

# TEST REPORT

**STANDARD : FCC Part15C  
RSS-210 Issue 9**

Applicant	Testing Laboratory
AIPHONE Co., LTD 2-18, Jinno-cho, Atsuta-ku, Nagoya 456-8666, JAPAN Tel: +81 52 681 8721	Intertek Japan K.K. Nagano Laboratory URL: <a href="http://www.japan.intertek-etlsemko.com">http://www.japan.intertek-etlsemko.com</a> 3226 Yokokawa, Tatsuno-machi, Kamiina-gun, Nagano 399-0511 Japan Tel. +81 266 47 5311

<b>Equipment Type</b>	Expanded bus control unit
<b>Trademark</b>	AIPHONE
<b>Model(s)</b>	GT-BCXB-N
<b>Serial No.</b>	0000169R(J725-2819)
<b>Equipment Authorization</b>	Certification
<b>FCC ID</b>	2ALNEGTCXBN
<b>ISED CN and UPN</b>	4361A-GTCXBN
<b>Test Result</b>	Complied
<b>Report Number</b>	17010363JNA-001
<b>Original Issue Date</b>	June 5, 2017
<b>Revised Issue Date</b>	June 14, 2017

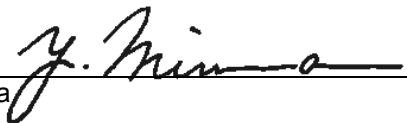
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Approved by



Hideaki Kosemura  
[Technical Manager]

Tested by



Yoshihide Mimura  
[ Test Engineer ]

*Responsible Party of Test Item (Product)*

Responsible Party	:
Add.	:
Tel.	:
Fax.	:
Contact Person	:

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FCC ID :2ALNEGTCXBN

ISED CN and UPN :4361A-GTBCXBN

**SECTION 1. GENERAL INFORMATION****Test Performed**

<b>EUT Received</b>	February 14, 2017
<b>Date of Test</b>	From February 14, 2017 to March 17, 2017
<b>Standard Applied</b>	FCC Part15C RSS-210 Issue 9
<b>Test methods</b>	ANSI C63.10-2013
<b>Deviation from Standard(s)</b>	None

**Qualifications of Testing Laboratory**

<b>Accreditation</b>	<b>Scope</b>	<b>Lab. Code</b>	<b>Remarks</b>
VLAC	EMC Testing	VLAC-008-4	JAPAN
BSMI	EMC Testing	SL2-IN-E-6007	TAIWAN
<b>Filing</b>			
VCCI	EMC Testing	A-0128	JAPAN
FCC	EMC Testing	JP0010	USA
IC	EMC Testing	2042O-1	CANADA

**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	HDMI	High-Definition Multimedia Interface
OBW	Occupied Bandwidth		

**Revision Summary**

<b>Revised Date</b>	<b>Section</b>	<b>Description of Changes</b>
June 14, 2017	3	The Overview of EUT has been deleted.
June 14, 2017	7	The operation explanation has been added.
June 14, 2017	ANNEX	Page 29, 30 Modification of the figures

FCC ID :2ALNEGTCXBN  
ISED CN and UPN :4361A-GTBCXBN**SECTION 2. SUMMARY OF TEST RESULTS**

See Section9 for the detailed result.

**Emission Tests**

<b>Standard Applied</b>		FCC Part15C (15.207, 15.225, 15.209) RSS-210 Issue 9 (B.6)
<b>Test Item</b>	<b>Minimum margin</b>	<b>Remarks</b>
Conducted disturbance at mains terminals	21.0 dB (0.1513 MHz) [Q-P]	
Radiated disturbance (IN band)	38.7 dB (13.5670 MHz)	
Radiated disturbance (OUT band)	10.3 dB (122.04 MHz)	

<b>Standard Applied</b>		FCC Part15C (15.225) RSS-210 Issue 9 (B.6)
<b>Test Item</b>	<b>Result</b>	<b>Remarks</b>
Frequency Tolerance	PASS	

<b>Standard Applied</b>		FCC Part15C(15.215(c)) RSS-Gen Issue 4 (6.6)
<b>Test Item</b>	<b>Result</b>	<b>Remarks</b>
20dB OBW 99%OBW	N/A	See Note

Note : None Limit (for reporting purposes only)

FCC ID :2ALNEGTCXBN  
ISED CN and UPN :4361A-GTBCXBN**SECTION 3. EQUIPMENT UNDER TEST**

The equipment under test (EUT) consisted of the following apparatus.

**3.1 System Configuration**

Symbol	Item	Model No.	Serial No.	Manufacturer	Remarks
A1	Expanded bus control unit	GT-BCXB-N	0000169R(J725-2819)	AIPHONE Co., LTD	-
<b>Rated Power</b> : 100V-240 V, 50-60 Hz, 1.2-0.6 5A					
<b>Supplied Power</b> : AC 120V, 60Hz					
<b>Condition of Equipment</b>		PreProduction			
<b>Type</b>		Wall hanging type			
<b>Suppression Devices</b>		No Modifications by the laboratory were made to the device			

**3.2 Port(s)/Connector(s)**

Port Name	Connector Type	Connector Pin	Remarks
R1R2	-	2 pin	-
A1A2	-	2 pin	-
B1B2	-	2 pin	-

**3.3 Highest Frequency Generated / Used**

Operating Frequency	Operating mode	Remarks
13.56 MHz	Confirmation of NFC reader	-

**3.4 RFID module specification**

<b>Model No.</b>	ARI3030I
<b>Operating Frequency</b>	13.56 MHz
<b>Number of Channel</b>	1 ch
<b>Modulation Technology</b>	ISO/IEC 14443 Type A / MIFARE ISO/IEC 14443 Type A / MIFARE: Manchester coding MIFARE Higher Baud Rate: BPSK ISO/IEC 14443 Type B / BPSK ISO/IEC 18092 FeliCa: Manchester coding
<b>Transfer rate</b>	MIFARE: 106 kbps FeliCa: 212 kbps / 424 kbps
<b>TX Power</b>	Max. 20dBm (less than 100m W)

FCC ID :2ALNEGTCXBN  
ISED CN and UPN :4361A-GTCXBN**SECTION 4. SUPPORT EQUIPMENT**

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

Symbol	Item	Model No.	Serial No.	Manufacturer	FCC ID
B	Power supply	PS-2420	1536(J725-974)	AIPHONE Co., LTD	N/A
<b>Supplied Power:</b>					
B	AC120 V, 60 Hz				

FCC ID :2ALNEGTCXBN  
ISED CN and UPN :4361A-GTCXBN**SECTION 5. USED CABLE(S)**

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

No.	Name	Length (m)	Shield	Metal Connector	Ferrite Core
1	Signal cable	2.00	No	No	
2	AC power cable for PS2420	1.90	No	No	
3	FG cable	2.00	No	No	

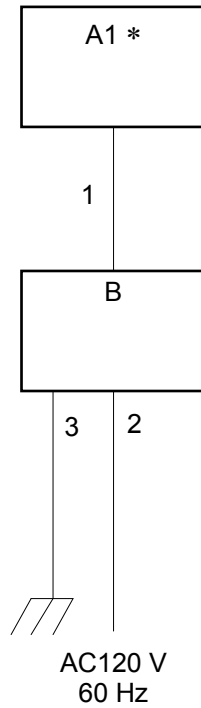
Note :

1. No ferrite core is attached to the outer cables.

## SECTION 6. TEST CONFIGURATION

### 6.1 Conducted disturbance at mains terminals Tests and Radiated disturbance tests

\* : EUT



The symbols and numbers assigned to the equipments and cables on this diagram correspond to the ones in Sections 3 to 5.



FCC ID :2ALNEGTCXBN  
ISED CN and UPN :4361A-GTBCXBN

## SECTION 7. OPERATING CONDITION

The test was carried out under the following mode.  
This operation mode is the worst.

### 7.1 Confirmation of NFC reader mode (Card emulation)

Cycle time for operation: 500 ms

MIFARE: 106 kbps Modified Miller ASK 100%  
FeliCa: 212 kbps Manchester coding ASK 10%  
FeliCa: 424 kbps Manchester coding ASK 10%

The above-mentioned, consecutive movement of card emulation (tag state)  
period 500ms

FCC ID :2ALNEGTCXBN  
ISED CN and UPN :4361A-GTBCXBN**SECTION 8. UNCERTAINTY**

Traceability to national standard in SI units is ensured with these values.  
Compliance with the limits in this standard are determined without in consideration of the measurement uncertainty of the measurement instrumentation.

**8.1 Emission tests**

<b>Radiated disturbance at 3m</b>	<b><math>U_{lab} [k = 2]</math></b>	<b><math>U_{cispr}</math></b>
30 MHz – 1000 MHz	+/- 4.28 dB	6.3 dB
Above 1 GHz	+/- 4.80 dB	5.2 dB
<b>Radiated disturbance at 10m</b>		
30 MHz – 1000 MHz	+/- 4.81 dB	6.3 dB
<b>Radiated disturbance at 30m</b>		
	N/A	Nil
<b>Conducted disturbance at mains terminals</b>		
9 kHz – 150 kHz	+/- 1.77 dB	3.8 dB
150 kHz – 30 MHz		3.4 dB
<b>Conducted disturbance at telecommunication ports (ISN)</b>		
150 kHz – 30 MHz	+/- 3.11 dB	5.0 dB
<b>Conducted disturbance at telecommunication ports (Capacitive Voltage Probe)</b>		
150 kHz – 30 MHz	+/- 3.06 dB	3.9 dB
<b>Conducted disturbance at telecommunication ports (Current Probe)</b>		
150 kHz – 30 MHz	+/- 1.89 dB	2.9 dB
<b>Conducted disturbance at terminals</b>		
150 kHz – 30 MHz	+/- 1.77 dB	2.9 dB
<b>Disturbance power</b>		
30 MHz – 300 MHz	+/- 2.49 dB	4.5 dB

The above expanded instrumentation uncertainty,  $U_{lab}$ , is estimated in accordance with CISPR 16-4-2:2011.

FCC ID :2ALNEGTCXBN  
ISED CN and UPN :4361A-GTBCXBN**SECTION 9. EVALUATION OF TEST RESULTS****9.1 Emission tests****9.1.1 Conducted disturbance at mains terminals**

<b>Location</b>	Nagano No.3 Test Site
<b>Test Engineer</b>	Yoshihide Mimura

**Frequency Range of Measurements**

Required Measurement Frequency Range	Measured Frequency Range
0.15 – 30 MHz	0.15 – 30 MHz

**Test Procedure**

Item	Document number
Conducted disturbance at mains terminals	LEN-RJP-TE003

**Setting for the Measuring instruments**

Instrument	Detector	Resolution Bandwidth	Video Bandwidth
Receiver	Quasi Peak	10 kHz	N/A
	Average	10 kHz	N/A

&lt; Measurement data correction &gt;

Emission Level = Meter Reading + Factor

Margin = Limit- Emission Level

Factor = LISN Factor + Cable Loss + Attenuator

&lt; Sample Calculations &gt;

Sample @0.1513 MHz (Confirmation of NFC reader mode)

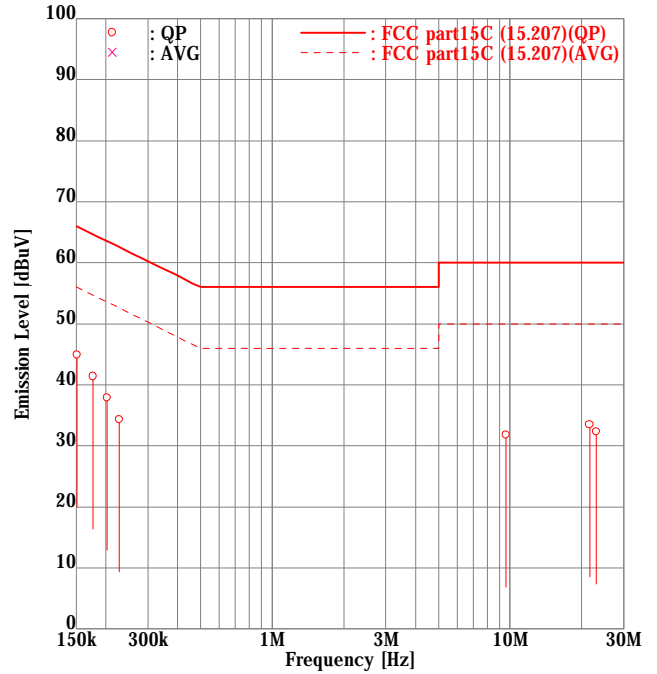
Emission Level = 34.5 [dBuV] + 10.1 [dB] = 44.6 [dBuV]

FCC ID :2ALNEGTCBXXBN  
 ISED CN and UPN :4361A-GTBCBXXBN

**Result of Conducted disturbance at mains terminals**

**Intertek Japan K.K.**  
**Nagano No.3 Test Site**  
 AC Conducted Emission Test

APPLICANT : AIPHONE Co., LTD  
 EUT NAME : Expanded bus control unit  
 MODEL NO. : GT-BCXB-N  
 SERIAL NO. : 0000169R(J725-2819)  
 TEST MODE : Confirmation of NFC reader  
 POWER SOURCE : AC120 V, 60 Hz  
 DATE TESTED : Feb 15 2017  
 FILE NO. : -  
 REGULATION : FCC part15C (15.207)  
 TEST METHOD : ANSI C63.10-2013  
 TEMPERATURE : 22.5 [degC]  
 HUMIDITY : 38.0 [%]  
 NOTE : AC Adapter:PS-240(1536J725-1426)



ENGINEER : Yoshhide Mimura

FREQUENCY [No]	MODE [MHz]		READING [dBuV]		FACTOR [dB]		EMISSION [dBuV]		LIMIT [dBuV]	MARGIN [dB]	
			Line1	Line2	Line1	Line2	Line1	Line2		Line1	Line2
1	0.1513	QP	34.5	<u>34.7</u>	10.1	10.2	44.6	<u>44.9</u>	65.9	21.3	<u>21.0</u>
2	0.1768	QP	31.1	<u>31.2</u>	10.1	10.2	41.2	<u>41.4</u>	64.6	23.4	<u>23.2</u>
3	0.2022	QP	27.6	<u>27.7</u>	10.1	10.2	37.7	<u>37.9</u>	63.5	25.8	<u>25.6</u>
4	0.2275	QP	23.9	<u>24.1</u>	10.1	10.2	34.0	<u>34.3</u>	62.5	28.5	<u>28.2</u>
5	9.5996	QP	21.2	<u>21.3</u>	10.5	10.5	31.7	<u>31.8</u>	60.0	28.3	<u>28.2</u>
6	21.5836	QP	22.3	<u>22.7</u>	10.8	10.8	33.1	<u>33.5</u>	60.0	26.9	<u>26.5</u>
7	22.9820	QP	20.3	<u>21.5</u>	10.8	10.8	31.1	<u>32.3</u>	60.0	28.9	<u>27.7</u>

Higher six points are underlined.  
 Other frequencies : Below the FCC part15C (15.207) limit  
 Emission Level = Read + Factor(LISN,Pad,Cable)

FCC ID :2ALNEGTCXBN  
 ISED CN and UPN :4361A-GTBCXBN

### 9.1.2 Radiated disturbance (IN band and OUT band)

<b>Location</b>	Nagano No.3 Test Site
<b>Test Engineer</b>	Yoshihide Mimura

#### Frequency Range of Measurements

Operating mode	Required Frequency Range	Measured Frequency Range
Confirmation of NFC reader	0.0090 – 1000 MHz	0.0090 – 1000 MHz

#### Test Procedure

Item	Document number
Radiated disturbance	LEN-RJP-TE003

#### Setting for the Measuring instruments

Frequency [MHz]	Instrument	Detector	Resolution Bandwidth	Video Bandwidth
0.009 - 30	Receiver	AVG : 0.009 - 0.090 MHz QP : 0.090 - 0.110 MHz AVG : 0.110 - 0.490 MHz QP : 0.490 - 30 MHz	200 Hz : 0.009 - 0.15 MHz 10 kHz : 0.15 – 30 MHz	N/A
30 – 1000	Receiver	Quasi Peak	120 kHz	N/A
Above 1000	Receiver	Peak	1 MHz	N/A
		Average	1 MHz	N/A

< Measurement data correction >

Emission Level = Meter Reading + Factor

Margin = Limit - Emission Level

Factor = Antenna Factor + Cable Loss - Amplifier Gain + Attenuator (+ Distance Conversion Factor)\*

\* For other than Standard distance:

Distance Conversion Factor =  $20 \log (\text{Measurement distance} / \text{Standard distance})$

< Sample Calculations >

Sample @122.04 MHz (Confirmation of NFC reader mode)

Emission Level = 40.5 [dBuV] - 11.3 [dB/m] = 29.2 [dBuV/m]

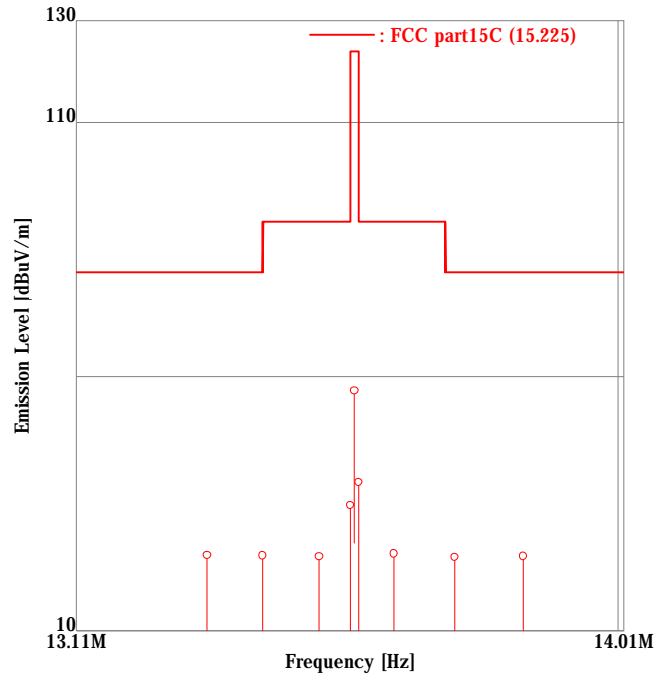
FCC ID :2ALNEGTCXB  
 ISED CN and UPN :4361A-GTBCXB

**Result of Radiated disturbances**

**9.1.2.1 IN band (X axis)**

**Intertek Japan K.K.**  
**Nagano No.3 Test Site**  
 Field Strength Emission Test

APPLICANT : AIPHONE Co., LTD  
 EUT NAME : Expanded bus control unit  
 MODEL NO. : GT-BCXB-N  
 SERIAL NO. : 0000169R(J725-2819)  
 TEST MODE : Confirmation of NFC reader  
 POWER SOURCE : AC120 V, 60 Hz  
 DATE TESTED : Mar 17 2017  
 FILE NO. : -  
 REGULATION : FCC part15C (15.225)  
 TEST METHOD : ANSI C63.10 :2013  
 DISTANCE : 3.00 [m]  
 TEMPERATURE : 21.4 [degC]  
 HUMIDITY : 37.0 [%]  
 NOTE : X



ENGINEER : Yoshihide Mimura

FREQUENCY [No]	FREQUENCY [MHz]	READING [dBuV]		FACTOR [dB]		EMISSION [dBuV/m]		LIMIT [dBuV/m]	MARGIN [dB]	
		Hori	Vert	Hori	Vert	Hori	Vert		Hori	Vert
1	13.3200	23.9	<u>24.2</u>	0.7	0.7	24.6	<u>24.9</u>	80.5	55.9	<u>55.6</u>
2	13.4097	<u>24.1</u>	23.9	0.7	0.7	<u>24.8</u>	24.6	80.5	<u>55.7</u>	55.9
3	13.5023	23.9	23.9	0.7	0.7	24.6	24.6	90.5	65.9	65.9
4	13.5530	<u>34.0</u>	28.6	0.7	0.7	<u>34.7</u>	29.3	90.5	<u>55.8</u>	61.2
5	13.5600	56.5	49.0	0.7	0.7	57.2	49.7	124.0	66.8	74.3
6	13.5670	38.5	32.2	0.7	0.7	<u>39.2</u>	32.9	90.5	<u>51.3</u>	57.6
7	13.6250	24.4	24.5	0.7	0.7	25.1	25.2	90.5	65.4	65.3
8	13.7258	23.7	<u>23.8</u>	0.7	0.7	24.4	<u>24.5</u>	80.5	56.1	<u>56.0</u>
9	13.8401	23.7	<u>24.0</u>	0.7	0.7	24.4	<u>24.7</u>	80.5	56.1	<u>55.8</u>

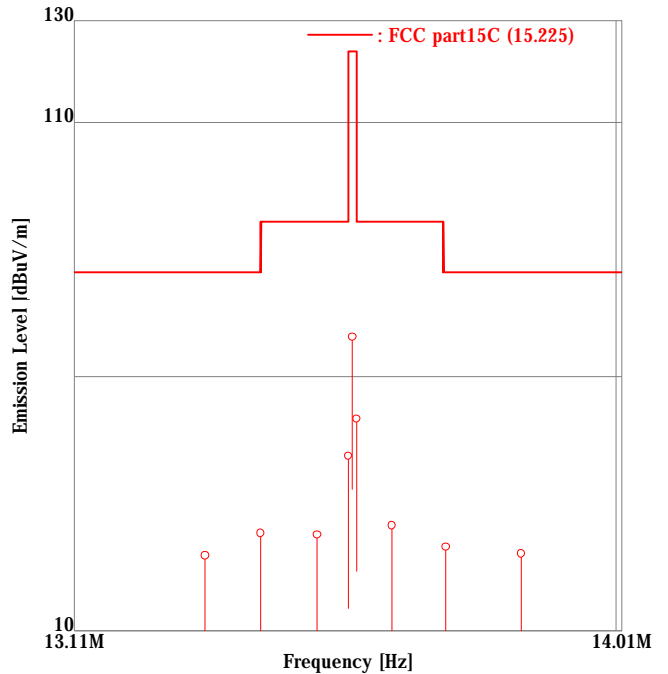
Higher six points are underlined.  
 Other frequencies : Below the FCC part15C (15.225) limit  
 Emission Level = Read + Factor(Antenna,Antenna Pad,Cable,Preamp)

FCC ID :2ALNEGTCXB  
 ISED CN and UPN :4361A-GTBCXB

9.1.2.2 IN band (Y axis)

**Intertek Japan K.K.**  
**Nagano No.3 Test Site**  
 Field Strength Emission Test

APPLICANT : AIPHONE Co., LTD  
 EUT NAME : Expanded bus control unit  
 MODEL NO. : GT-BCXB-N  
 SERIAL NO. : 0000169R(J725-2819)  
 TEST MODE : Confirmation of NFC reader  
 POWER SOURCE : AC120 V, 60 Hz  
 DATE TESTED : Mar 17 2017  
 FILE NO. : -  
 REGULATION : FCC part15C (15.225)  
 TEST METHOD : ANSI C63.10 :2013  
 DISTANCE : 3.00 [m]  
 TEMPERATURE : 21.4 [degC]  
 HUMIDITY : 37.0 [%]  
 NOTE : Y



ENGINEER : Yoshihide Mimura

FREQUENCY [No]	FREQUENCY [MHz]	READING [dBuV]		FACTOR [dB]		EMISSION [dBuV/m]		LIMIT [dBuV/m]		MARGIN [dB]	
		Hori	Vert	Hori	Vert	Hori	Vert	Hori	Vert	Hori	Vert
1	13.3200	<u>24.1</u>	23.5	0.7	0.7	<u>24.8</u>	24.2	80.5	80.5	<u>55.7</u>	56.3
2	13.4097	<u>28.5</u>	23.6	0.7	0.7	<u>29.2</u>	24.3	80.5	80.5	<u>51.3</u>	56.2
3	13.5023	<u>28.2</u>	23.5	0.7	0.7	<u>28.9</u>	24.2	90.5	90.5	<u>61.6</u>	66.3
4	13.5530	<u>43.7</u>	32.0	0.7	0.7	<u>44.4</u>	32.7	90.5	90.5	<u>46.1</u>	57.8
5	13.5600	<u>67.1</u>	54.9	0.7	0.7	<u>67.8</u>	55.6	124.0	124.0	<u>56.2</u>	68.4
6	13.5670	<u>51.0</u>	38.0	0.7	0.7	<u>51.7</u>	38.7	90.5	90.5	<u>38.8</u>	51.8
7	13.6250	<u>30.0</u>	24.5	0.7	0.7	<u>30.7</u>	25.2	90.5	90.5	<u>59.8</u>	65.3
8	13.7144	<u>25.8</u>	23.5	0.7	0.7	<u>26.5</u>	24.2	80.5	80.5	<u>54.0</u>	56.3
9	13.8401	<u>24.5</u>	23.5	0.7	0.7	<u>25.2</u>	24.2	80.5	80.5	<u>55.3</u>	56.3

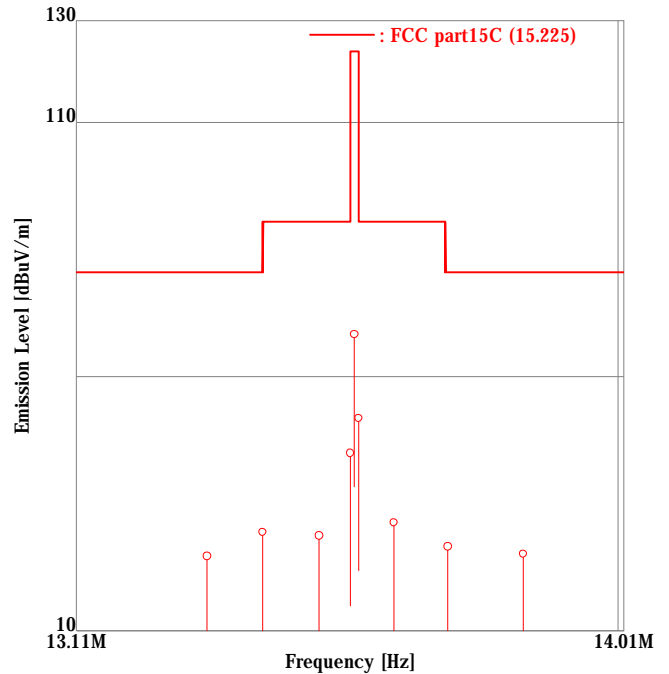
Higher six points are underlined.  
 Other frequencies : Below the FCC part15C (15.225) limit  
 Emission Level = Read + Factor(Antenna,Antenna Pad,Cable,Preamp)

FCC ID :2ALNEGTCXB  
 ISED CN and UPN :4361A-GTBCXB

9.1.2.3 IN band (Z axis)

**Intertek Japan K.K.**  
**Nagano No.3 Test Site**  
 Field Strength Emission Test

APPLICANT : AIPHONE Co., LTD  
 EUT NAME : Expanded bus control unit  
 MODEL NO. : GT-BCXB-N  
 SERIAL NO. : 0000169R(J725-2819)  
 TEST MODE : Confirmation of NFC reader  
 POWER SOURCE : AC120 V, 60 Hz  
 DATE TESTED : Mar 17 2017  
 FILE NO. : -  
 REGULATION : FCC part15C (15.225)  
 TEST METHOD : ANSI C63.10 :2013  
 DISTANCE : 3.00 [m]  
 TEMPERATURE : 21.4 [degC]  
 HUMIDITY : 37.0 [%]  
 NOTE : Z



ENGINEER : Yoshihide Mimura

FREQUENCY [No]	FREQUENCY [MHz]	READING [dBuV]		FACTOR [dB]		EMISSION [dBuV/m]		LIMIT [dBuV/m]		MARGIN [dB]	
		Hori	Vert	Hori	Vert	Hori	Vert	Hori	Vert	Hori	Vert
1	13.3200	24.0	23.5	0.7	0.7	24.7	24.2	80.5	80.5	55.8	56.3
2	13.4097	<u>28.7</u>	23.8	0.7	0.7	<u>29.4</u>	24.5	80.5	80.5	<u>51.1</u>	56.0
3	13.5023	<u>28.0</u>	23.7	0.7	0.7	<u>28.7</u>	24.4	90.5	90.5	<u>61.8</u>	66.1
4	13.5530	<u>44.2</u>	32.3	0.7	0.7	<u>44.9</u>	33.0	90.5	90.5	<u>45.6</u>	57.5
5	13.5600	<u>67.6</u>	55.1	0.7	0.7	<u>68.3</u>	55.8	124.0	124.0	<u>55.7</u>	68.2
6	13.5670	<u>51.1</u>	38.9	0.7	0.7	<u>51.8</u>	39.6	90.5	90.5	<u>38.7</u>	50.9
7	13.6250	<u>30.6</u>	24.9	0.7	0.7	<u>31.3</u>	25.6	90.5	90.5	<u>59.2</u>	64.9
8	13.7144	<u>25.9</u>	23.5	0.7	0.7	<u>26.6</u>	24.2	80.5	80.5	<u>53.9</u>	56.3
9	13.8401	<u>24.4</u>	23.5	0.7	0.7	<u>25.1</u>	24.2	80.5	80.5	<u>55.4</u>	56.3

Higher six points are underlined.  
 Other frequencies : Below the FCC part15C (15.225) limit  
 Emission Level = Read + Factor(Antenna,Antenna Pad,Cable,Preamp)



FCC ID :2ALNEGTCXB  
 ISED CN and UPN :4361A-GTBCXB

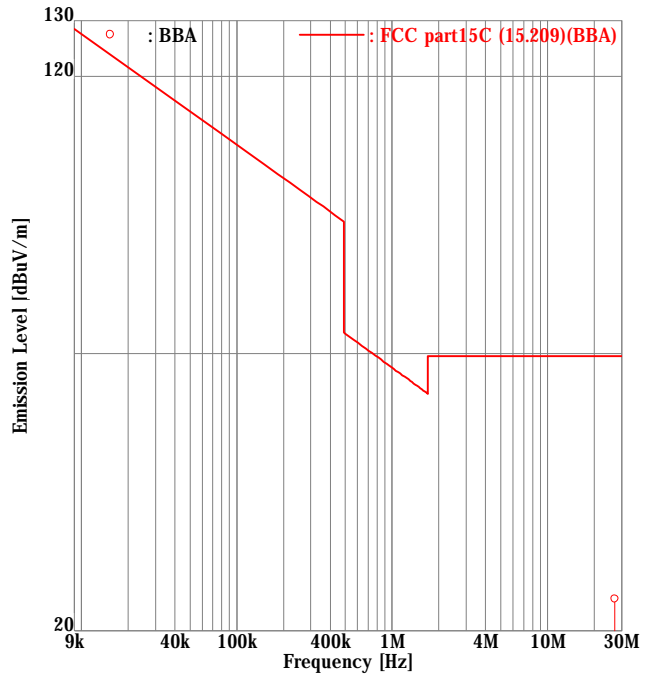
9.1.2.4 Out band  
 0.009 – 30 MHz (X axis)

**Intertek Japan K.K.**

**Nagano No.3 Test Site**

Spurious Emission - Radiated Test

APPLICANT : AIPHONE Co., LTD  
 EUT NAME : Expanded bus control unit  
 MODEL NO. : GT-BCXB-N  
 SERIAL NO. : 0000169R(J725-2819)  
 TEST MODE : Confirmation of NFC reader  
 POWER SOURCE : AC120 V, 60 Hz  
 DATE TESTED : Feb 20 2017  
 FILE NO. : -  
 REGULATION : FCC part15C (15.209)  
 TEST METHOD : ANSI C63.10-2013  
 DISTANCE : 3.00 [m]  
 TEMPERATURE : 18.0 [degC]  
 HUMIDITY : 51.0 [%]  
 NOTE : X



ENGINEER : Yoshihide Mimura

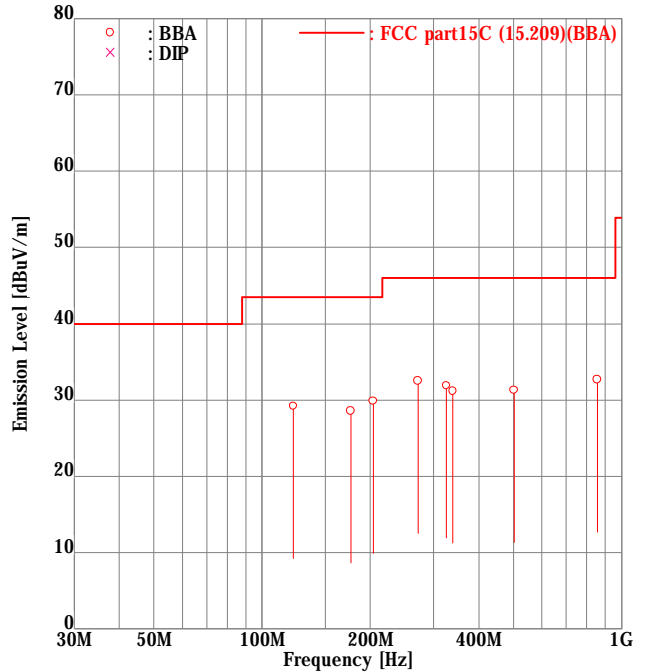
FREQUENCY [No]	FREQUENCY [MHz]	READING [dBuV]	FACTOR [dB]	EMISSION [dBuV/m]	LIMIT [dBuV/m]	MARGIN [dB]
1	27.1200	<u>24.2</u>	1.6	<u>25.8</u>	69.5	<u>43.7</u>

Higher six points are underlined.  
 Other frequencies : Below the FCC part15C (15.209) limit  
 Emission Level = Read + Factor(Antenna,Antenna Pad,Cable,Preamp)

FCC ID :2ALNEGTCBXXBN  
 ISED CN and UPN :4361A-GTBCBXXBN

**30 – 1000 MHz**  
**Intertek Japan K.K.**  
**Nagano No.3 Test Site**  
**Spurious Emissions - Radiated Test**

APPLICANT : AIPHONE Co., LTD  
 EUT NAME : Expanded bus control unit  
 MODEL NO. : GT-BCXB-N  
 SERIAL NO. : 0000169R(J725-2819)  
 TEST MODE : Confirmation of NFC reader  
 POWER SOURCE : AC120 V, 60 Hz  
 DATE TESTED : Feb 27 2017  
 FILE NO. : -  
 REGULATION : FCC part15C (15.209)  
 TEST METHOD : ANSI C63.10-:2013  
 DISTANCE : 3.00 [m]  
 TEMPERATURE : 24.2 [degC]  
 HUMIDITY : 16.0 [%]  
 NOTE : X



ENGINEER : Yoshihide Mimura

FREQUENCY [No]	ANT. [MHz]		READING [dBuV]		FACTOR [dB/m]		EMISSION [dBuV/m]		LIMIT [dBuV/m]		MARGIN [dB]	
			Hori	Vert	Hori	Vert	Hori	Vert	Hori	Vert		
1	122.04	BBA	<u>40.5</u>	40.5	-11.3	-11.3	<u>29.2</u>	29.2	43.5	<u>14.3</u>	14.3	
2	176.28	BBA	40.0	40.8	-12.2	-12.2	27.8	28.6	43.5	15.7	14.9	
3	203.40	BBA	38.1	<u>40.7</u>	-10.8	-10.8	27.3	<u>29.9</u>	43.5	16.2	<u>13.6</u>	
4	271.20	BBA	<u>39.5</u>	-	-7.0	-7.0	<u>32.5</u>	-	46.0	<u>13.5</u>	-	
5	325.44	BBA	<u>37.0</u>	-	-5.1	-5.1	<u>31.9</u>	-	46.0	<u>14.1</u>	-	
6	339.00	BBA	35.9	-	-4.7	-4.7	31.2	-	46.0	14.8	-	
7	501.72	BBA	<u>31.9</u>	-	-0.6	-0.6	<u>31.3</u>	-	46.0	<u>14.7</u>	-	
8	854.28	BBA	<u>25.7</u>	-	7.0	7.0	<u>32.7</u>	-	46.0	<u>13.3</u>	-	

Higher six points are underlined.  
 Other frequencies : Below the FCC part15C (15.209) limit  
 Emission Level = Read + Factor(Antenna, Antenna Pad, Cable, Preamp)  
 ANT. : Used antenna(BBA = Broadband antenna, DIP = Dipole antenna)

FCC ID :2ALNEGTCXB  
 ISED CN and UPN :4361A-GTBCXB

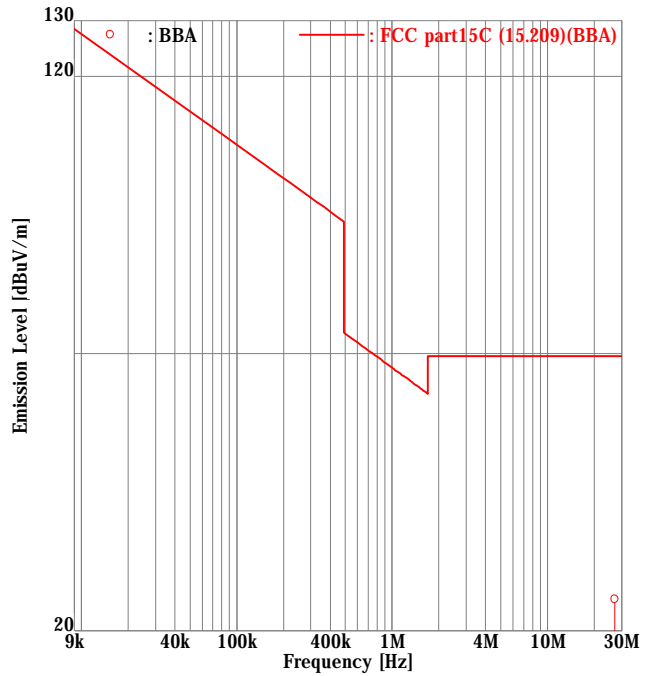
9.1.2.5 Out band  
 0.009 – 30 MHz (Y axis)

**Intertek Japan K.K.**

**Nagano No.3 Test Site**

Spurious Emission - Radiated Test

APPLICANT : AIPHONE Co., LTD  
 EUT NAME : Expanded bus control unit  
 MODEL NO. : GT-BCXB-N  
 SERIAL NO. : 0000169R(J725-2819)  
 TEST MODE : Confirmation of NFC reader  
 POWER SOURCE : AC120 V, 60 Hz  
 DATE TESTED : Feb 20 2017  
 FILE NO. : -  
 REGULATION : FCC part15C (15.209)  
 TEST METHOD : ANSI C63.10-2013  
 DISTANCE : 3.00 [m]  
 TEMPERATURE : 18.0 [degC]  
 HUMIDITY : 51.0 [%]  
 NOTE : Y



ENGINEER : Yoshihide Mimura

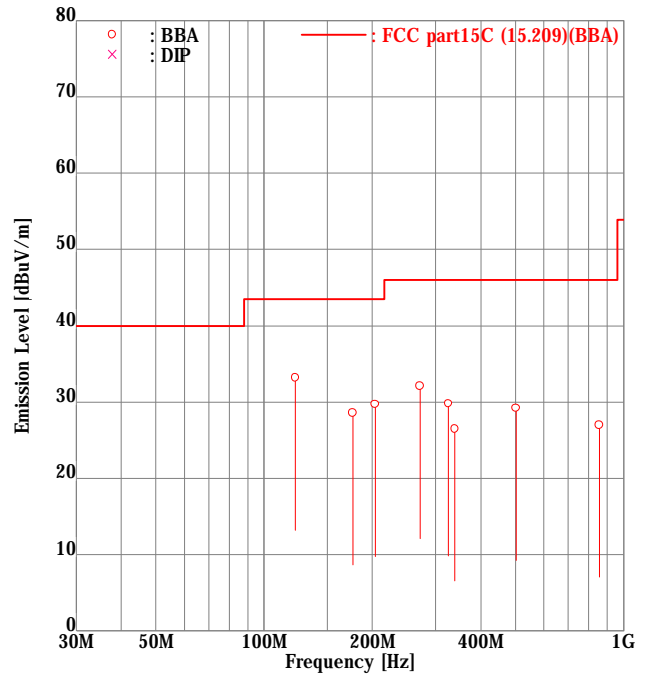
FREQUENCY [No]	FREQUENCY [MHz]	READING [dBuV]	FACTOR [dB]	EMISSION [dBuV/m]	LIMIT [dBuV/m]	MARGIN [dB]
1	27.1200	<u>24.1</u>	1.6	<u>25.7</u>	69.5	<u>43.8</u>

Higher six points are underlined.  
 Other frequencies : Below the FCC part15C (15.209) limit  
 Emission Level = Read + Factor(Antenna,Antenna Pad,Cable,Preamp)

FCC ID :2ALNEGTCXBN  
 ISED CN and UPN :4361A-GTBCXBN

**30 – 1000 MHz**  
**Intertek Japan K.K.**  
**Nagano No.3 Test Site**  
**Spurious Emissions - Radiated Test**

APPLICANT : AIPHONE Co., LTD  
 EUT NAME : Expanded bus control unit  
 MODEL NO. : GT-BCXB-N  
 SERIAL NO. : 0000169R(J725-2819)  
 TEST MODE : Confirmation of NFC reader  
 POWER SOURCE : AC120 V, 60 Hz  
 DATE TESTED : Feb 27 2017  
 FILE NO. : -  
 REGULATION : FCC part15C (15.209)  
 TEST METHOD : ANSI C63.10-:2013  
 DISTANCE : 3.00 [m]  
 TEMPERATURE : 24.2 [degC]  
 HUMIDITY : 16.0 [%]  
 NOTE : Y



ENGINEER : Yoshihide Mimura

FREQUENCY [No]	ANT. [MHz]		READING [dBuV]		FACTOR [dB/m]		EMISSION [dBuV/m]		LIMIT [dBuV/m]		MARGIN [dB]	
			Hori	Vert	Hori	Vert	Hori	Vert	Hori	Vert		
1	122.04	BBA	38.1	<u>44.5</u>	-11.3	-11.3	26.8	<u>33.2</u>	43.5	16.7	<u>10.3</u>	
2	176.28	BBA	38.4	<u>40.8</u>	-12.2	-12.2	26.2	<u>28.6</u>	43.5	17.3	<u>14.9</u>	
3	203.40	BBA	35.8	<u>40.5</u>	-10.8	-10.8	25.0	<u>29.7</u>	43.5	18.5	<u>13.8</u>	
4	271.20	BBA	<u>39.1</u>	-	-7.0	-7.0	<u>32.1</u>	-	46.0	<u>13.9</u>	-	
5	325.44	BBA	<u>34.9</u>	-	-5.1	-5.1	<u>29.8</u>	-	46.0	<u>16.2</u>	-	
6	339.00	BBA	31.2	-	-4.7	-4.7	26.5	-	46.0	19.5	-	
7	501.72	BBA	<u>29.8</u>	-	-0.6	-0.6	<u>29.2</u>	-	46.0	<u>16.8</u>	-	
8	854.28	BBA	20.0	-	7.0	7.0	27.0	-	46.0	19.0	-	

Higher six points are underlined.  
 Other frequencies : Below the FCC part15C (15.209) limit  
 Emission Level = Read + Factor(Antenna, Antenna Pad, Cable, Preamp)  
 ANT. : Used antenna(BBA = Broadband antenna, DIP = Dipole antenna)

FCC ID :2ALNEGTCXB  
 ISED CN and UPN :4361A-GTBCXB

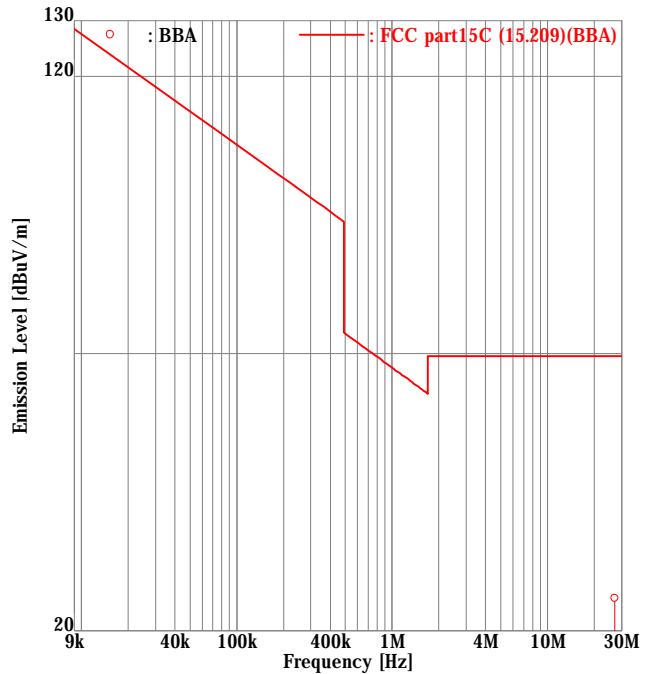
9.1.2.6 Out band  
 0.009 – 30 MHz (Z axis)

**Intertek Japan K.K.**

**Nagano No.3 Test Site**

Spurious Emission - Radiated Test

APPLICANT : AIPHONE Co., LTD  
 EUT NAME : Expanded bus control unit  
 MODEL NO. : GT-BCXB-N  
 SERIAL NO. : 0000169R(J725-2819)  
 TEST MODE : Confirmation of NFC reader  
 POWER SOURCE : AC120 V, 60 Hz  
 DATE TESTED : Feb 20 2017  
 FILE NO. : -  
 REGULATION : FCC part15C (15.209)  
 TEST METHOD : ANSI C63.10-2013  
 DISTANCE : 3.00 [m]  
 TEMPERATURE : 18.0 [degC]  
 HUMIDITY : 51.0 [%]  
 NOTE : Z



ENGINEER : Yoshihide Mimura

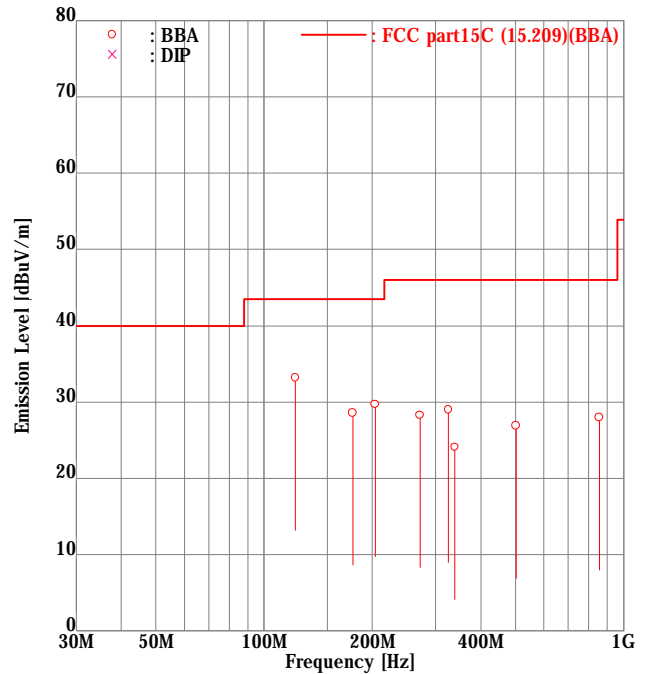
FREQUENCY [No]	FREQUENCY [MHz]	READING [dBuV]	FACTOR [dB]	EMISSION [dBuV/m]	LIMIT [dBuV/m]	MARGIN [dB]
1	27.1200	<u>24.3</u>	1.6	<u>25.9</u>	69.5	<u>43.6</u>

Higher six points are underlined.  
 Other frequencies : Below the FCC part15C (15.209) limit  
 Emission Level = Read + Factor(Antenna,Antenna Pad,Cable,Preamp)

FCC ID :2ALNEGTCBXXBN  
 ISED CN and UPN :4361A-GTBCBXXBN

**30 – 1000 MHz**  
**Intertek Japan K.K.**  
**Nagano No.3 Test Site**  
**Spurious Emissions - Radiated Test**

APPLICANT : AIPHONE Co., LTD  
 EUT NAME : Expanded bus control unit  
 MODEL NO. : GT-BCXB-N  
 SERIAL NO. : 0000169R(J725-2819)  
 TEST MODE : Confirmation of NFC reader  
 POWER SOURCE : AC120 V, 60 Hz  
 DATE TESTED : Feb 27 2017  
 FILE NO. : -  
 REGULATION : FCC part15C (15.209)  
 TEST METHOD : ANSI C63.10-:2013  
 DISTANCE : 3.00 [m]  
 TEMPERATURE : 24.2 [degC]  
 HUMIDITY : 16.0 [%]  
 NOTE : Z



ENGINEER : Yoshihide Mimura

FREQUENCY [No]	ANT. [MHz]		READING [dBuV]		FACTOR [dB/m]		EMISSION [dBuV/m]		LIMIT [dBuV/m]		MARGIN [dB]	
			Hori	Vert	Hori	Vert	Hori	Vert	Hori	Vert		
1	122.04	BBA	35.9	<u>44.5</u>	-11.3	-11.3	24.6	<u>33.2</u>	43.5	18.9	<u>10.3</u>	
2	176.28	BBA	37.0	<u>40.8</u>	-12.2	-12.2	24.8	<u>28.6</u>	43.5	18.7	<u>14.9</u>	
3	203.40	BBA	35.5	<u>40.5</u>	-10.8	-10.8	24.7	<u>29.7</u>	43.5	18.8	<u>13.8</u>	
4	271.20	BBA	<u>35.3</u>	-	-7.0	-7.0	<u>28.3</u>	-	46.0	17.7	-	
5	325.44	BBA	<u>34.1</u>	-	-5.1	-5.1	<u>29.0</u>	-	46.0	17.0	-	
6	339.00	BBA	28.8	-	-4.7	-4.7	24.1	-	46.0	21.9	-	
7	501.72	BBA	27.5	-	-0.6	-0.6	26.9	-	46.0	19.1	-	
8	854.28	BBA	<u>21.0</u>	-	7.0	7.0	<u>28.0</u>	-	46.0	18.0	-	

Higher six points are underlined.  
 Other frequencies : Below the FCC part15C (15.209) limit  
 Emission Level = Read + Factor(Antenna, Antenna Pad, Cable, Preamp)  
 ANT. : Used antenna(BBA = Broadband antenna, DIP = Dipole antenna)

FCC ID :2ALNEGTCXBN  
 ISED CN and UPN :4361A-GTBCXBN

**9.2 Frequency Tolerance (Temperature Variation and Voltage Variation)**

<b>Location</b>	Kashima No.1
<b>Test date</b>	March 9, 2017
<b>Test Engineer</b>	Yoshihide Mimura
<b>Test Procedure</b>	LEN-RJP-TE003

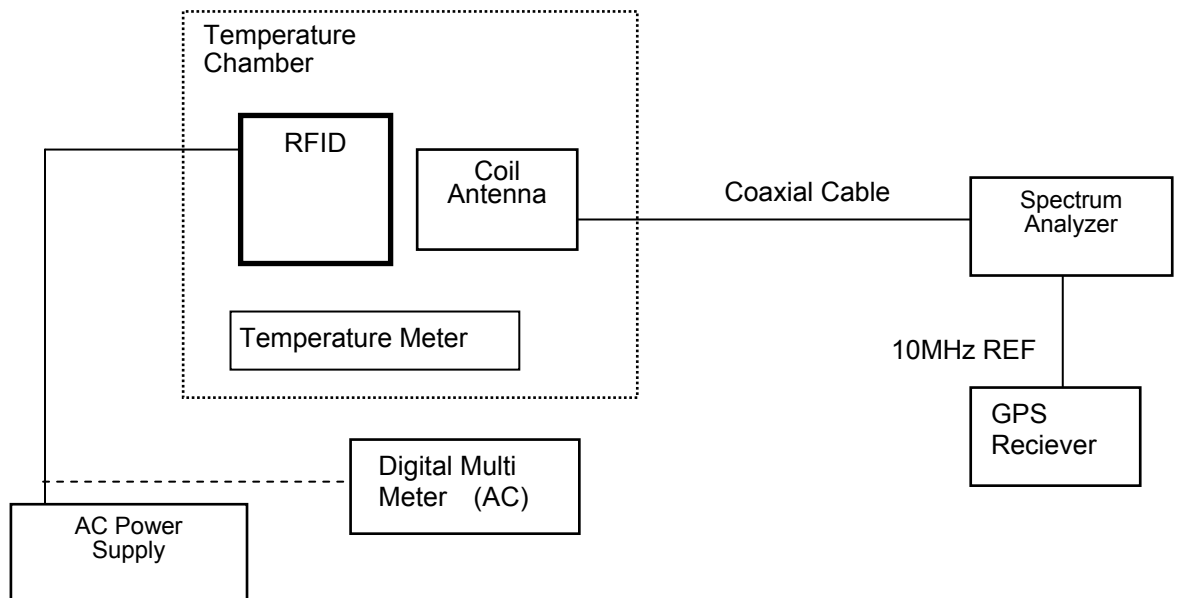
**Test Procedure**

**Frequency Tolerance (Temperature Variation)**

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.
5. Measure the output frequency. (Startup, 2min, 5min and 10min)
6. Set the temperature -20 degrees C to +50 degrees C.
7. Repeat test procedure 4 to 6

**Frequency Tolerance (Voltage Variation)**

1. The EUT and test equipment (Set the Supply Voltage 100%) were set up as shown on the following page.
2. Set the temperature +20 degrees C.
3. Leave the EUT for 1 hour after it became the temperature that was set up.
4. Make the EUT the transmitting.
5. Measure the output frequency.
6. Set the Supply Voltage 85% and 115%.
7. Repeat test procedure 4 to 6



FCC ID :2ALNEGTCXBN  
 ISED CN and UPN :4361A-GTBCXBN

## Result of Frequency Tolerance (Temperature Variation and Voltage Variation)

### 9.2.1 Temperature Variation

Reference Frequency: 13.560000 MHz (FCC Stability) /13.560117 MHz (RSS Stability)

MHz	Temperature (Degree C)	Voltage (%)	Frequency (MHz)	Deviation (ppm)		Limit (+/-) (ppm)
				FCC	RSS	
13.56	-30	100	13.560118	8.70	0.07	100.0
	-20	100	13.560118	8.70	0.07	100.0
	-10	100	13.560120	8.85	0.22	100.0
	0	100	13.560120	8.85	0.22	100.0
	10	100	13.560118	8.70	0.07	100.0
	20	100	13.560117	8.63	0.00	100.0
	30	100	13.560110	8.11	-0.52	100.0
	40	100	13.560090	6.64	-1.99	100.0
50	100	13.560089	6.56	-2.06	100.0	

### 9.2.2 Voltage Variation

Reference Frequency: 13.560000 MHz (FCC Stability) /13.560117 MHz (RSS Stability)

MHz	Temperature (Degree C)	Voltage (%)	Frequency (MHz)	Deviation (ppm)		Supply Voltage		Limit (+/-) (ppm)
				FCC	RSS			
13.56	20	85	13.560116	8.55	-0.07	102 V	60 Hz	100.0
		100	13.560117	8.63	0.00	120 V	60 Hz	100.0
		115	13.560117	8.63	0.00	138 V	60 Hz	100.0



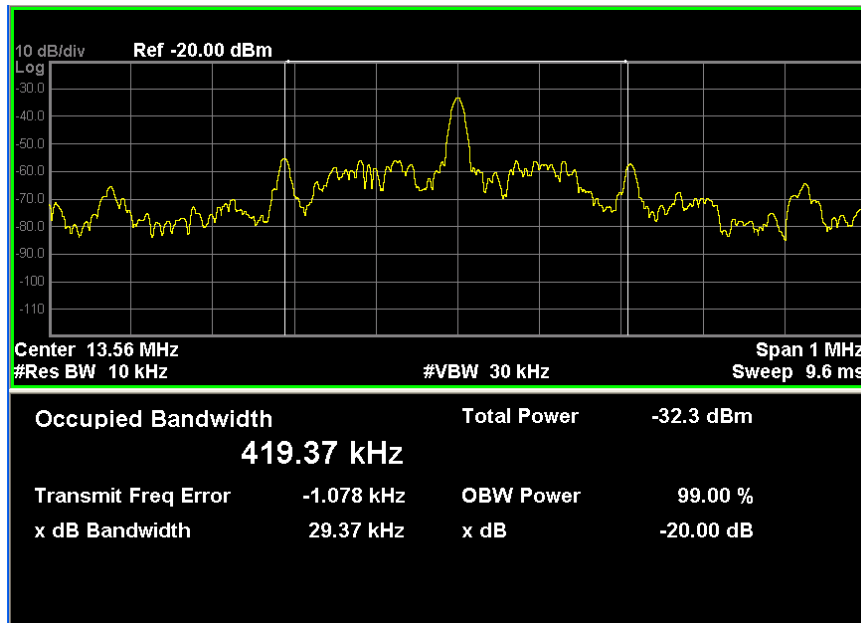
FCC ID :2ALNEGTCXBN  
 ISED CN and UPN :4361A-GTBCXBN

**9.3 20dB OBW , 99% OBW**

<b>Location</b>	Nagano No.3 Test Site
<b>Test date</b>	March 17, 2016
<b>Test Engineer</b>	Yoshihide Mimura
<b>Test Procedure</b>	LEN-RJP-TE003

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 Occupied Bandwidth.



FCC ID :2ALNEGTCXBN  
ISED CN and UPN :4361A-GTBCXBN**SECTION 10. LIST OF MEASURING INSTRUMENTS**

Test instruments are calibrated according to Quality Manual and Calibration Rules of Intertek Japan K.K.

All measurements equipment used for the measurement is calibrated based on standard.

Each measurement result is traceable to national or international standards.

Antenna used for the measurement is calibrated based on the ANSI C63.5.

Instrument	Model No.	Serial No.	Manufacturer	Cal. Interval	Effective period
<b>Conducted disturbance at mains terminals</b>					
LISN (EUT)	ESH2-Z5	892377/022	ROHDE & SCHWARZ	1 Y	May 31, 17
10 dB Attenuator	CFA-01	CEC052	TAMAGAWA		
Coaxial cable	5D-2W(5.5 m)	N3C-1	Intertek	1 Y	Jan. 31, 18
Coaxial cable	5D-2W(1.6 m)	N3C-2	Intertek		
Coaxial cable	5D-2W(0.7 m)	N3C-3	Intertek		
Coaxial cable	5D-2W(1.6 m)	N3C-4	Intertek		
RF Switch	ACX-150-1	CE3010	Intertek		
Test receiver	ESS (Firmware Version 1.21)	842886/011	ROHDE & SCHWARZ	1 Y	Feb. 28, 18
<b>Radiated disturbance (30 MHz-1000 MHz)</b>					
Loop Antenna	HFH2-Z2	892665/009	ROHDE & SCHWARZ	1 Y	Oct. 31, 18
Coaxial cable	3D-2V(15m)	CL1	Intertek	1 Y	Sep. 30, 17
Broad Band antenna	LPB-2513/A	1092	A.R.A.	1 Y	Jun. 30, 17
6 dB Attenuator	8491A	36306	HEWLETT PACKARD	1 Y	Jan. 31, 18
Step Attenuator	8494B	2812A15596	HEWLETT PACKARD		
Amplifier	8447D	2727A05731	HEWLETT PACKARD		
Coaxial cable	5D-SFA(9.8 m)	N3R-1	Intertek		
Coaxial cable	12D-SFA(8.0 m)	N3R-2	Intertek		
Coaxial cable	5D-2W(1.6 m)	N3R-3	Intertek		
Coaxial cable	5D-2W(0.4 m)	N3R-4	Intertek		
Coaxial cable	5D-2W(0.4 m)	N3R-5	Intertek		
Coaxial cable	5D-2W(0.7 m)	N3R-6	Intertek		
Coaxial cable	5D-2W(1.6 m)	N3R-7	Intertek		
RF Switch	ACX-150-1	CE3010	Intertek		
Test receiver	ESS (Firmware Version 1.21)	842886/011	ROHDE & SCHWARZ	1 Y	Feb. 28, 18
Site Attenuation	-	-	-	1 Y	Apr. 30, 17

FCC ID :2ALNEGTCXBN  
ISED CN and UPN :4361A-GTBCXBN

Instrument	Model No.	Serial No.	Manufacturer	Cal. Interval	Effective period
<b>Frequency Tolerance and OBW</b>					
Spectrum Analyzer	N9030A	US51350220	Agilent	1 Y	Feb. 28, 18
Spectrum Analyzer	E7401	US39440254	Agilent	1 Y	Nov. 30, 17
Digital Multi Meter	34401A	US36043517	Hewlett Packard	1 Y	Jan. 31, 18
Temperature Chamber	PL-3F	5103661	Tabai	-	None
Temperature Meter	PC-5000TRH-II	A11999972	Sato	1 Y	Feb. 28, 18
Coil antenna	None	None	Intertek Japan	-	None
GPS Receiver	HP Z3801A	3542A02414	Hewlett Packard	-	None
Coaxial Cable	3D-2V	KSR00100	Daiyu Densen	1 Y	Jan. 31, 18

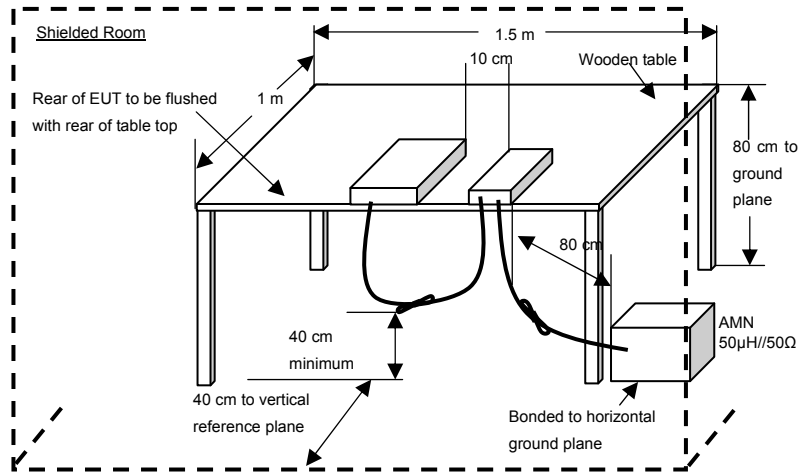
# ANNEX

**A. TEST PROCEDURE(S)**

Test was carried out under the following conditions.

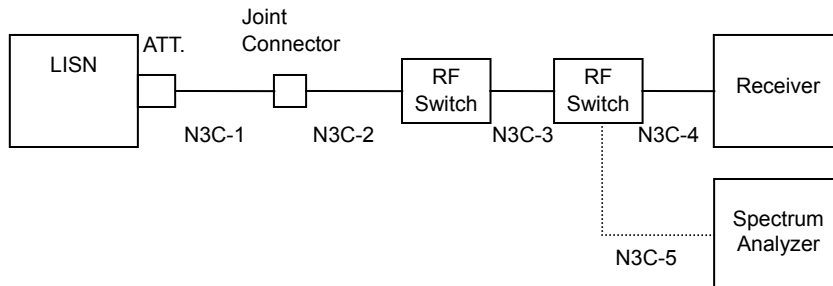
**Conducted disturbance at mains terminals**

Test setup as per standard



\* Reference Ground plane : greater than 2 x 2m

Diagram of the measuring instruments



Setting for the instruments

Frequency [MHz]	Instrument	Detector Function	Resolution Bandwidth	Video Bandwidth
0.15 – 30	Receiver	Quasi Peak	10 kHz	N/A
		Average	10 kHz	N/A

[ Preliminary Measurement ]

EUT is tested on all operating conditions.

The spectrum analyzer is controlled by the computer program to sweep the frequency range to be measured, then spectrum chart is plotted out to find the worst emission conditions in operating mode and/or configuration decision for the final test.

All leads other than safety ground are tested.

[ Final Measurement ]

The EUT is operated in the worst emission condition found by the preliminary test.

The equipment and cables are arranged or manipulated within the range of the test standard in the above condition.

At least six highest spectrum are measured in quasi-peak and average (if necessary) using the test receiver.

**Radiated disturbance**  
Test setup as per standard

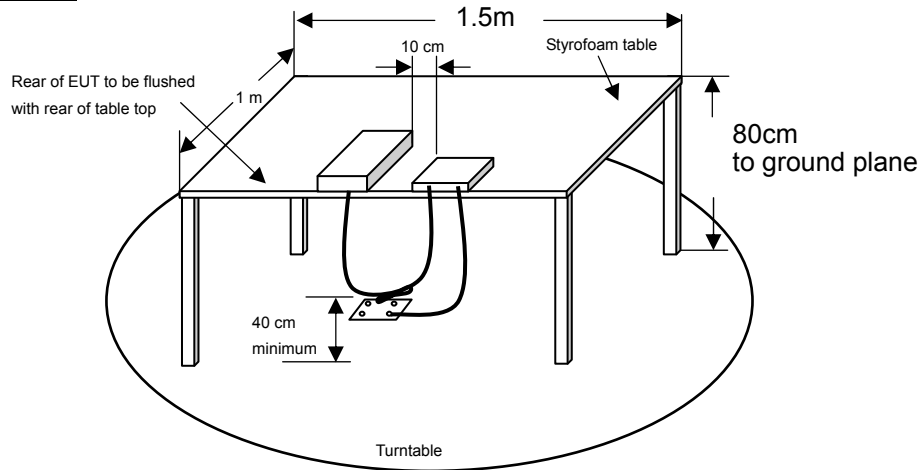
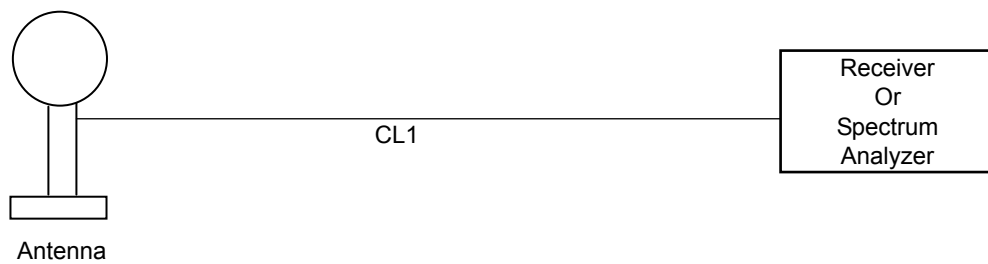
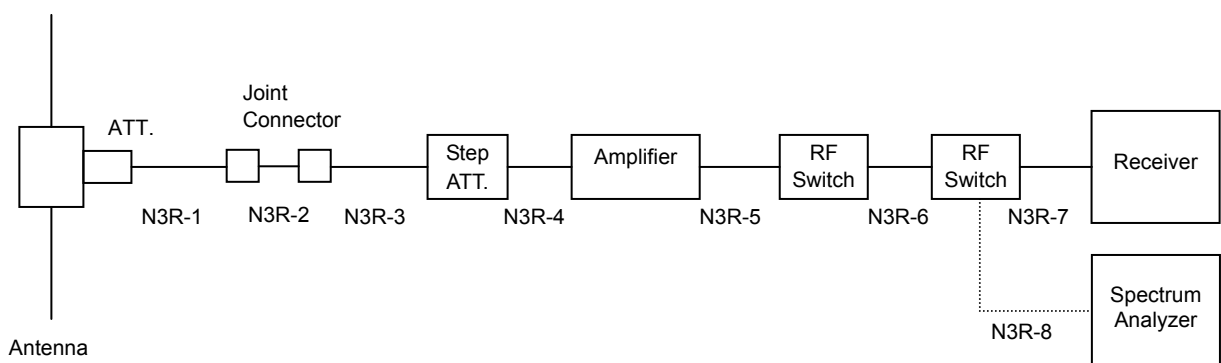


Diagram of the measuring instruments

0.009 – 30MHz



30 – 1000 MHz



Test was carried out under the following conditions.