



TEST REPORT

REGULATION : FCC Part 2, 80, 90
 RSS-119 Issue 12

| Applicant | Testing Laboratory |
|---|--|
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| | |
|----------------------------|--|
| Equipment type | VHF DIGITAL TRANSCEIVER |
| Trademark | KENWOOD |
| FCC Model(s) | NX-700H-K, NX-700-K, TK-5720-K |
| IC Model(s) | NX-700H-K, NX-700-K, TK-5720-K (HVIN:NX-700H-K-17, NX-700-K-17, TK-5720-K-17) |
| Serial No. | 20 |
| FCC ID | K44378602 |
| IC CN and UPN | 282F-378602 |
| Test Result | Complied |
| Report Number | 17030291JKA-003 |
| Original Issue Date | June 05, 2017 |

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Approved by

Hideaki Kosemura

[Technical Manager]

Tested by

Koichi Wagatsuma

[Engineer]



In Accordance with FCC Rules and Regulations, Volume II, Part 2 and 90

Sub-part 2.1033

| Applicant and Manufacture Information | |
|--|--|
| APPLICANT | |
| Company | : JVC KENWOOD Corporation |
| Address | : 1-16-2, Hakusan, Midori-ku, Yokohama-shi Kanagawa, 226-8525 Japan |
| Contact Person | : Tamaki Shimamura Manager, Communications Systems Devision |
| MANUFACTURER | |
| Company | : JVC KENWOOD Corporation |
| Address | : 1-16-2, Hakusan, Midori-ku, Yokohama-shi Kanagawa, 226-8525 Japan |
| (c)(2) FCC ID | |
| FCC ID | : K44378602 |
| Model number | : NX-700H-K, NX-700-K, TK-5720-K |
| Serial number | : 20 |
| Instruction Manual(S) | |
| Instruction manual(s) | : Please refer to attached Exhibits F |
| Type of Emission | |
| Emission Designation | : 16K0F3E(Wide) , 14K4F1D(Wide) 16K0F3E and 14K4F1D are IC Only. 11K0F3E(Narrow) 8K30F1E(Narrow) / 8K30F1D(Narrow) / 8K30F7W(Narrow) 8K10F1E(Narrow) / 8K10F1D(Narrow) 4K00F1E(Very Narrow) / 4K00F1D(Very Narrow) / 4K00F7W(Very Narrow) 4K00F2D(Very Narrow) |
| Frequency range | |
| Frequency Range | : FCC: 150 to 174 MHz IC: 138 to 144 MHz and 148 to 174 MHz |
| Power Rating | |
| Output Power | : 1 to 50 W |
| Type | : Continuously Variable |
| Maximum Power Rating | |
| Output Power | : 50W |
| Voltages & currents in all elements in final RF stage, including final transistor or solid-state device | |
| Collector Current, A | : 13.0 A Maximum |
| Collector Voltage, Vdc | : 13.6 Vdc |
| Supply Voltage, Vdc | : 13.6 Vdc |
| Other Information | |
| Number of Channel | : Zone 128max. Cannels 250 max.(per Zone) |
| Maximum Deviation | : ± 5 kHz (16K0F3E), ± 2.5 kHz (11K0F3E) |
| Frequency Stability | : 1.0 ppm |
| | : |
| Antenna Impedance | : 50 Ω Norminal |
| Note | |
| | |

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SECTION 1. GENERAL INFORMATION

TEST PERFORMED

| | | | |
|----------------------------|---|----|--------------|
| Location | Kashima No.1 Test Site and No.12 Test Site | | |
| EUT Received | April 14, 2017 | | |
| Date of Test | April 18, 2017 | to | May 26, 2017 |
| Standard Applied | FCC Part 2, 80, 90 RSS-119 Issue 12 | | |
| Measurement Method | ANSI/TIA-603-D-2010 / RSS-119 Issue 12(2015), RSS-Gen Issue 4(2014) | | |
| Deviation from Standard(s) | Not applicable | | |

QUALIFICATIONS OF TESTING LABORATORY (Kashima Lab.)

| ACCREDITATION | SCOPE | LAB. CODE | Remarks |
|---------------|-------------|-------------------------|---------|
| VLAC | EMC Testing | VLAC-008-1 | JAPAN |
| FILING | | | |
| VCCI | EMC Testing | A-0126 | JAPAN |
| FCC | EMC Testing | JP0008 | |
| IC | EMC Testing | IC-2042K-3, IC-2042Q-12 | CANADA |
| CB-Scheme | EMC Testing | TL222 | IECEE |

ABBREVIATIONS

| | | | |
|------|--------------------------------------|------------|-----------------------------------|
| EUT | Equipment Under Test | DoC | Declaration of Conformity |
| AMN | Artificial Mains Network | ISN | Impedance Stabilization Network |
| LISN | Line Impedance Stabilization Network | Q-P | Quasi-peak |
| AMP | Amplifier | AVG | Average |
| ATT | Attenuator | PK | Peak |
| ANT | Antenna | Cal | Calibration |
| BBA | Broadband Antenna | N/A | Not applicable or Not available |
| DIP | Dipole Antenna | LCD | Liquid-Crystal Display |
| AE | Associated Equipment | 4LEVEL FSK | 4LEVEL Frequency Shift Key |
| GMSK | Gaussian Maximum Shift Key | CW ID | Continuously Repeating bit stream |
| FM | Frequency Modulation | C4FM | Constant envelope 4 Level FM |
| PTT | Push to Talk | AFC | Automatic frequency control |

Revision Summary

| Revised Date | Section | Description of Changes |
|--------------|---------|------------------------|
| | | |
| | | |
| | | |

SECTION 2. SUMMARY OF TEST RESULT

| FCC Part2 | Part80 | Part90 | IC RSS-119 | TEST ITEM | RESULTS | Comments |
|----------------|--------|---------------|-------------|--|-----------------|----------|
| 2.1046 (a) | - | - | 5.4 | Carrier Output Power (Conducted) | PASS | |
| 2.1051 | 80.211 | 90.210 | 5.8 | Unwanted Emissions (Transmitter Conducted) | PASS | |
| 2.1053 (a) | 80.211 | 90.210 | 5.8 | Field Strength of Spurious Radiation | PASS | |
| 2.1049 (c) (1) | 80.211 | 90.210 | 5.5 | Emission Masks (Occupied Bandwidth) | PASS | |
| - | - | 90.214 | 5.9 | Transient Frequency Behavior | PASS | |
| 2.1047 (a) | 80.213 | - | - | Audio Low Pass Filter (Voice Input) | PASS | |
| 2.1047 (a) | 80.213 | - | - | Audio Frequency Response | PASS | |
| 2.1047 (b) | 80.213 | - | - | Modulation Limiting | PASS | |
| 2.1055 (a) (1) | 80.209 | 90.213 (a) | 5.3 | Frequency Stability (Temperature Variation) | PASS | |
| 2.1055 (d) (1) | 80.209 | 90.213 (a) | 5.3 | Frequency Stability (Voltage Variation) | PASS | |
| - | - | - | RSS-Gen 7.1 | Receiver Spurious Emissions | PASS | |
| - | - | 90.203 (j)(3) | - | Certification required (FCC Part 90.203(j)(3)) | Complied | |
| - | - | 90.203 (j)(4) | - | Certification required (FCC Part 90.203(j)(4)) | Complied | |
| - | - | 90.203 (j)(5) | - | Certification required (FCC Part 90.203(j)(5)) | Complied | |
| - | - | 90.203 (e) | - | Certification required (FCC Part 90.203(e)) | Complied | |
| - | - | - | 5.5 | 99% Occupied Bandwidth | PASS | |

Limitation on Results

The test result of this report is effective equipment under test itself and under the test configuration described on the report. This test report does not assure that whether the test result taken in other testing laboratory is compatible or reproducible to the test result on this report or not.

Note:

As for the FCC Part 15 Subpart B-Unintentional Radiators, the EUT has been measured and declared as Verification by JVC Kenwood Corporation.

SECTION 3. TEST AND MEASUREMENT DATA

All test and measurements indicated in this document were performed in accordance with the Code of Federal Regulations Title 47 Part 2, Sub-part J and Industry Canada as the following individual parts:

| FCC Rule | Test Item | Tested |
|----------------|---|------------|
| Part 24 | Personal Communications Services | N.A. |
| Part 80 | Stations in the Maritime Services | YES |
| Part 90 | Private Land Mobile radio Services | YES |

| IC Rule | Test Item | Tested |
|----------------|---|------------|
| RSS-119 | Radio Transmitters and Receivers Operating in the Land Mobile and Fixed Services in the Frequency Range 27.4-960 MHz | YES |
| RSS-134 | 900MHz Narrowband Personal Communication Service | N.A. |
| RSS-Gen | General Requirements for Compliance of Radio Apparatus | YES |

SECTION 4. INFORMATION ABOUT EUT AND SUPPORT EQUIPMENT(S)

4.1 List of System Configuration

| Symbol | Item | Model No. | HVIN | Serial No. | Manufacture | Remarks |
|-------------------------------|----------------------------|------------------------------------|--|----------------|-------------------------|---------|
| A | VHF DIGITAL TRANSCEIVER | NX-700H-K NX-700-K TK-5720-K | NX-700H-K-17 NX-700-K-17 TK-5720-K-17 | 20 | JVC KENWOOD Corporation | EUT |
| Power Ratings of EUT : | | | DC 13.6V ± 20% | 13.0 A Maximum | | |
| Power Supply : | | | DC 13.6 V | | | |
| Condition of Equipment | | | Proto type | | | |
| Type | | | Mobile type | | | |
| Suppression Devices | | | No Modifications by the laboratory were made to the device | | | |

4.2 Port(s)/Connector(s)

| Port Name | Connector Type | Connector Pin | Remarks |
|------------------|----------------|---------------|---------|
| ACC | D-sub | 25 pin | |
| External Speaker | 3.5φ | 2 pin | |
| RF Antenna | M | 2 pin | |
| Microphone | RJ-45 | 8 pin | |
| Ignition sense | Original | 2 pin | |

4.3 Highest Frequency Oscillator(s)/Crystal(s)

| Operating Frequency | Board Name | Remarks |
|---------------------|------------|---------|
| 232.05 MHz | TXRX UNIT | |

SECTION 5. SUPPORT EQUIPMENT

The EUT was supported by the following equipment during the test.

| Symbol | Item | Model No. | Serial No. | Manufacture | FCC ID |
|-----------------|-----------------------------|-----------|------------|-------------|--------|
| B | CONTROL HEAD REMOTE KIT | KRK-10 | None | JVC KENWOOD | N/A |
| C | KEYPAD MICROPHONE | KMC-36 | None | JVC KENWOOD | N/A |
| D | External Speaker | KES-3 | None | JVC KENWOOD | N/A |
| E | Dummy Load | CT-03NP | 1037408 | TME | N/A |
| F | DC Power Supply | PMC35-3A | LE000716 | KIKUSUI | N/A |
| G | VOICE GUIDE & STORAGE UNIT | VGS-1 | None | JVC KENWOOD | N/A |
| H | SECURE CRYPTOGRAPHIC MODULE | KWD-AE31 | None | JVC KENWOOD | N/A |
| I | CONTROL HEAD REMOTE KIT | KRK-10 | None | JVC KENWOOD | N/A |
| Supplied Power: | | | | | |
| F | AC | 100V,60Hz | | | |

SECTION 6. USED CABLE(S)

The following cable(s) was used for the test.

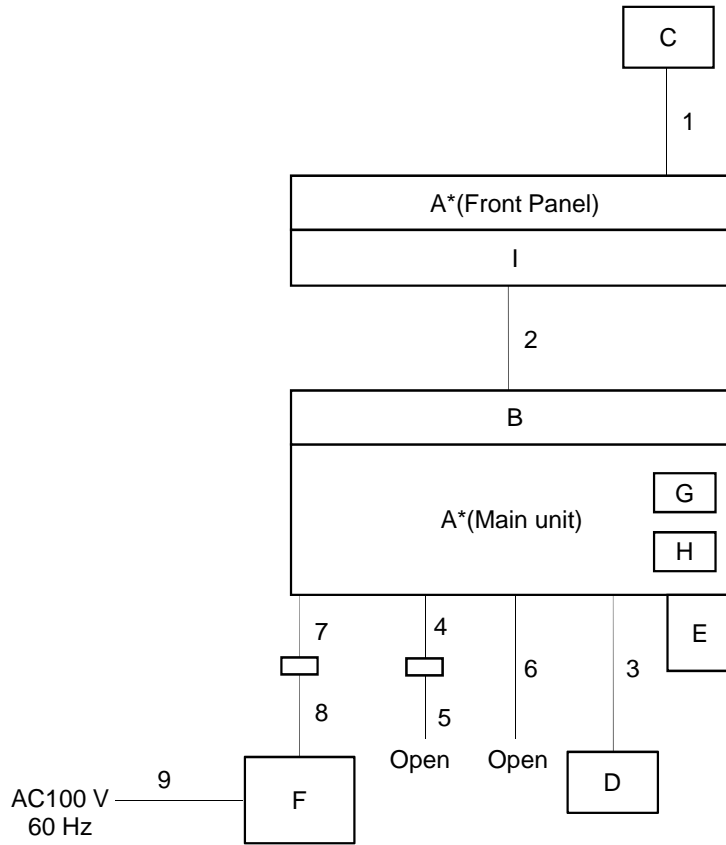
| No. | Name | Length (m) | Shield | Metal Connector | Ferrite core |
|-----|---------------------------------|------------|--------|-----------------|--------------|
| 1 | KEYPAD MICROPHONE CABLE | 0.50 | No | No | |
| 2 | CONTROL HEAD REMOTE KIT CABLE | 7.00 | Yes | Yes | |
| 3 | Speaker cable | 2.90 | No | No | |
| 4 | Ignition sense cable | 0.12 | No | Yes | |
| 5 | Ignition sense cable (KCT-46) | 3.20 | No | Yes | |
| 6 | ACC Cable | 1.70 | Yes | Yes | |
| 7 | DC cable | 0.25 | No | No | |
| 8 | DC cable | 3.00 | No | No | |
| 9 | Power cable for DC Power Supply | 2.00 | No | No | |

SECTION 7. TEST CONFIGURATION

Details of Configuration and Connection

Example: Case of Section 10.10Test

* : EUT
■ : Ferrite core
□ : Joint Connector



SECTION 8. OPERATING CONDITION

The EUT was operated under the following condition during the test.

8.1 Operating Condition

The test was carried out under Transmit mode.

(FCC:150.05MHz, 162.05MHz, 173.95MHz)

(RSS:138.05MHz, 162.05MHz, 173.95MHz)

(High Power : 50W, Low Power : 1 W)

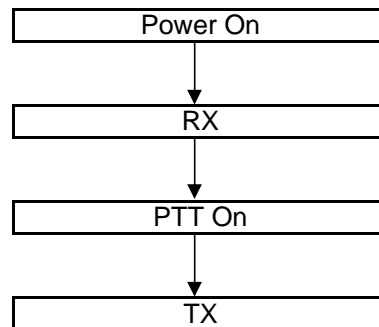
The test was carried out under Receive mode.

(138.05MHz, 162.05MHz, 173.95MHz)

EUT was examined in the operating conditions that had maximum emissions.

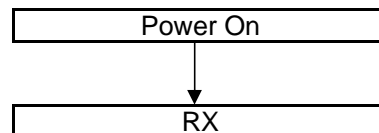
8.2 Operating Flow [Transmit mode]

Following operations were performed continuously.



8.3 Operating Flow [Receive mode]

Following operations were performed continuously.



SECTION 9. MEASUREMENT UNCERTAINTY

| | | |
|---|---------------------|-------------|
| Carrier Output Power (Conducted) | U _{lab} | Utia-603-d |
| | +/- 0.29dB (k = 2) | +/- 0.59 dB |
| Unwanted Emissions (Transmitter Conducted) | | |
| | +/- 2.19 dB (k = 2) | +/- 1.1 dB |
| Field Strength of Spurious Radiation | | |
| | +/- 2.78dB (k = 2) | +/- 3.3 dB |
| Emission Masks (Occupied Bandwidth) | | |
| | +/- 0.5dB (k = 2) | +/- 2.1 dB |
| Transient Frequency Behavior | | |
| | +/- 1.10% (k = 2) | +/- 21.6 % |
| Audio Low Pass Filter (Voice Input) | | |
| | +/- 0.1dB (k = 2) | +/- 1.2 dB |
| Audio Frequency Response | | |
| | +/- 0.1dB (k = 2) | +/- 1.2 dB |
| Modulation Limiting | | |
| | +/- 1% (k = 2) | +/- 1.0 % |
| Frequency Stability (Temperature Variation) | | |
| | +/- 10.1Hz (k=2) | +/-34.2 Hz |
| Frequency Stability (Voltage Variation) | | |
| | +/- 10.1Hz (k=2) | +/-34.2 Hz |
| Receiver Spurious Emissions | U _{lab} | Ucisp |
| 30-1000MHz | +/- 4.05dB (k = 2) | +/- 6.3 dB |
| abobe 1GHz | +/- 4.79dB (k = 2) | +/- 5.2 dB |
| Bandwidth | | |
| | +/- 1.02% (k = 2) | - |

SECTION 10. TEST DATA

10.1 Carrier Output Power (Conducted)

| | |
|-------------------|--|
| REGULATIONS | : FCC Part 2 Section 1046 (a) / RSS-119 Section 5.4 |
| TEST METHOD/GUIDE | : ANSI/TIA-603-D Section 2.2.1.2 / RSS-119 Section 4.1 |

Test Procedure

- 1 The EUT and test equipment were set up as shown on the following page.
- 2 The EUT was conducted to a resistive coaxial attenuator of normal load impedance.
 $RF\ Power\ (dBm) = Power\ Meter\ reading\ (dBm) + Attenuator\ Loss\ (dB) + Cable\ Loss\ (dB)$
 $RF\ Power\ (W) = 10^{(RF\ Power\ (dBm)/10)}/1000$
- 3 Modulate the transmitter with a 2.5 kHz sine wave at an input Level of 16 dB greater than that necessary to produce 50 % of rated system deviation.(Only as for the test of RSS)

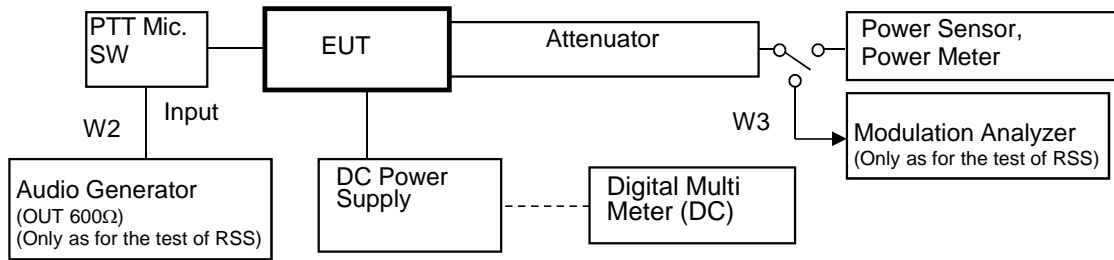
Measuring Equipments

| No. | Equipment | Manufacture | Model No. | Serial No. | Cal. Interval | Effective period |
|-----|---------------------|---------------------|-------------|------------|---------------|------------------|
| 1 | Power Meter | Hewlett Packard | E4418B | GB38410265 | 1Y | May. 31, 17 |
| 2 | Power Sensor | Hewlett Packard | 8482A | US37292237 | 1Y | May. 31, 17 |
| 3 | Attenuator (20dB) | Aeroflex/Wenshel | 66-20-34 | BY4357 | 1Y | May. 31, 17 |
| 4 | Attenuator (30dB) | Weinschel | WA-29-30-34 | 8923 | 1Y | May. 31, 17 |
| 5 | Modulation Analyzer | Hewlett Packard | 8901B | 3403A04852 | 1Y | Dec. 31, 17 |
| 6 | Audio Generator | Anritsu | MG443B | M70150 | 1Y | May. 31, 17 |
| 7 | DC Power Supply | Daiichi denpa kogyo | GZV4000 | 90290931 | None | None |
| 8 | DC Power Supply 2 | Kikusui | PMC35-3A | LE000716 | None | None |
| 9 | Digital Multi Meter | FLUKE | 8846A | 9642018 | 1Y | Sep. 30, 17 |
| 10 | JIG1 | Anritsu | MD6420A | 6200552647 | None | None |
| 11 | JIG2 | Kenwood | Modem | None | None | None |

Measuring Cables

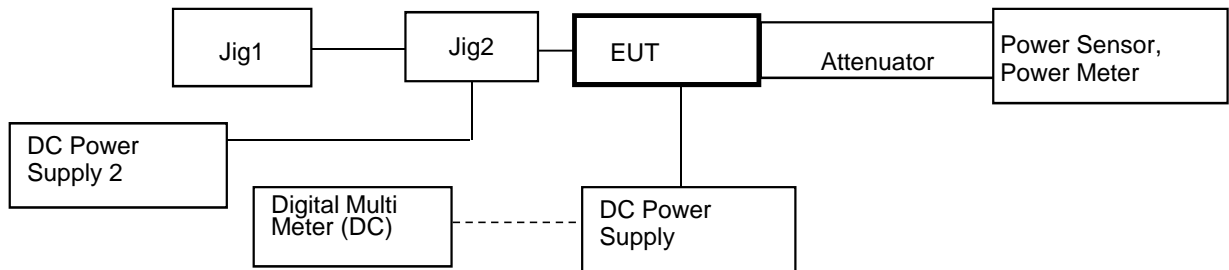
| No. | Cable | Manufacturer | Model No. | Serial No. | Cal. Interval | Effective period |
|-----|---------------|----------------|-----------|------------|---------------|------------------|
| W2 | Balance Cable | Nicoon | 3D-2V | KSR00092 | 1Y | Mar. 31, 18 |
| W3 | Coaxial Cable | Pacific custom | RG-58 C/U | AM90C04 | 1Y | Feb. 28, 18 |

Measuring Equipment Configuration



Note: Configuration of other Modulation test is composed without the Audio Generator.

<14K4F1D Modulation Case>



Test Results

| | | |
|----------------------|-------------------------|------------|
| Test date | Apr. 18, 2017 | |
| Location | Kashima No.12 Test Site | |
| temperature | 23.0 | [degree C] |
| Humidity Variation | 50.0 | [%] |
| Atmospheric Pressure | 98.9 | [kPa] |
| Test Engineer | Koichi Wagatsuma | |

Test was carried out for all the Authorized Bandwidth.
 State the worst case (below).

| No. | Frequency (MHz) | Band | Setting | RF Power (W) |
|-----|------------------|--------|------------|--------------|
| 1 | 138.05 (RSS) | Low | High Power | 50 |
| 2 | 150.05 (FCC) | Low | High Power | 50 |
| 3 | 162.05 (FCC/RSS) | Middle | High Power | 50 |
| 4 | 173.95 (FCC/RSS) | High | High Power | 50 |
| 5 | 138.05 (RSS) | Low | Low Power | 1 |
| 6 | 150.05 (FCC) | Low | Low Power | 1 |
| 7 | 162.05 (FCC/RSS) | Middle | Low Power | 1 |
| 8 | 173.95 (FCC/RSS) | High | Low Power | 1 |

RF Power: Peak reading

10.2 Unwanted Emissions (Transmitter Conducted)

| | |
|-------------------|--|
| REGULATIONS | : FCC Part 2 Section 1051, Part 80 Section 211, Part 90 Section 210 RSS-119 Section 5.8 |
| TEST METHOD/GUIDE | : ANSI/TIA-603-D Section 2.2.13.2 / RSS-119 Section 4.2 |

Test Procedure

- 1 The EUT and test equipment were set up as shown on the following page.
- 2 Modulate the transmitter with a 2.5 kHz sine wave at an input Level of 16 dB greater than that than necessary to produce 50 % of rated system deviation.
- 3 Adjust the spectrum analyzer for the following setting:
 - a) RBW : 100 kHz (< 1 GHz), 1 MHz (> 1 GHz).
 - b) VBW : 300 kHz (< 1 GHz), 3 MHz (> 1 GHz).
 - c) Detector mode : Average power (FM Modulation) , Positive peak with peak hold (Digital Modulation)
- 4 The emissions were measured for the worst case as follows:
 - a) : within a band of frequencies defined by the carrier frequency plus and minus one channel.
 - b) : from the lowest frequency generated in the EUT and to at least the 10th harmonic of the carrier frequency, or 40 GHz, whichever is lower.

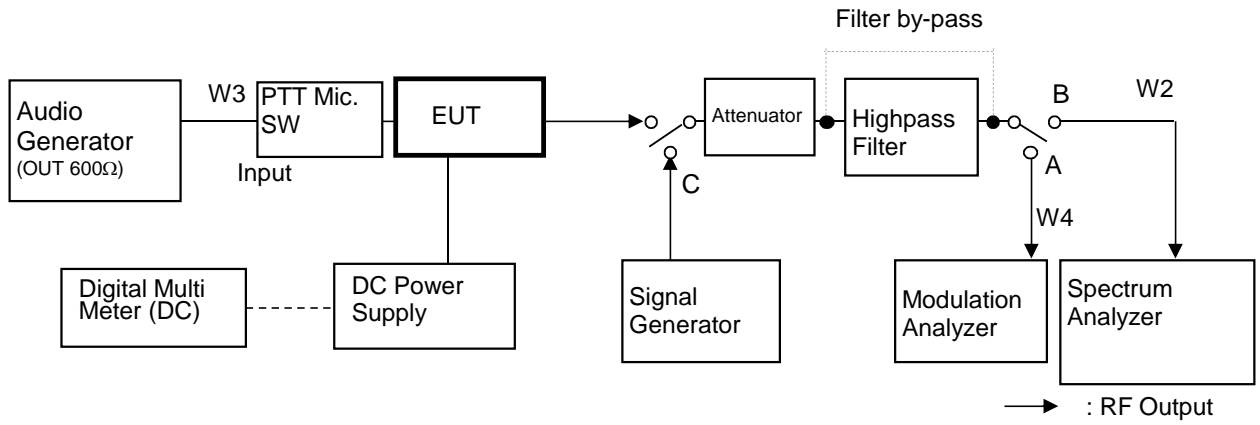
Measuring Equipments

| No. | Equipment | Manufacture | Model No. | Serial No. | Cal. Interval | Effective period |
|-----|---------------------|---------------------|-------------|------------|---------------|------------------|
| 1 | Attenuator (20dB) | Aeroflex/Wenshel | 66-20-34 | BY4357 | 1Y | May. 31, 17 |
| 2 | Attenuator (30dB) | Weinschel | WA-29-30-34 | 8923 | 1Y | May. 31, 17 |
| 3 | Highpass Filter | Anritsu | MP526B | 6200220636 | 1Y | Jan. 31, 18 |
| 4 | Modulation Analyzer | Hewlett Packard | 8901B | 3403A04852 | 1Y | Dec. 31, 17 |
| 5 | Signal Generator | Rohde&Schwarz | SMB 100A | 105709 | 1Y | Apr. 30, 18 |
| 6 | Audio Generator | Anritsu | MG443B | M70150 | 1Y | May. 31, 17 |
| 7 | Spectrum Analyzer | Agilent | N9030A | US51350220 | 1Y | Feb. 28, 18 |
| 8 | DC Power Supply | Daiichi denpa kogyo | GZV4000 | 90290931 | None | None |
| 9 | DC Power Supply 2 | Kikusui | PMC35-3A | LE000716 | None | None |
| 10 | Digital Multi Meter | FLUKE | 8846A | 9642018 | 1Y | Sep. 30, 17 |
| 11 | JIG1 | Anritsu | MD6420A | 6200552647 | None | None |
| 12 | JIG2 | Kenwood | Modem | None | None | None |

Measuring Cables

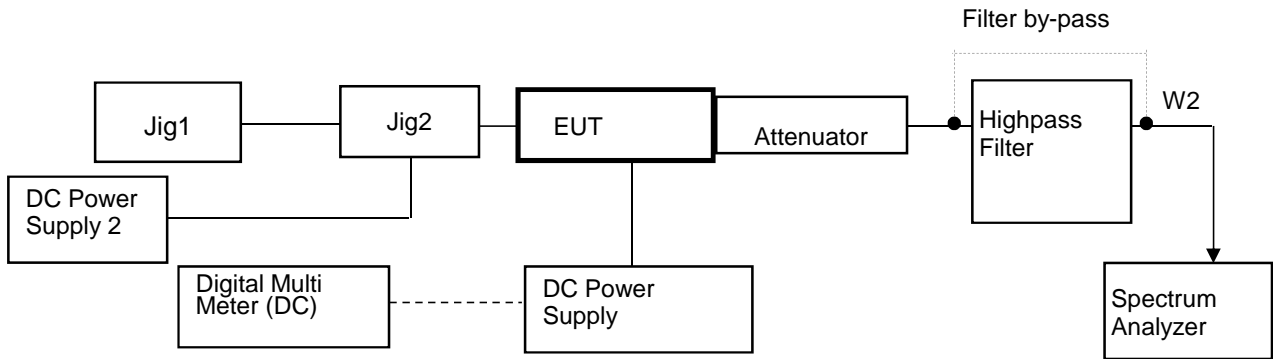
| No. | Cable | Manufacture | Model No. | Serial No. | Cal. Interval | Effective period |
|-----|---------------|----------------|-------------|------------|---------------|------------------|
| W3 | Balance Cable | Nicoon | 3D-2V | KSR00092 | 1Y | Mar. 31, 18 |
| W4 | Coaxial Cable | Pacific custom | RG-58 C/U | AM90C04 | 1Y | Feb. 28, 18 |
| W2 | Coaxial Cable | Suhner | SUCOFLEX104 | KSR00217 | 1Y | May. 31, 17 |

Measuring Equipment Configuration



Note: Configuration of other Modulation test is composed without the Audio Generator.

<14K4F1D Modulation Case>



Test Results

| | |
|----------------------|-------------------------|
| Test date | May. 26, 2017 |
| Location | Kashima No.12 Test Site |
| temperature | 25 [degree C] |
| Humidity Variation | 61 [%] |
| Atmospheric Pressure | 99.9 [kPa] |
| Test Engineer | Koichi Wagatsuma |

Test was carried out for all the frequency band of section 10.1
 State the worst case (below).

State : High Power / Authorized Bandwidth 11.25 kHz

| No. | Tuned Frequency (MHz) | Band | Spurious Frequency (MHz) | Correct Level (dBm) | Emission Level (dBc) | Mask D Limit (dBc) | Margin (dB) |
|-----|-----------------------|--------|--------------------------|---------------------|----------------------|--------------------|-------------|
| 1 | 138.05 (RSS) | Low | 276.10 | -36.18 | -83.17 | -67.0 | 16.2 |
| 2 | 150.05 (FCC) | Low | 750.25 | -35.58 | -82.57 | -67.0 | 15.6 |
| 3 | 162.05 (FCC/RSS) | Middle | 324.10 | -36.70 | -83.69 | -67.0 | 16.7 |
| 4 | 173.95 (FCC/RSS) | High | 347.90 | -38.54 | -85.53 | -67.0 | 18.5 |

There is the margin of 20dB over except for the above points.

Mask D Limit (dBc) = $-(50+10\log(P))$
 Correct Level (dBm) = Substitute SG Level (dBm)
 Emission Level (dBc) = Correct Level (dBm) - $10\log(P*1000)$
 P = Carrier Level (W)
 " - " = Measurement Limit

State : Low Power / Authorized Bandwidth 6 kHz

| No. | Tuned Frequency (MHz) | Band | Spurious Frequency (MHz) | Correct Level (dBm) | Emission Level (dBc) | Mask E Limit (dBc) | Margin (dB) |
|-----|-----------------------|--------|--------------------------|---------------------|----------------------|--------------------|-------------|
| 1 | 138.05 (RSS) | Low | No Point detected | - | - | -55.0 | - |
| 2 | 150.05 (FCC) | Low | 750.25 | -42.46 | -72.46 | -55.0 | 17.5 |
| 3 | 162.05 (FCC/RSS) | Middle | No Point detected | - | - | -55.0 | - |
| 4 | 173.95 (FCC/RSS) | High | 347.90 | -45.03 | -75.03 | -55.0 | 20.0 |

There is the margin of 20dB over except for the above points.

Mask E Limit (dBc) = whichever is the lesser attenuation ; $-(55+10\log(P))$ or -65
 Correct Level (dBm) = Substitute SG Level (dBm)
 Emission Level (dBc) = Correct Level (dBm) - $10\log(P*1000)$
 P = Carrier Level (W)
 " - " = Measurement Limit

10.3 Field Strength of Spurious Radiation

| | | |
|-------------------|---|---|
| REGULATIONS | : | FCC Part 2 Section 1053 (a), Part 80 Section 211 , Part 90 Section 210 RSS-119 Section 5.8 |
| TEST METHOD/GUIDE | : | ANSI/TIA-603-D Section 2.2.12.2 / RSS-119 Section 4.2 |

Test Procedure

- 1 The EUT and test equipment were set up as shown on the following page.
- 2 Adjust the spectrum analyzer for the following setting:
 - a) RBW : 100 kHz (< 1 GHz), 1 MHz (> 1 GHz).
 - b) VBW : 300 kHz (< 1 GHz), 3 MHz (> 1 GHz).
 - c) Detector mode : Positive Peak
- 3 The transmitter was placed on a wooden turntable, and it was transmitting into non-radiating load which was also placed on the turntable.
- 4 The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and polarization as well as EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. The test was performed by placing the EUT on 3-orthogonal axis.
- 5 The frequency range up to tenth harmonic of the fundamental frequency was investigated.
- 6 Remove the EUT and replace it with substitution antenna. A signal generator was connected to the substitution antenna by a non-radiating cable. The absolute levels of the spurious emissions were measured by the substitution.
- 7 Spurious emissions in dB = 10 Log (TX power in Watts/0.001) – the absolute level

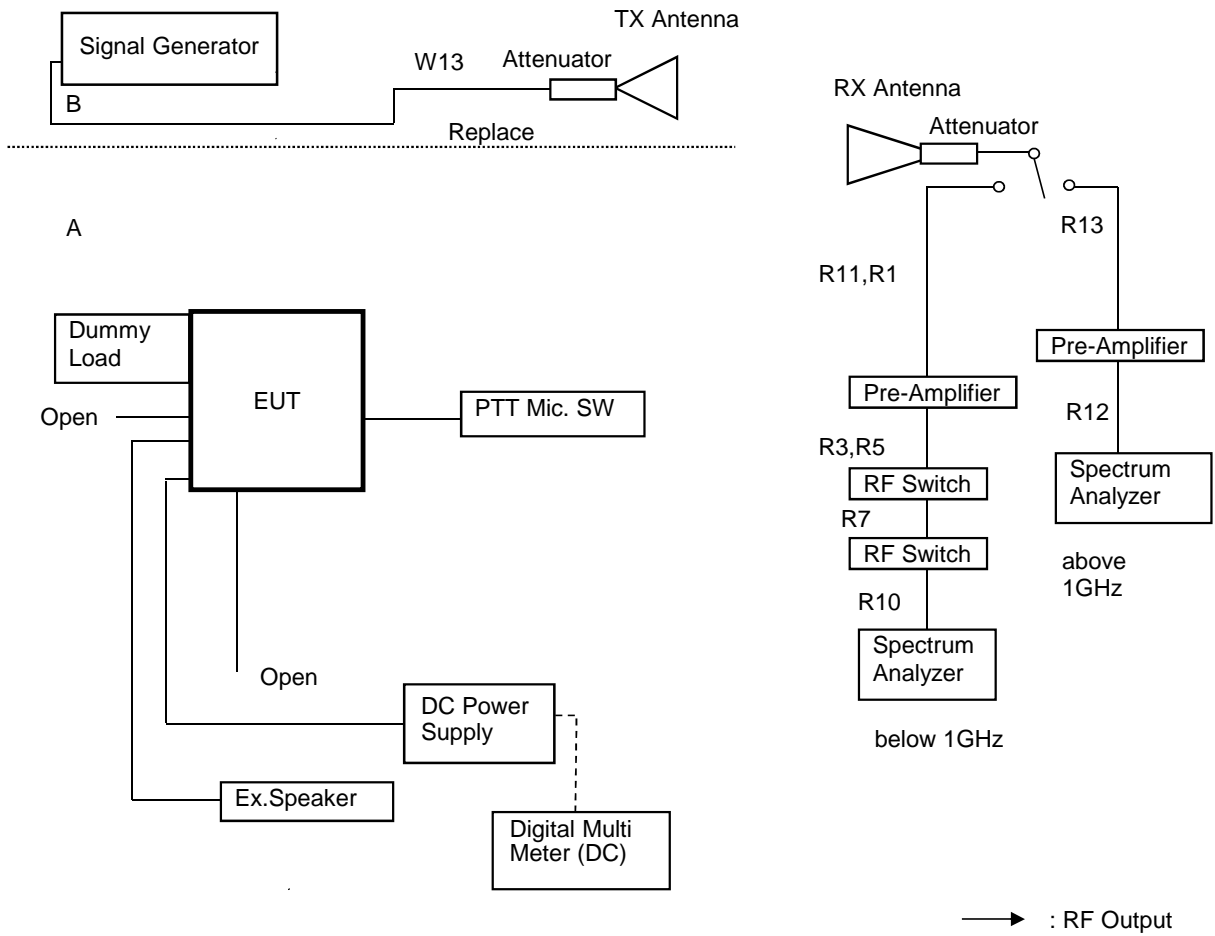
Measuring Equipments

| No. | Equipment | Manufacture | Model No. | Serial No. | Cal. Interval | Effective period |
|-----|---------------------|---------------------|------------|------------|---------------|------------------|
| 1 | Attenuator(10dB) | HUBER+SUHNER | 6810.17B | 5061 | 1Y | Feb. 28, 18 |
| 2 | Dummy Load | TME | CT-150NP | 1138693 | 1Y | Feb. 28, 18 |
| 3 | Signal Generator | Rohde&Schwarz | SMB 100A | 105709 | 1Y | Apr. 30, 18 |
| 4 | Spectrum Analyzer | Agilent | N9000A | MY51260520 | 1Y | May. 31, 17 |
| 5 | D.R.G Antenna(RX) | Schwarzbeck | 3115 | 5045 | 1Y | Mar. 31, 18 |
| 6 | D.R.G Antenna(TX) | ETS LINDGREN | 3117 | 00055157 | 1Y | May. 31, 17 |
| 7 | Dipole Antenna(TX) | Schwarzbeck | UHA9105 | AM0082002 | 1Y | Aug. 31, 17 |
| 8 | Dipole Antenna(TX) | Schwarzbeck | VHA9103 | C01082007 | 1Y | Aug. 31, 17 |
| 9 | Tri-log Antenna(RX) | Schwarzbeck | VULB9168WP | 126 | 1Y | Dec. 31, 17 |
| 10 | DC Power Supply | Daiichi denpa kogyo | GZV4000 | 90290931 | None | None |
| 11 | Digital Multi Meter | FLUKE | 8846A | 9642018 | 1Y | Sep. 30, 17 |
| 12 | Amplifier | TOYO | TPA0118-30 | 0402 | 1Y | Apr. 30, 18 |
| 13 | Attenuator | HUBER + SUHNER | 6803.17.B | 5111 | 1Y | Apr. 30, 18 |
| 14 | Amplifier | Intertek Japan | ZX60-3018G | 005 | 1Y | Feb. 28, 18 |
| 15 | Attenuator | TAMAGAWA | CFA-01 | A00040805 | 1Y | Feb. 28, 18 |
| 16 | RF Switch | Intertek Japan | ACX-150-1 | A12301501 | 1Y | Feb. 28, 18 |

Measuring Cables

| No. | Cable | Manufacturer | Model No. | Serial No. | Cal. Interval | Effective period |
|-----|---------------|--------------|-------------------|------------|---------------|------------------|
| R11 | Coaxial Cable | FUJIKURA | 5D-2W | R11 | 1Y | Feb. 28, 18 |
| R1 | Coaxial Cable | FUJIKURA | 5D-2W | R1 | 1Y | Feb. 28, 18 |
| R3 | Coaxial Cable | FUJIKURA | 10D-2W | R3 | 1Y | Feb. 28, 18 |
| R5 | Coaxial Cable | FUJIKURA | RG-5A/U | R5 | 1Y | Feb. 28, 18 |
| R7 | Coaxial Cable | MIYAZAKI | 5D-2W | R7 | 1Y | Feb. 28, 18 |
| R10 | Coaxial Cable | FUJIKURA | 5D-2W | R10 | 1Y | Feb. 28, 18 |
| R13 | Coaxial Cable | SUHNER | SUCOFLEX 104 | 229603 | 1Y | Apr. 30, 18 |
| R12 | Coaxial Cable | Candox | 5B-048-98-98-5000 | 111130 | 1Y | Apr. 30, 18 |
| W13 | Coaxial Cable | Suhner | SUCOFLEX106 | KSR00207 | 1Y | Feb. 28, 18 |

Measuring Equipment Configuration



Test Results

| | | | |
|----------------------|-------------------------|------------|--------------|
| Test date | Apr 29, 2017 | to | May 01, 2017 |
| Location | Kashima No.12 Test Site | | |
| temperature | 20.0 to 21.5 | [degree C] | |
| Humidity Variation | 30 to 40 | [%] | |
| Atmospheric Pressure | 101 to 102 | [kPa] | |
| Test Engineer | Koichi Wagatsuma | | |

Test was carried out for all the frequency band of section 10.1
 State the worst case (below).

State : High Power / Authorized Bandwidth 11.25 kHz / 173.95MHz(FCC /RSS)

| No | Frequency (MHz) | Pol | Reading Level (dBm) | SG Out Level (dBm) | Antenna Gain (dBd) | Loss (dB) | Correct Level (dBm) | Emission Level (dBc) | MASK D Limit Level (dBc) | Margin (dB) |
|----|-----------------|------|---------------------|--------------------|--------------------|-----------|---------------------|----------------------|--------------------------|-------------|
| 1 | 347.90 | Hor. | -48.80 | -27.85 | 0.00 | 11.46 | -39.3 | -86.3 | -67.0 | 19.3 |
| | | Ver. | -55.12 | -29.82 | 0.00 | 11.46 | -41.3 | -88.3 | -67.0 | 21.3 |
| 2 | 521.85 | Hor. | -65.10 | -38.26 | 0.00 | 11.80 | -50.1 | -97.1 | -67.0 | 30.1 |
| | | Ver. | -71.92 | -44.24 | 0.00 | 11.80 | -56.0 | -103.0 | -67.0 | 36.0 |
| 3 | 695.80 | Hor. | -73.56 | -43.12 | 0.00 | 12.10 | -55.2 | -102.2 | -67.0 | 35.2 |
| | | Ver. | -74.61 | -41.93 | 0.00 | 12.10 | -54.0 | -101.0 | -67.0 | 34.0 |
| 4 | 869.75 | Hor. | -84.38 | -50.70 | 0.00 | 12.37 | -63.1 | -110.1 | -67.0 | 43.1 |
| | | Ver. | -84.60 | -49.08 | 0.00 | 12.37 | -61.5 | -108.4 | -67.0 | 41.4 |
| 5 | 1043.70 | Hor. | -58.00 | -45.21 | 1.28 | 12.62 | -56.6 | -103.5 | -67.0 | 36.5 |
| | | Ver. | -58.47 | -46.21 | 1.28 | 12.62 | -57.6 | -104.5 | -67.0 | 37.5 |
| 6 | 1217.65 | Hor. | -65.23 | -51.02 | 2.34 | 12.82 | -61.5 | -108.5 | -67.0 | 41.5 |
| | | Ver. | -60.82 | -46.19 | 2.34 | 12.82 | -56.7 | -103.7 | -67.0 | 36.7 |
| 7 | 1391.60 | Hor. | - | - | 3.23 | 13.02 | - | - | -67.0 | - |
| | | Ver. | - | - | 3.23 | 13.02 | - | - | -67.0 | - |
| 8 | 1565.55 | Hor. | - | - | 3.67 | 13.21 | - | - | -67.0 | - |
| | | Ver. | - | - | 3.67 | 13.21 | - | - | -67.0 | - |
| 9 | 1739.50 | Hor. | - | - | 3.48 | 13.41 | - | - | -67.0 | - |
| | | Ver. | - | - | 3.48 | 13.41 | - | - | -67.0 | - |

There is the margin of 20dB over except for the above points.

Mask D Limit (dBc) = whichever is the lesser attenuation ; $-(50+10\log(P))$ or -70
 Correct Level (dBm) = Substitute SG Level (dBm) + ANT Gain (dBd) - Loss (Cable, Attenuator) (dB)
 Emission Level (dBc) = Correct Level (dBm) - $10\log(P*1000)$
 P = Carrier Level (W)
 " - " = Measurement Limit

State : Low Power / Authorized Bandwidth 11.25 kHz / 173.95MHz(FCC)

| No | Frequency (MHz) | Pol | Reading Level (dBm) | SG Out Level (dBm) | Antenna Gain (dBd) | Loss (dB) | Correct Level (dBm) | Emission Level (dBc) | MASK E Limit Level (dBc) | Margin (dB) |
|----|-----------------|------|---------------------|--------------------|--------------------|-----------|---------------------|----------------------|--------------------------|-------------|
| 1 | 347.90 | Hor. | -81.33 | -60.38 | 0.00 | 11.46 | -71.8 | -101.8 | -55.0 | 46.8 |
| | | Ver. | -82.40 | -57.10 | 0.00 | 11.46 | -68.6 | -98.6 | -55.0 | 43.6 |
| 2 | 521.85 | Hor. | -76.98 | -50.14 | 0.00 | 11.80 | -61.9 | -91.9 | -55.0 | 36.9 |
| | | Ver. | -77.47 | -49.79 | 0.00 | 11.80 | -61.6 | -91.6 | -55.0 | 36.6 |
| 3 | 695.80 | Hor. | -79.45 | -49.01 | 0.00 | 12.10 | -61.1 | -91.1 | -55.0 | 36.1 |
| | | Ver. | -77.56 | -44.88 | 0.00 | 12.10 | -57.0 | -87.0 | -55.0 | 32.0 |
| 4 | 869.75 | Hor. | - | - | 0.00 | 12.37 | - | - | -55.0 | - |
| | | Ver. | - | - | 0.00 | 12.37 | - | - | -55.0 | - |
| 5 | 1043.70 | Hor. | -60.16 | -47.37 | 1.28 | 12.62 | -58.7 | -88.7 | -55.0 | 33.7 |
| | | Ver. | -60.13 | -47.87 | 1.28 | 12.62 | -59.2 | -89.2 | -55.0 | 34.2 |
| 6 | 1217.65 | Hor. | - | - | 2.34 | 12.82 | - | - | -55.0 | - |
| | | Ver. | - | - | 2.34 | 12.82 | - | - | -55.0 | - |
| 7 | 1391.60 | Hor. | - | - | 3.23 | 13.02 | - | - | -55.0 | - |
| | | Ver. | - | - | 3.23 | 13.02 | - | - | -55.0 | - |
| 8 | 1565.55 | Hor. | - | - | 3.67 | 13.21 | - | - | -55.0 | - |
| | | Ver. | - | - | 3.67 | 13.21 | - | - | -55.0 | - |
| 9 | 1739.50 | Hor. | - | - | 3.48 | 13.41 | - | - | -55.0 | - |
| | | Ver. | - | - | 3.48 | 13.41 | - | - | -55.0 | - |

There is the margin of 20dB over except for the above points.

Mask E Limit (dBc) = whichever is the lesser attenuation ; $-(55+10\log(P))$ or -65

Correct Level (dBm) = Substitute SG Level (dBm) + ANT Gain (dBd) - Loss (Cable, Attenuator) (dB)

Emission Level (dBc) = Correct Level (dBm) - $10\log(P*1000)$

P = Carrier Level (W)

" - " = Measurement Limit

State : Low Power / Authorized Bandwidth 6 kHz / 138.05MHz(RSS)

| No | Frequency (MHz) | Pol | Reading Level (dBm) | SG Out Level (dBm) | Antenna Gain (dBd) | Loss (dB) | Correct Level (dBm) | Emission Level (dBc) | MASK E Limit Level (dBc) | Margin (dB) |
|----|-----------------|------|---------------------|--------------------|--------------------|-----------|---------------------|----------------------|--------------------------|-------------|
| 1 | 276.10 | Hor. | -72.23 | -53.63 | 0.00 | 11.29 | -64.9 | -94.9 | -55.0 | 39.9 |
| | | Ver. | -69.31 | -43.76 | 0.00 | 11.29 | -55.1 | -85.1 | -55.0 | 30.1 |
| 2 | 414.15 | Hor. | -79.38 | -56.88 | 0.00 | 11.59 | -68.5 | -98.5 | -55.0 | 43.5 |
| | | Ver. | -80.95 | -55.38 | 0.00 | 11.59 | -67.0 | -97.0 | -55.0 | 42.0 |
| 3 | 552.20 | Hor. | -80.57 | -53.30 | 0.00 | 11.85 | -65.2 | -95.2 | -55.0 | 40.2 |
| | | Ver. | -82.32 | -54.66 | 0.00 | 11.85 | -66.5 | -96.5 | -55.0 | 41.5 |
| 4 | 690.25 | Hor. | -79.42 | -48.10 | 0.00 | 12.10 | -60.2 | -90.2 | -55.0 | 35.2 |
| | | Ver. | -80.67 | -47.77 | 0.00 | 12.10 | -59.9 | -89.9 | -55.0 | 34.9 |
| 5 | 828.30 | Hor. | - | - | 0.00 | 12.31 | - | - | -55.0 | - |
| | | Ver. | - | - | 0.00 | 12.31 | - | - | -55.0 | - |
| 6 | 966.35 | Hor. | - | - | 0.00 | 12.52 | - | - | -55.0 | - |
| | | Ver. | - | - | 0.00 | 12.52 | - | - | -55.0 | - |
| 7 | 1104.40 | Hor. | - | - | 1.67 | 12.69 | - | - | -55.0 | - |
| | | Ver. | - | - | 1.67 | 12.69 | - | - | -55.0 | - |
| 8 | 1242.45 | Hor. | - | - | 2.48 | 12.85 | - | - | -55.0 | - |
| | | Ver. | - | - | 2.48 | 12.85 | - | - | -55.0 | - |
| 9 | 1380.50 | Hor. | - | - | 3.18 | 13.00 | - | - | -55.0 | - |
| | | Ver. | - | - | 3.18 | 13.00 | - | - | -55.0 | - |

There is the margin of 20dB over except for the above points.

Mask E Limit (dBc) = whichever is the lesser attenuation ; $-(55+10\log(P))$ or -65

Correct Level (dBm) = Substitute SG Level (dBm) + ANT Gain (dB) - Loss (Cable, Attenuator) (dB)

Emission Level (dBc) = Correct Level (dBm) - $10\log(P*1000)$

P = Carrier Level (W)

" - " = Measurement Limit

10.4 Emission Masks (Occupied Bandwidth)

| | |
|-------------------|--|
| REGULATIONS | : FCC Part 2 Section 1049 (c) (1), Part 80 Section 211, Part 90 Section 210 RSS-119 Section 5.5 |
| TEST METHOD/GUIDE | : ANSI/TIA-603-D Section 2.2.11.2 / RSS-119 Section 5.8 |

Test Procedure

- 1 The EUT and test equipment were set up as shown on the following page.
- 2 For EUT supporting audio modulation, the audio signal generator was adjusted to the frequency of maximum response and with output level set for +/- 2.5 kHz deviation (or 50 % modulation). (FM modulation).
- 3 With level constant, the signal level was increased 16 dB.
- 4 For EUT supporting digital modulation, the digital modulation mode was operated to its maximum extent.
- 5 Adjust the spectrum analyzer for the following setting:
 - a) RBW : 100Hz (Non modulation and Authorized Band 6 kHz),
100Hz (Non modulation and Authorized Band 11.25 kHz),
300Hz (Non modulation and Authorized Band 20 kHz).
 - b) VBW : 10times the RBW (Non modulation , Authorized Band 6kHz, 11.25 kHz and 20 kHz).
 - c) RBW and VBW : 30 kHz (Non modulation(Digital Modulation)).
- 6 The occupied Bandwidth was measured with the Spectrum Analyzer controls set as shown on the test results.

The selection of Emission Mask

| No. | Frequency (MHz) | Audio Filter | Channel Bandwidth (kHz) | Authorized Bandwidth (kHz) | Selection of Emission Mask FCC IC | |
|------------------------|--------------------|---------------------|-------------------------------|----------------------------------|---|---|
| Emission Designation : | | 16K0F3E | | | | |
| 1 | 138.05 (RSS) | With | 25 | 20 | - | B |
| 2 | 162.05 (RSS) | With | 25 | 20 | - | B |
| 3 | 173.95 (RSS) | With | 25 | 20 | - | B |
| Emission Designation : | | 14K4F1D | | | | |
| 1 | 138.05 (RSS) | Without | 25 | 20 | - | C |
| 2 | 162.05 (RSS) | Without | 25 | 20 | - | C |
| 3 | 173.95 (RSS) | Without | 25 | 20 | - | C |
| Emission Designation : | | 11K0F3E | | | | |
| 1 | 138.05 (RSS) | With | 12.5 | 11.25 | - | D |
| 2 | 150.05 (FCC) | With | 12.5 | 11.25 | D | - |
| 3 | 162.05 (FCC/RSS) | With | 12.5 | 11.25 | D | - |
| 4 | 173.95 (FCC/RSS) | With | 12.5 | 11.25 | D | D |
| Emission Designation : | | 8K30F1E/F1D/F7W | | | | |
| 1 | 138.05 (RSS) | Without | 12.5 | 11.25 | - | D |
| 2 | 150.05 (FCC) | Without | 12.5 | 11.25 | D | - |
| 3 | 162.05 (FCC/RSS) | Without | 12.5 | 11.25 | D | - |
| 4 | 173.95 (FCC/RSS) | Without | 12.5 | 11.25 | D | D |
| Emission Designation : | | 8K10F1E / F1D | | | | |
| 1 | 138.05 (RSS) | Without | 12.5 | 11.25 | - | D |
| 2 | 150.05 (FCC) | Without | 12.5 | 11.25 | D | - |
| 3 | 162.05 (FCC/RSS) | Without | 12.5 | 11.25 | D | - |
| 4 | 173.95 (FCC/RSS) | Without | 12.5 | 11.25 | D | D |
| Emission Designation : | | 4K00F1E / F1D / F7W | | | | |
| 1 | 138.05 (RSS) | Without | 6.25 | 6 | - | E |
| 2 | 150.05 (FCC) | Without | 6.25 | 6 | E | - |
| 3 | 162.05 (FCC/RSS) | Without | 6.25 | 6 | E | - |
| 4 | 173.95 (FCC/RSS) | Without | 6.25 | 6 | E | E |
| Emission Designation : | | 4K00F2D | | | | |
| 1 | 138.05 (RSS) | Without | 6.25 | 6 | - | E |
| 2 | 150.05 (FCC) | Without | 6.25 | 6 | E | - |
| 3 | 162.05 (FCC/RSS) | Without | 6.25 | 6 | E | - |
| 4 | 173.95 (FCC/RSS) | Without | 6.25 | 6 | E | E |

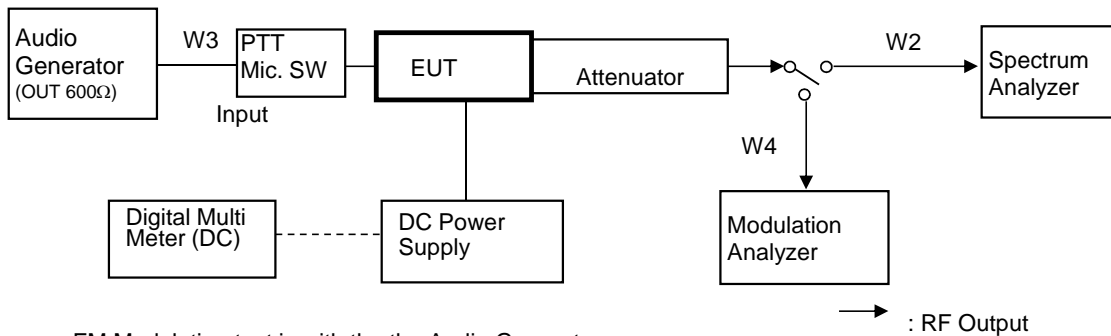
Measuring Equipments

| No. | Equipment | Manufacture | Model No. | Serial No. | Cal. Interval | Effective period |
|-----|---------------------|---------------------|-------------|------------|---------------|------------------|
| 1 | Attenuator (20dB) | Aeroflex/Wenshel | 66-20-34 | BY4357 | 1Y | May. 31, 17 |
| 2 | Attenuator (30dB) | Weinschel | WA-29-30-34 | 8923 | 1Y | May. 31, 17 |
| 3 | Modulation Analyzer | Hewlett Packard | 8901B | 3403A04852 | 1Y | Dec. 31, 17 |
| 4 | Audio Generator | Anritsu | MG443B | M70150 | 1Y | May. 31, 17 |
| 5 | Spectrum Analyzer | Agilent | N9030A | US51350220 | 1Y | Feb. 28, 18 |
| 6 | DC Power Supply | Daiichi denpa kogyo | GZV4000 | 90290931 | None | None |
| 7 | DC Power Supply 2 | Kikusui | PMC35-3A | LE000716 | None | None |
| 8 | Digital Multi Meter | FLUKE | 8846A | 9642018 | 1Y | Sep. 30, 17 |
| 9 | JIG1 | Anritsu | MD6420A | 6200552647 | None | None |
| 10 | JIG2 | Kenwood | Modem | None | None | None |

Measuring Cables

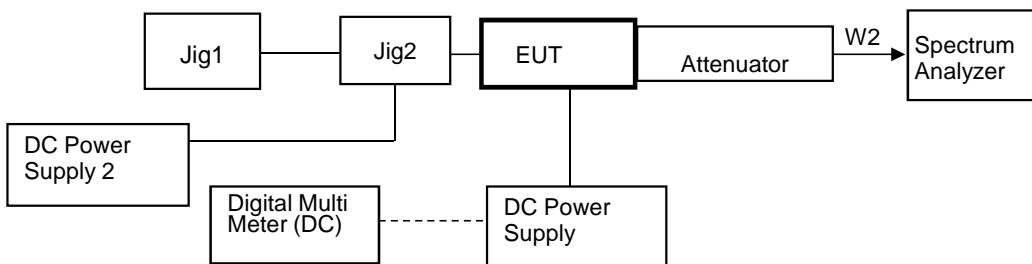
| No. | Cable | Manufacture | Model No. | Serial No. | Cal. Interval | Effective period |
|-----|---------------|----------------|-------------|------------|---------------|------------------|
| W3 | Balance Cable | Nicoon | 3D-2V | KSR00092 | 1Y | Mar. 31, 18 |
| W4 | Coaxial Cable | Pacific custom | RG-58 C/U | AM90C04 | 1Y | Feb. 28, 18 |
| W2 | Coaxial Cable | Suhner | SUCOFLEX104 | KSR00217 | 1Y | May. 31, 17 |

Measuring Equipment Configuration



FM Modulation test is with the the Audio Generator.
 Configuration of other Modulation test is composed without the Audio Generator.

<14K4F1D Modulation Case>

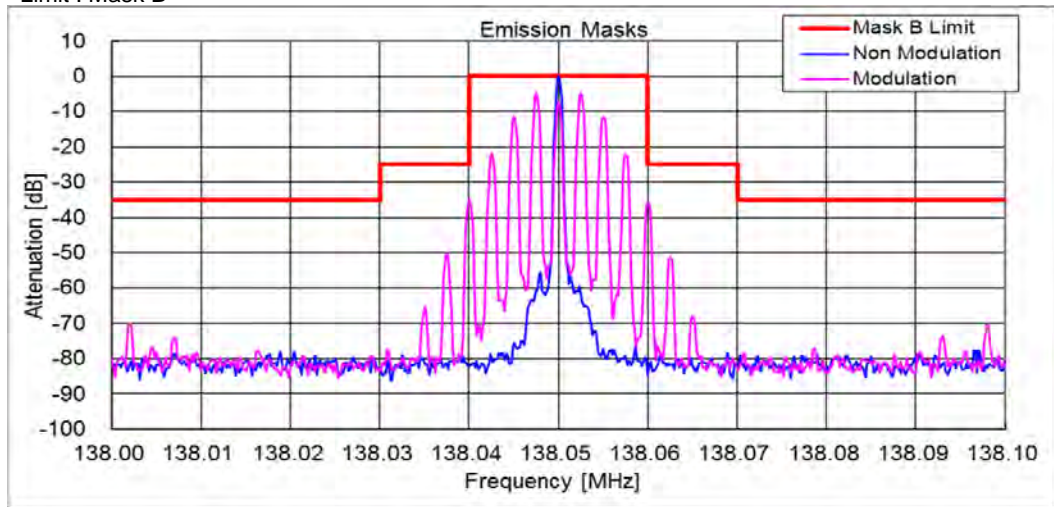


Test Results

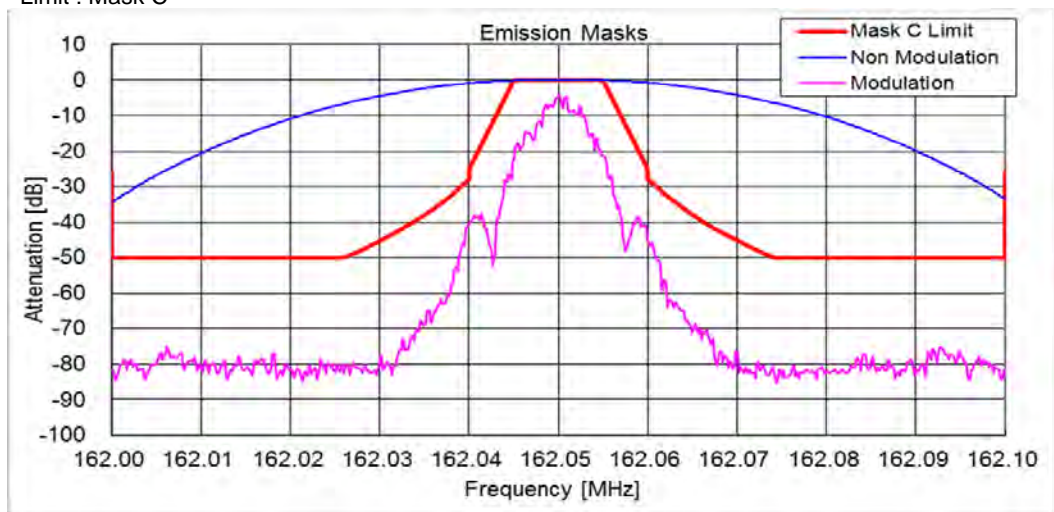
| | |
|----------------------|---------------------------------|
| Test date | May. 08, 2017 and May. 26, 2017 |
| Location | Kashima No.12 Test Site |
| temperature | 21.1 to 23.4 [degree C] |
| Humidity Variation | 60 to 60 [%] |
| Atmospheric Pressure | 100.2 to 100.4 [kPa] |
| Test Engineer | Koichi Wagatsuma |

Test was carried out for all the frequency band of section 10.1
 State the worst case (below).

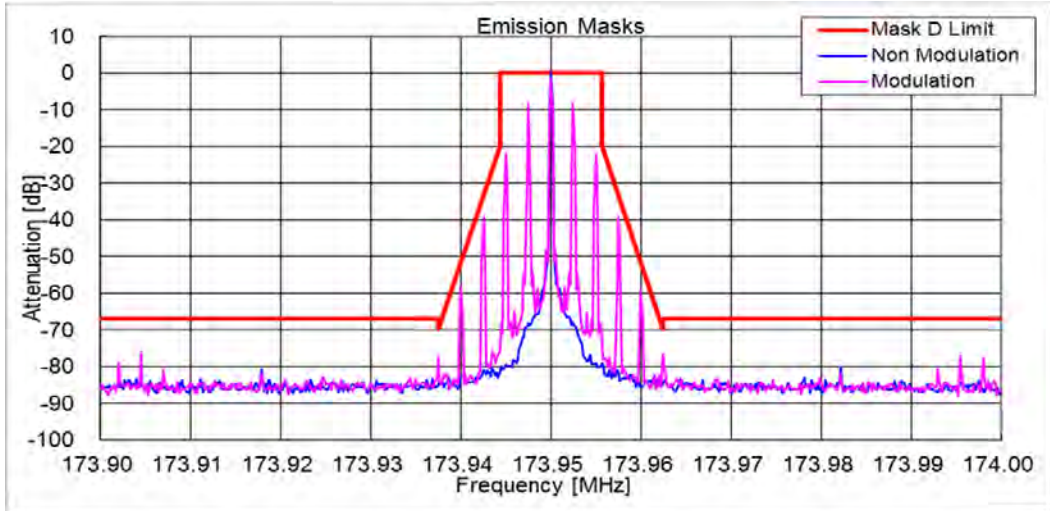
State : High Power / Authorized Bandwidth 20 kHz/ 16K0F3E / 138.05 MHz(RSS)
 Limit : Mask B



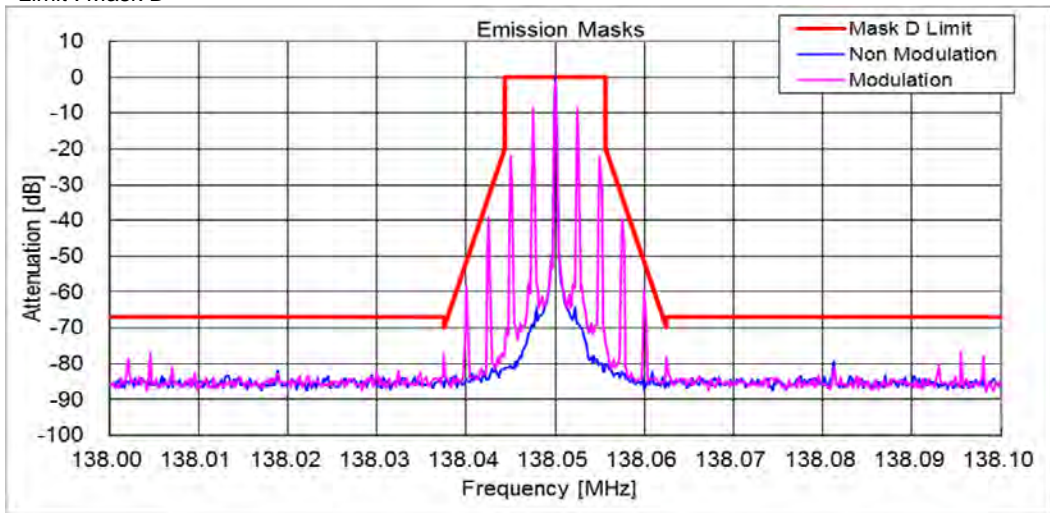
State : High Power / Authorized Bandwidth 20 kHz/ 14K4F1D / 162.05 MHz(RSS)
 Limit : Mask C



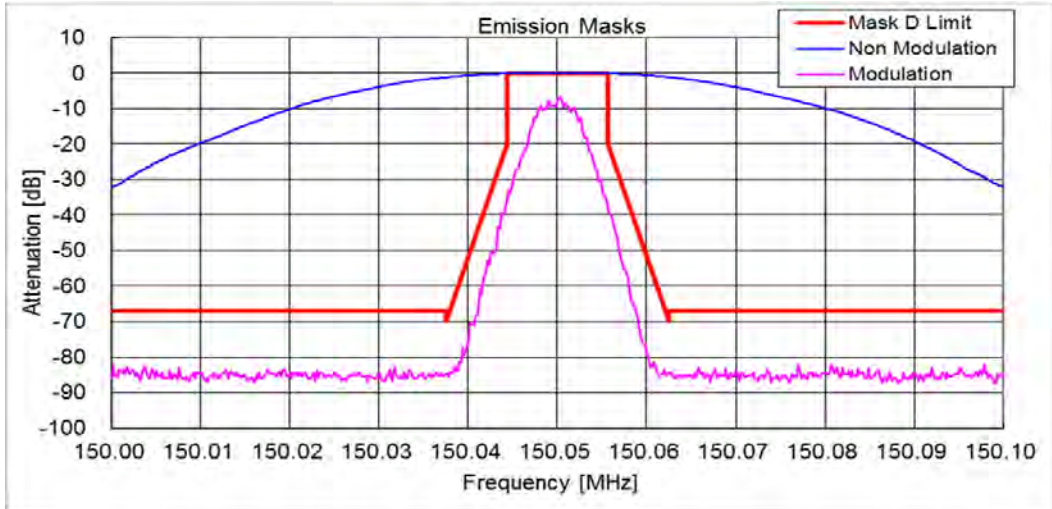
State : High Power / Authorized Bandwidth 11.25 kHz/ 11K0F3E / 173.95 MHz(FCC)
Limit : Mask D



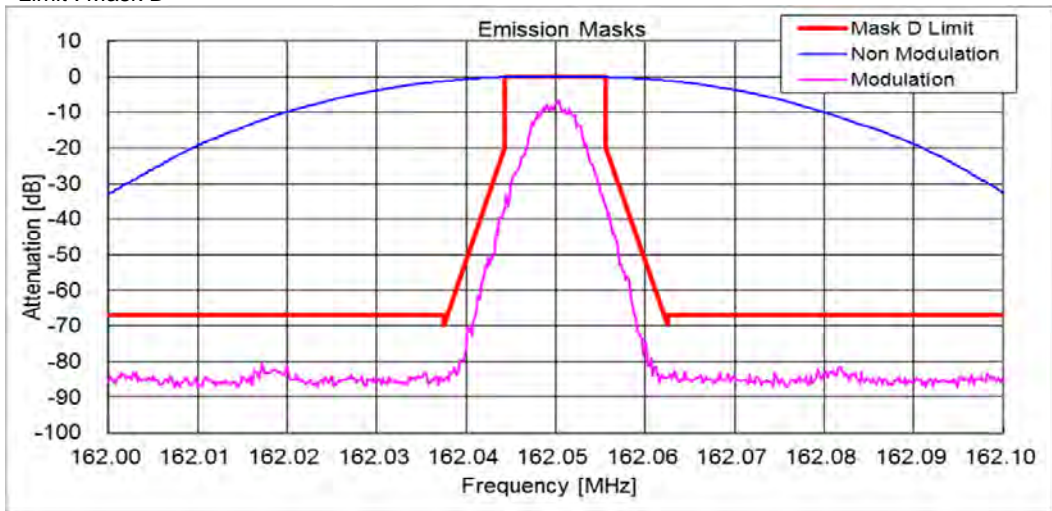
State : High Power / Authorized Bandwidth 11.25 kHz/ 11K0F3E / 138.05 MHz(RSS)
Limit : Mask D



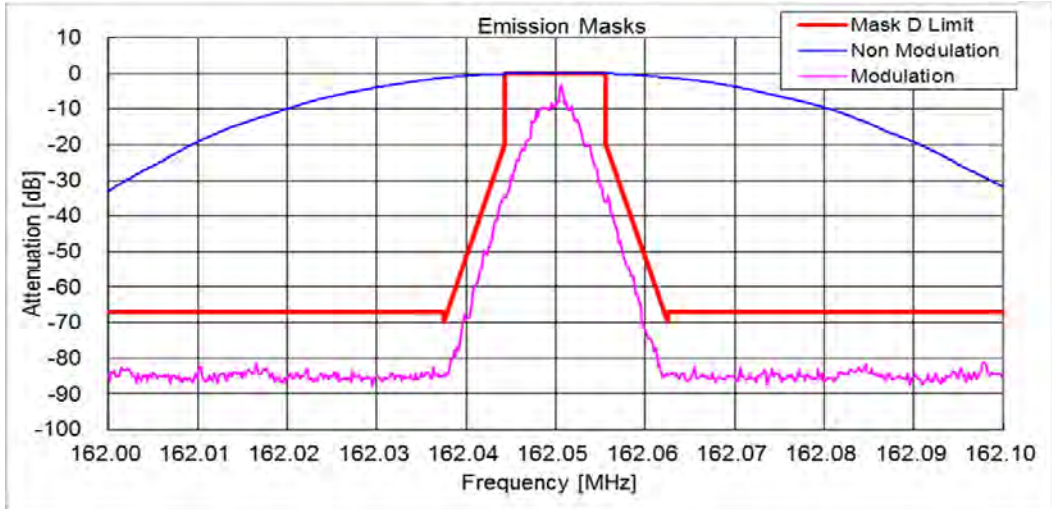
State : High Power / Authorized Bandwidth 11.25 kHz/ 8K30F1E/F1D/F7W / 150.05 MHz(FCC)
Limit : Mask D



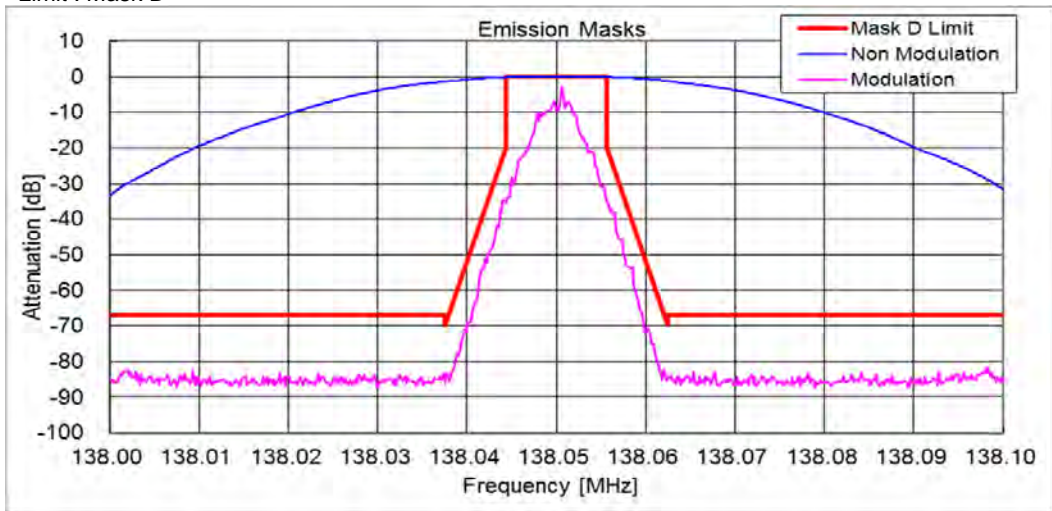
State : High Power / Authorized Bandwidth 11.25 kHz/ 8K30F1E/F1D/F7W / 162.05 MHz(RSS)
Limit : Mask D



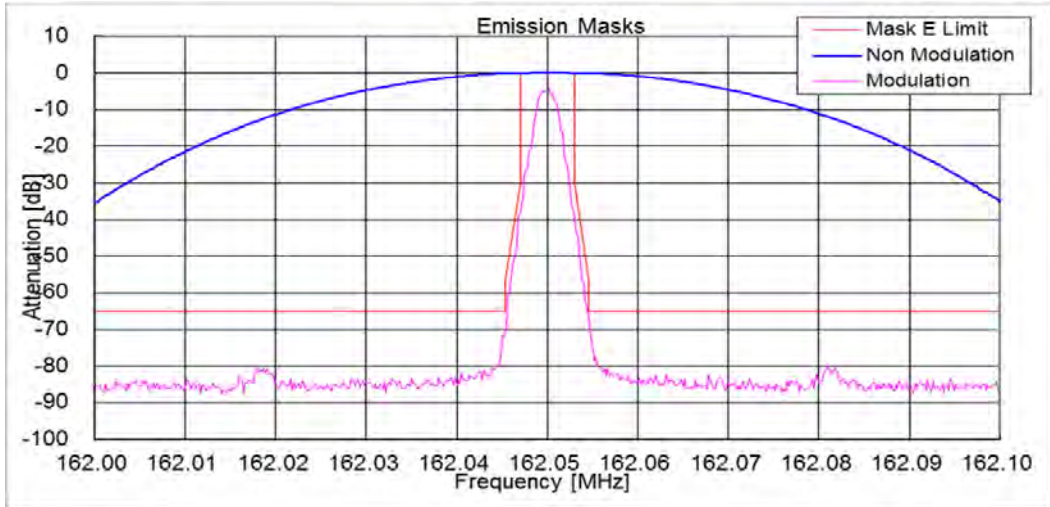
State : High Power / Authorized Bandwidth 11.25 kHz/ 8K10F1E / F1D / 162.05 MHz(FCC)
Limit : Mask D



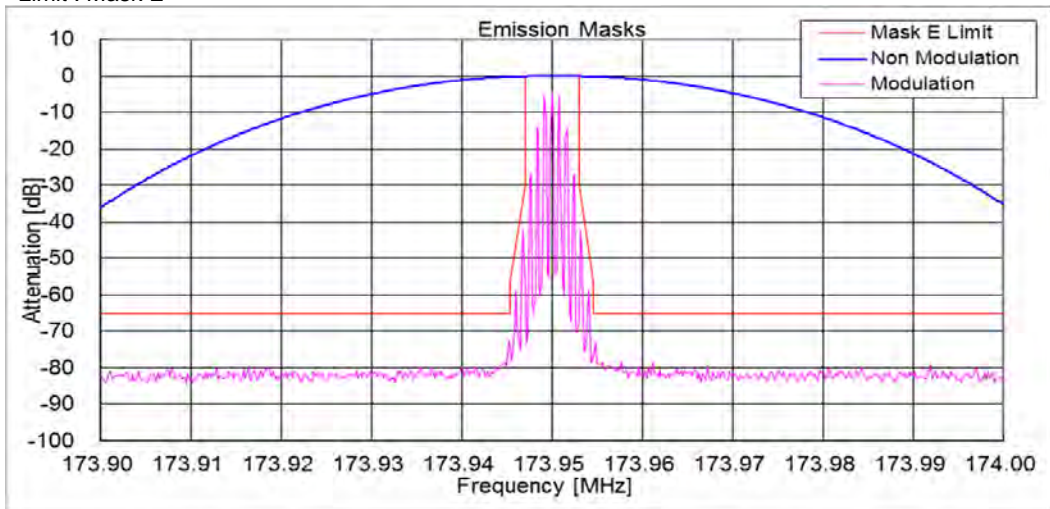
State : High Power / Authorized Bandwidth 11.25 kHz/ 8K10F1E / F1D / 138.05 MHz(RSS)
Limit : Mask D



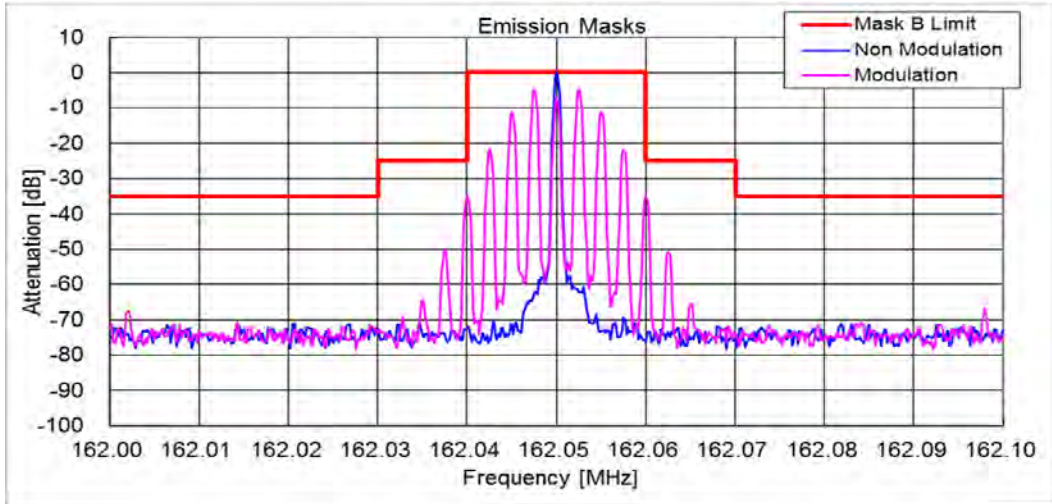
State : High Power / Authorized Bandwidth 6 kHz/ 4K00F1E / F1D / F7W / 162.05 MHz(FCC/RSS)
Limit : Mask E



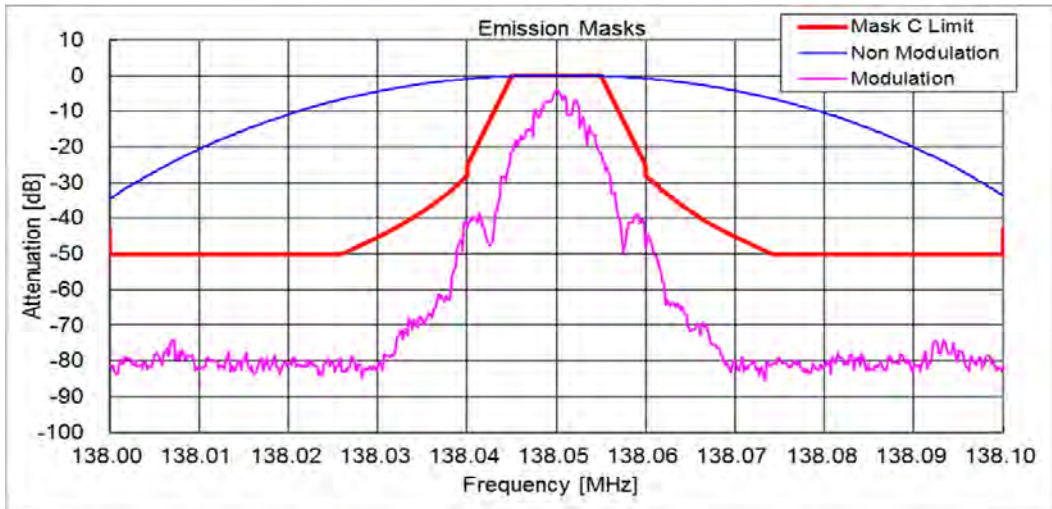
State : High Power / Authorized Bandwidth 6 kHz/ 4K00F2D / 173.95 MHz(FCC/RSS)
Limit : Mask E



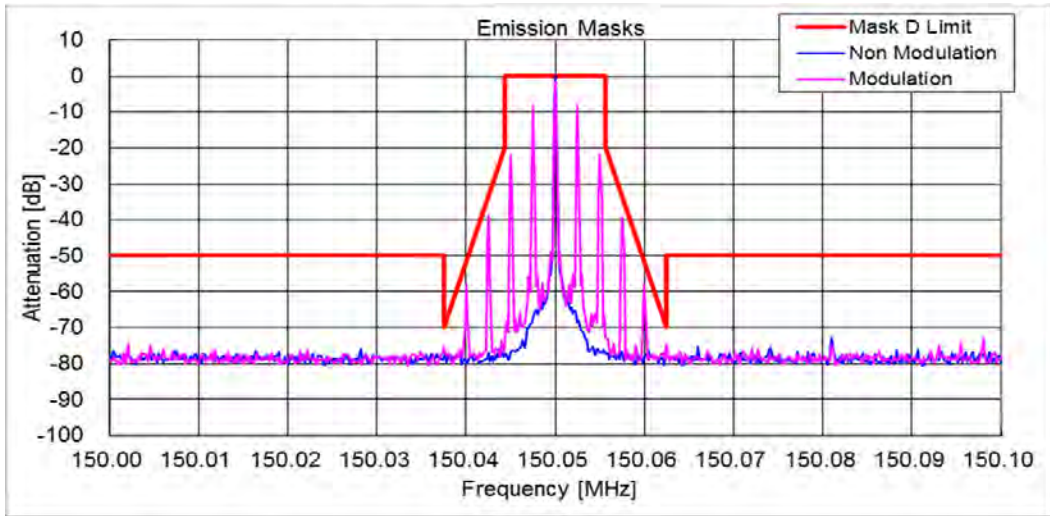
State : Low Power / Authorized Bandwidth 20 kHz/ 4K00F2D / 162.05 MHz(RSS)
Limit : Mask B



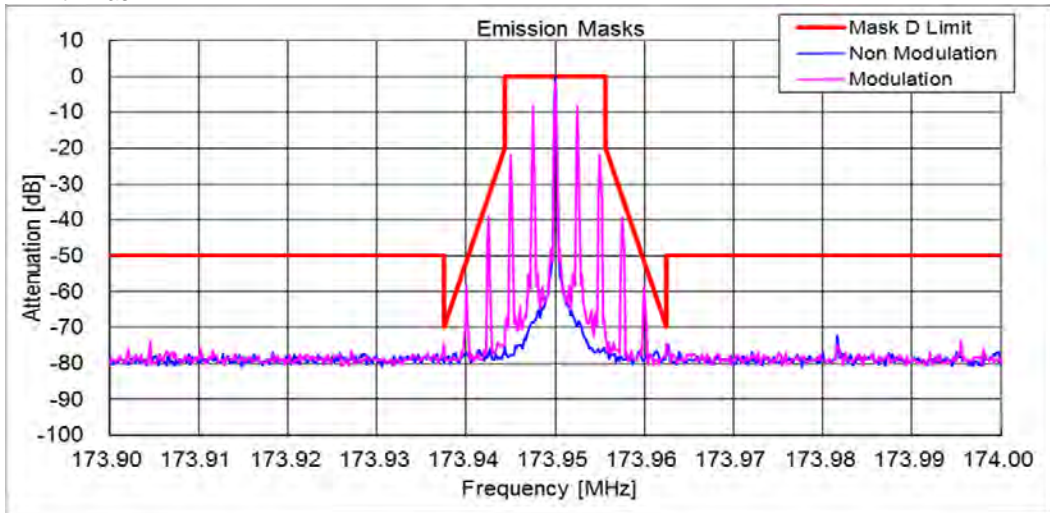
State : Low Power / Authorized Bandwidth 20 kHz/ 14K4F1D / 138.05 MHz(RSS)
Limit : Mask C



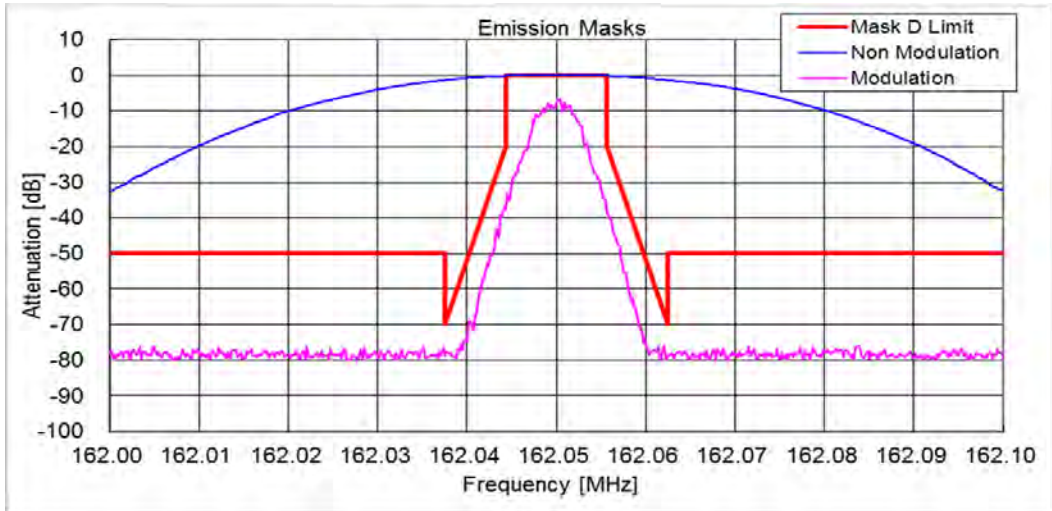
State : Low Power / Authorized Bandwidth 11.25 kHz/ 11K0F3E / 150.05 MHz(FCC)
Limit : Mask D



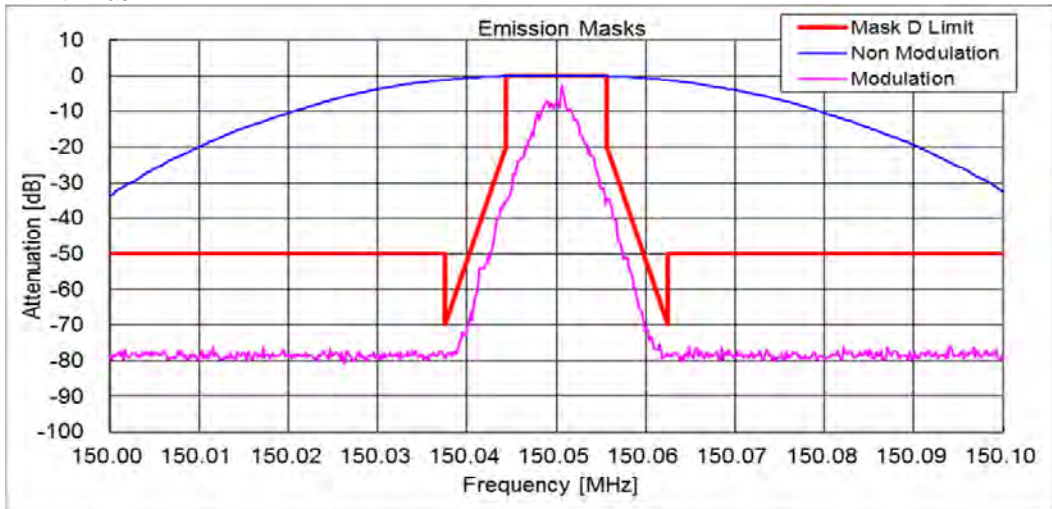
State : Low Power / Authorized Bandwidth 11.25 kHz/ 11K0F3E / 173.95 MHz(RSS)
Limit : Mask D



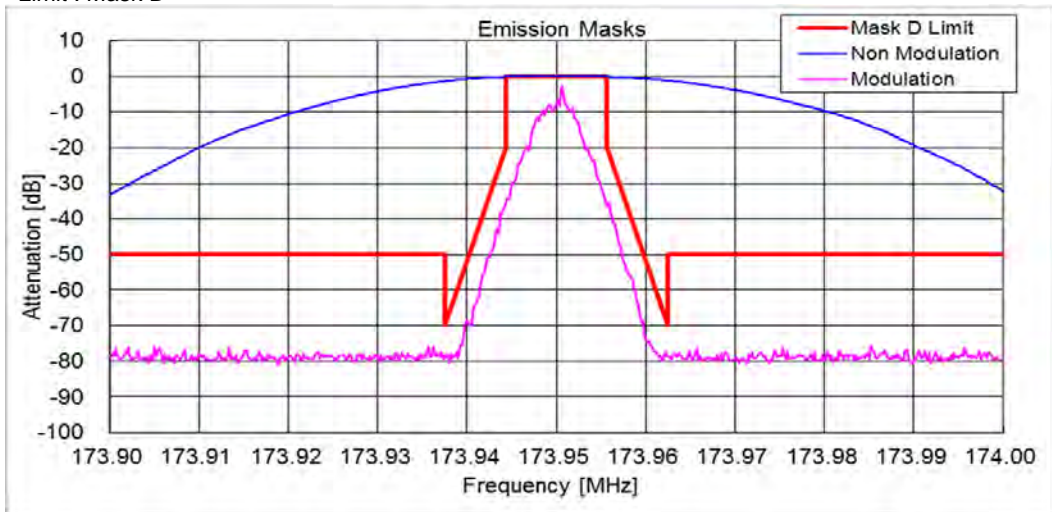
State : Low Power / Authorized Bandwidth 11.25 kHz/ 8K30F1E/F1D/F7W / 162.05 MHz(FCC/RSS)
Limit : Mask D



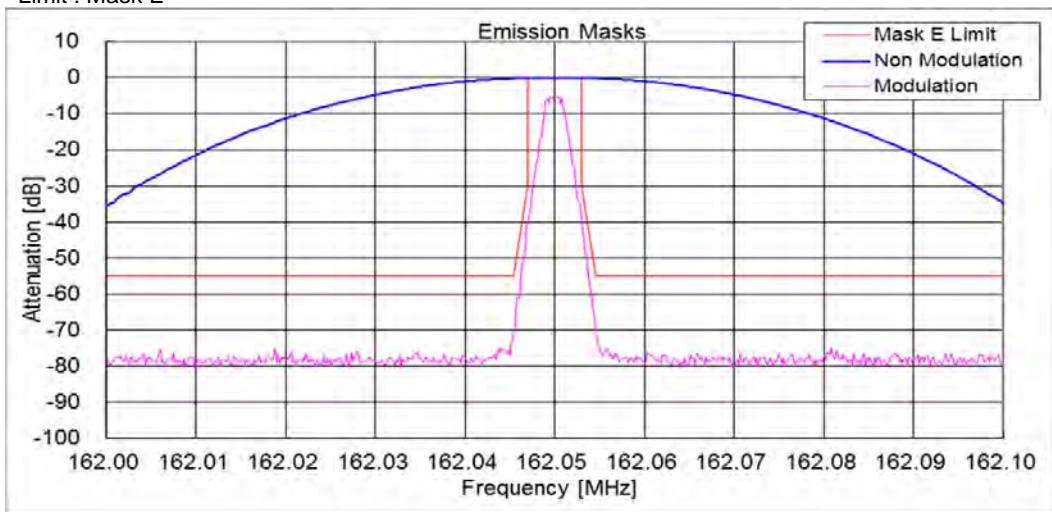
State : Low Power / Authorized Bandwidth 11.25 kHz/ 8K10F1E / F1D / 150.05 MHz(FCC)
Limit : Mask D



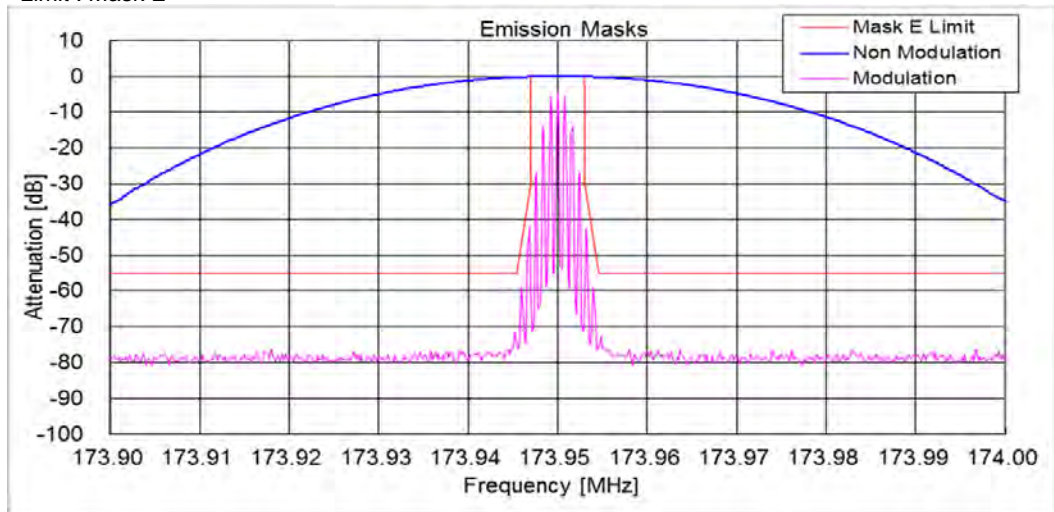
State : Low Power / Authorized Bandwidth 11.25 kHz/ 8K10F1E / F1D / 173.95 MHz(RSS)
Limit : Mask D



State : Low Power / Authorized Bandwidth 6 kHz/ 4K00F1E / F1D / F7W / 162.05 MHz(FCC/RSS)
Limit : Mask E



State : Low Power / Authorized Bandwidth 6 kHz/ 4K00F2D / 173.95 MHz(FCC/RSS)
Limit : Mask E



10.5 Transient Frequency Behavior

| | |
|-------------------|------------------------------------|
| REGULATIONS | : FCC Part 90 Section 214 |
| TEST METHOD/GUIDE | : ANSI/TIA-603-D, Section 2.2.19.3 |

Test Procedure

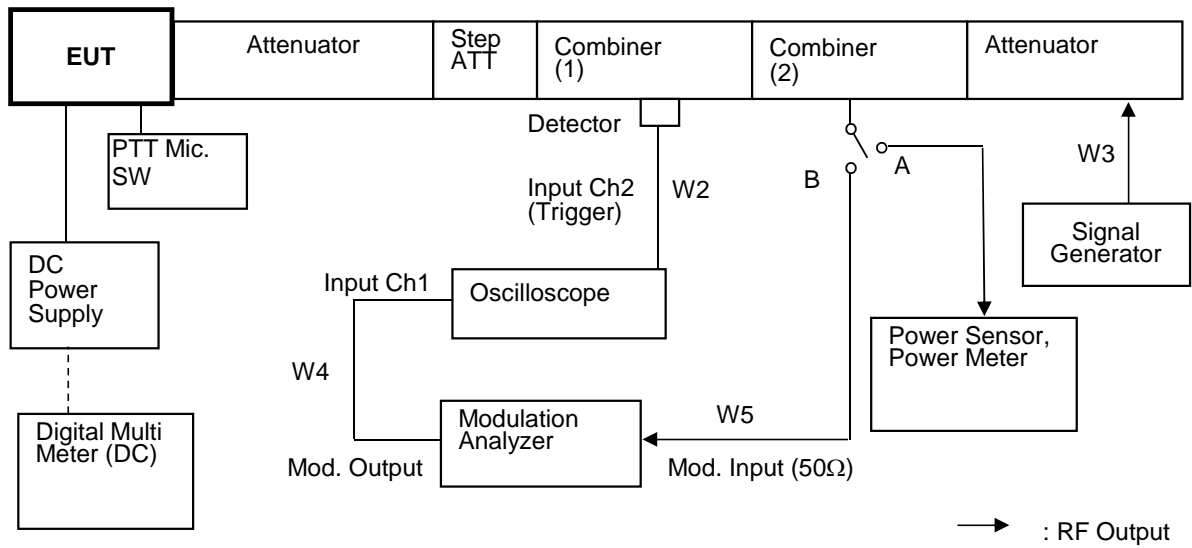
- 1 The EUT and test equipment were set up as shown on the following page.
- 2 The transmitter was turned on.
- 3 The transmitter carrier level was measured at the output of the combiner .
- 4 The transmitter was turned off.
- 5 An RF signal generator (1) modulated with a 1 kHz tone at either 25 kHz or 12.5 kHz or 6.25 kHz deviation, and set to the same frequency as the assigned transmitter frequency, (2) was adjusted to a level -30 dB below the level recorded in Procedure 3, as measured at the output of the combiner.
 This level was then fixed for the remainder of the test and is recorded at step h.
- 6 The oscilloscope was setup using TIA-603 steps j and k as a guide, however 1000 Hz tone was adjusted at +- 2.5 /div vertically centered on the display.
- 7 The transmitter was turned on, and the level of the carrier at the output of the combiner was recorded as step l.
- 8 The carrier on-time as referenced in TIA-603 steps m, n, and o was captured and plotted.
- 9 The carrier off-time as referenced in TIA-603 steps p, q, r, and s was captured and plotted.

| No. | Equipment | Manufacture | Model No. | Serial No. | Cal. Interval | Effective period |
|-----|---------------------|---------------------|-------------|------------|---------------|------------------|
| 1 | Power Meter | Hewlett Packard | E4418B | GB38410265 | 1Y | May. 31, 17 |
| 2 | Power Sensor | Hewlett Packard | 8482A | US37292237 | 1Y | May. 31, 17 |
| 3 | Attenuator (20dB) | Aeroflex/Wenshel | 66-20-34 | BY4357 | 1Y | May. 31, 17 |
| 4 | Attenuator (3dB) | TME | CFA-20NPJ-3 | 679701 | 1Y | May. 31, 17 |
| 5 | Attenuator (30dB) | Weinschel | WA-29-30-34 | 8923 | 1Y | May. 31, 17 |
| 6 | Step Attenuator | Hewlett Packard | 8494B | 272614515 | 1Y | Jan. 31, 18 |
| 7 | Combiner(1) | Anritsu | Z-164A | M89249 | 1Y | Jan. 31, 18 |
| 8 | Combiner(2) | Anritsu | Z-164A | M89549 | 1Y | Jan. 31, 18 |
| 9 | Modulation Analyzer | Hewlett Packard | 8901B | 3403A04852 | 1Y | Dec. 31, 17 |
| 10 | Signal Generator | Rohde&Schwarz | SMB 100A | 105709 | 1Y | Apr. 30, 18 |
| 11 | Oscilloscope | Tektronix | TDS 680B | B010292 | 1Y | Feb. 28, 18 |
| 12 | DC Power Supply | Daiichi denpa kogyo | GZV4000 | 90290931 | None | None |
| 13 | Digital Multi Meter | FLUKE | 8846A | 9642018 | 1Y | Sep. 30, 17 |

Measuring Cables

| No. | Cable | Manufacture | Model No. | Serial No. | Cal. Interval | Effective period |
|-----|---------------|----------------|-----------|------------|---------------|------------------|
| W2 | Coaxial Cable | Pacific custom | RG-58 C/U | KSR00097 | 1Y | Jan. 31, 18 |
| W4 | Coaxial Cable | Daiyu Densen | 3D-2V | KSR00101 | 1Y | Feb. 28, 18 |
| W5 | Coaxial Cable | Pacific custom | RG-58 C/U | AM90C04 | 1Y | Feb. 28, 18 |
| W3 | Coaxial Cable | Pacific custom | RG-58 C/U | KSR00041 | 1Y | Feb. 28, 18 |

Measuring Equipment Configuration

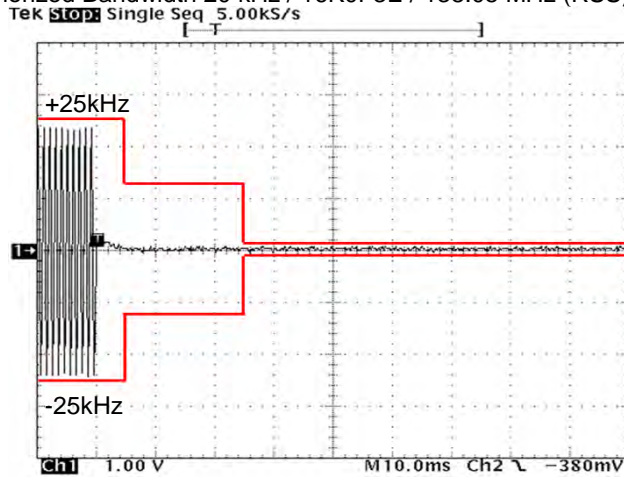


Test Results

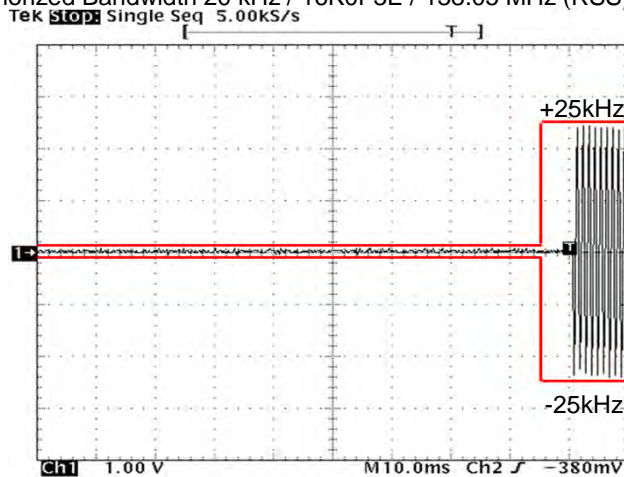
| | | |
|----------------------|-------------------------|------------|
| Test date | Apr 19, 2017 | |
| Location | Kashima No.12 Test Site | |
| temperature | 20 | [degree C] |
| Humidity Variation | 51 | [%] |
| Atmospheric Pressure | 102 | [kPa] |
| Test Engineer | Koichi Wagatsuma | |

Test was carried out for all the frequency band of section 10.1
 State the worst case (below).

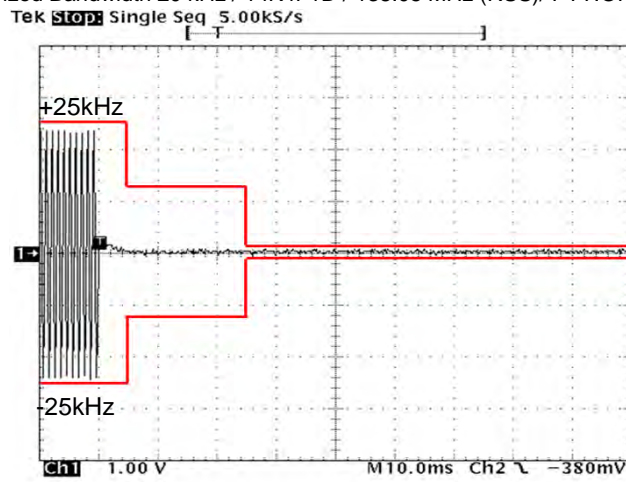
State : High Power / Authorized Bandwidth 20 kHz / 16K0F3E / 138.05 MHz (RSS)/ PTT:OFF -ON



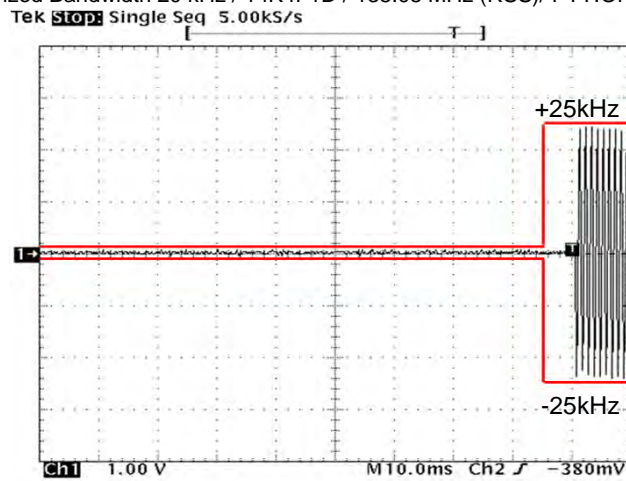
State : High Power / Authorized Bandwidth 20 kHz / 16K0F3E / 138.05 MHz (RSS)/ PTT:ON -OFF



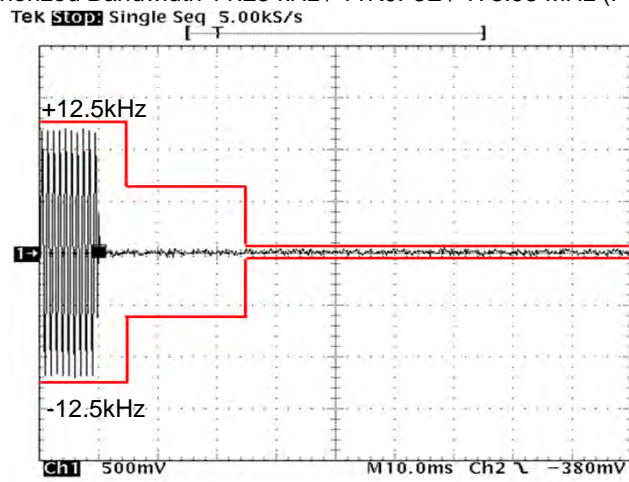
State : High Power / Authorized Bandwidth 20 kHz / 14K4F1D / 138.05 MHz (RSS)/ PTT:OFF -ON



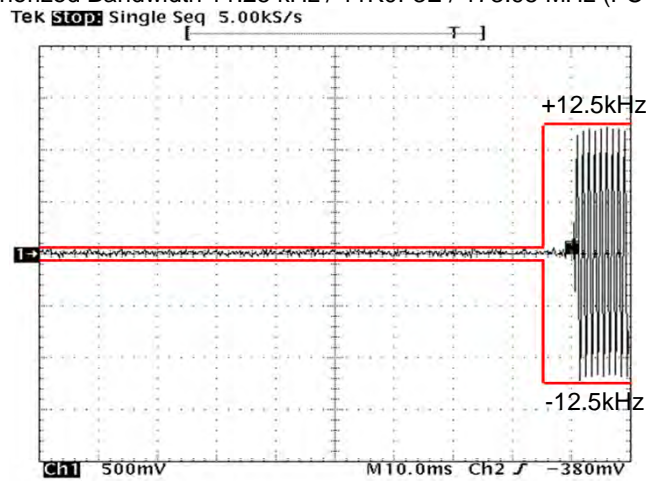
State : High Power / Authorized Bandwidth 20 kHz / 14K4F1D / 138.05 MHz (RSS)/ PTT:ON-OFF



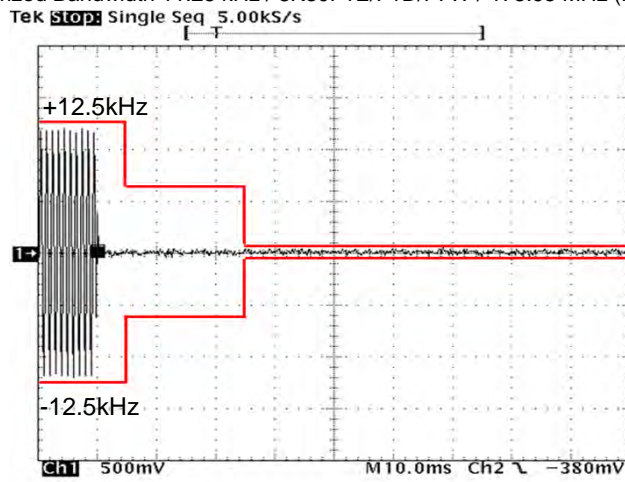
State : High Power / Authorized Bandwidth 11.25 kHz / 11K0F3E / 173.95 MHz (FCC/RSS)/ PTT:OFF -ON



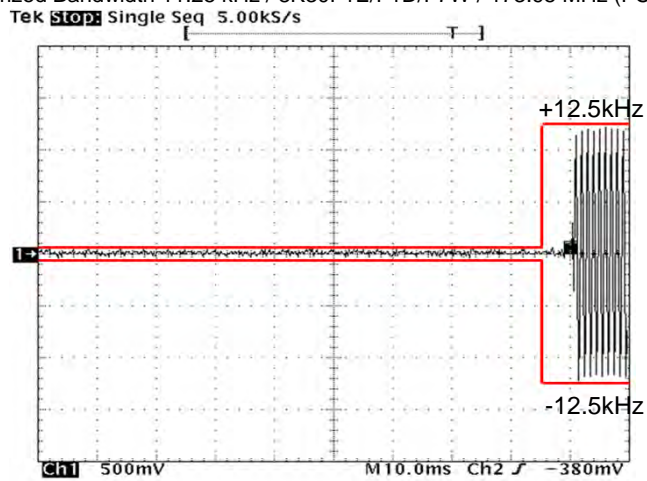
State : High Power / Authorized Bandwidth 11.25 kHz / 11K0F3E / 173.95 MHz (FCC/RSS)/ PTT:ON -OFF



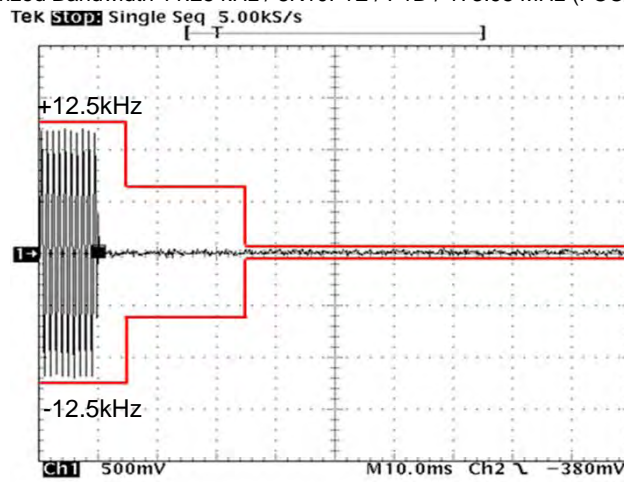
State : High Power / Authorized Bandwidth 11.25 kHz / 8K30F1E/F1D/F7W / 173.95 MHz (FCC/RSS)/ PTT:OFF -ON



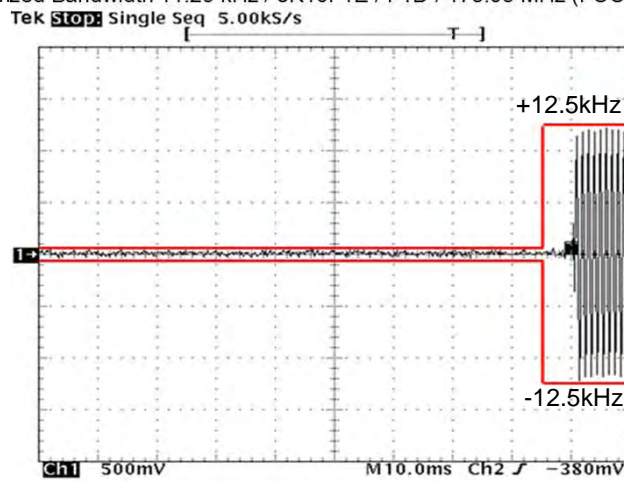
State : High Power / Authorized Bandwidth 11.25 kHz / 8K30F1E/F1D/F7W / 173.95 MHz (FCC/RSS)/ PTT:ON-OFF



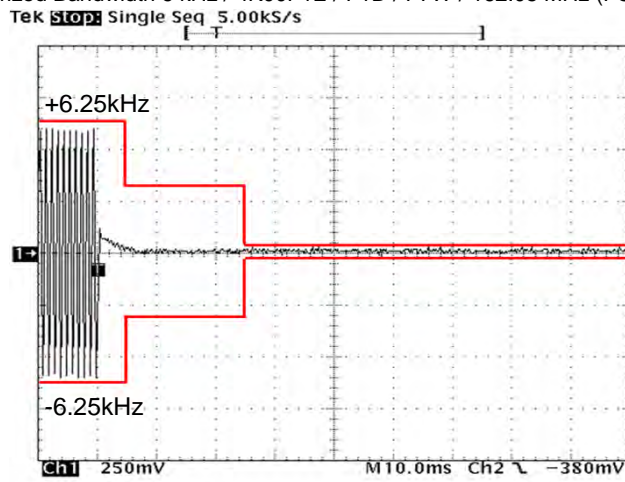
State : High Power / Authorized Bandwidth 11.25 kHz / 8K10F1E / F1D / 173.95 MHz (FCC/RSS)/ PTT:OFF -ON



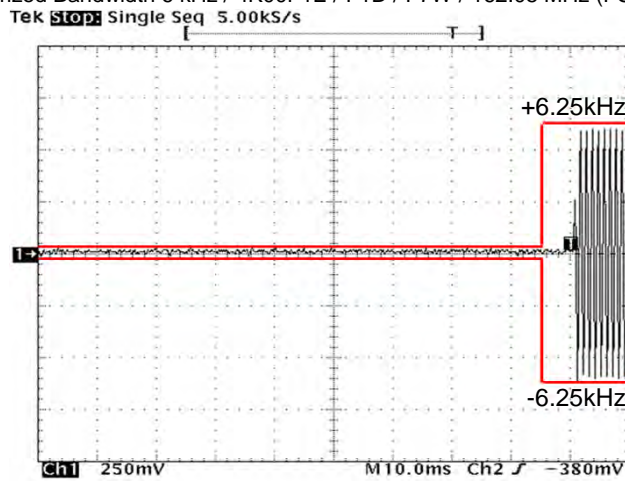
State : High Power / Authorized Bandwidth 11.25 kHz / 8K10F1E / F1D / 173.95 MHz (FCC/RSS)/ PTT:ON-OFF



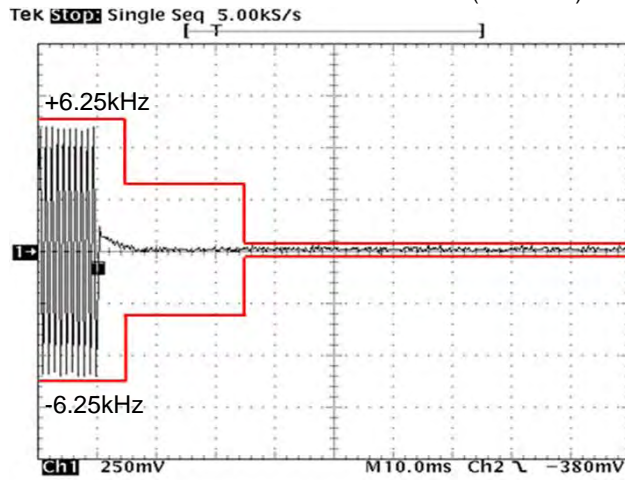
State : High Power / Authorized Bandwidth 6 kHz / 4K00F1E / F1D / F7W / 162.05 MHz (FCC/RSS)/ PTT:OFF -ON



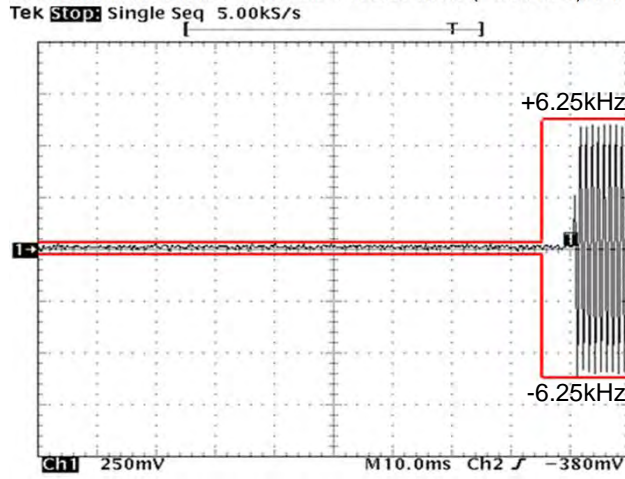
State : High Power / Authorized Bandwidth 6 kHz / 4K00F1E / F1D / F7W / 162.05 MHz (FCC/RSS)/ PTT:ON-OFF



State : High Power / Authorized Bandwidth 6 kHz / 4K00F2D / 162.05 MHz (FCC/RSS)/ PTT:OFF -ON



State : High Power / Authorized Bandwidth 6 kHz / 4K00F2D / 162.05 MHz (FCC/RSS)/ PTT:ON-OFF



10.6 Audio Frequency Response / Audio Low Pass Filter (Voice Input)

| | |
|-------------------|--|
| REGULATIONS | : FCC Part 2 Section 1047 (a) FCC Part 80 Section 213 |
| TEST METHOD/GUIDE | : ANSI/TIA-603-D Section 2.2.6.2.2, 3.2.6.2 |

Test Procedure

- 1 The EUT and test equipment were set up as shown on the following page.
- 2 Adjust the Modulation Analyzer for the following setting:
 - a) High-pass filter : 50 Hz
 - b) Low-pass filter : 15 kHz
 - c) Detector : positive peak
 - d) Function : FM
- 3 The audio signal input was adjusted to obtain 20 % modulation at 1 kHz, and this point was taken as the 0 dB reference level.
- 4 With input levels held constant and below limiting at all frequencies, the audio signal generator was varied from 100 Hz to 5 kHz.
- 5 The response in dB relative to 1 kHz was then measured, using the Modulation Analyzer.

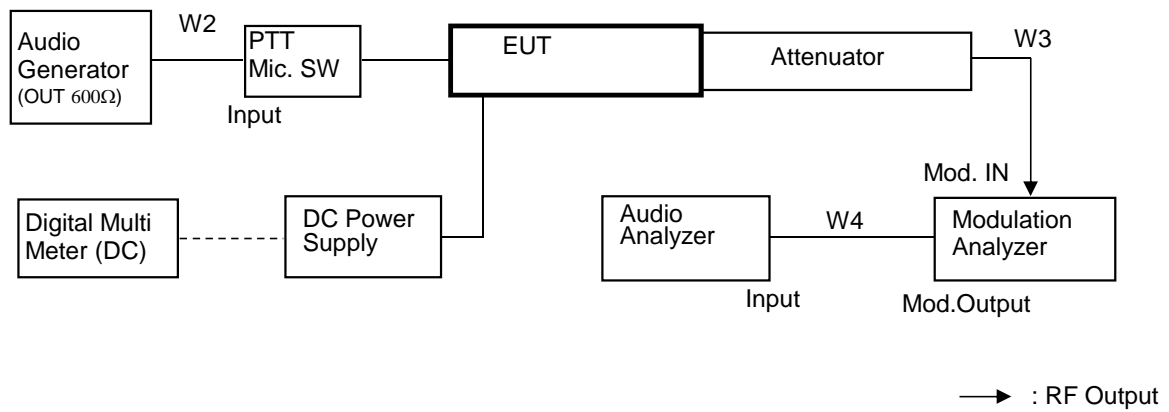
Measuring Equipments

| No. | Equipment | Manufacture | Model No. | Serial No. | Cal. Interval | Effective period |
|-----|---------------------|---------------------|-------------|------------|---------------|------------------|
| 1 | Attenuator (20dB) | Aeroflex/Wenshel | 66-20-34 | BY4357 | 1Y | May. 31, 17 |
| 2 | Attenuator (30dB) | Weinschel | WA-29-30-34 | 8923 | 1Y | May. 31, 17 |
| 3 | Modulation Analyzer | Hewlett Packard | 8901B | 3403A04852 | 1Y | Dec. 31, 17 |
| 4 | Audio Generator | Anritsu | MG443B | M70150 | 1Y | May. 31, 17 |
| 5 | Audio Analyzer | Hewlett Packard | 8903B | 2948A07326 | 1Y | Sep. 30, 17 |
| 6 | DC Power Supply | Daiichi denpa kogyo | GZV4000 | 90290931 | None | None |
| 7 | Digital Multi Meter | FLUKE | 8846A | 9642018 | 1Y | Sep. 30, 17 |

Measuring Cables

| No. | Cable | Manufacture | Model No. | Serial No. | Cal. Interval | Effective period |
|-----|---------------|----------------|-----------|------------|---------------|------------------|
| W2 | Balance Cable | Nicoon | 3D-2V | KSR00092 | 1Y | Mar. 31, 18 |
| W4 | Coaxial Cable | Daiyu Densen | 3D-2V | KSR00101 | 1Y | Feb. 28, 18 |
| W3 | Coaxial Cable | Pacific custom | RG-58 C/U | AM90C04 | 1Y | Feb. 28, 18 |

Measuring Equipment Configuration

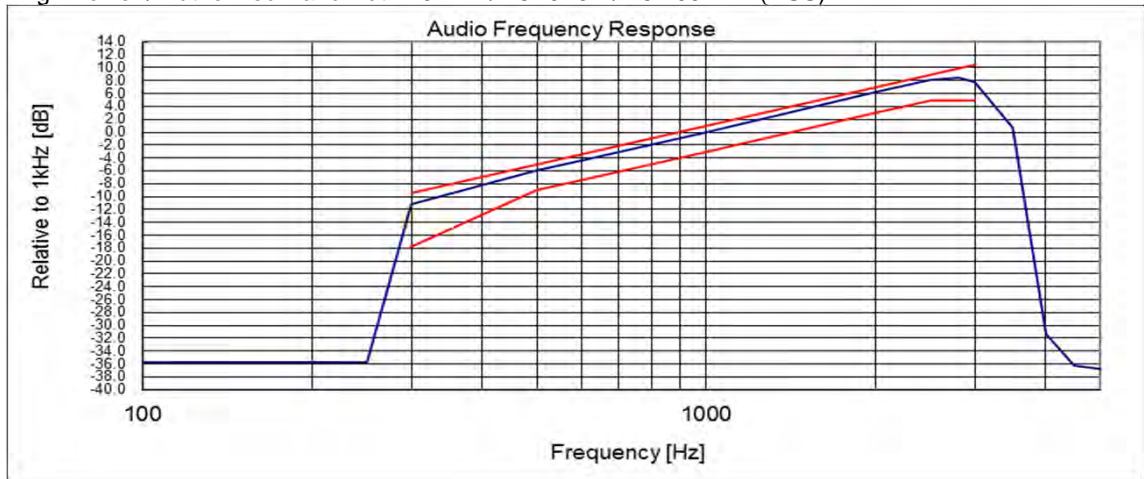


Test Results

| | | |
|----------------------|-------------------------|------------|
| Test date | Apr 18, 2017 | |
| Location | Kashima No.12 Test Site | |
| temperature | 23 | [degree C] |
| Humidity Variation | 50 | [%] |
| Atmospheric Pressure | 98.9 | [kPa] |
| Test Engineer | Koichi Wagatsuma | |

Test was carried out for all the frequency band of section 10.1
 State the worst case (below).

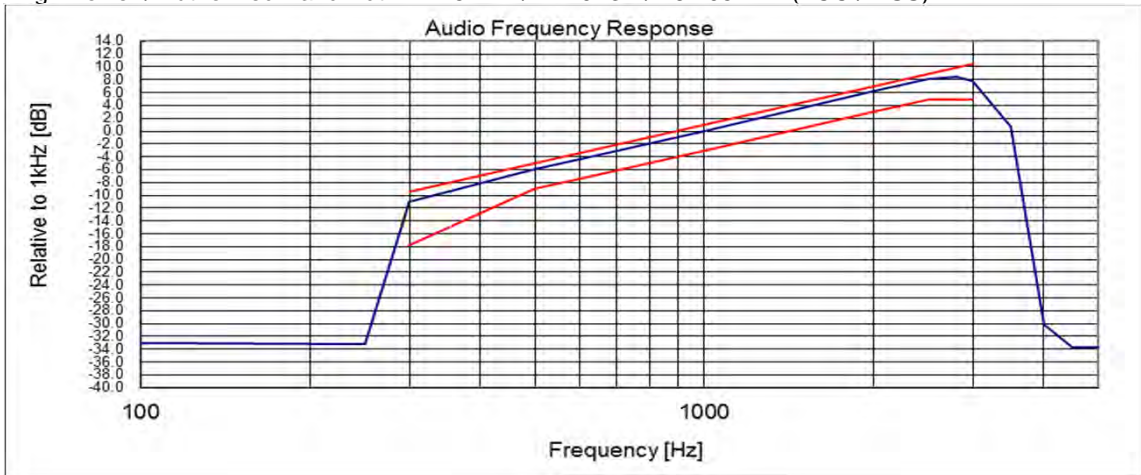
State : High Power / Authorized Bandwidth 20 kHz / 16K0F3E / 162.05 MHz(RSS)



Note:

Audio Filter of the above result is substituted with the same structure as Audio Frequency Response.
 On the transmission condition below 3kHz,
 Transceiver shows pre-emphasis condition of transmission function.
 On the transmission condition above 3kHz, Transceiver shows Audio Low Pass Filter.

State : High Power / Authorized Bandwidth 11.25 kHz / 11K0F3E / 162.05 MHz(FCC / RSS)



Note:

Audio Filter of the above result is substituted with the same structure as Audio Frequency Response.

On the transmission condition below 3kHz,

Transceiver shows pre-emphasis condition of transmission function.

On the transmission condition above 3kHz, Transceiver shows Audio Low Pass Filter.

10.7 Modulation Limiting

| | |
|-------------------|--|
| REGULATIONS | : FCC Part 2 Section 1047 (b) FCC Part 80 Section 213 |
| TEST METHOD/GUIDE | : ANSI/TIA-603-D Section 2.2.3.2, 1.3.4.4 |

Test Procedure

- 1 The EUT and test equipment were set up as shown on the following page.
- 2 Adjust the Modulation Analyzer for the following setting:
 - a) High-pass filter : off
 - b) Low-pass filter : 15 kHz
 - c) Detector : positive peak
 - d) Function : FM
- 3 Apply a 1kHz modulation signal to the transmitter from the audio generator, and adjust the level to obtain 60% of full rated system deviation.
- 4 Measure the modulation frequency that was showed on the Modulation Analyzer when the output levels of the Audio Generator were changed from -20 dB to +50 dB by 10 dB.
- 5 Set the output frequencies of the Audio Generator 300 Hz and 3 kHz, and repeat test procedure 4.
- 6 Set the Detector of the Modulation Analyzer Negative Peak.
- 7 Repeat test procedure 4 and 5.

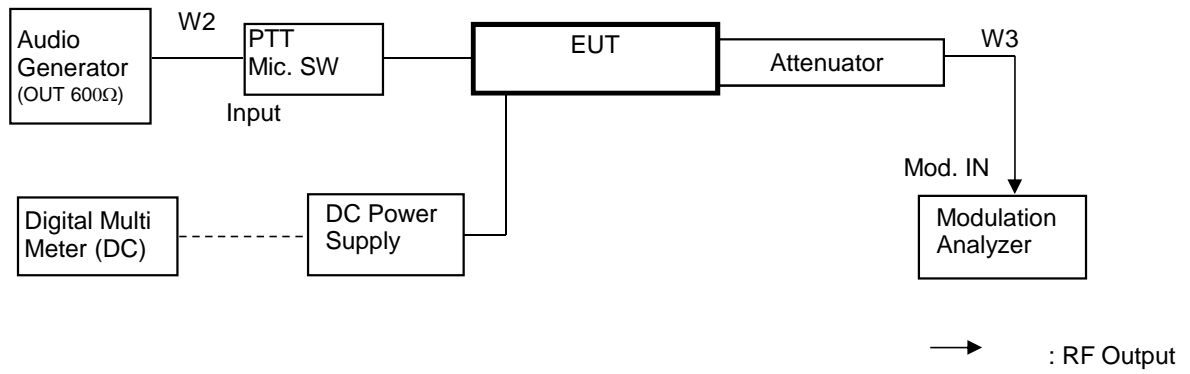
Measuring Equipments

| No. | Equipment | Manufacture | Model No. | Serial No. | Cal. Interval | Effective period |
|-----|---------------------|---------------------|-------------|------------|---------------|------------------|
| 1 | Attenuator (20dB) | Aeroflex/Wenshel | 66-20-34 | BY4357 | 1Y | May. 31, 17 |
| 2 | Attenuator (30dB) | Weinschel | WA-29-30-34 | 8923 | 1Y | May. 31, 17 |
| 3 | Modulation Analyzer | Hewlett Packard | 8901B | 3403A04852 | 1Y | Dec. 31, 17 |
| 4 | Audio Generator | Anritsu | MG443B | M70150 | 1Y | May. 31, 17 |
| 5 | DC Power Supply | Daiichi denpa kogyo | GZV4000 | 90290931 | None | None |
| 4 | Digital Multi Meter | FLUKE | 8846A | 9642018 | 1Y | Sep. 30, 17 |

Measuring Cables

| No. | Cable | Manufacture | Model No. | Serial No. | Cal. Interval | Effective period |
|-----|---------------|----------------|-----------|------------|---------------|------------------|
| W2 | Balance Cable | Nicoon | 3D-2V | KSR00092 | 1Y | Mar. 31, 18 |
| W3 | Coaxial Cable | Pacific custom | RG-58 C/U | AM90C04 | 1Y | Feb. 28, 18 |

Measuring Equipment Configuration

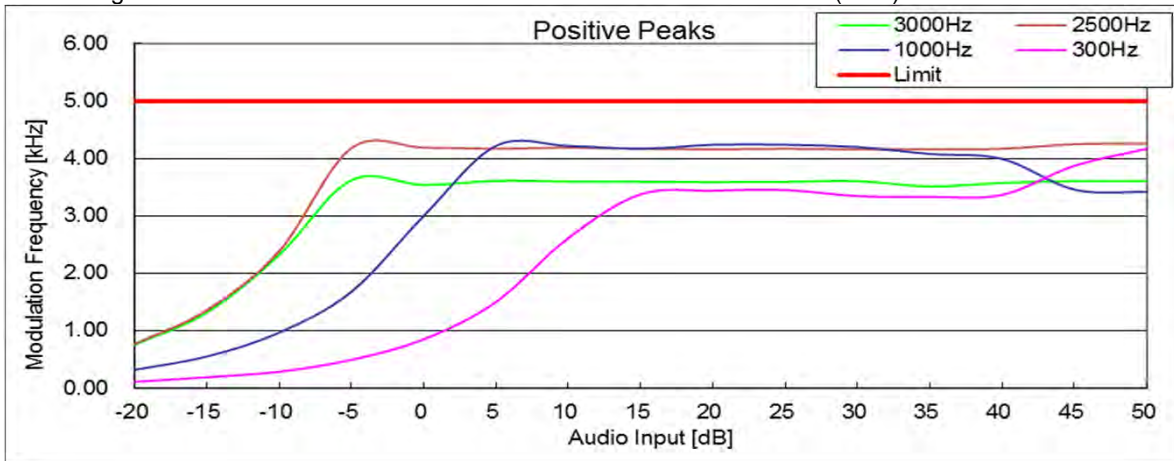


Test Results

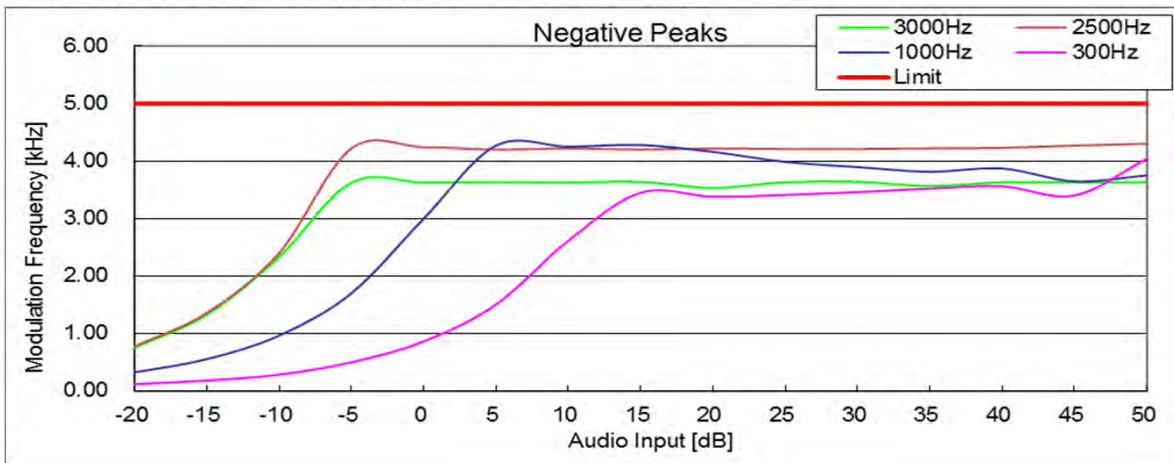
| | | |
|----------------------|-------------------------|------------|
| Test date | Apr. 18, 2017 | |
| Location | Kashima No.12 Test Site | |
| temperature | 23 | [degree C] |
| Humidity Variation | 50 | [%] |
| Atmospheric Pressure | 98.9 | [kPa] |
| Test Engineer | Koichi Wagatsuma | |

Test was carried out for all the frequency band of section 10.1
 State the worst case (below).

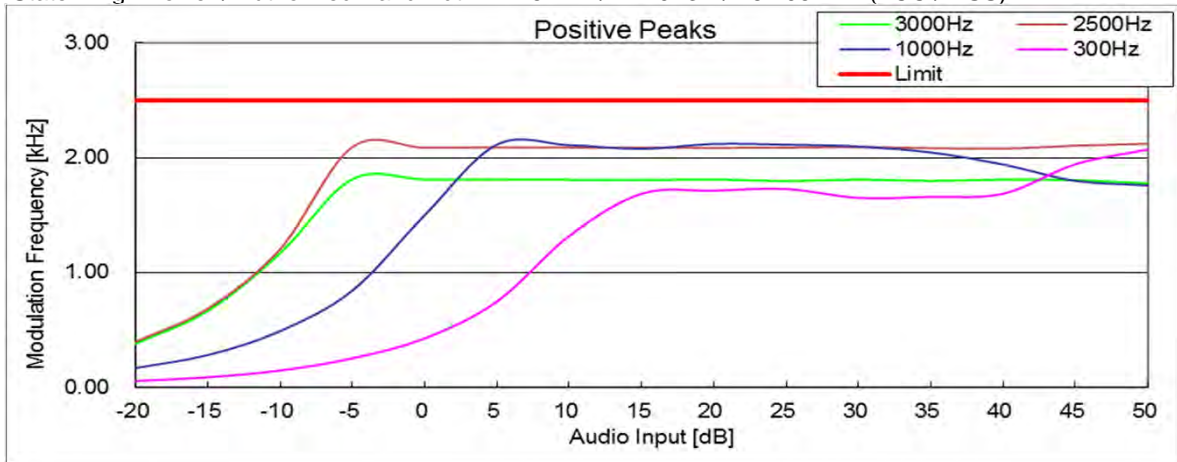
State : High Power / Authorized Bandwidth 20 kHz / 16K0F3E / 162.05 MHz(RSS)



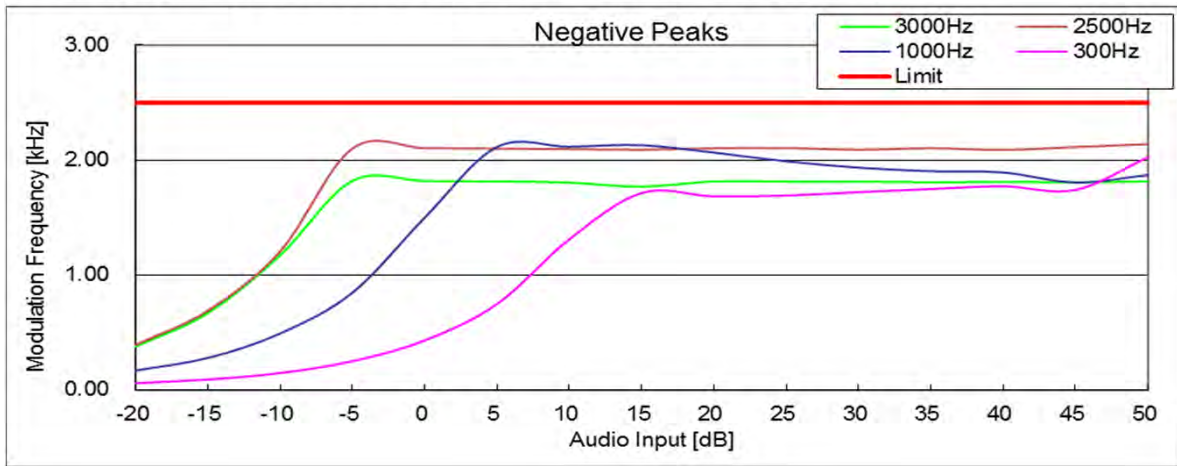
State : High Power / Authorized Bandwidth 20 kHz / 16K0F3E / 162.05 MHz(RSS)



State : High Power / Authorized Bandwidth 11.25 kHz / 11K0F3E / 162.05 MHz(FCC / RSS)



State : High Power / Authorized Bandwidth 11.25 kHz / 11K0F3E / 162.05 MHz(FCC / RSS)



10.8 Frequency Stability (Temperature Variation)

| | |
|-------------------|---|
| REGULATIONS | : FCC Part 2 Section 1055 (a) (1), Part 80 Section 209, Part 90 Section 213(a) RSS-119 Section 5.3 |
| TEST METHOD/GUIDE | : ANSI/TIA-603-D Section 2.2.2.2 RSS-Gen Section 4.7(a) |

Test Procedure

- 1 The EUT and test equipment were set up as shown on the following page.
- 2 Set the temperature -30 degrees C.
- 3 Leave the EUT for 1 hour after it became the temperature that was set up.
- 4 Make the EUT the transmitting state.
measure the output frequency.
- 5 Make the EUT the receiving state.
- 6 Set the temperature 50 degrees C by 10 degrees C.
And repeat test procedure 4 to 6.

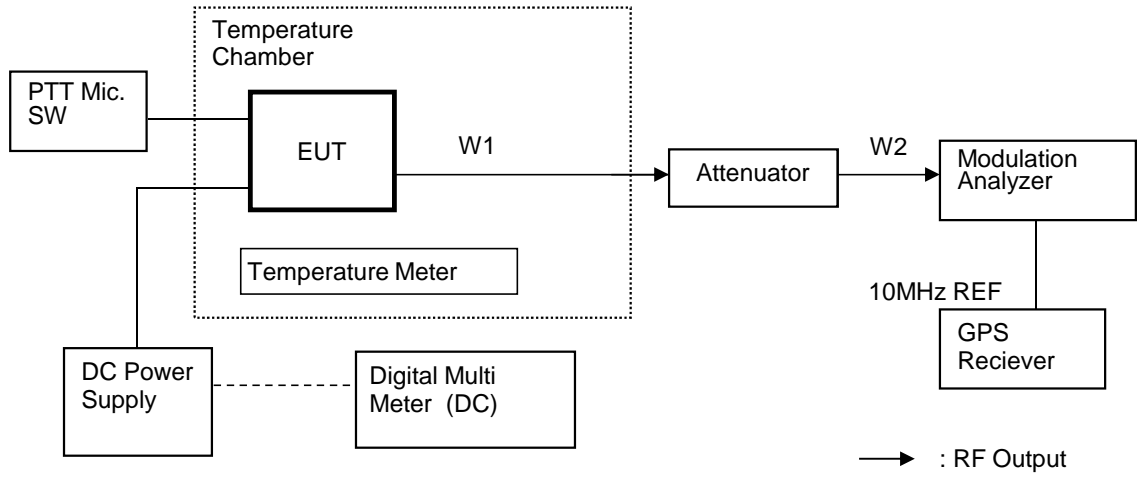
Measuring Equipments

| No. | Equipment | Manufacture | Model No. | Serial No. | Cal. Interval | Effective period |
|-----|---------------------|------------------|---------------|------------|---------------|------------------|
| 1 | Attenuator (20dB) | Aeroflex/Wenshel | 66-20-34 | BY4357 | 1Y | May. 31, 17 |
| 2 | Attenuator (30dB) | Weinschel | WA-29-30-34 | 8923 | 1Y | May. 31, 17 |
| 3 | Modulation Analyzer | Hewlett Packard | 8901B | 3403A04852 | 1Y | Dec. 31, 17 |
| 4 | DC Power Supply | Takasago | GP035-20R | 1014199060 | None | None |
| 5 | Digital Multi Meter | FLUKE | 8846A | 9642018 | 1Y | Sep. 30, 17 |
| 6 | Temperature Chamber | Tabai | PL-3F | 5103661 | None | None |
| 7 | Temperature Meter | Sato | PC-5000TRH-II | A11999972 | 1Y | Feb. 28, 18 |
| 8 | GPS Receiver | Hewlett Packard | HP Z3801A | 3542A02414 | None | None |

Measuring Cables

| No. | Cable | Manufacture | Model No. | Serial No. | Cal. Interval | Effective period |
|-----|---------------|----------------|-------------|------------|---------------|------------------|
| W2 | Coaxial Cable | Pacific custom | RG-58 C/U | KSR00041 | 1Y | Feb. 28, 18 |
| W1 | Coaxial Cable | Suhner | SUCOFLEX104 | KSR00042 | 1Y | May. 31, 17 |

Measuring Equipment Configuration



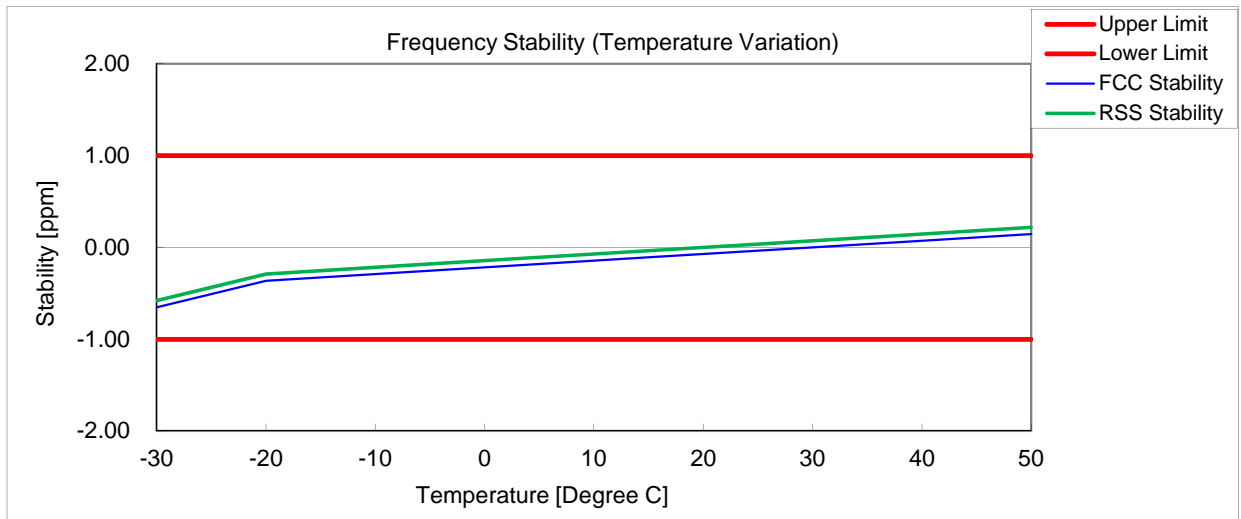
Test Results

| | |
|---------------|------------------------|
| Test date | May. 24, 2017 |
| Location | Kashima No.1 Test Site |
| Test Engineer | Koichi Wagatsuma |

Test was carried out for all the frequency band of section 10.1
 State the worst case (below).

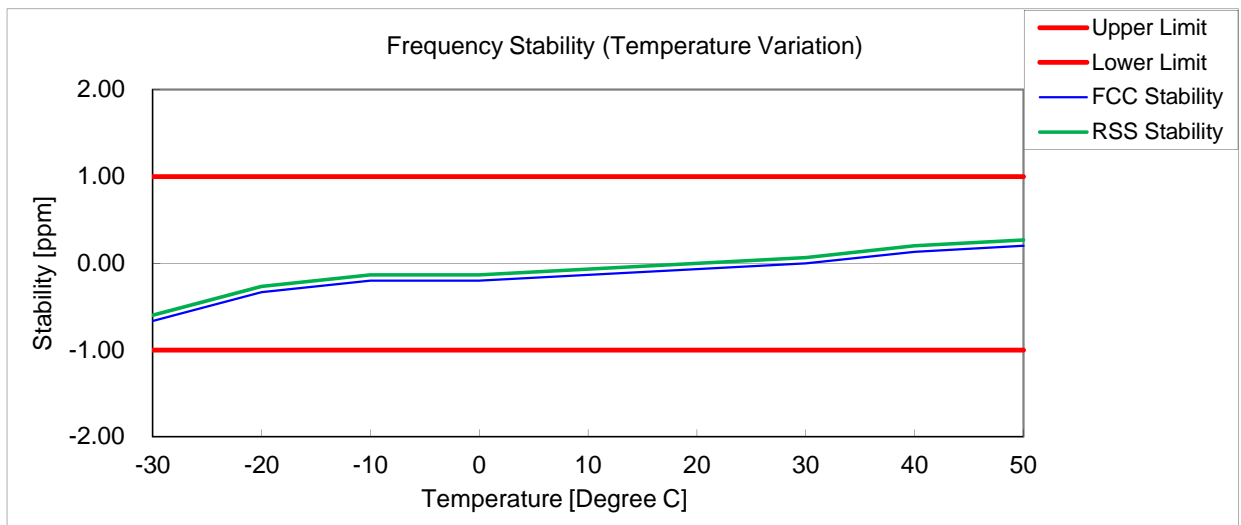
State : High Power / Authorized Bandwidth 20 kHz / 138.05 MHz (RSS)
 Reference Frequency: 138.050000 MHz(FCC Stability)
 138.049990 MHz(RSS Stability)

| No. | Temperature (Degree C) | Frequency (MHz) | FCC Stability (ppm) | RSS Stability (ppm) | Limit (+/- ppm) | Min. Margin (ppm) |
|-----|------------------------|-----------------|---------------------|---------------------|-----------------|-------------------|
| 1 | -30 | 138.049910 | -0.65 | -0.58 | 1.0 | 0.35 |
| 2 | -20 | 138.049950 | -0.36 | -0.29 | 1.0 | 0.64 |
| 3 | -10 | 138.049960 | -0.29 | -0.22 | 1.0 | 0.71 |
| 4 | 0 | 138.049970 | -0.22 | -0.14 | 1.0 | 0.78 |
| 5 | 10 | 138.049980 | -0.14 | -0.07 | 1.0 | 0.86 |
| 6 | 20 | 138.049990 | -0.07 | 0.00 | 1.0 | 0.93 |
| 7 | 30 | 138.050000 | 0.00 | 0.07 | 1.0 | 0.93 |
| 8 | 40 | 138.050010 | 0.07 | 0.14 | 1.0 | 0.86 |
| 9 | 50 | 138.050020 | 0.14 | 0.22 | 1.0 | 0.78 |



State : High Power / Authorized Bandwidth 11.25 kHz / 150.05 MHz (FCC)
 Reference Frequency: 150.050000 MHz(FCC Stability)
 Reference Frequency: 150.049990 MHz(RSS Stability)

| No. | Temperature (Degree C) | Frequency (MHz) | FCC Stability (ppm) | RSS Stability (ppm) | Limit (+/- ppm) | Min. Margin (ppm) |
|-----|------------------------|-----------------|---------------------|---------------------|-----------------|-------------------|
| 1 | -30 | 150.049900 | -0.67 | -0.60 | 1.0 | 0.33 |
| 2 | -20 | 150.049950 | -0.33 | -0.27 | 1.0 | 0.67 |
| 3 | -10 | 150.049970 | -0.20 | -0.13 | 1.0 | 0.80 |
| 4 | 0 | 150.049970 | -0.20 | -0.13 | 1.0 | 0.80 |
| 5 | 10 | 150.049980 | -0.13 | -0.07 | 1.0 | 0.87 |
| 6 | 20 | 150.049990 | -0.07 | 0.00 | 1.0 | 0.93 |
| 7 | 30 | 150.050000 | 0.00 | 0.07 | 1.0 | 0.93 |
| 8 | 40 | 150.050020 | 0.13 | 0.20 | 1.0 | 0.80 |
| 9 | 50 | 150.050030 | 0.20 | 0.27 | 1.0 | 0.73 |



10.9 Frequency Stability (Voltage Variation)

| | |
|-------------------|---|
| REGULATIONS | : FCC Part 2 Section 1055 (a) (1), Part 80 Section 209, Part 90 Section 213(a) RSS-119 Section 5.3 |
| TEST METHOD/GUIDE | : ANSI/TIA-603-D Section 2.2.2.2 RSS-Gen Section 4.7(a) |

Test Procedure

- 1 The EUT and test equipment were set up as shown on the following page.
- 2 The power supply voltage to the EUT was varied from 85 % to 115 % of the nominal value measured at the input to the EUT.

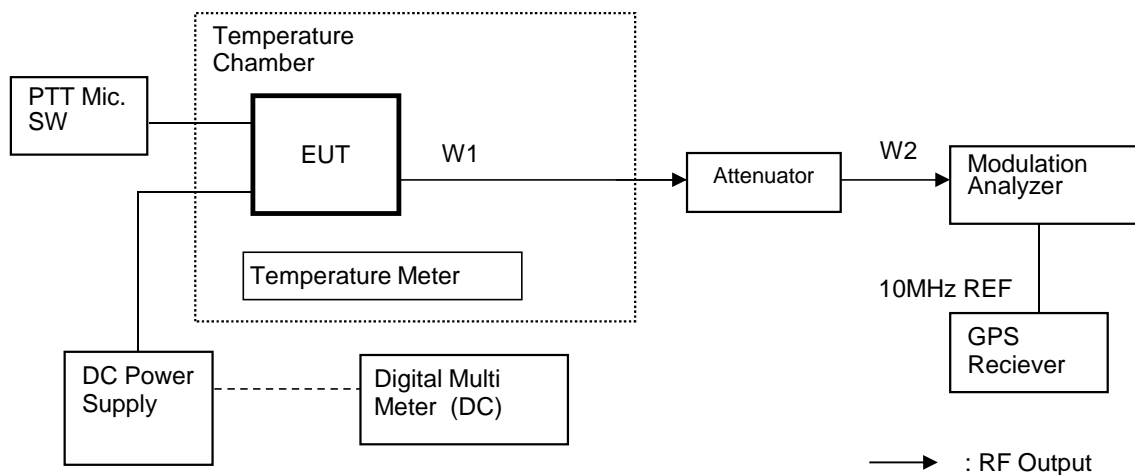
Measuring Equipments

| No. | Equipment | Manufacture | Model No. | Serial No. | Cal. Interval | Effective period |
|-----|---------------------|------------------|---------------|------------|---------------|------------------|
| 1 | Attenuator (20dB) | Aeroflex/Wenshel | 66-20-34 | BY4357 | 1Y | May. 31, 17 |
| 2 | Attenuator (30dB) | Weinschel | WA-29-30-34 | 8923 | 1Y | May. 31, 17 |
| 3 | Modulation Analyzer | Hewlett Packard | 8901B | 3403A04852 | 1Y | Dec. 31, 17 |
| 4 | DC Power Supply | Takasago | GP035-20R | 1014199060 | None | None |
| 5 | Digital Multi Meter | FLUKE | 8846A | 9642018 | 1Y | Sep. 30, 17 |
| 6 | Temperature Chamber | Tabai | PL-3F | 5103661 | None | None |
| 7 | Temperature Meter | Sato | PC-5000TRH-II | A11999972 | 1Y | Feb. 28, 18 |
| 8 | GPS Receiver | Hewlett Packard | HP Z3801A | 3542A02414 | None | None |

Measuring Cables

| No. | Cable | Manufacture | Model No. | Serial No. | Cal. Interval | Effective period |
|-----|---------------|----------------|-------------|------------|---------------|------------------|
| W2 | Coaxial Cable | Pacific custom | RG-58 C/U | KSR00041 | 1Y | Feb. 28, 18 |
| W1 | Coaxial Cable | Suhner | SUCOFLEX104 | KSR00042 | 1Y | May. 31, 17 |

Measuring Equipment Configuration



Test Results

| | |
|---------------|------------------------|
| Test date | May 24, 2017 |
| Location | Kashima No.1 Test Site |
| Test Engineer | Koichi Wagatsuma |

Test was carried out for all the frequency band of section 10.1
 State the worst case (below).

State : High Power / Authorized Bandwidth 20 kHz / 138.05 MHz (RSS)

Reference Frequency: 138.049990 MHz

| No. | Temperature (Degree C) | Diviation (%) | Voltage (V) | Frequency (MHz) | Stability (ppm) | Limit +/- (ppm) | Margin (ppm) |
|-----|---------------------------|------------------|----------------|--------------------|--------------------|--------------------|-----------------|
| 1 | 20+/-5 | 85 | 11.56 | 138.050000 | 0.07 | 1.0 | 0.93 |
| 2 | 20+/-5 | 100 | 13.60 | 138.049990 | 0.00 | 1.0 | 1.00 |
| 3 | 20+/-5 | 115 | 15.64 | 138.049990 | 0.00 | 1.0 | 1.00 |

State : High Power / Authorized Bandwidth 11.25 kHz / 150.05 MHz (FCC)

Reference Frequency: 150.049990 MHz

| No. | Temperature (Degree C) | Diviation (%) | Voltage (V) | Frequency (MHz) | Stability (ppm) | Limit +/- (ppm) | Margin (ppm) |
|-----|---------------------------|------------------|----------------|--------------------|--------------------|--------------------|-----------------|
| 1 | 20+/-5 | 85 | 11.56 | 150.049980 | -0.07 | 1.0 | 0.93 |
| 2 | 20+/-5 | 100 | 13.60 | 150.049990 | 0.00 | 1.0 | 1.00 |
| 3 | 20+/-5 | 115 | 15.64 | 150.049990 | 0.00 | 1.0 | 1.00 |

10.10 Receiver Spurious Emissions(Radiated)

| | | |
|-------------------|---|-------------------|
| REGULATIONS | : | RSS-Gen Section 7 |
| TEST METHOD/GUIDE | : | RSS-Gen Section 7 |

TEST PROCEDURE

- 1 The EUT and test equipment were set up as shown on the following page.
- 2 Tabletop Equipment
EUT is placed on the wooden table, the top of which is 0.8meter above the metal ground plane(turntable).
- 3 Interconnecting Cables
Excess part of the interconnecting cables longer than 1 meter are bundled in the center.
Cables that hang closer than 40 cm to the ground plane is folded back and forth forming bundle to 40 cm long, hanging approx, in the middle between ground plane and table.
- 4 Measuring Instruments
Measuring instruments list and their calibration schedule are shown on Measurement Equipment Configuration.
The brief description are as follows;
- 5 Antennas
The broadband Bi-cog antenna or Biconical and Log periodic antenna is used for measurement on the frequency range 30 – 1000 MHz.
The Double ridged guide antenna is used for frequency higher than 1000 MHz.
- 6 Pre-amplifier
The broadband pre-amplifier is used for radiated emission measurement.
The signal to noise ratio is improved by using pre-amplifier.
- 7 Spectrum Analyzer
The spectrum analyzer is used for preliminary measurement of frequency range 30 – 1000 MHz, and also used for final measurement of higher than 1000 MHz (RBW : 1 MHz).
- 8 EMI Test Receiver
The Quasi-peak detector (IF bandwidth : 120 kHz) built in test receiver is used for final measurement of the frequency 30 – 1000 MHz.
The test receiver is complied with the specification of the CISPR publication 16.
- 9 Turntable
The turntable is capable for EUT weight and rotatable 0 to 360 degree horizontally by remote control in the test room.
- 10 Antenna Mast
The antenna mast is attachable to all antennas described on antenna height is adjustable 1 to 4 meters continuously by remote control at the test room, and antenna polarization is also changed by the remote control.
- 11 Preliminary Measurement
EUT is tested on all operating conditions.
The spectrum analyzer is set max-hold mode and swept during turntable was rotated 0 to 360 degree. Then spectrum chart are plotted out to find the worst emission conditions in configuration, operating mode, or ambient noise notation.

12 Final Measurement

The EUT operated in the condition where maximum emission is found in the preliminary test.
 The turntable azimuth(EUT direction) and antenna height are adjusted the position so that maximum field strength is obtained for each frequency spectrum to be measured.
 The equipment and cables are arranged or manipulated within the range of the test standard in the above condition.
 When the uncertain result was obtained, the measurement is retried by using the half wave dipole antenna instead of the broadband antenna.

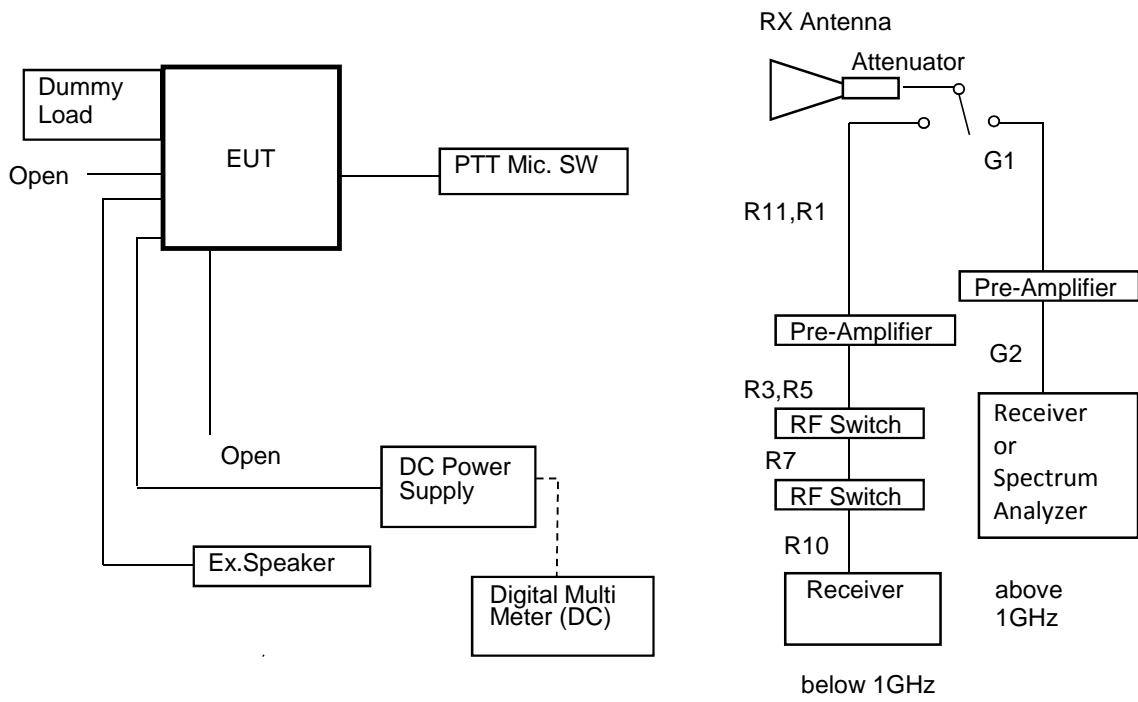
TEST EQUIPMENTS

| No. | Equipment | Manufacture | Model No. | Serial No. | Cal. Interval | Effective period |
|-----|-----------------------|------------------------|-----------------|--------------|---------------|------------------|
| 1 | Broad Band antenna | Schwarzbeck | Tri-Log VULB916 | 126 | 1Y | Dec. 31, 17 |
| 2 | 6 dB Attenuator | TAMAGAWA | UFA-01 | None(A000408 | 1Y | Feb. 28, 18 |
| 3 | Amplifier | Intertek | ZX60-3018G | 005 | 1Y | Feb. 28, 18 |
| 4 | RF Switch | Intertek | ACX-150 | None(A123015 | 1Y | Feb. 28, 18 |
| 5 | EMI Test receiver | Agilent | N9038A | MY51210201 | 1Y | Oct. 31, 17 |
| 6 | Site Attenuation | | | | 1Y | Feb. 28, 18 |
| 7 | Double Ridged antenna | Schwarzbeck | 3115 | 5045 | 1Y | Mar. 31, 18 |
| 8 | 3 dB Attenuator | SUHNER | 6803.17.B | KSR00089 | 1Y | Apr. 30, 18 |
| 9 | Amplifier (1-18 GHz) | TOYO | TPA0118-30 | 0402 | 1Y | Apr. 30, 18 |
| 10 | SVSWR | | | | 1Y | Oct. 31, 17 |
| 11 | Testing Software | emiT (Version 3,0,0,0) | | | - | - |

USED CABLES

| No. | Cable | Manufacture | Model No. | Serial No. | Cal. Interval | Effective period |
|-----|---------------|-------------|-------------------|------------|---------------|------------------|
| R11 | Coaxial cable | FUJIKURA | 5D-2W | R11 | 1Y | Feb. 28, 18 |
| R1 | Coaxial cable | FUJIKURA | 5D-2W | R1 | 1Y | Feb. 28, 18 |
| R3 | Coaxial cable | FUJIKURA | 10D-2W | R3 | 1Y | Feb. 28, 18 |
| R5 | Coaxial cable | FUJIKURA | RG-5A/U | R5 | 1Y | Feb. 28, 18 |
| R7 | Coaxial cable | FUJIKURA | RG-5A/U | R7 | 1Y | Feb. 28, 18 |
| R10 | Coaxial cable | FUJIKURA | 5D-2W | R10 | 1Y | Feb. 28, 18 |
| G1 | Coaxial cable | SUHNER | SUCOFLEX 104 | 229603/4 | 1Y | Apr. 30, 18 |
| G2 | Coaxial cable | Candox | 5B-048-98-98-5000 | 111130 | 1Y | Apr. 30, 18 |

MEASUREMENT EQUIPMENT CONFIGURATION



TEST RESULTS

| | |
|----------------------|--------------------------------|
| Test date | Apr. 21, 2017 to Apr. 22, 2017 |
| Location | Kashima No.12 Test Site |
| temperature | 18.6 to 20.0 [degree C] |
| Humidity Variation | 40 to 45 [%] |
| Atmospheric Pressure | 99.4 to 100.1 [kPa] |
| Test Engineer | Koichi Wagatsuma |

Test was carried out for the frequency band of section 10.1
 State the worst case (below).

State : 469.95 MHz Receiver Condition

| No. | Frequency (MHz) | Pol | Mode | Reading Level (dBuv) | Factor* (dB) | Emission Level (dBuV/m) | Limit Level (dBuV/m) | Margin (dB) |
|-----|-----------------|------|------|----------------------|--------------|-------------------------|----------------------|-------------|
| 1 | 325.94 | Hor. | | 25.6 | 2.9 | 28.5 | 46.0 | 17.5 |
| | | Ver. | | 23.6 | 2.9 | 26.5 | 46.0 | 19.5 |
| 2 | 328.19 | Hor. | | 25.9 | 3.0 | 28.9 | 46.0 | 17.1 |
| | | Ver. | | 23.8 | 3.0 | 26.8 | 46.0 | 19.2 |
| 3 | 330.43 | Hor. | | 23.9 | 3.1 | 27.0 | 46.0 | 19.0 |
| | | Ver. | | - | 3.1 | - | 46.0 | - |
| 4 | 352.72 | Hor. | | 21.8 | 3.3 | 25.1 | 46.0 | 20.9 |
| | | Ver. | | - | 3.3 | - | 46.0 | - |
| 5 | 384.00 | Hor. | | - | 4.9 | - | 46.0 | - |
| | | Ver. | | 22.8 | 4.9 | 27.7 | 46.0 | 18.3 |
| 6 | 386.23 | Hor. | | - | 4.9 | - | 46.0 | - |
| | | Ver. | | 21.0 | 4.9 | 25.9 | 46.0 | 20.1 |
| 7 | 880.40 | Hor. | | - | 15.9 | - | 46.0 | - |
| | | Ver. | | 11.2 | 15.9 | 27.1 | 46.0 | 18.9 |
| 8 | 1320.60 | Hor. | AVG | 29.7 | 3.1 | 32.8 | 54.0 | 21.2 |
| | | Ver. | AVG | 29.9 | 3.1 | 33.0 | 54.0 | 21.0 |
| 9 | 1980.90 | Hor. | AVG | 28.0 | 5.9 | 33.9 | 54.0 | 20.1 |
| | | Ver. | AVG | 28.1 | 5.9 | 34.0 | 54.0 | 20.0 |

There is the margin of 20dB over except for the above points.

* Factor = Antenna, Antenna Pad, Cable, Preamp, (Dist. Conversion)

Emission Level = Reading Level + Factor

Note:

- 1 Measurement distance is 3 metres. (Above 1GHz is 6.5 metres)
- 2 Scanned frequency are 30 to 2000 MHz.
- 3 Highest frequency is 232.05 MHz.

10.11 Necessary Bandwidth and Emission Bandwidth

| | |
|-------------|--|
| REGULATIONS | : FCC Part 2 Section 202 (g) & Federal Register/ Vol.68, No236 TRC 43 |
|-------------|--|

Calculation Results

State : 16K0F3E (Authorized Bandwidth 20 kHz)

| Item | Mark | | |
|---------------------|------|----|-----|
| Maximum Modulation | (M) | 3 | kHz |
| Maximum Deviation | (D) | 5 | kHz |
| Constant Factor | (K) | 1 | |
| Necessary Bandwidth | (Bn) | 16 | kHz |

$$B_n = (2 \times M) + (2 \times D \times K)$$

- 1.types of modulation of the main carrier : F= Frequency modulation
 2.nature of signal(s) modulating the main carrier: 3= A single channel containing analog information
 3.type of information to be transmitted: E= Telephony (including sound broadcasting)

State : 14K4F1D (GMSK / 9600bps, Authorized Bandwidth 20 kHz)

| Item | Mark | | |
|--------------------------|------|------|-----|
| Digital information rate | (R) | 9600 | bps |
| Peak frequency deviation | (D) | 2.4 | kHz |
| Signaling states | (S) | 2 | |
| Numerical factor | (K) | 1 | |
| Necessary Bandwidth | (Bn) | 14.4 | kHz |

$$B_n = (R / \log_2 S) + 2 \times D \times K$$

- 1.types of modulation of the main carrier : F= Frequency modulation
 2.nature of signal(s) modulating the main carrier: 1= A single channel containing quantized or digital information without the use of a modulating sub-carrier
 3.type of information to be transmitted: D= Data transmission, telemetry, telecommand

State : 11K0F3E (Authorized Bandwidth 11.25 kHz)

| Item | Mark | | |
|---------------------|------|-----|-----|
| Maximum Modulation | (M) | 3 | kHz |
| Maximum Deviation | (D) | 2.5 | kHz |
| Constant Factor | (K) | 1 | |
| Necessary Bandwidth | (Bn) | 11 | kHz |

$$B_n = (2 \times M) + (2 \times D \times K)$$

- 1.types of modulation of the main carrier : F= Frequency modulation
 2.nature of signal(s) modulating the main carrier: 3= A single channel containing analog information
 3.type of information to be transmitted: E= Telephony (including sound broadcasting)

State: 8K10F1E / 8K10F1D (9600bps, Authorized Bandwidth 11.25 kHz)

| Item | Mark | | |
|--------------------------|------|-------|-----------------------------|
| Digital information rate | (R) | 9600 | bps |
| Peak frequency deviation | (D) | 3.111 | kHz |
| Signaling states | (S) | 4 | |
| Numerical factor | (K) | 1 | |
| Necessary Bandwidth | (Bn) | 8.1 | kHz Measurements were done* |

*Measurements per Rule 47CFR Part 2.202(c)(4) were done because Part 2.202(g) Table III-A.1.

formulation produces an excessive result using the value of K recommended in th Table. Therefore the 99% energy rule (title 47CFR 2.202(a)) was used for digital mode and is more accurate than Carson's rule. It basically states that 99% of the modulation energy falls within X kHz, in this case, 8.10kHz Measurements were performed in accordance with TIA/EIA 102.CAAB Section 2.2.5.2. The emission mask was obtained from 47CFR 90.210(d).

- 1.types of modulation of the main carrier : F= Frequency modulation
 2.nature of signal(s) modulating the main carrier: 1= A single channel containing quantized or digital information without the use of a modulating sub-carrier
 3.type of information to be transmitted: E= Telephony (including sound broadcasting)
 D= Data transmission, telemetry, telecommand

State : 8K30F1E / 8K30F1D / 8K30F7W (4Level FSK / 9600bps, Authorized Bandwidth 11.25 kHz)

| Item | Mark | | |
|--------------------------|------|-------|-----|
| Digital information rate | (R) | 9600 | bps |
| Peak frequency deviation | (D) | 3.391 | kHz |
| Signaling states | (S) | 4 | |
| Numerical factor | (K) | 0.516 | |
| Necessary Bandwidth | (Bn) | 8.3 | kHz |

$$B_n = (R/\log_2 S) + 2x D x K$$

- 1.types of modulation of the main carrier : F= Frequency modulation
 2.nature of signal(s) modulating the main carrier: 1= A single channel containing quantized or digital information without the use of a modulating sub-carrier
 7= Two or more channels containing quantized or digital information
 3.type of information to be transmitted: E= Telephony (including sound broadcasting)
 D= Data transmission, telemetry, telecommand
 W= Combination of the above

State : 4K00F1E / 4K00F1D / 4K00F7W (4Level FSK / 4800bps, Authorized Bandwidth 6 kHz)

| Item | Mark | | |
|--------------------------|------|-------|-----|
| Digital information rate | (R) | 4800 | bps |
| Peak frequency deviation | (D) | 1.55 | kHz |
| Signaling states | (S) | 4 | |
| Numerical factor | (K) | 0.516 | |
| Necessary Bandwidth | (Bn) | 4 | kHz |

$$B_n = (R/\log_2 S) + 2x D x K$$

- 1.types of modulation of the main carrier : F= Frequency modulation
 2.nature of signal(s) modulating the main carrier: 1= A single channel containing quantized or digital information without the use of a modulating sub-carrier
 7= Two or more channels containing quantized or digital information
 3.type of information to be transmitted: E= Telephony (including sound broadcasting)
 D= Data transmission, telemetry, telecommand
 W= Combination of the above

State : 4K00F2D (CWID, Authorized Bandwidth 6 kHz)

| Item | Mark | | |
|---------------------|------|-----|-----|
| Maximum Modulation | (M) | 0.8 | kHz |
| Maximum Deviation | (D) | 1.2 | kHz |
| Numerical factor | (K) | 1 | |
| Necessary Bandwidth | (Bn) | 4 | kHz |

$$B_n = (2xM) + (2xDxK)$$

- 1.types of modulation of the main carrier : F= Frequency modulation
 2.nature of signal(s) modulating the main carrier: 2= A single channel containing quantized or digital information with the
 3.type of information to be transmitted: D= Data transmission, telemetry, telecommand

10.12 99% Occupied Bandwidth

| | |
|-------------------|-----------------------|
| REGULATIONS | : RSS-119 Section 5.5 |
| TEST METHOD/GUIDE | : RSS-Gen Section 6.6 |

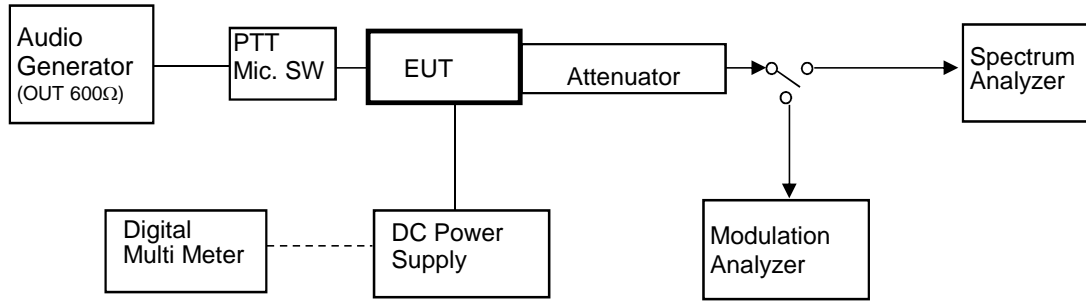
Test Procedure

- 1 The EUT and test equipment were set up as shown on the following page.
- 2 Adjust the test instrument for the following setting:
 - RBW : 1 % to 5 % of the Necessary bandwidth
 - VBW : at least 3 times the RBW
 - Detector : Peak
 - Sweep Time : Auto
 - Trace mode : Max Hold
- 3 Allow trace to fully stabilize.
- 4 Use "Occupied Bandwidth Measurement" function to measure the 99% Occupied Bandwidth.
- 5 Modulate the transmitter with a 2.5 kHz sine wave at an input Level of 16 dB greater than that necessary to produce 50 % of rated system deviation.(Only 16K0F3E, 11K0F3E)

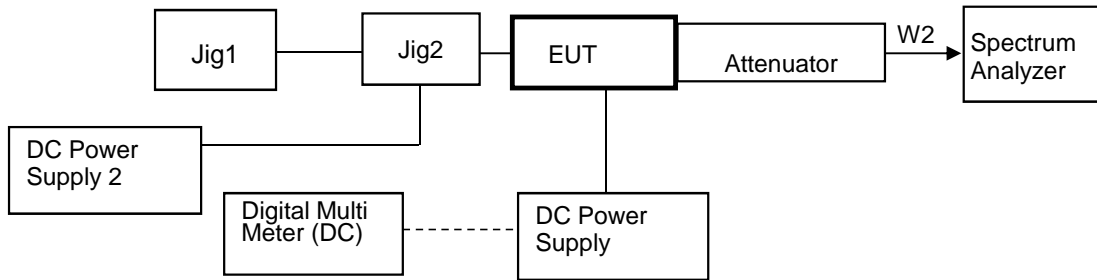
Measuring Equipments

| No. | Equipment | Manufacture | Model No. | Serial No. | Cal. Interval | Effective period |
|-----|---------------------|---------------------|-------------|------------|---------------|------------------|
| 1 | Attenuator (20dB) | Aeroflex/Wenshel | 66-20-34 | BY4357 | 1Y | May. 31, 17 |
| 2 | Attenuator (30dB) | Weinschel | WA-29-30-34 | 8923 | 1Y | May. 31, 17 |
| 3 | Modulation Analyzer | Hewlett Packard | 8901B | 3403A04852 | 1Y | Dec. 31, 17 |
| 4 | Audio Generator | Anritsu | MG443B | M70150 | 1Y | May. 31, 17 |
| 5 | Spectrum Analyzer | Agilent | N9030A | US51350220 | 1Y | Feb. 28, 18 |
| 6 | DC Power Supply | Daiichi denpa kogyo | GZV4000 | 90290931 | None | None |
| 7 | DC Power Supply 2 | Kikusui | PMC35-3A | LE000716 | None | None |
| 8 | Digital Multi Meter | FLUKE | 8846A | 9642018 | 1Y | Sep. 30, 17 |
| 9 | JIG1 | Anritsu | MD6420A | 6200552647 | None | None |
| 10 | JIG2 | Kenwood | Modem | None | None | None |
| 11 | Balance Cable | Nicoon | 3D-2V | KSR00092 | 1Y | Mar. 31, 18 |
| 12 | Coaxial Cable | Pacific custom | RG-58 C/U | AM90C04 | 1Y | Feb. 28, 18 |
| 13 | Coaxial Cable | Suhner | SUCOFLEX104 | KSR00217 | 1Y | May. 31, 17 |

Measuring Equipment Configuration



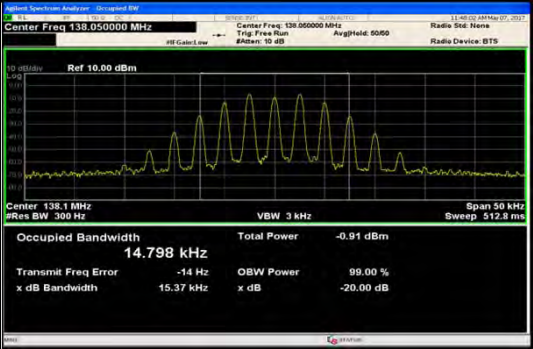
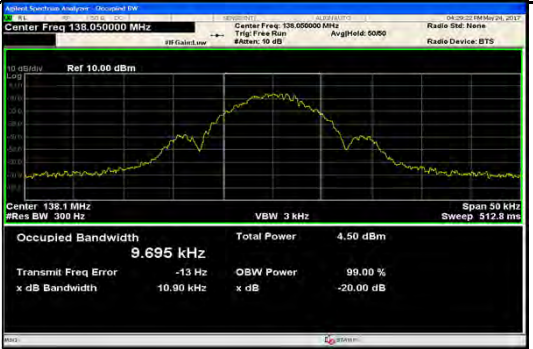
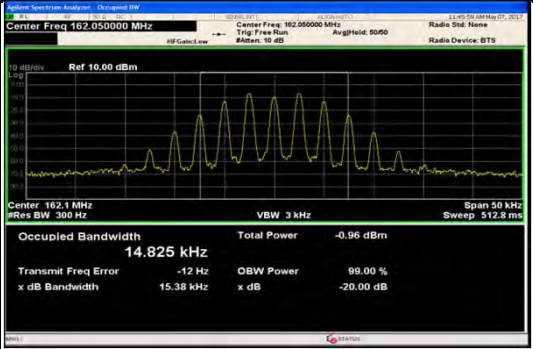
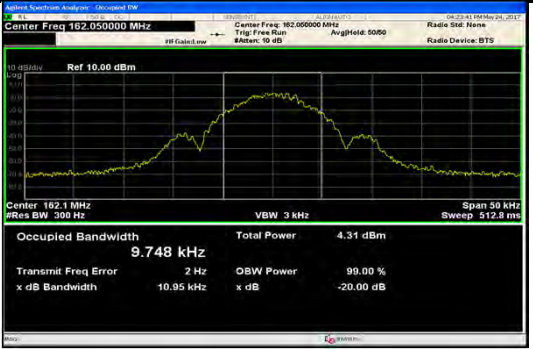
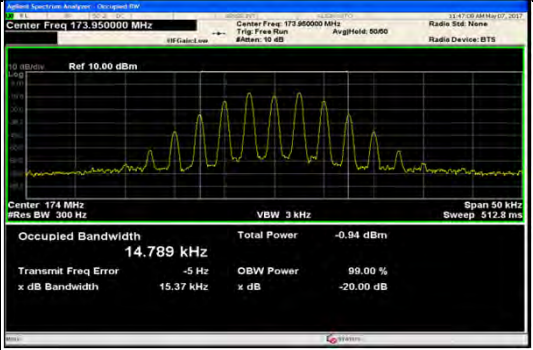
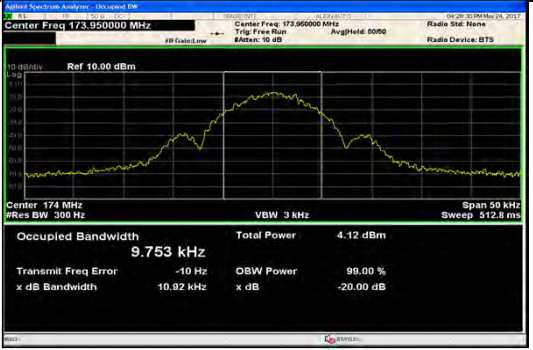
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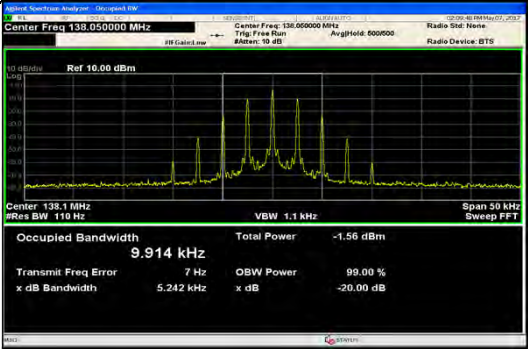
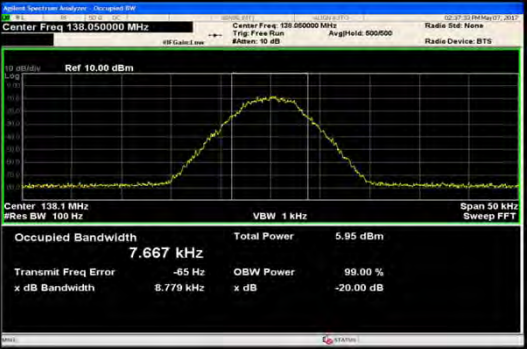
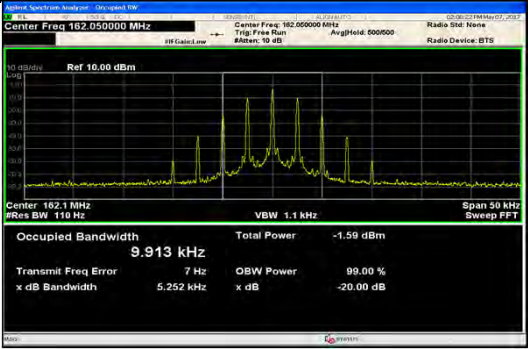
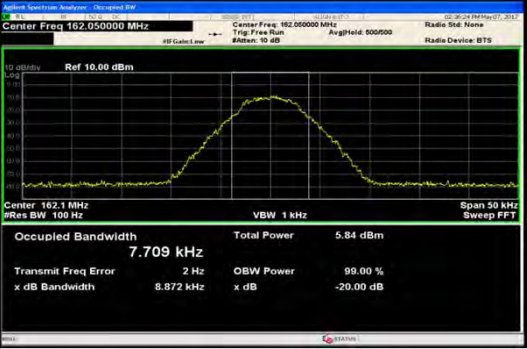
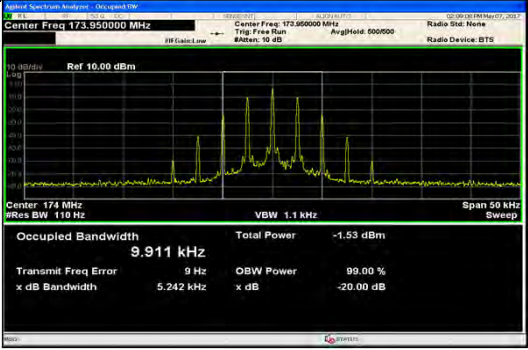
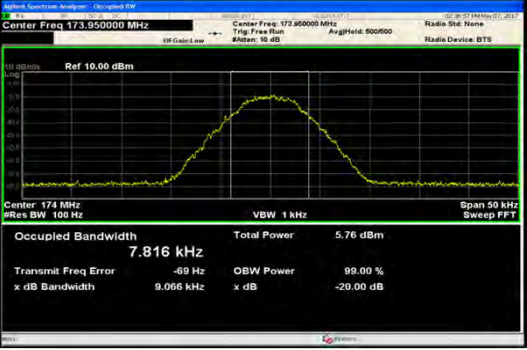


Test Results

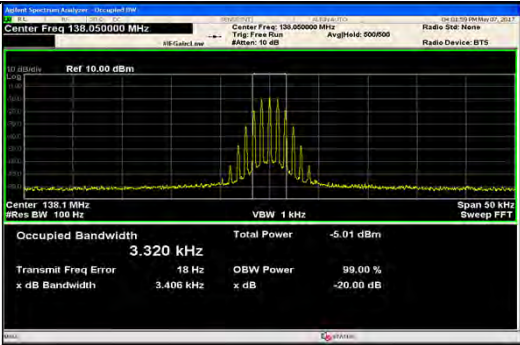
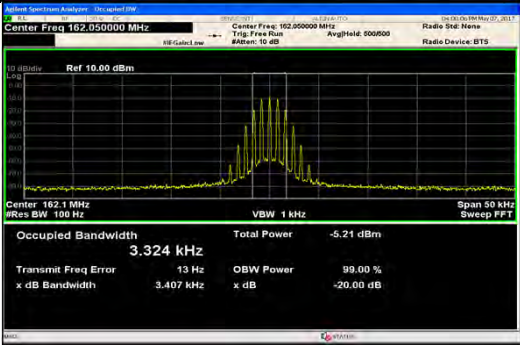
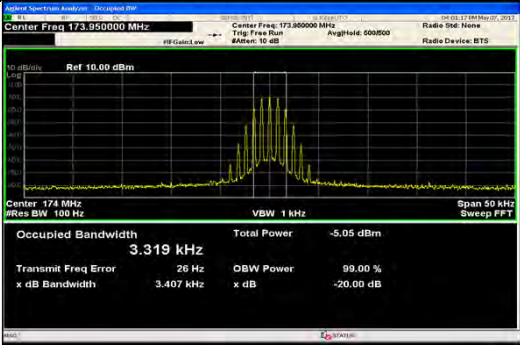
| | |
|----------------------|-------------------------------|
| Test date | Feb 23, 2017 and May 26, 2017 |
| Location | Kashima No.12 Test Site |
| temperature | 20.0 to 23.4 [degree C] |
| Humidity Variation | 60.0 to 60.0 [%] |
| Atmospheric Pressure | 101.0 to 100.4 [kPa] |
| Test Engineer | Koichi Wagatsuma |

| Emission Designation | Frequency (MHz) | 99% Occupied Bandwidth (kHz) | Authorized bandwidth (kHz) |
|----------------------|--------------------|------------------------------------|----------------------------------|
| 16K0F3E | 138.05 | 14.798 | 20 |
| | 162.05 | 14.825 | |
| | 173.95 | 14.789 | |
| 14K4F1D | 138.05 | 9.695 | 20 |
| | 162.05 | 9.748 | |
| | 173.95 | 9.753 | |
| 11K0F3E | 138.05 | 9.914 | 11.25 |
| | 162.05 | 9.913 | |
| | 173.95 | 9.911 | |
| 8K30F1E/F1D/F7W | 138.05 | 7.667 | 11.25 |
| | 162.05 | 7.709 | |
| | 173.95 | 7.816 | |
| 8K10F1E/F1D | 138.05 | 8.000 | 11.25 |
| | 162.05 | 8.048 | |
| | 173.95 | 7.971 | |
| 4K00F1E / F1D / F7W | 138.05 | 3.533 | 6 |
| | 162.05 | 3.542 | |
| | 173.95 | 3.522 | |
| 4K00F2D | 138.05 | 3.320 | 6 |
| | 162.05 | 3.324 | |
| | 173.95 | 3.319 | |

| Frequency (MHz) | Emission Designation | |
|-----------------|--|--|
| | 16K0F3E | 14K4F1D |
| 138.05 |  <p>Center Freq 138.050000 MHz Center Freq 138.050000 MHz Trig Freq Run AvgHeld: 5000 #B: 10 dB Radio Device: BTS</p> <p>Center 138.1 MHz #Res BW 300 Hz VBW 3 kHz Span 50 kHz Sweep 512.8 ms</p> <p>Occupied Bandwidth 14.798 kHz Total Power -0.91 dBm Transmit Freq Error -14 Hz OBW Power 99.00 % x dB Bandwidth 15.37 kHz x dB -20.00 dB</p> |  <p>Center Freq 138.050000 MHz Center Freq 138.050000 MHz Trig Freq Run AvgHeld: 5000 #B: 10 dB Radio Device: BTS</p> <p>Center 138.1 MHz #Res BW 300 Hz VBW 3 kHz Span 50 kHz Sweep 512.8 ms</p> <p>Occupied Bandwidth 9.695 kHz Total Power 4.50 dBm Transmit Freq Error -13 Hz OBW Power 99.00 % x dB Bandwidth 10.90 kHz x dB -20.00 dB</p> |
| 162.05 |  <p>Center Freq 162.050000 MHz Center Freq 162.050000 MHz Trig Freq Run AvgHeld: 5000 #B: 10 dB Radio Device: BTS</p> <p>Center 162.1 MHz #Res BW 300 Hz VBW 3 kHz Span 50 kHz Sweep 512.8 ms</p> <p>Occupied Bandwidth 14.825 kHz Total Power -0.96 dBm Transmit Freq Error -12 Hz OBW Power 99.00 % x dB Bandwidth 15.38 kHz x dB -20.00 dB</p> |  <p>Center Freq 162.050000 MHz Center Freq 162.050000 MHz Trig Freq Run AvgHeld: 5000 #B: 10 dB Radio Device: BTS</p> <p>Center 162.1 MHz #Res BW 300 Hz VBW 3 kHz Span 50 kHz Sweep 512.8 ms</p> <p>Occupied Bandwidth 9.748 kHz Total Power 4.31 dBm Transmit Freq Error 2 Hz OBW Power 99.00 % x dB Bandwidth 10.95 kHz x dB -20.00 dB</p> |
| 173.95 |  <p>Center Freq 173.950000 MHz Center Freq 173.950000 MHz Trig Freq Run AvgHeld: 5000 #B: 10 dB Radio Device: BTS</p> <p>Center 174 MHz #Res BW 300 Hz VBW 3 kHz Span 50 kHz Sweep 512.8 ms</p> <p>Occupied Bandwidth 14.789 kHz Total Power -0.94 dBm Transmit Freq Error -5 Hz OBW Power 99.00 % x dB Bandwidth 15.37 kHz x dB -20.00 dB</p> |  <p>Center Freq 173.950000 MHz Center Freq 173.950000 MHz Trig Freq Run AvgHeld: 5000 #B: 10 dB Radio Device: BTS</p> <p>Center 174 MHz #Res BW 300 Hz VBW 3 kHz Span 50 kHz Sweep 512.8 ms</p> <p>Occupied Bandwidth 9.753 kHz Total Power 4.12 dBm Transmit Freq Error -10 Hz OBW Power 99.00 % x dB Bandwidth 10.92 kHz x dB -20.00 dB</p> |

| Frequency (MHz) | Emission Designation | |
|-----------------|---|--|
| | 11K0F3E | 8K30F1E/F1D/F7W |
| 138.05 |  <p>Center Freq 138.050000 MHz Center Freq 138.050000 MHz Trig. Free Run Avg/Hold: 500/500 Radio Stn: None Radio Device: BTS</p> <p>Center 138.1 MHz #Res BW 110 Hz VBW 1.1 kHz Span 50 kHz Sweep FFT</p> <p>Occupied Bandwidth 9.914 kHz Total Power -1.56 dBm Transmit Freq Error 7 Hz OBW Power 99.00 % x dB Bandwidth 5.242 kHz x dB -20.00 dB</p> |  <p>Center Freq 138.050000 MHz Center Freq 138.050000 MHz Trig. Free Run Avg/Hold: 500/500 Radio Stn: None Radio Device: BTS</p> <p>Center 138.1 MHz #Res BW 100 Hz VBW 1 kHz Span 50 kHz Sweep FFT</p> <p>Occupied Bandwidth 7.667 kHz Total Power 5.95 dBm Transmit Freq Error -55 Hz OBW Power 99.00 % x dB Bandwidth 8.779 kHz x dB -20.00 dB</p> |
| 162.05 |  <p>Center Freq 162.050000 MHz Center Freq 162.050000 MHz Trig. Free Run Avg/Hold: 500/500 Radio Stn: None Radio Device: BTS</p> <p>Center 162.1 MHz #Res BW 110 Hz VBW 1.1 kHz Span 50 kHz Sweep FFT</p> <p>Occupied Bandwidth 9.913 kHz Total Power -1.59 dBm Transmit Freq Error 7 Hz OBW Power 99.00 % x dB Bandwidth 5.252 kHz x dB -20.00 dB</p> |  <p>Center Freq 162.050000 MHz Center Freq 162.050000 MHz Trig. Free Run Avg/Hold: 500/500 Radio Stn: None Radio Device: BTS</p> <p>Center 162.1 MHz #Res BW 100 Hz VBW 1 kHz Span 50 kHz Sweep FFT</p> <p>Occupied Bandwidth 7.709 kHz Total Power 5.84 dBm Transmit Freq Error 2 Hz OBW Power 99.00 % x dB Bandwidth 8.872 kHz x dB -20.00 dB</p> |
| 173.95 |  <p>Center Freq 173.950000 MHz Center Freq 173.950000 MHz Trig. Free Run Avg/Hold: 500/500 Radio Stn: None Radio Device: BTS</p> <p>Center 174 MHz #Res BW 110 Hz VBW 1.1 kHz Span 50 kHz Sweep FFT</p> <p>Occupied Bandwidth 9.911 kHz Total Power -1.53 dBm Transmit Freq Error 9 Hz OBW Power 99.00 % x dB Bandwidth 5.242 kHz x dB -20.00 dB</p> |  <p>Center Freq 173.950000 MHz Center Freq 173.950000 MHz Trig. Free Run Avg/Hold: 500/500 Radio Stn: None Radio Device: BTS</p> <p>Center 174 MHz #Res BW 100 Hz VBW 1 kHz Span 50 kHz Sweep FFT</p> <p>Occupied Bandwidth 7.816 kHz Total Power 5.76 dBm Transmit Freq Error -59 Hz OBW Power 99.00 % x dB Bandwidth 9.066 kHz x dB -20.00 dB</p> |

| Ferquency (MHz) | Emission Designation | |
|-----------------|--|---|
| | 8K10F1E/F1D | 4K00F1E / F1D / F7W |
| 138.05 | <p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq 138.050000 MHz</p> <p>Center Freq 138.050000 MHz</p> <p>Ref 10.00 dBm</p> <p>Center 138.1 MHz</p> <p>Res BW 100 Hz</p> <p>VBW 1 kHz</p> <p>Span 50 kHz</p> <p>Sweep FFT</p> <p>Occupied Bandwidth Total Power 6.40 dBm</p> <p>8.000 kHz</p> <p>Transmit Freq Error 30 Hz</p> <p>OBW Power 99.00 %</p> <p>x dB Bandwidth 8.594 kHz x dB -20.00 dB</p> | <p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq 138.050000 MHz</p> <p>Center Freq 138.050000 MHz</p> <p>Ref 10.00 dBm</p> <p>Center 138.1 MHz</p> <p>Res BW 100 Hz</p> <p>VBW 1 kHz</p> <p>Span 50 kHz</p> <p>Sweep FFT</p> <p>Occupied Bandwidth Total Power 4.73 dBm</p> <p>3.533 kHz</p> <p>Transmit Freq Error -20 Hz</p> <p>OBW Power 99.00 %</p> <p>x dB Bandwidth 4.225 kHz x dB -20.00 dB</p> |
| 162.05 | <p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq 162.050000 MHz</p> <p>Center Freq 162.050000 MHz</p> <p>Ref 10.00 dBm</p> <p>Center 162.1 MHz</p> <p>Res BW 100 Hz</p> <p>VBW 1 kHz</p> <p>Span 50 kHz</p> <p>Sweep FFT</p> <p>Occupied Bandwidth Total Power 6.40 dBm</p> <p>8.048 kHz</p> <p>Transmit Freq Error 14 Hz</p> <p>OBW Power 99.00 %</p> <p>x dB Bandwidth 8.457 kHz x dB -20.00 dB</p> | <p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq 162.050000 MHz</p> <p>Center Freq 162.050000 MHz</p> <p>Ref 10.00 dBm</p> <p>Center 162.1 MHz</p> <p>Res BW 100 Hz</p> <p>VBW 1 kHz</p> <p>Span 50 kHz</p> <p>Sweep FFT</p> <p>Occupied Bandwidth Total Power 4.66 dBm</p> <p>3.542 kHz</p> <p>Transmit Freq Error -25 Hz</p> <p>OBW Power 99.00 %</p> <p>x dB Bandwidth 4.227 kHz x dB -20.00 dB</p> |
| 173.95 | <p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq 173.950000 MHz</p> <p>Center Freq 173.950000 MHz</p> <p>Ref 10.00 dBm</p> <p>Center 174 MHz</p> <p>Res BW 100 Hz</p> <p>VBW 1 kHz</p> <p>Span 50 kHz</p> <p>Sweep FFT</p> <p>Occupied Bandwidth Total Power 6.33 dBm</p> <p>7.971 kHz</p> <p>Transmit Freq Error -15 Hz</p> <p>OBW Power 99.00 %</p> <p>x dB Bandwidth 8.676 kHz x dB -20.00 dB</p> | <p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq 173.950000 MHz</p> <p>Center Freq 173.950000 MHz</p> <p>Ref 10.00 dBm</p> <p>Center 174 MHz</p> <p>Res BW 100 Hz</p> <p>VBW 1 kHz</p> <p>Span 50 kHz</p> <p>Sweep FFT</p> <p>Occupied Bandwidth Total Power 4.68 dBm</p> <p>3.522 kHz</p> <p>Transmit Freq Error -14 Hz</p> <p>OBW Power 99.00 %</p> <p>x dB Bandwidth 4.219 kHz x dB -20.00 dB</p> |

| Ferquency (MHz) | Emission Designation | |
|-----------------|---|--|
| 138.05 | <p style="text-align: center;">4K00F2D</p>  | |
| 162.05 |  | |
| 173.95 |  | |