

Date : 2024-08-23 No. : HMD24070008				Page 1 of 25
Applicant	:	Radiance Instrum Flat 2002, 20/F, C Kowloon, Hong H	ents Ltd. CEO Tower, 77 Wing Hong Kong, China.	Street Lai Chi Kok,
Supplier / Manufacturer	:	HUIZHOU LIHE Da Jing Village, S	NG ELECTRONICS PLAS Si Jiao Lou, Luo Yang Towi	TIC CO.LTD n, Hui Zhou City, China
Description of Sample(s)	:	Submitted sample Product: Brand Name: Model No.: FCC ID:	e(s) said to be RFX GATEWAY N/A TX-5601 2AI67-TX5601	
Date Samples Received	:	2024-07-11		
Date Tested	:	2024-07-25 to 202	24-08-19	
Investigation Requested	:	Perform ElectroM with FCC 47CFR C63.10:2013 for 1	Iagnetic Interference measu [Codes of Federal Regulati FCC Certification.	rement in accordance ons] Part 15 and ANSI
Conclusions	:	The submitted pro Communications The tests were per above and on Sec	oduct <u>COMPLIED</u> with the Commission [FCC] Rules a rformed in accordance with tion 2.2 in this Test Report.	requirements of Federal nd Regulations Part 15. the standards described
Remarks	:			
Test by:		Susu	HONG KO	NG STANDARD

Dr.CHAN Kwok Hung, Brian Authorized Signatory



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Photograph(s) of Product

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#### 1.0 General Details

#### 1.1 Test Laboratory

The Hong Kong Standards and Testing Centre Ltd.EMC Laboratory10 Dai Wang Street, Taipo Industrial Estate, New Territories, Hong KongTelephone:852 2666 1888Fax:852 2664 4353

### 1.2 Equipment Under Test [EUT]

Description of Sample(s)	
Product:	RFX GATEWAY
Manufacturer:	HUIZHOU LIHENG ELECTRONICS PLASTIC CO.LTD
	Da Jing Village, Si Jiao Lou, Luo Yang Town, Hui Zhou City, China
Brand Name:	N/A
Model Number:	TX-5601
Rating:	5.0Vd.c. by adapter or 3.7Vd.c.(Li-ion battery *1)
The AC/DC adapter was provi	ded by the applicant with following details:
Brand name: N/A; Model no.:	XSD-0503000NUSU
Input: 100-240Va.c. 50/60Hz	0.5A, Output: 5Vd.c. 3000mA

#### **1.2.1** Description of EUT Operation

The Equipment Under Test (EUT) is a RFX GATEWAY. The EUT is operating at 433.92MHz. Test was conducted under Tx mode.

TX Frequency: 433.92MHz RF modulation: GFSK Antenna gain: -5.6dBi Antenna type: dipole antenna

#### 1.3 Date of Order

2024-07-11

#### 1.4 Submitted Sample(s):

1 Sample

#### 1.5 Test Duration

2024-07-25 to 2024-08-19

#### 1.6 Country of Origin

China

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#### <u>2.0</u> <u>Technical Details</u>

#### 2.1 Investigations Requested

Perform ElectroMagnetic Interference measurement in accordance with FCC 47CFR [Codes of Federal Regulations] Part 15 and ANSI C63.10: 2013 for FCC Certification. This is a manually operated transmitter, Press the button to start sending signals.

#### 2.2 Test Standards and Results Summary Tables

EMISSION Results Summary						
Test Condition	Test Requirement	Test Method	Class /	Т	est Result	
			Severity	Pass	Failed	N/A
Field Strength of Fundamental Emissions & Spurious Emissions	FCC 47CFR 15.231(a)	ANSI C63.10: 2013	N/A	$\boxtimes$		
20dB Bandwidth of Fundamental Emission	FCC 47CFR 15.231(c)	ANSI C63.10: 2013	N/A	$\boxtimes$		
Radiated Emissions	FCC 47CFR 15.209	ANSI C63.10: 2013	N/A	$\boxtimes$		
Conducted Emissions	FCC 47CFR 15.231(a)	ANSI C63.10:2013	N/A	$\boxtimes$		
Manual Operated Transmitter Transmission Time	FCC 47CFR 15.203	ANSI C63.10: 2013	N/A	$\boxtimes$		
Antenna requirement	FCC 47CFR 15.231(a)	N/A	N/A	$\boxtimes$		

Note: N/A - Not Applicable

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<u>3.0</u> <u>Test Results</u>

```
3.1 Emission
```

3.1.1 Radiated Emissions

Test Requirement:	FCC 47CFR 15.231(a)	
Test Method:	ANSI C63.10:2013	
Test Date:	2024-08-12	
Mode of Operation:	Tx mode	
Ambient Temperature: 25°C	Relative Humidity: 52%	Atmospheric Pressure: 101 kPa

#### **Test Method:**

For emission measurements at or below 1 GHz, the sample was placed 0.8m above the ground plane of semianechoic Chamber\*. For emission measurements above 1 GHz, the sample was placed 1.5m above the ground plane of semi-anechoic Chamber\*. Measurements in both horizontal and vertical polarities were performed. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, rotating turntable, varying antenna height from 1m to 4m in both horizontal and vertical polarizations. The emissions worst-case are shown in Test Results of the following pages.

 \* Semi-Anechoic chamber located on the G/F of The Hong Kong Standards and Testing Centre Ltd. with Registration Number: HK0001 Test Firm Registration Number: 367672

#### **Test Setup:**



Absorbers placed on top of the ground plane are for measurements above 1000MHz only.
Measurements between 30MHz to 1000MHz made with Bi-log antennas, above 1000MHz horn antennas are used, 9kHz to 30MHz loop antennas are used.

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#### Limits for Field Strength of Fundamental Emissions [FCC 47CFR 15.231a]:

Frequency Range of	Field Strength of	Field Strength of
Fundamental	Fundamental Emission	Spurious Emission
	[Average]	[Average]
[MHz]	[µV/m]	$[\mu V/m]$
40.66-40.70	2,250	225
70-130	1,250	125
130-174	1,250 to 3,750 *	125 to 375 *
174-260	3,750	375
260-470	3,750 to 12,500 *	375 to 1,250 *
Above 470	12,500	1,250

<sup>1</sup>Linear interpolations.

The maximum permitted unwanted emission level is 20 dB below the maximum permitted fundamental level.

#### Results of Tx mode(1GHz – 18GHz): PASS

Field Strength of Fundamental Emissions						
			Peak Value			
Frequency	Measured	Correction	Field	Field	Limit	E-Field
	Level @3m	Factor	Strength	Strength	@3m	Polarity
MHz	dBµV	dB/m	dBµV/m	μV/m		
433.92	69.9	15.4	85.3	18428.9	109,966.8	Vertical
433.92	82.5	15.3	97.8	77714.1	109,966.8	Horizontal

Field Strength of Spurious Emissions						
			Peak Value			
Frequency	Measured	Correction	Field	Field	Limit @3m	E-Field
	Level @3m	Factor	Strength	Strength		Polarity
MHz	dBµV	dB/m	dBµV/m	μV/m	μV/m	
867.84	20.8	22.8	43.6	151.4	10,996.7	Vertical
867.84	22.3	22.5	44.8	173.8	10,996.7	Horizontal
1301.76	12.3	26.8	39.1	90.2	5,011.87	Vertical
1301.76	12.7	26.8	39.5	94.4	5,011.87	Horizontal
1735.68	9.9	32.9	42.8	138.0	10,996.7	Vertical
1735.68	10.9	32.7	43.6	151.4	10,996.7	Horizontal
2169.60	4.9	38.2	43.1	142.9	10,996.7	Vertical
2169.60	5.9	38.1	44.0	158.5	10,996.7	Horizontal

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#### Results of Tx mode(1GHz - 18GHz): PASS

Field Strength of Fundamental Emissions						
		A	verage Value	2		
Frequency	Peak Value	Duty Crycle	Field	Field	Limit	E-Field
	Level @3m	Factor	Strength	Strength	@3m	Polarity
MHz	dBμV	dB/m	_dBµV/m_	μV/m	μV/m_	
433.92	85.3	-17.7	67.6	2404.4	10,996.7	Vertical
433.92	97.8	-17.7	80.1	10127.4	10,996.7	Horizontal

	Field Strength of Spurious Emissions					
		Av	erage Value			
Frequency	Peak Value	Duty Cycle	Field	Field	Limit @3m	E-Field
	Level @3m	Factor	Strength	Strength		Polarity
MHz	dBµV	dB/m	dBµV/m_	μV/m	μV/m_	
867.84	43.6	-17.7	25.9	19.7	1,099.7	Vertical
867.84	44.8	-17.7	27.1	22.6	1,099.7	Horizontal
1301.76	39.1	-17.7	21.4	11.7	501.190	Vertical
1301.76	39.5	-17.7	21.8	12.3	501.190	Horizontal
1735.68	42.8	-17.7	25.1	18.0	1,099.7	Vertical
1735.68	43.6	-17.7	25.9	19.7	1,099.7	Horizontal
2169.60	43.1	-17.7	25.4	18.6	1,099.7	Vertical
2169.60	44.0	-17.7	26.3	20.7	1,099.7	Horizontal

Remarks:

FCC Limit for Fundamental Average Measurement :Linear interpolations

- +: Denotes restricted band of operation. Measurements were made using a peak detector. Any emission less than 1000 MHz and falling within the restricted bands of FCC Rules Part 15 Section 15.205 were not adjusted for averaging and the limits of FCC Rules Part 15 Section 15.209 were applied.
- \*: Adjusted by Duty Cycle = -20.0dB Duty Cycle Correction = -20.0dB Correction Factor= Cable loss Factor+ Ant Factor-Amp Factor Average Value Final Field Strengted = Peak Value Final Field Strengted +Duty Cycle

Correction Factor includes Antenna Factor and Cable Attenuation.

Calculated measurement uncertainty (9kHz-30MHz): 2.0dB

(30MHz -1GHz): 4.9dB (1GHz -6GHz): 4.02dB

(6GHz -26.5GHz): 4.03dB

Emissions in the vertical and horizontal polarizations have been investigated and the worst-case test results are recorded in this report.

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#### Limits for Radiated Emissions FCC 47 CFR 15.209 Class B]:

Frequency Range	Quasi-Peak Limits
[MHz]	[µV/m]
0.009-0.490	2400/F (kHz)
0.490-1.705	24000/F (kHz)
1.705-30	30
30-88	100
88-216	150
216-960	200
Above960	500

The emission limits shown in the above table are based on measurement employing a CISPR quasi-peak detector and above 1000MHz are based on measurements employing an average detector.

Remarks:

Correction Factor includes Antenna Factor and Cable Attenuation.

Calculated measurement uncertainty: (9kHz-30MHz): 2.0dB

(30MHz -1GHz): 4.9dB

(1GHz -6GHz): 4.02dB (6GHz -26.5GHz): 4.03dB

Emissions in the vertical and horizontal polarizations have been investigated and the worst-case test results are recorded in this report.

#### Result of Tx mode (9kHz - 30MHz): PASS

Emissions detected are more than 20 dB below the limit line(s).



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#### **Results of Tx mode (30MHz – 1GHz): PASS** Horizontal



Ambient Temperature: 26.3C Relative Humidity : 54.7% Air Pressure : 100.9kPa

	Freq	Level	Limit Line	Over Limit	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB		
1	36.001	31.29	40.00	-8.71	QP	Horizontal
2	82.938	24.07	40.00	-15.93	QP	Horizontal
3	166.068	26.39	43.50	-17.11	QP	Horizontal
4	284.977	31.02	46.00	-14.98	QP	Horizontal
5	433.920	97.81				
6	495.934	36.98	46.00	-9.02	QP	Horizontal
7	633.907	38.94	46.00	-7.06	QP	Horizontal

\*: Frequency 434.92MHz is the fundamental.

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Vertical



Ambient Temperature: 26.3C Relative Humidity : 54.7% Air Pressure : 100.9kPa

	Freq	Level	Limit Line	Over Limit	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB		
1	45.375	30.02	40.00	-9.98	QP	Vertical
2	47.326	29.23	40.00	-10.77	QP	Vertical
3	103.080	22.94	43.50	-20.56	QP	Vertical
4	155.910	24.68	43.50	-18.82	QP	Vertical
5	297.224	29.58	46.00	-16.42	QP	Vertical
6	433.920	85.32				
7	719.200	39.85	46.00	-6.15	QP	Vertical

\*: Frequency 434.92MHz is the fundamental.

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#### 3.1.2 AC Mains Conducted Emissions (0.15MHz to 30MHz)

Test Requirement:	FCC 47CFR 15.207
Test Method:	ANSI C63.10:2013
Test Date:	2024-07-25
Mode of Operation:	TX mode
Test Voltage:	AC 120V/60Hz for adapter

Ambient Temperature: 25°C

Relative Humidity: 51%

Atmospheric Pressure: 101 kPa

#### **Test Method:**

The test was performed in accordance with ANSI ANSI C63.10:2013, with the following: an initial measurement was performed in peak and average detection mode on the live line, any emissions recorded within 30dB of the relevant limit line were re-measured using quasi-peak and average detection on the live and neutral lines with the worst case recorded in the table of results.

#### **Receiver Setting:**

Bandw. = 9 kHz, Meas. Time= 10.0 ms, Step Width = 5.0kHz Detector = MaxPeak and CISPR AV

#### **Test Setup:**



#### Limits for Conducted Emissions (FCC 47 CFR 15.207):

Frequency Range	Quasi-Peak Limits	Average
[MHz]	[dBµV]	[dBµV]
0.15-0.5	66 to 56*	56 to 46*
0.5-5.0	56	46
5.0-30.0	60	50

\* Decreases with the logarithm of the frequency.

Remarks:

Calculated measurement uncertainty (0.15MHz - 30MHz): 3.25dB

-\*- Emission(s) that is far below the corresponding limit line.

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#### **Results of TX mode (L): PASS**

Please refer to the following diagram for individual results.



### MEASUREMENT RESULT: "vol\_0001\_fin QP" Frequency Level Transd Limit

PE	Line	Margin	Limit	Transd	Level	Frequency
		dB	dBuV	dB	dBuV	MHZ
GND	L1	19.80	61.90	9.7	42.10	0.245000
GND	L1	5.60	56.00	9.7	50.40	0.605000
GND	L1	12.00	56.00	9.7	44.00	1.185000
GND	L1	12.50	56.00	9.8	43.50	2.325000
GND	L1	17.30	60.00	10.1	42.70	12.220000
GND	L1	11.50	60.00	10.3	48.50	15.785000
			fin AV"	ro1_0001_	RESULT: "1	MEASUREMENT 1
PE	Line	Margin	<i>fin AV"</i> Limit	701_0001_ Transd	RESULT: "T Level	Frequency
PE	Line	Margin dB	<i>fin AV"</i> Limit dBµV	0001_0001_ Transd dB	R <b>ESULT: "1</b> Level dBµV	MEASUREMENT 1 Frequency MHz
PE	Line	Margin dB	<i>fin AV"</i> Limit dBµV	Transd dB	R <b>ESULT: "1</b> Level dBµV	MEASUREMENT 1 Frequency MHz
PE GND	Line Ll	Margin dB 18.30	fin AV" Limit dBµV 51.60	701_0001_ Transd dB 9.7	RESULT: "T Level dBµV 33.30	MEASUREMENT 1 Frequency MHz 0.255000
PE GND GND	Line L1 L1	Margin dB 18.30 5.00	fin AV" Limit dBµV 51.60 46.00	7 <b>01_0001_</b> Transd dB 9.7 9.7	RESULT: " Level dBµV 33.30 41.00	MEASUREMENT 1 Frequency MHz 0.255000 0.605000
PE GND GND GND	Line L1 L1 L1	Margin dB 18.30 5.00 11.50	fin AV" Limit dBµV 51.60 46.00 46.00	7 <b>01_0001_</b> Transd dB 9.7 9.7 9.7	RESULT: " Level dBµV 33.30 41.00 34.50	MEASUREMENT 1 Frequency MHz 0.255000 0.605000 0.880000
PE GND GND GND GND	Line L1 L1 L1 L1	Margin dB 18.30 5.00 11.50 13.20	_fin AV" Limit dBμV 51.60 46.00 46.00 46.00	701_0001_ Transd dB 9.7 9.7 9.7 9.8	RESULT: " Level dBµV 33.30 41.00 34.50 32.80	MEASUREMENT 1 Frequency MHz 0.255000 0.605000 0.880000 2.355000
PE GND GND GND GND GND	Line L1 L1 L1 L1 L1 L1	Margin dB 18.30 5.00 11.50 13.20 19.80	_fin AV" Limit dBμV 51.60 46.00 46.00 46.00 50.00	701_0001_ Transd dB 9.7 9.7 9.7 9.7 9.8 10.1	RESULT: " Level dBµV 33.30 41.00 34.50 32.80 30.20	MEASUREMENT 1 Frequency MHz 0.255000 0.605000 0.880000 2.355000 12.220000
PE GND GND GND GND GND GND	Line L1 L1 L1 L1 L1 L1 L1	Margin dB 18.30 5.00 11.50 13.20 19.80 11.00	_fin AV" Limit dBμV 51.60 46.00 46.00 46.00 50.00 50.00	rol_0001_ Transd dB 9.7 9.7 9.7 9.7 9.8 10.1 10.3	RESULT: " Level dBµV 33.30 41.00 34.50 32.80 30.20 39.00	MEASUREMENT 1 Frequency MHz 0.255000 0.605000 0.880000 2.355000 12.220000 18.900000

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#### **Results of TX mode (N): PASS**

Please refer to the following diagram for individual results.



#### MEASUREMENT RESULT: "vol 0001 fin QP"

			~			
Frequency	Level	Transd	Limit	Margin	Line	PE
MHZ	αΒμν	aв	αΒμν	aв		
0.320000	36.20	9.7	59.70	23.50	N	GND
0.600000	50.20	9.7	56.00	5.80	Ν	GND
1.975000	43.80	9.8	56.00	12.20	N	GND
2.475000	40.10	9.8	56.00	15.90	Ν	GND
12.325000	42.60	10.1	60.00	17.40	Ν	GND
15.410000	47.70	10.2	60.00	12.30	Ν	GND
MEASUREMENT RE	SULT: "v	001_0001_f	in AV"			
Frequency	Level	Transd	Limit	Margin	Line	PE
MHz	dBµV	dB	dBµV	dB		
0.250000	30.10	9.7	51.80	21.60	Ν	GND
0.600000	38.70	9.7	46.00	7.30	N	GND
1.270000	31.40	9.7	46.00	14.60	Ν	GND
2.755000	30.20	9.8	46.00	15.80	Ν	GND
12.160000	29.20	10.1	50.00	20.80	Ν	GND
18.945000	38.50	10.3	50.00	11.50	Ν	GND

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#### 3.1.3 Antenna Requirement

Ambient Temperature: 25°C

Relative Humidity: 51%

Atmospheric Pressure: 101 kPa

#### Test Requirements: § 15.203

#### **Test Specification:**

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

#### **Test Results:**

This is dipole antenna with an un-standard antenna jack, the antenna gain = -5.6dBi. User is unable to remove or changed the Antenna.



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#### 3.2 20dB Bandwidth of Fundamental Emission

Test Requirement:	FCC 47 CFR 15.231(c)
Test Method:	ANSI C63.10:2013
Test Date:	2024-08-19
Mode of Operation:	Tx mode

Ambient Temperature: 25°C Relative Humidity: 52%

Atmospheric Pressure: 101 kPa

#### **Test Method:**

The bandwidth is measured at an amplitude level reduced from the reference level by a specified ratio. The reference level is the level of the highest amplitude signal observed from the transmitter at the fundamental frequency. Once the reference level is established, the equipment is conditioned with typical modulating signal to produce the worst-case (i.e. the widest) bandwidth.

#### **Test Setup:**

As Test Setup of clause 3.1.1 in this test report.



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#### Limits for 20 dB Bandwidth of Fundamental Emission:

Frequency Range	20dB Bandwidth	FCC Limits *
[MHz]	[kHz]	[MHz]
433.92	26.98	1.0848

\*: FCC Limit for Bandwidth measurement

= (0.25%)(Center Frequency) = (0.0025)(433.92)

= (0.0025)(455)= 1.0848MHz

Ref Value	2.00 dBm		Center Freq: 433.920 Trig: Free Run	000 MHz Avg Hold:>10/10	Radio Std: None
		#IFGain:Low	#Atten: 10 dB		Radio Device: BTS
0 dB/div	Ref 2.00 dBr	n			
0g 1.00					
.8.0			~		
8.0			$\rightarrow$		
18.0		~~			
18.0	- manana mana	<i>F</i> *			
8.0	0				m how have a second
8.0					
8.0					
8.0					
enter 43 Res BW	3.9 MHz 3 kHz		#VBW 10 ki	łz	Span 100 kH Sweep 13.67 m
Occup	ied Bandwic	ith	Total P	ower -8.	53 dBm
	:	24.180 kH	z		
Transm	nit Freq Error	-6.004 kH	IZ OBW P	ower	99.00 %
		26.00 PT	⊡ بر ا	2	0.00 -10

20dB Bandwidth of Fundamental Emission

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![](_page_17_Picture_0.jpeg)

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#### Appendix A

#### List of Measurement Equipment

		Radiated E	Emission			
EQP NO.	DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.	LAST CAL	DUE CAL
EM215	MULTIDEVICE CONTROLLER	EMCO	2090	00024676	N/A	N/A
EM217	ELECTRIC POWERED TURNTABLE	EMCO	2088	00029144	N/A	N/A
EM218	ANECHOIC CHAMBER	ETS-LINDGREN	FACT-3		2024-04-18	2029-04-18
EM356	ANTENNA POSITIONING TOWER	ETS-LINDGREN	2171B	00150346	N/A	N/A
EM293	SPECTRUM ANALYZER	AGILENT TECHNOLOGIES	N9020A	MY50510152	2023-03-21	2025-03-21
EM299	BROADBAND HORN ANTENNA	ETS-LINDGREN	3115	00114120	2023-01-25	2025-01-25
EM300	PYRAMIDAL STANDARD GAIN HORN ANTENNA	ETS-LINDGREN	3160-09	00130130	2023-01-16	2025-01-16
EM301	PYRAMIDAL STANDARD GAIN HORN ANTENNA	ETS-LINDGREN	3160-10	00130988	2023-02-15	2025-02-15
EM353	LOOP ANTENNA	ETS_LINDGREN	6502	00206533	2022-09-26	2025-09-26
EM355	BICONILOG ANTENNA	ETS-LINDGREN	3143B	00094856	2022-08-26	2025-08-26
EM200	DUAL CHANNEL POWER METER	R & S	NRVD	100592	2023-08-02	2025-08-02
EM012	PRE-AMPLIFIER	HP	HP8448B	3008A00262	2022-11-08	2025-11-08

#### Line Conducted

EQP NO.	DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.	LAST CAL	DUE CAL
EM232	LISN	SCHAFFNER	NNB41	04/100082	2023-05-30	2025-05-30
EM181	EMI TEST RECEIVER	R & S	ESIB7	100072	2024-04-18	2025-04-18
EM179	IMPULSE LIMITER	R & S	ESH3-Z2	357.8810.52/54	2023-03-17	2025-03-17
EM154	SHIELDING ROOM	SIEMENS MATSUSHITA COMPONENTS	N/A	803-740-057- 99A	2022-02-06	2027-02-06
N/A	MEASUREMENT AND EVALUATION SOFTWARE	ROHDE & SCHWARZ	BSIB-K1	V1.20	N/A	N/A

Remarks:-

CM Corrective Maintenance

N/A Not Applicable

TBD To Be Determined

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![](_page_18_Picture_0.jpeg)

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Appendix B

**Duty Cycle Correction During 100msec** 

Each packet period (100msec) never exceeds a series of 1 (1\*13.0ms) pulses. Assuming any combination of pulses may be obtained due to encoding the worst case transmit duty cycle would be considered

(13.0 ms) per 100msec =13.0% duty cycle.

Remarks:

Duty cycle factor = 20Log [13.0/100]= -17.7dB

The following figures [Figure A to Figure B] showed the characteristics of the pulse train for one of these functions.

![](_page_19_Picture_0.jpeg)

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![](_page_19_Figure_4.jpeg)

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![](_page_20_Picture_0.jpeg)

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Appendix C

#### Manually Operated Transmitter Transmission Time [FCC 47CFR 15.231(a)]

According to FCC 47CFR15.231 (a). A manually operated transmitter shall employ a switch that will automatically deactivate the transmitter within not more than 5 seconds of being released. The EUT ceases transmission almost immediately upon being released and appears to finish the current packet being transmitted. Therefore the longest period of time the transmitter should take to deactivate is a packet length.

Mark	ter 1Δ2	20.0000	ns PI	NO: Fast 🔸 Gain:Low	Trig: Free #Atten: 20	Run dB	Avg Type	: Log-Pwr	TRA TY D	CE 1 2 3 4 5 6 PE WWWWWWW ET P N N N N N
10 dB	/div Re	ef -2.00 d	Bm					Δ	Mkr1 1	3.00 ms 0.08 dB
-12.0										
-22.0										
-32.0									12	<u>2</u>
-42.0										
-52.0										
-62.0	₩₩₩₽₽₽ <sup>₽</sup> ₩₩₩₽₽ <sup>₽</sup>	bhraitean an a	Maling And	alpharancetatant	<b>M</b> hitikaaapiiayik	Maran Marana Marana Marana Marana M	h <del>allan</del> dekkantor	and the second second	northe later	onterformation
-72.0 -										
-82.0										
-92.0 -										
Cent	er 433.92 BM 1 0 N	20000 MH 4Hz	Iz	VBM	1 0 MHz			Sween	ې ۱0 00 د	Span 0 Hz

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![](_page_21_Picture_0.jpeg)

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Appendix D

#### **Photographs of EUT**

![](_page_21_Picture_6.jpeg)

View of the product

![](_page_21_Picture_8.jpeg)

View of adapter

![](_page_21_Picture_10.jpeg)

![](_page_21_Picture_11.jpeg)

View of the product

![](_page_21_Picture_13.jpeg)

**Inner Circuit Bottom View** 

![](_page_21_Picture_15.jpeg)

![](_page_22_Picture_0.jpeg)

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Photographs of EUT

![](_page_22_Picture_5.jpeg)

**Inner Circuit Top View** 

![](_page_22_Picture_7.jpeg)

**Inner Circuit Bottom View** 

![](_page_22_Picture_9.jpeg)

**Inner Circuit Bottom View** 

![](_page_22_Picture_11.jpeg)

![](_page_23_Picture_0.jpeg)

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**Photographs of EUT** 

![](_page_23_Picture_5.jpeg)

Measurement of Radiated Emission Test Set Up (30MHz – 1000MHz)

![](_page_23_Picture_7.jpeg)

![](_page_24_Picture_0.jpeg)

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**Photographs of EUT** 

![](_page_24_Picture_4.jpeg)

Measurement of Conducted Emission Test Set Up

![](_page_24_Picture_6.jpeg)

\*\*\*\*\* End of Test Report \*\*\*\*\*

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