

# **FCC Test Report**

Report No.: AGC16184240503FR01

FCC ID : 2AJQ6MMF-15088FLD

**APPLICATION PURPOSE**: Original Equipment

**PRODUCT DESIGNATION**: FEED HUB UNIVERSAL

**BRAND NAME** : MOULTRIE MOBILE

MODEL NAME : MMF-15088FLD

**APPLICANT**: EBSCO Industries Inc., DBA PRADCO Outdoor Brands

**DATE OF ISSUE** : Jun. 07, 2024

**STANDARD(S)** : FCC Part 15 Subpart C §15.249

**REPORT VERSION** : V1.0

Attestation of Global Co., Ltd



Page 2 of 30

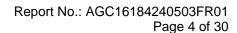
## REPORT REVISE RECORD

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	Jun. 07, 2024	Valid	Initial Release



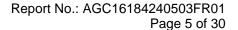
## **TABLE OF CONTENTS**

1. GENERAL INFORMATION	5
2. PRODUCT INFORMATION	6
2.1 PRODUCT TECHNICAL DESCRIPTION	6
2.2. TABLE OF CARRIER FREQUENCYS	6
2.3 RELATED SUBMITTAL(S) / GRANT (S)	7
2.4 TEST METHODOLOGY	7
2.5 SPECIAL ACCESSORIES	7
2.6 EQUIPMENT MODIFICATIONS	7
2.7 ANTENNA REQUIREMENT	7
3. TEST ENVIRONMENT	8
3.1 ADDRESS OF THE TEST LABORATORY	8
3.2 TEST FACILITY	8
3.3 ENVIRONMENTAL CONDITIONS	9
3.4 MEASUREMENT UNCERTAINTY	9
3.5 LIST OF EQUIPMENTS USED	10
4. SYSTEM TEST CONFIGURATION	11
4.1 EUT CONFIGURATION	11
4.2 EUT EXERCISE	11
4.3 CONFIGURATION OF TESTED SYSTEM	11
4.4 EQUIPMENT USED IN TESTED SYSTEM	
4.5 SUMMARY OF TEST RESULTS	12
5. DESCRIPTION OF TEST MODES	
6. RADIATED EMISSION	
6.1. TEST LIMIT	14
6.2. MEASUREMENT PROCEDURE	15
6.3. TEST SETUP	17
6.4. TEST RESULT	18
7. BAND EDGE EMISSION	22
7.1. TEST LIMIT	22
7.2. MEASUREMENT PROCEDURE	22
7.3 TEST SETUP	22
7.4 TEST RESULT	23





8. 20DB BANDWIDTH & 99% BANDWIDTH	25
8.1. MEASUREMENT PROCEDURE	25
8.2. TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)	25
8.3. MEASUREMENT RESULTS	26
9. LINE CONDUCTED EMISSION TEST	28
9.1. LIMITS OF LINE CONDUCTED EMISSION TEST	28
9.2. BLOCK DIAGRAM OF LINE CONDUCTED EMISSION TEST	28
9.3. PRELIMINARY PROCEDURE OF LINE CONDUCTED EMISSION TEST	29
9.4. FINAL PROCEDURE OF LINE CONDUCTED EMISSION TEST	29
9.5. TEST RESULT OF LINE CONDUCTED EMISSION TEST	29
APPENDIX I: PHOTOGRAPHS OF TEST SETUP	30
APPENDIX II: PHOTOGRAPHS OF TEST EUT	30





#### 1. GENERAL INFORMATION

Applicant	EBSCO Industries Inc., DBA PRADCO Outdoor Brands
Address	5724 Highway 280 East Birmingham, Alabama 35242, United States
Manufacturer	Plastic Research and Development Corporation DBA Moultrie Feeders
Address	15 Block, Third industrial Area, Longxi Village Longgang District, Shenzhen, China
Factory	Plastic Research and Development Corporation DBA Moultrie Feeders
Address	15 Block, Third industrial Area, Longxi Village Longgang District, Shenzhen, China
Product Designation	FEED HUB UNIVERSAL
Brand Name	MOULTRIE MOBILE
Test Model	MMF-15088FLD
Series Model(s)	N/A
Difference Description	N/A
Deviation from Standard	No any deviation from the test method
Date of receipt of test item	May 28, 2024
Date of Test	May 28, 2024 to Jun. 07, 2024
Test Result	Pass
Test Report Form No	AGCTR-ER-FCC-SRDV1.0

Note: The test results of this report relate only to the tested sample identified in this report.

Bibo Zhang
(Project Engineer)

Reviewed By

Calvin Liu
(Reviewer)

Approved By

Max Zhang
(Authorized Officer)

Jun. 07, 2024

Jun. 07, 2024



Page 6 of 30

## 2. PRODUCT INFORMATION

#### 2.1 PRODUCT TECHNICAL DESCRIPTION

A major technical description of EUT is described as following

Operation Frequency	915MHz
Maximum field strength	88.36dBuV/m(QP)@3m
Modulation	FSK
Number of channels	1 channel
Hardware Version	V1.0
Software Version	V1.0
Antenna Designation	Chip Antenna
Antenna Gain	-1dBi
Power Supply	DC 6.0V

## 2.2. TABLE OF CARRIER FREQUENCYS

Channel Number	Frequency (MHz)	
01	915	



Page 7 of 30

## 2.3 RELATED SUBMITTAL(S) / GRANT (S)

This submittal(s) (test report) is intended for **FCC ID: 2AJQ6MMF-15088FLD**, filing to comply with Part 2, Part 15 of the Federal Communication Commission rules.

## 2.4 TEST METHODOLOGY

The tests were performed according to following standards:

No.	Identity	Document Title	
1	FCC 47 CFR Part 2	Frequency allocations and radio treaty matters; general rules and regulations	
2	FCC 47 CFR Part 15	Radio Frequency Devices	
3	ANSI C63.10-2013	American National Standard for Testing Unlicensed Wireless Devices	

#### 2.5 SPECIAL ACCESSORIES

Not available for this EUT intended for grant.

#### 2.6 EQUIPMENT MODIFICATIONS

Not available for this EUT intended for grant.

#### 2.7 ANTENNA REQUIREMENT

## **Standard Requirement**

#### 15.203 requirement:

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

#### 15.247(b) (4) requirement:

The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmittingantennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi

### **EUT Antenna:**

The non-detachable antenna inside the device cannot be replaced by the user at will. The gain of the antenna is -1.0dBi.



Page 8 of 30

#### 3. TEST ENVIRONMENT

#### 3.1 ADDRESS OF THE TEST LABORATORY

Laboratory: Attestation of Global Compliance (Shenzhen) Co., Ltd.

Address: 1-2/F, Building 19, Junfeng Industrial Park, Chongqing Road, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China

#### 3.2 TEST FACILITY

The test facility is recognized, certified, or accredited by the following organizations:

#### CNAS-Lab Code: L5488

Attestation of Global Compliance (Shenzhen) Co., Ltd. has been assessed and proved to be in compliance with CNAS-CL01 Accreditation Criteria for Testing and Calibration Laboratories (identical to ISO/IEC17025: 2017 General Requirements) for the Competence of Testing and Calibration Laboratories.

## A2LA-Lab Cert. No.: 5054.02

Attestation of Global Compliance (Shenzhen) Co., Ltd. EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025: 2017 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing.

#### FCC-Registration No.: 975832

Attestation of Global Compliance (Shenzhen) Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the FCC (Federal Communications Commission). The acceptance letter from the FCC is maintained in our files with Registration 975832.

## IC-Registration No.: 24842 (CAB identifier: CN0063)

Attestation of Global Compliance (Shenzhen) Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the Certification and Engineering Bureau of Industry Canada. The acceptance letter from the IC is maintained in our files with Registration 24842.



Page 9 of 30

#### 3.3 ENVIRONMENTAL CONDITIONS

	NORMAL CONDITIONS	EXTREME CONDITIONS		
Temperature range (°C)	15 - 35	-20 - 50		
Relative humidty range	20 % - 75 %	20 % - 75 %		
Pressure range (kPa)	86 - 106	86 - 106		
Power supply	DC 6V	DC 6V		
Note: The Extreme Temperature and Extreme Voltages declared by the manufacturer				

Note: The Extreme Temperature and Extreme voltages declared by the manufacturer.

#### 3.4 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement y ±U, where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95%.

Item	Measurement Uncertainty
Uncertainty of Conducted Emission for AC Port	$U_c = \pm 2.9 \text{ dB}$
Uncertainty of Radiated Emission below 1GHz	$U_c = \pm 3.9 \text{ dB}$
Uncertainty of Radiated Emission above 1GHz	$U_c = \pm 4.9 \text{ dB}$
Uncertainty of total RF power, conducted	$U_c = \pm 0.8 \text{ dB}$
Uncertainty of RF power density, conducted	$U_c = \pm 2.6 \text{ dB}$
Uncertainty of spurious emissions, conducted	$U_c = \pm 2 \%$
Uncertainty of Occupied Channel Bandwidth	U <sub>c</sub> = ±2 %



Page 10 of 30

## 3.5 LIST OF EQUIPMENTS USED

#### TEST EQUIPMENT OF RADIATED EMISSION TEST

TEST EQUIPMENT OF RADIATED EMISSION TEST						
Equipment	Manufacturer	Model	S/N	Cal. Date	Cal. Due	
Test Receiver	R&S	ESCI	10096	Feb. 01, 2024	Jan. 31, 2025	
Signal Analyzer	Keysight	N9010A	MY53470504	May 28, 2024	May 27, 2025	
2.4GHz Fliter	Songyi	N/A	N/A	May 23, 2024	May 22, 2025	
Attenuator	Weinachel Corp	58-30-33	N/A	Aug. 04, 2022	Aug. 03, 2024	
Horn antenna	SCHWARZBECK	BBHA 9170	#768	Sep. 24, 2024	Sep. 23, 2025	
Active loop antenna (9K-30MHz)	ZHINAN	ZN30900C	18051	Mar. 05, 2024	Mar. 04, 2026	
Double-Ridged Waveguide Horn	ETS LINDGREN	3117	00034609	Mar. 31, 2024	Mar. 30, 2025	
Broadband Preamplifier	ETS LINDGREN	3117PA	00225134	Sep. 01, 2022	Sep. 02, 2024	
ANTENNA	SCHWARZBECK	VULB9168	494	Jan. 05, 2023	Jan. 04, 2025	
Test software	Tonscend	JS32-RE (Ver.2.5)	N/A	N/A	N/A	



Page 11 of 30

#### 4. SYSTEM TEST CONFIGURATION

#### **4.1 EUT CONFIGURATION**

The EUT configuration for testing is installed on RF field strength measurement to meet the Commission's requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

#### **4.2 EUT EXERCISE**

The Transmitter was operated in the normal operating mode. The TX frequency was fixed which was for the purpose of the measurements.

#### 4.3 CONFIGURATION OF TESTED SYSTEM

Radiate	d Emission Configure:
	EUT

#### **4.4 EQUIPMENT USED IN TESTED SYSTEM**

The Following Peripheral Devices And Interface Cables Were Connected During The Measurement:

☐ Test Accessories Come From The Laboratory

No.	Equipment	Manufacturer	Model No.	Specification Information	Cable
1					

#### ☐ Test Accessories Come From The Manufacturer

No.	Equipment	Manufacturer	Model No.	Specification Information	Cable
1	FEED HUB UNIVERSAL	Plastic Research and Development Corporation DBA Moultrie Feeders	MMF-15088FLD	-	



Page 12 of 30

#### 4.5 SUMMARY OF TEST RESULTS

Item	FCC Rules	Description of Test	Result
1	§15.203	Antenna Equipment	Pass
2	§15.249(a)	Field Strength of Fundamental	Pass
3	§15.209&§15.249(d)	Radiated Emission& Band Edge	Pass
4	§15.205	Restricted Bands of Operation	Not applicable
5	§15.215	Bandwidth	Pass
6	§15.207	AC Power Line Conducted Emission	Not applicable

**Note:** The device under test is battery-powered and does not require evaluation of AC Power Line Conducted Emission.



Page 13 of 30

## 5. DESCRIPTION OF TEST MODES

NO.	TEST MODE DESCRIPTION				
1	915MHz TX Mode				
Note:	Note: 1. For Radiated Emission, 3axis were chosen for testing for each applicable mode.				
	2. Go ahead and turn right to start the test mode, turn left to switch channels				



Page 14 of 30

#### 6. RADIATED EMISSION

## 6.1. TEST LIMIT

#### Standard FCC15.249

0.00.00.00.00.00.00.00.00.00.00.00.00.0							
Fundamental Frequency	Field Strength of Fundamental	Field Strength of Harmonics					
	(millivolts/meter)	(microvolts/meter)					
900-928MHz	50	500					
2400-2483.5MHz	50	500					
5725-5875MHz	50	500					
24.0-24.25GHz	250	2500					

#### Standard FCC 15.209

Fraguency	Distance	Field	Strengths Limit			
Frequency	Distance	Fleid	Strengths Limit			
(MHz)	Meters	μ <b>V/m</b>	dB(μV)/m			
0.009 ~ 0.490	300	2400/F(kHz)				
0.490 ~ 1.705	30	24000/F(kHz)				
1.705 ~ 30	30	30				
30 ~ 88	3	100	40.0			
88 ~ 216	3	150	43.5			
216 ~ 960	3	200	46.0			
960 ~ 1000	3	500	54.0			
Above 1000	3	Other:74.0 dB(µV)/m	Other:74.0 dB(µV)/m (Peak) 54.0 dB(µV)/m (Average)			

Remark:

- (1) Emission level dB  $\mu$  V = 20 log Emission level  $\mu$  V/m
- (2) The smaller limit shall apply at the cross point between two frequency bands.
- (3) Distance is the distance in meters between the measuring instrument, antenna and the closest point of any part of the device or system.



Page 15 of 30

#### **6.2. MEASUREMENT PROCEDURE**

- 1. The EUT was placed on the top of the turntable 0.8 or 1.5 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
- 2. Power on the EUT and all the supporting units. The turntable was rotated by 360 degrees to determine the position of the highest radiation.
- 3. The height of the broadband receiving antenna was varied between one meter and four meters above ground to find the maximum emissions field strength of both horizontal and vertical polarization.
- 4. For each suspected emissions, the antenna tower was scan (from 1 M to 4 M) and then the turntable was rotated (from 0 degree to 360 degrees) to find the maximum reading.
- 5. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function with specified bandwidth under Maximum Hold Mode.
- 6. For emissions above 1GHz, use minimum resolution bandwidth of 1 MHz. Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane.
- 7. When the radiated emissions limits are expressed in terms of the average value of the emissions, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum values.
- 8.If the emissions level of the EUT in peak mode was 3 dB lower than the average limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the quasi-peak method for below 1GHz.
- 9. For testing above 1GHz, the emissions level of the EUT in peak mode was lower than average limit (that means the emissions level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.
- 10. In case the emission is lower than 30MHz, loop antenna has to be used for measurement and the recorded data should be QP measured by receiver. High Low scan is not required in this case.

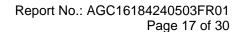


Page 16 of 30

The following table is the setting of spectrum analyzer and receiver.

Spectrum Parameter	Setting
Start ~Stop Frequency	9KHz~150KHz/RB 200Hz for QP
Start ~Stop Frequency	150KHz~30MHz/RB 9KHz for QP
Start ~Stop Frequency	30MHz~1000MHz/RB 120KHz for QP
	1GHz~26.5GHz
Start ~Stop Frequency	RBW 2.4MHz/ VBW 8MHz for Peak,
	RBW 2.4MHz/3MHz for Average

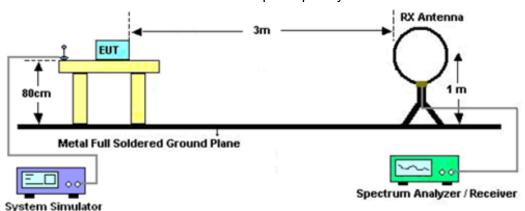
Receiver Parameter	Setting
Start ~Stop Frequency	9KHz~150KHz/RB 200Hz for QP
Start ~Stop Frequency	150KHz~30MHz/RB 9KHz for QP
Start ~Stop Frequency	30MHz~1000MHz/RB 120KHz for QP



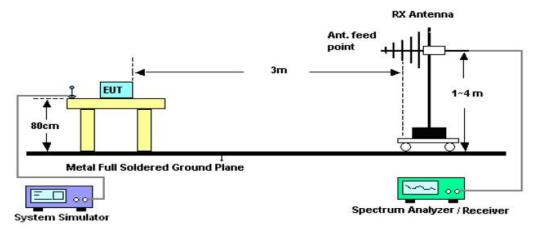


#### 6.3. TEST SETUP

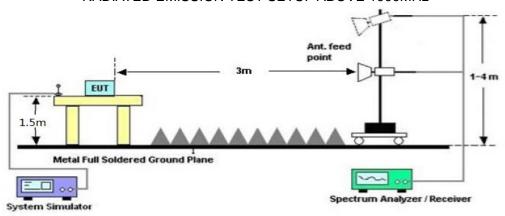
## Radiated Emission Test-Setup Frequency Below 30MHz



#### RADIATED EMISSION TEST SETUP 30MHz-1000MHz

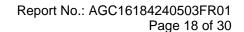


#### RADIATED EMISSION TEST SETUP ABOVE 1000MHz



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Tel: +86-755 2523 4088 E-mail: agc@agccert.com Web: http://www.agccert.com/





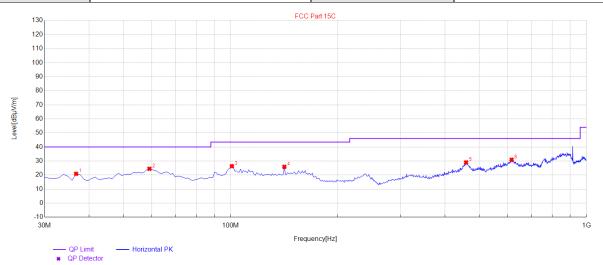
#### **6.4. TEST RESULT**

## **RADIATED EMISSION BELOW 30MHz**

No emission found between lowest internal used/generated frequencies to 30MHz.

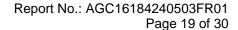
#### **RADIATED EMISSION 30MHz-1GHZ**

EUT	FEED HUB UNIVERSAL	Model Name	MMF-15088FLD
Temperature	<b>23.1</b> ℃	Relative Humidity	59.5%
Pressure	1010 hPa	Test Voltage	DC 6V
Test Mode	Mode 1	Polarization	Horizontal



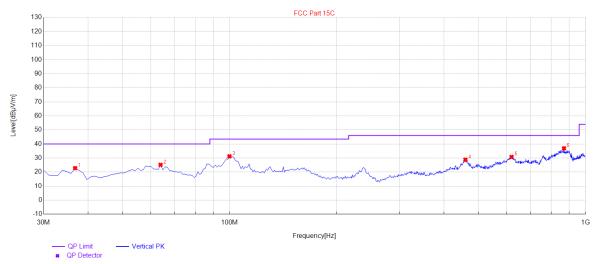
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	36.79	20.90	11.23	40.00	19.10	100	165	Horizontal
2	59.1	24.48	17.64	40.00	15.52	100	358	Horizontal
3	100.81	26.36	17.03	43.50	17.14	100	250	Horizontal
4	141.55	25.90	16.13	43.50	17.60	100	131	Horizontal
5	458.74	29.03	24.42	46.00	16.97	100	124	Horizontal
6	615.88	30.94	25.47	46.00	15.06	100	1	Horizontal

**RESULT: PASS** 





EUT	FEED HUB UNIVERSAL	Model Name	MMF-15088FLD
Temperature	23.1℃	Relative Humidity	59.5%
Pressure	1010 hPa	Test Voltage	DC 6V
Test Mode	Mode 1	Polarization	Vertical



NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	36.79	22.80	11.23	40.00	17.20	100	260	Vertical
2	63.95	25.15	16.61	40.00	14.85	100	58	Vertical
3	99.84	31.18	17.03	43.50	12.32	100	281	Vertical
4	459.71	28.81	24.69	46.00	17.19	100	58	Vertical
5	619.76	30.77	25.90	46.00	15.23	100	111	Vertical
6	870.02	36.91	29.67	46.00	9.09	100	298	Vertical

## **RESULT: PASS**

**Note:** 1. Factor=Antenna Factor + Cable loss, Margin= Limit-Level.

- 2. The "Factor" value can be calculated automatically by software of measurement system.
- 3. The mode 1 is the worst case, and only the data of the worst case recorded in this test report.



Page 20 of 30

## FIELD STRENGTH OF FUNDAMENTAL

EUT	FEED HUB UNIVERSAL	Model Name	MMF-15088FLD
Temperature	22.8℃	Relative Humidity	58.8%
Pressure	1010 hPa	Test Voltage	DC 6V
Test Modulation	FSK	Polarization	Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Value Type		
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	value Type		
915.000	62.12	26.01	88.13	94.00	-5.87	QP		
Remark:	Remark:							
Factor = Antenna Factor + Cable Loss – Pre-amplifier.								

EUT	FEED HUB UNIVERSAL	Model Name	MMF-15088FLD
Temperature	22.8℃	Relative Humidity	58.8%
Pressure	1010 hPa	Test Voltage	DC 6V
Test Modulation	FSK	Polarization	Vertical

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Value Type			
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	value Type			
915.000	62.35	26.01	88.36	94.00	-5.64	QP			
Remark:	Remark:								
Factor = Antenna Factor + Cable Loss – Pre-amplifier.									



Page 21 of 30

### RADIATED EMISSION ABOVE 1GHZ FOR BLE

EUT	FEED HUB UNIVERSAL	Model Name	MMF-15088FLD	
Temperature	23.1℃	Relative Humidity	59.5%	
Pressure	1010 hPa	Test Voltage	DC 6V	
Test Mode	Mode 1	Polarization	Horizontal	

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Value Type
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	value Type
1830.000	45.52	3.76	49.28	74.00	-24.72	peak
1830.000	36.95	3.76	40.71	54.00	-13.29	AVG
2745.000	42.45	8.17	50.62	74.00	-23.38	peak
2745.000	33.28	8.17	41.45	54.00	-12.55	AVG
Remark:	აა.28	0.17	41.45	54.00	-12.55	I AV

Factor = Antenna Factor + Cable Loss – Pre-amplifier.

EUT	FEED HUB UNIVERSAL	Model Name	MMF-15088FLD
Temperature	<b>23.1</b> ℃	Relative Humidity	59.5%
Pressure	1010 hPa	Test Voltage	DC 6V
Test Mode	Mode 1	Polarization	Vertical

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Value Type			
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	value Type			
1830.000	47.57	3.76	51.33	74.00	-22.67	peak			
1830.000	38.41	3.76	42.17	54.00	-11.83	AVG			
2745.000	41.49	8.17	49.66	74.00	-24.34	peak			
2745.000 32.33 8.17 40.50 54.00 -13.50 AVG									
Remark:									
Factor = Ante	Factor = Antenna Factor + Cable Loss – Pre-amplifier.								

**Note:** Other emissions from 8G to 25 GHz are considered as ambient noise. No recording in the test report. Factor=Antenna Factor + Cable loss - Amplifier gain, Margin=Level - Limit.

The "Factor" value can be calculated automatically by software of measurement system.



#### 7. BAND EDGE EMISSION

#### 7.1. TEST LIMIT

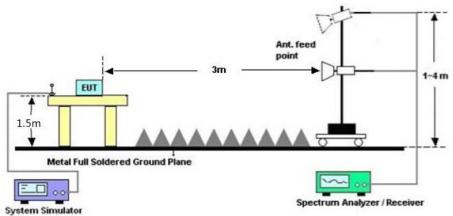
Fraguency Rand	Limit of the Field Strength (dBμV/m)			
Frequency Band	QP			
f≤902MHz	46			
f≥928MHz	46			

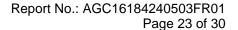
#### 7.2. MEASUREMENT PROCEDURE

- 1. The EUT operates at transmitting mode. The operate channel is tested to verify the largest transmission and spurious emissions power at the continuous transmission mode.
- 2. Set the spectrum analyzer in the following setting in order to capture the lower and upper band-edges of the emission: (a) PEAK: RBW=1MHz, VBW=3MHz / Sweep=AUTO
- (b) AVERAGE: RBW=1MHz; VBW=3MHz; Sweep time=AUTO
- 3. Other procedures refer to clause 8.2.

#### 7.3 TEST SETUP

## RADIATED EMISSION TEST SETUP



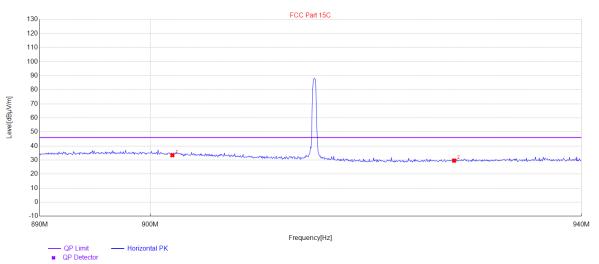




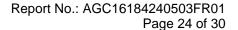
#### 7.4 TEST RESULT

EUT	FEED HUB UNIVERSAL	Model Name	MMF-15088FLD
Temperature	22.8℃	Relative Humidtity	58.8%
Pressure	1010 hPa	Test Voltage	DC 6V
Test Mode	Mode 1	Polarization	Horizontal

## QP Value



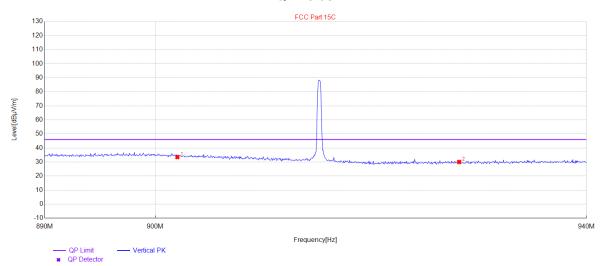
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	902	33.48	29.73	46.00	12.52	150	1	Horizontal
2	928	29.61	25.00	46.00	16.39	150	3	Horizontal





EUT	FEED HUB UNIVERSAL	Model Name	MMF-15088FLD
Temperature	22.8℃	Relative Humidtity	58.8%
Pressure	1010 hPa	Test Voltage	DC 6V
Test Mode	Mode 1	Polarization	Vertical

**QP** Value



NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	902	33.53	29.73	46.00	12.47	150	302	Vertical
2	928	30.05	25.00	46.00	15.95	150	306	Vertical

Note: 1. Factor=Antenna Factor + Cable loss - Amplifier gain. Field Strength=Factor + Reading level
 The factor had been edited in the "Input Correction" of the Spectrum Analyzer. So the Amplitude of test plots is equal to Reading level plus the Factor in dB. Use the A dB(μV) to represent the Amplitude. Use the F dB(μV/m) to represent the Field Strength. So A=F.



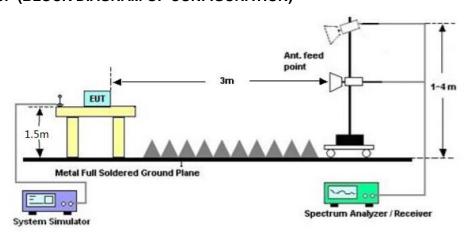
## 8. 20DB BANDWIDTH & 99% BANDWIDTH

## **8.1. MEASUREMENT PROCEDURE**

## 20DB BANDWIDTH&99% BANDWIDTH

- 1. Set the EUT Work on the top, the middle and the bottom operation frequency individually.
- 2. Set SPA Centre Frequency = Operation Frequency, RBW= 3kHz, VBW= 10kHz.
- 3. Set SPA Trace 1 Max hold, then View.

# 8.2. TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)



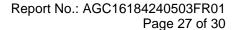


Page 26 of 30

#### **8.3. MEASUREMENT RESULTS**

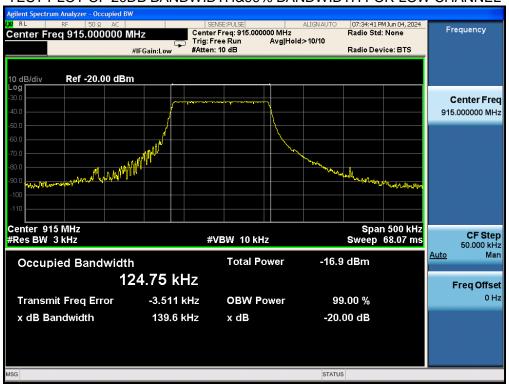
TEST ITEM	20DB BANDWIDTH&20DB BANDWIDTH
TEST MODULATION	FSK

Test Channel (MHz)	20DB BANDWIDTH (kHz)	99% BANDWIDTH (kHz)	Criteria
915	124.75	139.6	PASS





## TEST PLOT OF 20DB BANDWIDTH&99% BANDWIDTH FOR LOW CHANNEL





#### 9. LINE CONDUCTED EMISSION TEST

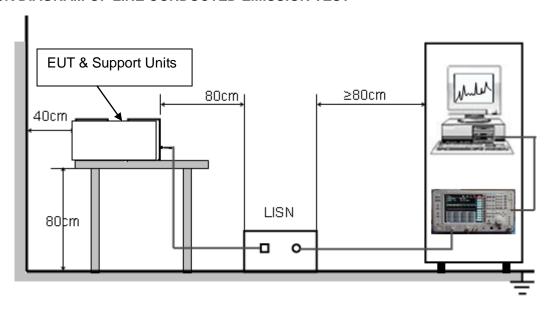
## 9.1. LIMITS OF LINE CONDUCTED EMISSION TEST

Francis	Maximum RF Line Voltage		
Frequency	Q.P.( dBuV)	Average( dBuV)	
150kHz~500kHz	66-56	56-46	
500kHz~5MHz	56	46	
5MHz~30MHz	60	50	

Note: 1. The lower limit shall apply at the transition frequency.

2. The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz.

#### 9.2. BLOCK DIAGRAM OF LINE CONDUCTED EMISSION TEST





Report No.: AGC16184240503FR01 Page 29 of 30

#### 9.3. PRELIMINARY PROCEDURE OF LINE CONDUCTED EMISSION TEST

- 1. The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. When the EUT is a tabletop system, a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per ANSI C63.10-2013 (see Test Facility for the dimensions of the ground plane used). When the EUT is a floor-standing equipment, it is placed on the ground plane which has a 3-12 mm non-conductive covering to insulate the EUT from the ground plane.
- 2. Support equipment, if needed, was placed as per ANSI C63.10-2013.
- 3. All I/O cables were positioned to simulate typical actual usage as per ANSI C63.10-2013.
- 4. All support equipment received AC120V/60Hz power from a LISN, if any.
- 5. The EUT received DC5V by adapter which received AC120V/60Hz power by a LISN.
- 6. The test program was started. Emissions were measured on each current carrying line of the EUT using a spectrum Analyzer / Receiver connected to the LISN powering the EUT. The LISN has two monitoring points: Line 1 (Hot Side) and Line 2 (Neutral Side). Two scans were taken: one with Line 1 connected to Analyzer / Receiver and Line 2 connected to a 50 ohm load; the second scan had Line 1 connected to a 50 ohm load and Line 2 connected to the Analyzer / Receiver.
- 7. Analyzer / Receiver scanned from 150 kHz to 30MHz for emissions in each of the test modes.
- 8. During the above scans, the emissions were maximized by cable manipulation.
- 9. The test mode(s) were scanned during the preliminary test.

Then, the EUT configuration and cable configuration of the above highest emission level were recorded for reference of final testing.

#### 9.4. FINAL PROCEDURE OF LINE CONDUCTED EMISSION TEST

- 1. EUT and support equipment was set up on the test bench as per step 2 of the preliminary test.
- 2. A scan was taken on both power lines, Line 1 and Line 2, recording at least the six highest emissions. Emission frequency and amplitude were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit. If EUT emission level was less –2dB to the A.V. limit in Peak mode, then the emission signal was re-checked using Q.P and Average detector.
- 3. The test data of the worst case condition(s) was reported on the Summary Data page.

#### 9.5. TEST RESULT OF LINE CONDUCTED EMISSION TEST

Not applicable

Note: The device under test is battery-powered and does not require evaluation of AC Power Line Conducted Emission.



Page 30 of 30

## **APPENDIX I: PHOTOGRAPHS OF TEST SETUP**

Refer to the Report No.: AGC16184240503AP01

APPENDIX II: PHOTOGRAPHS OF TEST EUT

Refer to the Report No.: AGC16184240503AP02

----END OF REPORT----



# Conditions of Issuance of Test Reports

- 1. All samples and goods are accepted by the Attestation of Global Compliance (Shenzhen) Co., Ltd (the "Company") solely for testing and reporting in accordance with the following terms and conditions. The company provides its services on the basis that such terms and conditions constitute express agreement between the company and any person, firm or company requesting its services (the "Clients").
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- 3. The Company shall not be called or be liable to be called to give evidence or testimony on the Report in a court of law without its prior written consent, unless required by the relevant governmental authorities, laws or court orders.
- 4. In the event of the improper use of the report as determined by the Company, the Company reserves the right to withdraw it, and to adopt any other additional remedies which may be appropriate.
- 5. Samples submitted for testing are accepted on the understanding that the Report issued cannot form the basis of, or be the instrument for, any legal action against the Company.
- 6. The Company will not be liable for or accept responsibility for any loss or damage however arising from the use of information contained in any of its Reports or in any communication whatsoever about its said tests or investigations.
- 7.Clients wishing to use the Report in court proceedings or arbitration shall inform the Company to that effect prior to submitting the sample for testing.
- 8. The Company is not responsible for recalling the electronic version of the original report when any revision is made to them. The Client assumes the responsibility to providing the revised version to any interested party who uses them.
- 9. Subject to the variable length of retention time for test data and report stored hereinto as otherwise specifically required by individual accreditation authorities, the Company will only keep the supporting test data and information of the test report for a period of six years. The data and information will be disposed of after the aforementioned retention period has elapsed. Under no circumstances shall we provide any data and information which has been disposed of after retention period. Under no circumstances shall we be liable for damage of any kind, including (but not limited to) compensatory damages, lost profits, lost data, or any form of special, incidental, indirect, consequential or punitive damages of any kind, whether based on breach of contract of warranty, tort (including negligence), product liability or otherwise, even if we are informed in advance of the possibility of such damages.