

TEST REPORT

For

144/430MHz DIGITAL/ANALOG TRANSCEIVER

In conformity with

FCC CFR 47 Part15 Subpart B (CSR)

Model : FT5DR

FCC ID : K6620825X21

Test Item : 144/430MHz DIGITAL/ANALOG TRANSCEIVER

Report No. : WE210415BC2-12

Issue Date : 09 Jul. 2021

Prepared for

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History

Report No.	Date	Revisions	Issued By
WE210415BC2-11	30 Jun. 2021	Initial Issue	T. Kato
WE201415BC2-12	09 Jul. 2021	Revise the lowest operating frequency (Sec 1.1)	T. Kato

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1 General information

1.1 Product description from supplier

Test item	: 144/430MHz DIGITAL/ANALOG TRANSCEIVER
Manufacturer	: YAESU MUSEN CO., LTD.
Address	: 43 Utsuroda, Morijuku, Sukagawa-shi, Fukushima-ken 962-0001 JAPAN
Model	: FT5DR
FCC ID	: K6620825X21
Serial number	: 7
Hardware version	: SPP01
Software version	: 82.34 (Main), 0.00 (Sub), 7.11 (DSP)
Operating frequency range	: 0.52 - 985 MHz
Highest internal operating Freq.	: 941.94 MHz
Receipt date of EUT	: 15 Jun. 2021
Nominal power source voltages	: DC 7.4 V (Battery)

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1.2 Test(s) performed/ Summary of test result

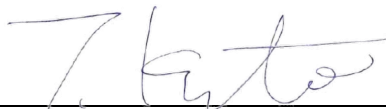
Test specification(s)	: FCC CFR 47 Part 15 Subpart B
Test method(s)	: ANSI C63.4: 2014
Test(s) started	: 15 Jun. 2021
Test(s) completed	: 23 Jun. 2021
Purpose of test(s)	: Certification as the scanning receiver
Summary of test result	: <u>Complied</u>

Note: The above judgment is only based on the measurement data and it does not include the measurement uncertainty. Accordingly, the statement below is applied to the test result.


The EUT complies with the limit required in the standard in case that the margin is not less than the measurement uncertainty in the Laboratory.

Compliance of the EUT is more probable than non-compliance is case that the margin is less than the measurement uncertainty in the Laboratory.

Test engineer

: 
 T. Kato
 (Test Engineer, RF/EMC Testing Lab.)

Reviewer

: 
 K. Onishi
 (Testing Leader, RF/EMC Testing Lab.)

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1.3 Test facility

The Federal Communications Commission has reviewed the technical characteristics of the test facilities at SGS Japan Inc., located in 3-5-23, Kitayamata, Tsuzuki-ku, Yokohama, 224-0021, Japan, and has found these test facilities to be in compliance with the requirements of 47 CFR Part 15, section 2.948.

The description of the test facilities has been filed under registration number 319924 at the Office of the Federal Communications Commission. The facility has been added to the list of laboratories performing these test services for the public on a fee basis.

The list of all public test facilities is available on the Internet at <http://www.fcc.gov>.

Registered by Innovation, Science and Economic Development Canada (ISED):
The registered CAB identifier is JP0009.

Accredited by **National Voluntary Laboratory Accreditation Program (NVLAP)** for the emission tests stated in the scope of the certificate under Certificate Number 200780-0

This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the U.S. Government.



1.4 Measurement uncertainty

The treatment of uncertainty is based on the general matters on the definition of uncertainty in “Guide to the expression of uncertainty in measurement (GUM)” published by ISO. The Lab’s uncertainty is determined by referring UKAS Publication LAB34: 2002 “The Expression of Uncertainty in EMC Testing” and CISPR16-4-2: 2011 “Uncertainty in EMC Measurements”.

The uncertainty of the measurement result in the level of confidence of approximately 95% (k=2) is as follows;

AC conducted emission (150 kHz - 30 MHz)	: ± 3.3 dB
RF conducted emission (30 MHz - 6 GHz)	: ± 1.0 dB
Radiated emission (30 MHz - 1000 MHz)	: ± 6.0 dB
Radiated emission (1 GHz - 6 GHz)	: ± 4.0 dB

1.5 Summary of test results

Requirement	Section in specification	Result	Section in this report
Radiated emissions (30 to 5000 MHz) (*1)	15.109	Complied	2.1
Conducted emission for receiver	15.111	Complied	2.2
AC power line conducted emissions	15.107	N/A (*2)	2.3
38 dB Rejection (cellular band)	15.121 (b)	N/A (*3)	-

- (*1) The highest internal operating frequency is 941.94 MHz
 (*2) The EUT is powered by the battery.
 (*3) This item was not tested in this report.

1.6 Setup of equipment under test (EUT)

1.6.1 Test configuration of EUT

Equipment(s) under test

No.	Item	Manufacture	Model No.	Serial No.
1	144/430MHz DIGITAL/ANALOG TRANSCEIVER	YAESU MUSEN CO., LTD.	FT5DR	7
-	-	-	-	-

Support Equipment(s)

No.	Item	Manufacture	Model No.	Serial No.
2	Li-ion Battery Pack	YAESU MUSEN CO., LTD.	SBR-14LI	Q37
3	Microphone	YAESU MUSEN CO., LTD.	SSM-17A	YTS07

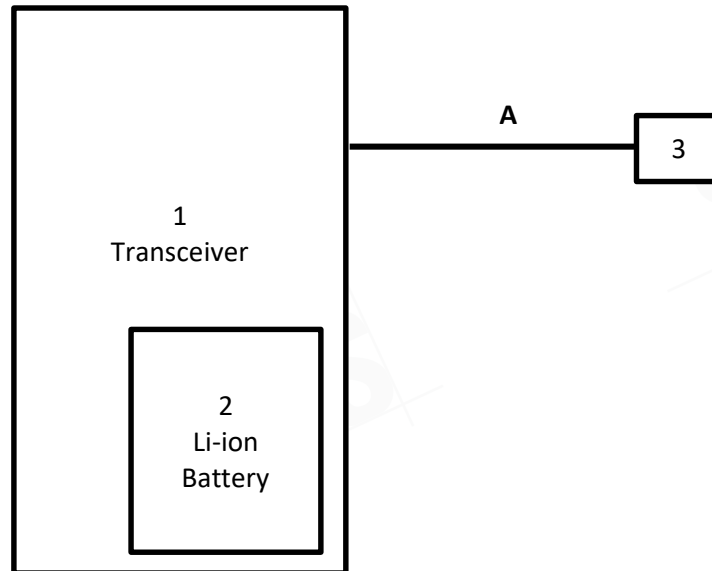
Connected cable(s)

No.	Item	From	To	Cable Shielded	Ferrite Core	Length [m]
A	Mic. Cable	1	3	No	No	0.4

1.6.2 Operating condition:

- Rx 0.520 MHz
- Rx 499.975 MHz
- Rx 985.000 MHz

1.6.3 Setup diagram of tested system



1.7 Equipment modifications

No modifications have been made to the equipment in order to achieve compliance with the applicable standards described in clause 1.2.

1.8 Deviation from the standard

No deviations from the standards described in clause 1.2.

2 Test procedure and test data

2.1 Radiated emissions

Test setup

Test setup was implemented according to the method of ANSI C63.4 clause 6 “General requirements for EUT equipment arrangements and operation”, clause 8.2 and Annex H.3 “Radiated emission measurements setup”.

Test procedure

Measurement procedures were implemented according to the method of ANSI C63.4 clauses 8.2. The EUT is placed on a non-conducted table which is 0.8 m height from a ground plane and the measurement antenna to EUT distance is 3 meters. The turn table is rotated for 360 degrees to determine the maximum emission level.

The antenna height scanned between 1 m and 4 m, and the antenna rotated to repeat the measurements for both the horizontal and vertical antenna polarizations.

The spectrum analyzer and receiver are set to the followings;

RBW=100 kHz (up to 1000 MHz) or 1 MHz (above 1000 MHz) ,
 VBW= 300 kHz (up to 1000 MHz) or 3 MHz (above 1000 MHz)

Final measurement is carried out with a receiver RBW of 120 kHz (up to 1000 MHz), or 1 MHz (above 1000 MHz).

Applicable rule and limitation

FCC 15.109 Radiated emissions limits

Frequency [MHz]	Field Strength [$\mu\text{V/m}$]	Measurement Distance [m]	Field Strength [dB $\mu\text{V/m}$]
30 – 88	100	3	40.0
88 – 216	150	3	43.5
216 – 960	200	3	46.0
Above 960	500	3	53.9

In the emission table above, the tighter limit applies at the band edges.

The emission limits shown in the above table are based on measurements employing a QP detector (up to 1000 MHz) or AVE/PEAK detector (above 1000 MHz).

Test results - Complied with requirement

Test equipment used (refer to List of utilized test equipment)

AC11	TR10	CL71	PR15	BA10	CL80	CL35
CL36	PR16	DH07				

Test software used

EMI1 Ver. 6.1

Calculation method

The Correction Factor and Result are calculated as followings.

$$\text{Correction Factor [dB/m]} = \text{Ant. Factor [dB/m]} + \text{Loss [dB]} - \text{Gain [dB]}$$

$$\text{Result [dB}\mu\text{V/m]} = \text{Reading [dB}\mu\text{V]} + \text{Correction Factor [dB/m]}$$

Test Data

Operating mode: Rx 0.520 MHz (X-plane)

Range: 30 - 1000 MHz

No.	Frequency [MHz]	Reading [dBμV]	Factor [dB/m]	Loss [dB]	Gain [dB]	Result [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Ant.
1	332.309	28.3	14.3	7.7	30.2	20.1	46.0	25.9	Hori.

All other emissions were under noise floor.

Range: 1000 - 5000 MHz

No.	Frequency [MHz]	Reading PK [dBμV]	Reading AVE [dBμV]	C.Factor [dB/m]	Result PK [dBμV/m]	Result AVE [dBμV/m]	Limit PK [dBμV/m]	Limit AVE [dBμV/m]	Margin PK [dB]	Margin AVE [dB]	Ant.
1	3660.732	48.3	43.0	0.7	49.0	43.7	73.9	53.9	24.9	10.2	Hori.
2	3660.753	50.0	45.9	0.7	50.7	46.6	73.9	53.9	23.2	7.3	Vert.

Operating mode: Rx 0.520 MHz (Y-plane)

Range: 30 - 1000 MHz

No.	Frequency [MHz]	Reading [dBμV]	Factor [dB/m]	Loss [dB]	Gain [dB]	Result [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Ant.
-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-

All emissions were under noise floor.

Range: 1000 - 5000 MHz

No.	Frequency [MHz]	Reading PK [dBμV]	Reading AVE [dBμV]	C.Factor [dB/m]	Result PK [dBμV/m]	Result AVE [dBμV/m]	Limit PK [dBμV/m]	Limit AVE [dBμV/m]	Margin PK [dB]	Margin AVE [dB]	Ant.
1	3660.751	51.0	47.8	0.7	51.7	48.5	73.9	53.9	22.2	5.4	Hori.
2	3660.758	48.0	42.4	0.7	48.7	43.1	73.9	53.9	25.2	10.8	Vert.

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Operating mode: Rx 0.520 MHz (Z-plane)

Range: 30 - 1000 MHz

No.	Frequency [MHz]	Reading [dBμV]	Factor [dB/m]	Loss [dB]	Gain [dB]	Result [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Ant.
1	960.000	18.7	21.1	9.3	28.6	20.5	46.0	25.5	Vert.

All other emissions were under noise floor.

Range: 1000 - 5000 MHz

No.	Frequency [MHz]	Reading PK [dBμV]	Reading AVE [dBμV]	C.Factor [dB/m]	Result PK [dBμV/m]	Result AVE [dBμV/m]	Limit PK [dBμV/m]	Limit AVE [dBμV/m]	Margin PK [dB]	Margin AVE [dB]	Ant.
1	3660.768	48.1	41.6	0.7	48.8	42.3	73.9	53.9	25.1	11.6	Hori.
2	3660.791	50.3	46.3	0.7	51.0	47.0	73.9	53.9	22.9	6.9	Vert.

Operating mode: Rx 499.975 MHz (X-plane)

Range: 30 - 1000 MHz

No.	Frequency [MHz]	Reading [dBμV]	Factor [dB/m]	Loss [dB]	Gain [dB]	Result [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Ant.
1	441.925	43.2	16.6	8.1	30.2	37.7	46.0	8.3	Hori.
2	883.850	34.0	20.3	9.2	29.4	34.1	46.0	11.9	Hori.
3	441.925	36.0	16.6	8.1	30.2	30.5	46.0	15.5	Vert.

All other emissions were under noise floor.

Range: 1000 - 5000 MHz

No.	Frequency [MHz]	Reading PK [dBμV]	Reading AVE [dBμV]	C.Factor [dB/m]	Result PK [dBμV/m]	Result AVE [dBμV/m]	Limit PK [dBμV/m]	Limit AVE [dBμV/m]	Margin PK [dB]	Margin AVE [dB]	Ant.
1	4861.173	45.4	36.6	5.0	50.4	41.6	73.9	53.9	23.5	12.3	Hori.
2	2209.624	52.5	49.0	-3.5	49.0	45.5	73.9	53.9	24.9	8.4	Vert.
3	3093.474	48.7	43.6	0.2	48.9	43.8	73.9	53.9	25.0	10.1	Vert.
4	3977.324	47.9	42.2	2.5	50.4	44.7	73.9	53.9	23.5	9.2	Vert.
5	4419.249	48.6	42.9	3.6	52.2	46.5	73.9	53.9	21.7	7.4	Vert.
6	4861.173	49.9	45.4	5.0	54.9	50.4	73.9	53.9	19.0	3.5	Vert.

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Operating mode: Rx 499.975 MHz (Y-plane)

Range: 30 - 1000 MHz

No.	Frequency [MHz]	Reading [dBμV]	Factor [dB/m]	Loss [dB]	Gain [dB]	Result [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Ant.
1	441.925	38.5	16.6	8.1	30.2	33.0	46.0	13.0	Hori.
2	883.850	33.2	20.3	9.2	29.4	33.3	46.0	12.7	Hori.
3	441.925	34.5	16.6	8.1	30.2	29.0	46.0	17.0	Vert.

All other emissions were under noise floor.

Range: 1000 - 5000 MHz

No.	Frequency [MHz]	Reading PK [dBμV]	Reading AVE [dBμV]	C.Factor [dB/m]	Result PK [dBμV/m]	Result AVE [dBμV/m]	Limit PK [dBμV/m]	Limit AVE [dBμV/m]	Margin PK [dB]	Margin AVE [dB]	Ant.
1	2209.624	49.8	45.1	-3.5	46.3	41.6	73.9	53.9	27.6	12.3	Hori.
2	3093.474	47.9	41.7	0.2	48.1	41.9	73.9	53.9	25.8	12.0	Hori.
3	3977.324	46.9	40.4	2.5	49.4	42.9	73.9	53.9	24.5	11.0	Hori.
4	4419.249	47.4	41.8	3.6	51.0	45.4	73.9	53.9	22.9	8.5	Hori.
5	4861.173	46.0	39.0	5.0	51.0	44.0	73.9	53.9	22.9	9.9	Hori.
6	2209.624	50.4	45.9	-3.5	46.9	42.4	73.9	53.9	27.0	11.5	Vert.
7	3977.324	46.1	38.6	2.5	48.6	41.1	73.9	53.9	25.3	12.8	Vert.
8	4419.249	48.6	42.2	3.6	52.2	45.8	73.9	53.9	21.7	8.1	Vert.
9	4861.173	47.2	41.0	5.0	52.2	46.0	73.9	53.9	21.7	7.9	Vert.

Operating mode: Rx 499.975 MHz (Z-plane)

Range: 30 - 1000 MHz

No.	Frequency [MHz]	Reading [dBμV]	Factor [dB/m]	Loss [dB]	Gain [dB]	Result [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Ant.
1	441.925	36.1	16.6	8.1	30.2	30.6	46.0	15.4	Hori.
2	883.850	26.6	20.3	9.2	29.4	26.7	46.0	19.3	Hori.
3	441.925	39.7	16.6	8.1	30.2	34.2	46.0	11.8	Vert.
4	883.850	28.6	20.3	9.2	29.4	28.7	46.0	17.3	Vert.

All other emissions were under noise floor.

Range: 1000 - 5000 MHz

No.	Frequency [MHz]	Reading PK [dBμV]	Reading AVE [dBμV]	C.Factor [dB/m]	Result PK [dBμV/m]	Result AVE [dBμV/m]	Limit PK [dBμV/m]	Limit AVE [dBμV/m]	Margin PK [dB]	Margin AVE [dB]	Ant.
1	2209.624	52.1	48.4	-3.5	48.6	44.9	73.9	53.9	25.3	9.0	Hori.
2	3093.473	49.7	44.8	0.2	49.9	45.0	73.9	53.9	24.0	8.9	Hori.
3	3977.324	48.3	43.4	2.5	50.8	45.9	73.9	53.9	23.1	8.0	Hori.
4	4419.248	48.5	42.8	3.6	52.1	46.4	73.9	53.9	21.8	7.5	Hori.
5	4861.174	49.1	44.7	5.0	54.1	49.7	73.9	53.9	19.8	4.2	Hori.
6	3977.324	46.9	40.5	2.5	49.4	43.0	73.9	53.9	24.5	10.9	Vert.

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Operating mode: Rx 985.000 MHz (X-plane)

Range: 30 - 1000 MHz

No.	Frequency [MHz]	Reading [dB μ V]	Factor [dB/m]	Loss [dB]	Gain [dB]	Result [dB μ V/m]	Limit [dB μ V/m]	Margin [dB]	Ant.
1	926.950	43.0	20.7	9.2	29.0	43.9	46.0	2.1	Hori.
2	926.950	34.7	20.7	9.2	29.0	35.6	46.0	10.4	Vert.

All other emissions were under noise floor.

Range: 1000 - 5000 MHz

No.	Frequency [MHz]	Reading PK [dB μ V]	Reading AVE [dB μ V]	C.Factor [dB/m]	Result PK [dB μ V/m]	Result AVE [dB μ V/m]	Limit PK [dB μ V/m]	Limit AVE [dB μ V/m]	Margin PK [dB]	Margin AVE [dB]	Ant.
1	3707.799	48.0	42.1	1.1	49.1	43.2	73.9	53.9	24.8	10.7	Hori.
2	4634.749	46.9	40.0	3.6	50.5	43.6	73.9	53.9	23.4	10.3	Hori.
3	2780.849	49.4	43.7	-1.1	48.3	42.6	73.9	53.9	25.6	11.3	Vert.
4	3707.799	50.7	46.8	1.1	51.8	47.9	73.9	53.9	22.1	6.0	Vert.
5	4634.749	50.2	46.7	3.6	53.8	50.3	73.9	53.9	20.1	3.6	Vert.

Operating mode: Rx 985.000 MHz (Y-plane)

Range: 30 - 1000 MHz

No.	Frequency [MHz]	Reading [dB μ V]	Factor [dB/m]	Loss [dB]	Gain [dB]	Result [dB μ V/m]	Limit [dB μ V/m]	Margin [dB]	Ant.
1	926.950	42.5	20.7	9.2	29.0	43.4	46.0	2.6	Hori.
2	926.950	38.5	20.7	9.2	29.0	39.4	46.0	6.6	Vert.

All other emissions were under noise floor.

Range: 1000 - 5000 MHz

No.	Frequency [MHz]	Reading PK [dB μ V]	Reading AVE [dB μ V]	C.Factor [dB/m]	Result PK [dB μ V/m]	Result AVE [dB μ V/m]	Limit PK [dB μ V/m]	Limit AVE [dB μ V/m]	Margin PK [dB]	Margin AVE [dB]	Ant.
1	2780.849	47.7	40.6	-1.1	46.6	39.5	73.9	53.9	27.3	14.4	Hori.
2	3707.799	51.5	48.0	1.1	52.6	49.1	73.9	53.9	21.3	4.8	Hori.
3	4634.749	47.6	42.3	3.6	51.2	45.9	73.9	53.9	22.7	8.0	Hori.
4	3707.799	47.0	40.6	1.1	48.1	41.7	73.9	53.9	25.8	12.2	Vert.
5	4634.749	48.7	44.1	3.6	52.3	47.7	73.9	53.9	21.6	6.2	Vert.

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Operating mode: Rx 985.000 MHz (Z-plane)

Range: 30 - 1000 MHz

No.	Frequency [MHz]	Reading [dBμV]	Factor [dB/m]	Loss [dB]	Gain [dB]	Result [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Ant.
1	926.950	39.3	20.7	9.2	29.0	40.2	46.0	5.8	Hori.
2	926.950	34.3	20.7	9.2	29.0	35.2	46.0	10.8	Vert.

All other emissions were under noise floor.

Range: 1000 - 5000 MHz

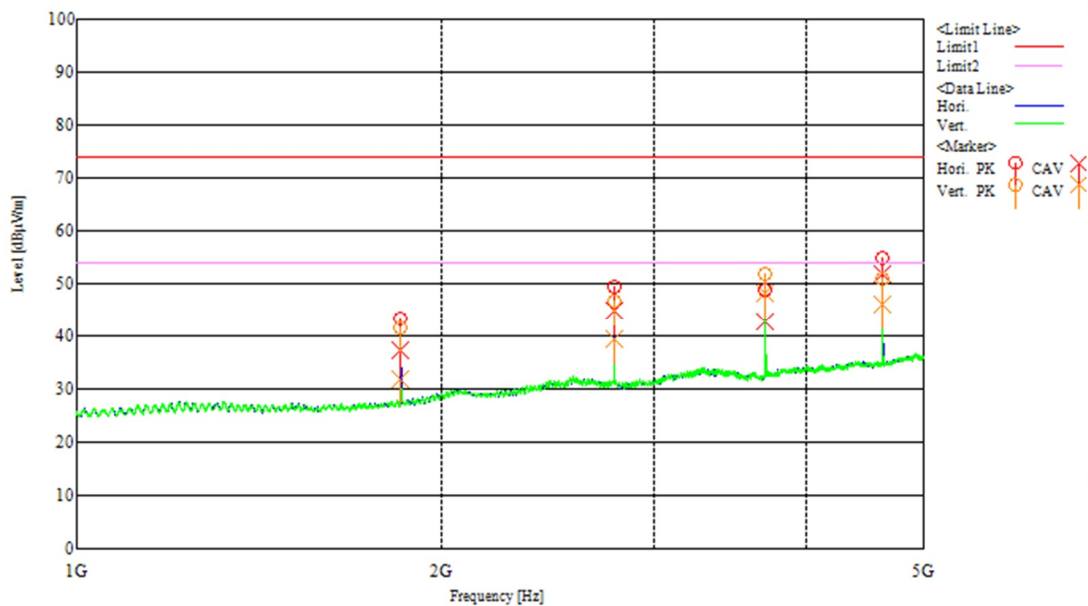
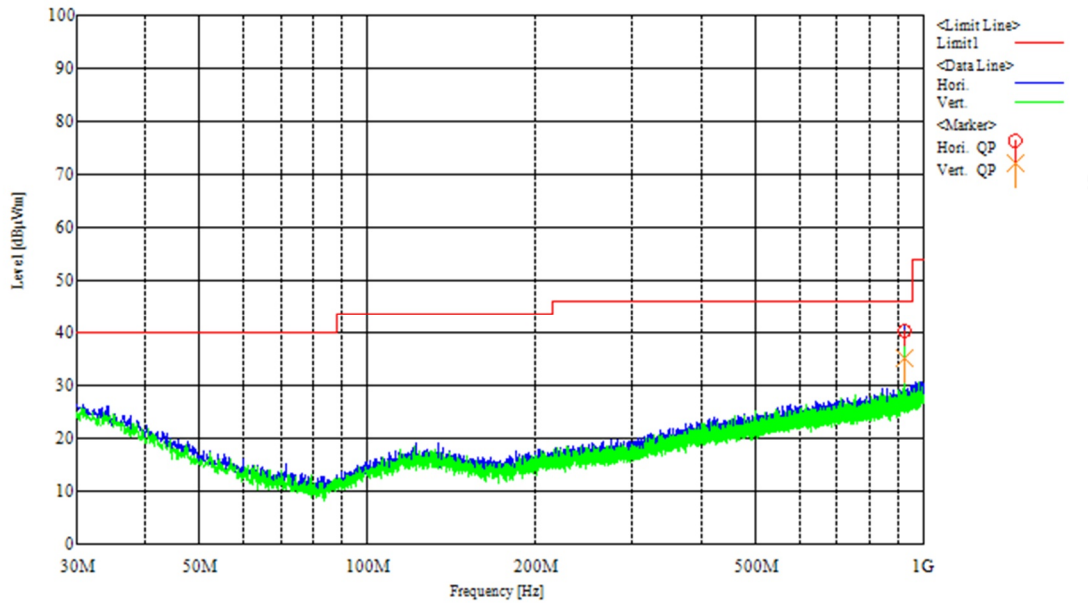
No.	Frequency [MHz]	Reading PK [dBμV]	Reading AVE [dBμV]	C.Factor [dB/m]	Result PK [dBμV/m]	Result AVE [dBμV/m]	Limit PK [dBμV/m]	Limit AVE [dBμV/m]	Margin PK [dB]	Margin AVE [dB]	Ant.
1	1853.899	49.0	42.7	-5.6	43.4	37.1	73.9	53.9	30.5	16.8	Hori.
2	2780.849	50.5	46.0	-1.1	49.4	44.9	73.9	53.9	24.5	9.0	Hori.
3	3707.799	47.6	41.5	1.1	48.7	42.6	73.9	53.9	25.2	11.3	Hori.
4	4634.749	51.3	48.3	3.6	54.9	51.9	73.9	53.9	19.0	2.0	Hori.
5	1853.899	47.0	37.4	-5.6	41.4	31.8	73.9	53.9	32.5	22.1	Vert.
6	2780.849	47.8	40.6	-1.1	46.7	39.5	73.9	53.9	27.2	14.4	Vert.
7	3707.799	50.7	46.9	1.1	51.8	48.0	73.9	53.9	22.1	5.9	Vert.
8	4634.749	47.4	42.4	3.6	51.0	46.0	73.9	53.9	22.9	7.9	Vert.

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[Chart (Worst)]

Operating condition: Rx 985.000 MHz (Z-plane)



[Test condition]

Tested Date: 15 Jun. 2021
 Humidity: 70 %

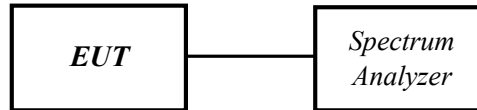
Temperature: 19 degC
 Atmos. Press: 1003 hPa

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2.2 Conducted emissions for receiver

Test setup



Applicable rule and limitation

§15.111 (b) Antenna power conducted limit : 2 nW (= -57 dBm)

Test equipment used (refer to List of utilized test equipment)

TR10	CL31	
------	------	--

Test results - Complied with requirement

Test Data

[The maximum spurious level]

Operating freq. [MHz]	Frequency range 30 - 1000 MHz		Frequency range 1000 - 5000 MHz	
	Freq. [MHz]	Level [dBm]	Freq. [MHz]	Level [dBm]
0.520	Note	Note	3660.670	-64.7
499.975	883.854	-63.8	2209.760	-68.5
985.000	None	None	4634.870	-60.9

Note: No emission above noise floor was found.

[Test condition]

Tested Date: 23 Jun. 2021
 Humidity: 63 %

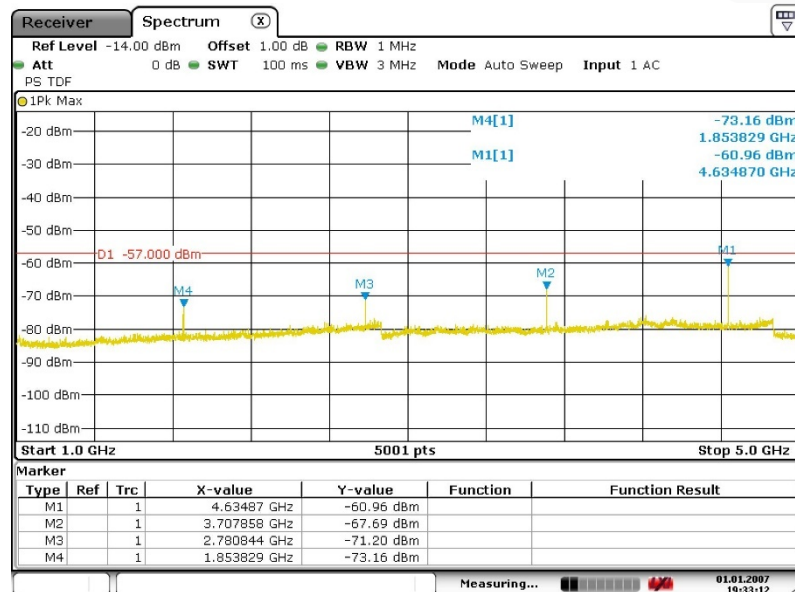
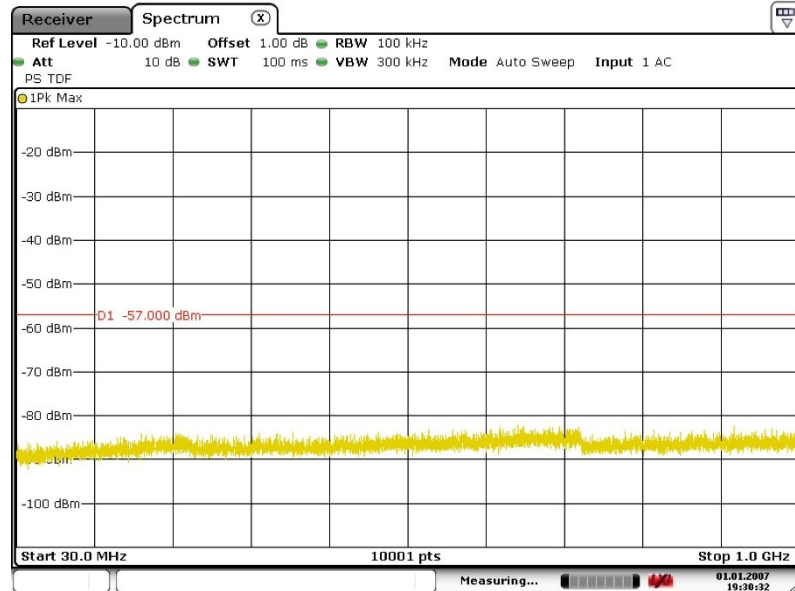
Temperature: 23 degC
 Atmos. Press: 1007 hPa

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[Chart]

Operating mode: Rx 985.000 MHz (Worst)



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2.3 AC power line conducted emissions

Test setup

Test setup was implemented according to the method of ANSI C63.4 clause 6 “General requirements for EUT equipment arrangements and operation” and Annex H.1 “AC power line conducted emission measurements setup”.

Test procedure

Measurement procedures were implemented according to the method of ANSI C63.4 clauses 7, clause 13.1.3 and Annex H.2 “AC power line conducted emission measurements”.

Exploratory measurements were used the spectrum analyzer to identify the frequency of the emission that has the highest amplitude relative to the limit by operating the EUT in a range of typical modes of operation, cable positions, and with a typical system equipment configuration and arrangement.

Final ac power line conducted emission measurements were performed based on the exploratory tests.

The EUT cable configuration and arrangement and mode of operation that produced the emission with the highest amplitude relative to the limit are selected for the final measurement.

When the measurement value is greater than average limitation the average detection measurements were performed.

Applicable rule and limitation

§15.107 (b) AC power line conducted limits

Frequency of Emission [MHz]	Conducted emissions Limit [dBμV]	
	Quasi-peak	Average
0.15 - 0.5	66 to 56 *	56 to 46 *
0.5 - 5	56	46
5 - 30	60	50

* Decreases with the logarithm of the frequency. The lower limit applies at the band edges.

Test equipment used (refer to List of utilized test equipment)

-	-	-	-
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Test software used

EMI1 Ver. 6.1

Calculation method

The Correction Factor and Result are calculated as followings.

$$\text{Correction Factor [dB]} = \text{ISN Factor [dB]} + \text{Loss [dB]}$$

$$\text{Result [dB}\mu\text{V]} = \text{Reading [dB}\mu\text{V]} + \text{Correction Factor [dB]}$$

Test results - *This tem was not tested.*

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Test Data

[Emission level]

Operating mode: -

	Freq. [MHz]	Reading QP [dBμV]	Reading Ave [dBμV]	Factor [dB]	Result QP [dBμV]	Result Ave [dBμV]	Limit QP [dBμV]	Limit Ave [dBμV]	Margin QP [dB]	Margin Ave [dB]	Line

[Chart]

Operating mode: -

[Test condition]

Tested Date: -
 Humidity: - %

Temperature: - degC
 Atmos. Press: - hPa

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4 List of utilized test equipment / calibration

ID No.	Kind of Equipment	Manufacturer	Model No.	Serial Number	Cal. Date	Cal. until
AC11(EM)	Anechoic Chamber	TDK	-	-	2020/8/11	2021/8/31
AC11(EG)	Anechoic Chamber	TDK	-	-	2020/8/1	2021/8/31
BA10	Biological Antenna	TESEQ	CBL6111D	32342	2020/6/24	2021/6/30
CL35	RF Cable 2 m	Junkosha	MWX221	1502S020	2021/3/9	2022/3/31
CL36	RF Cable 2 m	Junkosha	MWX221	1502S021	2021/3/9	2022/3/31
CL80	RF Cable 8 m	HUBER&SUHNER	SUCOFLEX104PE	MY3792/4PE	2021/3/10	2022/3/31
CL71	RF Cable for RE	RFT	-	-	2021/1/18	2022/1/31
DH07	DRG Horn Antenna	A.H. Systems	SAS-571	1939	2021/2/27	2023/2/28
PR15	Pre. Amplifier	Anritsu	MH648A	6201156141	2020/6/25	2021/6/30
PR16	Pre. Amplifier (1-26G)	Agilent Technologies	8449B	3008A01538	2021/3/9	2022/3/31
TR10	Test Receiver (F/W : 2.26)	Rohde & Schwarz	ESR26	101313	2021/3/22	2022/3/31
CL31	RF Cable 1 m	Junkosha	MWX221	1303S118	2021/1/27	2022/1/31

The measuring equipment, which was utilized in performing the tests documented herein, has been calibrated in accordance with the manufacturer's recommendations for utilizing calibration equipment, which is traceable to recognized national standards.

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