TEST REPORT

STANDARD : FCC Part15C
RSS-210 Issue 9

Applicant	Testing Laboratory
NBS Card Corporation GRAPHTEC Bldg., 503-10 Shinano-cho, Totsuka-ku, Yokohama Kanagawa 244-0801, Japan +81-45-825-6331	Intertek Japan K.K. Matsuda Laboratory (Open area test site) 1283 Yadoriki, Matsuda-machi, Ashigarakami-gun, Kanagawa-ken, 258-0001 Japan Tel.: +81 465 89 2316 Fax.: +81 465 89 2160 Intertek Japan K.K. Kashima Laboratory (Anechoic chamber) 298-6 Sada, Kashima-shi, Ibaraki-ken 314-0255 Japan Tel.: +81 479 40 1097 URL: http://www.japan.intertek-etlsemko.com

Equipment Type	Card Embosser & Printer
Trademark	NBS
Model(s)	Advantage M8
Serial No.	M8-00003
Equipment Authorization	Certification
FCC ID	2AP2D-ADVANTAGEM8
ISED CN and UPN	23948-ADVANTAGEM8
Test Result	Complied
Report Number	18040325JMA-001
Original Issue Date	June 15, 2018
Revised Issue Date	July 5, 2018

Approved by

Hideaki Kosemura
[Technical Manager]

VLAC-008-3

Tested by

Naohei Murakami
[Engineer]

Yoshiaki Yoneyama
[Engineer]

Responsible Party of Test Item (Product)

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

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SECTION 1. GENERAL INFORMATION

Test Performed

EUT Received	May 17, 2018
Date of Test	From May 21, 2018 to June 6, 2018
Standard Applied	FCC Part15C RSS-210 Issue 9
Test methods	ANSI C63.10-2013
Deviation from Standard(s)	None

Qualifications of Testing Laboratory

Accreditation	**Scope**	**Lab. Code**	**Remarks**
VLAC	EMC Testing	VLAC-008-3	JAPAN
BSMI	EMC Testing	SL2-IN-E-6009	TAIWAN
Filing			
VCCI	EMC Testing	A-0127	JAPAN
FCC	EMC Testing	Designation Number : JP0009	USA
CB-Scheme	EMC Testing	TL223	IECEE
SAUDI ARABIA	EMC Testing	N/A	

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

Revised Date	**Section**	**Description of Changes**
July 5, 2018	Section 3.5	Added baud rate information.
	Section 9.3	Changed capture data of OBW.
	Annex	Added diagrams of the measuring instruments.

SECTION 2. SUMMARY OF TEST RESULTS

See Section9 for the detailed result.

Emission Tests

Standard Applied	FCC Part15C (15.207, 15.225, 15.209) RSS-210 Issue 9 (B.6)	
Test Item	**Minimum margin**	**Remarks**
Conducted disturbance at mains terminals	24.1 dB (25.4337 MHz) [Q-P]	
Radiated disturbance (IN band)	55.0 dB (13.7200 MHz)	
Radiated disturbance (OUT band)	14.6 dB (40.68 MHz)	

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

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

Note : None Limit (for reporting purposes only)

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
A	Card Embosser & Printer	Advantage M8	M8-00003	NBS Card Corporation	-
Rated Power : AC100 -120 V, 50/60 Hz, 4.5 A					
Supplied Power : AC120 V, 60 Hz					
Condition of Equipment	Pre-Production				
Type	Floor standing				
Suppression Devices	No Modifications by the laboratory were made to the device				

3.2 Overview of EUT

Frequency Ranges	13.56 MHz
Modulation Method	Transmitting – Amplitude Shift Keying

3.3 Port(s)/Connector(s)

Port Name	Connector Type	Connector Pin	Remarks
LAN	RJ45	8 pin	-
USB	USB type B	4 pin	-

3.4 Highest Frequency Generated / Used

Operating Frequency	Operating mode	Remarks
192 MHz	RF mode	CPU

3.5 RFID module specification

Operating Frequency	13.56 MHz
Type of Modulation	ASK
Mode of Operation	Simplex
Transmit Power	0.04 mW
Antenna Type	Loop antenna (PCB pattern)
Modulation Technology	ASK100%
Communication method	ISO/IEC 14443
Baud rate	106 kBd (fixed)

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	Note PC	Dynabook satellite B453/L	4E080987H	Toshiba	DoC
C	AC adapter for Note PC	PA3917U-1ACA	G71C000DP410	Toshiba	N/A
Supplied Power:					
C	AC120 V, 60 Hz				

SECTION 5. USED CABLE(S)

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

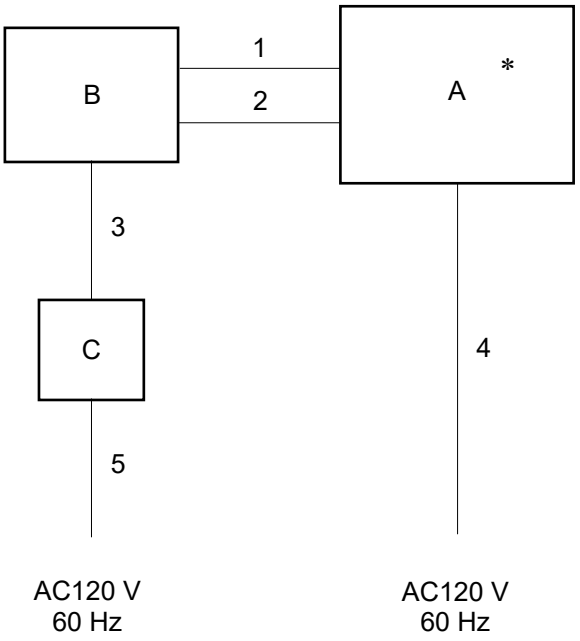
No.	Name	Length (m)	Shield	Metal Connector	Ferrite Core
1	LAN cable	5.00	No	No	-
2	USB cable	3.00	Yes	Yes	-
3	Power cable for Note PC (DC)	1.70	No	No	-
4	Power cable for EUT (AC: 3 cores)	3.00	No	No	-
5	Power cable for Note PC (AC: 2 cores)	0.80	No	No	-

Note : 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



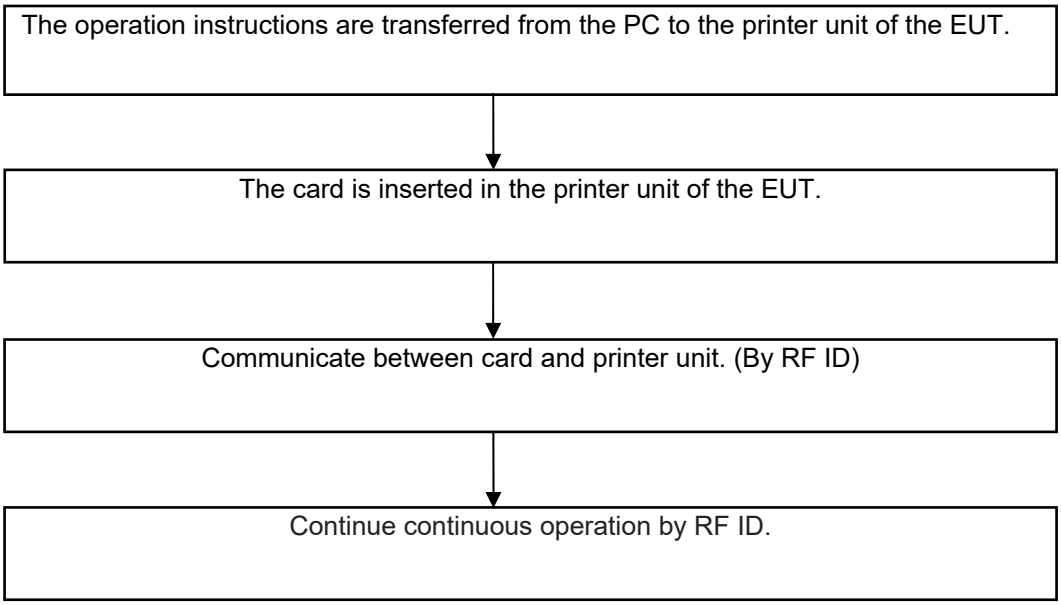
The symbols and numbers assigned to the equipments and cables on this diagram correspond to the ones in Sections 3 to 5.

SECTION 7. OPERATING CONDITION

The test was carried out under the following mode.

7.1 RF mode

Cycle time for operation: Continuity



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

Radiated disturbance at 3m	**U_{lab} [*k* = 2]**	**U_{cispr}**
30 MHz – 1000 MHz	+/- 5.08 dB	6.3 dB
Above 1 GHz	+/- 4.82 dB	5.2 dB
Radiated Magnetic disturbance at 3m		
9 kHz – 30 MHz	+/- 1.63 dB	Nil
AC Conducted Emissions		
150 kHz – 30 MHz	+/- 1.56 dB	3.4 dB

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

SECTION 9. EVALUATION OF TEST RESULTS

9.1 Emission tests

9.1.1 Conducted disturbance at mains terminals

Location	Matsuda No.3 Test Site
Test Engineer	Yoshiaki Yoneyama

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	9 kHz	N/A
	Average	9 kHz	N/A

< Measurement data correction >

Emission Level = Meter Reading + Factor

Margin = Limit- Emission Level

Factor = LISN Factor + Cable Loss + Attenuator

< Sample Calculations >

Sample @0.1500 MHz (RF mode)

Emission Level = 19.6 [dBuV] + 10.1 [dB] = 29.7 [dBuV]

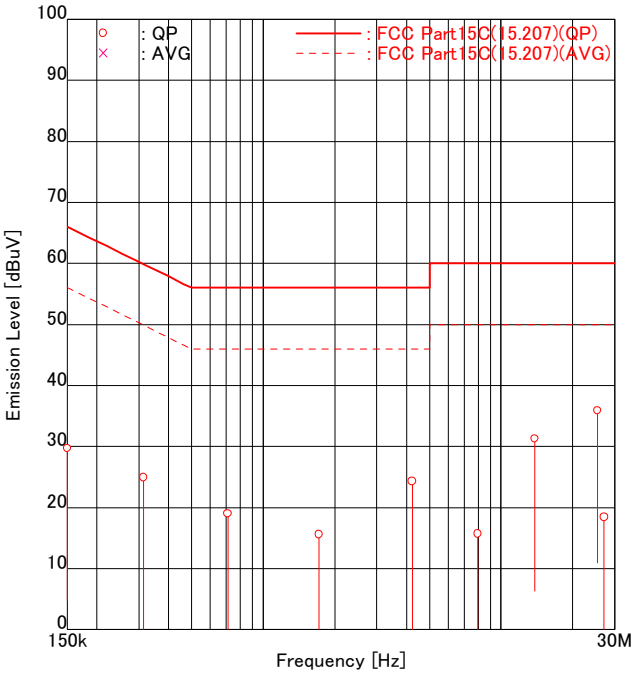
Result of Conducted disturbance at mains terminals

Intertek Japan K.K.

Matsuda No.3 Test Site

Conducted Voltages on Mains Port

APPLICANT	: NBS Card Corporation
EUT NAME	: Card Embosser & Printer
MODEL NO.	: Advantage M8
SERIAL NO.	: M8-00003
TEST MODE	: RF Mode
POWER SOURCE	: AC120 V/ 60 Hz
DATE TESTED	: May 23 2018
FILE NO.	: -
REGULATION	: FCC Part15C(15.207)
TEST METHOD	: ANSI C63.10:2013
TEMPERATURE	: 21.0 [degC]
HUMIDITY	: 62.0 [%]
NOTE	: -



ENGINEER : Yoshiaki Yoneyama

[No]	FREQUENCY [MHz]	MODE	READING [dBuV] Line1	READING [dBuV] Line2	FACTOR [dB] Line1	FACTOR [dB] Line2	EMISSION [dBuV] Line1	EMISSION [dBuV] Line2	LIMIT [dBuV]	MARGIN [dB] Line1	MARGIN [dB] Line2
1	0.1500	QP	19.6	19.4	10.1	10.1	29.7	29.5	66.0	36.3	36.5
2	0.3140	QP	14.8	14.6	10.1	10.1	24.9	24.7	59.9	35.0	35.2
3	0.7100	QP	8.8	8.6	10.2	10.3	19.0	18.9	56.0	37.0	37.1
4	1.7116	QP	5.2	4.9	10.4	10.4	15.6	15.3	56.0	40.4	40.7
5	4.2300	QP	12.6	13.7	10.6	10.6	23.2	24.3	56.0	32.8	31.7
6	7.9774	QP	4.8	3.7	10.9	10.9	15.7	14.6	60.0	44.3	45.4
7	13.8372	QP	20.2	19.8	11.1	11.3	31.3	31.1	60.0	28.7	28.9
8	25.4337	QP	24.5	21.8	11.4	11.7	35.9	33.5	60.0	24.1	26.5
9	27.1200	QP	7.1	4.2	11.3	11.7	18.4	15.9	60.0	41.6	44.1

Other frequencies : Below the FCC Part15C(15.207) limit
Emission Level = Read + Factor(LISN,Pad,Cable)

emiT 3, 0, 0, 0

9.1.2 Radiated disturbance (IN band and OUT band)

Location	Matsuda No.3 Test Site
Test Engineer	Yoshiaki Yoneyama

Frequency Range of Measurements

Operating mode	Required Frequency Range	Measured Frequency Range
RF mode	0.009 – 2000 MHz	0.009 – 2000 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	Quasi Peak	200 Hz : 0.009 - 0.15 MHz 9 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 (Measurement distance / Standard distance)

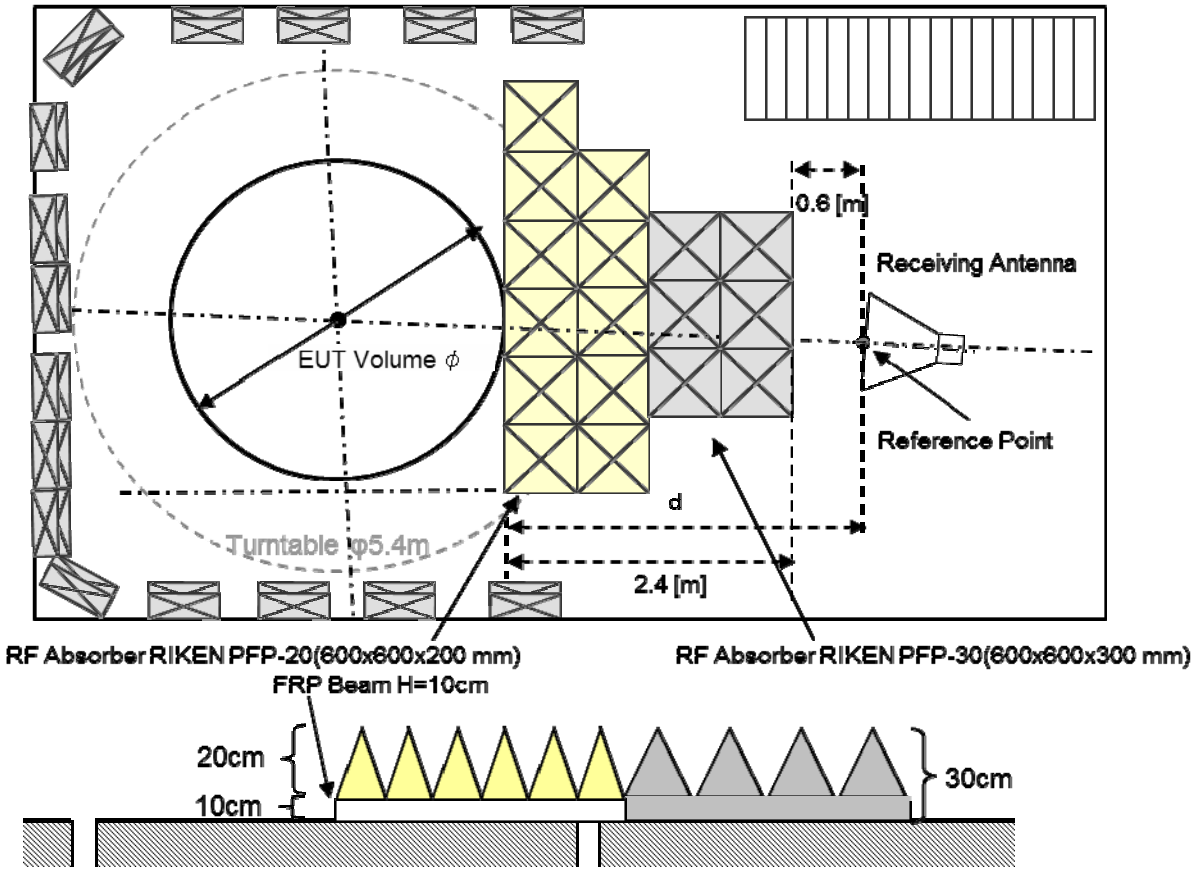
< Sample Calculations >

Sample @13.4000 MHz (RF mode)

Emission Level = 4.8 [dBuV] 20.6 [dB/m] = 25.4 [dBuV/m]

Operating Condition	Frequency Range	Measurement distance
RF mode	0.009 -1000 MHz	3 m
	Above 1 GHz	3.9 m

Absorber placement and Receive Antenna location in Radiated disturbance above 1 GHz



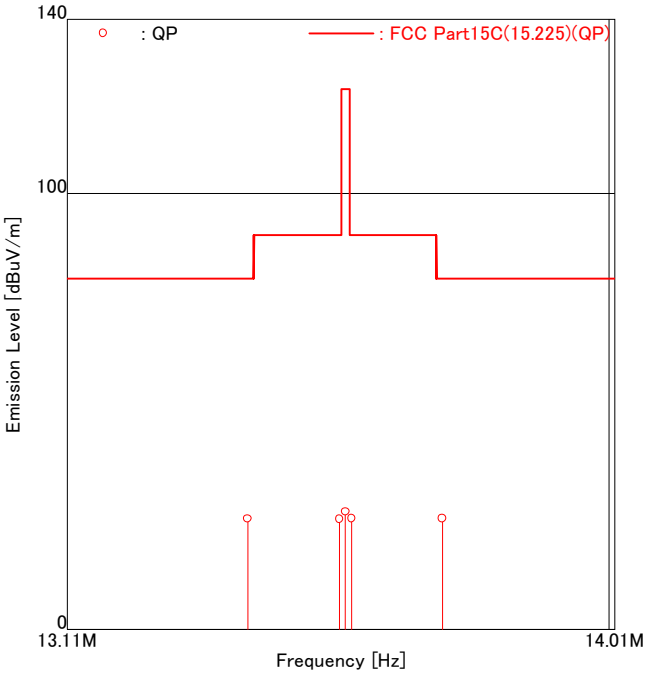
Result of Radiated disturbances
9.1.2.1 IN band

Intertek Japan K.K.

Matsuda No.3 Test Site

INTERFERENCE MAGNETIC FIELD

APPLICANT	: NBS Card Corporation
EUT NAME	: Card Embosser & Printer
MODEL NO.	: Advantage M8
SERIAL NO.	: M8-00003
TEST MODE	: RF Mode
POWER SOURCE	: AC120 V, 60Hz
DATE TESTED	: May 22 2018
FILE NO.	: -
REGULATION	: FCC Part15C(15.225)
TEST METHOD	: ANSI C63.10:2013
DISTANCE	: 3.00 [m]
TEMPERATURE	: 24.0 [degC]
HUMIDITY	: 48.0 [%]
NOTE	: -



ENGINEER : Yoshiaki Yoneyama

[No]	FREQUENCY [MHz]	READING [dBuV] Hori	Vert	FACTOR [dB] Hori	Vert	EMISSION [dBuV/m] Hori	Vert	LIMIT [dBuV/m]	MARGIN [dB] Hori	Vert
1	13.4000	4.8	4.6	20.6	20.6	25.4	25.2	80.5	55.1	55.3
2	13.5500	4.7	4.7	20.6	20.6	25.3	25.3	90.5	65.2	65.2
3	13.5600	6.4	6.1	20.6	20.6	27.0	26.7	124.0	97.0	97.3
4	13.5700	4.9	4.7	20.6	20.6	25.5	25.3	90.5	65.0	65.2
5	13.7200	4.8	4.9	20.6	20.6	25.4	25.5	80.5	55.1	55.0

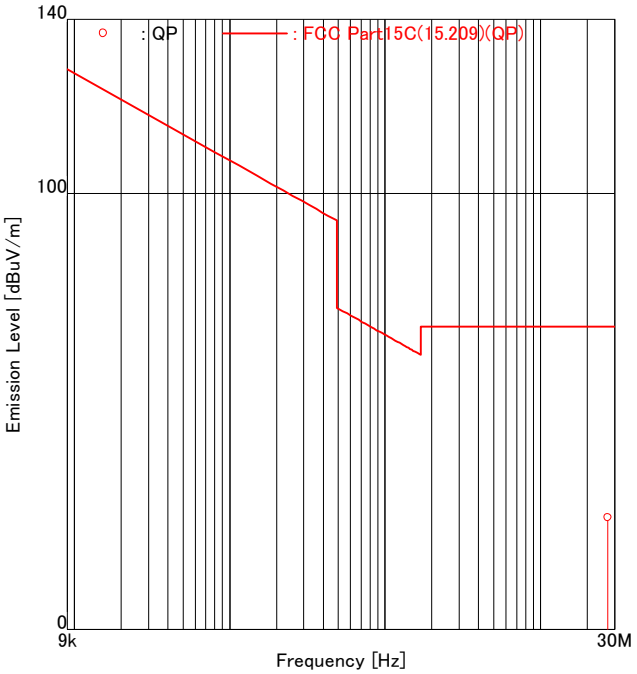
Other frequencies : Below the FCC Part15C(15.225) limit
Emisson Level = Read + Factor(Antenna,Cable)

emiT 3, 0, 0, 0

9.1.2.2 Out band
0.009 – 30 MHz

Intertek Japan K.K.
Matsuda No.3 Test Site
INTERFERENCE MAGNETIC FIELD

APPLICANT	: NBS Card Corporation
EUT NAME	: Card Embosser & Printer
MODEL NO.	: Advantage M8
SERIAL NO.	: M8-00003
TEST MODE	: RF Mode
POWER SOURCE	: AC120 V, 60Hz
DATE TESTED	: May 22 2018
FILE NO.	: -
REGULATION	: FCC Part15C(15.209)
TEST METHOD	: ANSI C63.10:2013
DISTANCE	: 3.00 [m]
TEMPERATURE	: 24.0 [degC]
HUMIDITY	: 48.0 [%]
NOTE	: -



ENGINEER : Yoshiaki Yoneyama

[No]	FREQUENCY [MHz]	READING [dBuV] Hori	Vert	FACTOR [dB] Hori	Vert	EMISSION [dBuV/m] Hori	Vert	LIMIT [dBuV/m]	MARGIN [dB] Hori	Vert
1	27.1200	4.0	3.9	21.7	21.7	25.7	25.6	69.5	43.8	43.9

Other frequencies : Below the FCC Part15C(15.209) limit
Emisson Level = Read + Factor(Antenna,Cable)

emiT 3, 0, 0, 0

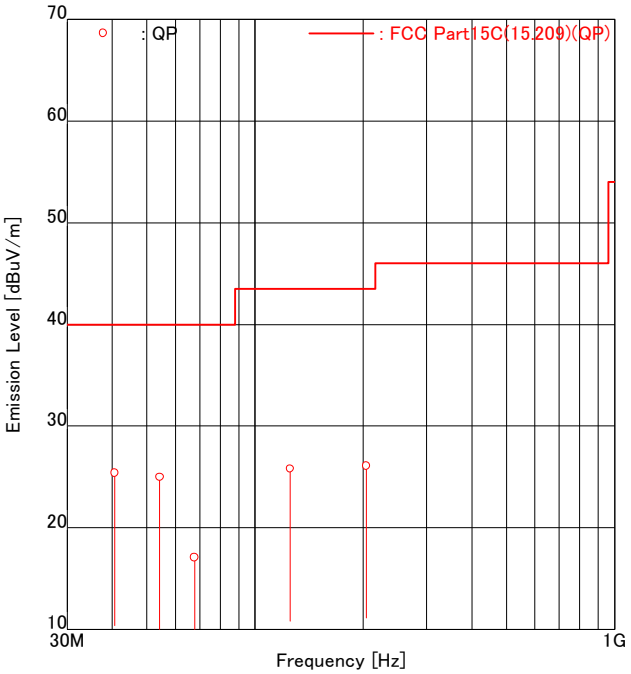
30 – 1000 MHz

Intertek Japan K.K.

Matsuda No.3 Test Site

Radiated Electric Field

APPLICANT	: NBS Card Corporation
EUT NAME	: Card Embosser & Printer
MODEL NO.	: Advantage M8
SERIAL NO.	: M8-00003
TEST MODE	: RF Mode
POWER SOURCE	: AC120 V, 60Hz
DATE TESTED	: May 21 2018
FILE NO.	: -
REGULATION	: FCC Part15C(15.209)
TEST METHOD	: ANSI C63.10:2013
DISTANCE	: 3.00 [m]
TEMPERATURE	: 19.5 [degC]
HUMIDITY	: 52.0 [%]
NOTE	: -



ENGINEER : Yoshiaki Yoneyama

[No]	FREQUENCY [MHz]	READING [dBuV] Hori	Vert	FACTOR [dB/m] Hori	Vert	EMISSION [dBuV/m] Hori	Vert	LIMIT [dBuV/m]	MARGIN [dB] Hori	Vert
1	40.68	-	32.3	-6.9	-6.9	-	25.4	40.0	-	14.6
2	54.24	-	31.5	-6.5	-6.5	-	25.0	40.0	-	15.0
3	67.80	-	25.0	-7.9	-7.9	-	17.1	40.0	-	22.9
4	125.00	-	32.2	-6.4	-6.4	-	25.8	43.5	-	17.7
5	204.02	33.0	-	-6.9	-6.9	26.1	-	43.5	17.4	-

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)

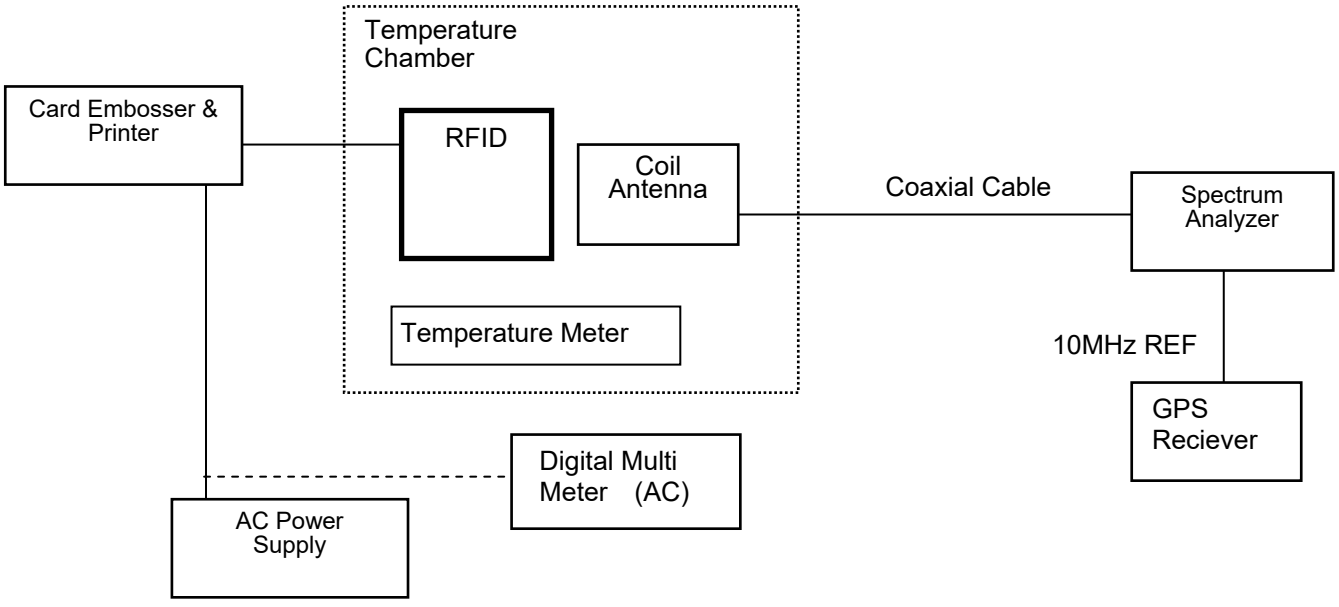
emiT 3, 0, 0, 0

9.2 Frequency Tolerance (Temperature Variation and Voltage Variation)

Location	Kashima No.12 Test Site
Test date	June 5, 2018
Test Engineer	Naohei Murakami
Test Procedure	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



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

Reference Frequency: 13.560000 MHz (FCC Stability) / 13.559148 MHz (RSS Stability)

Temperature	Voltage	Frequency (MHz)				Deviation (ppm)								Limit (+/−)
						StartUP		2min		5min		10min		
(Degree C)	(%)	StartUP	2min	5min	10min	FCC	RSS	FCC	RSS	FCC	RSS	FCC	RSS	(ppm)
-30	100	13.559104	13.559106	13.559111	13.559111	-66.04	-3.21	-65.93	-3.10	-65.56	-2.73	-65.56	-2.73	100.0
-20	100	13.559146	13.559153	13.559158	13.559162	-62.98	-0.15	-62.46	0.37	-62.09	0.74	-61.80	1.03	100.0
-10	100	13.559183	13.559185	13.559186	13.559186	-60.25	2.58	-60.10	2.73	-60.03	2.80	-60.03	2.80	100.0
0	100	13.559188	13.559187	13.559186	13.559185	-59.88	2.95	-59.96	2.88	-60.03	2.80	-60.10	2.73	100.0
10	100	13.559173	13.559171	13.559168	13.559167	-60.99	1.84	-61.14	1.70	-61.36	1.48	-61.43	1.40	100.0
20	100	13.559148	13.559148	13.559150	13.559154	-62.83	0.00	-62.83	0.00	-62.68	0.15	-62.39	0.44	100.0
30	100	13.559162	13.559159	13.559156	13.559154	-61.80	1.03	-62.02	0.81	-62.24	0.59	-62.39	0.44	100.0
40	100	13.559130	13.559128	13.559127	13.559127	-64.16	-1.33	-64.31	-1.48	-64.38	-1.55	-64.38	-1.55	100.0
50	100	13.559116	13.559116	13.559116	13.559116	-65.19	-2.36	-65.19	-2.36	-65.19	-2.36	-65.19	-2.36	100.0

9.2.2 Voltage Variation

Reference Frequency: 13.560000 MHz (FCC Stability) / 13.559148 MHz (RSS Stability)

MHz	Temperature (Degree C)	Voltage (%)	Frequency	Deviation (ppm)		Supply Voltage		Limit (+/-) (ppm)
				FCC	RSS			
13.56	20	85	13.559155	-62.32	0.07	85.0 V	AC	100.0
		100	13.559154	-62.39	0.00	120.0 V	AC	100.0
		115	13.559156	-62.24	0.15	138.0 V	AC	100.0

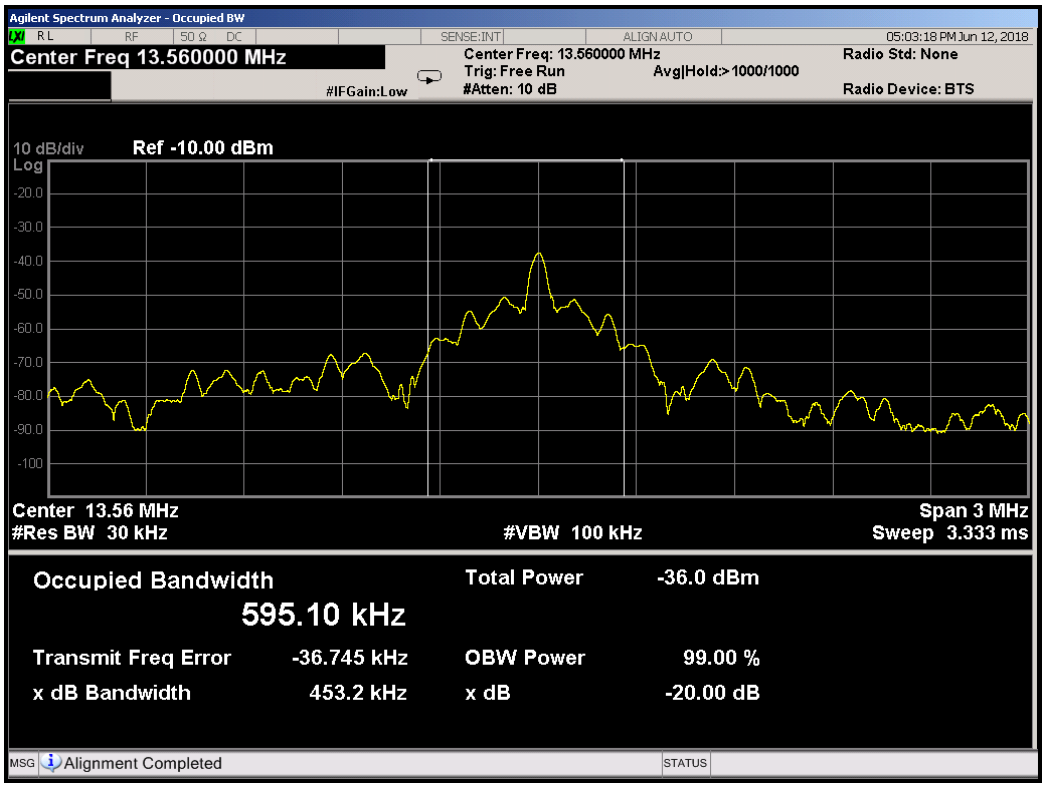
Note: Lower Voltage =100 V – 15%, Upper Voltage = 120 V + 15%

9.3 20dB OBW , 99% OBW

Location	Kashima No.12 Test Site
Test date	June 5, 2018
Test Engineer	Naohei Murakami
Test Procedure	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.



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
Conducted disturbance at mains terminals					
LISN(EUT)	ESH2-Z5	882395/020	Rohde & Schwarz	1 Y	Apr. 2019
LISN(Peripheral)	KNW-407	8-1395-9	Kyoritsu	1 Y	Aug. 2018
10dB LISN Pad	6801.01.A	E01AT10E	HUBER+SUHNER	1 Y	Apr. 2019
10dB LISN Pad	090-0110A	E04AT10A	MISUMI	1 Y	Aug. 2018
50Ω Termination	65BNC-50-0-2/133NE	E04TRM50B	SUHNER	1 Y	Aug. 2018
Coaxial Cable (C1)	3D-2W(7.8m)	MTS03CSR-1	Intertek	1 Y	Jan. 2019
Coaxial Cable (C2)	RG-5A/U(12.0m)	MTS03CSR-2	Intertek	1 Y	Jan. 2019
Coaxial Cable (C3)	RG214HF(1.5m)	MTS03CSR-3	SUHNER	1 Y	Jan. 2019
Coaxial Cable (C4)	RG214HF(1.5m)	MTS03CSR-4	SUHNER	1 Y	Jan. 2019
Coaxial Cable (C5)	RG214HF(1.5m)	MTS03CSR-5	SUHNER	1 Y	Jan. 2019
Radiated disturbance					
Loop Antenna	HFH2-Z2	882964/28	Rohde & Schwarz	1 Y	Dec. 2018
Coaxial Cable (M1)	5D-2W(8.0m)	EM0CS012	SUHNER	1 Y	Jan. 2019
Broad Band Antenna	VULB9168	111	Schwarzbeck	1 Y	Sep. 2018
Amplifier	8447D	2727A05321	Hewlett Packard	1 Y	Jan. 2019
Step Attenuator	8494B	2726A13827	Hewlett Packard	1 Y	Jan. 2019
6dB Attenuator	MP721B	M54588	ANRITSU	1 Y	Jan. 2019
Coaxial Cable (R1)	RG214HF(8.0m)	MTS03R10-1	SUHNER	1 Y	Jan. 2019
Coaxial Cable (R2)	12D-SFA(28.0m)	MTS03R10-2	Intertek	1 Y	Jan. 2019
Coaxial Cable (R3)	RG214HF(2.0m)	MTS03R10-3	SUHNER	1 Y	Jan. 2019
Coaxial Cable (R4)	RG214HF(0.4m)	MTS03R10-4	SUHNER	1 Y	Jan. 2019
Coaxial Cable (R5)	RG214HF(0.4m)	MTS03R10-5	SUHNER	1 Y	Jan. 2019
Coaxial Cable (R6)	RG214HF(1.5m)	MTS03R10-6	SUHNER	1 Y	Jan. 2019
Coaxial Cable (R7)	RG214HF(1.5m)	MTS03R10-7	SUHNER	1 Y	Jan. 2019
Coaxial Cable (R8)	RG214HF(1.5m)	MTS03R10-8	SUHNER	1 Y	Jan. 2019
Site Attenuation	-	-	-	1 Y	Apr. 2019
Double Ridged Antenna	3115	2568	EMCO	1 Y	Jan. 2019
Amplifier	TPA0118-30	950186	TOYO Corporation	1 Y	Apr. 2019
6dB Attenuator	6806.17.B	E00AT6GA	SUNNER	1 Y	Apr. 2019
Coaxial Cable (R11)	SUCOFLEX 104(6.0m)	65566/4PE	SUNNER	1 Y	Apr. 2019
Coaxial Cable (R12)	SUCOFLEX 104(1.0m)	64587/4PE	SUNNER	1 Y	Apr. 2019
SVSWR	-	-	-	1 Y	Sep. 2018

Common					
Test Receiver	ESR26 (Firmware Ver. 3.36 SP2)	101629	Rohde & Schwarz	1 Y	Feb. 2019
Test Receiver	ESS (Firmware Version 1.07)	842886/010	Rohde & Schwarz	1 Y	Mar. 2019
RF Switch(1)	MP59B	M28942	ANRITSU	1 Y	Jan. 2019
RF Switch(2)	ACX-150-1	E02301501	Intertek	1 Y	Jan. 2019
Testing Software	emiT (Version 3,0,0,0)			N/A	N/A

Instrument	**Model No.**	**Serial No.**	**Manufacturer**	**Cal. Interval**	**Effective period**
Frequency Tolerance and OBW					
Spectrum Analyzer	Agilent	N9030A	MY52350520	1 Y	Nov. 2018
Digital Multi Meter	FLUKE	8846A	9642018	1 Y	Jul. 2018
Temperature Chamber	Tabai	PL-3F	5103661	-	-
Temperature Meter	T&D	TR-71nW	52160B67	1 Y	Dec. 2018
Coil antenna	Intertek Japan	None	None	-	-
GPS Receiver	Hewlett Packard	HP Z3801A	3542A02414	-	-
Coaxial Cable	3D-2V	KSR00100	Coaxial Cable	1 Y	Nov. 2018

ANNEX

A. TEST PROCEDURE(S)

Test was carried out under the following conditions.

Conducted disturbance at mains terminals
Test setup as per standard

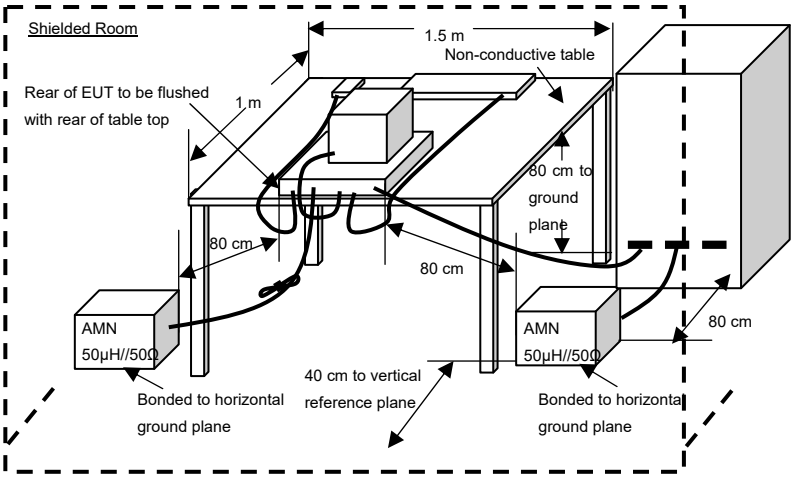
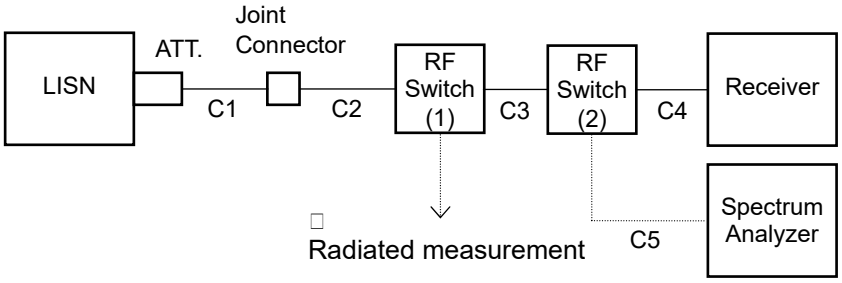


Diagram of the measuring instruments



[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.

EUT was placed in transmission mode then tested for conducted emissions per 15.207 to ensure the device complies with 15.207 outside the transmitter fundamental emissions band.
After, with a dummy load in lieu of the antenna from the EUT and only the fundamental emission band was measured to show that the fundamental emission band is in compliance with the 15.207 limits.
*In accordance with ”174176 D01 Line Conducted FAQ v01r01”

[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

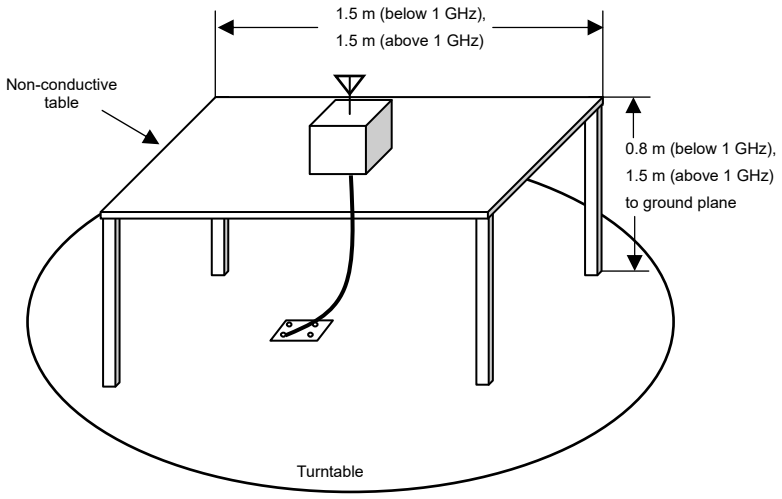
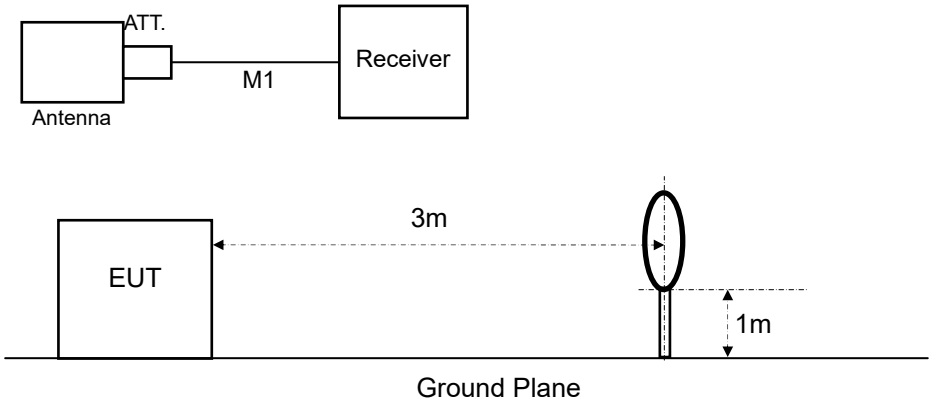
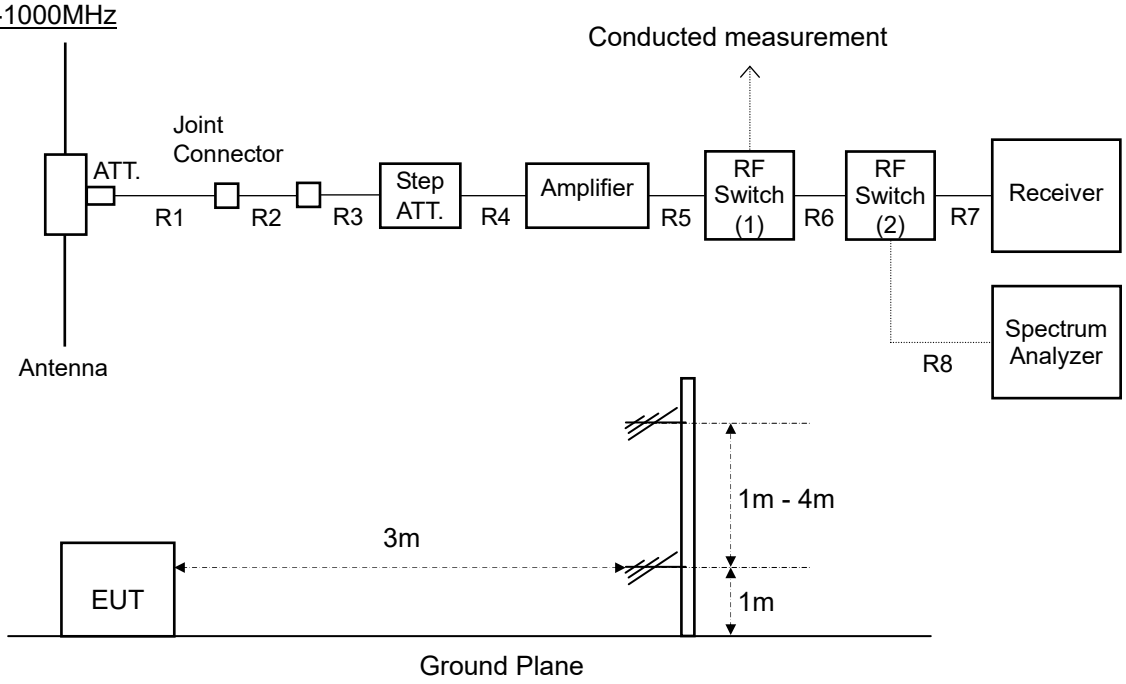


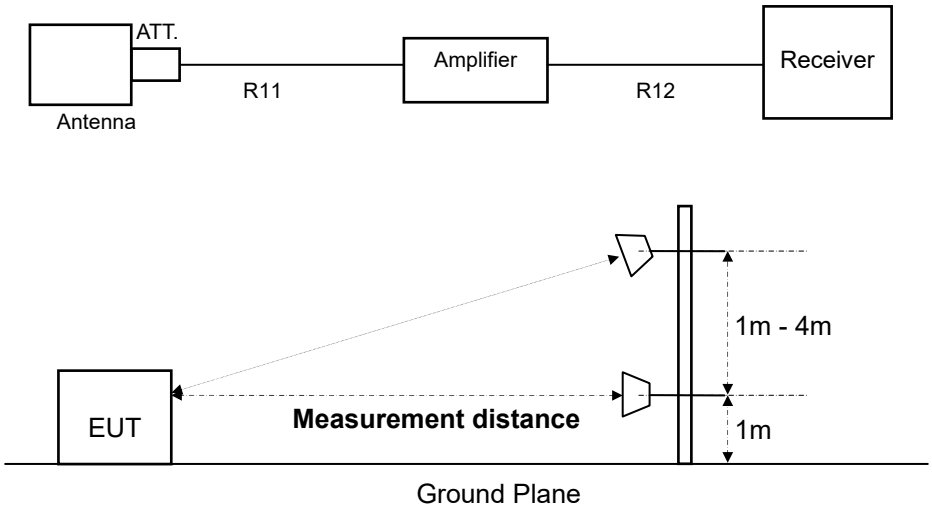
Diagram of the measuring instruments (Below 30MHz)



30-1000MHz



Above 1GHz



***Measurement distance : See Section 9.1.2**

[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,
And find the worst emission conditions in configuration, operating mode, or ambient noise notation.

[Final Measurement]
The EUT operated in the worst emission condition found by 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. At least six highest spectrums are measured by the test receiver (quasi-peak) and spectrum analyzer (peak and average). When the uncertain result was obtained (30 – 1000 MHz), the measurement is retried by using the half wave dipole antenna instead of the broadband antenna.