

Prüfbericht - Nr.: <i>Test Report No.:</i>	50347990 001	Auftrags-Nr.: <i>Order No.:</i>	168154565	Seite 1 von 45 <i>Page 1 of 45</i>
Kunden-Referenz-Nr.: <i>Client Reference No.:</i>	N/A	Auftragsdatum: <i>Order date:</i>	2020.10.20	
Auftraggeber: <i>Client:</i>	Ring LLC 1523 26th St, Santa Monica, CA 90404, USA			
Prüfgegenstand: <i>Test item:</i>	Transformer			
Bezeichnung / Typ-Nr. : <i>Identification / Type No. :</i>	5AT1S9			
Auftrags-Inhalt: <i>Order content:</i>	TÜV Rheinland – FCC ID/ISED Service			
Prüfgrundlage: <i>Test specification:</i>	CFR47 FCC Part 15: Subpart C Section 15.207 CFR47 FCC Part 15: Subpart C Section 15.209 CFR47 FCC Part 15: Subpart C Section 15.247 RSS-247 Issue 2 February 2017 RSS-Gen Issue 5 March 2019			
Wareneingangsdatum: <i>Date of receipt:</i>	2021.04.20			
Prüfmuster-Nr.: <i>Test sample No.:</i>	A003040847 001			
Prüfzeitraum: <i>Testing period:</i>	2021.04.19-2021.04.23			
Ort der Prüfung: <i>Place of testing:</i>	Refer to section 1.1.			
Prüflaboratorium: <i>Testing laboratory:</i>	TÜV Rheinland / CCIC (Ningbo) Co., Ltd.			
Prüfergebnis*: <i>Test result*:</i>	Pass			
geprüft von/ tested by:		kontrolliert von/ reviewed by:		
2021.05.07 Caidong Xie/PE		2021.05.07 Feng Liang/TC		
Datum <i>Date</i>	Name/Stellung <i>Name/Position</i>	Unterschrift <i>Signature</i>	Datum <i>Date</i>	Name/Stellung <i>Name/Position</i>
				Unterschrift <i>Signature</i>
Sonstiges/ Other: FCC ID: 2AEUPBHALV002, IC: 20271-BHALV002.				
ZZustand des Prüfgegenstandes bei Anlieferung: <i>Condition of the test item at delivery :</i>		Prüfmuster vollständig und unbeschädigt <i>Test item complete and undamaged</i>		
*Legende: 1= Sehr gut 2 = gut 3= befriedigend 4= ausreichend 5 = mangelhaft P(ass) =entspricht o.g. Prüfgrundlage(n) F(ail)= entspricht o.g. Prüfgrundlage(n) N/A = nicht anwendbar N/T =nicht getestet Legend: 1= very good 2 = good 3= satisfactory 4= sufficient 5 = poor P(ass) = passed a.m. test specification(s) F(ail)= failed a.m. test specification(s) N/A = not applicable N/T = not tested				
Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens. <i>This test report relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any safety mark on this or similar products.</i>				

TEST SUMMARY

4.1.1 ANTENNA REQUIREMENT

Result:

Pass

4.1.2 20dB BANDWIDTH MEASUREMENT

Result:

Pass

4.1.3 99% EMISSION BANDWIDTH MEASUREMENT

Result:

Pass

4.1.4 MAXIMUM PEAK CONDUCTED OUTPUT POWER

Result:

Pass

4.1.5 EQUIVALENT ISOTROPICALLY RADIATED POWER

Result:

Pass

4.1.6 CONDUCTED SPURIOUS EMISSIONS MEASURED IN 100 KHz BANDWIDTH

Result:

Pass

4.1.7 CARRIER SEPARATION MEASUREMENT

Result:

Pass

4.1.8 THE NUMBER OF HOPPING CHANNELS

Result:

Pass

4.1.9 CHANNEL OCCUPANCY TIME

Result:

Pass

4.1.10 CONDUCTED EMISSION (AC POWER-LINE)

Result:

Pass

4.1.11 RADIATED SPURIOUS EMISSION

Result:

Pass

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1 Test Sites

1.1 Test Facilities

Laboratory: TÜV Rheinland /CCIC(Ningbo) Co., Ltd.

1st Floor, Building 11, Scholar Innovation Park, No.1188 Zhongguan Road, Zhenhai District, Ningbo 315200 P.R. China.

The used test equipment is in accordance with CISPR 16-1 series standards for measurement of radio interference.

1.2 List of Test and Measurement Instruments

Table 1: List of Test and Measurement Equipment

No.	Equipment	Model	Inventory no.	Last cal. date	Cal. due date
1.	EMI test receiver	ESR7	101929	2020.11.25	2021.11.11
2.	Spectrum analyzer	FSV40	101412	2020.11.25	2021.11.11
3.	Pre-amplifier	SCU-18F	180051	2020.11.25	2021.11.11
4.	Horn antenna	HF907	102653	2021.08.02	2023.07.21
5.	Bilog Antenna	CBL6112D	49033	2021.04.12	2024.03.14
6.	EMI receiver	ESR3	102331	2020.11.25	2021.11.11
7.	LISN	ENV216	102250	2020.11.25	2021.11.11

1.3 Measurement Uncertainty

Test Item	Expanded Measurement Uncertainty (k=2)
Conducted Emission (9-150kHz)	3.70dB
Conducted Emission (150k-30MHz)	3.30dB
Radiated Emission (30-1000MHz)	4.52dB
Radiated Emission (1-18GHz)	4.37dB

2 General Product Information

2.1 Product Function and Intended Use

The EUT (equipment under test) is a Transformer which support BLE and FSK FHSS function operated at 2400-2483.5MHz and 902-928MHz respectively.

This report is for FSK FHSS 902-928MHz only. For BLE test, please refer to the original report EC1903011F02.

2.2 Ratings and System Details

Power Supply	: 120Vac
FCC ID	: 2AEUPBHALV002
IC	: 20271-BHALV002
HVIN	: 5AT1S9
FVIN	: 1.7.16-56
PMN	: Transformer

Technical Specification of BLE

Technical Specification	BLE
Operating Frequency band	2402 – 2480 MHz
Bluetooth Core Version	Bluetooth Low Energy 4.2
Channel separation	2MHz
Extreme Temperature Range	-20°C ~ 55°C
Modulation	GFSK
Antenna Type	Internal Antenna
Antenna Gain(dBi)	-2.5
Channel	0~39

Technical Specification of FSK FHSS

Technical Specification	FSK150Kbps FHSS	FSK 50Kbps FHSS	FSK 250Kbps FHSS
Operating Frequency band	902 – 928 MHz		
Extreme Temperature Range	-20°C ~ 55°C		
Modulation	FSK FHSS		
Antenna Type	Internal Antenna		
Antenna Gain(dBi)	-3.8		
Channel Separation (kHz)	400	200	500
Channel Number	64	129	51
Data Rate (Kbps)	150	50	250
Hopping Channel(MHz)	902.4~927.6	902.2~927.8	902.5~927.5

2.3 Independent Operation Modes

The basic operation modes are:

Mode A: Transmitting continuously in a channel

Mode B: Hopping in a sequence of hopping channels and Transmitting

2.4 Noise Generating and Noise Suppressing Parts

Refer to the Circuit diagram for further information.

2.5 Submitted Documents

Circuit diagram, PCB layout, Labels, user's manual, etc.

3 Test Set-up and Operation Modes

3.1 Principle of Configuration Selection

The equipment under test (EUT) was configured to measure its maximum power level. The Mode Cs were adapted accordingly in reference to the instructions for use.

3.2 Test Operation and Test Software

During testing, Channel & Power Controlling Software provided by the customer was used to control the operating channel as well as the output power level. The RF output power was selected according to the instruction given by the manufacturer. The setting of the RF output power expected by the customer shall be fixed on the firmware of the final end product.

All testing were performed according to the procedures in ANSI C63.10: 2013.

Test Software EMC32 V10.30 was used in the radiated emission test.

3.3 Special Accessories and Auxiliary Equipment

Description	Manufacturer	Model No.
notebook	Lenovo	T420

3.4 Countermeasures to achieve EMC Compliance

The tested sample contained noise suppression components as specified in the circuit diagram. No special measure is employed to achieve the requirement.

3.5 Test set-up

Diagram of Measurement Configuration for Radiation Test (Below 1GHz)

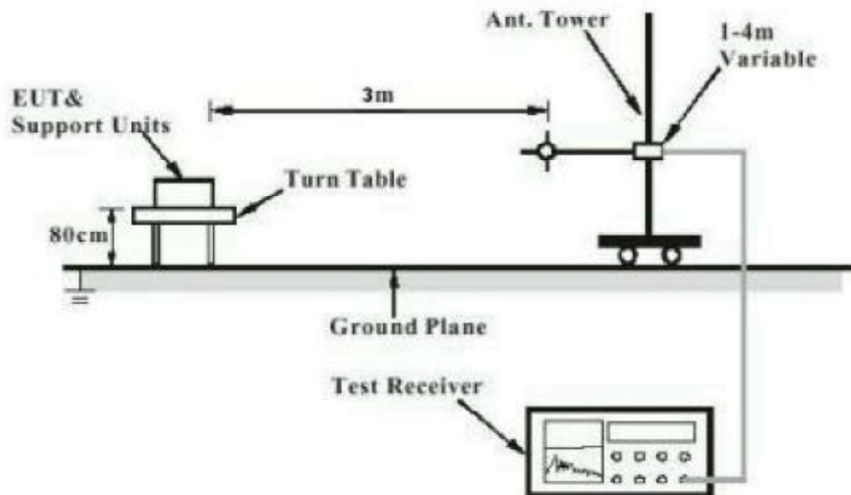


Diagram of Measurement Configuration for Radiation Test (Above 1GHz)

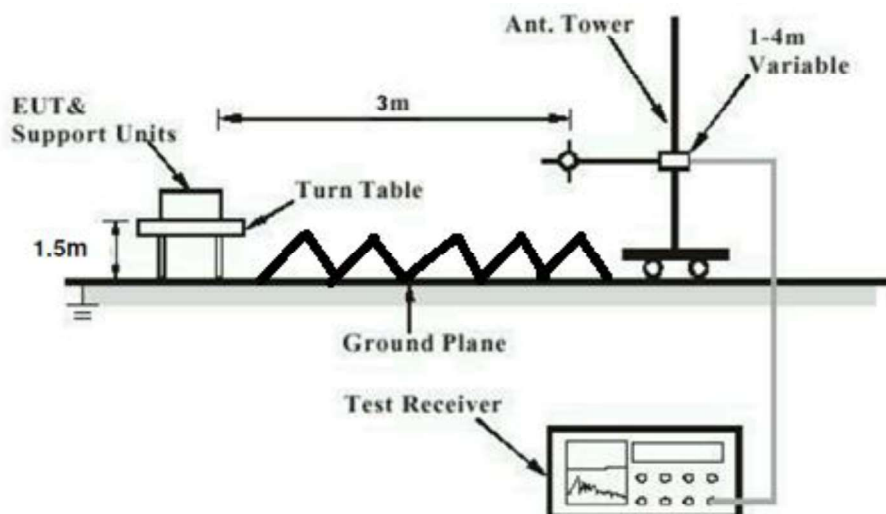
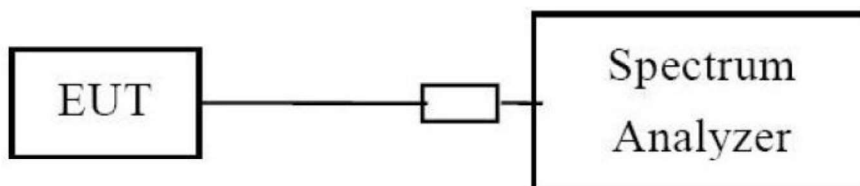


Diagram of Measurement Configuration for Conducted Transmitter Measurement



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4 Test Results

4.1 Transmitter Requirement & Test Suites

4.1.1 Antenna Requirement

Result:

Pass

Test Specification

Test standard

: FCC Part 15.203 and RSS-GEN 6.8

Internal antennas used, which permanently attached and no consideration of replacement. Therefore, the EUT is considered sufficient to comply with the provision.

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4.1.2 20dB Bandwidth Measurement

Result:

Pass

Test Specification

Test standard : FCC Part 15.247(a)(1)(i)
RSS-247 Issue 2 February 2017 Clause 5.1

Basic standard : ANSI C63.10: 2013, clause 6.9.2
KDB558074 D01v05r02, clause 8.3.1.1

Limits : Not more than 500kHz for 20dB bandwidth

Kind of test site : Shielded Room

Test Setup

Date of testing : 2021.04.23

Input voltage : AC 120V, 60Hz

Operational mode : Mode A

Test channel : Lo, Mi, Hi

Temperature : 22°C

Relative humidity : 55%

Atmospheric pressure : 102.1 kPa

Table 2: Test result of 20dB Bandwidth for FSK FHSS

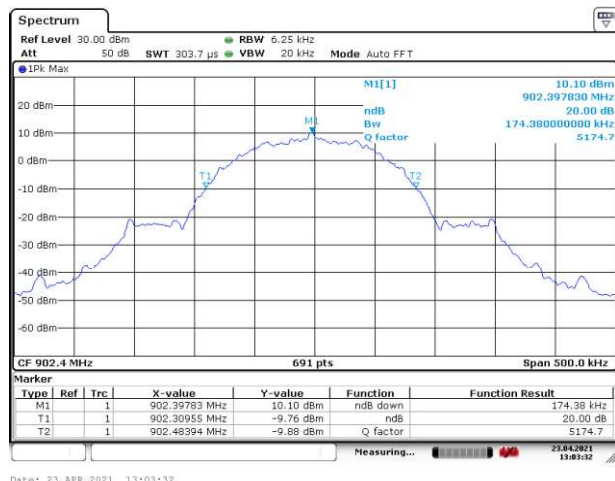
Modulation Type and Operation band	Channel	Channel Frequency (MHz)	Bandwidth (kHz)	Limit (kHz)	Result
1. FSK 150Kbps FHSS 902.4MHz~927.6MHz 20dB Bandwidth	Low Channel	902.4	174.38	500	Pass
	Mid Channel	914.8	172.94	500	Pass
	High Channel	927.6	167.87	500	Pass
2. FSK 50Kbps FHSS 902.2MHz~927.8MHz 20dB Bandwidth	Low Channel	902.2	111.43	500	Pass
	Mid Channel	915	110.71	500	Pass
	High Channel	927.8	109.26	500	Pass
3. FSK 250Kbps FHSS 902.5MHz~927.5MHz 20dB Bandwidth	Low Channel	902.5	269.20	500	Pass
	Mid Channel	915	275.00	500	Pass
	High Channel	927.5	276.40	500	Pass

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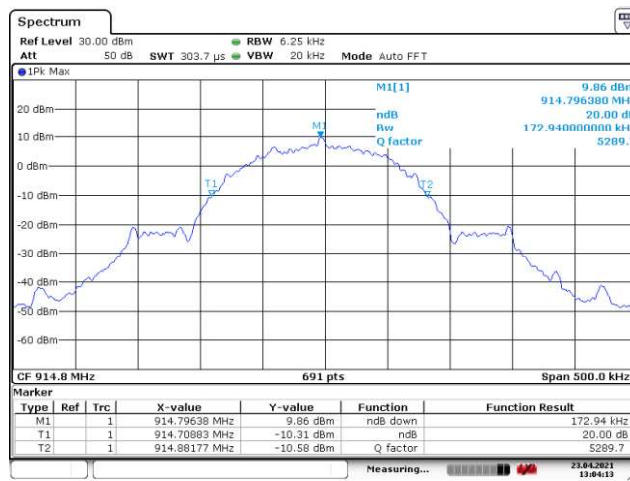
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Figure 1: 20dB Bandwidth Measurement

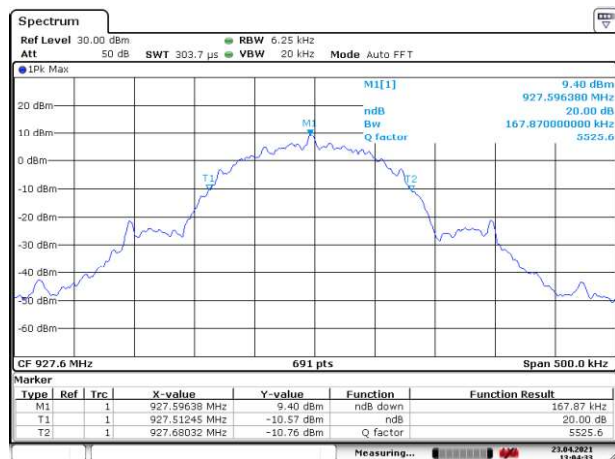
1. FSK 150Kbps FHSS, 20dB Bandwidth, 902.4MHz~927.6MHz



Date: 23.APR.2021 13:03:32

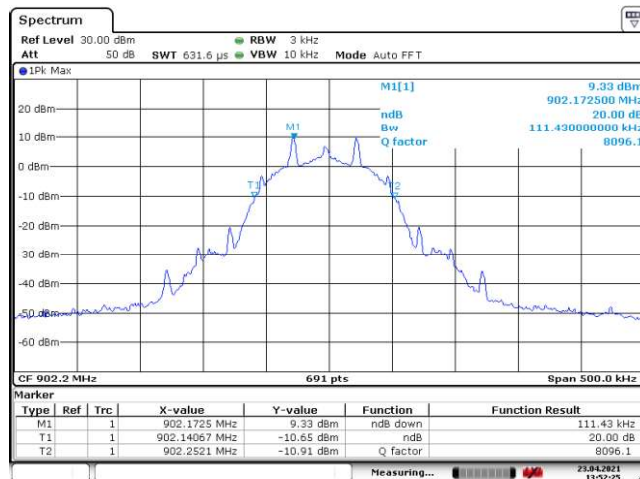


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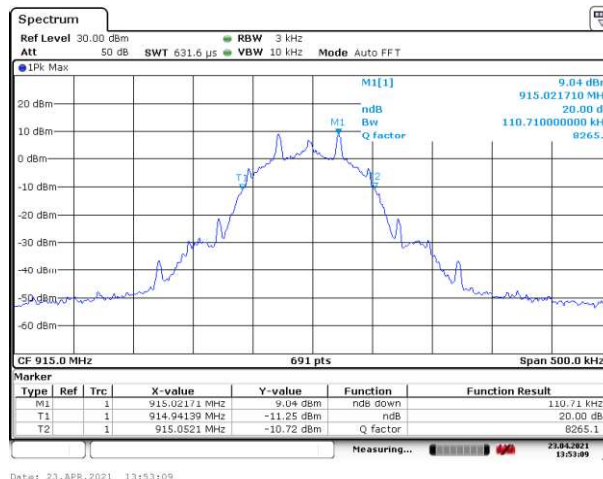


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2. FSK 50Kbps FHSS, 20dB Bandwidth, 902.2MHz~927.8MHz



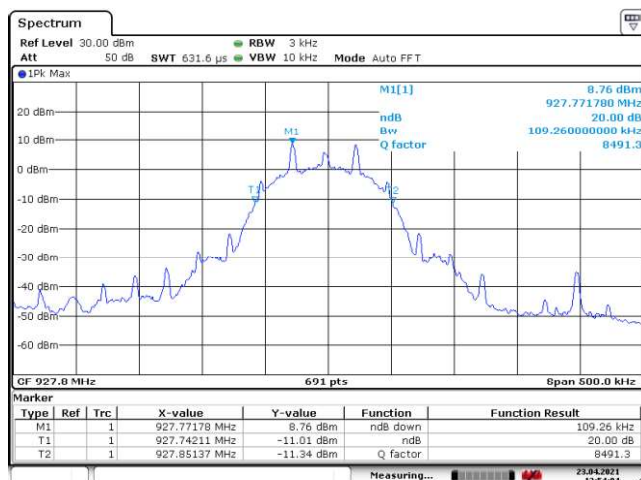
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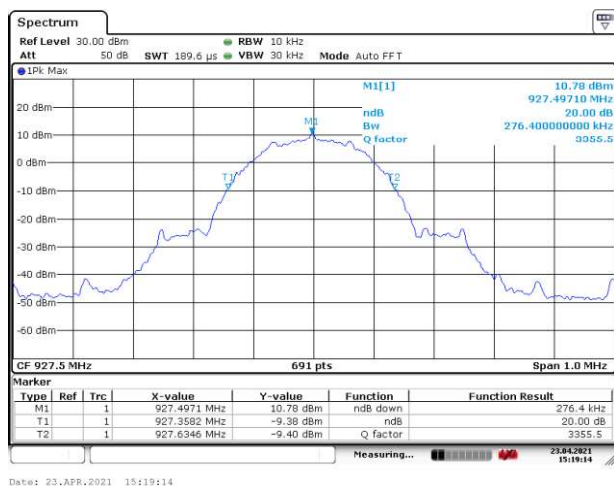
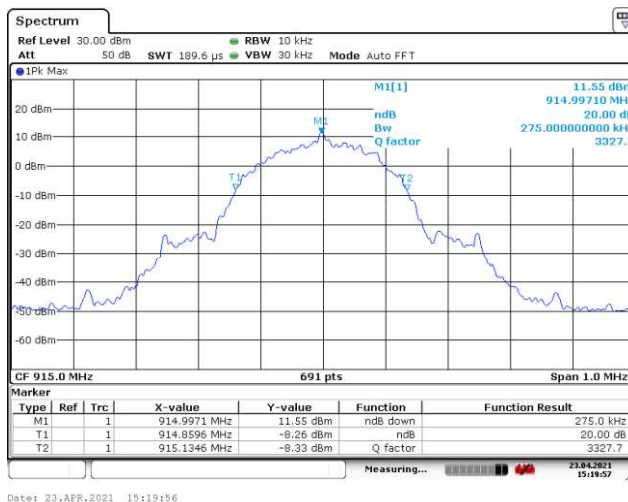
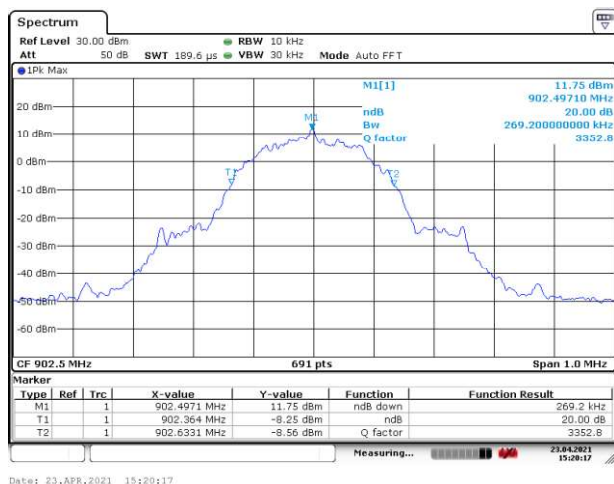
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3. FSK 250Kbps FHSS, 20dB Bandwidth, 902.5MHz~927.5MHz



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4.1.3 99% Emission Bandwidth Measurement

Result:

Pass

Test Specification

Test standard : RSS Gen Issue 5 March 2019, clause 6.7

Basic standard : ANSI C63.10: 2013, clause 6.9.3

Kind of test site : Shielded Room

Test Setup

Date of testing : 2021.04.23

Input voltage : AC 120V, 60Hz

Operational mode : Mode A

Test channel : Lo, Mi, Hi

Temperature : 22°C

Relative humidity : 55%

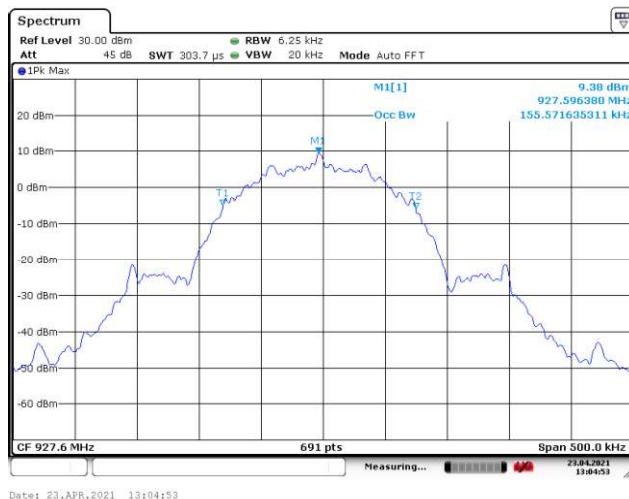
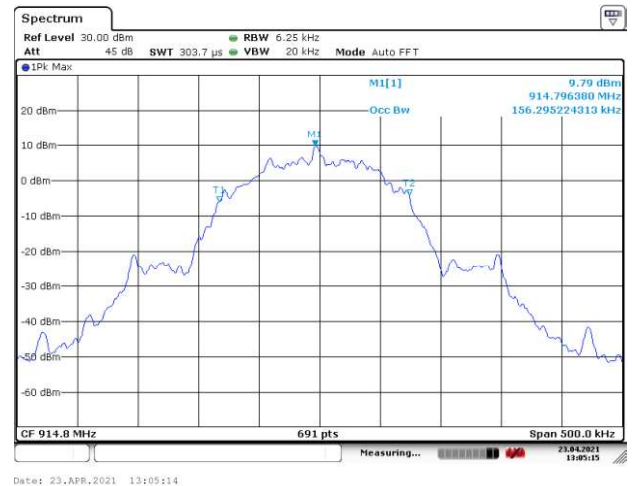
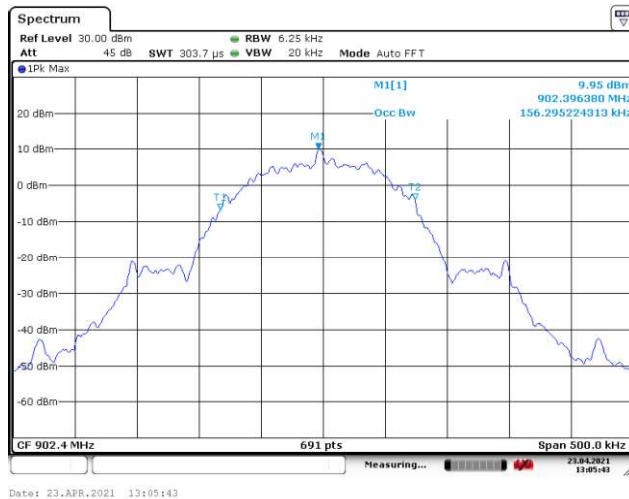
Atmospheric pressure : 102.1 kPa

Table 3: Test result of 99% Emission Bandwidth for FSK FHSS

Modulation Type and Operation band	Channel	Channel Frequency (MHz)	Bandwidth (kHz)
1. FSK 150Kbps FHSS 902.4MHz~927.6MHz 99% Emission Bandwidth	Low Channel	902.4	156.30
	Mid Channel	914.8	156.30
	High Channel	927.6	155.57
2. FSK 50Kbps FHSS 902.2MHz~927.8MHz 99% Emission Bandwidth	Low Channel	902.2	102.75
	Mid Channel	915	103.47
	High Channel	927.8	103.47
3. FSK 250Kbps FHSS 902.5MHz~927.5MHz 99% Emission Bandwidth	Low Channel	902.5	253.26
	Mid Channel	915	253.26
	High Channel	927.5	251.81

Figure 2: 99% Emission Bandwidth Measurement

1. FSK 150Kbps FHSS, 99% Emission Bandwidth, 902.4MHz~927.6MHz

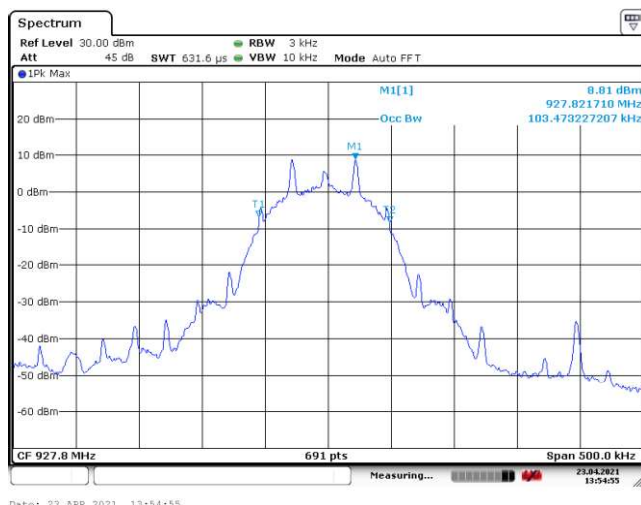


2. FSK 50Kbps FHSS, 99% Emission Bandwidth, 902.2MHz~927.8MHz

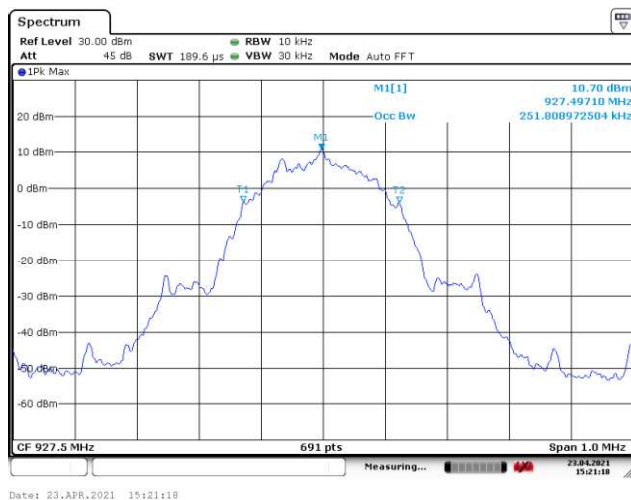
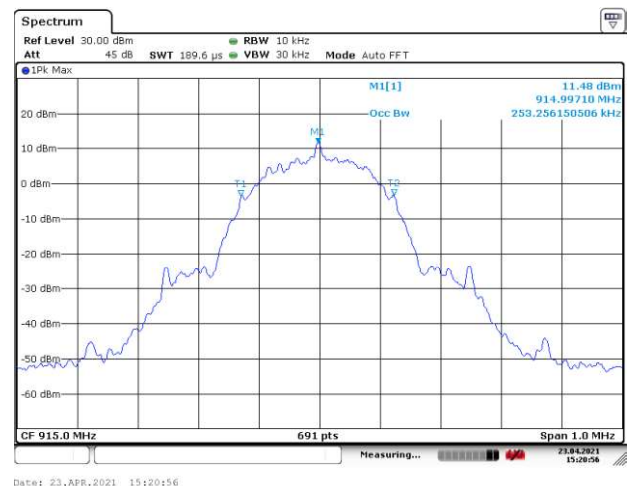
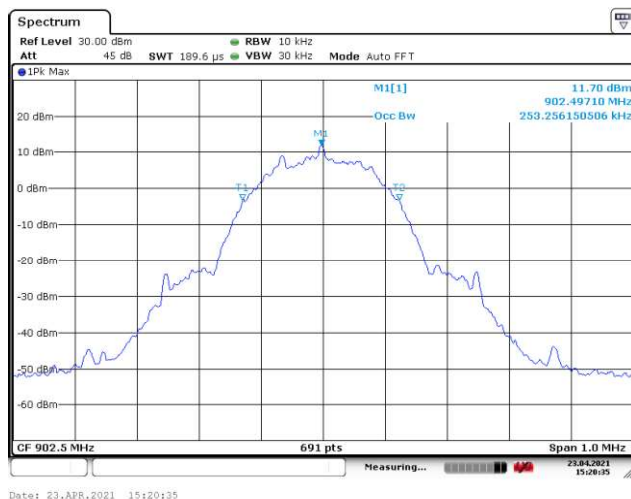


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3. FSK 250Kbps FHSS, 99% Emission Bandwidth, 902.5MHz~927.5MHz



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4.1.4 Maximum Peak Conducted Output Power

Result:

Pass

Test Specification

Test standard : FCC Part 15.247(b)(2)
RSS-247 Issue 2 February 2017 Clause 5.4(a)

Basic standard : ANSI C63.10: 2013, clause 11.9.1
KDB558074 D01v05r02, clause 8.3.1.3

Limits : Not more than 1Watt(30dBm) for FHSS with at least 50
hopping channels in the band 902-928MHz

Kind of test site : Shielded Room

Test Setup

Date of testing : 2021.04.23

Input voltage : AC120V, 60Hz

Operational mode : Mode A

Test channel : Lo, Mi, Hi

Temperature : 22 °C

Relative humidity : 55%

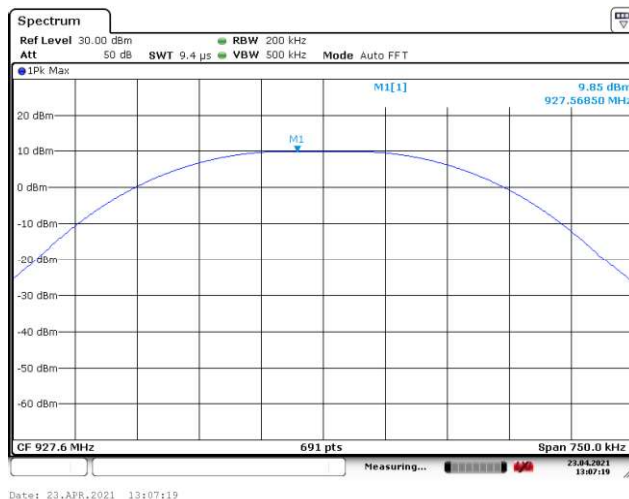
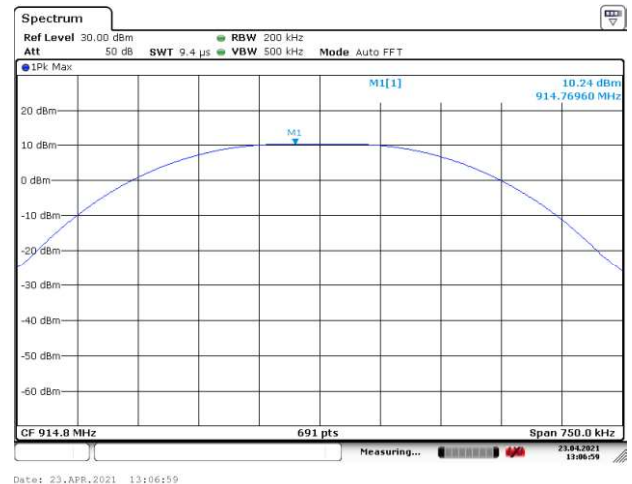
Atmospheric pressure : 102.1 kPa

Table 4: Test result of Maximum Peak Output Power for FSK FHSS

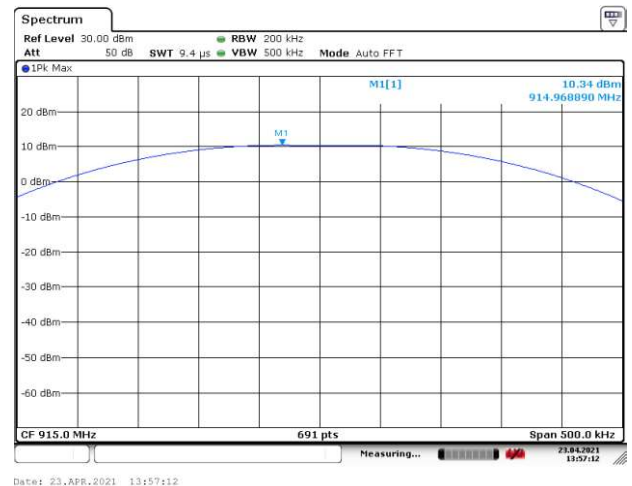
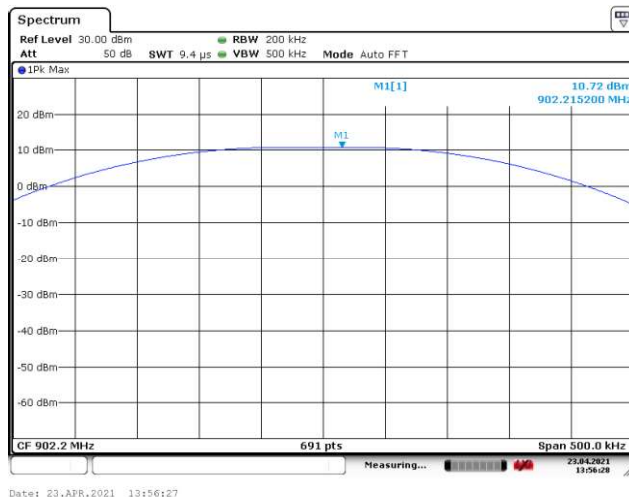
Modulation Type and Operation band	Channel	Channel Frequency (MHz)	Peak Output Power (dBm)	Limit (dBm)
1. FSK 150Kbps FHSS 902.4MHz~927.6MHz	Low Channel	902.4	10.45	30
	Mid Channel	914.8	10.24	30
	High Channel	927.6	9.85	30
2. FSK 50Kbps FHSS 902.2MHz~927.8MHz	Low Channel	902.2	10.72	30
	Mid Channel	915	10.34	30
	High Channel	927.8	9.74	30
3. FSK 250Kbps FHSS 902.5MHz~927.5MHz	Low Channel	902.5	11.99	30
	Mid Channel	915	11.79	30
	High Channel	927.5	11.02	30

Figure 3: Maximum peak Conducted Output Power

1. FSK 150Kbps FHSS, Maximum Peak Conducted Output Power, 902.4MHz~927.6MHz

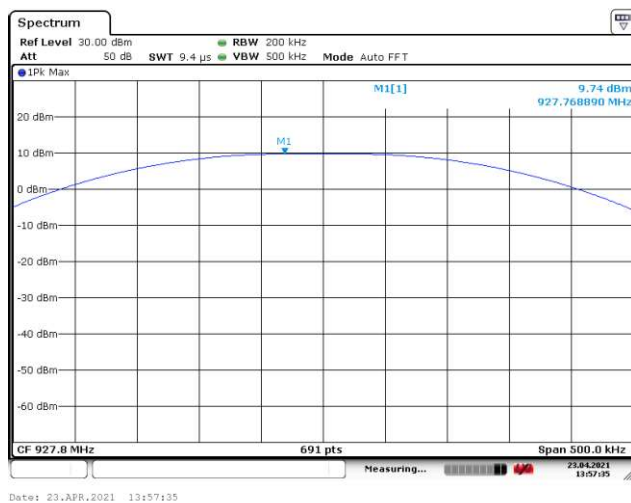


2. FSK 50Kbps FHSS, Maximum Peak Conducted Output Power, 902.2MHz~927.8MHz



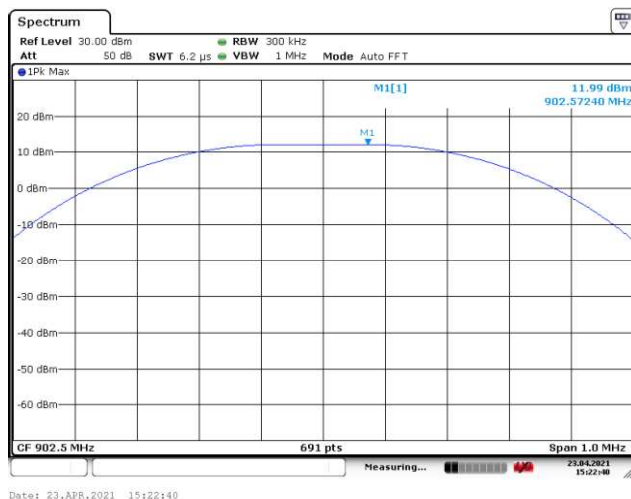
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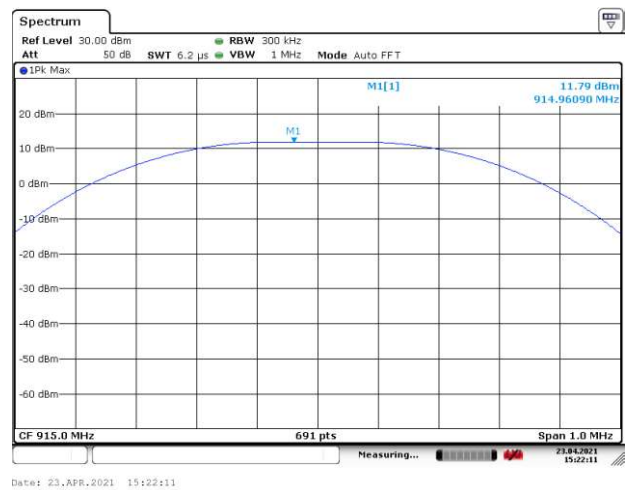


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3. FSK 250Kbps FHSS, Maximum Peak Conducted Output Power, 902.5MHz~927.5MHz



Date: 23.APR.2021 15:22:40



Date: 23.APR.2021 15:22:11



Date: 23.APR.2021 15:21:42

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4.1.5 Equivalent Isotropically Radiated Power

Result:

Pass

Test Specification

Test standard : RSS-247 Issue 2 February 2017 Clause 5.4(a)

Basic standard : ANSI C63.10: 2013, clause 9.5

Limits : Not more than 4Watt(36dBm) for FHSS system with at least 50 hopping channels in the band 902-928MHz

Kind of test site : Shielded Room

Test Setup

Date of testing : 2021.04.23

Input voltage : AC120V, 60Hz

Operational mode : Mode A

Test channel : Lo, Mi, Hi

Temperature : 22 °C

Relative humidity : 55%

Atmospheric pressure : 102.1 kPa

Table 5: Test result of E.I.R.P. for FSK FHSS

Modulation Type and Operation band	Channel	Channel Frequency (MHz)	Peak Output Power (dBm)	Antenna Gain (dBi)	E.I.R.P. (dBm)	Limit (dBm)
1. FSK 150Kbps FHSS 902.4MHz~927.6MHz	Low Channel	902.4	10.45	-3.8	6.65	36
	Mid Channel	914.8	10.24	-3.8	6.44	36
	High Channel	927.6	9.85	-3.8	6.05	36
2. FSK 50Kbps FHSS 902.2MHz~927.8MHz	Low Channel	902.2	10.72	-3.8	6.92	36
	Mid Channel	915	10.34	-3.8	6.54	36
	High Channel	927.8	9.74	-3.8	5.94	36
3. FSK 250Kbps FHSS 902.5MHz~927.5MHz	Low Channel	902.5	11.99	-3.8	8.19	36
	Mid Channel	915	11.79	-3.8	7.99	36
	High Channel	927.5	11.02	-3.8	7.22	36

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4.1.6 Conducted Spurious Emissions Measured in 100 kHz Bandwidth

Result:

Pass

Test Specification

Test standard

: FCC Part 15.247(d)

RSS-247 Issue 2 February 2017 Clause 5.5

Basic standard

: ANSI C63.10: 2013, 14.3.3(Spurious)

ANSI C63.10: 2013, 6.10(Band edge)

KDB 558074 D01 v05r02, clause 8.5

Limits

: 20dB (below that in the 100kHz bandwidth within the band that contains the highest level of the desired power)

Kind of test site

: Shielded Room

Test Setup

Date of testing

: 2021.04.23

Input voltage

: AC 120V, 60Hz

Operational mode

: Mode A, Mode B

Test channel

: Lo, Mi, Hi

Temperature

: 19°C

Relative humidity

: 56%

Atmospheric pressure

: 102.1 kPa

All emissions are more than 20dB below fundamental, compliance is achieved as well.

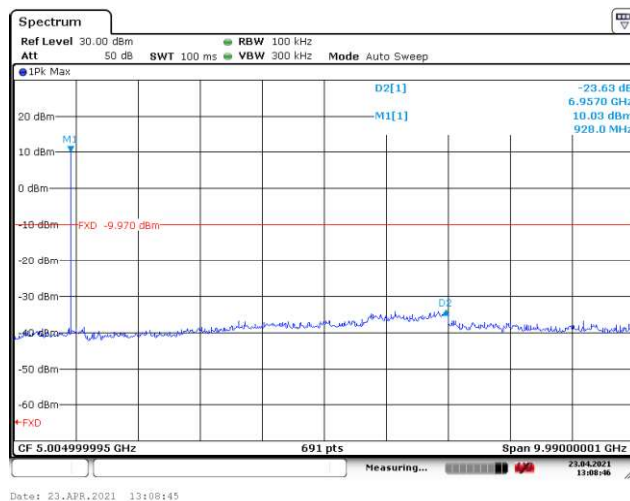
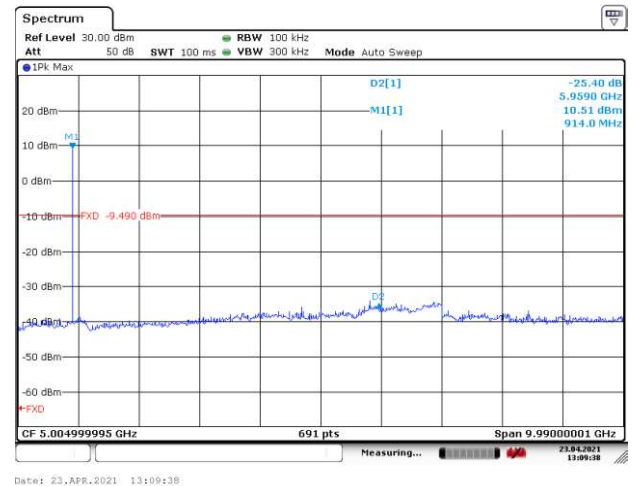
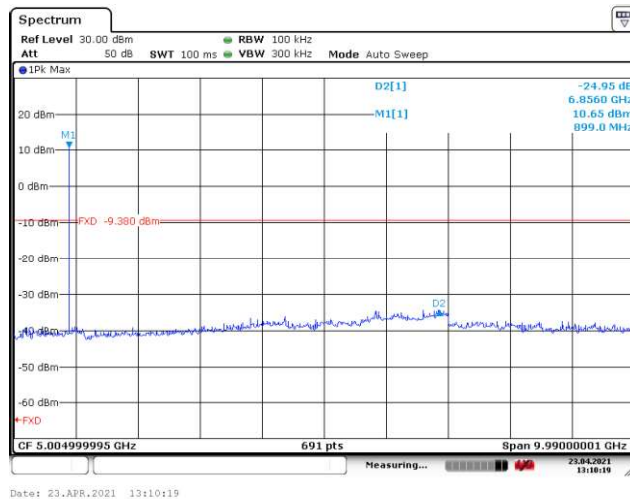
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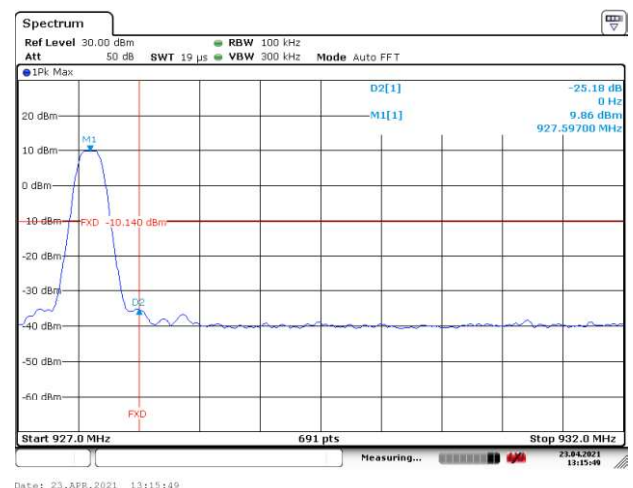
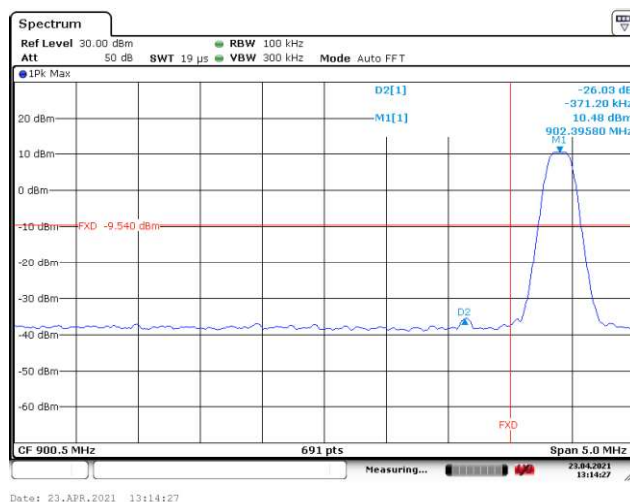
Figure 4: Conducted Spurious Emission

1. FSK 150Kbps FHSS, Conducted Spurious Emission and Band edge, 902.4MHz~927.6MHz

Conducted Spurious Emission

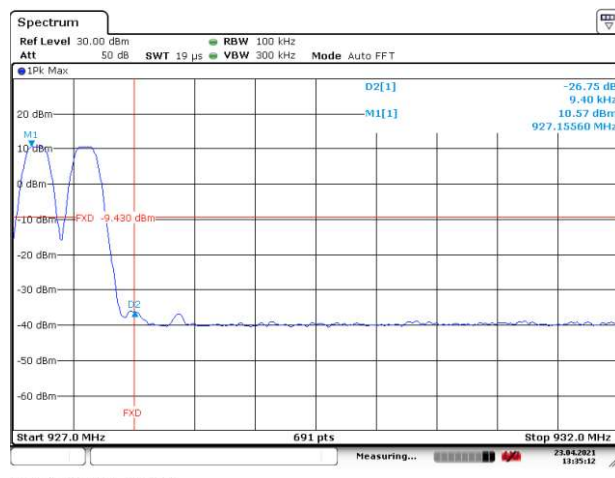
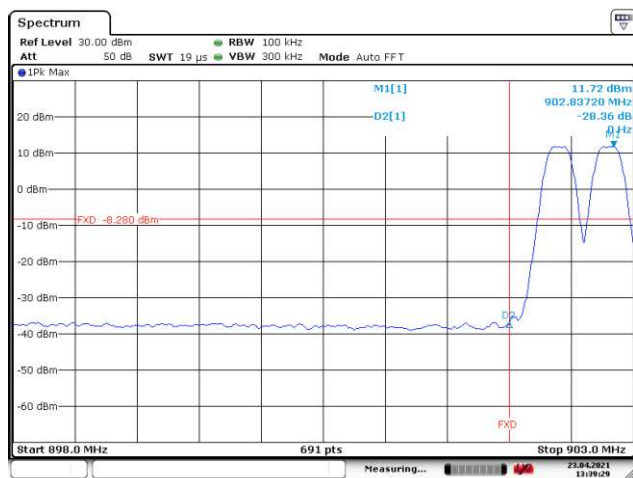


Band edge



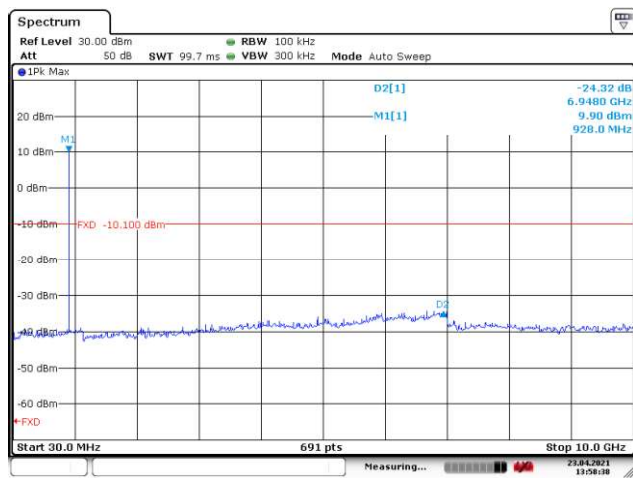
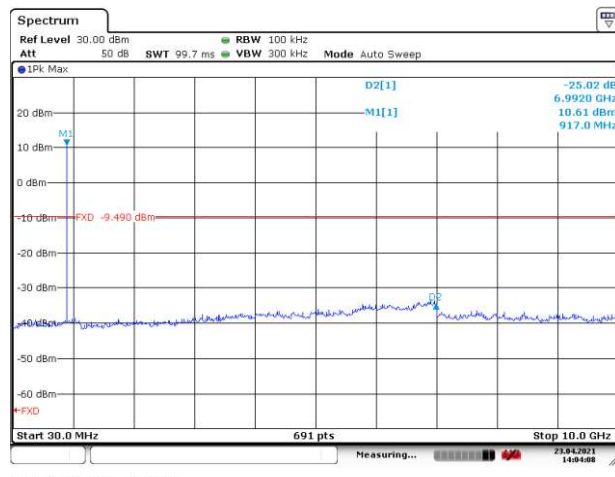
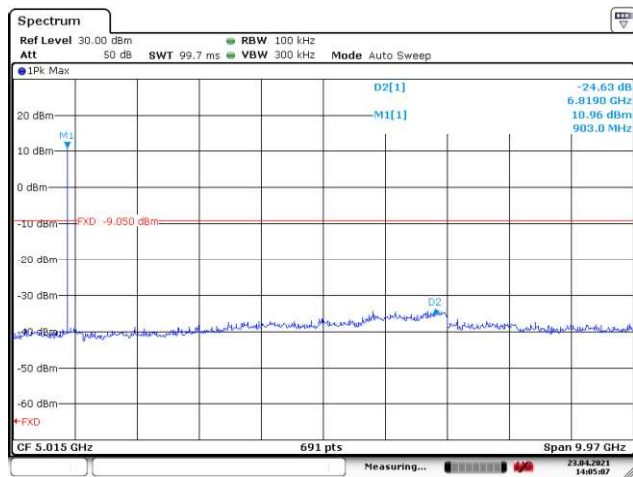
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2. FSK 50Kbps FHSS, Conducted Spurious Emission and Band edge, 902.2MHz~927.8MHz

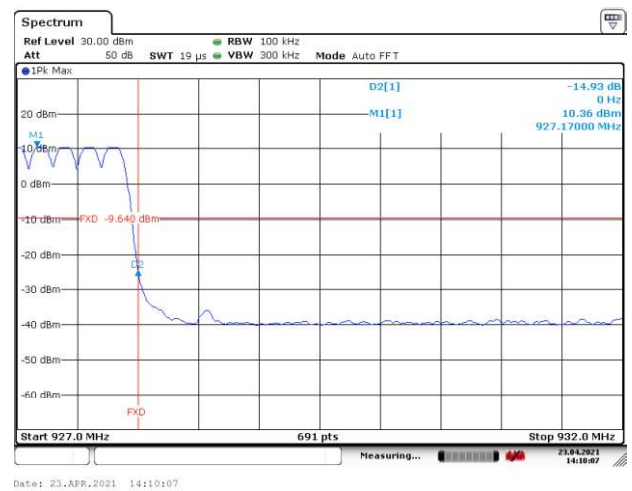
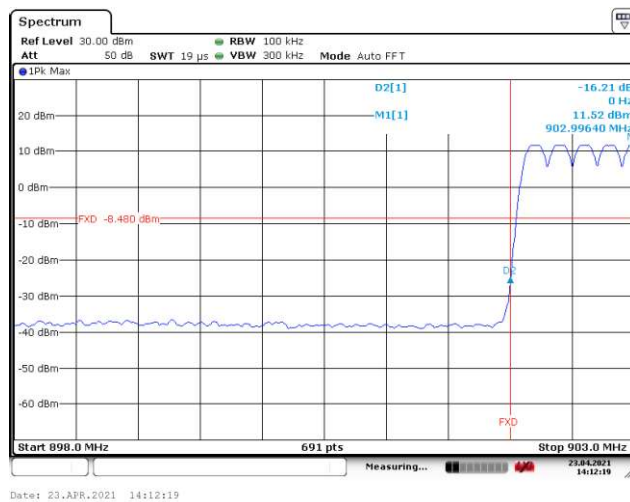
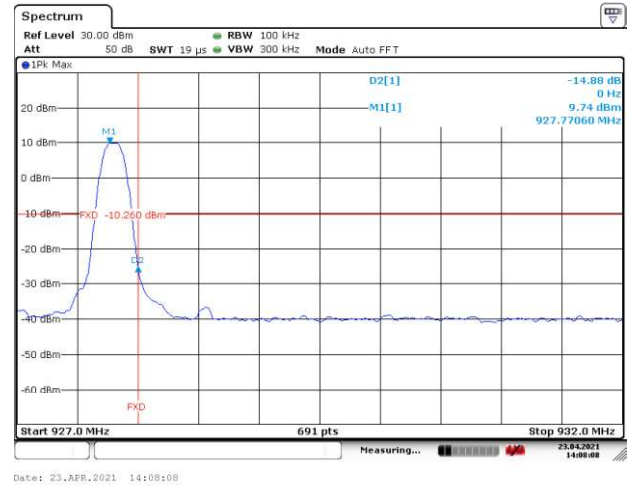
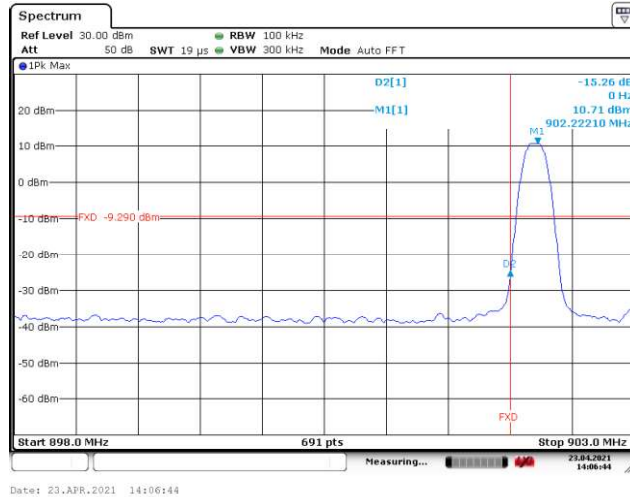
Conducted Spurious Emission



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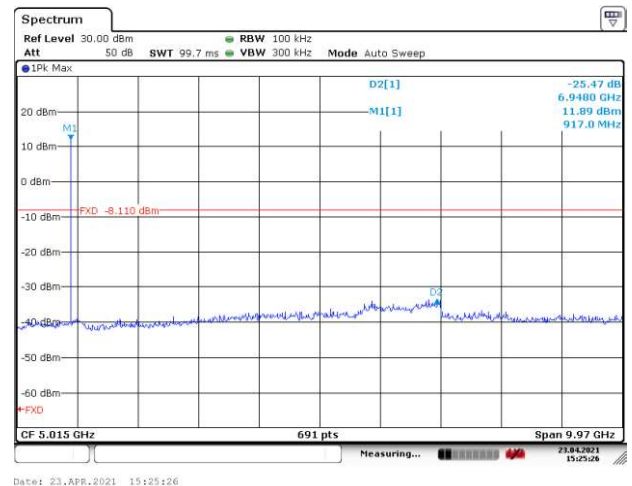
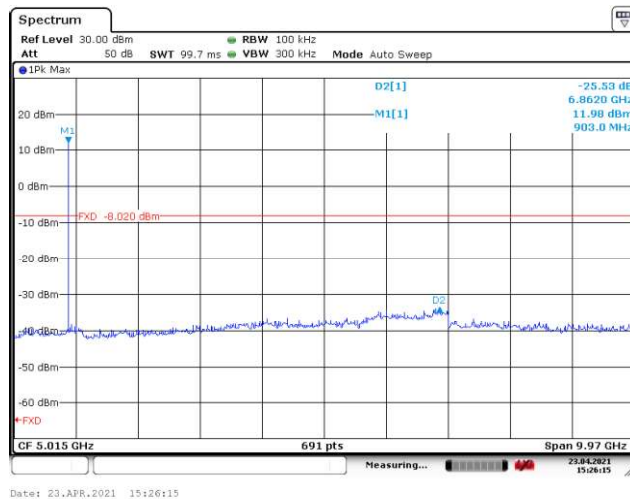
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Band edge



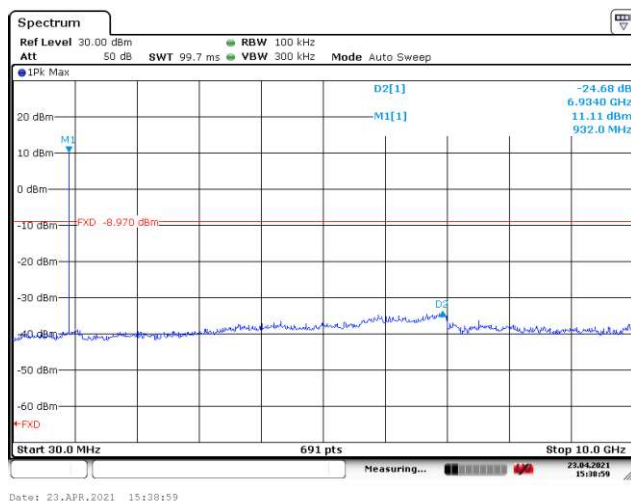
3. FSK 250Kbps FHSS, Conducted Spurious Emission and Band edge, 902.5MHz~927.5MHz

Conducted Spurious Emission

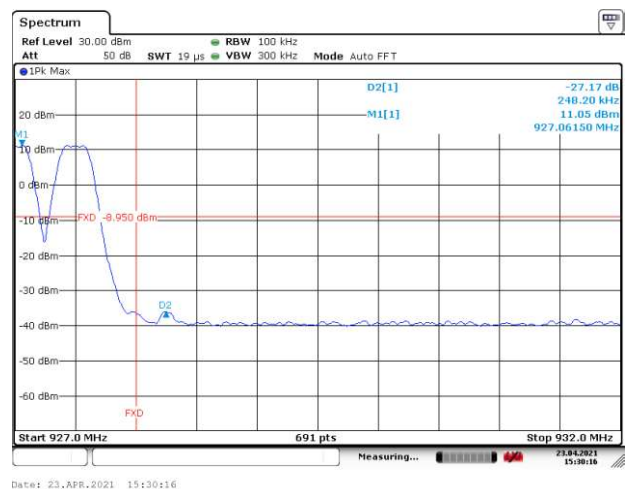
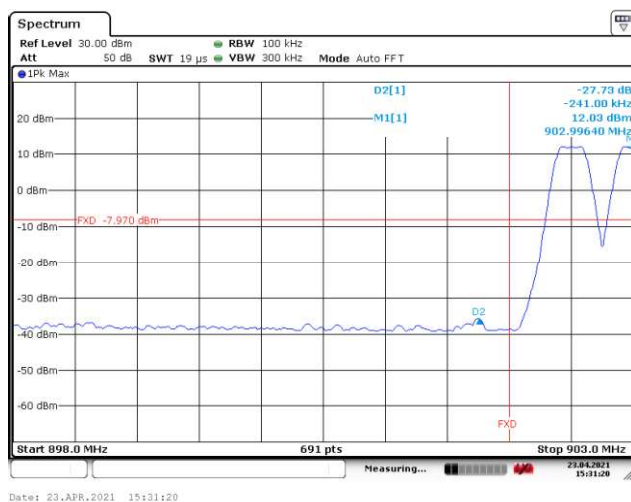
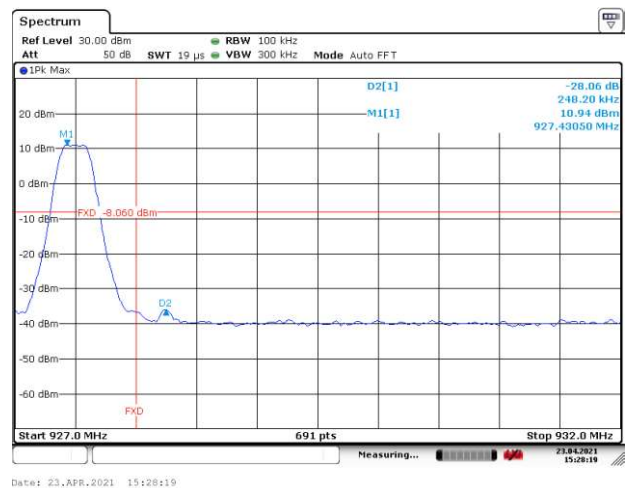
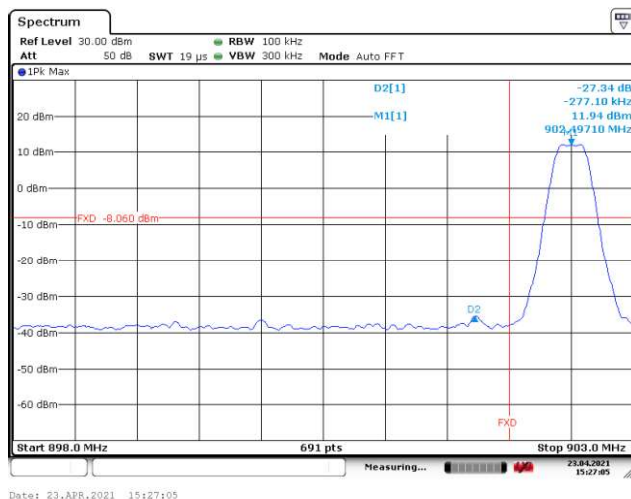


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Band edge



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4.1.7 Carrier Separation Measurement

Result:

Pass

Test Specification

Test standard : FCC Part 15.247(a)(1)
RSS-247 Issue 2 February 2017 Clause 5.1(b)

Basic standard : ANSI C63.10: 2013, clause 7.8.2

Limits : At least 20 dB bandwidth or 25kHz, whichever is greater.

Kind of test site : Shielded Room

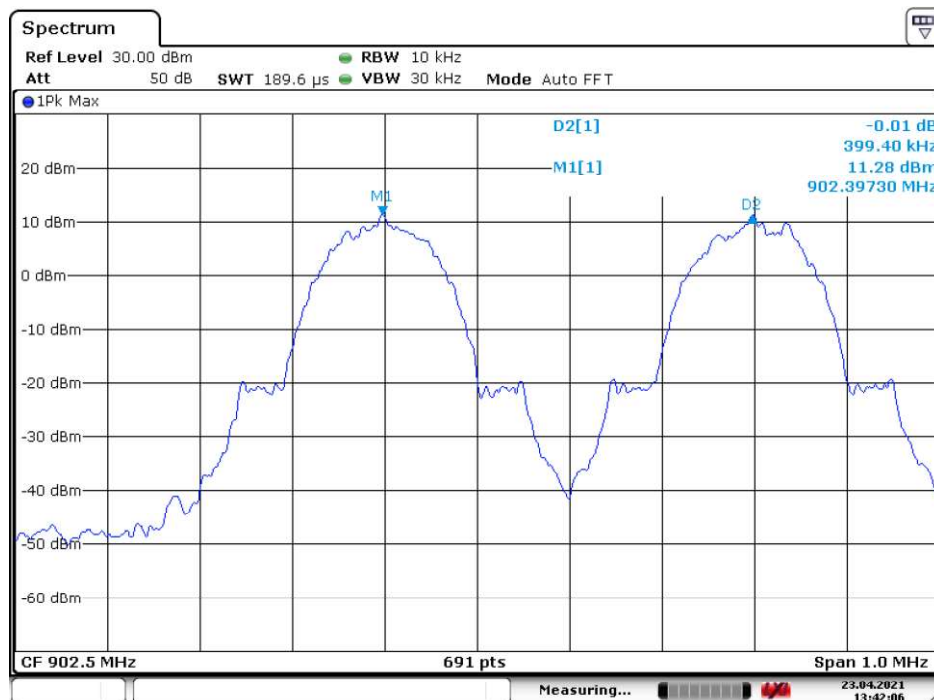
Test Setup

Date of testing : 2021.04.23
Input voltage : AC 120V, 60Hz
Operational mode : Mode B
Temperature : 19°C
Relative humidity : 56%
Atmospheric pressure : 102.1 kPa

Figure 5: Carrier Separation

- FSK 150Kbps FHSS, Carrier Separation, 902.4MHz~927.6MHz

Carrier Separation: 399.40kHz



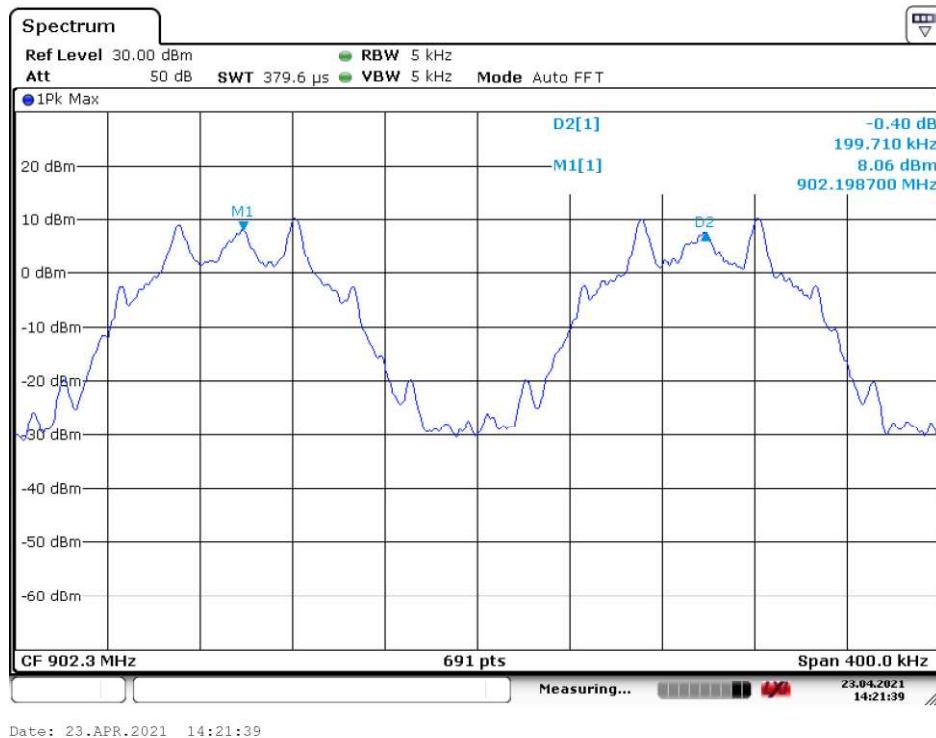
Date: 23.APR.2021 13:42:05

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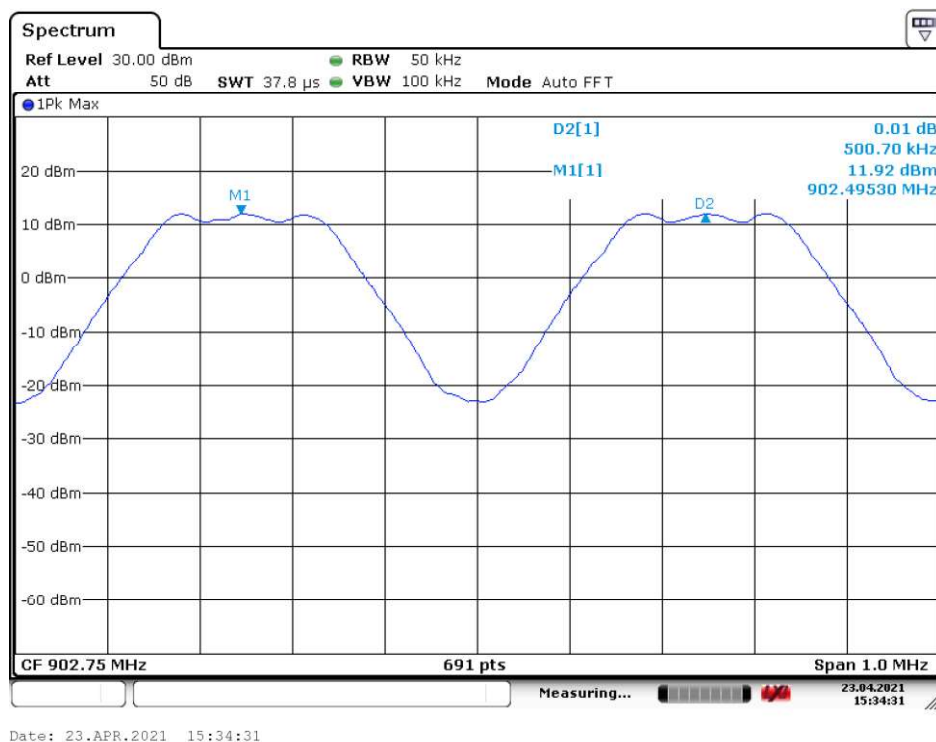
2. FSK 50Kbps FHSS, Carrier Separation, 902.2MHz~927.8MHz

Carrier Separation: 199.71kHz



3. FSK 250Kbps FHSS, Carrier Separation, 902.5MHz~927.5MHz

Carrier Separation: 500.70kHz



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4.1.8 The number of hopping channels

Result:

Pass

Test Specification

Test standard : FCC Part 15.247(a)(1)(i)
RSS-247 Issue 2 February 2017 Clause 5.1(c)

Basic standard : ANSI C63.10: 2013, clause 7.8.3

Limits : At least 50 for 20dB bandwidth less than 250kHz
At least 25 for 20dB bandwidth at least 250kHz

Kind of test site : Shielded Room

Test Setup

Date of testing : 2021.04.23
Input voltage : AC120V, 60Hz
Operational mode : Mode B
Temperature : 19°C
Relative humidity : 56%
Atmospheric pressure : 102.1 kPa

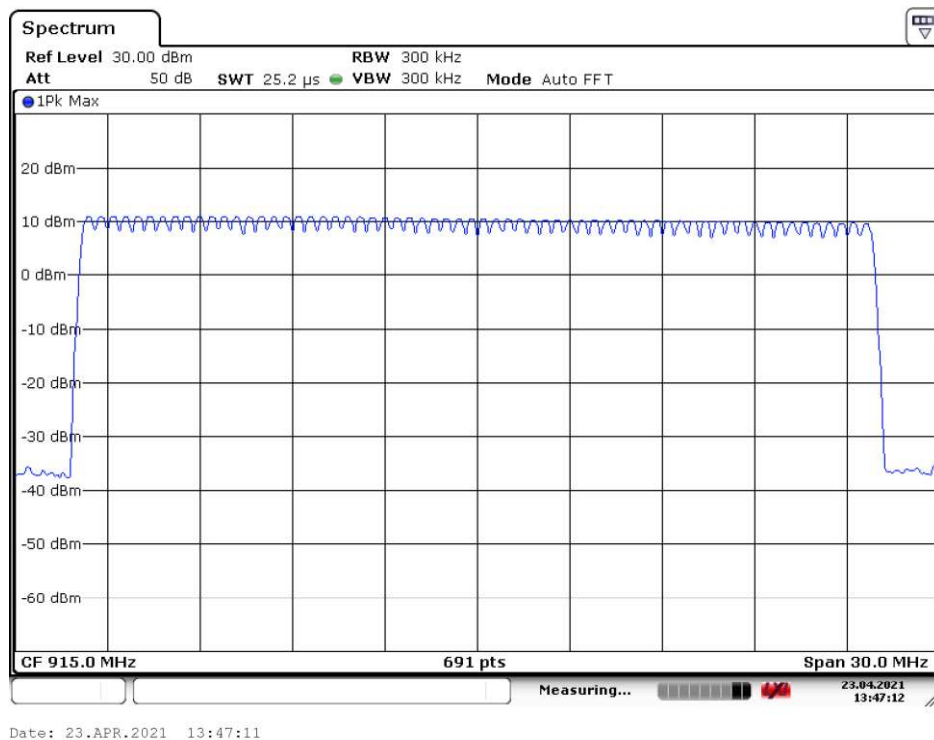
Table 6: Test result of hopping channel number for FSK FHSS

Modulation Type and Operation band	20dB Bandwidth(kHz)	Channel Number	Limit	Result
FSK 150Kbps FHSS 902.4MHz~927.6MHz	20dB Bandwidth < 250	64	50	Pass
FSK 50Kbps FHSS 902.2MHz~927.8MHz	20dB Bandwidth < 250	129	50	Pass
FSK 250Kbps FHSS 902.5MHz~927.5MHz	250 ≤ 20dB Bandwidth < 500	51	25	Pass

Figure 6: The number of hopping channels

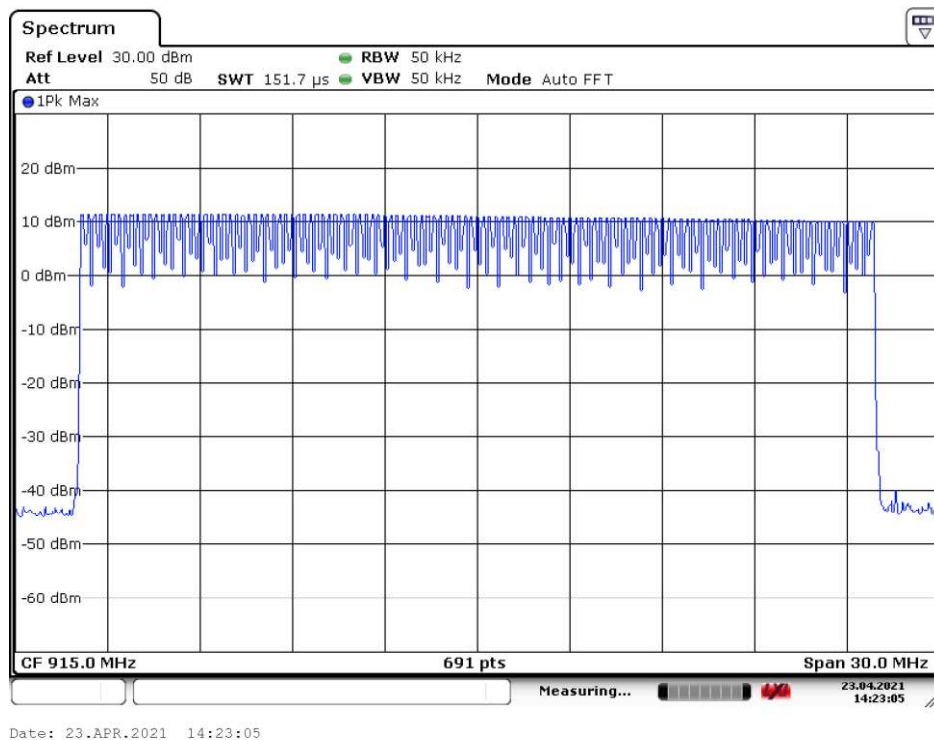
1. FSK 150Kbps FHSS, 902.4MHz~927.6MHz

Channel Number: 64



2. FSK 50Kbps FHSS, 902.2MHz~927.8MHz

Channel Number: 129



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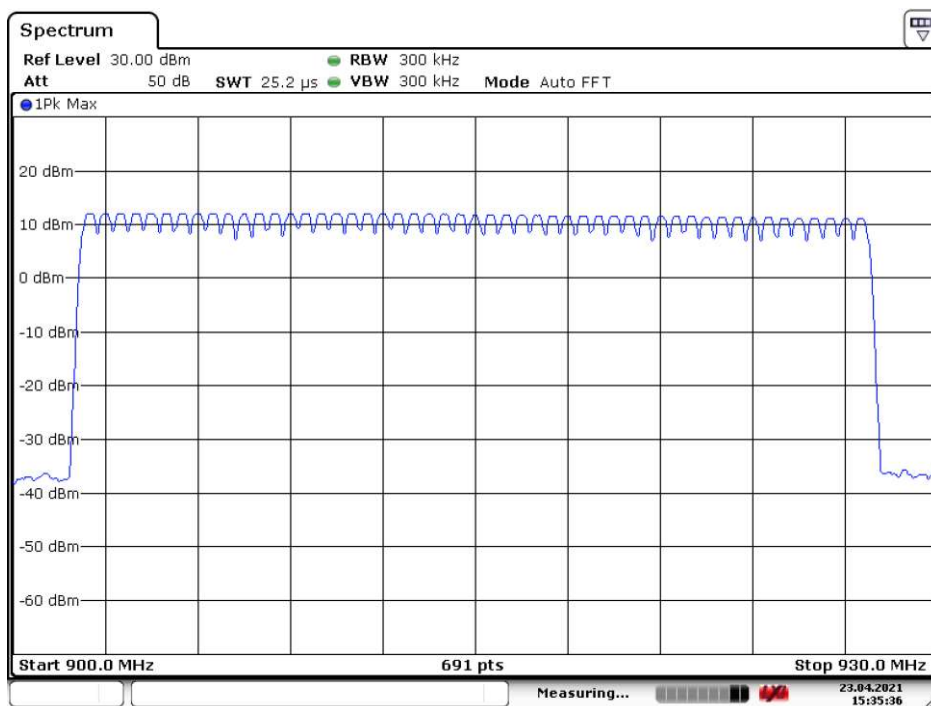
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3. FSK 250Kbps FHSS, 902.5MHz~927.5MHz

Channel Number: 51



Date: 23.APR.2021 15:35:36

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4.1.9 Channel Occupancy Time

Result:

Pass

Test Specification

Test standard : FCC Part 15.247(a)(1)(i)
RSS-247 Issue 2 February 2017 Clause 5.1(c)

Basic standard : ANSI C63.10: 2013, clause 7.8.4

Limits : Not more than 0.4s

Kind of test site : Shielded Room

Test Setup

Date of testing : 2021.04.23

Input voltage : AC120V, 60Hz

Operational mode : Mode B

Temperature : 19°C

Relative humidity : 56%

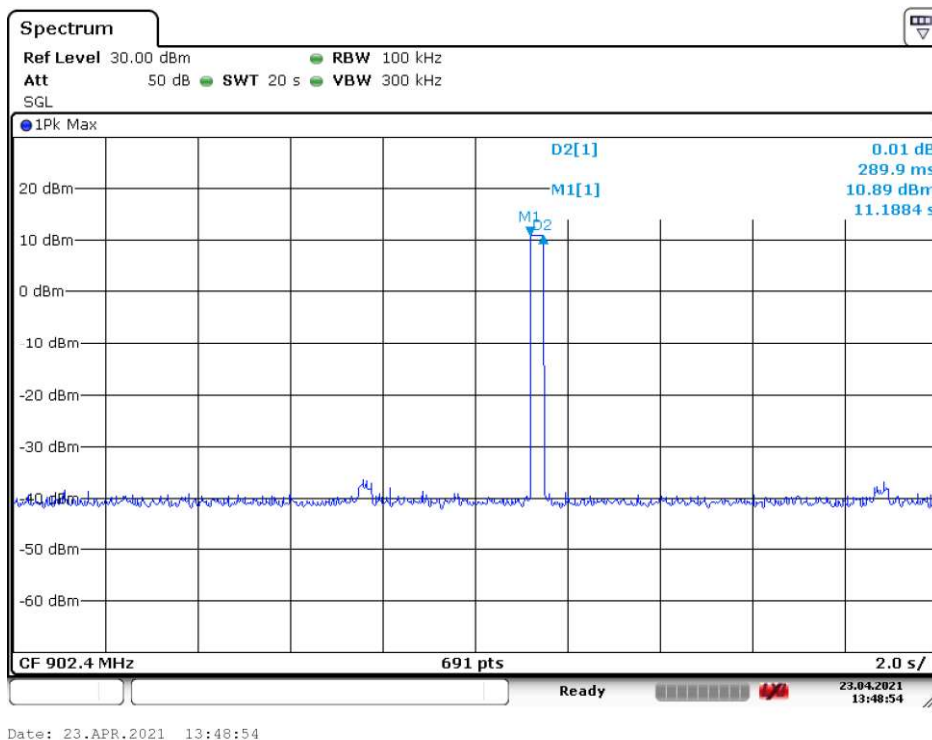
Atmospheric pressure : 102.1 kPa

Table 7: Test result of Channel Occupancy Time for FSK FHSS

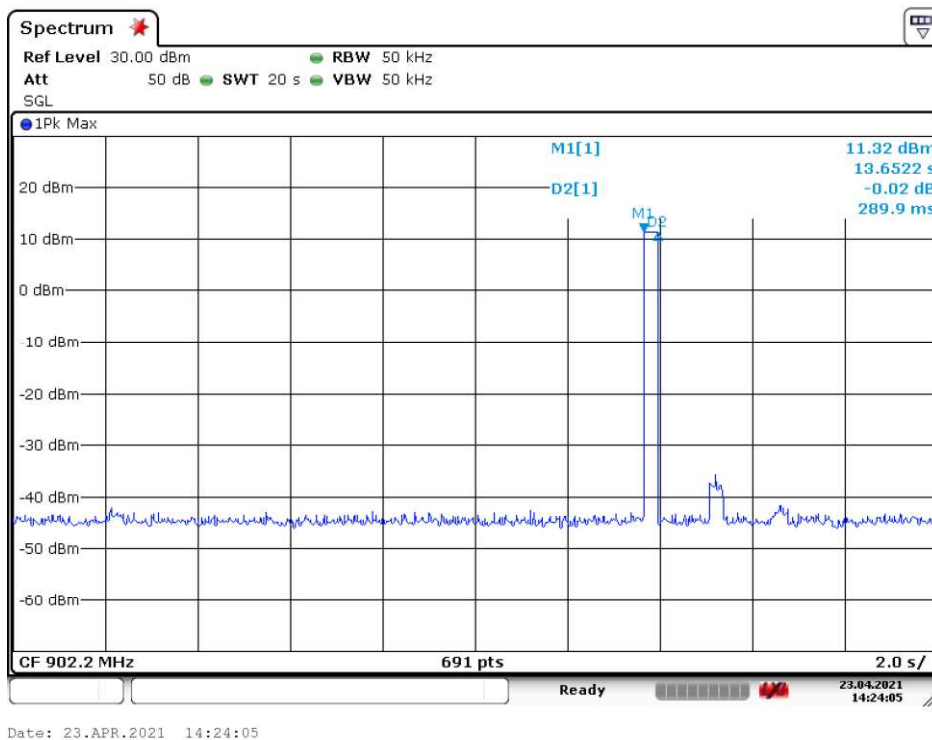
Modulation Type and Operation band	20dB Bandwidth(kHz)		Period (s)	Channel Occupancy Time (ms)	Limit (s)	Result
FSK 150kbps FHSS 902.4MHz~927.6MHz	20dB Bandwidth < 250		20	289.9	0.4	Pass
FSK 50Kbps FHSS 902.2MHz~927.8MHz	20dB Bandwidth < 250		20	289.9	0.4	Pass
FSK 250Kbps FHSS 902.5MHz~927.5MHz	250 ≤ 20dB Bandwidth < 500		10	318.8	0.4	Pass

Figure 7: Channel Occupancy Time

1. FSK 150Kbps FHSS, 902.4MHz~927.6MHz



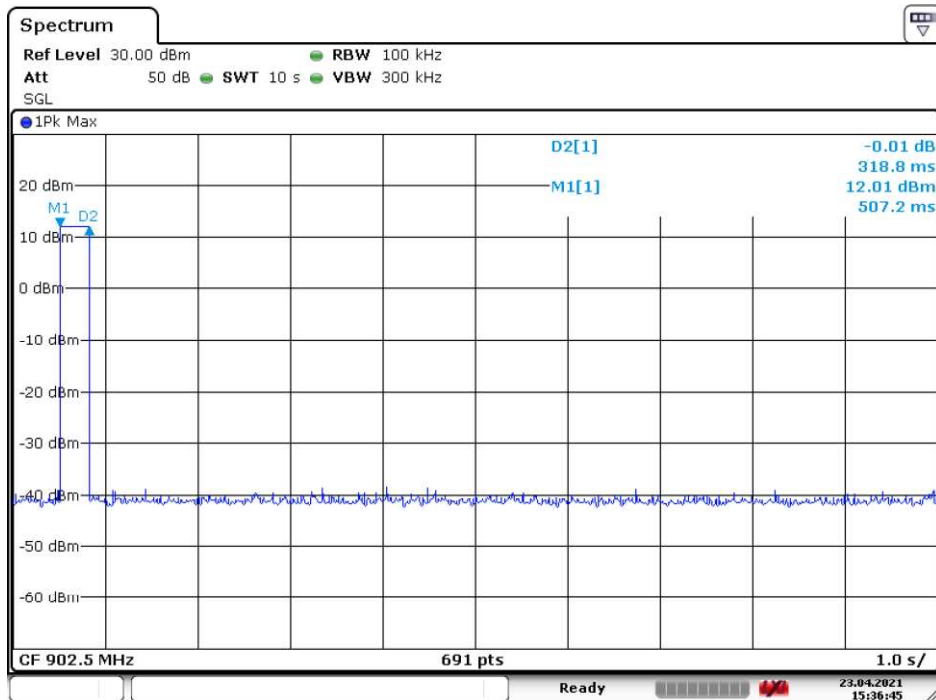
2. FSK 50Kbps FHSS, 902.2MHz~927.8MHz



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3. FSK 250Kbps FHSS, 902.5MHz~927.5MHz



Date: 23.APR.2021 15:36:45

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4.1.10 Conducted Emission (AC power-line)

Result:

Pass

Test Specification

Test standard

: FCC Part 15.207

RSS-Gen Issue 5 March 2019

Basic standard

: ANSI C63.10: 2013, clause 6.2

Port

: Mains

Frequency range

: 0.15 – 30MHz

Limits

: FCC part 15.207(a)

RSS Gen Issue 5 March 2019, table 4

Kind of test site

: 3m Semi-anechoic Chamber

Test Setup

Date of testing

: 2021.04.23

Input voltage

: AC 120V, 60Hz

Operational mode

: Mode A

Temperature

: 21°C

Relative humidity

: 56%

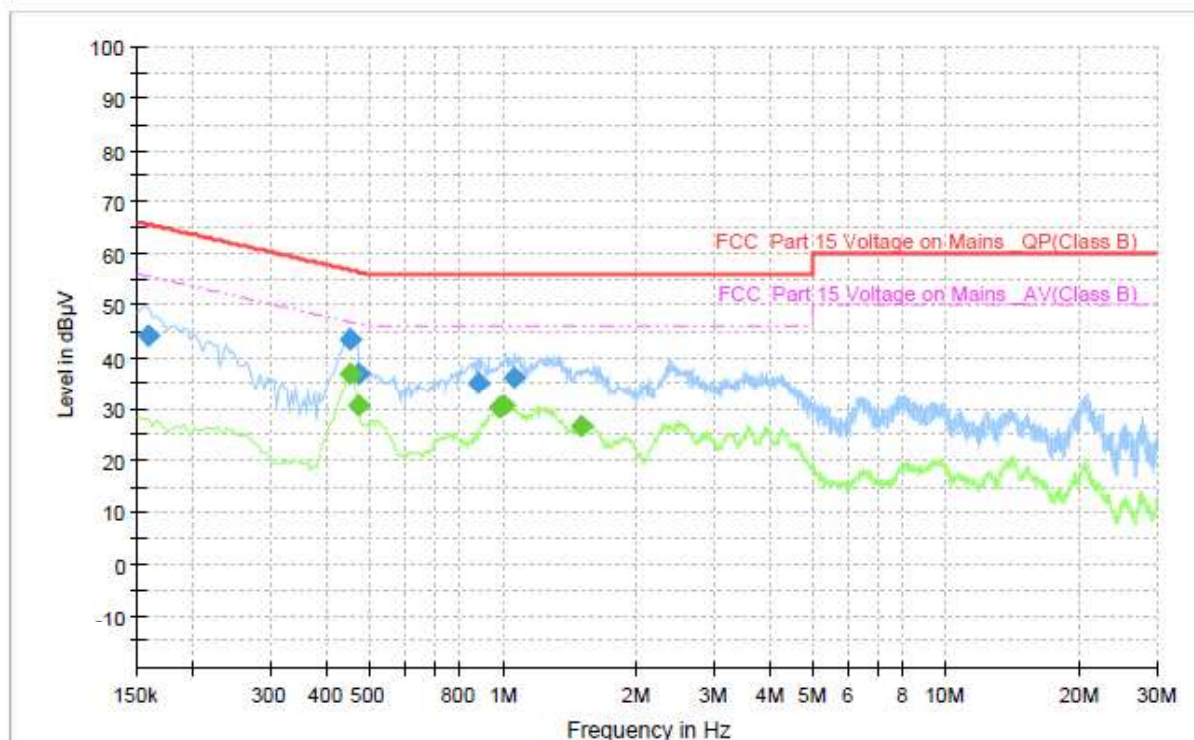
Atmospheric pressure

: 102.1 kPa

The measurement result is calculated based on the following formula by the test software:
Emission Level = Reading level + Correction (LISN factor + cable loss).

Figure 8: Spectral Diagrams, Conducted Emission, 150kHz - 30MHz, L, AC120V, 60Hz

Full Spectrum



Final Result

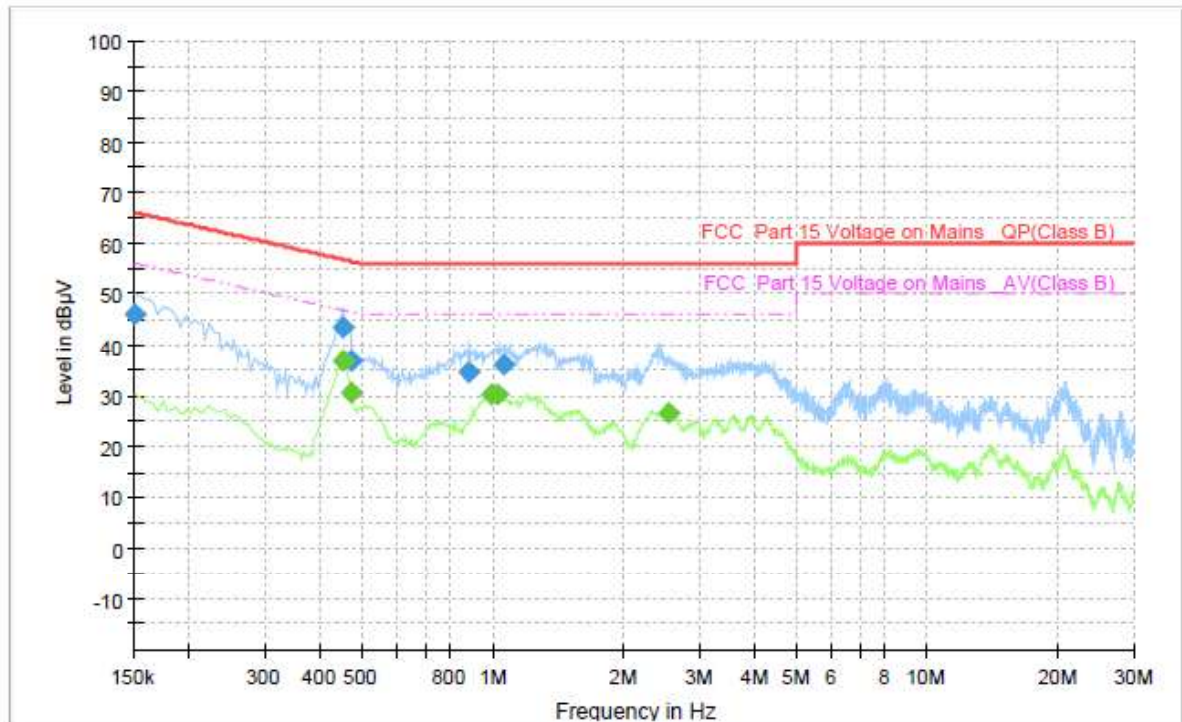
Frequency (MHz)	QuasiPeak (dBµV)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Filter	Corr. (dB)
0.158000	44.26	---	65.57	21.31	1000.0	9.000	L1	ON	9.6
0.450000	43.38	---	56.88	13.50	1000.0	9.000	L1	ON	9.6
0.454000	---	36.71	46.80	10.09	1000.0	9.000	L1	ON	9.6
0.470000	36.80	---	56.51	19.71	1000.0	9.000	L1	ON	9.6
0.470000	---	30.48	46.51	16.04	1000.0	9.000	L1	ON	9.6
0.878000	34.88	---	56.00	21.12	1000.0	9.000	L1	ON	9.7
0.986000	---	30.34	46.00	15.66	1000.0	9.000	L1	ON	9.7
1.002000	---	30.55	46.00	15.45	1000.0	9.000	L1	ON	9.7
1.062000	36.24	---	56.00	19.76	1000.0	9.000	L1	ON	9.7
1.506000	---	26.70	46.00	19.30	1000.0	9.000	L1	ON	9.7

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Figure 9: Spectral Diagrams, Conducted Emission, 150kHz - 30MHz, N, AC120V, 60Hz

Full Spectrum



Final Result

Frequency (MHz)	QuasiPeak (dBµV)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Filter	Corr. (dB)
0.150000	46.14	---	66.00	19.86	1000.0	9.000	N	ON	9.6
0.454000	---	36.77	46.80	10.03	1000.0	9.000	N	ON	9.6
0.454000	43.41	---	56.80	13.39	1000.0	9.000	N	ON	9.6
0.470000	---	30.72	46.51	15.79	1000.0	9.000	N	ON	9.6
0.470000	36.84	---	56.51	19.68	1000.0	9.000	N	ON	9.6
0.882000	34.74	---	56.00	21.26	1000.0	9.000	N	ON	9.7
0.990000	---	30.30	46.00	15.70	1000.0	9.000	N	ON	9.7
1.022000	---	30.35	46.00	15.65	1000.0	9.000	N	ON	9.7
1.062000	35.98	---	56.00	20.02	1000.0	9.000	N	ON	9.7
2.530000	---	26.58	46.00	19.42	1000.0	9.000	N	ON	9.8

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Test Specification	
Test standard	: FCC Part 15.209 RSS-Gen Issue 5 March 2019
Basic standard	: ANSI C63.10: 2013, clause 6.3 KDB 558074 D01 v05r02, clause 8.6
Port	: Enclosure
Frequency range	: 30MHz-10 th Harmonic
Limits	: FCC part 15.209(a) RSS Gen Issue 5 March 2019, table 3, table 5
Kind of test site	: 3m Semi-anechoic Chamber

Test Setup

Date of testing	: 2021.04.19-2021.04.23
Input voltage	: AC 120V, 60Hz
Operational mode	: Mode A
Test channel	: Lo, Mi, Hi
Temperature	: 21°C
Relative humidity	: 57%
Atmospheric pressure	: 102.1 kPa

Remark:

Testing was carried out within frequency range 9kHz to the tenth harmonics. Only the worst case emissions configuration of the each mode were reported.

The measurement result is calculated based on the following formula by the test software:

Emission Level = Reading level + Correction (Antenna factor + Cable loss – Preamplifier)

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Table 8: FSK 150Kbps FHSS, 902.4~927.6MHz, Horizontal, CH 902.4

Frequency (MHz)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Corr. (dB)
31.137778	21.24	40.00	18.76	1000.0	120.000	H	25.2
259.371111	17.85	46.00	28.15	1000.0	120.000	H	21.3
709.153889	25.34	46.00	20.66	1000.0	120.000	H	27.8

Frequency (MHz)	MaxPeak (dBμV/m)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Corr. (dB)	Margin - PK+ (dB)	Limit - PK+ (dBμV/m)
1804.310000	51.9	1000.0	1000.000	H	-8.8	22.1	74.0
2706.905000	52.1	1000.0	1000.000	H	-3.4	22.0	74.0
3609.500000	52.8	1000.0	1000.000	H	-0.3	21.2	74.0

Frequency (MHz)	Average (dBμV/m)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Corr. (dB)	Margin - AVG (dB)	Limit - AVG (dBμV/m)
1804.310000	48.6	1000.0	1000.000	H	-8.8	5.5	54.0
2706.905000	50.4	1000.0	1000.000	H	-3.4	3.6	54.0
3609.500000	51.0	1000.0	1000.000	H	-0.3	3.0	54.0

Table 9: FSK 150Kbps FHSS, 902.4~927.6MHz, Vertical, CH 902.4

Frequency (MHz)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Corr. (dB)
31.205556	21.25	40.00	18.75	1000.0	120.000	V	25.2
45.974444	21.63	40.00	18.37	1000.0	120.000	V	17.2
845.077222	24.68	46.00	21.32	1000.0	120.000	V	29.4

Frequency (MHz)	MaxPeak (dBμV/m)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Corr. (dB)	Margin - PK+ (dB)	Limit - PK+ (dBμV/m)
1804.845000	48.0	1000.0	1000.000	V	-8.8	26.0	74.0
2706.905000	47.7	1000.0	1000.000	V	-3.4	26.3	74.0
3609.500000	54.2	1000.0	1000.000	V	-0.3	19.8	74.0

Frequency (MHz)	Average (dBμV/m)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Corr. (dB)	Margin - AVG (dB)	Limit - AVG (dBμV/m)
1804.845000	46.3	1000.0	1000.000	V	-8.8	7.7	54.0
2706.905000	44.6	1000.0	1000.000	V	-3.4	9.4	54.0
3609.500000	52.5	1000.0	1000.000	V	-0.3	1.6	54.0

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Table 10: FSK 150Kbps FHSS, 902.4~927.6MHz, Horizontal, CH 914.8

Frequency (MHz)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Corr. (dB)
31.518333	23.26	40.00	16.74	1000.0	120.000	H	24.9
718.003889	24.31	46.00	21.69	1000.0	120.000	H	27.8
850.749444	24.86	46.00	21.14	1000.0	120.000	H	29.3

Frequency (MHz)	MaxPeak (dBμV/m)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Corr. (dB)	Margin - PK+ (dB)	Limit - PK+ (dBμV/m)
1829.280000	47.3	1000.0	1000.000	H	-8.6	26.7	74.0
2744.625000	51.7	1000.0	1000.000	H	-3.2	22.3	74.0
3658.905000	53.7	1000.0	1000.000	H	-0.1	20.3	74.0

Frequency (MHz)	Average (dBμV/m)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Corr. (dB)	Margin - AVG (dB)	Limit - AVG (dBμV/m)
1829.280000	45.0	1000.0	1000.000	H	-8.6	9.0	54.0
2744.625000	50.1	1000.0	1000.000	H	-3.2	3.9	54.0
3658.905000	52.0	1000.0	1000.000	H	-0.1	2.0	54.0

Table 11: FSK 150Kbps FHSS, 902.4~927.6MHz, Vertical, CH 914.8

Frequency (MHz)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Corr. (dB)
30.993333	21.43	40.00	18.57	1000.0	120.000	V	25.3
729.203889	26.97	46.00	19.03	1000.0	120.000	V	28.0

Frequency (MHz)	MaxPeak (dBμV/m)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Corr. (dB)	Margin - PK+ (dB)	Limit - PK+ (dBμV/m)
2744.625000	47.2	1000.0	1000.000	V	-3.2	26.8	74.0
3659.435000	53.5	1000.0	1000.000	V	-0.1	20.6	74.0
4573.720000	47.5	1000.0	1000.000	V	2.2	26.6	74.0

Frequency (MHz)	Average (dBμV/m)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Corr. (dB)	Margin - AVG (dB)	Limit - AVG (dBμV/m)
2744.625000	44.0	1000.0	1000.000	V	-3.2	10.0	54.0
3659.435000	51.7	1000.0	1000.000	V	-0.1	2.3	54.0
4573.720000	42.0	1000.0	1000.000	V	2.2	12.0	54.0

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Table 12: FSK 150Kbps FHSS, 902.4~927.6MHz, Horizontal, CH 927.6

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Corr. (dB)
30.411111	21.90	40.00	18.10	1000.0	120.000	H	25.7
845.105000	24.84	46.00	21.16	1000.0	120.000	H	29.4

Frequency (MHz)	MaxPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Corr. (dB)	Margin - PK+ (dB)	Limit - PK+ (dBµV/m)
2782.345000	52.6	1000.0	1000.000	H	-3.0	21.4	74.0
3710.435000	54.7	1000.0	1000.000	H	0.0	19.3	74.0
8348.250000	50.8	1000.0	1000.000	H	8.3	23.2	74.0

Frequency (MHz)	Average (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Corr. (dB)	Margin - AVG (dB)	Limit - AVG (dBµV/m)
2782.345000	51.0	1000.0	1000.000	H	-3.0	3.0	54.0
3710.435000	53.2	1000.0	1000.000	H	0.0	0.8	54.0
8348.250000	45.6	1000.0	1000.000	H	8.3	8.4	54.0

Table 13: FSK 150Kbps FHSS, 902.4~927.6MHz, Vertical, CH 927.6

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Corr. (dB)
30.077222	22.34	40.00	17.66	1000.0	120.000	V	25.9
845.113889	24.83	46.00	21.17	1000.0	120.000	V	29.4

Frequency (MHz)	MaxPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Corr. (dB)	Margin - PK+ (dB)	Limit - PK+ (dBµV/m)
2782.875000	48.6	1000.0	1000.000	V	-3.0	25.4	74.0
3710.435000	53.6	1000.0	1000.000	V	0.0	20.5	74.0
8348.780000	47.9	1000.0	1000.000	V	8.3	26.1	74.0

Frequency (MHz)	Average (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Corr. (dB)	Margin - AVG (dB)	Limit - AVG (dBµV/m)
2782.875000	45.9	1000.0	1000.000	V	-3.0	8.1	54.0
3710.435000	51.7	1000.0	1000.000	V	0.0	2.3	54.0
8348.780000	37.8	1000.0	1000.000	V	8.3	16.2	54.0

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Table 14: FSK 50Kbps FHSS, 902.2~927.8MHz, Horizontal, CH 902.2

Frequency (MHz)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Corr. (dB)
31.515000	23.29	40.00	16.71	1000.0	120.000	H	24.9
728.663333	27.06	46.00	18.94	1000.0	120.000	H	28.0

Frequency (MHz)	MaxPeak (dBμV/m)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Corr. (dB)	Margin - PK+ (dB)	Limit - PK+ (dBμV/m)
1804.310000	48.7	1000.0	1000.000	H	-8.8	25.3	74.0
2706.375000	49.2	1000.0	1000.000	H	-3.4	24.8	74.0
3608.970000	53.9	1000.0	1000.000	H	-0.3	20.1	74.0

Frequency (MHz)	Average (dBμV/m)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Corr. (dB)	Margin - AVG (dB)	Limit - AVG (dBμV/m)
1804.310000	47.1	1000.0	1000.000	H	-8.8	6.9	54.0
2706.375000	46.9	1000.0	1000.000	H	-3.4	7.1	54.0

Table 15: FSK 50Kbps FHSS, 902.2~927.8MHz, Vertical, CH 902.2

Frequency (MHz)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Corr. (dB)
31.243889	21.22	40.00	18.78	1000.0	120.000	V	25.1
845.440556	24.82	46.00	21.18	1000.0	120.000	V	29.3

Frequency (MHz)	MaxPeak (dBμV/m)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Corr. (dB)	Margin - PK+ (dB)	Limit - PK+ (dBμV/m)
2706.375000	47.5	1000.0	1000.000	V	-3.4	26.5	74.0
3608.435000	52.9	1000.0	1000.000	V	-0.3	21.1	74.0
4510.500000	47.1	1000.0	1000.000	V	2.0	26.9	74.0

Frequency (MHz)	Average (dBμV/m)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Corr. (dB)	Margin - AVG (dB)	Limit - AVG (dBμV/m)
2706.375000	44.5	1000.0	1000.000	V	-3.4	9.5	54.0
3608.435000	51.1	1000.0	1000.000	V	-0.3	2.9	54.0
4510.500000	40.8	1000.0	1000.000	V	2.0	13.2	54.0

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Table 16: FSK 50Kbps FHSS, 902.2~927.8MHz, Horizontal, CH 915

Frequency (MHz)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Corr. (dB)
30.423333	21.84	40.00	18.16	1000.0	120.000	H	25.7
717.306667	24.35	46.00	21.65	1000.0	120.000	H	27.8

Frequency (MHz)	MaxPeak (dBμV/m)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Corr. (dB)	Margin - PK+ (dB)	Limit - PK+ (dBμV/m)
1829.810000	46.5	1000.0	1000.000	H	-8.6	27.5	74.0
2745.155000	51.1	1000.0	1000.000	H	-3.2	22.9	74.0
3659.970000	52.8	1000.0	1000.000	H	-0.1	21.2	74.0

Frequency (MHz)	Average (dBμV/m)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Corr. (dB)	Margin - AVG (dB)	Limit - AVG (dBμV/m)
1829.810000	43.8	1000.0	1000.000	H	-8.6	10.3	54.0
2745.155000	49.0	1000.0	1000.000	H	-3.2	5.0	54.0
3659.970000	50.9	1000.0	1000.000	H	-0.1	3.1	54.0

Table 17: FSK 50Kbps FHSS, 902.2~927.8MHz, Vertical, CH 915

Frequency (MHz)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Corr. (dB)
30.280000	22.38	40.00	17.62	1000.0	120.000	V	25.8
729.379444	27.06	46.00	18.94	1000.0	120.000	V	28.0

Frequency (MHz)	MaxPeak (dBμV/m)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Corr. (dB)	Margin - PK+ (dB)	Limit - PK+ (dBμV/m)
2744.625000	47.0	1000.0	1000.000	V	-3.2	27.0	74.0
3659.970000	53.3	1000.0	1000.000	V	-0.1	20.7	74.0
8235.625000	48.2	1000.0	1000.000	V	8.1	25.8	74.0

Frequency (MHz)	Average (dBμV/m)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Corr. (dB)	Margin - AVG (dB)	Limit - AVG (dBμV/m)
2744.625000	43.7	1000.0	1000.000	V	-3.2	10.3	54.0
3659.970000	51.6	1000.0	1000.000	V	-0.1	2.5	54.0
8235.625000	38.0	1000.0	1000.000	V	8.1	16.0	54.0

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Table 18: FSK 50Kbps FHSS, 902.2~927.8MHz, Horizontal, CH 927.8

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Corr. (dB)
31.852222	22.84	40.00	17.16	1000.0	120.000	H	24.6
844.887778	24.76	46.00	21.24	1000.0	120.000	H	29.4

Frequency (MHz)	MaxPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Corr. (dB)	Margin - PK+ (dB)	Limit - PK+ (dBµV/m)
2783.405000	54.0	1000.0	1000.000	H	-3.0	20.0	74.0
3710.970000	54.8	1000.0	1000.000	H	0.0	19.2	74.0
8602.185000	47.2	1000.0	1000.000	H	8.7	26.8	74.0

Frequency (MHz)	Average (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Corr. (dB)	Margin - AVG (dB)	Limit - AVG (dBµV/m)
2783.405000	52.8	1000.0	1000.000	H	-3.0	1.2	54.0
3710.970000	53.3	1000.0	1000.000	H	0.0	0.7	54.0
8602.185000	36.3	1000.0	1000.000	H	8.7	17.7	54.0

Table 19: FSK 50Kbps FHSS, 902.2~927.8MHz, Vertical, CH 927.8

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Corr. (dB)
31.042222	21.50	40.00	18.50	1000.0	120.000	V	25.3
729.056111	27.23	46.00	18.77	1000.0	120.000	V	28.0

Frequency (MHz)	MaxPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Corr. (dB)	Margin - PK+ (dB)	Limit - PK+ (dBµV/m)
2783.405000	48.0	1000.0	1000.000	V	-3.0	26.0	74.0
3711.500000	53.5	1000.0	1000.000	V	0.0	20.5	74.0
7911.560000	46.7	1000.0	1000.000	V	7.8	27.3	74.0

Frequency (MHz)	Average (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Corr. (dB)	Margin - AVG (dB)	Limit - AVG (dBµV/m)
2783.405000	45.4	1000.0	1000.000	V	-3.0	8.6	54.0
3711.500000	51.9	1000.0	1000.000	V	0.0	2.1	54.0
7911.560000	35.7	1000.0	1000.000	V	7.8	18.3	54.0

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Table 20: FSK 250Kbps FHSS, 902.5~927.5MHz, Horizontal, CH 902.5

Frequency (MHz)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Corr. (dB)
30.200000	22.12	40.00	17.88	1000.0	120.000	H	25.8
728.233889	27.40	46.00	18.60	1000.0	120.000	H	28.0

Frequency (MHz)	MaxPeak (dBμV/m)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Corr. (dB)	Margin - PK+ (dB)	Limit - PK+ (dBμV/m)
1804.845000	49.3	1000.0	1000.000	H	-8.8	24.8	74.0
2707.435000	49.0	1000.0	1000.000	H	-3.4	25.0	74.0
3610.030000	54.3	1000.0	1000.000	H	-0.3	19.8	74.0

Frequency (MHz)	Average (dBμV/m)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Corr. (dB)	Margin - AVG (dB)	Limit - AVG (dBμV/m)
1804.845000	47.6	1000.0	1000.000	H	-8.8	6.4	54.0
2707.435000	46.6	1000.0	1000.000	H	-3.4	7.4	54.0
3610.030000	52.5	1000.0	1000.000	H	-0.3	1.5	54.0

Table 21: FSK 250Kbps FHSS, 902.5~927.5MHz, Vertical, CH 902.5

Frequency (MHz)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Corr. (dB)
30.277222	22.39	40.00	17.61	1000.0	120.000	V	25.8
845.197222	24.82	46.00	21.18	1000.0	120.000	V	29.4

Frequency (MHz)	MaxPeak (dBμV/m)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Corr. (dB)	Margin - PK+ (dB)	Limit - PK+ (dBμV/m)
2707.435000	48.6	1000.0	1000.000	V	-3.4	25.5	74.0
3609.500000	52.4	1000.0	1000.000	V	-0.3	21.6	74.0
8121.935000	49.0	1000.0	1000.000	V	8.0	25.1	74.0

Frequency (MHz)	Average (dBμV/m)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Corr. (dB)	Margin - AVG (dB)	Limit - AVG (dBμV/m)
2707.435000	46.1	1000.0	1000.000	V	-3.4	7.9	54.0
3609.500000	50.5	1000.0	1000.000	V	-0.3	3.5	54.0
8121.935000	39.3	1000.0	1000.000	V	8.0	14.7	54.0

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Table 22: FSK 250Kbps FHSS, 902.5~927.5MHz, Horizontal, CH 915

Frequency (MHz)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Corr. (dB)
30.277222	22.06	40.00	17.94	1000.0	120.000	H	25.8
729.146667	27.11	46.00	18.89	1000.0	120.000	H	28.0

Frequency (MHz)	MaxPeak (dBμV/m)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Corr. (dB)	Margin - PK+ (dB)	Limit - PK+ (dBμV/m)
1829.810000	46.3	1000.0	1000.000	H	-8.6	27.7	74.0
2744.625000	50.2	1000.0	1000.000	H	-3.2	23.8	74.0
3659.435000	53.3	1000.0	1000.000	H	-0.1	20.8	74.0

Frequency (MHz)	Average (dBμV/m)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Corr. (dB)	Margin - AVG (dB)	Limit - AVG (dBμV/m)
1829.810000	43.9	1000.0	1000.000	H	-8.6	10.1	54.0
2744.625000	48.0	1000.0	1000.000	H	-3.2	6.0	54.0
3659.435000	51.6	1000.0	1000.000	H	-0.1	2.4	54.0

Table 23: FSK 250Kbps FHSS, 902.5~927.5MHz, Vertical, CH 915

Frequency (MHz)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Corr. (dB)
30.040000	22.56	40.00	17.44	1000.0	120.000	V	25.9
845.033889	24.89	46.00	21.11	1000.0	120.000	V	29.4

Frequency (MHz)	MaxPeak (dBμV/m)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Corr. (dB)	Margin - PK+ (dB)	Limit - PK+ (dBμV/m)
2744.625000	47.4	1000.0	1000.000	V	-3.2	26.6	74.0
3659.435000	51.9	1000.0	1000.000	V	-0.1	22.1	74.0
8230.310000	47.8	1000.0	1000.000	V	8.1	26.2	74.0

Frequency (MHz)	Average (dBμV/m)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Corr. (dB)	Margin - AVG (dB)	Limit - AVG (dBμV/m)
2744.625000	44.3	1000.0	1000.000	V	-3.2	9.7	74.0
3659.435000	49.9	1000.0	1000.000	V	-0.1	4.1	74.0
8230.310000	36.3	1000.0	1000.000	V	8.1	17.7	74.0

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Table 24: FSK 250Kbps FHSS, 902.5~927.5MHz, Horizontal, CH 927.5

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Corr. (dB)
30.117222	22.21	40.00	17.79	1000.0	120.000	H	25.9
845.545000	24.89	46.00	21.11	1000.0	120.000	H	29.3

Frequency (MHz)	MaxPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Corr. (dB)	Margin - PK+ (dB)	Limit - PK+ (dBµV/m)
2782.345000	53.1	1000.0	1000.000	H	-3.0	20.9	74.0
3709.905000	55.2	1000.0	1000.000	H	0.0	18.8	74.0
8348.250000	48.5	1000.0	1000.000	H	8.3	25.5	74.0

Frequency (MHz)	Average (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Corr. (dB)	Margin - AVG (dB)	Limit - AVG (dBµV/m)
2782.345000	51.4	1000.0	1000.000	H	-3.0	2.6	54.0
3709.905000	53.8	1000.0	1000.000	H	0.0	0.2	54.0
8348.250000	40.3	1000.0	1000.000	H	8.3	13.7	54.0

Table 25: FSK 250Kbps FHSS, 902.5~927.5MHz, Vertical, CH 927.5

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Corr. (dB)
30.625000	21.87	40.00	18.13	1000.0	120.000	V	25.6
845.332778	24.88	46.00	21.12	1000.0	120.000	V	29.3

Frequency (MHz)	MaxPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Corr. (dB)	Margin - PK+ (dB)	Limit - PK+ (dBµV/m)
2781.810000	45.8	1000.0	1000.000	V	-3.0	28.2	74.0
3709.905000	53.3	1000.0	1000.000	V	0.0	20.7	74.0
8329.125000	46.8	1000.0	1000.000	V	8.2	27.2	74.0

Frequency (MHz)	Average (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Corr. (dB)	Margin - AVG (dB)	Limit - AVG (dBµV/m)
2781.810000	41.6	1000.0	1000.000	V	-3.0	12.5	74.0
3709.905000	51.3	1000.0	1000.000	V	0.0	2.7	74.0
8329.125000	36.1	1000.0	1000.000	V	8.2	17.9	74.0

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