ANTENNA GAIN & CABLE LOSS

### Downlink

| FCC<br>Band Name | Frequency<br>Range(MHz) | Panel antenna*(dBi) | Cable<br>loss*(dB) |
|------------------|-------------------------|---------------------|--------------------|
| 600 MHz Service  | 617-652                 | 8                   | 4.6                |
| Lower 700 MHz    | 728-746                 | 8                   | 4.8                |
| Upper 700 MHz    | 746-757                 | 8                   | 5.01               |
| Cellular         | 869-894                 | 8                   | 5.35               |
| Broadband PCS    | 1930-1995               | 10                  | 8.01               |
| AWS-1            | 2110-2155               | 10                  | 8.36               |

Note: The antenna gain and cable loss was provided by applicant.

### Uplink

| FCC<br>Band Name | Frequency<br>Range(MHz) | Panel antenna*(dBi) | Cable<br>loss*(dB) |
|------------------|-------------------------|---------------------|--------------------|
| 600 MHz Service  | 663-698                 | 8                   | 4.6                |
| Lower 700 MHz    | 698-716                 | 8.5                 | 4.8                |
| Upper 700 MHz    | 776-787                 | 8.5                 | 5.01               |
| Cellular         | 824-849                 | 8.5                 | 5.35               |
| Broadband PCS    | 1850-1915               | 9                   | 8.01               |
| AWS-1            | 1710-1755               | 9                   | 7.45               |

Note: The antenna gain and cable loss was provided by applicant.



## 2.3 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a RF product, according to the specifications of the manufacturers. It must comply with the requirements of the following standards:

**FCC Part 20.21 – Signal Boosters**

**RSS-131 Issue 4(2022-12)**

**ANSI C63.26-2015**

Part 22 Subpart H - Public Mobile Services

Part 24 Subpart E - Personal Communication Services

Part 27 – Miscellaneous wireless communications services

KDB 935210 D02 Signal Boosters Certification v04r02

KDB 935210 D05 Indus Booster Basic Meas v01r04

All test items have been performed and recorded as per the above standards.

## 2.4 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Training the tests:

| Support Equipment |             |                   |             |                      |                    |                |             |
|-------------------|-------------|-------------------|-------------|----------------------|--------------------|----------------|-------------|
| NO                | Description | Brand             | Model No.   | Serial Number        | Supplied by        |                |             |
| 1                 | Laptop      | Lenovo            | K4e-ARE120  | MP20kshe             | Lab                |                |             |
|                   |             |                   |             |                      |                    |                |             |
| Support Cable     |             |                   |             |                      |                    |                |             |
| NO                | Description | Quantity (Number) | Length (cm) | Detachable (Yes/ No) | Shielded (Yes/ No) | Cores (Number) | Supplied by |
|                   |             |                   |             |                      |                    |                |             |
|                   |             |                   |             |                      |                    |                |             |



## 3 TEST TYPES AND RESULTS

### 3.1 RF OUTPUT POWER

#### 3.1.1 Standard Applicable

According to FCC §2.1046 and §22.913 (a), the maximum effective radiated power (ERP) of base transmitters and cellular repeaters must not exceed 500 Watts.

According to FCC §2.1046 and §24.232(a)

(1) Base stations with an emission bandwidth of 1 MHz or less are limited to 1640 watts equivalent isotropically radiated power (EIRP) with an antenna height up to 300 meters HAAT, except as described in paragraph (b) below.

(2) Base stations with an emission bandwidth greater than 1 MHz are limited to 1640 watts/MHz equivalent isotropically radiated power (EIRP) with an antenna height up to 300 meters HAAT, except as described in paragraph (b) below.

(3) Base station antenna heights may exceed 300 meters HAAT with a corresponding reduction in power; see Tables 1 and 2 of this section.

According to §27.50(b), Fixed and base stations transmitting a signal in the 746-757 MHz and 776-787 MHz bands with an emission bandwidth greater than 1 MHz must not exceed an ERP of 1000 watts/MHz and an antenna height of 305 m HAAT, except that antenna heights greater than 305 m HAAT are permitted if power levels are reduced below 1000 watts/MHz ERP in accordance with Table 3 of this section.

According to §27.50(c), Fixed and base stations transmitting a signal in the 746-757 MHz and 776-787 MHz bands with an emission bandwidth greater than 1 MHz must not exceed an ERP of 1000 watts/MHz and an antenna height of 305 m HAAT, except that antenna heights greater than 305 m HAAT are permitted if power levels are reduced below 1000 watts/MHz ERP in accordance with Table 3 of this section.

Portable stations (hand-held devices) in the 600 MHz uplink band and the 698-746 MHz band, and fixed and mobile stations in the 600 MHz uplink band are limited to 3 watts ERP.

According to §27.50(d)(2), The power of each fixed or base station transmitting in the 1995-2000 MHz, the 2110-2155 MHz 2155-2180 MHz band, or 2180-2200 MHz band and situated in any geographic location other than that described in paragraph (d)(1) of this section is limited to:

(i) An equivalent isotropically radiated power (EIRP) of 1640 watts when transmitting with an emission bandwidth of 1 MHz or less;

(ii) An EIRP of 1640 watts/MHz when transmitting with an emission bandwidth greater than 1 MHz.

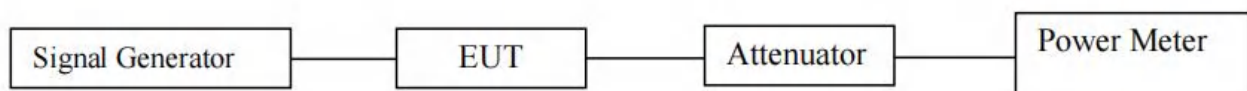
According to §27.50(d)(4), Fixed, mobile, and portable (hand-held) stations operating in the 1710-1755 MHz band and mobile and portable stations operating in the 1695-1710 MHz and 1755-1780 MHz bands are limited to 1 watt EIRP. Fixed stations operating in the 1710-1755 MHz band are limited to a maximum antenna height of 10 meters above ground. Mobile and portable stations operating in these bands must employ a means for limiting power to the minimum necessary for successful communications.

#### 3.1.2 Measurement procedure

Conducted method:

According to KDB 935210 D05 Indus Booster Basic Meas v01r04 clause 3.5

#### 3.1.3 Test setup





## 3.1.4 Test results

### AGC Level - Downlink:

| Mode     | Frequency (MHz) | Operation Band | Signal type | AGC level(dBm) | Conducted Output Power (dBm) | ERP (dBm) | Gain (dB) |
|----------|-----------------|----------------|-------------|----------------|------------------------------|-----------|-----------|
| Downlink | 678.8           | 600MHz Band    | AWGN        | -50.9          | 17.22                        | 20.62     | 68.12     |
|          | 699.1           | Lower700 MHz   | AWGN        | -52.5          | 17.35                        | 20.55     | 69.85     |
|          | 781.5           | Upper700MHz    | AWGN        | -51.7          | 18.53                        | 21.52     | 70.23     |
|          | 835.3           | cellular       | AWGN        | -55.0          | 17.11                        | 19.76     | 72.11     |
|          | 1866.3          | PCS            | AWGN        | -57.9          | 16.17                        | 18.16     | 74.07     |
|          | 1732.6          | AWS-1          | AWGN        | -58.1          | 17.07                        | 18.71     | 75.17     |
|          | 678.8           | 600MHz Band    | GSM         | -50.9          | 15.98                        | 19.38     | 66.88     |
|          | 699.1           | Lower700 MHz   | GSM         | -52.5          | 16.48                        | 19.68     | 68.98     |
|          | 781.5           | Upper700MHz    | GSM         | -51.7          | 17.74                        | 20.73     | 69.44     |
|          | 835.3           | cellular       | GSM         | -55.0          | 16.23                        | 18.88     | 71.23     |
|          | 1866.3          | PCS            | GSM         | -57.9          | 15.83                        | 17.82     | 73.73     |
|          | 1732.6          | AWS-1          | GSM         | -58.1          | 16.29                        | 17.93     | 74.39     |

Note:

- ERP=Conducted Output Power(dBm) +AntennaGain(dBd)-Cable loss(dB)
- AntennaGain(dBd) = AntennaGain(dBi) - 2.15

### AGC Level - Uplink:

| Mode   | Frequency (MHz) | Operation Band | Signal type | AGC level(dBm) | Conducted Output Power (dBm) | ERP (dBm) | Gain (dB) |
|--------|-----------------|----------------|-------------|----------------|------------------------------|-----------|-----------|
| Uplink | 633             | 600MHz Band    | AWGN        | -39.1          | 22.29                        | 25.69     | 64.39     |
|        | 734.2           | Lower700 MHz   | AWGN        | -41.7          | 21.17                        | 24.87     | 65.87     |
|        | 750.8           | Upper700MHz    | AWGN        | -40.7          | 22.38                        | 25.87     | 66.08     |
|        | 876.88          | cellular       | AWGN        | -40.8          | 23.22                        | 26.37     | 67.02     |
|        | 1968.1          | PCS            | AWGN        | -41.4          | 25.8                         | 26.79     | 70.2      |
|        | 2135.5          | AWS-1          | AWGN        | -41.2          | 25.91                        | 27.46     | 70.11     |
|        | 633             | 600MHz Band    | GSM         | -39.1          | 21.15                        | 24.55     | 63.25     |
|        | 734.2           | Lower700 MHz   | GSM         | -41.7          | 20.21                        | 23.91     | 64.91     |
|        | 750.8           | Upper700MHz    | GSM         | -40.7          | 21.16                        | 24.65     | 64.86     |
|        | 876.88          | cellular       | GSM         | -40.8          | 22.07                        | 25.22     | 65.87     |
|        | 1968.1          | PCS            | GSM         | -41.4          | 24.52                        | 25.51     | 68.92     |
|        | 2135.5          | AWS-1          | GSM         | -41.2          | 24.76                        | 26.31     | 68.96     |

Note:

- ERP=Conducted Output Power(dBm) +AntennaGain(dBd)-Cable loss(dB)
- AntennaGain(dBd) = AntennaGain(dBi) - 2.15



AGC + 3db Level - Downlink:

| Mode     | Frequency<br>(MHz) | Operation<br>Band | Signal<br>type | AGC+3db<br>level(dBm) | Conducted<br>Output<br>Powe<br>(dBm) | ERP<br>(dBm) | Gain<br>(dB) |
|----------|--------------------|-------------------|----------------|-----------------------|--------------------------------------|--------------|--------------|
| Downlink | 678.8              | 600MHz Band       | AWGN           | -47.9                 | 16.81                                | 20.21        | 64.71        |
|          | 699.1              | Lower700 MHz      | AWGN           | -49.5                 | 17.22                                | 20.42        | 66.72        |
|          | 781.5              | Upper700MHz       | AWGN           | -48.7                 | 18.17                                | 21.16        | 66.87        |
|          | 835.3              | cellular          | AWGN           | -52.0                 | 16.94                                | 19.59        | 68.94        |
|          | 1866.3             | PCS               | AWGN           | -54.9                 | 16.59                                | 18.58        | 71.49        |
|          | 1732.6             | AWS-1             | AWGN           | -55.1                 | 17.03                                | 18.67        | 72.13        |
|          | 678.8              | 600MHz Band       | GSM            | -47.9                 | 15.56                                | 18.96        | 63.46        |
|          | 699.1              | Lower700 MHz      | GSM            | -49.5                 | 16.53                                | 19.73        | 66.03        |
|          | 781.5              | Upper700MHz       | GSM            | -48.7                 | 17.49                                | 20.48        | 66.19        |
|          | 835.3              | cellular          | GSM            | -52.0                 | 15.02                                | 17.67        | 67.02        |
|          | 1866.3             | PCS               | GSM            | -54.9                 | 15.29                                | 17.28        | 70.19        |
|          | 1732.6             | AWS-1             | GSM            | -55.1                 | 14.73                                | 16.37        | 69.83        |

Note:

- ERP=Conducted Output Power(dBm) +AntennaGain(dBd)-Cable loss(dB)
- AntennaGain(dBd) = AntennaGain(dBi) - 2.15

AGC + 3db Level - Uplink:

| Mode   | Frequency<br>(MHz) | Operation<br>Band | Signal<br>type | AGC+3db<br>level(dBm) | Conducted<br>Output<br>Powe<br>(dBm) | ERP<br>(dBm) | Gain<br>(dB) |
|--------|--------------------|-------------------|----------------|-----------------------|--------------------------------------|--------------|--------------|
| Uplink | 633                | 600MHz Band       | AWGN           | -39.1                 | 22.02                                | 25.42        | 61.12        |
|        | 734.2              | Lower700 MHz      | AWGN           | -41.7                 | 20.83                                | 24.53        | 62.53        |
|        | 750.8              | Upper700MHz       | AWGN           | -40.7                 | 22.15                                | 25.64        | 62.85        |
|        | 876.88             | cellular          | AWGN           | -40.8                 | 23.01                                | 26.16        | 63.81        |
|        | 1968.1             | PCS               | AWGN           | -41.4                 | 25.91                                | 26.90        | 67.31        |
|        | 2135.5             | AWS-1             | AWGN           | -41.2                 | 25.77                                | 27.32        | 66.97        |
|        | 633                | 600MHz Band       | GSM            | -39.1                 | 21.03                                | 24.43        | 60.13        |
|        | 734.2              | Lower700 MHz      | GSM            | -41.7                 | 20.02                                | 23.72        | 61.72        |
|        | 750.8              | Upper700MHz       | GSM            | -40.7                 | 20.98                                | 24.47        | 61.68        |
|        | 876.88             | cellular          | GSM            | -40.8                 | 21.94                                | 25.09        | 62.74        |
|        | 1968.1             | PCS               | GSM            | -41.4                 | 25.37                                | 26.36        | 66.77        |
|        | 2135.5             | AWS-1             | GSM            | -41.2                 | 24.33                                | 25.88        | 65.53        |

Note:

- ERP=Conducted Output Power(dBm) +AntennaGain(dBd)-Cable loss(dB)
- AntennaGain(dBd) = AntennaGain(dBi) - 2.15



## 3.2 INPUT-VS-OUTPUT SIGNAL COMPARISON(BANDWIDTH) MEASUREMENT

### 3.2.1 Standard Applicable

FCC §2.1049, §22.917, §22.905, §24.238 & §27.53.

According to RSS-131, Clause 9.2

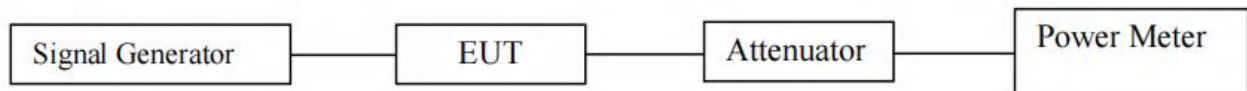
The spectral growth of the 26 dB bandwidth or occupied bandwidth of the output signal shall be less than 5% of the input signal spectrum.

### 3.2.2 Measurement procedure

According to KDB 935210 D05 Indus Booster Basic Meas v01r04 clause 3.4

A 26 dB bandwidth measurement shall be performed on the input signal and the output signal (alternatively, the 99% OBW can be measured and used) to demonstrate compliance to the technical requirements specified in §90.219(e)(4)(i) and (ii). See KDB Publication 971168 for more information regarding measuring the OBW.

### 3.2.3 Test setup

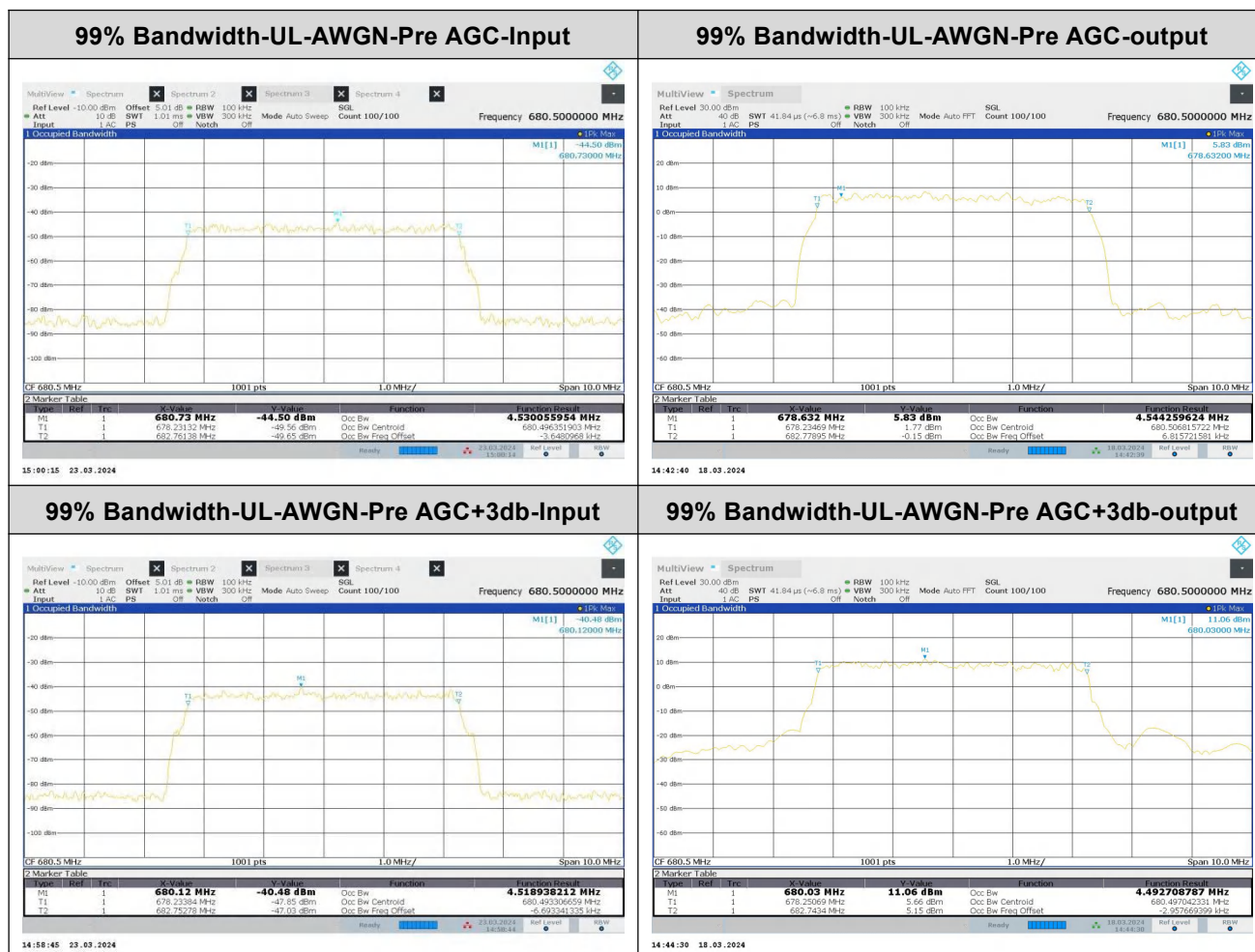


### 3.2.4 Test results

#### 600 MHz Service

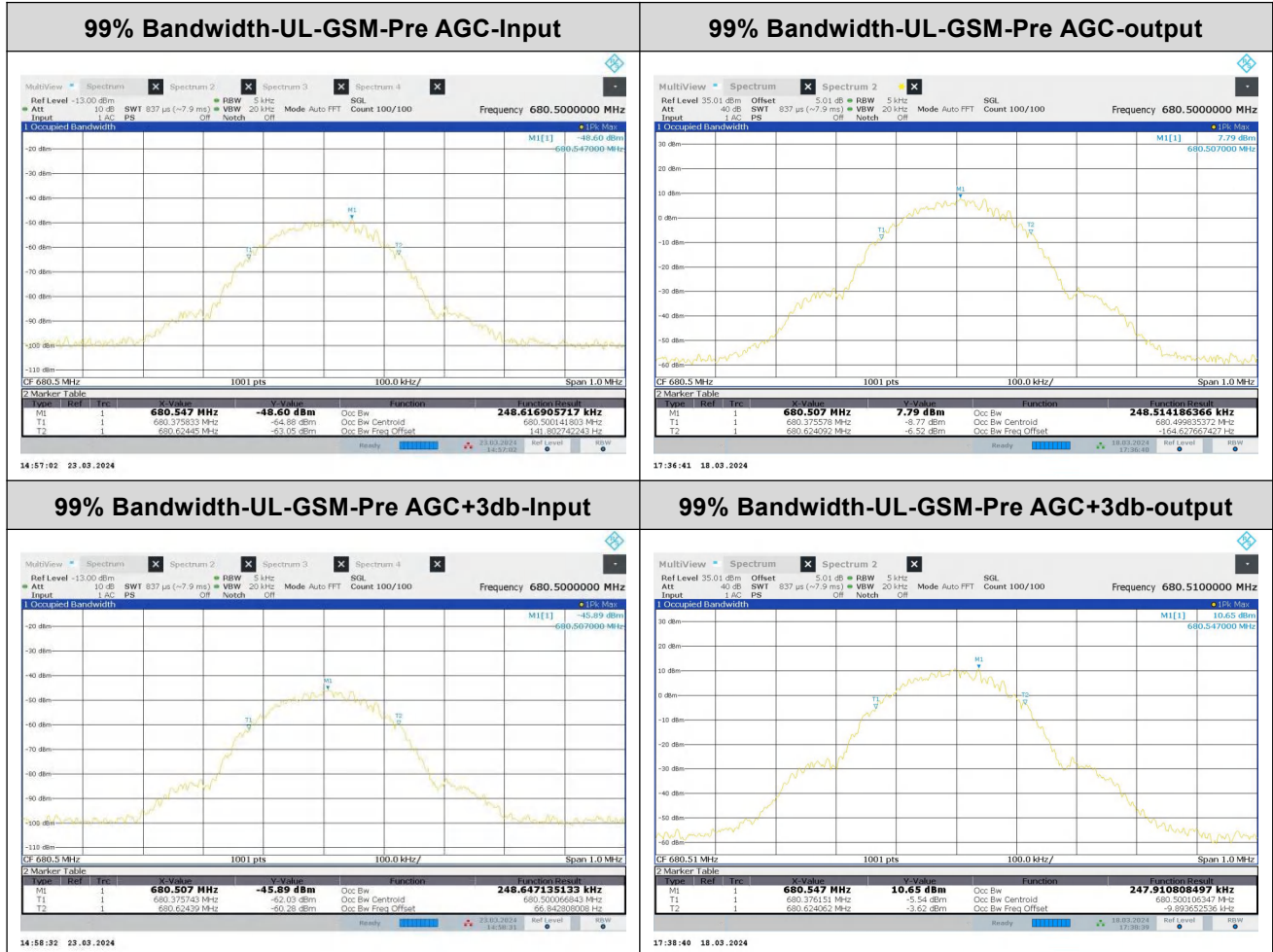
| Mode     | SignalType | Signal Level  | Frequency (MHz) | 99% Bandwidth (MHz) |        | 26dB Bandwidth (MHz) |        |
|----------|------------|---------------|-----------------|---------------------|--------|----------------------|--------|
|          |            |               |                 | Input               | Output | Input                | Output |
| Uplink   | AWGN       | Pre-AGC       | 680.5           | 4.530               | 4.544  | 5.040                | 5.040  |
|          |            | 3dB above AGC | 680.5           | 4.518               | 4.492  | 5.080                | 5.090  |
|          | GSM        | Pre-AGC       | 680.5           | 0.248               | 0.248  | 0.307                | 0.308  |
|          |            | 3dB above AGC | 680.5           | 0.248               | 0.247  | 0.309                | 0.309  |
| Downlink | AWGN       | Pre-AGC       | 634.5           | 4.508               | 4.522  | 5.110                | 5.080  |
|          |            | 3dB above AGC | 634.5           | 4.569               | 4.476  | 5.130                | 5.080  |
|          | GSM        | Pre-AGC       | 634.5           | 0.248               | 0.247  | 0.312                | 0.308  |
|          |            | 3dB above AGC | 634.5           | 0.248               | 0.247  | 0.309                | 0.307  |

## 600 MHz Service

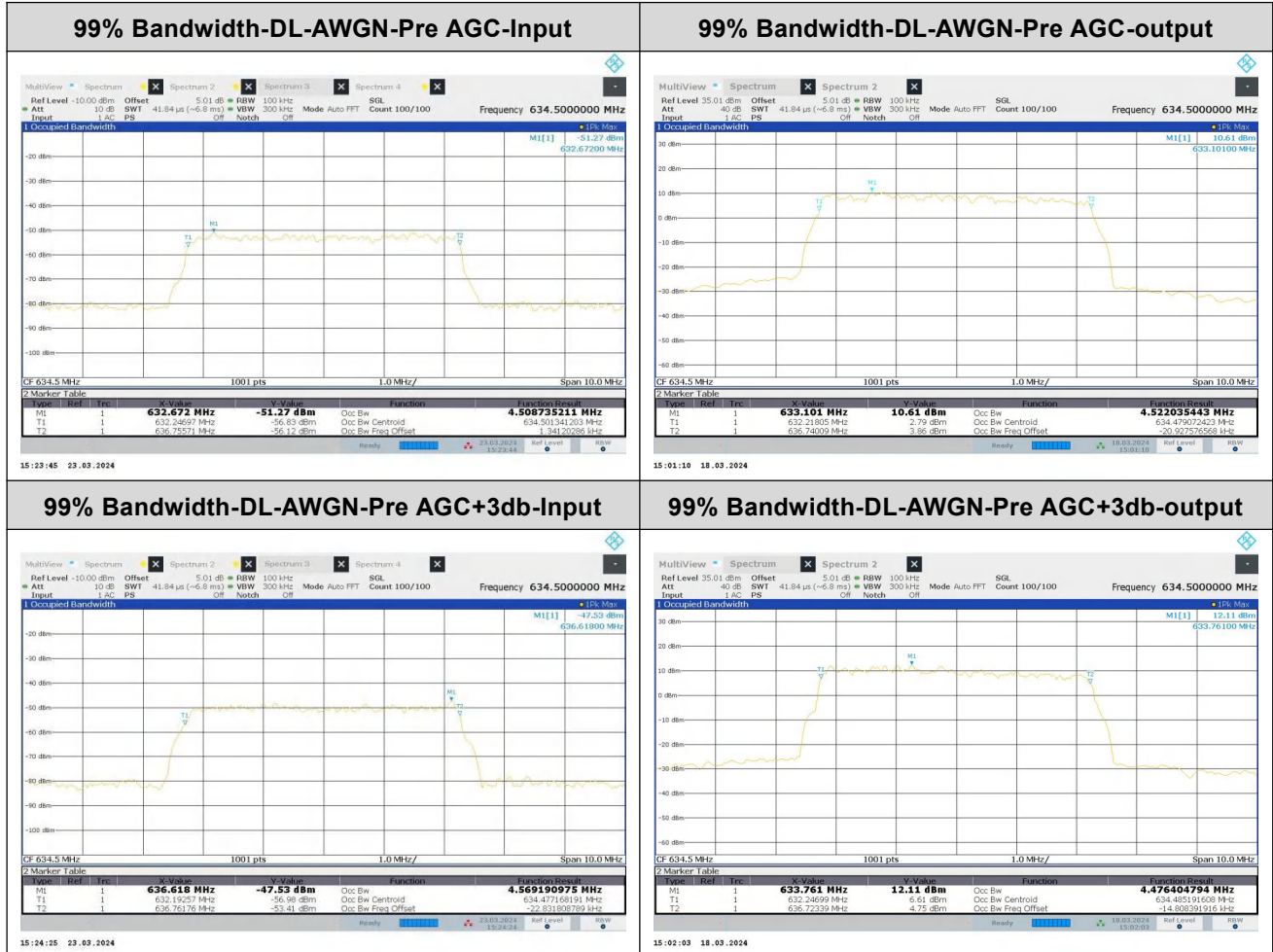




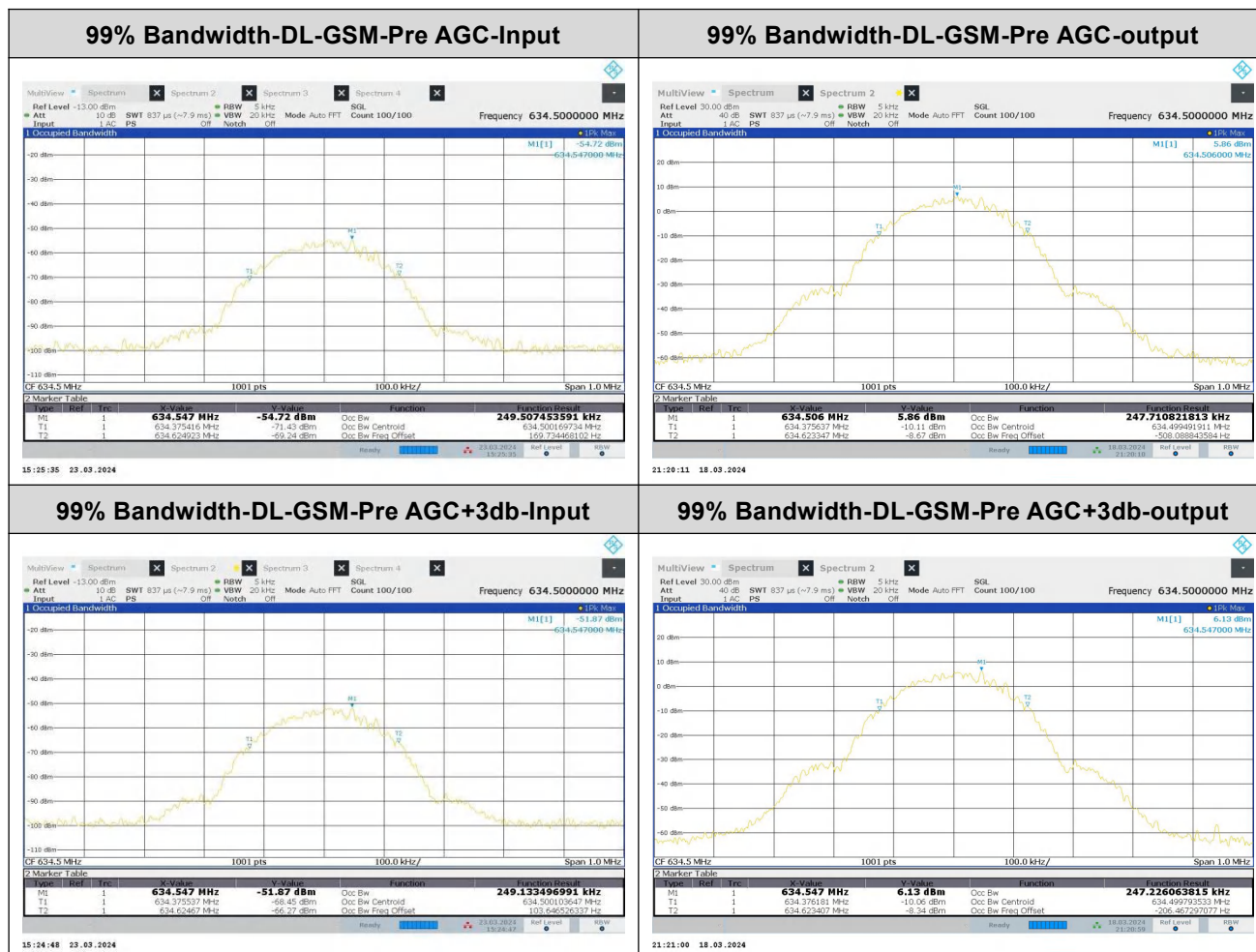
## 600 MHz Service



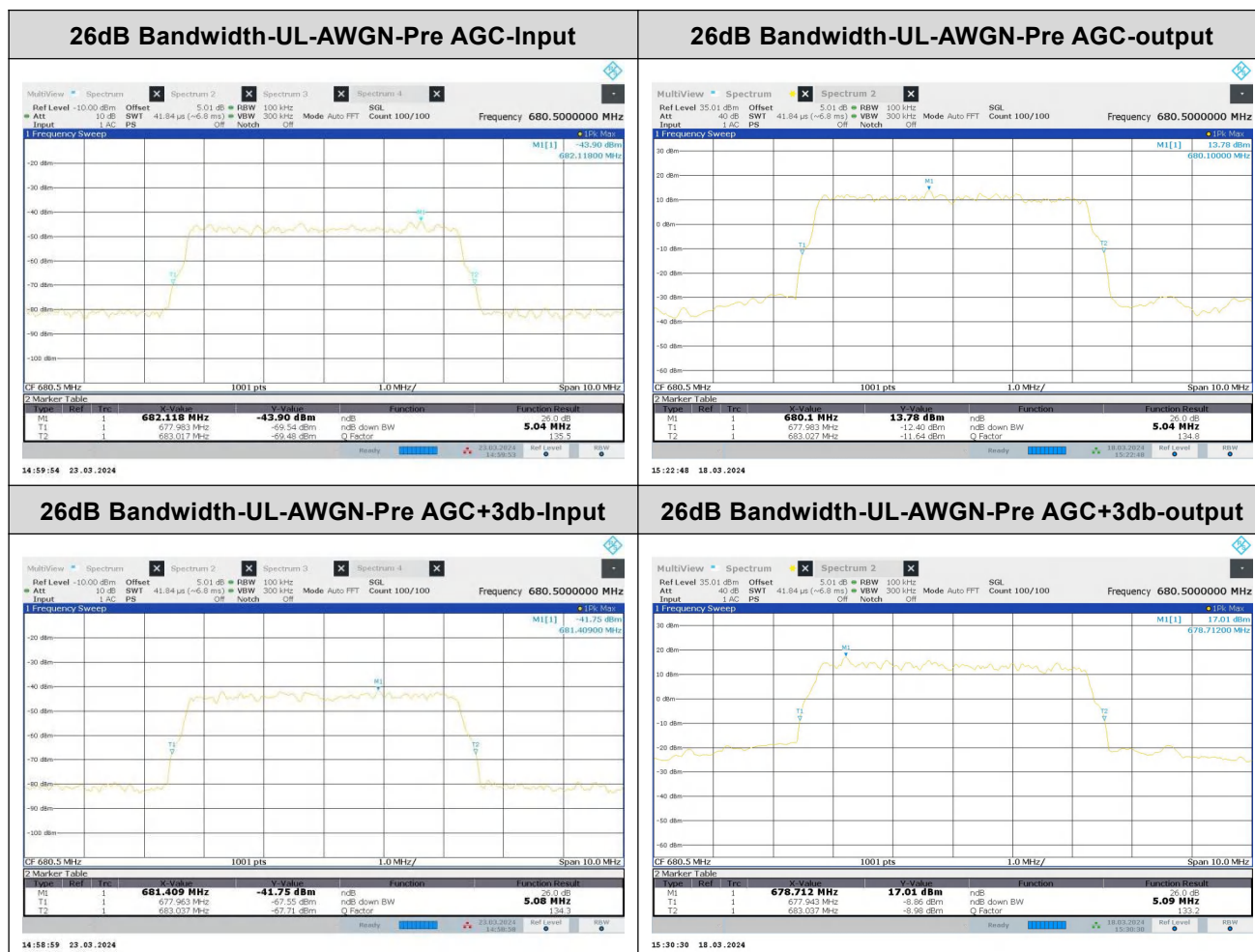
600 MHz Service



## 600 MHz Service

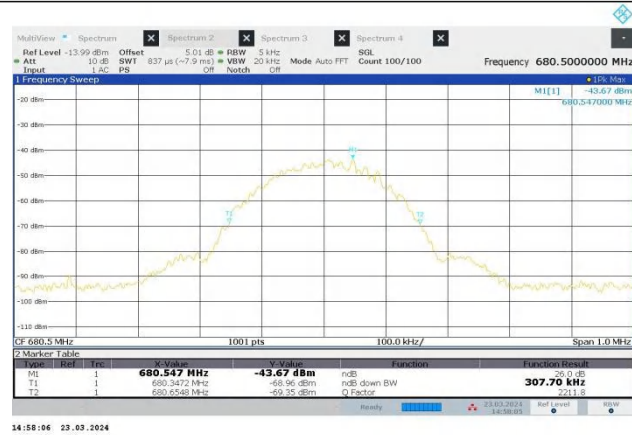


## 600 MHz Service



## 600 MHz Service

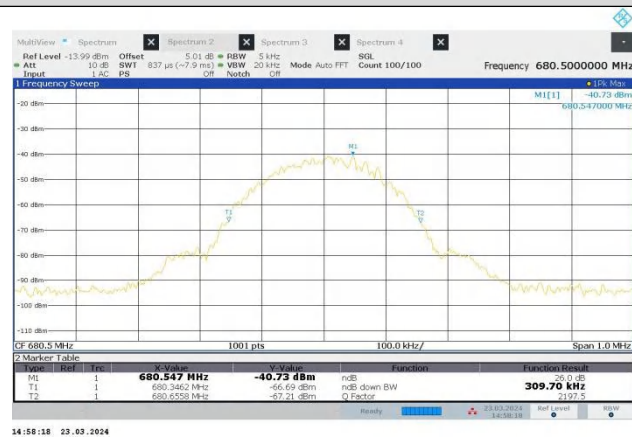
### 26dB Bandwidth-UL-GSM-Pre AGC-Input



### 26dB Bandwidth-UL-GSM-Pre AGC-output



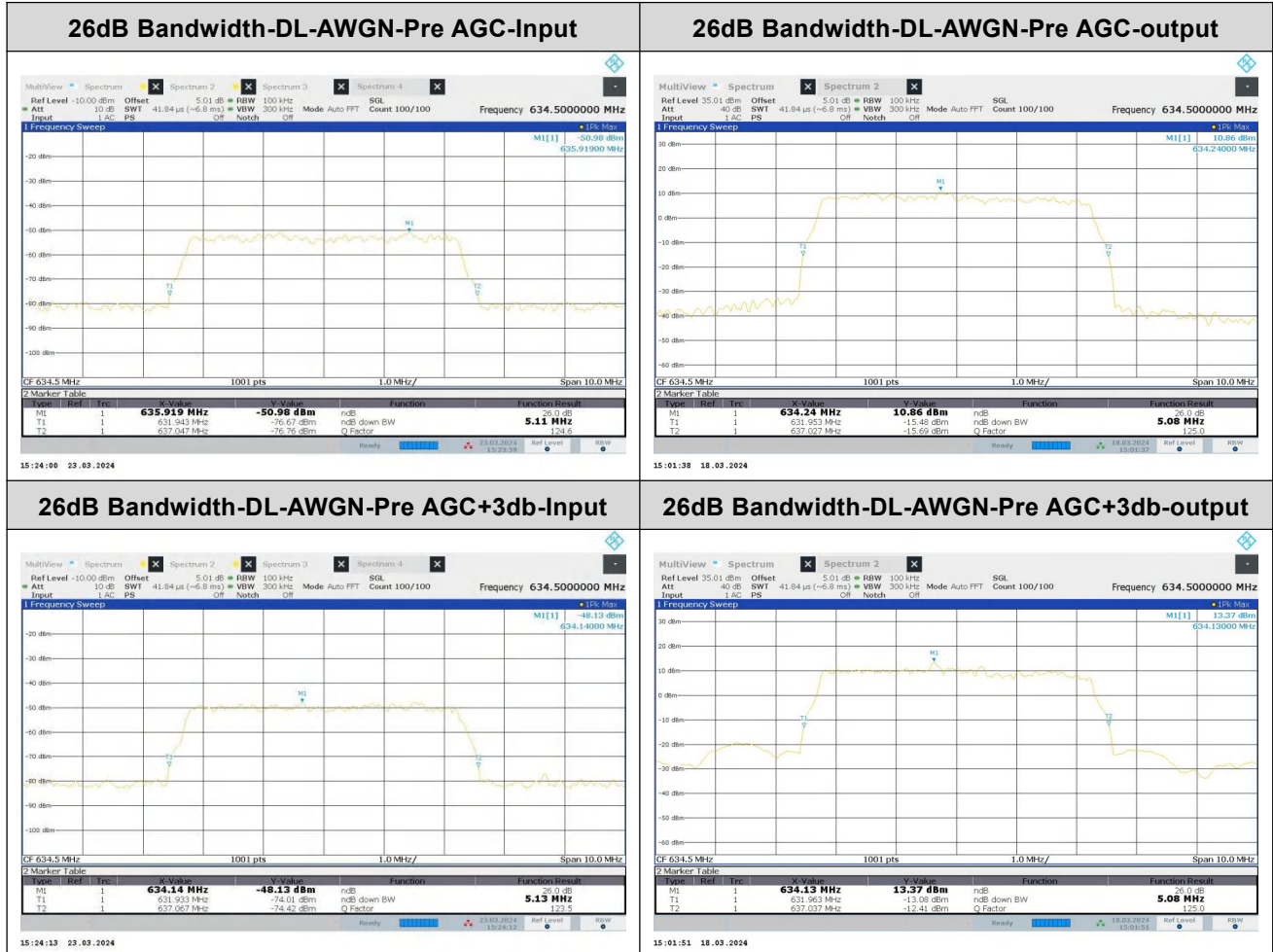
### 26dB Bandwidth-UL-GSM-Pre AGC+3db-Input



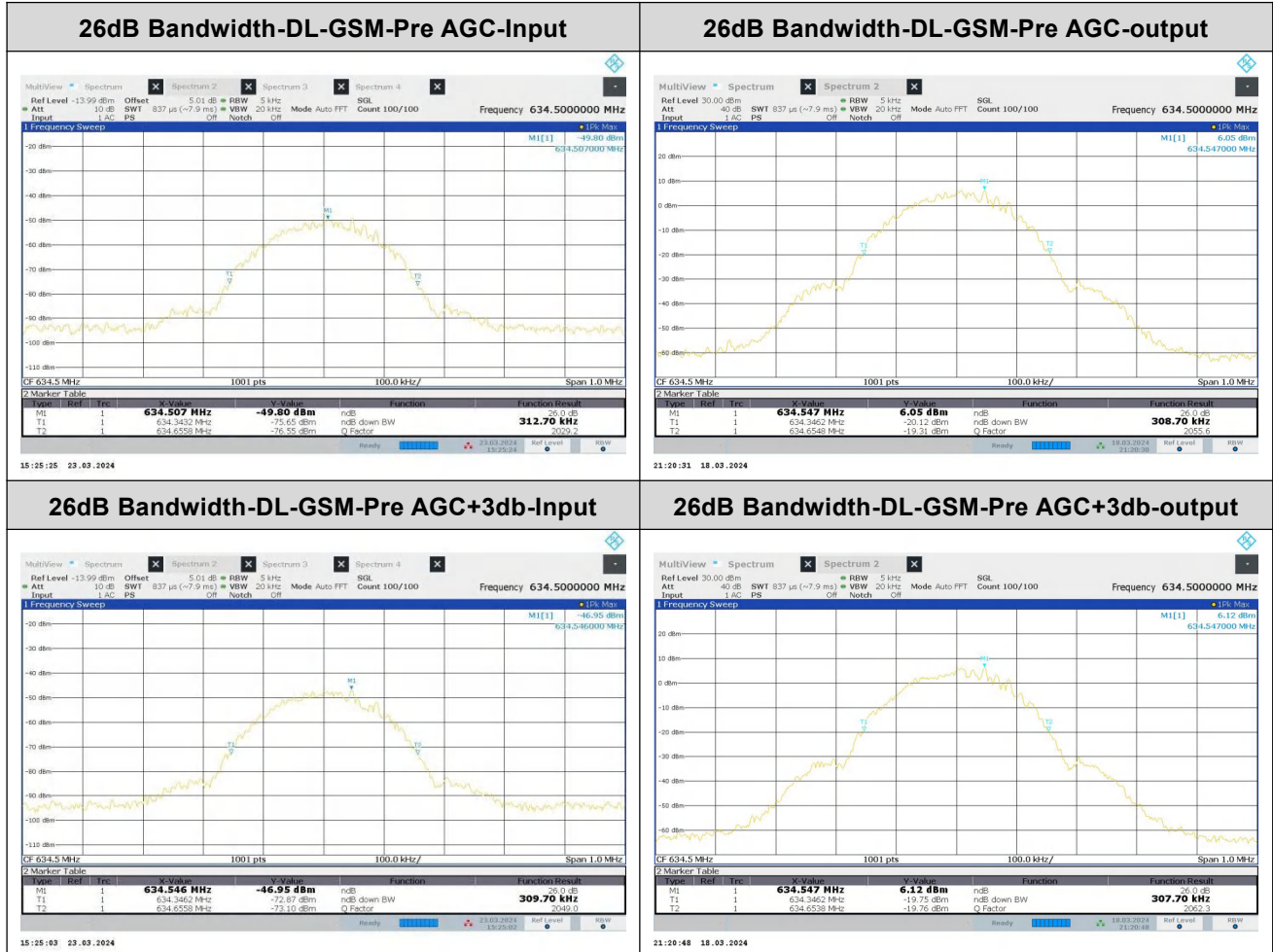
### 26dB Bandwidth-UL-GSM-Pre AGC+3db-output



600 MHz Service



600 MHz Service

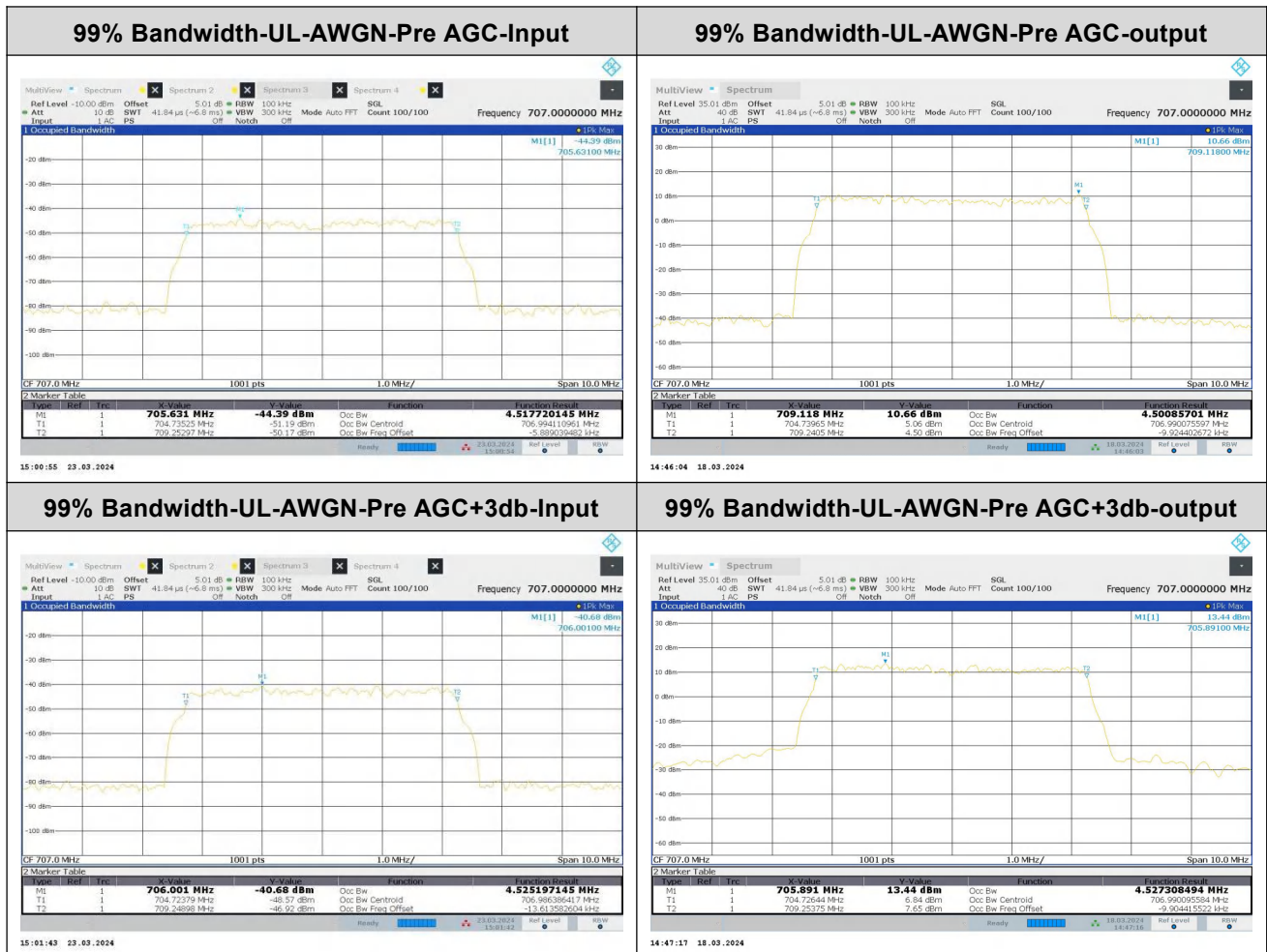


Lower 700 MHz

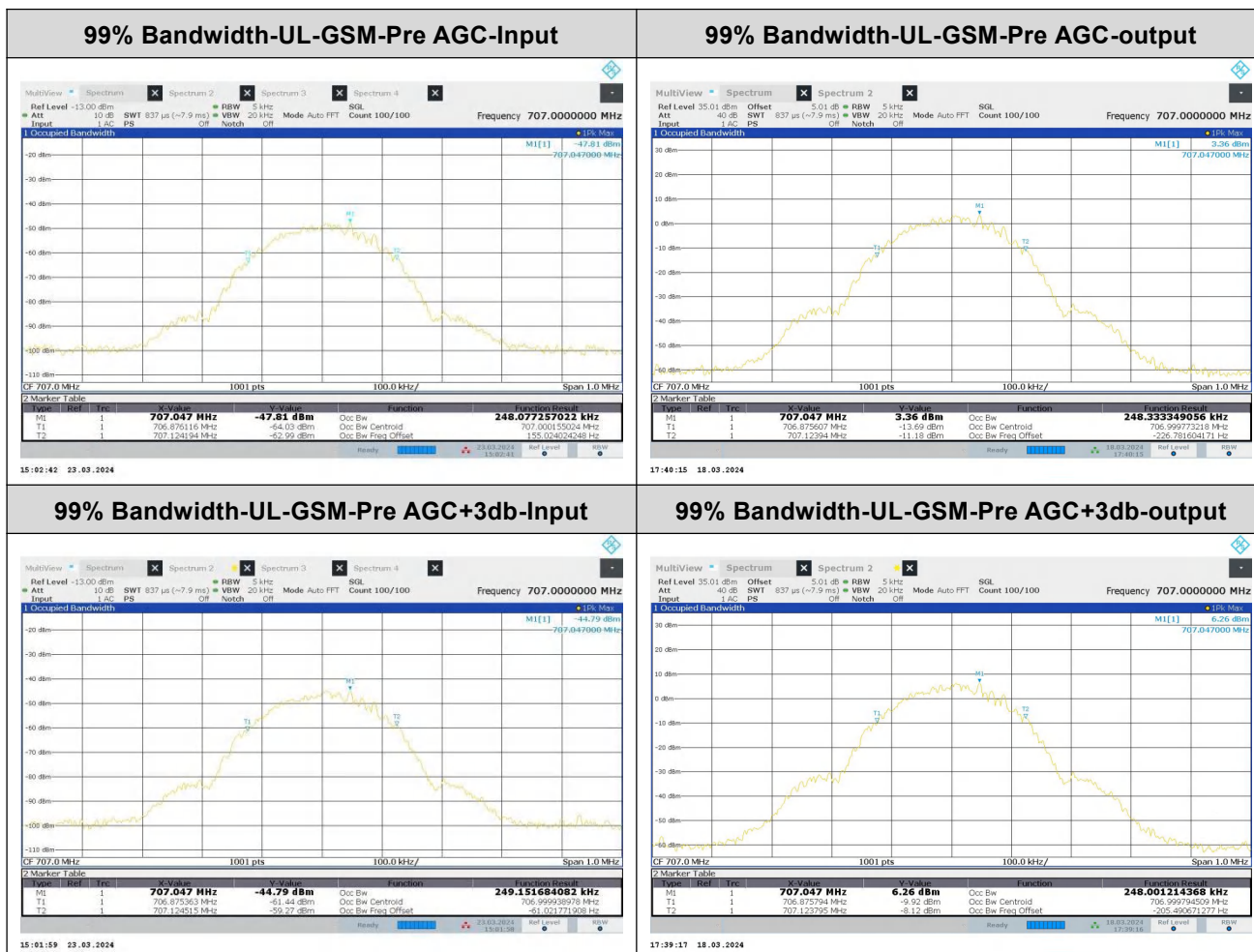
| Mode     | Signal Type | Signal Level  | Frequency (MHz) | 99% Bandwidth (MHz) |        | 26dB Bandwidth (MHz) |        |
|----------|-------------|---------------|-----------------|---------------------|--------|----------------------|--------|
|          |             |               |                 | Input               | Output | Input                | Output |
| Uplink   | AWGN        | Pre-AGC       | 707             | 4.517               | 4.500  | 5.090                | 5.080  |
|          |             | 3dB above AGC | 707             | 4.525               | 4.527  | 5.080                | 5.110  |
|          | GSM         | Pre-AGC       | 707             | 0.248               | 0.248  | 0.305                | 0.308  |
|          |             | 3dB above AGC | 707             | 0.249               | 0.248  | 0.309                | 0.308  |
| Downlink | AWGN        | Pre-AGC       | 737             | 4.492               | 4.519  | 5.040                | 5.080  |
|          |             | 3dB above AGC | 737             | 4.521               | 4.559  | 5.120                | 5.080  |
|          | GSM         | Pre-AGC       | 737             | 0.249               | 0.248  | 0.308                | 0.308  |
|          |             | 3dB above AGC | 737             | 0.248               | 0.245  | 0.308                | 0.308  |

\* Since the AGC Threshold level and AGC + 3 dB level for downlink are as low as -80 dBm, which is about the noise floor, the input levels are adjusted in order to get the right input 99% OBW and -26 dB BW when testing.

## Lower 700 MHz

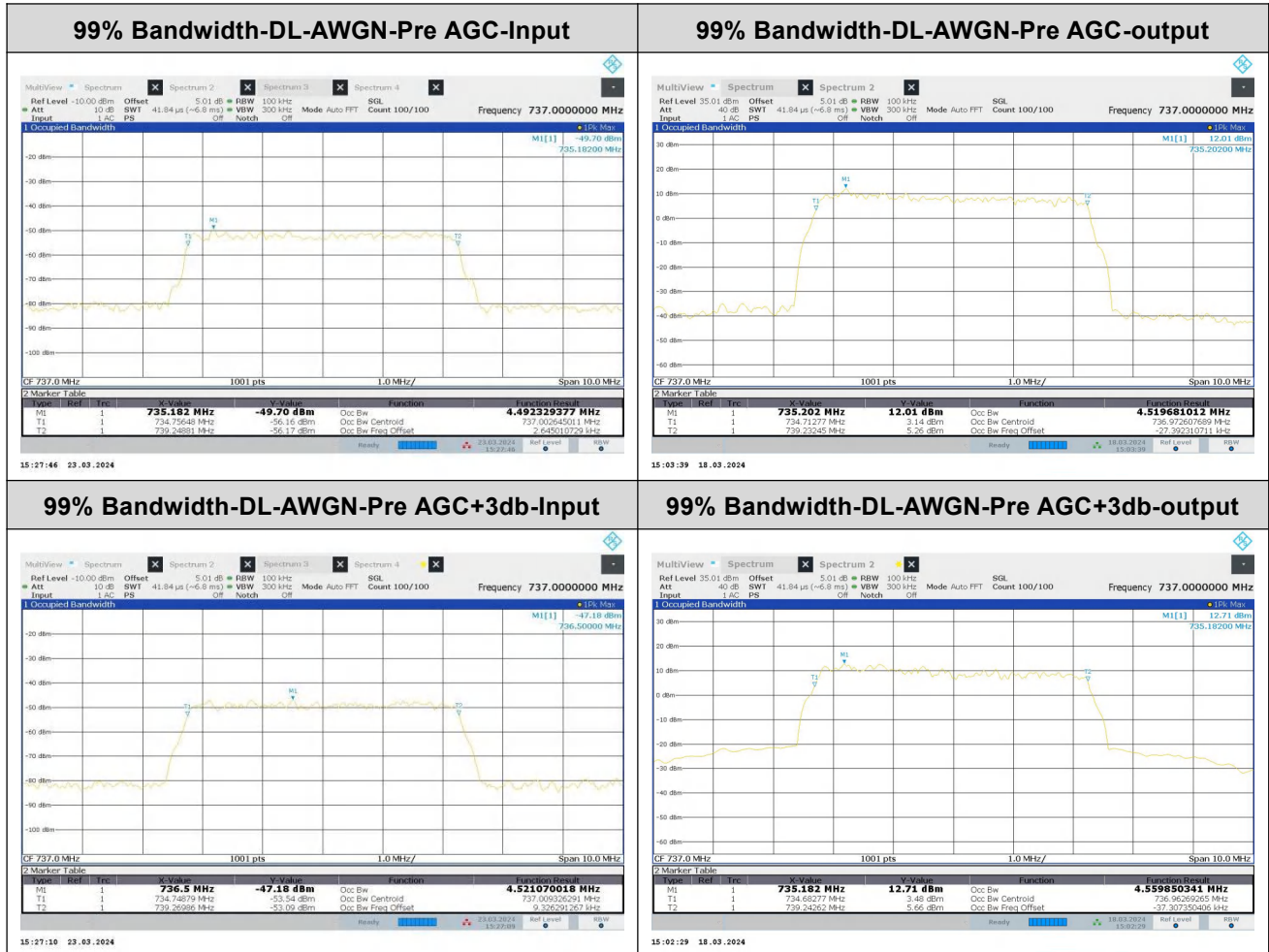


## Lower 700 MHz





## Lower 700 MHz





## Lower 700 MHz

