



RF TEST REPORT

Product Name: Alco RF OBC Dock

Model Name: A5-APU-1-PTB-915-D, Colorado

FCC ID: ZDLRF6

Issued For : Buddi Limited

Talbot House, 17 Church Street, Rickmansworth, WD3 1DE,
United Kingdom

Issued By : Shenzhen LGT Test Service Co., Ltd.

Room 205, Building 13, Zone B, Chen Hsong Industrial Park,
No.177 Renmin West Road, Jinsha Community, Kengzi
Street, Pingshan New District, Shenzhen, China

Report Number: LGT24K083RF02

Sample Received Date: Nov. 15, 2024

Date of Test: Nov. 15, 2024 - Dec. 04, 2024

Date of Issue: Dec. 04, 2024

The test report is effective only with both signature and specialized stamp. This report shall not be reproduced except in full without the written approval of the Laboratory. The results in this report only apply to the tested sample.



TEST REPORT CERTIFICATION

Applicant: Buddi Limited
Address: Talbot House, 17 Church Street, Rickmansworth, WD3 1DE, United Kingdom
Manufacturer: Buddi Limited
Address: Talbot House, 17 Church Street, Rickmansworth, WD3 1DE, United Kingdom
Product Name: Alco RF OBC Dock
Trademark: buddi
Model Name: A5-APU-1-PTB-915-D, Colorado
Sample Status: Normal

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
FCC Part 15.249, Subpart C ANSI C63.10-2013	PASS

Prepared by:

Zane Shan

Zane Shan
Engineer

Approved by:

Vita Li

Vita Li
Technical Director





Table of Contents

	Page
1. SUMMARY OF TEST RESULTS	5
1.1 TEST FACTORY	6
1.2 MEASUREMENT UNCERTAINTY	6
2. GENERAL INFORMATION	7
2.1 GENERAL DESCRIPTION OF THE EUT	7
2.2 DESCRIPTION OF THE TEST MODES	8
2.3 DESCRIPTION OF NECESSARY ACCESSORIES AND SUPPORT UNITS	9
2.4 EQUIPMENTS LIST	10
3. EMC EMISSION TEST	11
3.1 CONDUCTED EMISSION MEASUREMENT	11
3.2 RADIATED EMISSION LIMITS	15
4. BANDWIDTH TEST	32
4.1 TEST PROCEDURE	32
4.2 TEST SETUP	32
4.3 EUT OPERATION CONDITIONS	32
4.4 TEST RESULTS	32
5. ANTENNA REQUIREMENT	34
5.1 STANDARD REQUIREMENT	34
5.2 EUT ANTENNA	34



Revision History

Rev.	Issue Date	Contents
00	Dec. 04, 2024	Initial Issue



1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

FCC Part 15.249, Subpart C			
Standard Section	Test Item	Judgment	Remark
15.207	Conducted Emission	PASS	--
15.249	Radiated Spurious Emission	PASS	--
15.205	Restricted Band Edge Emission	PASS	--
15.215	20dB Bandwidth	Pass	--
15.203	Antenna Requirement	PASS	--

NOTE:

- (1) 'N/A' denotes test is not applicable in this Test Report.
- (2) All tests are according to ANSI C63.10-2013.



1.1 TEST FACTORY

Company Name:	Shenzhen LGT Test Service Co., Ltd.
Address:	Room 205, Building 13, Zone B, Chen Hsong Industrial Park, No.177 Renmin West Road, Jinsha Community, Kengzi Street, Pingshan New District, Shenzhen, China
Accreditation Certificate	A2LA Certificate No.: 6727.01
	FCC Registration No.: 746540
	CAB ID: CN0136

1.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement $y \pm U$, 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** %.

No.	Item	Uncertainty
1	RF output power, conducted	$\pm 0.68\text{dB}$
2	Unwanted Emissions, conducted	$\pm 2.988\text{dB}$
3	All emissions, radiated 9K-30MHz	$\pm 2.84\text{dB}$
4	All emissions, radiated 30M-1GHz	$\pm 4.39\text{dB}$
5	All emissions, radiated 1G-6GHz	$\pm 5.10\text{dB}$
6	All emissions, radiated >6G	$\pm 5.48\text{dB}$
7	Conducted Emission (9KHz-150KHz)	$\pm 2.79\text{dB}$
8	Conducted Emission (150KHz-30MHz)	$\pm 2.80\text{dB}$



2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF THE EUT

Product Name:	Alco RF OBC Dock	
Trademark:	buddi	
Model Name:	A5-APU-1-PTB-915-D, Colorado	
Series Model:	The difference only in the model name.	
Model Difference:	Only the model is different	
Product Description:	Operation Frequency:	914.5~921 MHz
	Modulation Type:	FSK
	Number Of Channel:	3
	Antenna Type:	Flex Antenna
	Antenna Gain (dBi):	0.76
Channel List:	Please refer to the Note 3.	
Rating:	Input: AC 100~240V,47-63Hz,0.4A Output: DC 5.99V 2A Max	
Hardware Version:	V5.2	
Software Version:	2.14	
Connecting I/O Port(s):	Please refer to the Note 1.	

Note:

1. For a more detailed features description, please refer to the manufacturer's specifications or the User Manual.
2. The antenna information refers to the manufacturer provide report, applicable only to the tested sample identified in the report. Due to the incorrect antenna information, a series of problems such as the accuracy of the test results will be borne by the customer.



3.

Channel List	
Channel	Frequency (MHz)
1	914.5
2	917.5
3	921

2.2 DESCRIPTION OF THE TEST MODES

For conducted test items and radiated spurious emissions
Each of these EUT operation mode(s) or test configuration mode(s) mentioned below was evaluated respectively.

Worst Mode	Frequency (MHz)
Mode 1	914.5
Mode 2	917.5
Mode 3	921

Note:

- (1) All above mode has been measurement, only worst data was reported.
- (2) We have be tested for all avaiable U.S. voltage and frequency (For 120V,50/60Hz and 240V, 50/60Hz) for which the device is capable of operation, and the worst case of 120V/60Hz is shown in the report.



2.3 DESCRIPTION OF NECESSARY ACCESSORIES AND 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.

Accessories Equipment

Description	Manufacturer	Model	S/N	Rating

Auxiliary Equipment

Description	Manufacturer	Model	S/N	Rating

Note:

- (1) For detachable type I/O cable should be specified the length in cm in 『Length』 column.
- (2) “YES” is means “with core”; “NO” is means “without core”.



2.4 EQUIPMENTS LIST

Conducted Emission					
Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Until
EMI Test Receiver	R&S	ESU8	100372	2024.03.09	2025.03.08
LISN	COM-POWER	LI-115	02032	2024.03.09	2025.03.08
LISN	SCHWARZBECK	NNLK 8122	00160	2024.03.09	2025.03.08
Transient Limiter	CYBERTEK	EM5010A	E2250100049	2024.03.09	2025.03.08
Temperature & Humidity	KTJ	TA218B	N.A	2024.03.09	2025.03.08
Testing Software	EMC-I_V1.4.0.3_SKET				

Radiated Test equipment					
Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Until
EMI Test Receiver	R&S	ESU8	100372	2024.03.09	2025.03.08
Active loop Antenna	ETS	6502	00049544	2023.10.13	2025.10.12
Spectrum Analyzer	Keysight	N9010B	MY60242508	2024.08.05	2025.08.04
Bilog Antenna(30M-1G)	SCHWARZBECK	VULB 9168	2705	2022.12.12	2025.12.11
Horn Antenna(1-18G)	SCHWARZBECK	3115	10SL0060	2022.06.02	2025.06.01
Horn Antenna(18-40G)	A-INFO	LB-180400-KF	J211060273	2022.06.08	2025.06.07
Pre-amplifier(30M-1G)	EMtrace	RP01A	02019	2024.03.09	2025.03.08
Pre-amplifier(1-26.5G)	Agilent	8449B	3008A4722	2024.03.09	2025.03.08
Pre-amplifier(18-40G)	com-mw	LNPA_18-40-01	18050003	2024.03.09	2025.03.08
Wireless Communications Test Set	R&S	CMW 500	137737	2024.03.09	2025.03.08
Temperature & Humidity	JINGCHUANG	BT-3	N.A	2024.03.11	2025.03.10
Testing Software	EMC-I_V1.4.0.3_SKET				

RF Conducted Test equipment					
Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Until
Spectrum Analyzer	Keysight	N9010B	MY60242508	2024.08.05	2025.08.04
Signal Analyzer	Keysight	N9020A	MY50530994	2024.03.09	2025.03.08
RF Automatic Test system	MW	MW100-RFCB	MW220322LG-033	2024.03.09	2025.03.08
MXG Vector Signal Generator	Keysight	N5182B	MY59100717	2024.03.09	2025.03.08
Temperature & Humidity test chamber	AISRY	LX-1000L	171200018	2024.03.09	2025.03.08
Attenuator	eastsheep	90db	N.A	2024.03.09	2025.03.08
Temperature & Humidity	JINGCHUANG	BT-3	N.A	2024.03.11	2025.03.10
Digital multimeter	MASTECH	MS8261	MBGBC83053	2024.03.09	2025.03.08
Testing Software	MTS8310_V2.0.0.0_MW				



3. EMC EMISSION TEST

3.1 CONDUCTED EMISSION MEASUREMENT

3.1.1 POWER LINE CONDUCTED EMISSION LIMITS

The radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table.

FREQUENCY (MHz)	Conducted Emission limit (dBuV)	
	Quasi-peak	Average
0.15 -0.5	66 - 56 *	56 - 46 *
0.50 -5.0	56.00	46.00
5.0 -30.0	60.00	50.00

Note:

- (1) The tighter limit applies at the band edges.
- (2) The limit of “ * ” marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

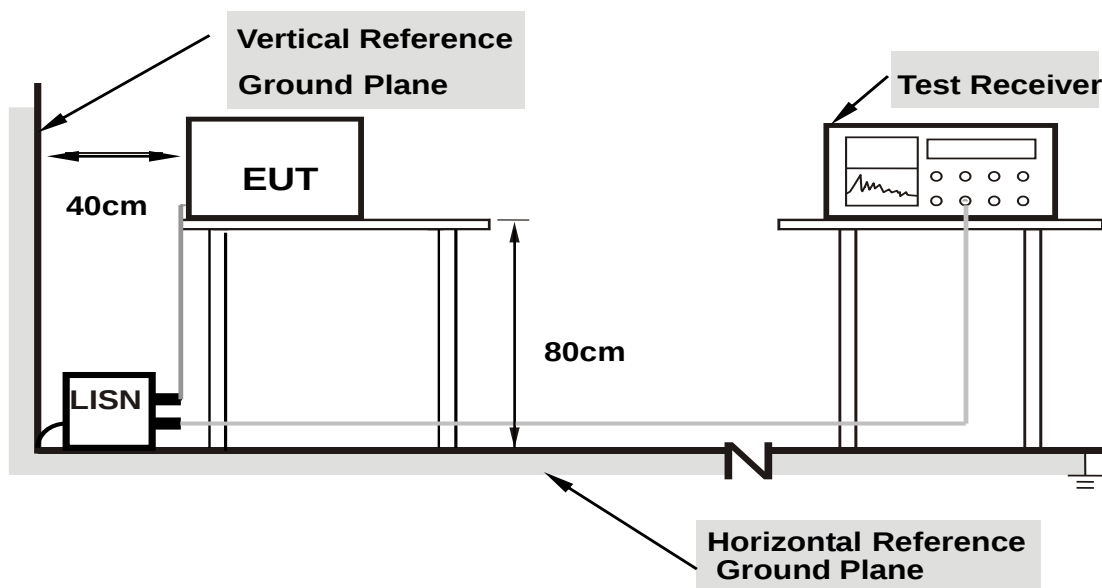
The following table is the setting of the receiver

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

3.1.2 TEST PROCEDURE

- The EUT is 0.8 m from the horizontal ground plane and 0.4 m from the vertical ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments are powered from additional LISN(s). The LISN provides 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
- I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- LISN is at least 80 cm from the nearest part of EUT chassis.
- For the actual test configuration, please refer to the related Item –EUT Test Photos.

3.1.3 TEST SETUP



Note: 1. Support units were connected to second LISN.

2. Both of LISNs (AMN) are 80 cm from EUT and at least 80 cm from other units and other metal planes support units.

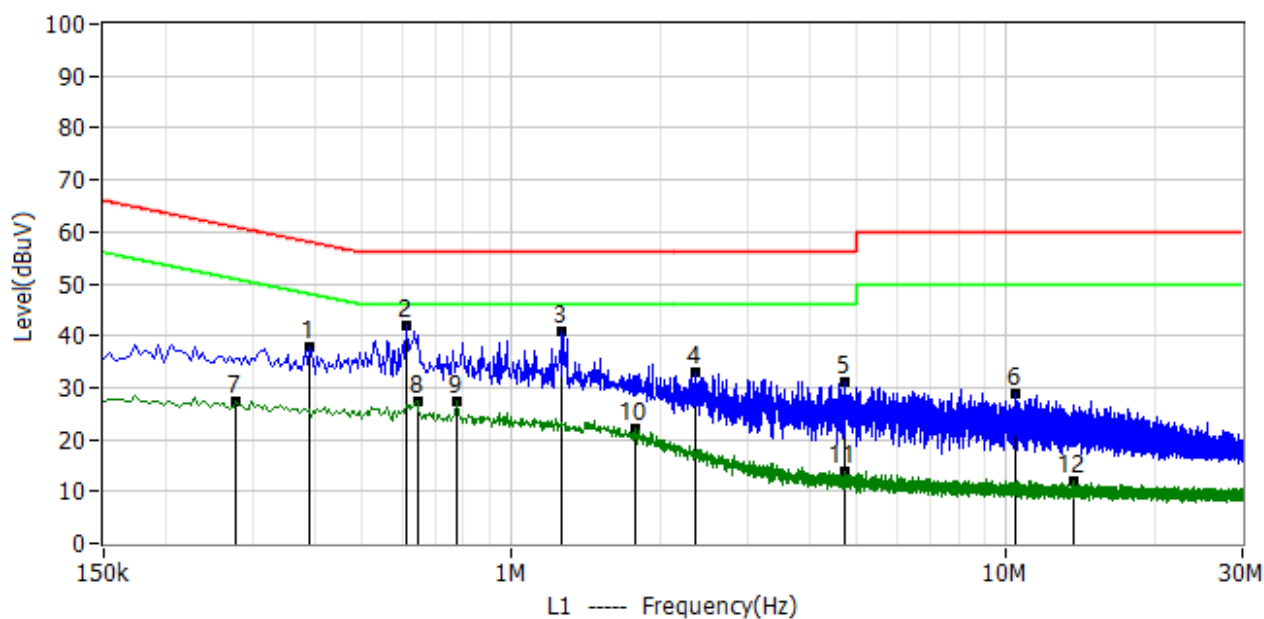
3.1.4 EUT OPERATING CONDITIONS

The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.



3.1.5 TEST RESULT

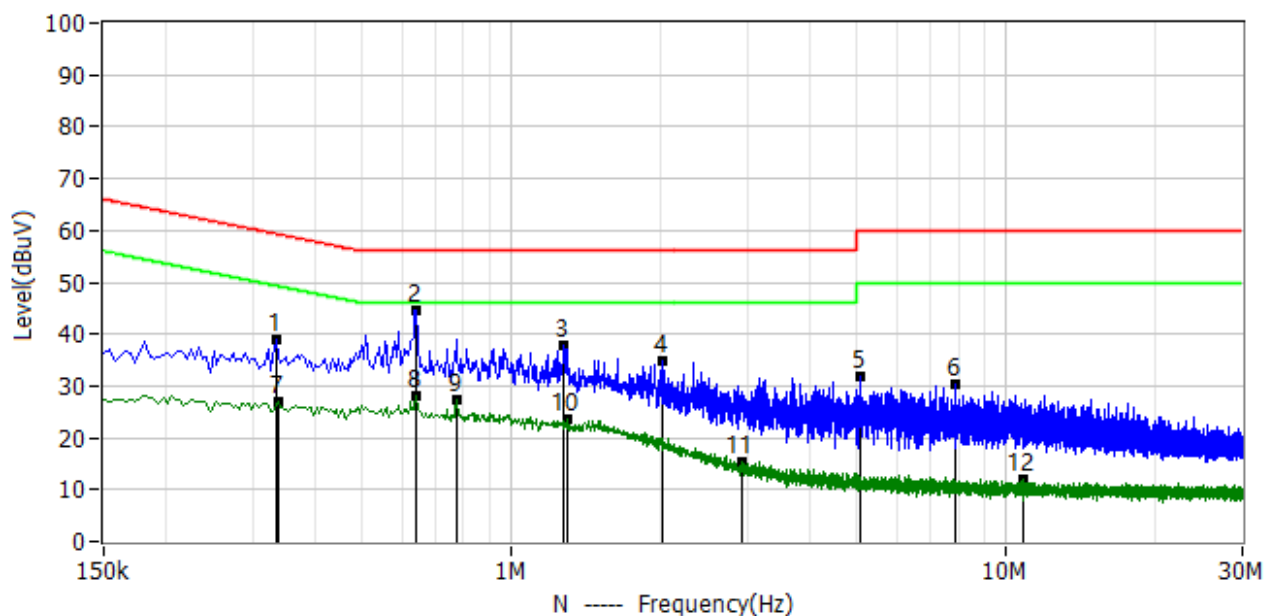
Project: LGT24K083	Test Engineer: LiuH
EUT: Alco RF OBC Dock	Temperature: 22.6°C
M/N: A5-APU-1-PTB-868-D	Humidity: 56%RH
Test Voltage: AC 120V/60Hz	Test Data: 2024-11-19
Test Mode: TX 915MHz	
Note:	



No.	Frequency MHz	Reading dBuV	Factor dB	Level dBuV	Limit dBuV	Margin dB	Detector	Polar
1*	0.390	27.15	10.56	37.71	58.06	-20.35	QP	L1
2*	0.614	31.33	10.57	41.90	56.00	-14.10	QP	L1
3*	1.266	29.95	10.77	40.72	56.00	-15.28	QP	L1
4*	2.362	21.82	11.06	32.88	56.00	-23.12	QP	L1
5*	4.698	19.87	11.10	30.97	56.00	-25.03	QP	L1
6*	10.450	17.81	11.05	28.86	60.00	-31.14	QP	L1
7*	0.278	16.84	10.59	27.43	50.88	-23.45	AV	L1
8*	0.646	16.94	10.57	27.51	46.00	-18.49	AV	L1
9*	0.778	16.75	10.60	27.35	46.00	-18.65	AV	L1
10*	1.774	11.26	10.92	22.18	46.00	-23.82	AV	L1
11*	4.722	2.73	11.10	13.83	46.00	-32.17	AV	L1
12*	13.622	0.84	11.29	12.13	50.00	-37.87	AV	L1



Project: LGT24K083	Test Engineer: LiuH
EUT: Alco RF OBC Dock	Temperature: 22.6°C
M/N: A5-APU-1-PTB-868-D	Humidity: 56%RH
Test Voltage: AC 120V/60Hz	Test Data: 2024-11-19
Test Mode: TX 915MHz	
Note:	



No.	Frequency MHz	Reading dBuV	Factor dB	Level dBuV	Limit dBuV	Margin dB	Detector	Polar
1*	0.334	28.20	10.59	38.79	59.35	-20.56	QP	N
2*	0.642	34.04	10.56	44.60	56.00	-11.40	QP	N
3*	1.278	27.34	10.60	37.94	56.00	-18.06	QP	N
4*	2.018	24.17	10.76	34.93	56.00	-21.07	QP	N
5*	5.046	21.13	10.84	31.97	60.00	-28.03	QP	N
6*	7.910	19.38	10.86	30.24	60.00	-29.76	QP	N
7*	0.338	16.53	10.59	27.12	49.25	-22.13	AV	N
8*	0.642	17.35	10.56	27.91	46.00	-18.09	AV	N
9*	0.778	16.81	10.56	27.37	46.00	-18.63	AV	N
10*	1.298	12.85	10.61	23.46	46.00	-22.54	AV	N
11*	2.914	4.73	10.78	15.51	46.00	-30.49	AV	N
12*	10.850	1.00	11.05	12.05	50.00	-37.95	AV	N



3.2 RADIATED EMISSION LIMITS

3.2.1 Limit

20dBc in any 100 kHz bandwidth outside the operating frequency band. In case the emission fall within the restricted band specified on Part 15.249, Part 15.209(a) limit in the table below has to be followed.

Standard FCC 15.209

Frequencies (MHz)	Field Strength (micorvolts/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
960~1000	500	3
Above 1000	Other:74.0 dB(μ V)/m (Peak) 54.0 dB(μ V)/m (Average)	3

Standard FCC 15.249

Frequency of Emission (MHz)	Field Strength of fundamental (millivolts /meter)	Field Strength of Harmonics (microvolts/meter)
900~928	50	500
2400~2483.5	50	500
5725~5875	50	500
24000~242500	250	2500

Notes:

- (1) Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation.

Spectrum Parameter	Setting
Detector	Peak/AV
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic
RB (emission in restricted band)	>20BW
VB (emission in restricted band)	=3xRB



Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~90kHz / RB 200Hz for PK & AV
	90kHz~110kHz / RB 200Hz for QP
	110kHz~490kHz / RB 200Hz for PK & AV
	490kHz~30MHz / RB 9kHz for QP
	30MHz~1000MHz / RB 120kHz for QP

3.2.2 TEST PROCEDURE

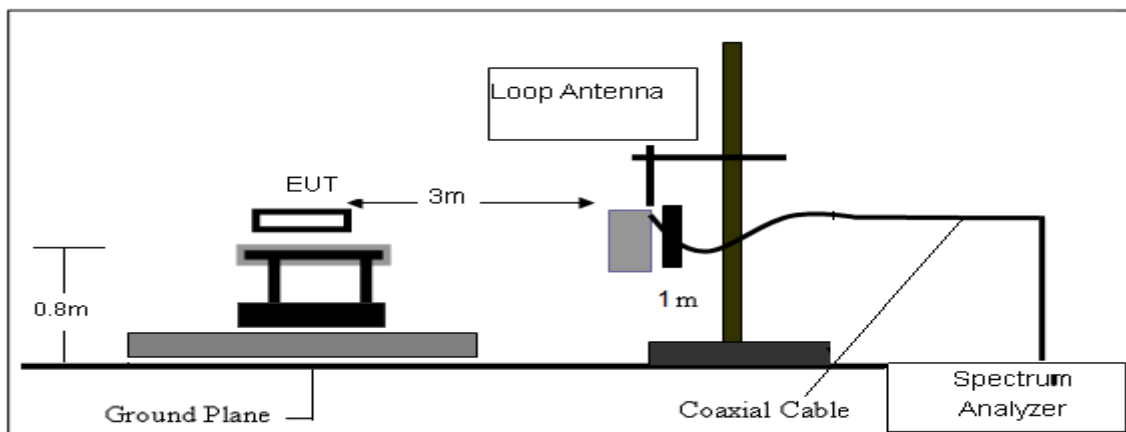
- The measuring distance at 3 m shall be used for measurements at frequency 0.009MHz up to 1GHz, and above 1GHz.
- The EUT was placed on the top of a rotating table 0.8 m (above 1GHz is 1.5 m) above the ground at a 3 m anechoic chamber test site. The table was rotated 360 degree to determine the position of the highest radiation.
- The height of the equipment shall be 0.8 m(above 1GHz is 1.5 m); the height of the test antenna shall vary between 1 m to 4 m. Horizontal and vertical polarization of the antenna are set to make the measurement.
- The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and QuasiPeak detector mode will be re-measured.
- If the Peak Mode measured value is compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and no additional QP Mode measurement was performed.
- For the actual test configuration, please refer to the related Item –EUT Test Photos.

Note:

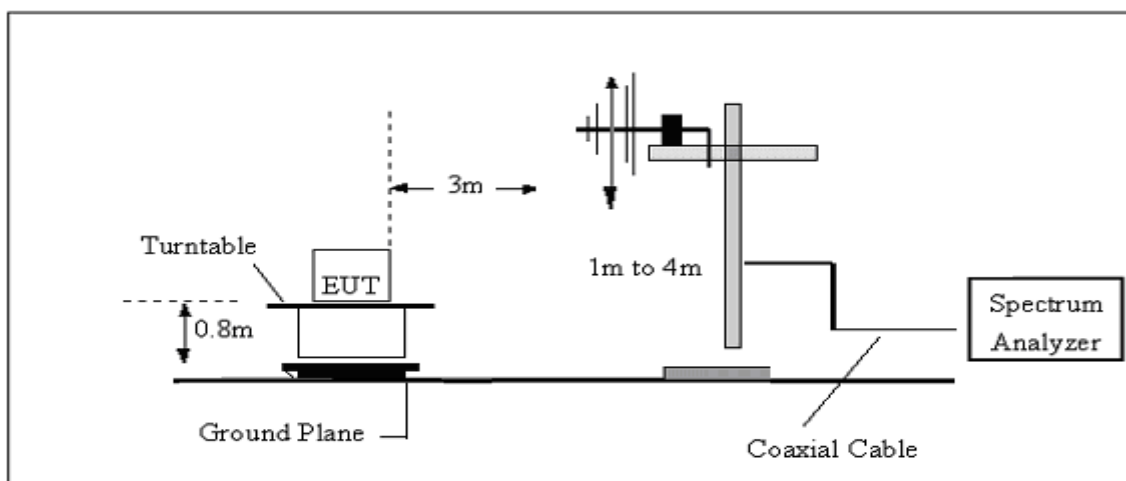
Both horizontal and vertical antenna polarities were tested and performed pretest to three orthogonal axis. The worst case emissions were reported.

3.2.3 TEST SETUP

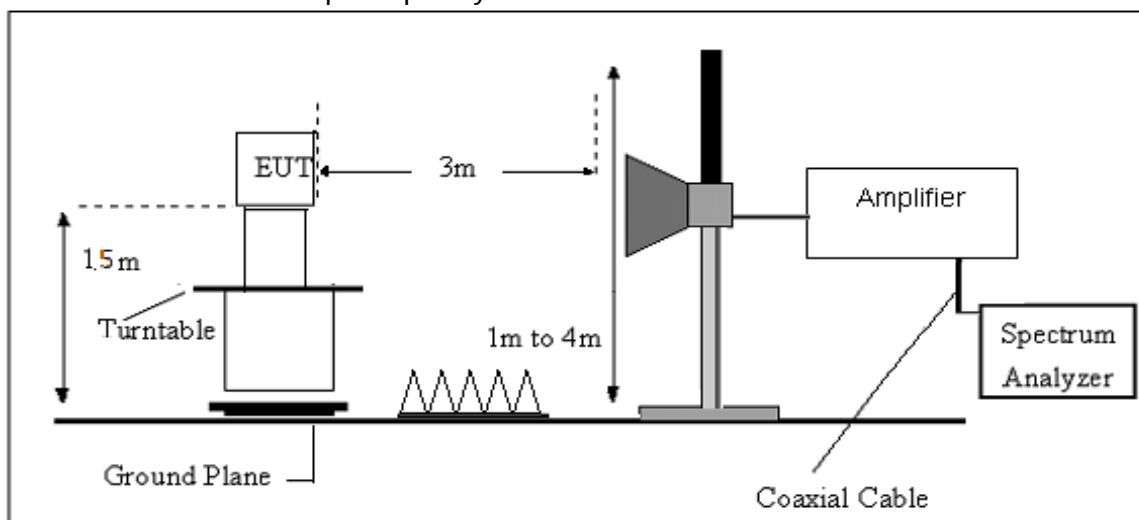
(A) Radiated Emission Test-Up Frequency Below 30MHz



(B) Radiated Emission Test-Up Frequency 30MHz~1GHz



(C) Radiated Emission Test-Up Frequency Above 1GHz



3.2.4 EUT OPERATING CONDITIONS

Please refer to section 3.4 of this report.



3.2.5 FIELD STRENGTH CALCULATION

The field strength is calculated by adding the Antenna Factor and Cable Factor and subtracting the Amplifier Gain and Duty Cycle Correction Factor (if any) from the measured reading. The basic equation with a sample calculation is as follows:

$$FS = RA + AF + CL - AG$$

Where

FS = Field Strength

CL = Cable Attenuation Factor (Cable Loss)

RA = Reading Amplitude

AG = Amplifier Gain

AF = Antenna Factor

For example

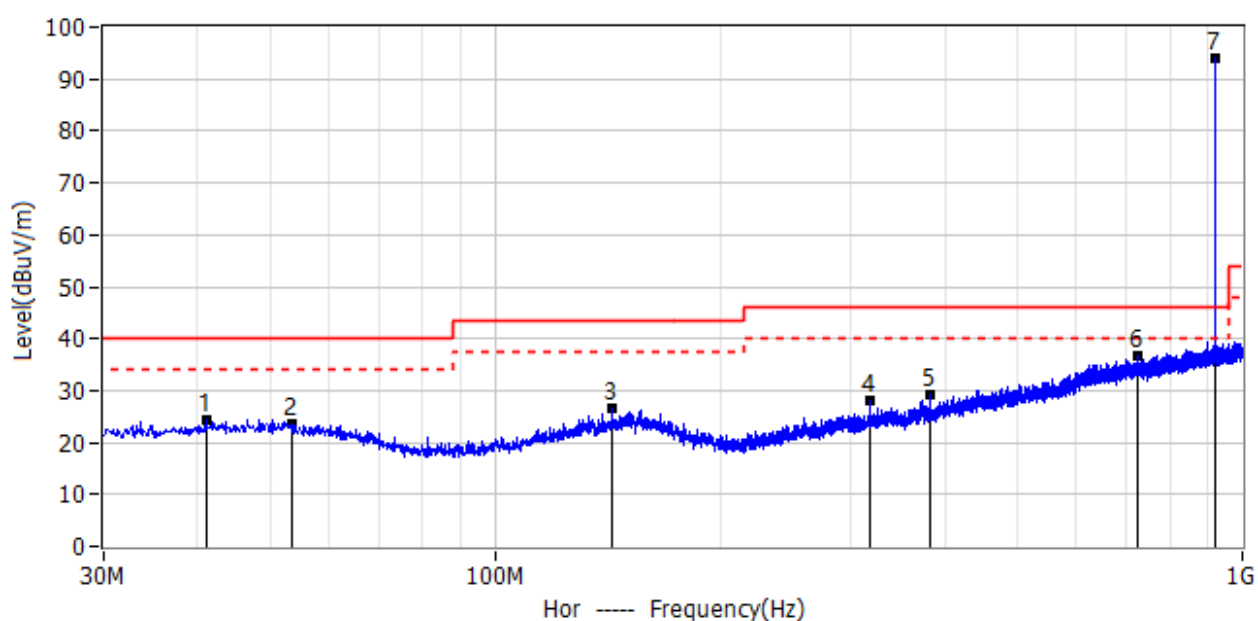
Frequency	FS	RA	AF	CL	AG	Factor
(MHz)	(dBμV/m)	(dBμV/m)	(dB)	(dB)	(dB)	(dB)
300	40	58.1	12.2	1.6	31.9	-18.1

$$\text{Factor} = \text{AF} + \text{CL} - \text{AG}$$



3.2.6 TEST RESULTS

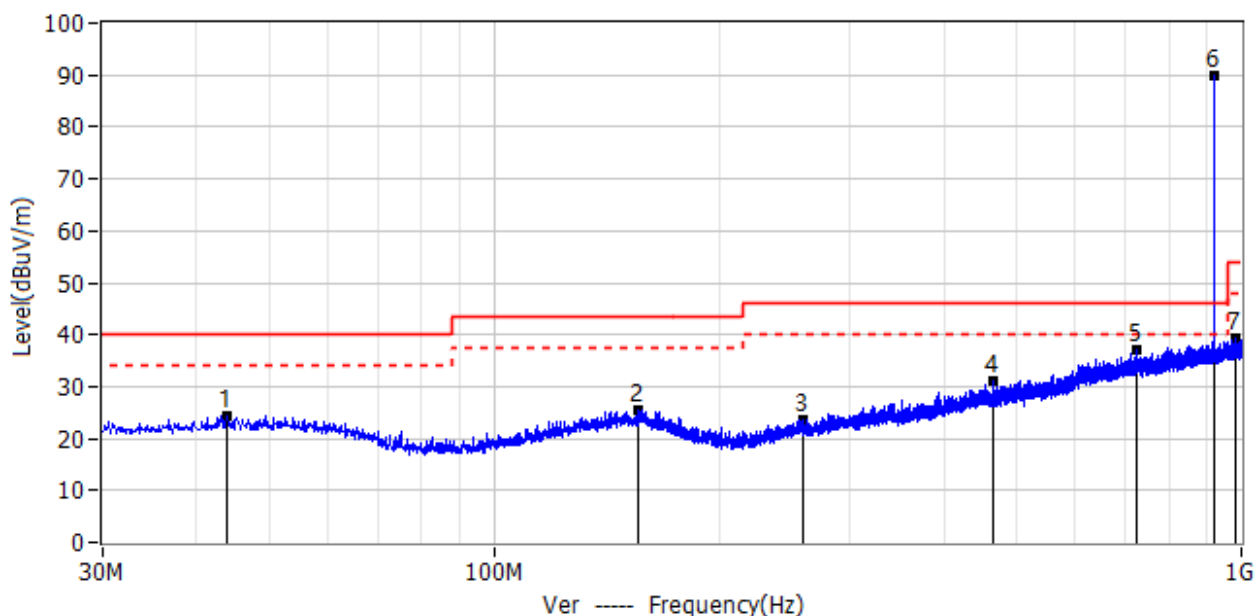
Project: LGT24K083	Test Engineer: LiuH
EUT: Alco RF OBC Dock	Temperature: 26°C
M/N: A5-APU-1-PTB-915-D	Humidity: 54%RH
Test Voltage: AC 120V/60Hz	Test Data: 2024-12-03
Test Mode: H	
Note:	



No.	Frequency MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	41.155	3.77	20.40	24.17	40.00	-15.83	PK	Hor
2*	53.523	3.14	20.48	23.62	40.00	-16.38	PK	Hor
3*	143.733	5.15	21.29	26.44	43.50	-17.06	PK	Hor
4*	317.848	5.83	22.29	28.12	46.00	-17.88	PK	Hor
5*	381.261	5.55	23.57	29.12	46.00	-16.88	PK	Hor
6*	723.671	5.70	30.97	36.67	46.00	-9.33	PK	Hor
!7*	921.066	60.75	33.29	94.04	46.00	48.04	PK	Hor



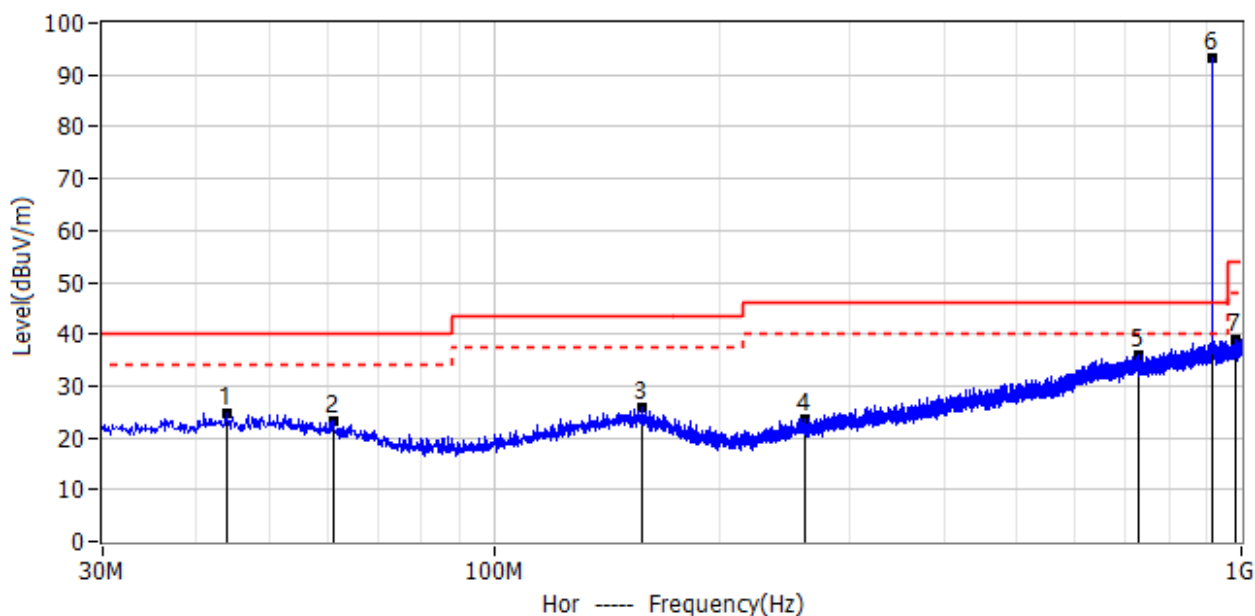
Project: LGT24K083	Test Engineer: LiuH
EUT: Alco RF OBC Dock	Temperature: 26°C
M/N: A5-APU-1-PTB-915-D	Humidity: 54%RH
Test Voltage: AC 120V/60Hz	Test Data: 2024-12-03
Test Mode: H	
Note:	



No.	Frequency MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	44.065	3.69	20.69	24.38	40.00	-15.62	PK	Ver
2*	155.858	3.95	21.66	25.61	43.50	-17.89	PK	Ver
3*	258.678	3.36	20.16	23.52	46.00	-22.48	PK	Ver
4*	466.500	5.11	25.95	31.06	46.00	-14.94	PK	Ver
5*	723.671	6.13	30.97	37.10	46.00	-8.90	PK	Ver
!6*	921.066	56.73	33.29	90.02	46.00	44.02	PK	Ver
7*	984.480	4.94	34.22	39.16	54.00	-14.84	PK	Ver



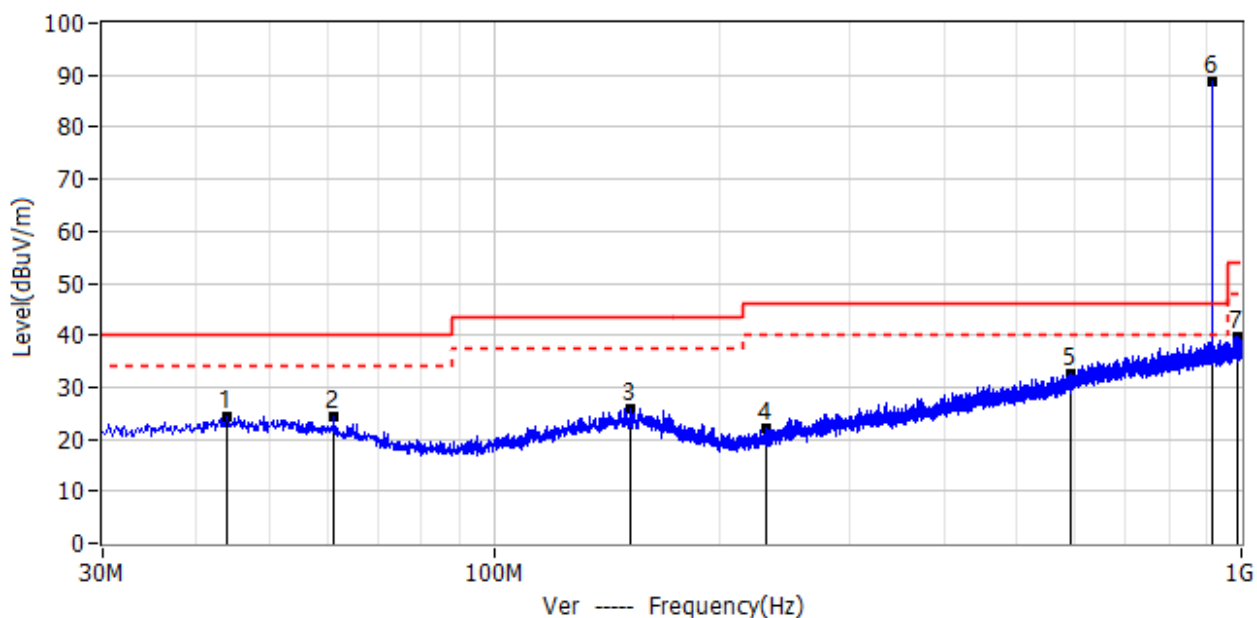
Project: LGT24K083	Test Engineer: LiuH
EUT: Alco RF OBC Dock	Temperature: 26°C
M/N: A5-APU-1-PTB-915-D	Humidity: 54%RH
Test Voltage: AC 120V/60Hz	Test Data: 2024-12-03
Test Mode:L	
Note:	



No.	Frequency MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	44.065	4.03	20.69	24.72	40.00	-15.28	PK	Hor
2*	61.040	3.80	19.43	23.23	40.00	-16.77	PK	Hor
3*	158.040	4.03	21.63	25.66	43.50	-17.84	PK	Hor
4*	260.011	3.45	20.17	23.62	46.00	-22.38	PK	Hor
5*	726.581	4.89	30.96	35.85	46.00	-10.15	PK	Hor
!6*	914.519	60.54	32.89	93.43	46.00	47.43	PK	Hor
7*	984.844	4.84	34.25	39.09	54.00	-14.91	PK	Hor



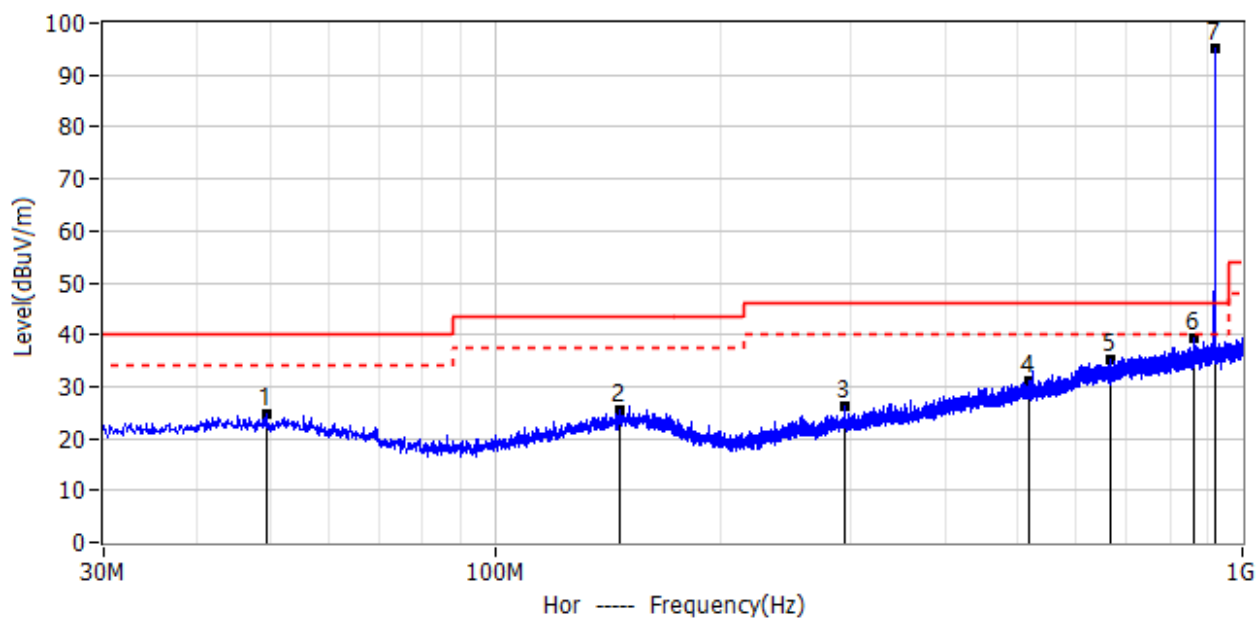
Project: LGT24K083	Test Engineer: LiuH
EUT: Alco RF OBC Dock	Temperature: 26°C
M/N: A5-APU-1-PTB-915-D	Humidity: 54%RH
Test Voltage: AC 120V/60Hz	Test Data: 2024-12-03
Test Mode:L	
Note:	



No.	Frequency MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	43.944	3.45	20.72	24.17	40.00	-15.83	PK	Ver
2*	61.161	4.81	19.37	24.18	40.00	-15.82	PK	Ver
3*	152.341	4.47	21.37	25.84	43.50	-17.66	PK	Ver
4*	231.154	3.50	18.59	22.09	46.00	-23.91	PK	Ver
5*	589.448	3.93	28.49	32.42	46.00	-13.58	PK	Ver
!6*	914.519	55.87	32.89	88.76	46.00	42.76	PK	Ver
7*	985.571	5.67	34.21	39.88	54.00	-14.12	PK	Ver



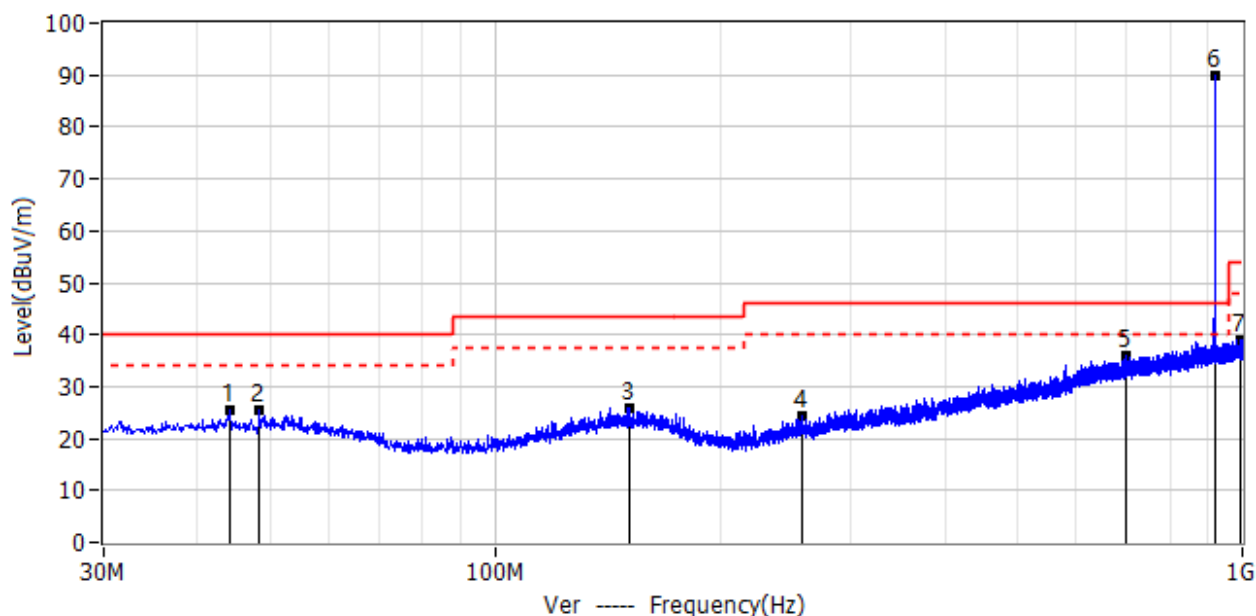
Project: LGT24K083	Test Engineer: LiuH
EUT: Alco RF OBC Dock	Temperature: 26°C
M/N: A5-APU-1-PTB-915-D	Humidity: 54%RH
Test Voltage: AC 120V/60Hz	Test Data: 2024-12-03
Test Mode: M	
Note:	



No.	Frequency MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	49.521	4.00	20.55	24.55	40.00	-15.45	PK	Hor
2*	146.643	4.09	21.46	25.55	43.50	-17.95	PK	Hor
3*	293.598	4.86	21.22	26.08	46.00	-19.92	PK	Hor
4*	519.608	3.94	27.02	30.96	46.00	-15.04	PK	Hor
5*	666.441	5.48	29.69	35.17	46.00	-10.83	PK	Hor
6*	861.775	6.71	32.56	39.27	46.00	-6.73	PK	Hor
!7*	917.550	61.96	33.12	95.08	46.00	49.08	PK	Hor



Project: LGT24K083	Test Engineer: LiuH
EUT: Alco RF OBC Dock	Temperature: 26°C
M/N: A5-APU-1-PTB-915-D	Humidity: 54%RH
Test Voltage: AC 120V/60Hz	Test Data: 2024-12-03
Test Mode: M	
Note:	

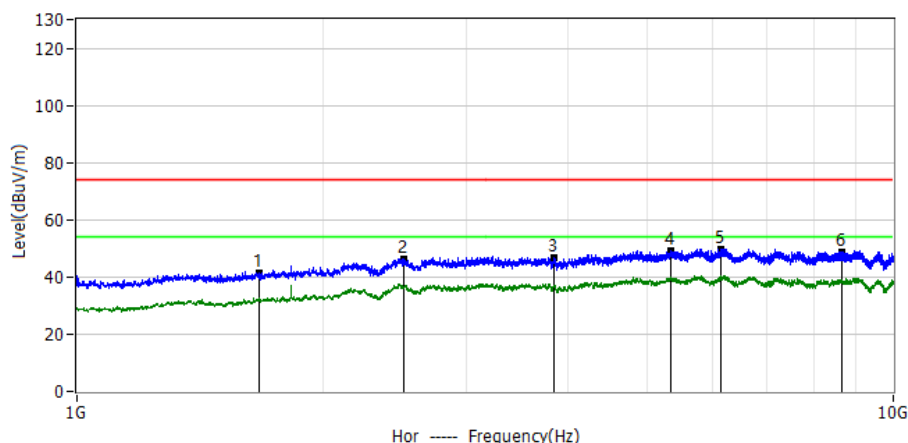


No.	Frequency MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	44.308	4.76	20.62	25.38	40.00	-14.62	PK	Ver
2*	48.430	4.94	20.46	25.40	40.00	-14.60	PK	Ver
3*	151.129	4.50	21.46	25.96	43.50	-17.54	PK	Ver
4*	257.829	4.26	20.16	24.42	46.00	-21.58	PK	Ver
5*	700.270	5.54	30.59	36.13	46.00	-9.87	PK	Ver
!6*	917.550	56.79	33.12	89.91	46.00	43.91	PK	Ver
7*	995.514	5.24	33.79	39.03	54.00	-14.97	PK	Ver

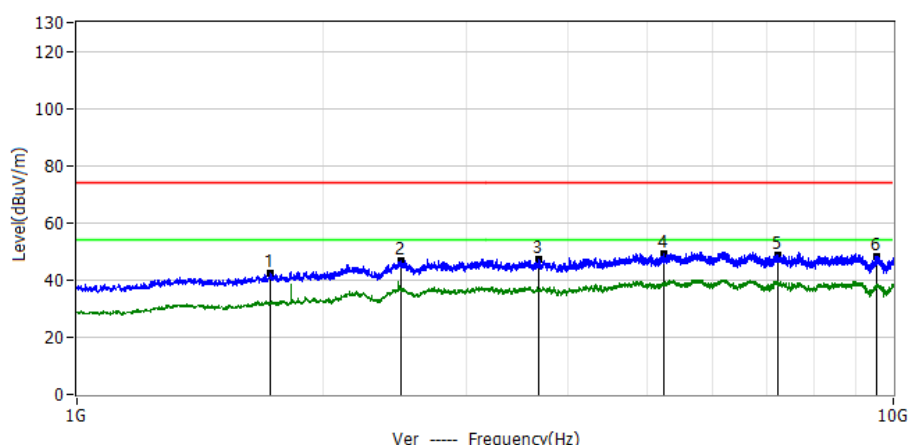


Results of Radiated Emissions (Above 1000MHz)

Project: LGT24K083	Test Engineer: LiuH
EUT: Alco RF OBC Dock	Temperature: 26°C
M/N: A5-APU-1-PTB-915-D	Humidity: 54%RH
Test Voltage: AC 120V/60Hz	Test Data: 2024-12-03
Test Mode: L	
Note:	



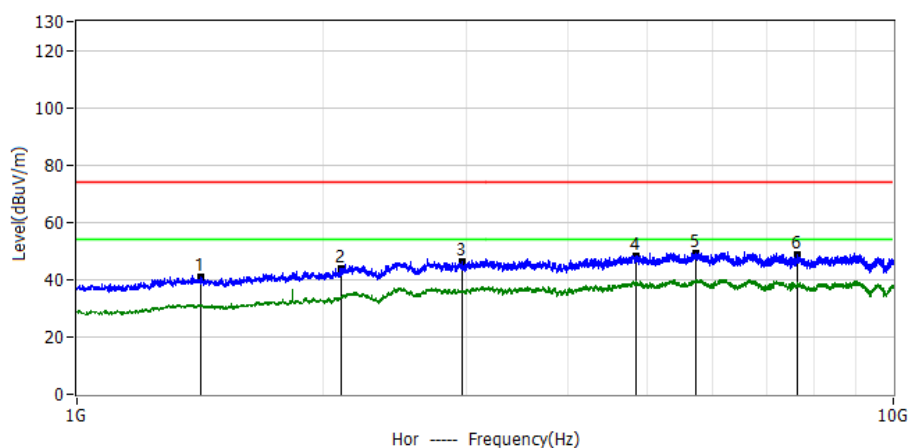
No.	Frequency MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	1669.4000	60.80	-19.34	41.46	74.00	-32.54	PK	Hor
2*	2514.2000	57.00	-10.62	46.38	74.00	-27.62	PK	Hor
3*	3846.2000	53.89	-7.22	46.67	74.00	-27.33	PK	Hor
4*	5339.1000	55.67	-6.60	49.07	74.00	-24.93	PK	Hor
5*	6158.1000	57.31	-7.48	49.83	74.00	-24.17	PK	Hor
6*	8644.4000	57.35	-8.66	48.69	74.00	-25.31	PK	Hor



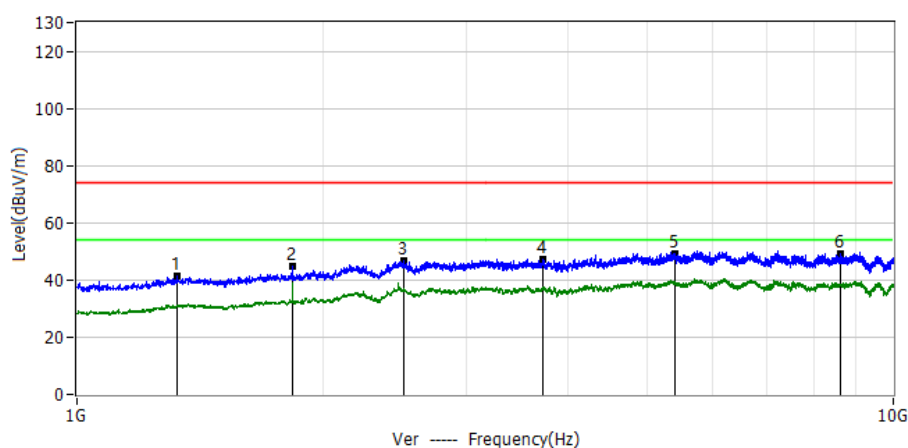
No.	Frequency MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	1724.5000	60.90	-18.77	42.13	74.00	-31.87	PK	Ver
2*	2490.6000	57.67	-10.77	46.90	74.00	-27.10	PK	Ver
3*	3679.7000	54.72	-7.62	47.10	74.00	-26.90	PK	Ver
4*	5241.2000	55.77	-6.42	49.35	74.00	-24.65	PK	Ver
5*	7216.7000	57.11	-8.20	48.91	74.00	-25.09	PK	Ver
6*	9532.0000	55.54	-7.26	48.28	74.00	-25.72	PK	Ver



Project: LGT24K083	Test Engineer: LiuH
EUT: Alco RF OBC Dock	Temperature: 26°C
M/N: A5-APU-1-PTB-915-D	Humidity: 54%RH
Test Voltage: AC 120V/60Hz	Test Data: 2024-12-03
Test Mode: M	
Note:	



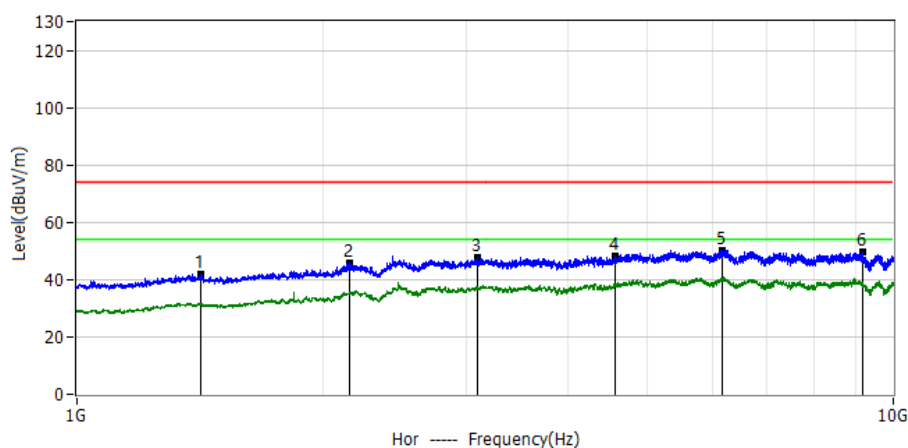
No.	Frequency MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	1416.2000	62.43	-21.32	41.11	74.00	-32.89	PK	Hor
2*	2104.7000	58.56	-14.72	43.84	74.00	-30.16	PK	Hor
3*	2967.6000	54.92	-8.88	46.04	74.00	-27.96	PK	Hor
4*	4841.9000	54.49	-6.08	48.41	74.00	-25.59	PK	Hor
5*	5727.2000	56.48	-7.11	49.37	74.00	-24.63	PK	Hor
6*	7626.2000	57.18	-8.68	48.50	74.00	-25.50	PK	Hor



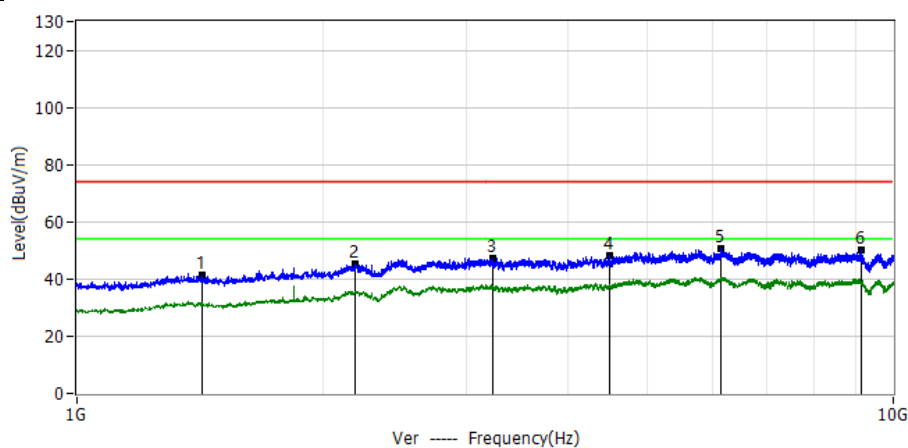
No.	Frequency MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	1328.5000	63.42	-22.02	41.40	74.00	-32.60	PK	Ver
2*	1834.7000	62.41	-17.60	44.81	74.00	-29.19	PK	Ver
3*	2516.5000	57.21	-10.61	46.60	74.00	-27.40	PK	Ver
4*	3718.0000	54.52	-7.53	46.99	74.00	-27.01	PK	Ver
5*	5407.7000	55.75	-6.72	49.03	74.00	-24.97	PK	Ver
6*	8623.0000	57.86	-8.70	49.16	74.00	-24.84	PK	Ver



Project: LGT24K083	Test Engineer: LiuH
EUT: Alco RF OBC Dock	Temperature: 26°C
M/N: A5-APU-1-PTB-915-D	Humidity: 54%RH
Test Voltage: AC 120V/60Hz	Test Data: 2024-12-03
Test Mode: H	
Note:	



No.	Frequency MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	1418.5000	63.35	-21.30	42.05	74.00	-31.95	PK	Hor
2*	2158.7000	59.94	-14.17	45.77	74.00	-28.23	PK	Hor
3*	3100.4000	56.30	-8.62	47.68	74.00	-26.32	PK	Hor
4*	4570.7000	54.61	-6.23	48.38	74.00	-25.62	PK	Hor
5*	6182.9000	57.76	-7.49	50.27	74.00	-23.73	PK	Hor
6*	9166.4000	57.31	-7.84	49.47	74.00	-24.53	PK	Hor

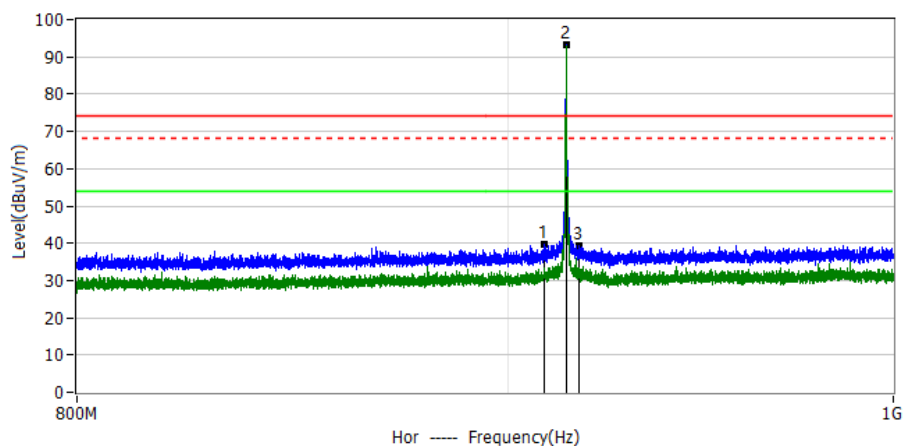


No.	Frequency MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	1420.7000	62.54	-21.29	41.25	74.00	-32.75	PK	Ver
2*	2190.2000	58.96	-13.84	45.12	74.00	-28.88	PK	Ver
3*	3229.7000	55.78	-8.44	47.34	74.00	-26.66	PK	Ver
4*	4484.1000	54.36	-6.29	48.07	74.00	-25.93	PK	Ver
5*	6153.6000	58.18	-7.48	50.70	74.00	-23.30	PK	Ver
6*	9132.6000	57.81	-7.89	49.92	74.00	-24.08	PK	Ver



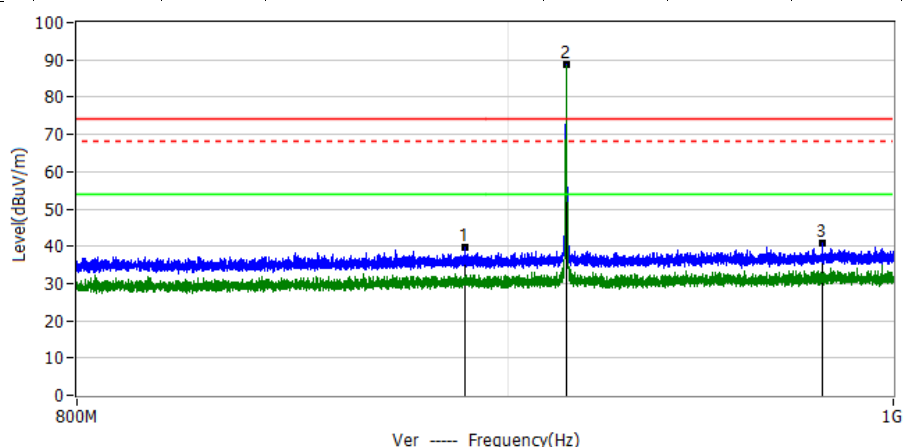
3.2.8 TEST RESULTS (BAND EDGE REQUIREMENTS)

Project: LGT24K083	Test Engineer: LiuH
EUT: Alco RF OBC Dock	Temperature: 26°C
M/N: A5-APU-1-PTB-915-D	Humidity: 54%RH
Test Voltage: AC 120V/60Hz	Test Data: 2024-12-03
Test Mode: L	
Note:	



No.	Frequency MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	909.125	6.48	33.15	39.63	74.00	-34.37	PK	Hor
2*	914.475	59.31	32.89	94.20	74.00	20.20	PK	Hor
3*	917.700	6.31	33.14	39.45	74.00	-34.55	PK	Hor

No.	Frequency MHz	Reading dBuV	Factor dB/m	Duty cycle Factor(dB/m)	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
3*	914.475	59.31	32.89	-	92.2	114	-21.8	PK	Hor
	914.475	59.31	32.89	0	92.2	94	-1.8	AV	Hor

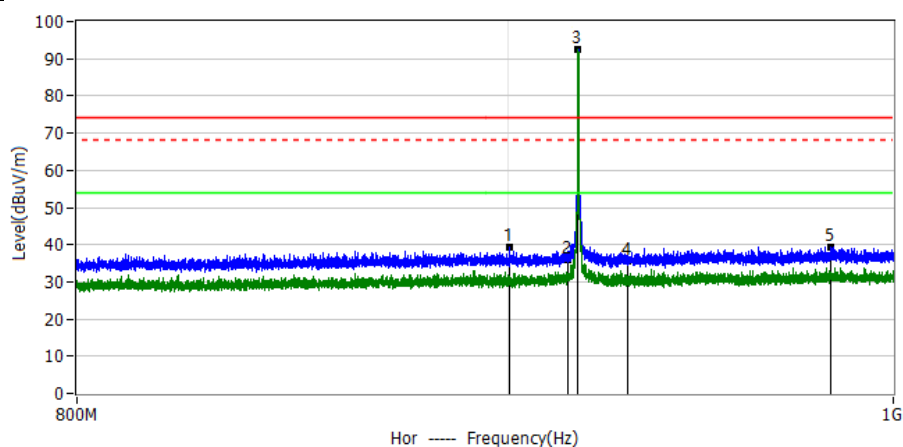


No.	Frequency MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	889.675	6.31	33.30	39.61	74.00	-34.39	PK	Ver
2*	914.500	55.71	32.89	88.60	74.00	14.60	PK	Ver
3*	980.825	6.75	33.93	40.68	74.00	-33.32	PK	Ver

No.	Frequency MHz	Reading dBuV	Factor dB/m	Duty cycle Factor(dB/m)	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
3*	914.500	55.71	32.89	-	88.6	114	-25.4	PK	Ver
	914.500	55.71	32.89	0	88.6	94	-5.4	AV	Ver

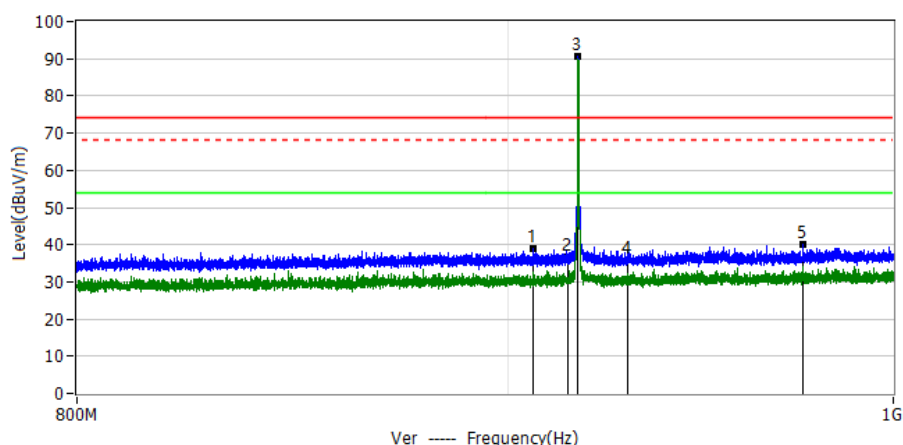


Project: LGT24K083	Test Engineer: LiuH
EUT: Alco RF OBC Dock	Temperature: 26°C
M/N: A5-APU-1-PTB-915-D	Humidity: 54%RH
Test Voltage: AC 120V/60Hz	Test Data: 2024-12-04
Test Mode: M	



No.	Frequency MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	900.550	6.08	33.14	39.22	74.00	-34.78	PK	Hor
2*	915.000	3.24	32.86	36.10	74.00	-37.90	PK	Hor
!3*	917.500	59.01	33.12	94.13	74.00	20.13	PK	Hor
4*	930.000	2.31	33.29	35.60	74.00	-38.40	PK	Hor
5*	983.025	5.32	34.10	39.42	74.00	-34.58	PK	Hor

No.	Frequency MHz	Reading dBuV	Factor dB/m	Duty cycle Factor(dB/m)	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
!3*	917.5	59.01	33.12	-	92.13	114	-21.87	PK	Hor
	917.5	59.01	33.12	0	92.13	94	-1.87	AV	Hor

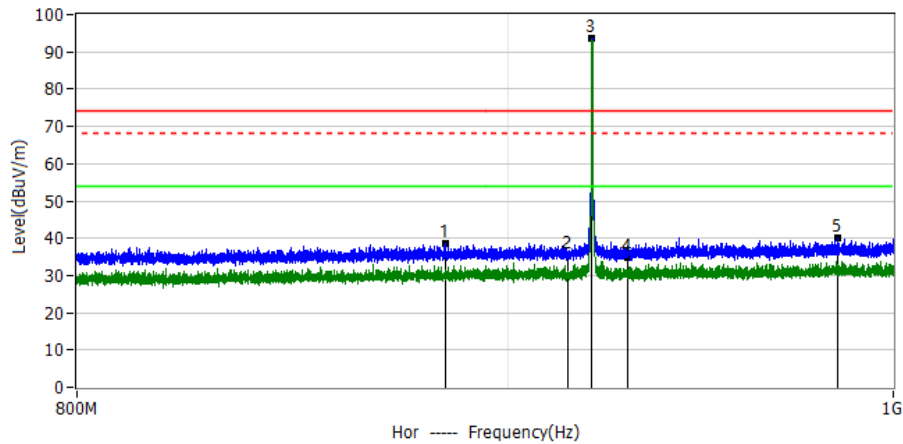


No.	Frequency MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	906.400	5.95	33.15	39.10	74.00	-34.90	PK	Ver
2*	915.000	3.74	32.86	36.60	74.00	-37.40	PK	Ver
!3*	917.500	57.37	33.12	90.49	74.00	16.49	PK	Ver
4*	930.000	2.51	33.29	35.80	74.00	-38.20	PK	Ver
5*	975.500	6.35	33.75	40.10	74.00	-33.90	PK	Ver

No.	Frequency MHz	Reading dBuV	Factor dB/m	Duty cycle Factor(dB/m)	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
!3*	917.5	57.37	33.12	-	90.49	114	-23.51	PK	Ver
	917.5	57.37	33.12	0	90.49	94	-3.51	AV	Ver

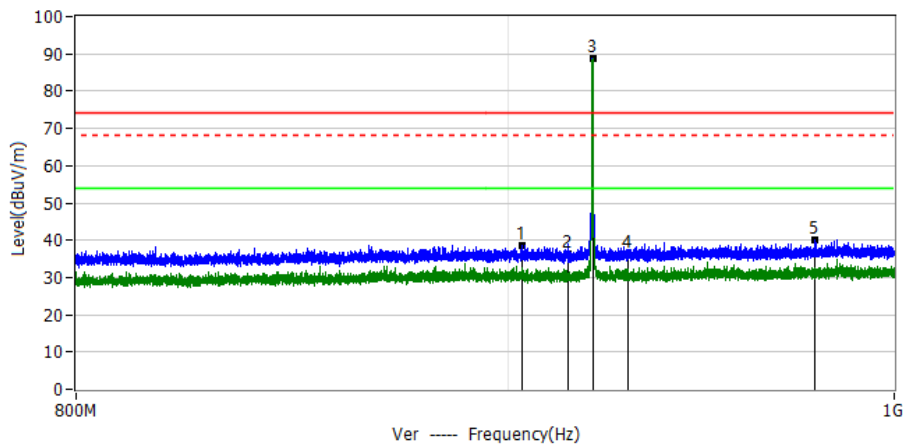


Project: LGT24K083	Test Engineer: LiuH
EUT: Alco RF OBC Dock	Temperature: 26°C
M/N: A5-APU-1-PTB-915-D	Humidity: 54%RH
Test Voltage: AC 120V/60Hz	Test Data: 2024-12-03
Test Mode: H	



No.	Frequency MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	884.800	5.60	33.01	38.61	74.00	-35.39	PK	Hor
2*	915.000	2.74	32.86	35.60	74.00	-38.40	PK	Hor
!3*	920.975	58.30	33.30	93.60	74.00	19.60	PK	Hor
4*	930.000	1.71	33.29	35.00	74.00	-39.00	PK	Hor
5*	984.875	5.79	34.25	40.04	74.00	-33.96	PK	Hor

No.	Frequency MHz	Reading dBuV	Factor dB/m	Duty cycle Factor(dB/m)	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
!3*	920.975	58.3	33.3	-	93.6	114	-20.4	PK	Hor
	920.975	58.3	33.3	0	93.6	94	-2.4	AV	Hor



No.	Frequency MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	903.475	5.56	33.14	38.70	74.00	-35.30	PK	Ver
2*	915.000	3.44	32.86	36.30	74.00	-37.70	PK	Ver
!3*	921.000	55.56	33.29	88.85	74.00	14.85	PK	Ver
4*	930.000	3.01	33.29	36.30	74.00	-37.70	PK	Ver
5*	978.575	6.32	33.83	40.15	74.00	-33.85	PK	Ver

No.	Frequency MHz	Reading dBuV	Factor dB/m	Duty cycle Factor(dB/m)	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
!3*	921	55.56	33.29	-	88.85	114	-25.15	PK	Ver
	921	55.56	33.29	0	88.85	94	-5.15	AV	Ver

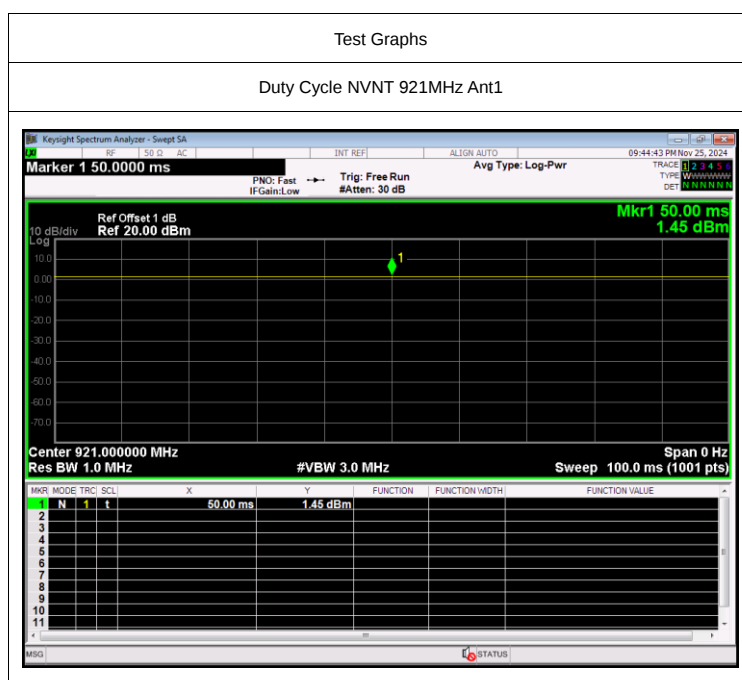


Note:1. In frequency ranges 18~25GHz no any other harmonic emissions detected which are tested to compliance with the limit. No recording in the test report. No any other emissions level which are attenuated less than 20dB below the limit. No recording in the test report.

Average measurement was not performed if peak level lower than average limit. No any other emissions level which are attenuated less than 20dB below the limit. The amplitude of spurious emissions from intentional radiators and emissions from unintentional radiators which are attenuated more than 20 dB below the permissible value need not be reported unless specifically required elsewhere in this Part. Hence there no other emissions have been reported.

Duty cycle

Condition	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	921	Ant1	100.00%	0.000	0.010



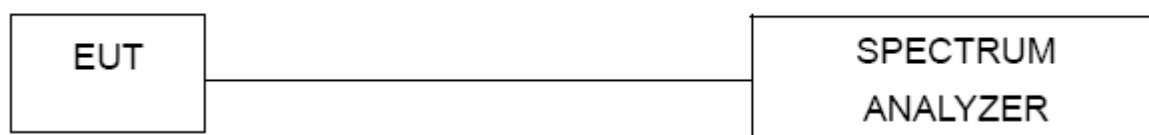


4. BANDWIDTH TEST

4.1 TEST PROCEDURE

- The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below.
- Spectrum Setting : RBW= 30KHz, VBW $\geq$ RBW, Sweep time = Auto.

4.2 TEST SETUP



4.3 EUT OPERATION CONDITIONS

TX mode.

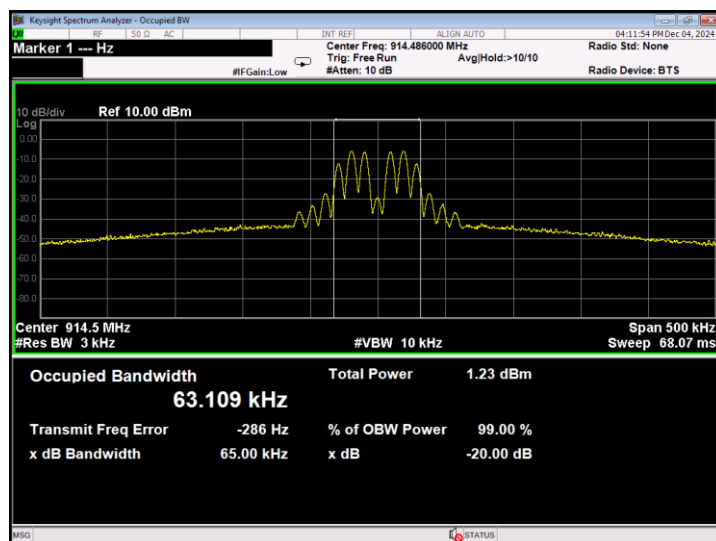
4.4 TEST RESULTS

Condition	Mode	Frequency (MHz)	Antenna	99% OBW (KHz)	-20 dB Bandwidth (KHz)
NVNT	ISM	914.5	Ant1	63.109	65
NVNT	ISM	917.5	Ant1	62.615	64.49
NVNT	ISM	921	Ant1	65.571	78.25

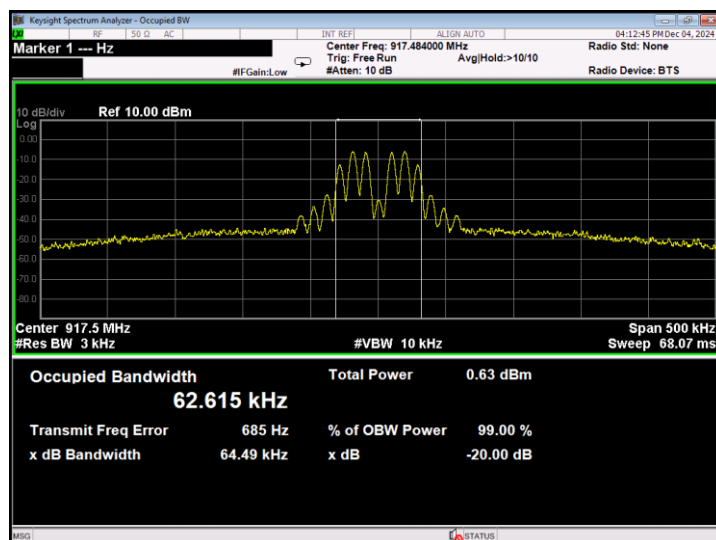


Test Graphs

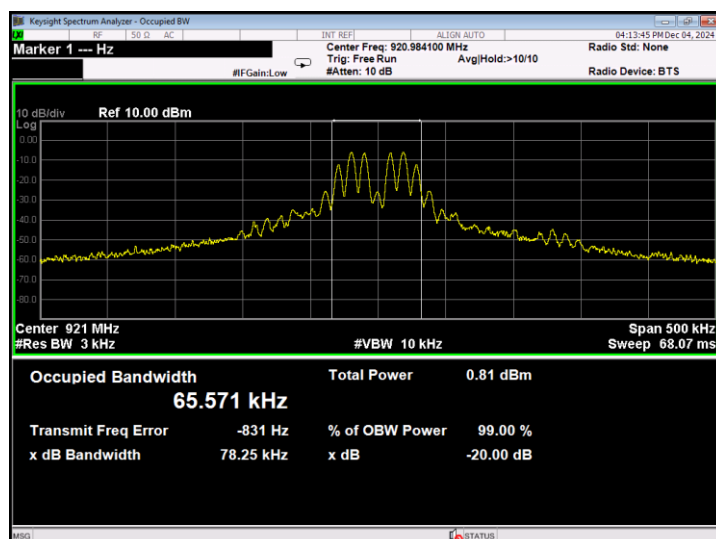
OBW NVNT 914.5MHz Ant1



OBW NVNT 917.5MHz Ant1



OBW NVNT 921MHz Ant1





5. ANTENNA REQUIREMENT

5.1 STANDARD REQUIREMENT

15.203 requirement: For intentional device, according to 15.203: 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.

5.2 EUT ANTENNA

The EUT antenna is Flex Antenna. It comply with the standard requirement.

※※※※※END OF THE REPORT※※※※※