

TEST REPORT

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

Applicant	Testing Laboratory
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Equipment Type	ENDOSCOPE REPROCESSOR
Trademark	OLYMPUS
Model(s)	OER-Pro
Serial No.	2733707
Equipment Authorization	Certification
FCC ID	S8Q-GN4215
ISED CN and UPN	4763B-GN4215
Test Result	Complied
Report Number	19030115JKA-001
Original Issue Date	May 27, 2019
Revised Issue Date	July 02, 2019

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Approved by

H. Kosemura

Hideaki Kosemura
[Technical Manager]

Tested by

K. Wagatsuma

Koichi Wagatsuma
[Engineer]



NVLAP accreditation are valid for RSS-210.
FCC Part15C is outside the NVLAP scope.



Responsible Party of Test Item (Product)

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

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APPENDIX PHOTOGRAPHS OF MAXIMUM EMISSION SET-UP

SECTION 1. GENERAL INFORMATION

Test Performed

EUT Received	April 15, 2019
Date of Test	From May 07, 2019 to May 08, 2019
Standard Applied	FCC Part15C RSS-210 Issue 9
Test methods	ANSI C63.10-2013
Deviation from Standard(s)	None

Qualifications of Testing Laboratory

Accreditation / Recognition	Scope	ID Number	Remarks
VLAC	Wireless / EMC Testing	VLAC-008-1	JAPAN
NVLAP	Wireless Testing	600233-0	USA
FCC	Wireless / EMC Testing	JP0008	USA
ISED	Wireless Testing	CABID : JP0008 ISED# : 2042Q	Canada
Filing			
VCCI	EMC Testing	A-0126	JAPAN
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	HDMI	High-Definition Multimedia Interface
OBW	Occupied Bandwidth		

Revision Summary

Revised Date	Section	Description of Changes
July 02, 2019	9.3 (Page 19)	Corrected OBW plot. By TCB Request.
July 02, 2019	10 (Page 20)	":2017" Added to ""ANSI C63.5" By TCB Request.
July 02, 2019	10 (Page 21)	Corrected year (Effective period). Due to typo.

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	Results	Remarks
Conducted disturbance at mains terminals	11.8 dB (0.7060 MHz) [Q-P]	PASS	
Radiated disturbance (IN band)	35.2 dB (13.5530 MHz)	PASS	
Radiated disturbance (OUT band)	4.8 dB (67.81 MHz)	PASS	

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

Standard Applied	RSS-Gen Issue 5 Amd 1 (6.7)	
Test Item	Results	Remarks
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
A1	ENDOSCOPE REPROCESSOR	OER-Pro	2733707	OLYMPUS MEDICAL SYSTEMS CORP.	
A2	RFID Module (Antenna Unit)	TR3-CA004C	16050315(F)	Takaya Corporation	See note
A3	RFID Module (R/W Unit)	TR3-L301	17030555(F)	Takaya Corporation	See note
A4	RFID Module (I/F Unit)	TR3-CIF001	16050315(F)	Takaya Corporation	See note
Rated Power : AC 120V±10% 60Hz / 700W					
Supplied Power : AC 120V, 60Hz					
Condition of Equipment		Prototype			
Type		Floor standing			
Suppression Devices		No Modifications by the laboratory were made to the device			

Note: A2, A3, and A4 are internal module of A1.

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
RS-232C	D-sub	9pin	for Maintenance

3.4 Highest Frequency Generated / Used

Operating Frequency	Operating mode	Remarks
10.0 MHz	RFID Active mode	RFID Board
13.56 MHz	RFID Active mode	RFID Board
16.0 MHz	RFID Active mode	CPU Board
36 kHz	RFID Active mode	US Board

SECTION 4. SUPPORT EQUIPMENT

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

Symbol	Item	Model No.	Serial No.	Manufacturer	Remarks	FCC ID
B	Scope ID master card	GT970700	20150412000210	OLYMPUS MEDICAL SYSTEMS CORP.		N/A

SECTION 5. USED CABLE(S)

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

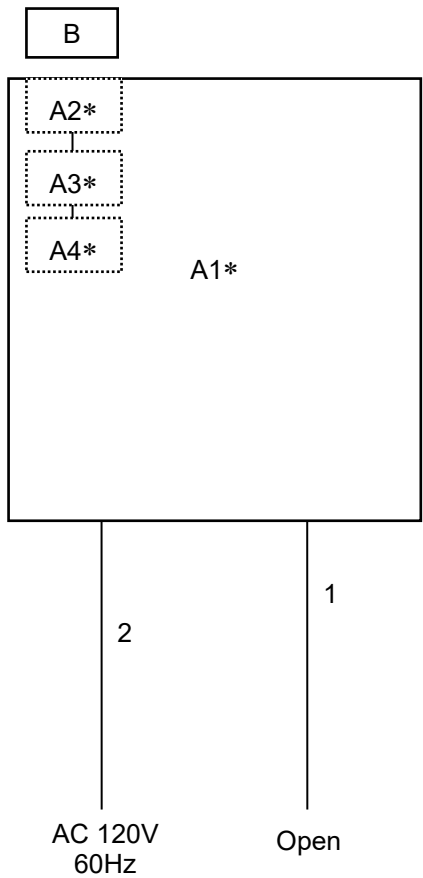
No.	Name	Length (m)	Shield	Metal Connector	Ferrite Core
1	RS-232C cable	2.0 m	Yes	Metal	
2	Power cable for EUT(AC)	3.5 m	No	-	

Note : No.1 cable (RS-232C) is for maintenance.

SECTION 6. TEST CONFIGURATION

6.1 Conducted disturbance at mains terminals Tests and Radiated disturbance tests

* : EUT



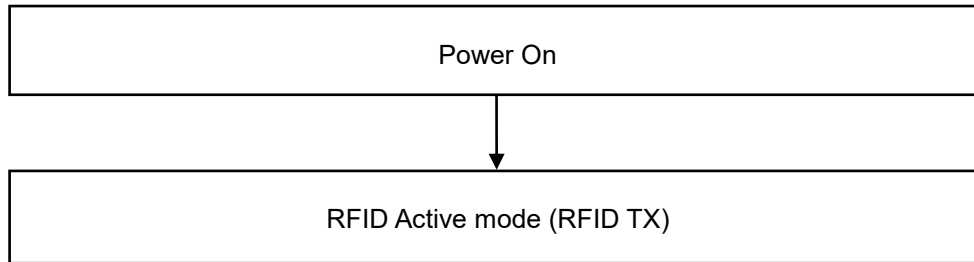
The symbols and numbers assigned to the equipment and cables on this diagram correspond to the ones in Sections 3 to 5.

SECTION 7. OPERATING CONDITION

The test was carried out under the following mode.

7.1 RFID Active 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 3 m	$U_{lab} [k = 2]$	U_{cispr}
30 MHz – 1000 MHz	+/- 4.38 dB	6.3 dB
Above 1 GHz	+/- 4.33 dB	5.2 dB
Radiated disturbance at 10 m		
30 MHz – 1000 MHz	+/- 5.00 dB	6.3 dB
Above 1 GHz	+/- 4.95 dB	Nil
Conducted disturbance at mains terminals		
9 kHz – 150 kHz	+/- 2.82 dB	3.8 dB
150 kHz – 30 MHz	+/- 2.80 dB	3.4 dB
Conducted disturbance at terminals (High Voltage Probe)		
150 kHz – 30 MHz	+/- 2.80 dB	2.9 dB
Conducted disturbance at telecommunication ports (ISN)		
150 kHz – 30 MHz	+/- 3.85 dB	5.0 dB
Conducted disturbance at telecommunication ports (Capacitive Voltage Probe)		
150 kHz – 30 MHz	+/- 3.77 dB	3.9 dB
Conducted disturbance at telecommunication ports (Current Probe)		
150 kHz – 30 MHz	+/- 2.37 dB	2.9 dB
Disturbance power		
30 MHz – 300 MHz	+/- 3.34 dB	4.5 dB
Conducted power on antenna port		
30 MHz – 1000 MHz	+/- 3.01 dB	Nil
Above 1 GHz	+/- 2.06 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	Kashima No.12 Test Site
Test Engineer	Koichi Wagatsuma

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 >

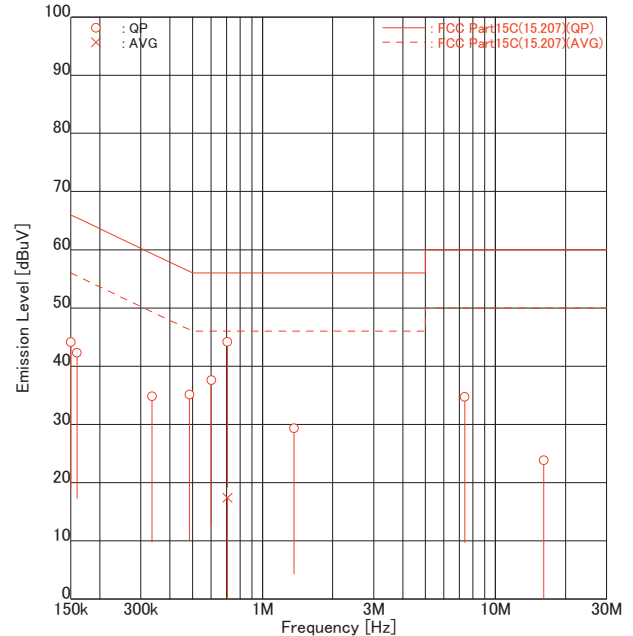
Sample @0.1500 MHz

Emission Level = 31.6 [dBuV] + 10.1 [dB] = 41.7 [dBuV]

Result of Conducted disturbance at mains terminals

Intertek Japan K.K. Kashima No.12 Test Site Conducted Voltages on Mains Port

APPLICANT : OLYMPUS MEDICAL SYSTEMS CORP.
EUT NAME : Endoscope Reprocessor
MODEL NO. : OER-Pro
SERIAL NO. : 2733707
TEST MODE : RF-ID Active mode
POWER SOURCE : AC120 V, 60 Hz
DATE TESTED : May 07 2019
FILE NO. : -
REGULATION : FCC Part15C(15.207)
TEST METHOD : ANSI C63.10-2013
TEMPERATURE : 21.0 [degC]
HUMIDITY : 48.0 [%]
NOTE :



ENGINEER : Koichi Wagatsuma

FREQUENCY [No]	MODE [MHz]		READING [dBuV]		FACTOR [dB]		EMISSION [dBuV]		LIMIT [dBuV]	MARGIN [dB]	
			Line1	Line2	Line1	Line2	Line1	Line2		Line1	Line2
1	0.1500	QP	31.6	<u>34.0</u>	10.1	10.1	41.7	<u>44.1</u>	66.0	24.3	<u>21.9</u>
2	0.1595	QP	29.7	<u>32.2</u>	10.1	10.1	39.8	<u>42.3</u>	65.5	25.7	<u>23.2</u>
3	0.3352	QP	<u>24.7</u>	23.8	10.1	10.1	<u>34.8</u>	33.9	59.3	<u>24.5</u>	25.4
4	0.4850	QP	<u>24.9</u>	23.7	10.2	10.2	<u>35.1</u>	33.9	56.3	<u>21.2</u>	22.4
5	0.6031	QP	<u>27.3</u>	26.8	10.3	10.3	<u>37.6</u>	37.1	56.0	<u>18.4</u>	18.9
6	0.7060	QP	33.1	<u>33.9</u>	10.3	10.3	43.4	<u>44.2</u>	56.0	12.6	<u>11.8</u>
7	0.7060	AVG	5.8	7.1	10.3	10.3	16.1	17.4	46.0	29.9	28.6
8	1.3645	QP	14.5	18.9	10.4	10.4	24.9	29.3	56.0	31.1	26.7
9	7.3870	QP	23.7	23.4	11.0	11.0	34.7	34.4	60.0	25.3	25.6
10	16.1356	QP	11.9	12.5	11.3	11.3	23.2	23.8	60.0	36.8	36.2

Higher six points are underlined.
Other frequencies : Below the FCC Part15C(15.207) limit
Emission Level = Read + Factor (LISN, Pad, Cable)

emiT 3, 0, 0, 0

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9.1.2 Radiated disturbance (IN band and OUT band)

Location	Kashima No.12 Test Site
Test Engineer	Koichi Wagatsuma

Frequency Range of Measurements

Operating mode	Required Frequency Range	Measured Frequency Range
RF-ID Active mode	0.009 -1000 MHz	0.009 -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

* Limit for 0.009 - 30 MHz = Limit for standard distance + 40 log (Standard distance / Measurement distance)

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 @13.2969 MHz

Emission Level = -0.5 [dBuV] +25.8 [dB/m] = 25.3 [dBuV/m]

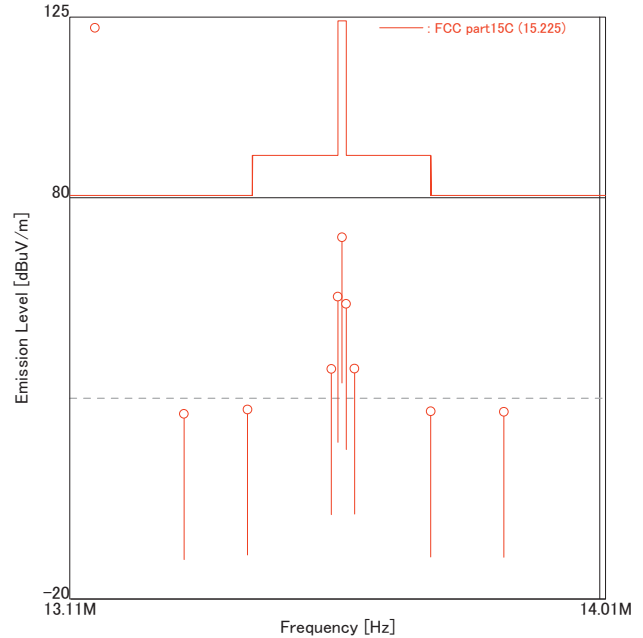
Operating Condition	Frequency Range	Measurement distance
RF-ID Active mode	0.009 -1000 MHz	3 m

Result of Radiated disturbances

9.1.2.1 IN band

Intertek Japan K.K. Kashima No.12 Test Site Field Strength Emission Test

APPLICANT : OLYMPUS MEDICAL SYSTEMS CORP.
EUT NAME : Endoscope Reprocessor
MODEL NO. : OER-Pro
SERIAL NO. : 2733707
TEST MODE : RF-ID Active mode
POWER SOURCE : AC 120V/60Hz
DATE TESTED : May 07 2019
FILE NO. : -
REGULATION : FCC part15C (15.225)
TEST METHOD : ANSI C63.10 :2013
DISTANCE : 3.00 [m]
TEMPERATURE : 20.9 [degC]
HUMIDITY : 49.0 [%]
NOTE :



ENGINEER : Koichi Wagatsuma

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	13.2969	-0.5	0.3	25.8	25.8	25.3	26.1	80.5	55.2	54.4
2	13.4020	0.5	<u>1.4</u>	25.8	25.8	26.3	<u>27.2</u>	80.5	54.2	<u>53.3</u>
3	13.5420	9.2	<u>11.5</u>	25.8	25.8	35.0	<u>37.3</u>	90.5	55.5	<u>53.2</u>
4	13.5530	27.3	<u>29.5</u>	25.8	25.8	53.1	<u>55.3</u>	90.5	37.4	<u>35.2</u>
5	13.5600	42.5	44.3	25.8	25.8	68.3	70.1	124.0	55.7	53.9
6	13.5670	25.5	<u>27.7</u>	25.8	25.8	51.3	<u>53.5</u>	90.5	39.2	<u>37.0</u>
7	13.5810	9.2	<u>11.6</u>	25.8	25.8	35.0	<u>37.4</u>	90.5	55.5	<u>53.1</u>
8	13.7100	0.2	<u>0.9</u>	25.8	25.8	26.0	<u>26.7</u>	80.5	54.5	<u>53.8</u>
9	13.8348	-0.4	0.8	25.8	25.8	25.4	26.6	80.5	55.1	53.9

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

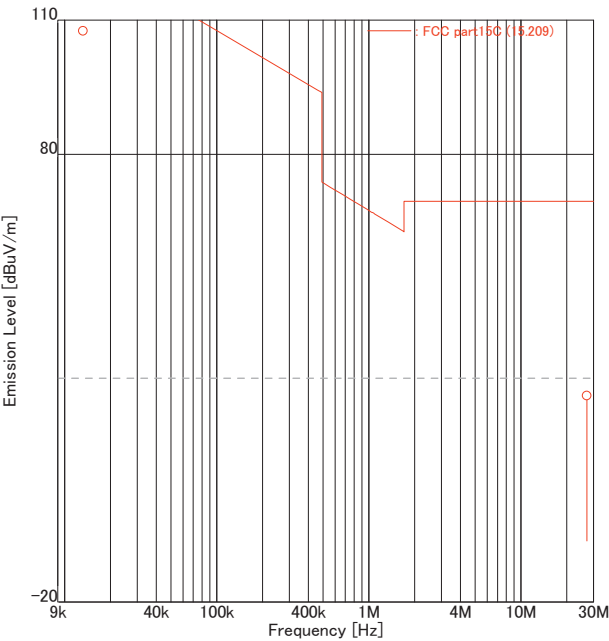
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9.1.2.2 Out band
0.009 – 30 MHz

Intertek Japan K.K.
Kashima No.12 Test Site
Spurious Emissions - Radiated Test

APPLICANT : OLYMPUS MEDICAL SYSTEMS CORP.
EUT NAME : Endoscope Reprocessor
MODEL NO. : OER-Pro
SERIAL NO. : 2733707
TEST MODE : RF-ID Active mode
POWER SOURCE : AC 120V/60Hz
DATE TESTED : May 07 2019
FILE NO. : -
REGULATION : FCC part15C (15.209)
TEST METHOD : ANSI C63.10-2013
DISTANCE : 3.00 [m]
TEMPERATURE : 20.9 [degC]
HUMIDITY : 49.0 [%]
NOTE :



ENGINEER : Koichi Wagatsuma

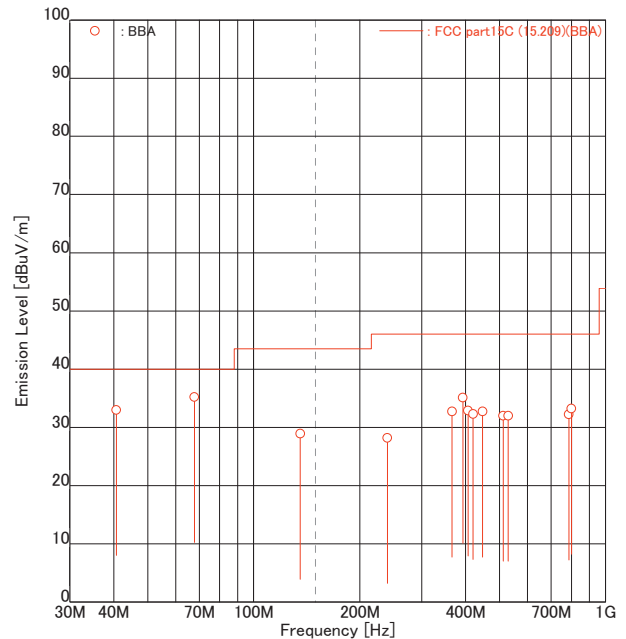
FREQUENCY		READING		FACTOR		EMISSION		LIMIT	MARGIN	
[No]	[MHz]	[dBuV]		[dB]		[dBuV/m]		[dBuV/m]	[dB]	
		Hori	Vert	Hori	Vert	Hori	Vert		Hori	Vert
1	27.1200	<u>-1.8</u>	-2.2	27.9	27.9	<u>26.1</u>	25.7	69.5	<u>43.4</u>	43.8

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

30 – 1000 MHz

Intertek Japan K.K. Kashima No.12 Test Site Spurious Emissions - Radiated Test

APPLICANT : OLYMPUS MEDICAL SYSTEMS CORP.
EUT NAME : Endoscope Reprocessor
MODEL NO. : OER-Pro
SERIAL NO. : 2733707
TEST MODE : RF-ID Active mode
POWER SOURCE : AC120 V, 60 Hz
DATE TESTED : May 07 2019
FILE NO. : -
REGULATION : FCC part15C (15.209)
TEST METHOD : ANSI C63.10-2013
DISTANCE : 3.00 [m]
TEMPERATURE : 21.6 [degC]
HUMIDITY : 49.0 [%]
NOTE :



ENGINEER : Koichi Wagatsuma

FREQUENCY [No]	[MHz]	READING [dBuV]		FACTOR [dB/m]		EMISSION [dBuV/m]		LIMIT [dBuV/m]	MARGIN [dB]	
		Hori	Vert	Hori	Vert	Hori	Vert		Hori	Vert
1	40.68	-	<u>35.3</u>	-2.3	-2.3	-	<u>33.0</u>	40.0	-	<u>7.0</u>
2	67.81	-	<u>38.2</u>	-3.0	-3.0	-	<u>35.2</u>	40.0	-	<u>4.8</u>
3	135.60	-	30.9	-2.0	-2.0	-	28.9	43.5	-	14.6
4	240.00	-	29.7	-1.5	-1.5	-	28.2	46.0	-	17.8
5	366.11	<u>28.9</u>	28.7	3.8	3.8	<u>32.7</u>	32.5	46.0	<u>13.3</u>	13.5
6	393.23	<u>30.7</u>	27.6	4.4	4.4	<u>35.1</u>	32.0	46.0	<u>10.9</u>	14.0
7	406.80	<u>28.1</u>	-	4.8	4.8	<u>32.9</u>	-	46.0	<u>13.1</u>	-
8	420.36	27.1	26.7	5.2	5.2	32.3	31.9	46.0	13.7	14.1
9	447.48	-	<u>26.8</u>	5.9	5.9	-	<u>32.7</u>	46.0	-	<u>13.3</u>
10	512.01	-	24.1	7.9	7.9	-	<u>32.0</u>	46.0	-	14.0
11	528.84	23.6	-	8.4	8.4	32.0	-	46.0	14.0	-
12	786.48	-	18.1	14.1	14.1	-	32.2	46.0	-	13.8
13	800.04	17.9	<u>18.7</u>	14.5	14.5	32.4	<u>33.2</u>	46.0	13.6	<u>12.8</u>

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

emiT 3, 0, 0, 0

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9.2 Frequency Tolerance (Temperature Variation and Voltage Variation)

Location	Kashima No.12 Test Site
Test date	May 08, 2019
Test Engineer	Koichi Wagatsuma
Test Procedure	LEN-RJP-TE003

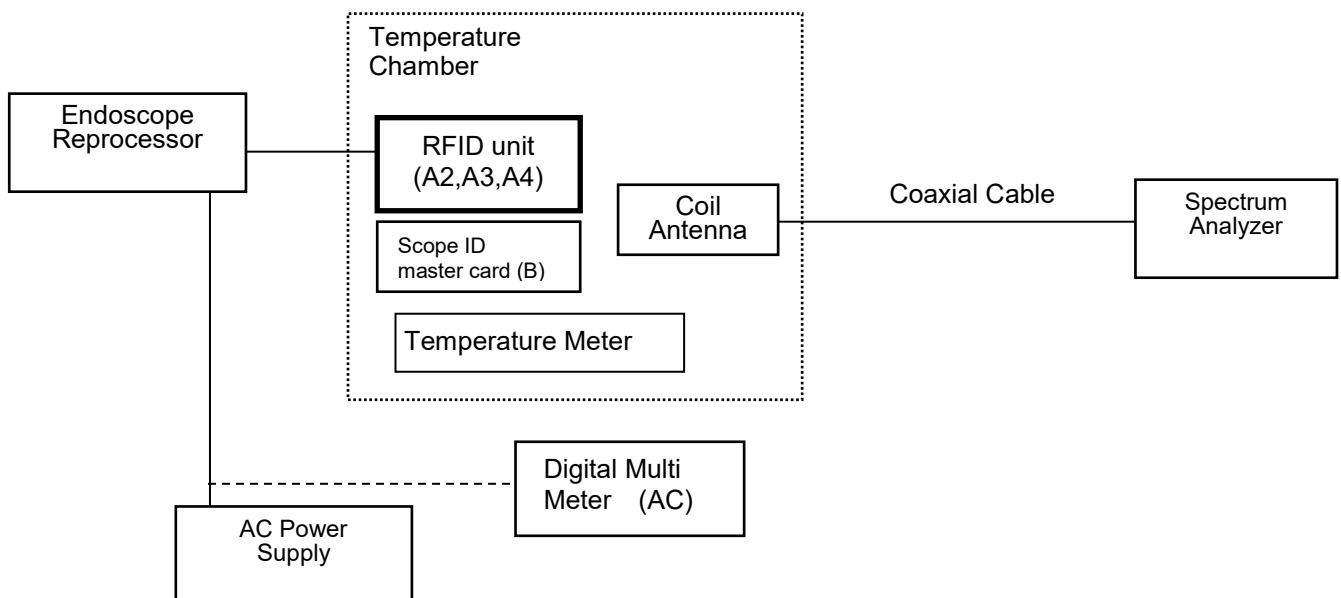
Test Procedure

Frequency Tolerance (Temperature Variation)

1. The EUT and test equipment were set up as shown on the following page.
2. Set the temperature -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. (Startup, 2min, 5min and 10min)
6. Set the temperature -10 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) /13.559834 MHz (RSS Stability)

MHz	Temperature (Degree C)	Voltage (%)	Frequency (MHz)				Deviation (ppm)								Limit (+/-) (ppm)
							StartUP		2min		5min		10min		
			StartUP	2min	5min	10min	FCC	RSS	FCC	RSS	FCC	RSS	FCC	RSS	
13.56	-20	100	13.559830	13.559830	13.559830	13.559830	-12.5	-0.3	-12.5	-0.3	-12.5	-0.3	-12.5	-0.3	100.0
	-10	100	13.559862	13.559862	13.559863	13.559862	-10.2	2.1	-10.2	2.1	-10.1	2.1	-10.2	2.1	100.0
	0	100	13.559869	13.559869	13.559869	13.559869	-9.6	2.6	-9.6	2.6	-9.6	2.6	-9.6	2.6	100.0
	10	100	13.559856	13.559856	13.559856	13.559856	-10.6	1.6	-10.6	1.6	-10.6	1.6	-10.6	1.6	100.0
	20	100	13.559834	13.559834	13.559834	13.559834	-12.2	0.0	-12.2	0.0	-12.2	0.0	-12.2	0.0	100.0
	30	100	13.559810	13.559810	13.559810	13.559810	-14.0	-1.8	-14.0	-1.8	-14.0	-1.8	-14.0	-1.8	100.0
	40	100	13.559793	13.559793	13.559793	13.559793	-15.3	-3.1	-15.3	-3.1	-15.3	-3.1	-15.3	-3.1	100.0
	50	100	13.559786	13.559786	13.559786	13.559786	-15.8	-3.5	-15.8	-3.5	-15.8	-3.5	-15.8	-3.5	100.0

9.2.2 Voltage Variation

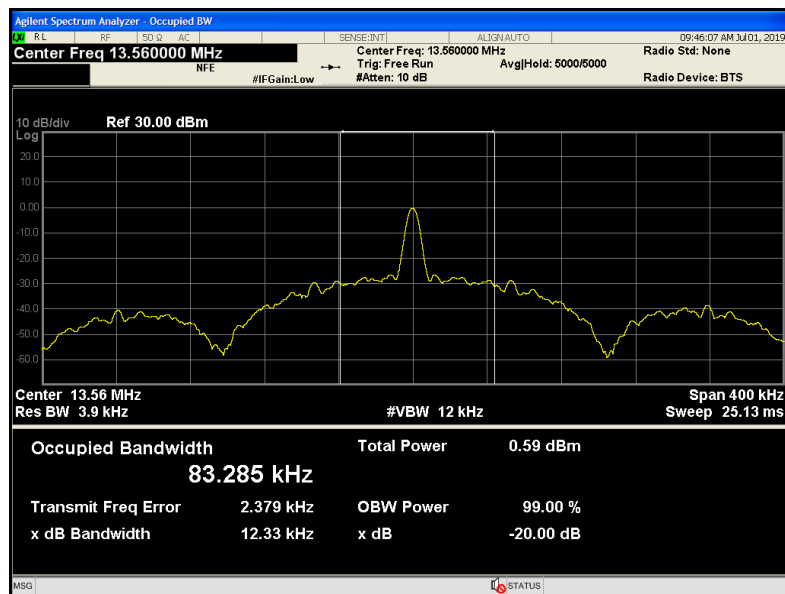
Reference Frequency: 13.560000 MHz (FCC Stability) /13.559834 MHz (RSS Stability)

MHz	Temperature (Degree C)	Voltage (%)	Frequency	Deviation (ppm)		Supply Voltage		Limit (+/-) (ppm)
				FCC	RSS			
13.56	20	85	13.559834	-12.2	0.0	102V	60Hz	100.0
		100	13.559834	-12.2	0.0	120V	60Hz	100.0
		115	13.559834	-12.2	0.0	138V	60Hz	100.0

Location	Kashima No.12 Test Site
Test date	July 01, 2019
Test Engineer	Koichi Wagatsuma
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 OBW
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 C63.5.2017

Instrument	Model No.	Serial No.	Manufacturer	Cal. Interval	Effective period
Conducted disturbance at mains terminals					
LISN(EUT)	ESH2-Z5	882395/022	Rohde & Schwarz	1Y	Dec. 31, 2019
10dB LISN Pad	CFA-01	KSR00249	TME	1Y	Dec. 31, 2019
Coaxial cable	RG-5A/U (14.0 m)	R2	Intertek	1Y	Aug. 31, 2019
Coaxial cable	10D-2W (7.0m)	R4	Intertek	1Y	Aug. 31, 2019
Coaxial cable	RG-5A/U (4.0 m)	R6	Intertek	1Y	Aug. 31, 2019
Coaxial cable	RG-5A/U(0.6 m)	R7	Intertek	1Y	Aug. 31, 2019
Coaxial cable	5D-2W (1.2 m)	R10	Intertek	1Y	Aug. 31, 2019
RF Switch	ACX-150	A12301501	Intertek	1Y	Aug. 31, 2019
Radiated disturbance					
Broad Band antenna	VULB9168WP	288	Schwarzbeck	1Y	Jul. 31, 2019
Loop Antenna	HFH2-Z2	882964/17	Rohde & Schwarz	1Y	Jan. 31, 2020
6dB Attenuator	UFA-01	A00040805	TME	1Y	Aug. 31, 2019
Amplifier	ZX60-3018G	002	Intertek	1Y	Aug. 31, 2019
Coaxial Cable	5D-2W(14.0m)	R11	FUJIKURA	1Y	Aug. 31, 2019
Coaxial cable	5D-2W(8.0 m)	R1	FUJIKURA	1Y	Aug. 31, 2019
Coaxial cable	10D-2W(7.0 m)	R3	FUJIKURA	1Y	Aug. 31, 2019
Coaxial cable	RG-5A/U(4.0 m)	R5	FUJIKURA	1Y	Aug. 31, 2019
Coaxial cable	RG-5A/U(0.6 m)	R7	FUJIKURA	1Y	Aug. 31, 2019
Coaxial cable	5D-2W(1.2 m)	R10	FUJIKURA	1Y	Aug. 31, 2019
RF Switch	ACX-150	A12301501	Intertek	1Y	Aug. 31, 2019
6 dB Attenuator	6806.17.B	4692	HUBER-SUHNER	1Y	Mar. 31, 2020
Coaxial cable(M1)	5D-2W(8.0 m)	KSR00312	FUJIKURA	1Y	Mar. 31, 2020
Site Attenuation	-	-	-	1Y	Feb. 29, 2020
Common					
MXE EMI Receiver	N9038A (Firmware Version A.13.58)	MY51210201	Agilent	1Y	Nov. 30, 2019
Testing software	emiT (Version 3,0,0,0)	-	-	-	-

Instrument	Model No.	Serial No.	Manufacturer	Cal. Interval	Effective period
Frequency Tolerance and OBW					
Spectrum Analyzer	N9030A	US51350170	Agilent	1 Y	Mar. 31, 2020
Spectrum Analyzer (For OBW)	N9038A (Firmware Version A.13.58)	MY51210201	Agilent	1Y	Nov. 30, 2019
Digital Multi Meter	8846A	9642018	FLUKE	1 Y	Sep. 30, 2019
Temperature Chamber	PL-3F	5103661	Tabai	-	None
Temperature Meter	TR-71nw	52160B67	T&D	1 Y	Jan. 31, 2020
Coil antenna	None	None	Intertek Japan	-	None
Coaxial Cable	KSR00100	Daiyu Densen	3D-2V	1 Y	Feb. 29, 2020

ANNEX

A. TEST PROCEDURE(S)

Test was carried out under the following conditions.

Conducted disturbance at mains terminals

Test setup as per standard

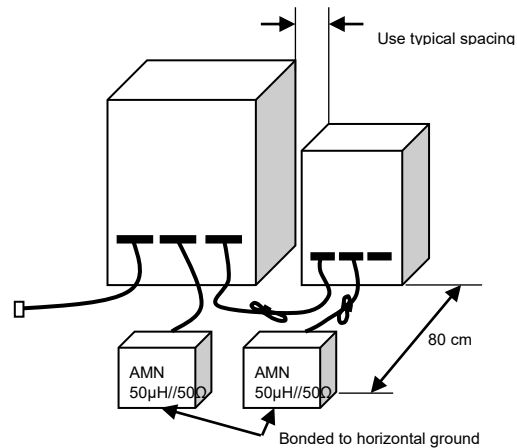
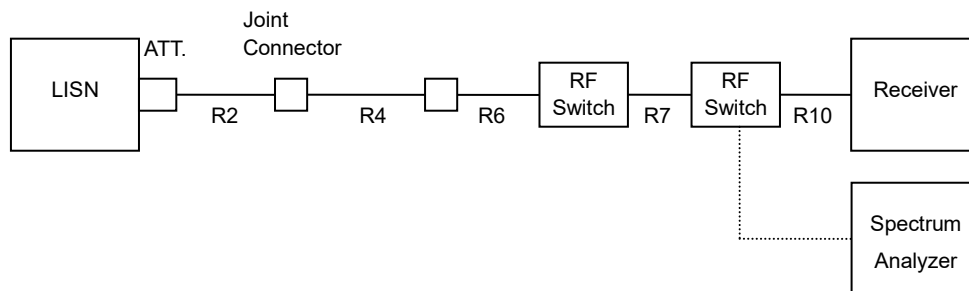


Diagram of the measuring instruments



[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

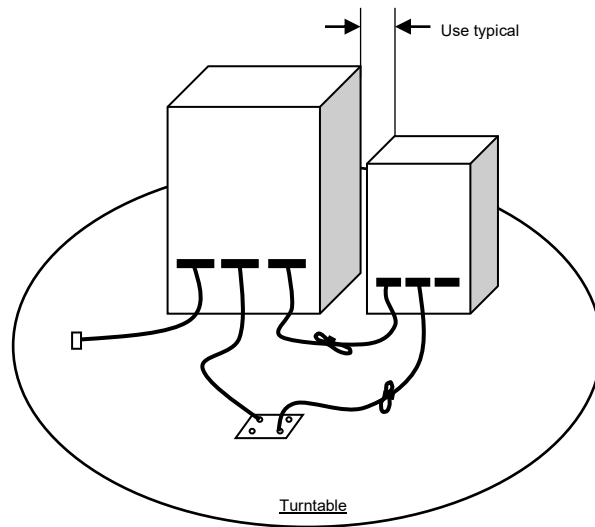
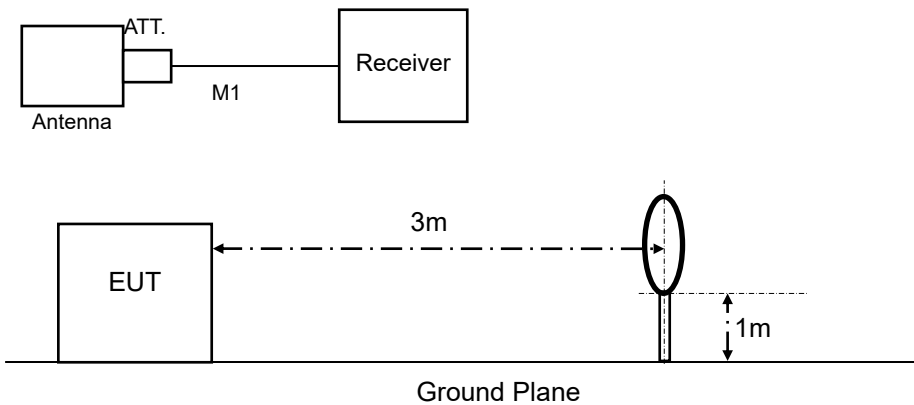


Diagram of the measuring instruments (Below 30MHz)



30-1000MHz

