

FCC Test Report

Report No.: RFACXM-WTW-P21060766A-4

FCC ID: 2AEUPBHASG001

Test Model: 5F48E9

Received Date: 2021/7/14

Test Date: 2021/7/30 ~ 2021/9/4

Issued Date: 2021/11/30

Applicant: Ring LLC

Address: 1523 26th Street, Santa Monica CA 90404 USA

Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
Hsin Chu Laboratory

Lab Address: E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300,
Taiwan

Test Location: E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300,
Taiwan

FCC Registration / 723255 / TW2022

Designation Number:



This report is for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. You have 60 days from date of issuance of this report to notify us of any material error or omission caused by our negligence, provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents. Unless specific mention, the uncertainty of measurement has been explicitly taken into account to declare the compliance or non-compliance to the specification.

Table of Contents

Release Control Record	3
1 Certificate of Conformity	4
2 Summary of Test Results	5
2.1 Measurement Uncertainty	5
2.2 Modification Record	5
3 General Information	6
3.1 General Description of EUT	6
3.2 Description of Test Modes	8
3.2.1 Test Mode Applicability and Tested Channel Detail	10
3.3 Duty Cycle of Test Signal	12
3.4 Description of Support Units	13
3.4.1 Configuration of System under Test	14
3.5 General Description of Applied Standards and References	15
4 Test Types and Results	16
4.1 Radiated Emission and Bandedge Measurement	16
4.1.1 Limits of Radiated Emission and Bandedge Measurement	16
4.1.2 Test Instruments	17
4.1.3 Test Procedures	19
4.1.4 Deviation from Test Standard	19
4.1.5 Test Setup	20
4.1.6 EUT Operating Conditions	21
4.1.7 Test Results (Mode 1)	22
4.1.8 Test Results (Mode 2)	31
4.1.9 Test Results (Mode 3)	42
4.2 Maximum Output Power	51
4.2.1 Limits of Maximum Output Power Measurement	51
4.2.2 Test Setup	51
4.2.3 Test Instruments	51
4.2.4 Test Procedure	51
4.2.5 Deviation from Test Standard	51
4.2.6 EUT Operating Condition	51
4.2.7 Test Results (Mode 1)	52
4.2.8 Test Results (Mode 2)	52
4.2.9 Test Results (Mode 3)	53
5 Pictures of Test Arrangements	54
Appendix – Information of the Testing Laboratories	55

Release Control Record

Issue No.	Description	Date Issued
RFACXM-WTW-P21060766A-4	Original release.	2021/11/30

1 Certificate of Conformity

Product: Amazon Sidewalk Bridge Pro by Ring

Brand: Ring LLC

Test Model: 5F48E9

Sample Status: Engineering sample

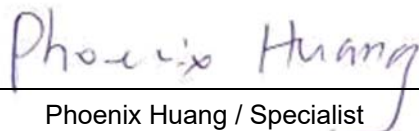
Applicant: Ring LLC

Test Date: 2021/7/30 ~ 2021/9/4

Standards: 47 CFR FCC Part 15, Subpart C (Section 15.247)
ANSI C63.10: 2013

The above equipment has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

Prepared by :


Phoenix Huang / Specialist

Date:

2021/11/30

Approved by :



Clark Lin / Technical Manager

Date:

2021/11/30

2 Summary of Test Results

47 CFR FCC Part 15, Subpart C (SECTION 15.247)			
FCC Clause	Test Item	Result	Remarks
15.207	AC Power Conducted Emission	NA	Refer to Note 1 below
15.247(a)(1)(i)	Number of Hopping Frequency Used	NA	Refer to Note 1 below
15.247(a)(1)(i)	Dwell Time on Each Channel	NA	Refer to Note 1 below
15.247(a)(1)(i)	1. Hopping Channel Separation 2. Spectrum Bandwidth of a Frequency Hopping Sequence Spread Spectrum System	NA	Refer to Note 1 below
15.247(b)(2)	Maximum Peak Output Power	Pass	Meet the requirement of limit.
15.205 & 209 & 15.247(d)	Radiated Emissions & Band Edge Measurement	Pass	Meet the requirement of limit. Minimum passing margin is -4.8 dB at 59.44 MHz.
15.247(d)	Antenna Port Emission	NA	Refer to Note 1 below
15.203	Antenna Requirement	Pass	Antenna connector is R-N type(F) and R-N type(M) not a standard connector.

Note:

- Only Maximum Peak Output Power and Radiated Emissions and Band Edge test items were performed for this addendum. The others testing data refer to original test report.
- Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

2.1 Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

Measurement	Frequency	Expanded Uncertainty (k=2) ($\pm$)
Radiated Emissions up to 1 GHz	9kHz ~ 30MHz	3.1 dB
	30MHz ~ 1GHz	5.5 dB
Radiated Emissions above 1 GHz	1GHz ~ 18GHz	5.1 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	Amazon Sidewalk Bridge Pro by Ring
Brand	Ring LLC
Test Model	5F48E9
Status of EUT	Engineering sample
Power Supply Rating	DC 6V from battery or DC 53V from POE
Modulation Type	FSK
Modulation Technology	FHSS
Transfer Rate	Refer to Note
Operating Frequency	902.2 ~ 927.8 MHz
Number of Channel	Refer to Note
Output Power	578.096 mW
Antenna Type	Refer to Note
Antenna Connector	Refer to Note
Accessory Device	NA
Data Cable Supplied	NA

Note:

- This report is prepared for FCC class II permissive change. The difference compared with the Report No.: RFACXM-WTW-P21060766-4 as the following:
 - ◆ Update software of LoRa technology and remove DTS channel spacing 600 kHz mode and Hybrid mode.
 - ◆ Change simultaneously transmission condition. (Refer to Note 6)
- According to above conditions, Only Maximum Peak Output Power and Radiated Emissions and Band Edge test items need to be performed and all data was verified to meet the requirements.
- The FSK technology information as below table.

Channel Spacing	Data Rate	Number of Channel
200 kHz	50 kbps	129
400 kHz	150 kbps	64
500 kHz	250 kbps	51

- The EUT contains certified WWAN (LTE) modular which FCC ID: ZMONL668AM00.

- The EUT has below radios as following table:

Radio 1	Radio 2	Radio 3	Radio 4
WLAN 2.4GHz+ WLAN 5GHz+ Bluetooth	WWAN (LTE)	GPS	LoRa + FSK

- Simultaneously transmission condition.

Condition	Technology		
1	WLAN (2.4GHz)	LoRa	Bluetooth
2	WLAN (5GHz)	LoRa	Bluetooth
3	WLAN (2.4GHz)	FSK	Bluetooth
4	WLAN (5GHz)	FSK	Bluetooth
5	LTE	LoRa	Bluetooth
6	LTE	FSK	Bluetooth

Note: The emission of the simultaneous operation has been evaluated and no non-compliance was found.

7. The EUT must be supplied with a battery and following below table:

Brand	Model No.	Spec.
WELLTECH ENERGY INC.	5F48E9	6 Vdc, 3100 mAh

8. The antennas provided to the EUT, please refer to the following table:

RF Chain No	Brand	Model	Antenna Net Gain (dBi)	Frequency Range	Antenna Type	Connector Type	Cable Length (mm)
WiFi 0	Inpaq	RFPCA520814IM LB301	8.04	2.4~2.4835 GHz	PIFA	i-pex(MHF)	149
			8.81	5.15~5.85 GHz			
WiFi 1	Inpaq	RFPCA501016IM LB301	8.26	2.4~2.4835 GHz	PIFA	i-pex(MHF)	165
			8.64	5.15~5.85 GHz			
BT	Inpaq	RFPCA520815IM AB301	6.88	2.4~2.4835 GHz	PIFA	i-pex(MHF)	210
LoRa/FSK (Outdoor)	Inpaq	RFDPA563600AF RBX01	5.5	902~928 MHz	Dipole	R-N type(F)	1000
LoRa/FSK (Indoor)	Inpaq	FDPA161500AMU B801	2.8	902~928 MHz	Dipole	R-N type(M)	NA
GPS(L1)	Inpaq	RFPCA621512IM TB301	7.26	1575 MHz	PIFA	i-pex(MHF)	NA
GPS(L5)	Inpaq	RFPCA711620IM TB301	6.06	1176 MHz	PIFA	i-pex(MHF)	NA

Note: For LoRa/FSK Radiated Emission test item the max. gain was selected for the final test .

9. For Radiated Emission test, the EUT was pre-tested under the following modes:

Pre-test Mode	Description
Mode A	Power from POE
Mode B	Power from Battery

In original report, from the above modes, the worst case was found in **Mode A**. Therefore only the test data of the mode was recorded in this report.

10. The above EUT information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or User's Manual.

11. The above Antenna information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications, the laboratory shall not be held responsible.

3.2 Description of Test Modes

129 channels are provided for channel spacing 200 kHz:

Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)
0	902.2	26	907.4	52	912.6	78	917.8	104	923
1	902.4	27	907.6	53	912.8	79	918	105	923.2
2	902.6	28	907.8	54	913	80	918.2	106	923.4
3	902.8	29	908	55	913.2	81	918.4	107	923.6
4	903	30	908.2	56	913.4	82	918.6	108	923.8
5	903.2	31	908.4	57	913.6	83	918.8	109	924
6	903.4	32	908.6	58	913.8	84	919	110	924.2
7	903.6	33	908.8	59	914	85	919.2	111	924.4
8	903.8	34	909	60	914.2	86	919.4	112	924.6
9	904	35	909.2	61	914.4	87	919.6	113	924.8
10	904.2	36	909.4	62	914.6	88	919.8	114	925
11	904.4	37	909.6	63	914.8	89	920	115	925.2
12	904.6	38	909.8	64	915	90	920.2	116	925.4
13	904.8	39	910	65	915.2	91	920.4	117	925.6
14	905	40	910.2	66	915.4	92	920.6	118	925.8
15	905.2	41	910.4	67	915.6	93	920.8	119	926
16	905.4	42	910.6	68	915.8	94	921	120	926.2
17	905.6	43	910.8	69	916	95	921.2	121	926.4
18	905.8	44	911	70	916.2	96	921.4	122	926.6
19	906	45	911.2	71	916.4	97	921.6	123	926.8
20	906.2	46	911.4	72	916.6	98	921.8	124	927
21	906.4	47	911.6	73	916.8	99	922	125	927.2
22	906.6	48	911.8	74	917	100	922.2	126	927.4
23	906.8	49	912	75	917.2	101	922.4	127	927.6
24	907	50	912.2	76	917.4	102	922.6	128	927.8
25	907.2	51	912.4	77	917.6	103	922.8		

64 channels are provided for channel spacing 400 kHz:

Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)
0	902.4	16	908.8	32	915.2	48	921.6
1	902.8	17	909.2	33	915.6	49	922
2	903.2	18	909.6	34	916	50	922.4
3	903.6	19	910	35	916.4	51	922.8
4	904	20	910.4	36	916.8	52	923.2
5	904.4	21	910.8	37	917.2	53	923.6
6	904.8	22	911.2	38	917.6	54	924
7	905.2	23	911.6	39	918	55	924.4
8	905.6	24	912	40	918.4	56	924.8
9	906	25	912.4	41	918.8	57	925.2
10	906.4	26	912.8	42	919.2	58	925.6
11	906.8	27	913.2	43	919.6	59	926
12	907.2	28	913.6	44	920	60	926.4
13	907.6	29	914	45	920.4	61	926.8
14	908	30	914.4	46	920.8	62	927.2
15	908.4	31	914.8	47	921.2	63	927.6

51 channels are provided for channel spacing 500 kHz:

Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)
0	902.5	16	910.5	32	918.5	48	926.5
1	903	17	911	33	919	49	927
2	903.5	18	911.5	34	919.5	50	927.5
3	904	19	912	35	920		
4	904.5	20	912.5	36	920.5		
5	905	21	913	37	921		
6	905.5	22	913.5	38	921.5		
7	906	23	914	39	922		
8	906.5	24	914.5	40	922.5		
9	907	25	915	41	923		
10	907.5	26	915.5	42	923.5		
11	908	27	916	43	924		
12	908.5	28	916.5	44	924.5		
13	909	29	917	45	925		
14	909.5	30	917.5	46	925.5		
15	910	31	918	47	926		

3.2.1 Test Mode Applicability and Tested Channel Detail

EUT CONFIGURE MODE	APPLICABLE TO			DESCRIPTION
	RE $\geq$ 1G	RE<1G	APCM	
1	√	-	√	Channel Spacing: 200 kHz
2	√	√	√	Channel Spacing: 400 kHz
3	√	-	√	Channel Spacing: 500 kHz

Where **RE $\geq$ 1G**: Radiated Emission above 1GHz **RE<1G**: Radiated Emission below 1GHz
APCM: Antenna Port Conducted Measurement

Radiated Emission Test (Above 1GHz):

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
☒ Following channel(s) was (were) selected for the final test as listed below.

Eut Configure Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (kbps)
1	0 to 128	0, 64, 128	FHSS	FSK	50
2	0 to 63	0, 32, 63	FHSS	FSK	150
3	0 to 50	0, 25, 50	FHSS	FSK	250

Radiated Emission Test (Below 1GHz):

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
☒ Following channel(s) was (were) selected for the final test as listed below.

Eut Configure Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (kbps)
2	0 to 63	63	FHSS	FSK	150

Antenna Port Conducted Measurement:

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
☒ Following channel(s) was (were) selected for the final test as listed below.

Eut Configure Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (kbps)
1	0 to 128	0, 64, 128	FHSS	FSK	50
2	0 to 63	0, 32, 63	FHSS	FSK	150
3	0 to 50	0, 25, 50	FHSS	FSK	250

Test Condition:

Applicable to	Environmental Conditions	Input Power (System)	Tested by
RE $\geq$ 1G	25deg. C, 75%RH	120Vac, 60Hz	Tom Yang
RE<1G	23~25deg. C, 67~71%RH	120Vac, 60Hz	Sampson Chen, Andy Ho
APCM	25deg. C, 60%RH	120Vac, 60Hz	Kevin Ko

3.3 Duty Cycle of Test Signal

Duty cycle of test signal is < 98 %, duty factor shall be considered.

Mode 1: Duty cycle = 10.25 ms/113.25 ms = 0.091, Duty factor = $10 \cdot \log(1/\text{Duty cycle}) = 9.89 \text{ dB}$

Mode 2: Duty cycle = 3.25 ms/105.562 ms = 0.031, Duty factor = $10 \cdot \log(1/\text{Duty cycle}) = 14.88 \text{ dB}$

Mode 3: Duty cycle = 2.125 ms/104.812 ms = 0.02, Duty factor = $10 \cdot \log(1/\text{Duty cycle}) = 16.73 \text{ dB}$



3.4 Description of Support Units

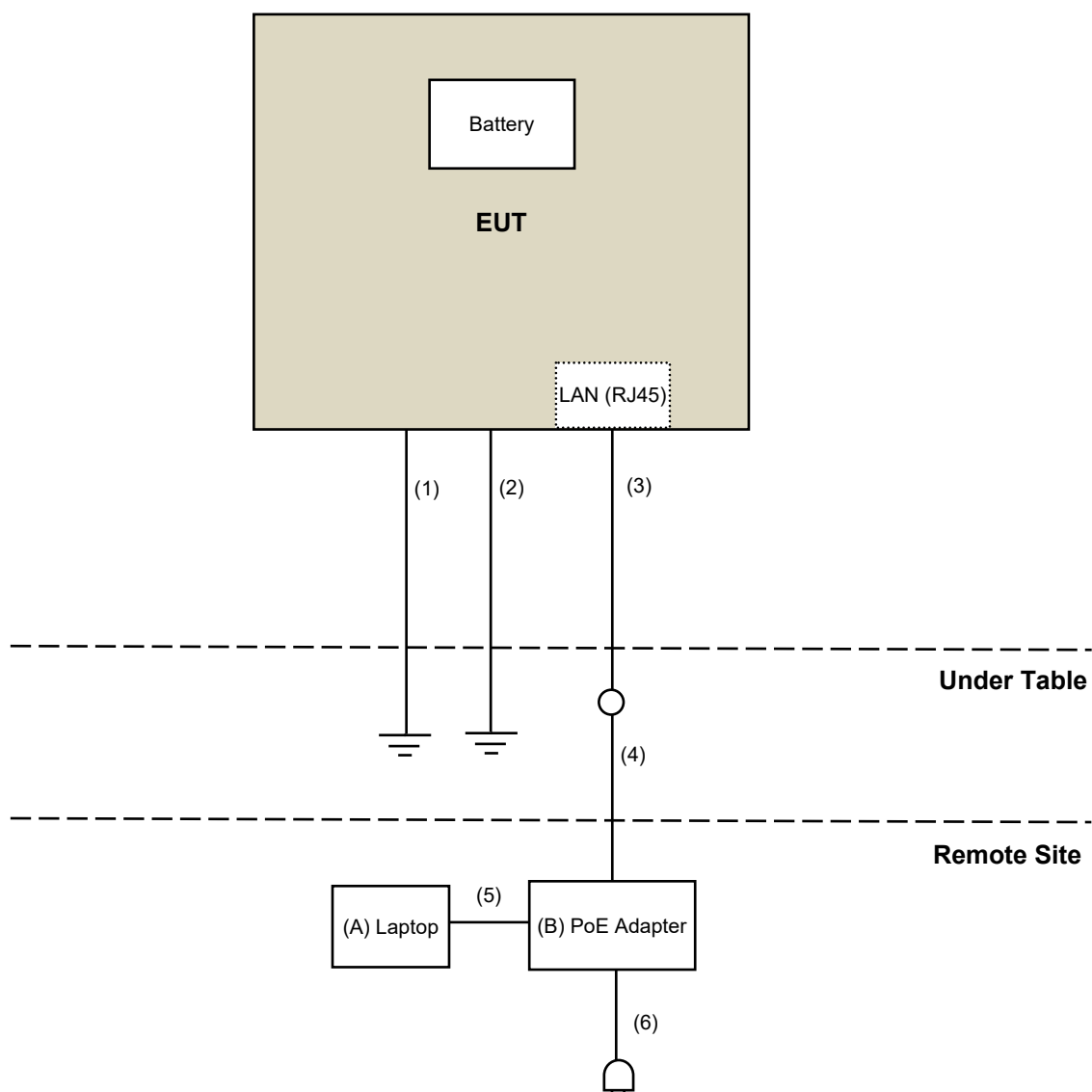
The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Laptop	Lenovo	20U5S01X00 L14	PF-1ANPYA	NA	Provided by Lab
B.	PoE Adapter	Gospower	G0545-530-060-P SE1000	NA	NA	Supplied by client

Note: 1. All power cords of the above support units are non-shielded (1.8m).

ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	GND Cable	1	2	Yes	0	Provided by Lab
2.	GND Cable	1	2	Yes	0	Provided by Lab
3.	RJ-45 Cable	1	1	No	0	Supplied by client
4.	RJ-45 Cable	1	10	No	0	Provided by Lab
5.	RJ-45 Cable	1	1.5	No	0	Provided by Lab
6.	AC Cable	1	1	No	0	Supplied by client

3.4.1 Configuration of System under Test



3.5 General Description of Applied Standards and References

The EUT is a RF Product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards and references:

Test standard:

FCC Part 15, Subpart C (15.247)

ANSI C63.10-2013

All test items have been performed and recorded as per the above standards.

References Test Guidance:

KDB 558074 D01 15.247 Meas Guidance v05r02

All test items have been performed as a reference to the above KDB test guidance.

4 Test Types and Results

4.1 Radiated Emission and Bandedge Measurement

4.1.1 Limits of Radiated Emission and Bandedge Measurement

Radiated emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table. Other emissions shall be at least 20dB below the highest level of the desired power:

Frequencies (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009 ~ 0.490	2400/F(kHz)	300
0.490 ~ 1.705	24000/F(kHz)	30
1.705 ~ 30.0	30	30
30 ~ 88	100	3
88 ~ 216	150	3
216 ~ 960	200	3
Above 960	500	3

Note:

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
3. For frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.

4.1.2 Test Instruments

For Radiated Emission test:

Description & Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Test Receiver Agilent	N9038A	MY51210202	2020/12/1	2021/11/30
Software	ADT_Radiated_V8.7.08	NA	NA	NA
Boresight Antenna Tower & Turn Table Max-Full	MF-7802BS	MF780208530	NA	NA
Pre_Amplifier EMCI	EMC001340	980142	2021/5/24	2022/5/23
LOOP ANTENNA Electro-Metrics	EM-6879	264	2021/3/5	2022/3/4
RF Coaxial Cable JYEBO	5D-FB	LOOPCAB-001	2021/1/7	2022/1/6
RF Coaxial Cable JYEBO	5D-FB	LOOPCAB-002	2021/1/7	2022/1/6
Pre_Amplifier EMCI	EMC330N	980701	2021/3/10	2022/3/9
Trilog Broadband Antenna Schwarzbeck	VULB 9168	9168-406	2020/11/6	2021/11/5
RF Coaxial Cable COMDATE/PEWC	8D	966-4-1	2021/3/17	2022/3/16
RF Coaxial Cable COMDATE/PEWC	8D	966-4-2	2021/3/17	2022/3/16
RF Coaxial Cable COMDATE/PEWC	8D	966-4-3	2021/3/17	2022/3/16
Fixed attenuator Mini-Circuits	UNAT-5+	PAD-ATT5-03	2021/1/11	2022/1/10
Horn Antenna SCHWARZBECK	BBHA 9120D	9120D-783	2020/11/22	2021/11/21
Pre_Amplifier EMCI	EMC 12630 SE	980638	2021/4/7	2022/4/6
RF Cable-Frequency Range : 1-26.5GHz EMCI	EMC104-SM-SM-1200	160922	2020/12/25	2021/12/24
RF Coaxial Cable EMCI	EMC104-SM-SM-2000	180502	2021/4/26	2022/4/25
RF Coaxial Cable EMCI	EMC104-SM-SM-6000	180418	2021/4/26	2022/4/25

- Note: 1. The test was performed in 966 Chamber No. 4.
 2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
 3. Tested Date: 2021/7/30 ~ 2021/9/4

For other test items:

Description & Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Spectrum Analyzer R&S	FSV40	101516	2021/3/8	2022/3/7
Power Meter Anritsu	ML2495A	1529002	2021/6/21	2022/6/20
Pulse Power Sensor Anritsu	MA2411B	1339443	2021/5/31	2022/5/30
Attenuator WOKEN	MDCS18N-10	MDCS18N-10-01	2021/4/13	2022/4/12
Software	ADT_RF Test Software V6.6.5.4	NA	NA	NA

- Note: 1. The test was performed in Oven room 2.
 2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
 3. Tested Date: 2021/8/26

4.1.3 Test Procedures

For Radiated emission below 30MHz

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter chamber room. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. Parallel, perpendicular, and ground-parallel orientations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Quasi-Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

Note:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 9kHz at frequency below 30MHz.

For Radiated emission above 30MHz

- a. The EUT was placed on the top of a rotating table 0.8 meters (for 30MHz ~ 1GHz) / 1.5 meters (for above 1GHz) above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.
- f. The test-receiver system was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

Note:

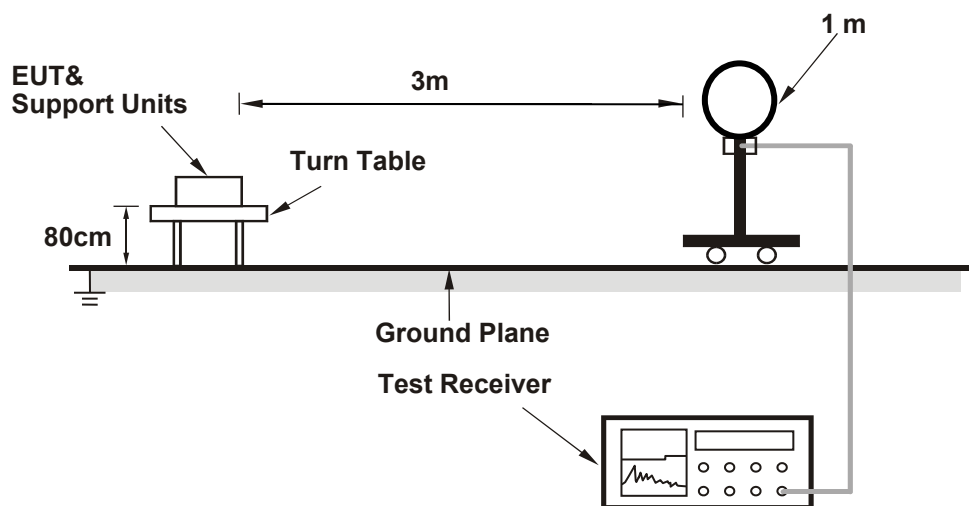
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is $\geq 1/T$ (Duty cycle < 98%) or 10Hz (Duty cycle $\geq 98\%$) for Average detection (AV) at frequency above 1GHz.
4. All modes of operation were investigated and the worst-case emissions are reported.

4.1.4 Deviation from Test Standard

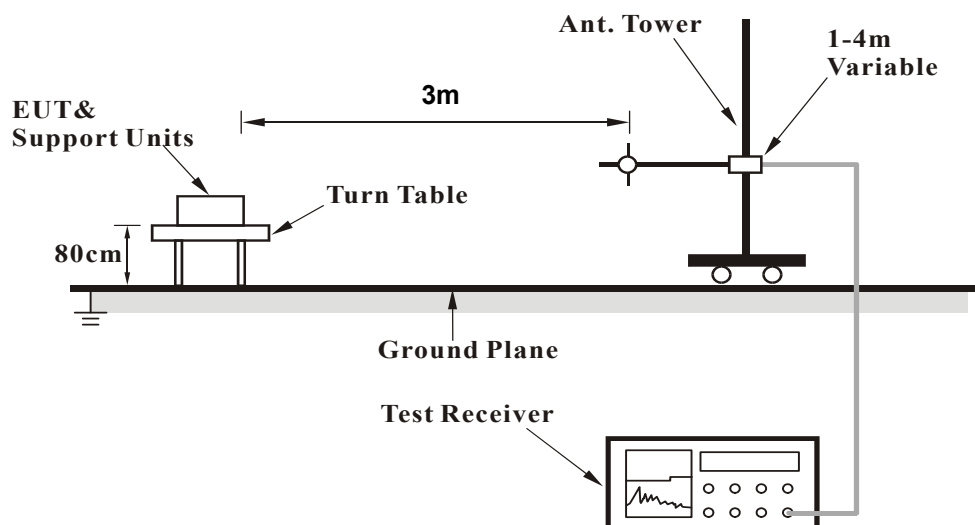
No deviation.

4.1.5 Test Setup

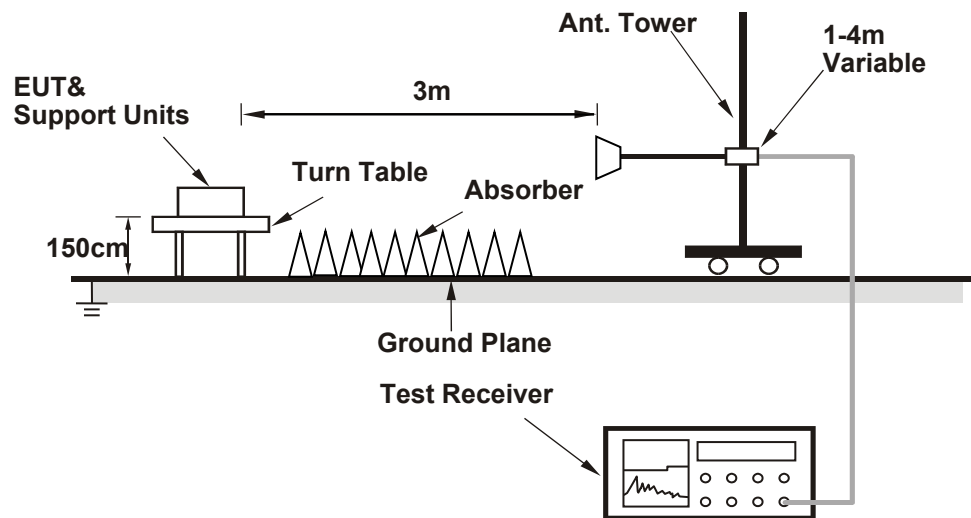
For Radiated emission below 30MHz



For Radiated emission 30MHz to 1GHz



For Radiated emission above 1GHz



For the actual test configuration, please refer to the attached file (Test Setup Photo).

4.1.6 EUT Operating Conditions

- Placed the EUT on the testing table.
- Controlling software (Run Putty.exe paste FSK_Test_Command_20210701.txt Command) has been activated to set the EUT under transmission condition continuously at specific channel frequency.

4.1.7 Test Results (Mode 1)

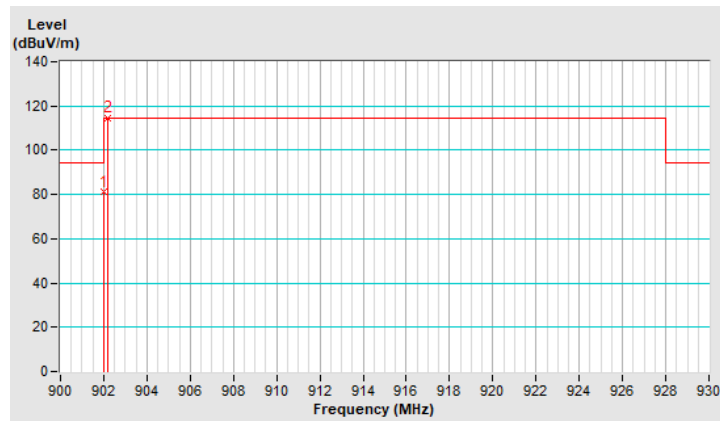
Bandedge Data:

RF Mode	TX FSK_50kbps	Channel	CH 0 : 902.2 MHz
Frequency Range	900MHz ~ 930MHz	Detector Function	Quasi-Peak (QP)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	902.00	81.1 QP	94.6	-13.5	1.34 H	337	46.1	35.0
2	*902.20	114.6 QP			1.34 H	337	79.6	35.0

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. " * ": Fundamental frequency.

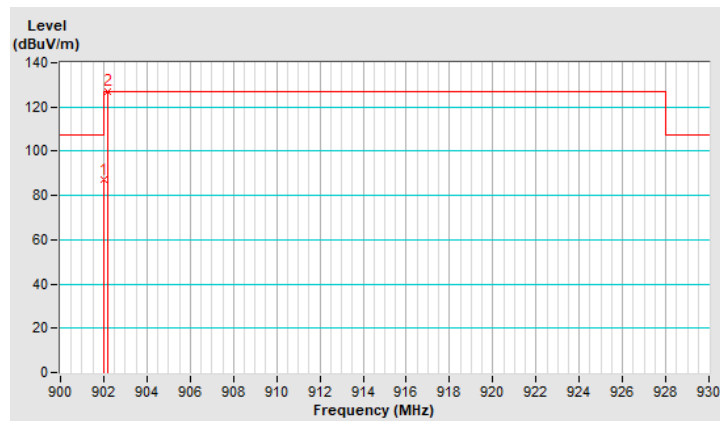


RF Mode	TX FSK_50kbps	Channel	CH 0 : 902.2 MHz
Frequency Range	900MHz ~ 930MHz	Detector Function	Quasi-Peak (QP)

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	902.00	87.1 QP	107.1	-20.0	1.48 V	341	52.1	35.0
2	*902.20	127.1 QP			1.48 V	341	92.1	35.0

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. " * ": Fundamental frequency.

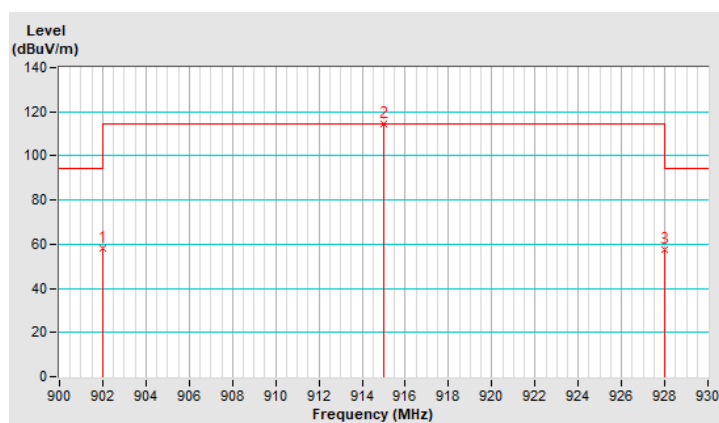


RF Mode	TX FSK_50kbps	Channel	CH 64 : 915 MHz
Frequency Range	900MHz ~ 930MHz	Detector Function	Quasi-Peak (QP)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	902.00	58.3 QP	94.6	-36.3	1.25 H	321	23.3	35.0
2	*915.00	114.6 QP			1.25 H	321	79.3	35.3
3	928.00	57.6 QP	94.6	-37.0	1.25 H	321	22.1	35.5

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. " * ": Fundamental frequency.

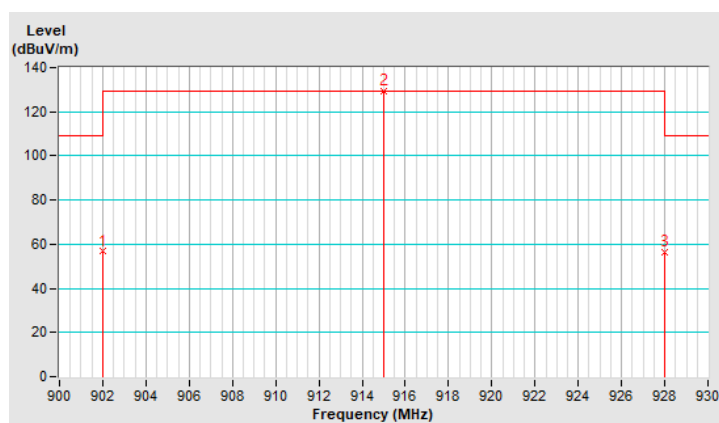


RF Mode	TX FSK_50kbps	Channel	CH 64 : 915 MHz
Frequency Range	900MHz ~ 930MHz	Detector Function	Quasi-Peak (QP)

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	902.00	56.8 QP	109.4	-52.6	1.39 V	335	21.8	35.0
2	*915.00	129.4 QP			1.39 V	335	94.1	35.3
3	928.00	56.5 QP	109.4	-52.9	1.39 V	335	21.0	35.5

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. " * ": Fundamental frequency.

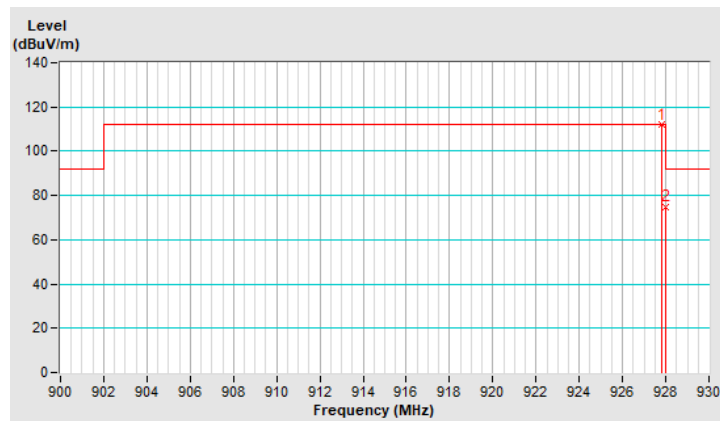


RF Mode	TX FSK_50kbps	Channel	CH 128 : 927.8 MHz
Frequency Range	900MHz ~ 930MHz	Detector Function	Quasi-Peak (QP)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*927.80	112.0 QP			1.28 H	341	76.5	35.5
2	928.00	74.8 QP	92.0	-17.2	1.28 H	341	39.3	35.5

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. " * ": Fundamental frequency.

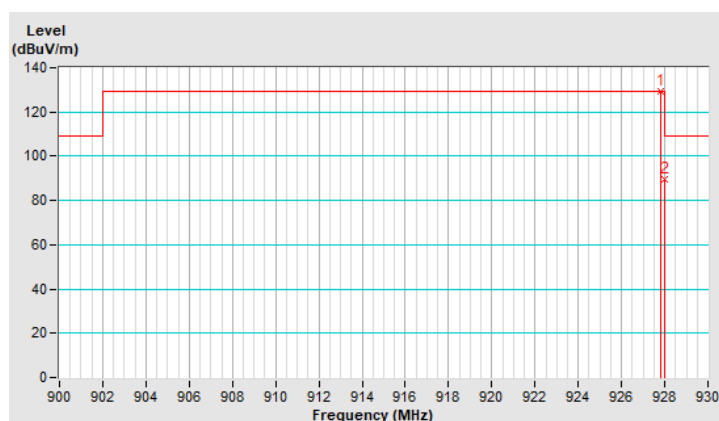


RF Mode	TX FSK_50kbps	Channel	CH 128 : 927.8 MHz
Frequency Range	900MHz ~ 930MHz	Detector Function	Quasi-Peak (QP)

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*927.80	129.4 QP			1.42 V	203	93.9	35.5
2	928.00	89.7 QP	109.4	-19.7	1.42 V	203	54.2	35.5

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. " * ": Fundamental frequency.



Above 1GHz Data:

TX_High

RF Mode	TX FSK_50kbps	Channel	CH 0 : 902.2 MHz
Frequency Range	1GHz ~ 10GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2706.60	33.1 PK	74.0	-40.9	1.60 H	151	36.9	-3.8
2	2706.60	21.4 AV	54.0	-32.6	1.60 H	151	25.2	-3.8
3	3608.80	33.2 PK	74.0	-40.8	1.55 H	171	35.5	-2.3
4	3608.80	28.8 AV	54.0	-25.2	1.55 H	171	31.1	-2.3
5	4511.00	34.8 PK	74.0	-39.2	1.54 H	161	34.9	-0.1
6	4511.00	26.8 AV	54.0	-27.2	1.54 H	161	26.9	-0.1
7	5413.20	36.8 PK	74.0	-37.2	3.23 H	106	35.5	1.3
8	5413.20	31.0 AV	54.0	-23.0	3.23 H	106	29.7	1.3
9	8119.80	39.2 PK	74.0	-34.8	1.47 H	2	30.9	8.3
10	8119.80	33.4 AV	54.0	-20.6	1.47 H	2	25.1	8.3
11	9022.00	40.0 PK	74.0	-34.0	1.12 H	40	32.3	7.7
12	9022.00	30.1 AV	54.0	-23.9	1.12 H	40	22.4	7.7

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2706.60	34.9 PK	74.0	-39.1	1.56 V	166	38.7	-3.8
2	2706.60	22.9 AV	54.0	-31.1	1.56 V	166	26.7	-3.8
3	3608.80	34.5 PK	74.0	-39.5	1.56 V	38	36.8	-2.3
4	3608.80	29.0 AV	54.0	-25.0	1.56 V	38	31.3	-2.3
5	4511.00	36.8 PK	74.0	-37.2	1.75 V	21	36.9	-0.1
6	4511.00	26.7 AV	54.0	-27.3	1.75 V	21	26.8	-0.1
7	5413.20	37.1 PK	74.0	-36.9	1.00 V	14	35.8	1.3
8	5413.20	31.5 AV	54.0	-22.5	1.00 V	14	30.2	1.3
9	8119.80	43.2 PK	74.0	-30.8	1.53 V	142	34.9	8.3
10	8119.80	31.8 AV	54.0	-22.2	1.53 V	142	23.5	8.3
11	9022.00	41.4 PK	74.0	-32.6	2.05 V	159	33.7	7.7
12	9022.00	31.7 AV	54.0	-22.3	2.05 V	159	24.0	7.7

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.

RF Mode	TX FSK_50kbps	Channel	CH 64 : 915 MHz
Frequency Range	1GHz ~ 10GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2745.00	32.9 PK	74.0	-41.1	1.60 H	147	36.7	-3.8
2	2745.00	21.1 AV	54.0	-32.9	1.60 H	147	24.9	-3.8
3	3660.00	33.1 PK	74.0	-40.9	1.50 H	171	35.1	-2.0
4	3660.00	28.8 AV	54.0	-25.2	1.50 H	171	30.8	-2.0
5	4575.00	34.7 PK	74.0	-39.3	1.57 H	167	34.8	-0.1
6	4575.00	26.8 AV	54.0	-27.2	1.57 H	167	26.9	-0.1
7	7320.00	35.0 PK	74.0	-39.0	3.15 H	107	28.2	6.8
8	7320.00	27.2 AV	54.0	-26.8	3.15 H	107	20.4	6.8
9	8235.00	38.9 PK	74.0	-35.1	1.48 H	4	31.2	7.7
10	8235.00	33.3 AV	54.0	-20.7	1.48 H	4	25.6	7.7
11	9150.00	39.5 PK	74.0	-34.5	1.13 H	40	31.4	8.1
12	9150.00	29.7 AV	54.0	-24.3	1.13 H	40	21.6	8.1

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2745.00	35.0 PK	74.0	-39.0	1.56 V	174	38.8	-3.8
2	2745.00	23.1 AV	54.0	-30.9	1.56 V	174	26.9	-3.8
3	3660.00	34.5 PK	74.0	-39.5	1.52 V	57	36.5	-2.0
4	3660.00	29.1 AV	54.0	-24.9	1.52 V	57	31.1	-2.0
5	4575.00	37.5 PK	74.0	-36.5	1.77 V	5	37.6	-0.1
6	4575.00	27.4 AV	54.0	-26.6	1.77 V	5	27.5	-0.1
7	7320.00	37.7 PK	74.0	-36.3	1.79 V	56	30.9	6.8
8	7320.00	29.6 AV	54.0	-24.4	1.79 V	56	22.8	6.8
9	8235.00	43.1 PK	74.0	-30.9	1.57 V	136	35.4	7.7
10	8235.00	31.5 AV	54.0	-22.5	1.57 V	136	23.8	7.7
11	9150.00	41.6 PK	74.0	-32.4	2.05 V	173	33.5	8.1
12	9150.00	31.6 AV	54.0	-22.4	2.05 V	173	23.5	8.1

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.

RF Mode	TX FSK_50kbps	Channel	CH 128 : 927.8 MHz
Frequency Range	1GHz ~ 10GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2783.40	33.2 PK	74.0	-40.8	1.68 H	145	36.9	-3.7
2	2783.40	21.1 AV	54.0	-32.9	1.68 H	145	24.8	-3.7
3	3711.20	34.3 PK	74.0	-39.7	1.45 H	154	36.1	-1.8
4	3711.20	29.8 AV	54.0	-24.2	1.45 H	154	31.6	-1.8
5	4639.00	35.4 PK	74.0	-38.6	1.62 H	177	35.3	0.1
6	4639.00	27.0 AV	54.0	-27.0	1.62 H	177	26.9	0.1
7	7422.40	34.6 PK	74.0	-39.4	3.19 H	121	27.3	7.3
8	7422.40	26.5 AV	54.0	-27.5	3.19 H	121	19.2	7.3
9	8350.20	39.9 PK	74.0	-34.1	1.42 H	22	32.4	7.5
10	8350.20	33.6 AV	54.0	-20.4	1.42 H	22	26.1	7.5

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2783.40	35.1 PK	74.0	-38.9	1.57 V	164	38.8	-3.7
2	2783.40	23.1 AV	54.0	-30.9	1.57 V	164	26.8	-3.7
3	3711.20	34.4 PK	74.0	-39.6	1.52 V	54	36.2	-1.8
4	3711.20	28.9 AV	54.0	-25.1	1.52 V	54	30.7	-1.8
5	4639.00	36.9 PK	74.0	-37.1	1.74 V	5	36.8	0.1
6	4639.00	27.0 AV	54.0	-27.0	1.74 V	5	26.9	0.1
7	7422.40	37.8 PK	74.0	-36.2	1.75 V	53	30.5	7.3
8	7422.40	29.5 AV	54.0	-24.5	1.75 V	53	22.2	7.3
9	8350.20	43.4 PK	74.0	-30.6	1.57 V	145	35.9	7.5
10	8350.20	32.0 AV	54.0	-22.0	1.57 V	145	24.5	7.5

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.

4.1.8 Test Results (Mode 2)

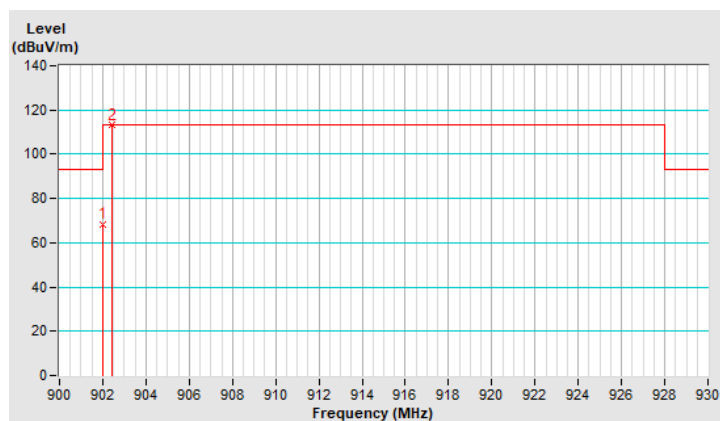
Bandedge Data:

RF Mode	TX FSK_150kbps	Channel	CH 0 : 902.4 MHz
Frequency Range	900MHz ~ 930MHz	Detector Function	Quasi-Peak (QP)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	902.00	68.3 QP	93.1	-24.8	1.37 H	351	33.3	35.0
2	*902.40	113.1 QP			1.37 H	351	78.1	35.0

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. " * ": Fundamental frequency.

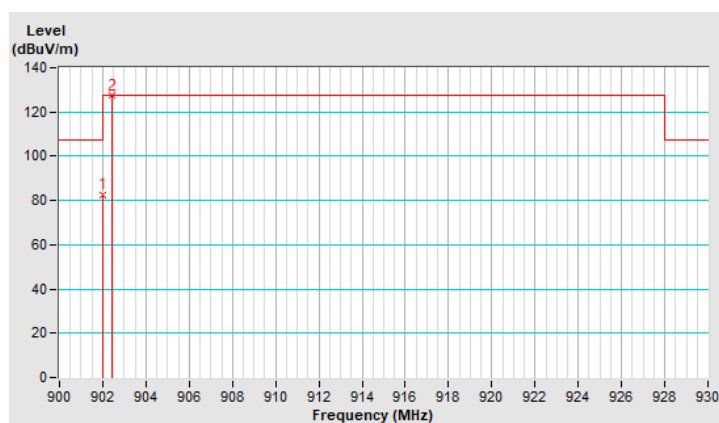


RF Mode	TX FSK_150kbps	Channel	CH 0 : 902.4 MHz
Frequency Range	900MHz ~ 930MHz	Detector Function	Quasi-Peak (QP)

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	902.00	82.6 QP	107.5	-24.9	1.43 V	337	47.6	35.0
2	*902.40	127.5 QP			1.43 V	337	92.5	35.0

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. " * ": Fundamental frequency.

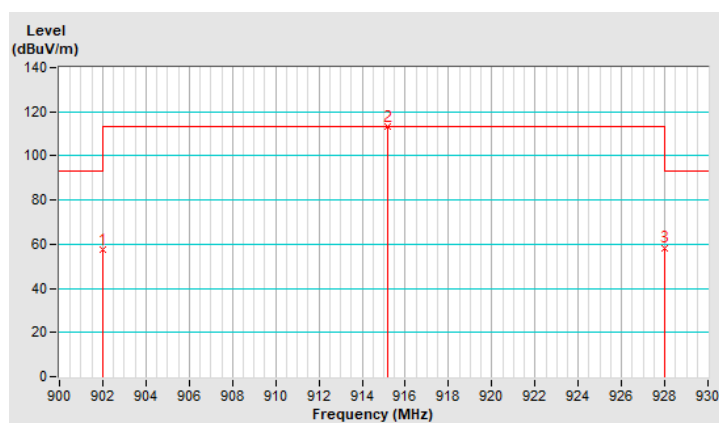


RF Mode	TX FSK_150kbps	Channel	CH 32 : 915.2 MHz
Frequency Range	900MHz ~ 930MHz	Detector Function	Quasi-Peak (QP)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	902.00	57.5 QP	93.2	-35.7	1.24 H	343	22.5	35.0
2	*915.20	113.2 QP			1.24 H	343	77.8	35.4
3	928.00	58.4 QP	93.2	-34.8	1.24 H	343	22.9	35.5

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. " * ": Fundamental frequency.

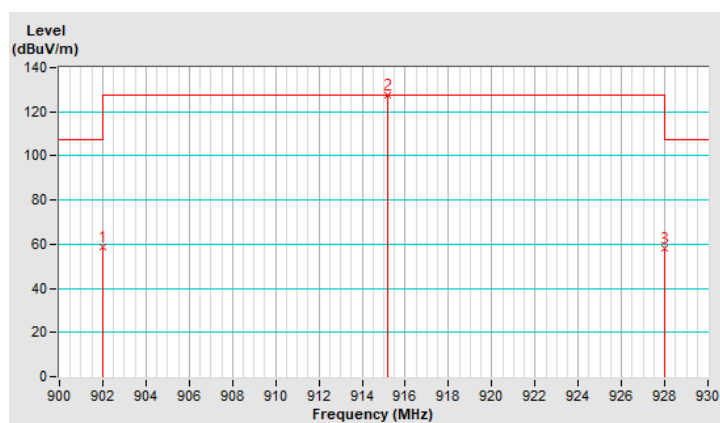


RF Mode	TX FSK_150kbps	Channel	CH 32 : 915.2 MHz
Frequency Range	900MHz ~ 930MHz	Detector Function	Quasi-Peak (QP)

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	902.00	58.7 QP	107.3	-48.6	1.54 V	191	23.7	35.0
2	*915.20	127.3 QP			1.54 V	191	91.9	35.4
3	928.00	58.1 QP	107.3	-49.2	1.54 V	191	22.6	35.5

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. " * ": Fundamental frequency.

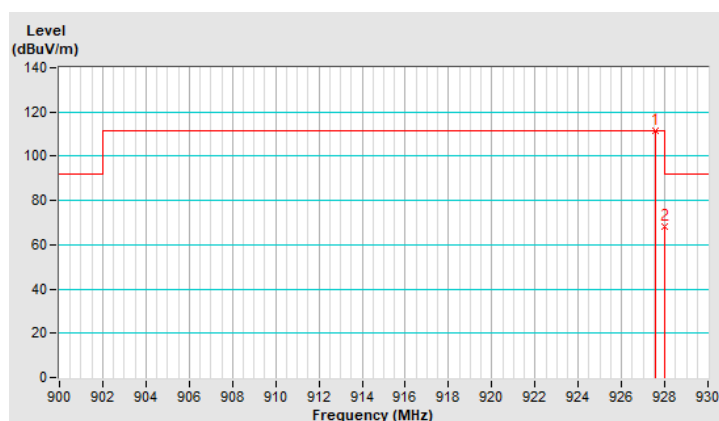


RF Mode	TX FSK_150kbps	Channel	CH 63 : 927.6 MHz
Frequency Range	900MHz ~ 930MHz	Detector Function	Quasi-Peak (QP)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*927.60	111.8 QP			1.23 H	351	76.3	35.5
2	928.00	68.5 QP	91.8	-23.3	1.23 H	351	33.0	35.5

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. " * ": Fundamental frequency.

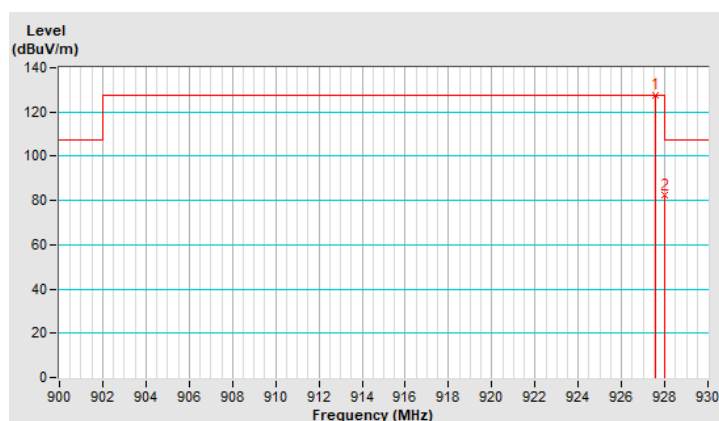


RF Mode	TX FSK_150kbps	Channel	CH 63 : 927.6 MHz
Frequency Range	900MHz ~ 930MHz	Detector Function	Quasi-Peak (QP)

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*927.60	127.6 QP			1.56 V	204	92.1	35.5
2	928.00	82.4 QP	107.6	-25.2	1.56 V	204	46.9	35.5

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. " * ": Fundamental frequency.



Above 1GHz Data:

RF Mode	TX FSK_150kbps	Channel	CH 0 : 902.4 MHz
Frequency Range	1GHz ~ 10GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2707.20	32.8 PK	74.0	-41.2	1.70 H	146	36.6	-3.8
2	2707.20	20.9 AV	54.0	-33.1	1.70 H	146	24.7	-3.8
3	3609.60	34.6 PK	74.0	-39.4	1.55 H	153	36.9	-2.3
4	3609.60	30.0 AV	54.0	-24.0	1.55 H	153	32.3	-2.3
5	4512.00	34.2 PK	74.0	-39.8	1.64 H	178	34.3	-0.1
6	4512.00	26.4 AV	54.0	-27.6	1.64 H	178	26.5	-0.1
7	8121.60	40.0 PK	74.0	-34.0	1.53 H	8	31.7	8.3
8	8121.60	34.4 AV	54.0	-19.6	1.53 H	8	26.1	8.3
9	9024.00	38.4 PK	74.0	-35.6	1.09 H	60	30.7	7.7
10	9024.00	29.0 AV	54.0	-25.0	1.09 H	60	21.3	7.7
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2707.20	34.1 PK	74.0	-39.9	1.61 V	145	37.9	-3.8
2	2707.20	22.3 AV	54.0	-31.7	1.61 V	145	26.1	-3.8
3	3609.60	36.2 PK	74.0	-37.8	1.59 V	34	38.5	-2.3
4	3609.60	32.1 AV	54.0	-21.9	1.59 V	34	34.4	-2.3
5	4512.00	38.5 PK	74.0	-35.5	1.75 V	285	38.6	-0.1
6	4512.00	30.9 AV	54.0	-23.1	1.75 V	285	31.0	-0.1
7	8121.60	43.2 PK	74.0	-30.8	1.61 V	210	34.9	8.3
8	8121.60	37.0 AV	54.0	-17.0	1.61 V	210	28.7	8.3
9	9024.00	41.9 PK	74.0	-32.1	2.11 V	169	34.2	7.7
10	9024.00	32.0 AV	54.0	-22.0	2.11 V	169	24.3	7.7

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.

RF Mode	TX FSK_150kbps	Channel	CH 32 : 915.2 MHz
Frequency Range	1GHz ~ 10GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2745.60	32.7 PK	74.0	-41.3	1.69 H	154	36.5	-3.8
2	2745.60	21.0 AV	54.0	-33.0	1.69 H	154	24.8	-3.8
3	3660.80	34.0 PK	74.0	-40.0	1.53 H	152	36.0	-2.0
4	3660.80	29.7 AV	54.0	-24.3	1.53 H	152	31.7	-2.0
5	4576.00	34.6 PK	74.0	-39.4	1.62 H	167	34.7	-0.1
6	4576.00	26.8 AV	54.0	-27.2	1.62 H	167	26.9	-0.1
7	7321.60	34.6 PK	74.0	-39.4	3.14 H	98	27.8	6.8
8	7321.60	26.8 AV	54.0	-27.2	3.14 H	98	20.0	6.8
9	8236.80	40.3 PK	74.0	-33.7	1.50 H	3	32.6	7.7
10	8236.80	34.6 AV	54.0	-19.4	1.50 H	3	26.9	7.7
11	9152.00	39.0 PK	74.0	-35.0	1.08 H	51	30.9	8.1
12	9152.00	29.4 AV	54.0	-24.6	1.08 H	51	21.3	8.1

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2745.60	34.0 PK	74.0	-40.0	1.57 V	150	37.8	-3.8
2	2745.60	22.0 AV	54.0	-32.0	1.57 V	150	25.8	-3.8
3	3660.80	36.2 PK	74.0	-37.8	1.53 V	23	38.2	-2.0
4	3660.80	32.0 AV	54.0	-22.0	1.53 V	23	34.0	-2.0
5	4576.00	37.9 PK	74.0	-36.1	1.71 V	285	38.0	-0.1
6	4576.00	30.5 AV	54.0	-23.5	1.71 V	285	30.6	-0.1
7	7321.60	34.5 PK	74.0	-39.5	1.00 V	1	27.7	6.8
8	7321.60	26.9 AV	54.0	-27.1	1.00 V	1	20.1	6.8
9	8236.80	43.6 PK	74.0	-30.4	1.64 V	198	35.9	7.7
10	8236.80	37.3 AV	54.0	-16.7	1.64 V	198	29.6	7.7
11	9152.00	41.6 PK	74.0	-32.4	2.08 V	163	33.5	8.1
12	9152.00	31.6 AV	54.0	-22.4	2.08 V	163	23.5	8.1

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.

RF Mode	TX FSK_150kbps	Channel	CH 63 : 927.6 MHz
Frequency Range	1GHz ~ 10GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2782.80	32.7 PK	74.0	-41.3	1.68 H	162	36.4	-3.7
2	2782.80	20.5 AV	54.0	-33.5	1.68 H	162	24.2	-3.7
3	3710.40	33.1 PK	74.0	-40.9	1.37 H	151	34.9	-1.8
4	3710.40	28.8 AV	54.0	-25.2	1.37 H	151	30.6	-1.8
5	4638.00	35.3 PK	74.0	-38.7	1.65 H	145	35.2	0.1
6	4638.00	26.9 AV	54.0	-27.1	1.65 H	145	26.8	0.1
7	7420.80	34.6 PK	74.0	-39.4	3.21 H	129	27.3	7.3
8	7420.80	26.5 AV	54.0	-27.5	3.21 H	129	19.2	7.3
9	8348.40	40.5 PK	74.0	-33.5	1.52 H	21	33.0	7.5
10	8348.40	34.0 AV	54.0	-20.0	1.52 H	21	26.5	7.5

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2782.80	34.4 PK	74.0	-39.6	1.56 V	167	38.1	-3.7
2	2782.80	22.8 AV	54.0	-31.2	1.56 V	167	26.5	-3.7
3	3710.40	34.7 PK	74.0	-39.3	1.46 V	38	36.5	-1.8
4	3710.40	29.3 AV	54.0	-24.7	1.46 V	38	31.1	-1.8
5	4638.00	37.2 PK	74.0	-36.8	1.79 V	23	37.1	0.1
6	4638.00	27.4 AV	54.0	-26.6	1.79 V	23	27.3	0.1
7	7420.80	37.6 PK	74.0	-36.4	1.74 V	35	30.3	7.3
8	7420.80	29.9 AV	54.0	-24.1	1.74 V	35	22.6	7.3
9	8348.40	43.3 PK	74.0	-30.7	1.54 V	126	35.8	7.5
10	8348.40	31.7 AV	54.0	-22.3	1.54 V	126	24.2	7.5

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.

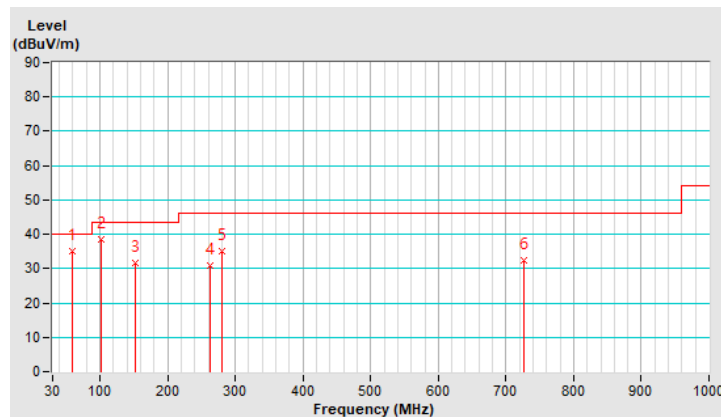
Below 1GHz Data:

RF Mode	TX FSK_150kbps	Channel	CH 63 : 927.6 MHz
Frequency Range	9kHz ~ 1GHz	Detector Function	Quasi-Peak (QP)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	59.44	35.2 QP	40.0	-4.8	3.00 H	148	48.3	-13.1
2	102.31	38.4 QP	43.5	-5.1	2.00 H	76	54.6	-16.2
3	152.37	31.6 QP	43.5	-11.9	2.00 H	47	43.6	-12.0
4	262.05	30.8 QP	46.0	-15.2	1.00 H	141	43.1	-12.3
5	279.72	35.0 QP	46.0	-11.0	1.00 H	224	46.4	-11.4
6	727.25	32.5 QP	46.0	-13.5	3.00 H	18	32.5	0.0

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30MHz~1000MHz.
5. The emission levels were very low against the limit of frequency range 9kHz~30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.

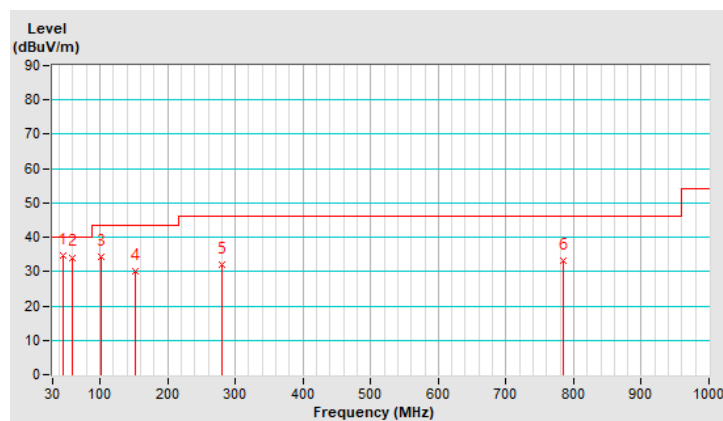


RF Mode	TX FSK_150kbps	Channel	CH 63 : 927.6 MHz
Frequency Range	9kHz ~ 1GHz	Detector Function	Quasi-Peak (QP)

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	45.51	34.8 QP	40.0	-5.2	1.00 V	310	47.2	-12.4
2	59.44	34.1 QP	40.0	-5.9	1.00 V	254	47.2	-13.1
3	100.83	34.3 QP	43.5	-9.2	1.00 V	71	50.8	-16.5
4	151.71	30.2 QP	43.5	-13.3	1.00 V	59	42.2	-12.0
5	280.93	32.1 QP	46.0	-13.9	1.50 V	62	43.4	-11.3
6	784.91	33.0 QP	46.0	-13.0	3.00 V	289	31.7	1.3

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30MHz~1000MHz.
5. The emission levels were very low against the limit of frequency range 9kHz~30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.



4.1.9 Test Results (Mode 3)

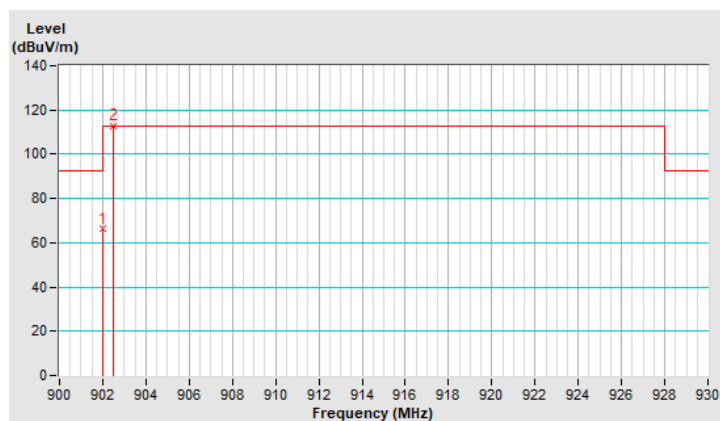
Bandedge Data:

RF Mode	TX FSK_250kbps	Channel	CH 0 : 902.5 MHz
Frequency Range	900MHz ~ 930MHz	Detector Function	Quasi-Peak (QP)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	902.00	66.3 QP	92.8	-26.5	1.24 H	356	31.3	35.0
2	*902.50	112.8 QP			1.24 H	356	77.8	35.0

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. " * ": Fundamental frequency.

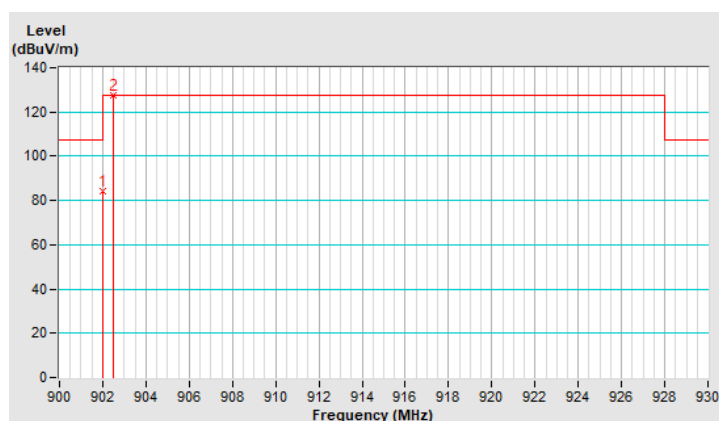


RF Mode	TX FSK_250kbps	Channel	CH 0 : 902.5 MHz
Frequency Range	900MHz ~ 930MHz	Detector Function	Quasi-Peak (QP)

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	902.00	84.2 QP	107.5	-23.3	1.35 V	330	49.2	35.0
2	*902.50	127.5 QP			1.35 V	330	92.5	35.0

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. " * ": Fundamental frequency.

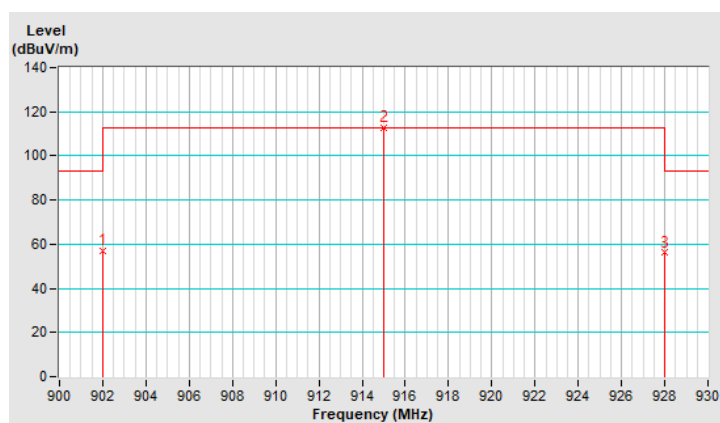


RF Mode	TX FSK_250kbps	Channel	CH 25 : 915 MHz
Frequency Range	900MHz ~ 930MHz	Detector Function	Quasi-Peak (QP)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	902.00	57.0 QP	93.0	-36.0	1.11 H	315	22.0	35.0
2	*915.00	113.0 QP			1.11 H	315	77.7	35.3
3	928.00	56.1 QP	93.0	-36.9	1.11 H	315	20.6	35.5

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. " * ": Fundamental frequency.

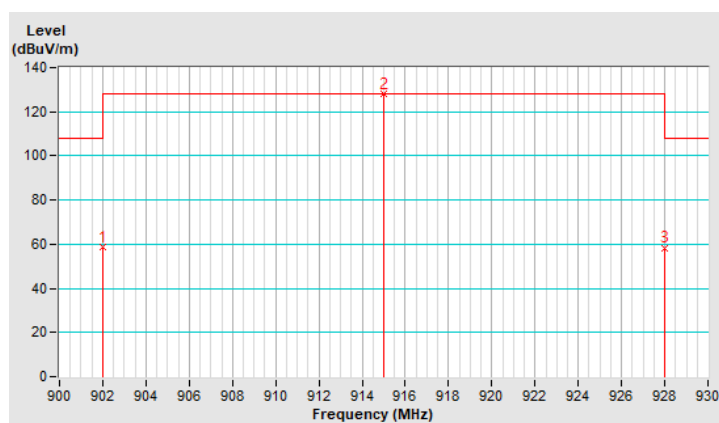


RF Mode	TX FSK_250kbps	Channel	CH 25 : 915 MHz
Frequency Range	900MHz ~ 930MHz	Detector Function	Quasi-Peak (QP)

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	902.00	58.7 QP	107.9	-49.2	1.33 V	356	23.7	35.0
2	*915.00	127.9 QP			1.33 V	356	92.6	35.3
3	928.00	58.4 QP	107.9	-49.5	1.33 V	356	22.9	35.5

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. " * ": Fundamental frequency.

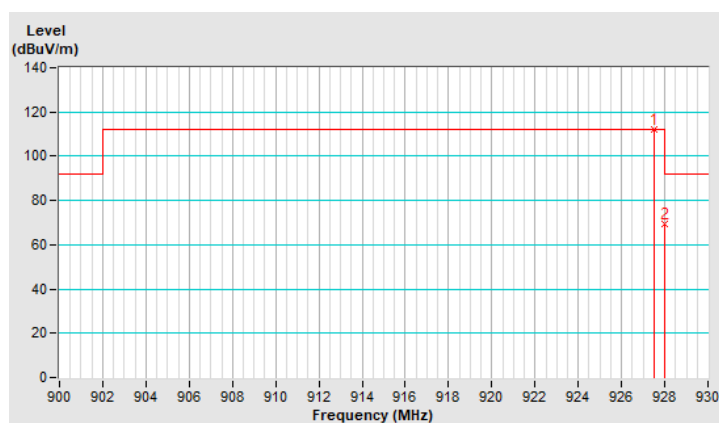


RF Mode	TX FSK_250kbps	Channel	CH 50 : 927.5 MHz
Frequency Range	900MHz ~ 930MHz	Detector Function	Quasi-Peak (QP)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*927.50	111.9 QP			1.23 H	354	76.4	35.5
2	928.00	69.4 QP	91.9	-22.5	1.23 H	354	33.9	35.5

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. " * ": Fundamental frequency.

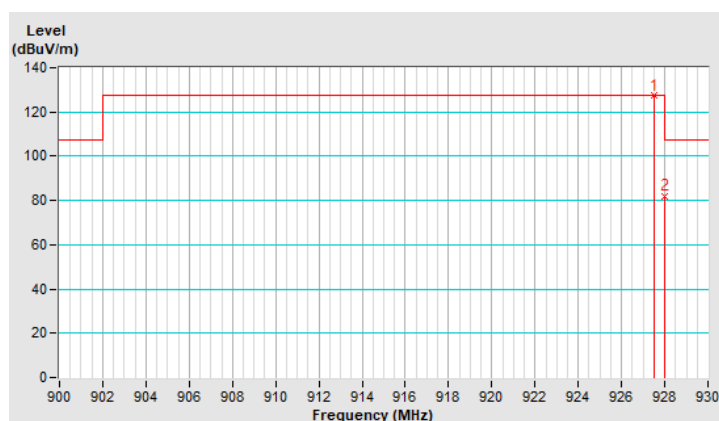


RF Mode	TX FSK_250kbps	Channel	CH 50 : 927.5 MHz
Frequency Range	900MHz ~ 930MHz	Detector Function	Quasi-Peak (QP)

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*927.50	127.3 QP			1.45 V	208	91.8	35.5
2	928.00	82.1 QP	107.3	-25.2	1.45 V	208	46.6	35.5

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. " * ": Fundamental frequency.



Above 1GHz Data:

RF Mode	TX FSK_250kbps	Channel	CH 0 : 902.5 MHz
Frequency Range	1GHz ~ 10GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2707.50	33.5 PK	74.0	-40.5	1.64 H	134	37.3	-3.8
2	2707.50	21.5 AV	54.0	-32.5	1.64 H	134	25.3	-3.8
3	3610.00	33.6 PK	74.0	-40.4	1.53 H	184	35.9	-2.3
4	3610.00	29.1 AV	54.0	-24.9	1.53 H	184	31.4	-2.3
5	4512.50	34.9 PK	74.0	-39.1	1.68 H	167	35.0	-0.1
6	4512.50	27.0 AV	54.0	-27.0	1.68 H	167	27.1	-0.1
7	5415.00	37.1 PK	74.0	-36.9	3.21 H	103	35.8	1.3
8	5415.00	30.5 AV	54.0	-23.5	3.21 H	103	29.2	1.3
9	8122.50	39.8 PK	74.0	-34.2	1.52 H	20	31.5	8.3
10	8122.50	33.8 AV	54.0	-20.2	1.52 H	20	25.5	8.3
11	9025.00	39.8 PK	74.0	-34.2	1.04 H	60	32.1	7.7
12	9025.00	30.1 AV	54.0	-23.9	1.04 H	60	22.4	7.7
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2707.50	35.6 PK	74.0	-38.4	1.52 V	183	39.4	-3.8
2	2707.50	23.7 AV	54.0	-30.3	1.52 V	183	27.5	-3.8
3	3610.00	34.5 PK	74.0	-39.5	1.53 V	10	36.8	-2.3
4	3610.00	28.7 AV	54.0	-25.3	1.53 V	10	31.0	-2.3
5	4512.50	36.7 PK	74.0	-37.3	1.67 V	52	36.8	-0.1
6	4512.50	26.5 AV	54.0	-27.5	1.67 V	52	26.6	-0.1
7	5415.00	37.2 PK	74.0	-36.8	1.00 V	30	35.9	1.3
8	5415.00	31.4 AV	54.0	-22.6	1.00 V	30	30.1	1.3
9	8122.50	43.8 PK	74.0	-30.2	1.44 V	91	35.5	8.3
10	8122.50	31.8 AV	54.0	-22.2	1.44 V	91	23.5	8.3
11	9025.00	42.0 PK	74.0	-32.0	1.34 V	150	34.3	7.7
12	9025.00	31.1 AV	54.0	-22.9	1.34 V	150	23.4	7.7

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.

RF Mode	TX FSK_250kbps	Channel	CH 25 : 915 MHz
Frequency Range	1GHz ~ 10GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2745.00	33.6 PK	74.0	-40.4	1.62 H	122	37.4	-3.8
2	2745.00	21.4 AV	54.0	-32.6	1.62 H	122	25.2	-3.8
3	3660.00	33.8 PK	74.0	-40.2	1.53 H	178	35.8	-2.0
4	3660.00	29.1 AV	54.0	-24.9	1.53 H	178	31.1	-2.0
5	4575.00	34.4 PK	74.0	-39.6	1.67 H	168	34.5	-0.1
6	4575.00	26.7 AV	54.0	-27.3	1.67 H	168	26.8	-0.1
7	7320.00	37.0 PK	74.0	-37.0	1.00 H	16	30.2	6.8
8	7320.00	29.6 AV	54.0	-24.4	1.00 H	16	22.8	6.8
9	8235.00	39.8 PK	74.0	-34.2	1.51 H	12	32.1	7.7
10	8235.00	34.0 AV	54.0	-20.0	1.51 H	12	26.3	7.7
11	9150.00	40.1 PK	74.0	-33.9	1.00 H	46	32.0	8.1
12	9150.00	30.5 AV	54.0	-23.5	1.00 H	46	22.4	8.1

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2745.00	35.3 PK	74.0	-38.7	1.50 V	175	39.1	-3.8
2	2745.00	23.6 AV	54.0	-30.4	1.50 V	175	27.4	-3.8
3	3660.00	34.9 PK	74.0	-39.1	1.57 V	21	36.9	-2.0
4	3660.00	29.1 AV	54.0	-24.9	1.57 V	21	31.1	-2.0
5	4575.00	36.9 PK	74.0	-37.1	1.64 V	42	37.0	-0.1
6	4575.00	26.7 AV	54.0	-27.3	1.64 V	42	26.8	-0.1
7	7320.00	37.3 PK	74.0	-36.7	1.66 V	34	30.5	6.8
8	7320.00	29.8 AV	54.0	-24.2	1.66 V	34	23.0	6.8
9	8235.00	44.0 PK	74.0	-30.0	1.45 V	100	36.3	7.7
10	8235.00	32.1 AV	54.0	-21.9	1.45 V	100	24.4	7.7
11	9150.00	42.2 PK	74.0	-31.8	1.38 V	157	34.1	8.1
12	9150.00	31.1 AV	54.0	-22.9	1.38 V	157	23.0	8.1

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.

RF Mode	TX FSK_250kbps	Channel	CH 50 : 927.5 MHz
Frequency Range	1GHz ~ 10GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2782.50	33.1 PK	74.0	-40.9	1.68 H	155	36.8	-3.7
2	2782.50	21.0 AV	54.0	-33.0	1.68 H	155	24.7	-3.7
3	3710.00	33.1 PK	74.0	-40.9	1.33 H	139	35.0	-1.9
4	3710.00	28.4 AV	54.0	-25.6	1.33 H	139	30.3	-1.9
5	4637.50	35.7 PK	74.0	-38.3	1.66 H	130	35.6	0.1
6	4637.50	27.1 AV	54.0	-26.9	1.66 H	130	27.0	0.1
7	7420.00	34.0 PK	74.0	-40.0	3.19 H	161	26.7	7.3
8	7420.00	26.4 AV	54.0	-27.6	3.19 H	161	19.1	7.3
9	8347.50	41.0 PK	74.0	-33.0	1.54 H	2	33.5	7.5
10	8347.50	34.8 AV	54.0	-19.2	1.54 H	2	27.3	7.5

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2782.50	35.1 PK	74.0	-38.9	1.56 V	190	38.8	-3.7
2	2782.50	23.6 AV	54.0	-30.4	1.56 V	190	27.3	-3.7
3	3710.00	35.2 PK	74.0	-38.8	1.46 V	60	37.1	-1.9
4	3710.00	29.2 AV	54.0	-24.8	1.46 V	60	31.1	-1.9
5	4637.50	36.7 PK	74.0	-37.3	1.73 V	36	36.6	0.1
6	4637.50	27.0 AV	54.0	-27.0	1.73 V	36	26.9	0.1
7	7420.00	37.0 PK	74.0	-37.0	1.86 V	58	29.7	7.3
8	7420.00	29.7 AV	54.0	-24.3	1.86 V	58	22.4	7.3
9	8347.50	43.5 PK	74.0	-30.5	1.51 V	140	36.0	7.5
10	8347.50	31.8 AV	54.0	-22.2	1.51 V	140	24.3	7.5

Remarks:

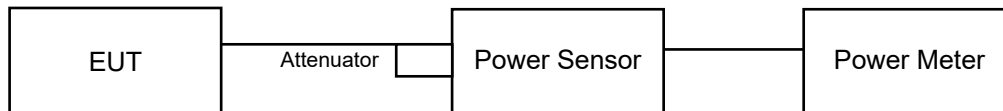
1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.

4.2 Maximum Output Power

4.2.1 Limits of Maximum Output Power Measurement

For frequency hopping systems operating in the 902-928 MHz band: 1 watt (30dBm) for systems employing at least 50 hopping channels; and, 0.25 watts for systems employing less than 50 hopping channels.

4.2.2 Test Setup



4.2.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.2.4 Test Procedure

A peak power sensor was used on the output port of the EUT. A power meter was used to read the response of the peak power sensor. Record the power level.

Average power sensor was used to perform output power measurement, trigger and gating function of wide band power meter is enabled to measure max output power of TX on burst. Duty factor is not added to measured value.

4.2.5 Deviation from Test Standard

No deviation.

4.2.6 EUT Operating Condition

The software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel frequencies individually.

4.2.7 Test Results (Mode 1)

FOR PEAK POWER

Chan.	Chan. Freq. (MHz)	Peak Power (mW)	Peak Power (dBm)	Limit (dBm)	Pass / Fail
0	902.2	562.341	27.50	30	Pass
64	915	570.164	27.56	30	Pass
128	927.8	568.853	27.55	30	Pass

FOR AVERAGE POWER

Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)
0	902.2	549.541	27.40
64	915	559.758	27.48
128	927.8	552.077	27.42

4.2.8 Test Results (Mode 2)

FOR PEAK POWER

Chan.	Chan. Freq. (MHz)	Peak Power (mW)	Peak Power (dBm)	Limit (dBm)	Pass / Fail
0	902.4	562.341	27.50	30	Pass
32	915.2	568.853	27.55	30	Pass
63	927.6	578.096	27.62	30	Pass

FOR AVERAGE POWER

Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)
0	902.4	550.808	27.41
32	915.2	552.077	27.42
63	927.6	570.164	27.56

4.2.9 Test Results (Mode 3)

FOR PEAK POWER

Chan.	Chan. Freq. (MHz)	Peak Power (mW)	Peak Power (dBm)	Limit (dBm)	Pass / Fail
0	902.5	575.44	27.60	30	Pass
25	915	568.853	27.55	30	Pass
50	927.5	564.937	27.52	30	Pass

FOR AVERAGE POWER

Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)
0	902.5	562.341	27.50
25	915	552.077	27.42
50	927.5	554.626	27.44

5 Pictures of Test Arrangements

Please refer to the attached file (Test Setup Photo).

Appendix – Information of the Testing Laboratories

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are FCC recognized accredited test firms and accredited according to ISO/IEC 17025.

If you have any comments, please feel free to contact us at the following:

Lin Kou EMC/RF Lab

Tel: 886-2-26052180

Fax: 886-2-26051924

Hsin Chu EMC/RF/Telecom Lab

Tel: 886-3-6668565

Fax: 886-3-6668323

Hwa Ya EMC/RF/Safety Lab

Tel: 886-3-3183232

Fax: 886-3-3270892

Email: service.adt@tw.bureauveritas.com

Web Site: www.bureauveritas-adt.com

The address and road map of all our labs can be found in our web site also.

--- END ---