



# **FCC EMI TEST REPORT**

| FCC ID         | : | 2ABOF-G1BN6ASI002                                      |
|----------------|---|--------------------------------------------------------|
| Equipment      | : | Base Node (BN)                                         |
| Brand Name     | : | TARANA                                                 |
| Model Name     | : | G1BN6ASI002                                            |
| Marketing Name | : | TARANA G1                                              |
| Applicant      | : | Tarana Wireless<br>590 Alder Drive, Milpitas, CA 95035 |
| Manufacturer   | : | Tarana Wireless<br>590 Alder Drive, Milpitas, CA 95035 |
| Standard       | : | FCC 47 CFR FCC Part 15 Subpart B Class A               |

The product was received on Jun. 27, 2023 and testing was performed from Jul. 06, 2023 to Jul. 06, 2023. We, Sporton International (USA) Inc., would like to declare that the tested sample has been evaluated in accordance with the test procedures given in ANSI C63.4-2014 and has been in compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval from Sporton International (USA) Inc., the test report shall not be reproduced except in full.

Jaidhte

Approved by: David Hung

Sporton International (USA) Inc. 1175 Montague Expressway, Milpitas, CA 95035

Page Number: 1 of 15Issue Date: Jul. 14, 2023Report Version: 01



# **Table of Contents**

| His        | tory o                       | f this test report                                                                                                               | 3                |
|------------|------------------------------|----------------------------------------------------------------------------------------------------------------------------------|------------------|
| Sur        | nmary                        | v of Test Result                                                                                                                 | 4                |
| 1.         | Gene                         | ral Description                                                                                                                  | 5                |
|            | 1.1.<br>1.2.<br>1.3.<br>1.4. | Product Feature of Equipment Under Test<br>Modification of EUT<br>Test Location<br>Applicable Standards                          | 5<br>5<br>5<br>5 |
| 2.         | Test                         | Configuration of Equipment Under Test                                                                                            | 6                |
|            | 2.1.<br>2.2.<br>2.3.<br>2.4. | Test Mode<br>Connection Diagram of Test System<br>Support Unit used in test configuration and system<br>EUT Operation Test Setup | 6<br>6<br>7<br>7 |
| 3.         | Test                         | Result                                                                                                                           | 8                |
|            | 3.1.<br>3.2.                 | Test of AC Conducted Emission Measurement1<br>Test of Radiated Emission Measurement1                                             | 8<br>0           |
| 4.         | List o                       | f Measuring Equipment1                                                                                                           | 4                |
| 5.         | Meas                         | urement Uncertainty1                                                                                                             | 5                |
| Apj<br>Apj | oendix<br>oendix             | A. AC Conducted Emission Test Result<br>B. Radiated Emission Test Result                                                         |                  |

Appendix C. Setup Photographs



# History of this test report

| Report No.  | Version | Description             | Issue Date    |
|-------------|---------|-------------------------|---------------|
| FC230625004 | 01      | Initial issue of report | Jul. 14, 2023 |
|             |         |                         |               |
|             |         |                         |               |
|             |         |                         |               |
|             |         |                         |               |
|             |         |                         |               |
|             |         |                         |               |
|             |         |                         |               |
|             |         |                         |               |
|             |         |                         |               |
|             |         |                         |               |
|             |         |                         |               |
|             |         |                         |               |
|             |         |                         |               |
|             |         |                         |               |



# **Summary of Test Result**

| Report<br>Clause | Ref Std.<br>Clause | Test Items            | Result<br>(PASS/FAIL) | Remark                                                       |
|------------------|--------------------|-----------------------|-----------------------|--------------------------------------------------------------|
| 3.1              | 15.107             | AC Conducted Emission | Pass                  | 24.95 dB<br>under the limit at<br>0.16 MHz                   |
| 3.2              | 15.109             | 09 Radiated Emission  |                       | 8.35 dB<br>under the limit at<br>40.67 MHz<br>for Quasi-Peak |

#### Conformity Assessment Condition:

- The test results (PASS/FAIL) with all measurement uncertainty excluded are presented against the regulation limits or in accordance with the requirements stipulated by the applicant/manufacturer who shall bear all the risks of non-compliance that may potentially occur if measurement uncertainty is taken into account.
- 2. The measurement uncertainty please refer to each test result in the section "Measurement Uncertainty".

#### Disclaimer:

The product specifications of the EUT presented in the test report that may affect the test assessments are declared by the manufacturer who shall take full responsibility for the authenticity.



# 1. General Description

# **1.1. Product Feature of Equipment Under Test**

**Product Feature** 

**General Specs** 

5 GHz Access Point

#### Antenna Type

5 GHz Access Point: Array Antenna

**Remark:** The EUT's information above is declared by manufacturer. Please refer to Disclaimer in report summary.

### 1.2. Modification of EUT

No modifications made to the EUT during the testing.

# 1.3. Test Location

| Test Site          | Sporton International (USA) Inc.                                  |  |  |
|--------------------|-------------------------------------------------------------------|--|--|
| Test Site Location | 1175 Montague Expressway, Milpitas, CA 95035<br>TEL : 408 9043300 |  |  |
| Tast Site No       | Sporton Site No.                                                  |  |  |
| Test Sile No.      | CO01-CA, 03CH01-CA                                                |  |  |

FCC Designation No.: US1250

# 1.4. Applicable Standards

According to the specifications declared by the manufacturer, the EUT must comply with the requirements of the following standards:

- FCC 47 CFR FCC Part 15 Subpart B Class A
- + ANSI C63.4-2014

**Remark:** All test items were verified and recorded according to the standards and without any deviation during the test.



# 2. Test Configuration of Equipment Under Test

# 2.1. Test Mode

The EUT is tested along with the peripherals, operating under possible configurations in compliant with normal operation. The maximum emissions can be identified by a pre-scan carried out in different orientations of placement pursuant to ANSI C63.4-2014. Frequency range covered: Conduction Emission (150 kHz to 30 MHz), Radiation Emission (30 MHz to the 5<sup>th</sup> harmonics of the highest fundamental frequency or to 40 GHz, whichever is lower).

| Test Items                                                                                                                       | Functions Enabled                                                                                         |  |  |  |  |
|----------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|--|--|--|--|
| AC Conducted<br>Emission                                                                                                         | Mode 1 : 5GHz TX + LAN Link (MGMT) + Optical fiber Load + USB Load + Adapter + LAN Load (Data 3) + GPS RX |  |  |  |  |
| Radiated<br>EmissionsMode 2: 5GHz TX + LAN Link (MGMT) + Optical fiber Load + USB Load +<br>Adapter + LAN Load (Data 3) + GPS RX |                                                                                                           |  |  |  |  |
| Remark:                                                                                                                          |                                                                                                           |  |  |  |  |
| <ol> <li>As requested I</li> </ol>                                                                                               | As requested by the manufacturer the entire testing was performed using shielded cables, the              |  |  |  |  |

guidance to end users will be included in the user manual.

2. The test configurations and functions enabled are designated by the manufacturer.

# 2.2. Connection Diagram of Test System



# 2.3. Support Unit used in test configuration and system

| Item | Equipment       | Brand Name | Model Name  | FCC ID | Data Cable | Power Cord                                                 |
|------|-----------------|------------|-------------|--------|------------|------------------------------------------------------------|
| 1.   | GPS Station     | Spectracom | GSG-5       | NA     | NA         | N/A                                                        |
| 2.   | Laptop          | Lenovo     | 20FN002VUS  | N/A    | N/A        | AC I/P:<br>Unshielded, 1.2 m<br>DC O/P:<br>Shielded, 1.8 m |
| 3.   | USB Flash drive | SanDisk    | N/A         | N/A    | N/A        | N/A                                                        |
| 4.   | Adapter         | MEAN WELL  | HEP-480-54A | NA     | NA         | AC I/P:<br>Unshielded, 1.8 m                               |
| 5.   | Shielding Cable | NA         | NA          | NA     | NA         | AC I/P:<br>Shielded, 3.0 m                                 |

# 2.4. EUT Operation Test Setup

### GPS

- 1. The EUT links with supported units.
- 2. Enter EUT command line, through Putty. Using "cgps" monitor GPS.
- 3. The GNSS receiver performance is kept monitoring.

### LAN

- 1. EUT is connected with notebook or PC via RJ-45 cable.
- 2. For testing, execute "Ping IP" function under the "cmd" of Window system to transfer packet bi-directionally between the EUT and supported units and monitor the packet loss.

#### Fiber Load

The EUT connected with fiber cables as a load.

#### LAN Load

The EUT connected with RJ45 cables as a load.



# 3. Test Result

# 3.1. Test of AC Conducted Emission Measurement

### 3.1.1. Limits of AC Conducted Emission

For equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table.

| <class< th=""><th>A&gt;</th></class<> | A> |
|---------------------------------------|----|
|---------------------------------------|----|

| Frequency of emission | Conducted limit (dBuV) |         |  |  |
|-----------------------|------------------------|---------|--|--|
| (MHz)                 | Quasi-peak             | Average |  |  |
| 0.15-0.5              | 79                     | 66      |  |  |
| 0.5-30                | 73                     | 60      |  |  |

### 3.1.2. Measuring Instruments

Please refer to the measuring equipment list in this test report.

### 3.1.3. Test Procedure

- 1. The EUT is placed 0.4 meter away from the conducting wall of the shielding room, and is kept at least 80 centimeters from any other grounded conducting surface.
- 2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
- 3. All the support units are connecting to the other LISN.
- 4. The LISN provides 50 ohm coupling impedance for the measuring instrument.
- 5. The FCC states that a 50 ohm, 50 microhenry LISN shall be used.
- 6. Both Line and Neutral shall be tested in order to find out the maximum conducted emission.
- 7. The frequency range from 150 kHz to 30 MHz is scanned.
- Set the test-receiver system to Peak Detect Function and specified bandwidth (If Bandwidth = 9 kHz) with Maximum Hold Mode. Then measurement is also conducted by Average Detector and Quasi-Peak Detector Function respectively.



### 3.1.4. Test Setup



### 3.1.5. Test Result of AC Conducted Emission

Please refer to Appendix A.



# 3.2. Test of Radiated Emission Measurement

### 3.2.1. Limit of Radiated Emission

The emissions from an unintentional radiator shall not exceed the field strength levels specified in the following table:

#### <Class A>

| Frequency<br>(MHz) | Field Strength<br>(microvolts/meter) | Measurement Distance<br>(meters) |
|--------------------|--------------------------------------|----------------------------------|
| 30 - 88            | 90                                   | 10                               |
| 88 – 216           | 150                                  | 10                               |
| 216 - 960          | 210                                  | 10                               |
| Above 960          | 300                                  | 10                               |

Note:

- 1. A disclaimer from test lab., based on the FCC Part 15.31(f)(1) standard applicability, the results which are consents by manufacturer, are extrapolated to the specified 10m distance using an extrapolation factor of 20 dB/decade, an Aux factor corrected for the test result tested at 3m distance, and which are declared by manufacturer, are not impacted by near field effect due to the characteristic of EUT, when measurement between frequency 30MHz to 1GHz.
- 2. The RSE test results above 18GHz are measured at a test distance of 1m. According to the test rules, the distance extrapolation factor should be used and the test results of 3m should be reported in this report.
- 3. Distance extrapolation factor = 20 log (specific distance / test distance) (dB)

#### **3.2.2. Measuring Instruments**

Please refer to the measuring equipment list in this test report.



### 3.2.3. Test Procedures

- 1. The EUT is placed on a turntable with 0.8 meter above ground.
- 2. The EUT is set 3 meters (30MHz~18GHz) and 1 meters (18GHz~40GHz) from the interference receiving antenna, which is mounted on the top of a variable height antenna tower.
- 3. The table is rotated 360 degrees to determine the position of the highest radiation.
- 4. The antenna is a Bi-Log antenna and its height is adjusted between one to four meters above ground to find the maximum value of the field strength for both horizontal polarization and vertical polarization of the antenna.
- 5. For each suspected emission, the EUT is arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading.
- Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode (RBW=120 kHz/VBW=300 kHz for frequency below 1 GHz; RBW=1 MHz VBW=3 MHz (Peak), RBW=1 MHz/VBW=10 Hz (Average) for frequency above 1 GHz).
- If the emission level of the EUT in peak mode is 3 dB lower than the limit specified, peak values of EUT will be reported. Otherwise, the emission will be repeated by using the quasi-peak method and reported.



### 3.2.4. Test Setup of Radiated Emission

#### For Radiated Emissions from 30 MHz to 1 GHz



#### For Radiated Emissions from 1GHz to 18GHz





#### For Radiated Emissions above 18GHz



### 3.2.5. Test Result of Radiated Emission

Please refer to Appendix B.



# 4. List of Measuring Equipment

| Instrument                                | Brand Name       | Model No.                                | Serial No.                           | Characteristics                         | Calibration<br>Date | Test Date     | Due Date      | Remark                   |
|-------------------------------------------|------------------|------------------------------------------|--------------------------------------|-----------------------------------------|---------------------|---------------|---------------|--------------------------|
| Bilog<br>Antenna                          | TESEQ            | 6111D                                    | 54683                                | 30MHz~1GHz                              | Nov. 01, 2022       | Jul. 06, 2023 | Oct. 31, 2023 | Radiation<br>(03CH01-CA) |
| Horn<br>Antenna                           | SCHWARZBE<br>CK  | BBHA 9120D                               | 02115                                | 1GHz~18GHz                              | Aug. 16, 2022       | Jul. 06, 2023 | Aug. 15, 2023 | Radiation<br>(03CH01-CA) |
| SHF-EHF<br>Horn<br>Antenna                | SCHWARZBE<br>CK  | BBHA9170                                 | 00841                                | 18GHz~40GHz                             | Sep. 12, 2022       | Jul. 06, 2023 | Sep. 11, 2023 | Radiation<br>(03CH01-CA) |
| Preamplifier                              | EMEC             | 00675                                    | EMC18G40G                            | 060725                                  | May 04, 2023        | Jul. 06, 2023 | May 03, 2024  | Radiation<br>(03CH01-CA) |
| Preamplifier                              | SONOMA           | 310N                                     | 372241                               | 9kHz~1GHz                               | May 03, 2023        | Jul. 06, 2023 | May 02, 2024  | Radiation<br>(03CH01-CA) |
| Preamplifier                              | Jet-Power        | JPA0118-55-303                           | 171000180005<br>5004                 | 1GHz~18GHz                              | May 04, 2023        | Jul. 06, 2023 | May 03, 2024  | Radiation<br>(03CH01-CA) |
| Spectrum<br>Analyzer                      | Keysight         | N9010B                                   | MY63440343                           | 10Hz~44GHz                              | Jan. 15, 2023       | Jul. 06, 2023 | Jan. 14, 2024 | Radiation<br>(03CH01-CA) |
| EMI Test<br>Receiver                      | R&S              | ESU26                                    | 100049                               | 20Hz~26.5GHz                            | May 02, 2023        | Jul. 06, 2023 | May 01, 2024  | Radiation<br>(03CH01-CA) |
| RF Cable                                  | HUBER+SUH<br>NER | SUCOFLEX 102                             | 8015932/2,801<br>5762/2,<br>804938/2 | NA                                      | Mar. 06, 2023       | Jul. 06, 2023 | Mar. 05, 2024 | Radiation<br>(03CH01-CA) |
| Hygrometer                                | TESTO            | 608-H1                                   | 45141354                             | NA                                      | Jul. 27, 2022       | Jul. 06, 2023 | Jul. 26, 2023 | Radiation<br>(03CH01-CA) |
| Notch Filter                              | Wainwright       | WRCJV12-5695-5<br>725-5850-5880-4<br>0SS | SN18                                 | NA                                      | Jul. 05, 2023       | Jul. 06, 2023 | Jul. 04, 2024 | Radiation<br>(03CH01-CA) |
| Filter                                    | Filter           | WHKX8-5872.5-6<br>750-18000-40ST         | SN8                                  | 6.75GHz High<br>Pass Filter             | Jun. 05, 2023       | Jul. 06, 2023 | Jun. 04, 2024 | Radiation<br>(03CH01-CA  |
| Controller                                | Chaintek         | EM-1000                                  | 060881                               | Control Turn<br>Table & Antenna<br>Mast | N/A                 | Jul. 06, 2023 | N/A           | Radiation<br>(03CH01-CA) |
| Antenna<br>Mast                           | ChainTek         | MBS-520-1                                | N/A                                  | 1m~4m                                   | N/A                 | Jul. 06, 2023 | N/A           | Radiation<br>(03CH01-CA) |
| Test<br>Software                          | Audix E3         | E6.2009-8-24d                            | PK-002093                            | N/A                                     | N/A                 | Jul. 06, 2023 | N/A           | Radiation<br>(03CH01-CA) |
| LISN                                      | TESEQ            | NNB51                                    | 47407                                | N/A                                     | May 16, 2023        | Jul. 06, 2023 | May 15, 2024  | Conduction<br>(CO01-CA)  |
| EMI Test<br>Receiver                      | R&S              | ESR7                                     | 102177                               | 9kHz~7GHz                               | May 23, 2023        | Jul. 06, 2023 | May 22, 2024  | Conduction<br>(CO01-CA)  |
| Pulse limiter<br>with 10dB<br>attenuation | R&S              | VTSD 9561-F N                            | 9561-F-<br>N00412                    | N/A                                     | Jun. 05, 2023       | Jul. 06, 2023 | Jun. 04, 2024 | Conduction<br>(CO01-CA)  |
| Test<br>Software                          | R&S              | EMC32 V10.30.0                           | N/A                                  | N/A                                     | N/A                 | Jul. 06, 2023 | N/A           | Conduction<br>(CO01-CA)  |



# 5. Measurement Uncertainty

#### Uncertainty of Conducted Emission Measurement (150 kHz ~ 30 MHz)

| Measuring Uncertainty for a Level of Confidence | 2.7 dB |
|-------------------------------------------------|--------|
| of 95% (U = 2Uc(y))                             | 2.7 dB |

#### Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

| Measuring Uncertainty for a Level of Confidence |        |
|-------------------------------------------------|--------|
| of 95% (U = 2Uc(y))                             | 4.0 UB |

#### Uncertainty of Radiated Emission Measurement (1000 MHz ~ 18000 MHz)

|                                                 | r      |
|-------------------------------------------------|--------|
| Measuring Uncertainty for a Level of Confidence | 5 2 dB |
| of 95% (U = 2Uc(y))                             | 5.2 00 |

#### Uncertainty of Radiated Emission Measurement (18000 MHz ~ 40000 MHz)

| Measuring Uncertainty for a Level of Confidence | 5 1 dB |
|-------------------------------------------------|--------|
| of 95% (U = 2Uc(y))                             | 5.1 dB |



# Appendix A. AC Conducted Emission Test Results

| Test Engineer : | Leo Liu | Temperature :       | <b>20~23</b> ℃ |  |
|-----------------|---------|---------------------|----------------|--|
|                 |         | Relative Humidity : | 38~42%         |  |

# **EUT Information**

Test Site Location : Project Power: Mode CO01-CA 230625004 120Vac/60Hz 1 Line



# Final\_Result

| Frequency<br>(MHz) | QuasiPeak<br>(dBµV) | CAverage<br>(dBµV) | Limit<br>(dBµV) | Margin<br>(dB) | Line | Filter | Corr.<br>(dB) |
|--------------------|---------------------|--------------------|-----------------|----------------|------|--------|---------------|
| 0.163509           |                     | 41.05              | 66.00           | 24.95          | L1   | OFF    | 20.3          |
| 0.163509           | 41.92               |                    | 79.00           | 37.08          | L1   | OFF    | 20.3          |
| 0.272310           |                     | 27.03              | 66.00           | 38.97          | L1   | OFF    | 20.3          |
| 0.272310           | 29.60               |                    | 79.00           | 49.40          | L1   | OFF    | 20.3          |
| 0.827304           |                     | 27.57              | 60.00           | 32.43          | L1   | OFF    | 20.3          |
| 0.827304           | 33.76               |                    | 73.00           | 39.24          | L1   | OFF    | 20.3          |
| 0.939534           |                     | 26.77              | 60.00           | 33.23          | L1   | OFF    | 20.3          |
| 0.939534           | 34.41               |                    | 73.00           | 38.59          | L1   | OFF    | 20.3          |
| 12.517053          |                     | 32.91              | 60.00           | 27.09          | L1   | OFF    | 20.5          |
| 12.517053          | 40.67               |                    | 73.00           | 32.33          | L1   | OFF    | 20.5          |
| 19.685292          |                     | 28.27              | 60.00           | 31.73          | L1   | OFF    | 20.7          |
| 19.685292          | 36.25               |                    | 73.00           | 36.75          | L1   | OFF    | 20.7          |

# **EUT Information**

Test Site Location : Project Power: Mode CO01-CA 230625004 120Vac/60Hz 1 Neutral



# Final\_Result

| Frequency<br>(MHz) | QuasiPeak<br>(dBµV) | CAverage<br>(dBµV) | Limit<br>(dBµV) | Margin<br>(dB) | Line | Filter | Corr.<br>(dB) |
|--------------------|---------------------|--------------------|-----------------|----------------|------|--------|---------------|
| 0.163239           |                     | 40.97              | 66.00           | 25.03          | Ν    | OFF    | 20.3          |
| 0.163239           | 41.95               |                    | 79.00           | 37.05          | Ν    | OFF    | 20.3          |
| 0.174660           |                     | 31.11              | 66.00           | 34.89          | Ν    | OFF    | 20.3          |
| 0.174660           | 39.13               |                    | 79.00           | 39.87          | Ν    | OFF    | 20.3          |
| 0.717684           |                     | 27.35              | 60.00           | 32.65          | Ν    | OFF    | 20.3          |
| 0.717684           | 33.31               |                    | 73.00           | 39.69          | Ν    | OFF    | 20.3          |
| 0.941784           |                     | 24.75              | 60.00           | 35.25          | Ν    | OFF    | 20.3          |
| 0.941784           | 34.05               |                    | 73.00           | 38.95          | Ν    | OFF    | 20.3          |
| 1.050153           |                     | 25.80              | 60.00           | 34.20          | Ν    | OFF    | 20.3          |
| 1.050153           | 33.89               |                    | 73.00           | 39.11          | Ν    | OFF    | 20.3          |
| 12.243975          |                     | 33.38              | 60.00           | 26.62          | Ν    | OFF    | 20.5          |
| 12.243975          | 41.22               |                    | 73.00           | 31.78          | Ν    | OFF    | 20.5          |



# Appendix B. Radiated Emission Test Result

|                                                                                                                                                                                           |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                        | ٦          | Temperature :       |                   | •               | 19~22°C  |                 |            |         |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|------------|---------------------|-------------------|-----------------|----------|-----------------|------------|---------|
| lest Eng                                                                                                                                                                                  | ineer :    | Leo Liu                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                        | F          | Relative Humidity : |                   |                 | 41~46%   |                 |            |         |
|                                                                                                                                                                                           |            | 3m (30MHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | ~18GHz                 | <u>z)</u>  |                     | 4:00.             |                 | lorizont |                 |            |         |
| Test Dist                                                                                                                                                                                 | ance :     | 1m (18GHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | ~40GHz                 | <u>z)</u>  | Polariza            | tion :            |                 |          | al              |            |         |
| <ul> <li>Emission level (dBµV/m) = 20 log Emission level (µV/m)</li> <li>Corrected Reading: Antenna Factor + Cable Loss - Preamp Factor + Distance Factor + Read Level = Level</li> </ul> |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                        |            |                     |                   |                 |          |                 |            |         |
| 110_Level (dBuV/m) Date: 07-06-2023                                                                                                                                                       |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                        |            |                     |                   |                 |          |                 |            |         |
|                                                                                                                                                                                           |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                        |            |                     |                   |                 |          |                 |            |         |
|                                                                                                                                                                                           | 96.3       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                        |            |                     |                   |                 |          |                 |            | _       |
|                                                                                                                                                                                           | 82.5       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                        |            |                     |                   |                 |          |                 |            | _       |
|                                                                                                                                                                                           | 68.8       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                        |            |                     |                   |                 |          | FC              | C CLASS-4  |         |
|                                                                                                                                                                                           | 55.0       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                        |            |                     |                   |                 |          | FCC CL4         | ASS-A (AVG | )       |
|                                                                                                                                                                                           | 41.3       | 9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                        | 12         | 13<br>/             |                   |                 |          |                 |            | 1       |
|                                                                                                                                                                                           | 27.54      | and the second s |                        |            | -14<br>-14          | Mins              | 15 <sub>A</sub> | winn     | and and and and | " Mr       | _       |
|                                                                                                                                                                                           | 13.8       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                        |            | ~~~                 |                   |                 |          |                 |            | _       |
|                                                                                                                                                                                           |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                        |            |                     |                   |                 |          |                 |            |         |
|                                                                                                                                                                                           | °30 3      | 000.5000.7000.9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 000. 1                 | 3000. 170  | 00. 21<br>Frequency | 000. 250<br>(MHz) | 000.            | 29000.   | 33000.          | 37000.400  | 00      |
|                                                                                                                                                                                           | Site       | :03CH01-0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | A                      |            |                     |                   |                 |          |                 |            |         |
|                                                                                                                                                                                           | Condition  | : FCC CLAS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | S-A 1m S               | 5HF_HORN   | J_841_2             | 20912 HC          | DRIZO           | NTAL     |                 |            |         |
|                                                                                                                                                                                           | Pretest    | : 23062500                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | )4<br>60U <del>7</del> |            |                     |                   |                 |          |                 |            |         |
|                                                                                                                                                                                           | Mode       | :12007007                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 00112                  |            |                     |                   |                 |          |                 |            |         |
| Frequency                                                                                                                                                                                 | Level      | Distance<br>extrapolation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Over                   | Limit      | Read                | Antenna           | Cable           | Preamp   | Ant             | Table      | Peak    |
|                                                                                                                                                                                           |            | Factor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Limit                  | Line       | Level               | Factor            | Loss            | Factor   | Pos             | Pos        | Average |
| (MHz)                                                                                                                                                                                     | ( dBµV/m ) | ( dB )                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | ( dB )                 | ( dBµV/m ) | (dBµV)              | ( dB/m )          | ( dB )          | (dB)     | ( cm )          | (deg)      | (P/A)   |
| 34.85                                                                                                                                                                                     | 18.63      | -10.45                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | -20.45                 | 39.08      | 37.66               | 22.46             | 1.12            | 32.16    | -               | -          | Peak    |
| 89.17                                                                                                                                                                                     | 32.47      | -10.45                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | -11.05                 | 43.52      | 58.8                | 14.52             | 1.81            | 32.21    | -               | -          | Peak    |
| 94.02                                                                                                                                                                                     | 31.99      | -10.45                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | -11.53                 | 43.52      | 57.64               | 15.1              | 1.87            | 32.17    | -               | -          | Peak    |
| 307.42                                                                                                                                                                                    | 25.01      | -10.45                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | -21.43                 | 46.44      | 45.26               | 19.35             | 3.05            | 32.2     | -               | -          | Peak    |
| 716.76                                                                                                                                                                                    | 32.07      | -10.45                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | -14.37                 | 46.44      | 42.92               | 27.07             | 4.69            | 32.16    | -               | -          | Peak    |
| 874.87                                                                                                                                                                                    | 29.01      | -10.45                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | -17.43                 | 46.44      | 36.68               | 28.9              | 5.24            | 31.36    | -               | -          | Peak    |
| 4966                                                                                                                                                                                      | 32         | -10.45                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | -37.54                 | 69.54      | 53.09               | 32.97             | 12.32           | 55.93    | -               | -          | Peak    |
| 4966                                                                                                                                                                                      | 32         | -10.45                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | -37.54                 | 69.54      | 53.09               | 32.97             | 12.32           | 55.93    | -               | -          | Peak    |
| 5746                                                                                                                                                                                      | 41.12      | -10.45                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | -28.42                 | 69.54      | 62.03               | 33.59             | 12.85           | 56.9     | -               | -          | Peak    |
| 6052                                                                                                                                                                                      | 37.83      | -10.45                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | -31.71                 | 69.54      | 57.77               | 34.09             | 13.09           | 56.67    | -               | -          | Peak    |









