



**BUREAU
VERITAS**

Test Report No: RE180831N010-2



TEST REPORT



Applicant:	Particle Industries, Inc
Address:	126 Post St, 4th floor, San Francisco, CA 94108 USA

Manufacturer or Supplier:	Particle Industries, Inc
Address	126 Post St, 4th floor, San Francisco, CA 94108 USA
Product	Boron 2G/3G
Brand Name	Particle Industries, Inc
Model	BRN310
Additional Model & Model Difference	N/A
Date of tests	Sep. 03, 2018 ~ Nov. 08, 2018

The submitted sample of the above equipment has been tested for according to the requirements of the following standards:

EN 300 330 V2.1.1 (2017-02)

CONCLUSION: The submitted sample was found to COMPLY with the test requirement

Tested by Breeze Jiang Project Engineer / EMC Department	Approved by Glyn He Supervisor / EMC Department
	

Date: Dec. 10, 2018

This report is governed by, and incorporates by reference, CPS Conditions of Service as posted at the date of issuance of this report at <http://www.bureauveritas.com/home/about-us/our-business/cps/about-us/terms-conditions/> and is intended 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 unless 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. Measurement uncertainty is only provided upon request for accredited tests. You have 60 days from date of issuance of this report to notify us of any material error or omission caused by our negligence or if you require measurement uncertainty; 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.



TABLE OF CONTENTS

- RELEASE CONTROL RECORD 3
- 1. SUMMARY OF TEST RESULTS 4
 - 1.1. TEST INSTRUMENTS 5
 - 1.2. MEASUREMENT UNCERTAINTY 7
 - 1.3. MAXIMUM MEASUREMENT UNCERTAINTY 7
- 2. GENERAL INFORMATION..... 8
 - 2.1. GENERAL DESCRIPTION OF EUT 8
 - 2.2. DESCRIPTION OF TEST MODES 9
 - 2.3. TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL..... 9
 - 2.4. GENERAL DESCRIPTION OF APPLIED STANDARDS.....11
 - 2.5. DESCRIPTION OF SUPPORT UNITS 11
- 3. TEST PROCEDURES AND RESULTS 12
 - TRANSMITTER PARAMETERS 12
 - 3.1 TRANSMITTER H-FIELD REQUIREMENTS 12
 - 3.1.1 LIMITS OF TRANSMITTER H-FIELD REQUIREMENTS 12
 - 3.1.2 TEST PROCEDURES 12
 - 3.1.3 DEVIATION FROM TEST STANDARD 12
 - 3.1.4 TEST SETUP..... 12
 - 3.1.5 TEST RESULTS 12
 - 3.2 PERMITTED RANGE OF OPERATING FREQUENCY/OPERATING FREQUENCY RANGES..... 13
 - 3.2.1 LIMITS OF PERMITTED RANGE OF OPERATING FREQUENCY/OPERATING FREQUENCY RANGES..... 13
 - 3.2.2 TEST PROCEDURES 13
 - 3.2.3 DEVIATION FROM TEST STANDARD 13
 - 3.2.4 TEST SETUP..... 14
 - 3.2.5 TEST RESULTS 14
 - 3.3 MODULATION BANDWIDTH 15
 - 3.3.1 LIMITS OF MODULATION BANDWIDTH..... 15
 - 3.3.2 TEST PROCEDURES 15
 - 3.3.3 DEVIATION FROM TEST STANDARD 15
 - 3.3.4 TEST SETUP..... 15
 - 3.3.5 TEST RESULTS 16
 - 3.4 SPURIOUS DOMAIN EMISSION LIMITS 17
 - 3.4.1 LIMITS OF SPURIOUS DOMAIN EMISSION LIMITS (<30MHZ) 17
 - 3.4.2 LIMITS OF SPURIOUS DOMAIN EMISSION LIMITS (≥30MHZ) 17
 - 3.4.3 TEST PROCEDURES 17
 - 3.4.4 DEVIATION FROM TEST STANDARD 17
 - 3.4.5 TEST SETUP..... 17
 - 3.4.6 TEST RESULTS 18
- 4. PHOTOGRAPHS OF THE TEST CONFIGURATION 24
- 5. APPENDIX A – MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB 25



BUREAU
VERITAS

Test Report No: RE180831N010-2

RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RE180831N010-2	Original release	Dec. 10, 2018



1. SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: ETSI EN 300 330 V2.1.1 (2017-02)			
CLAUSE IN ETSI EN 300 330	TEST PARAMETER	TEST APPLICABILITY	PASS/FAIL
	TRANSMITTER PARAMETERS		
4.3.4	Transmitter H-filed requirements	Applicable	PASS
4.3.1	Permitted range of operating frequency	Applicable	PASS
4.3.3	modulation bandwidth	Applicable	PASS
4.3.8	Transmitter radiated spurious domain emission limits<30MHz	Applicable	PASS
4.3.9	Transmitter radiated spurious domain emission limits>30MHz	Applicable	PASS
	RECEIVER PARAMETERS		
4.4.2	Receiver spurious radiation	Not Applicable(Note1)	N/A
4.4.4	Blocking or desensitization	Not Applicable(Note2)	N/A

- Note: 1. These requirements does not apply to receivers used in combination with permanently co-located transmitters continuously transmitting. In these cases the receivers will be tested together with the transmitter in operating mode
2. Receiver blocking or desensitization is only applicable for channelized systems where channel definitions are used.



1.1. TEST INSTRUMENTS

9KHz~30MHz

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	Rohde&Schwarz	ESR7	101564	Jan. 18,18	Jan. 17,19
Active Loop Antenna	SCHWARZBECK	FMZB 1519B	1519B-045	May 04,18	May 03,19
Amplifier	Burgeon	BPA-530	100210	Apr. 18,18	Apr. 18,19
Test Software	ADT	ADT_Radiated_V8.7.07	N/A	N/A	N/A

- NOTE:** 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.
2. The test was performed in 10m Chamber

30MHz~1GHz

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	Rohde&Schwarz	ESU40	100449	Mar. 21,18	Mar. 20,19
Bilog Antenna	Teseq	CBL 6111D	30643	Aug.11,18	Aug. 10,19
Amplifier	Burgeon	BPA-530	100220	Apr. 18,18	Apr. 18,19
3m Semi-anechoic Chamber	ETS-LINDGREN	9m*6m*6m	NSEMC003	Feb. 10,18	Feb. 09,19
Test software	ADT	ADT_Radiated_V7.6.15.9.2	N/A	N/A	N/A

- NOTE:**
1. The test was performed in 966 Chamber (a 3m Semi-anechoic chamber).
 2. The calibration interval of the above test instruments are 12 months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.
 3. The horn antenna is used only for the measurement of emission frequency above1GHz if tested.



Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	Rohde&Schwarz	ESU40	100449	Mar. 21,18	Mar. 20,19
Signal and Spectrum Analyzer	Rohde&Schwarz	FSV40	101094	Mar. 21,18	Mar. 20,19
Bilog Antenna	Teseq	CBL 6111D	30643	Jul. 28, 18	Jul. 27, 19
Horn Antenna	ETS-Lindgren	3117	00062558	Jul. 02,18	Jul. 01,19
GPS Generator+ Antenna	TOJOIN	GNSS-5000A	E1-010119	Sep. 08,18	Sep. 07,19
3m Semi-anechoic Chamber	ETS-LINDGREN	9m*6m*6m	NSEMC003	Feb. 10,18	Feb. 09,19
Test Software	ADT	ADT_Radiated_V7.6.15.9.2	N/A	N/A	N/A
Horn Antenna (15GHz-40GHz)	SCHWARZBECK	BBHA 9170	BBHA9170147	May 05,18	May 04,19
Amplifier	Burgeon	BPA-530	100220	Apr. 18,18	Apr. 18,19
Broadband Preamplifier (1GHz~18GHz)	SCHWARZBECK	BBV9718	305	Apr. 18,18	Apr. 18,19
Pre-Amplifier (18GHz-40GHz)	EMCI	EMC 184045	980102	Nov. 08,18	Nov. 07,19
Spectrum Analyzer	Keysight	N9020A	MY55400499	Mar. 21,18	Mar. 20,19
Signal Generator	Agilent	N5183A	MY50140980	Jan. 02,18	Jan. 01,19
10m Semi-anechoic Chamber	CHANGLING	21.4m*12.1m*8.8m	NSEMC006	Feb. 10,18	Feb. 09,19
Signal Generator	Agilent	N5183A	MY50140980	Jan. 02,18	Jan. 01,19

NOTE:

1. The test was performed in RF Oven room.
2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.



1.2. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT:

PARAMETER	UNCERTAINTY
Radio frequency	$\pm 1.06 \times 10^{-8}$
RF power (Conducted)	± 0.34 dB
RF power (Radiated)	± 3.294 dB
Temperature	± 0.23 °C
Humidity	± 0.3 %

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

1.3. MAXIMUM MEASUREMENT UNCERTAINTY

For the test methods, according to ETSI EN 300 330 standard, the measurement uncertainty figures shall be calculated in accordance with TR 100 028 [5] and shall correspond to an expansion factor (coverage factor) k = 1.96 or k = 2 (which provide confidence levels of respectively 95 % and 95.45 % in the case where the distributions characterizing the actual measurement uncertainties are normal (Gaussian)).

Maximum measurement uncertainty

PARAMETER	UNCERTAINTY
RF frequency	$\pm 1 \times 10^{-7}$
RF power (Conducted)	± 1.0 dB
RF power (Radiated)	± 6.0 dB
Temperature	± 1 °C
Humidity	± 5.0 %



2. GENERAL INFORMATION

2.1. GENERAL DESCRIPTION OF EUT

PRODUCT	Boron 2G/3G
MODEL NO.	BRN310
ADDITIONAL MODEL	N/A
POWER SUPPLY	Li+ PIN /Battery connector: DC 3.7V from Li-ion Battery or VUSB PIN /USB connector :DC 5V from USB Host Unit
OPERATING TEMPERATURE RNAGE	-20 ~ +80°C
MODULATION TECHNOLOGY	NFC
MODULATION TYPE	ASK
OPERATING FREQUENCY	13.56MHz
NUMBER OF CHANNEL	1
H-FIELD STRENGTH	22.46dBuA/m (Measured Max.)
ANTENNA TYPE	Loop Antenna
DATA CABLE	N/A
I/O PORTS	Refer to user's manual

NOTE:

1. For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.
2. For the test results, the EUT had been tested with all conditions. But only the worst case was shown in test report.
3. Please refer to the EUT photo document (Reference No.: 180831N010) for detailed product photo.
4. The EUT is wireless module, it no any accessories.



2.2. DESCRIPTION OF TEST MODES

The EUT only have 1 channel.

CHANNEL	FREQUENCY (MHz)
1	13.56

2.3. TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

EUT CONFIGURE MODE	APPLICABLE TO						DESCRIPTION
	THFR	PROF	MBW	TSE	RSE	RB	
A	-	√	√	-	-	-	Powered by Fully Battery
B	√	-	-	√	-	-	Powered by Adapter

Where THFR: Transmitter H-filed requirements TSE: Transmitter Spurious Emissions
 PROF: Permitted range of operating frequency RSE: Receiver Spurious Emissions
 MBW: Modulation Bandwidth
 RB: Receiver Blocking

TRANSMITTER H-FILED REQUIREMENTS:

- Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations 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	OPERATING FREQUENCY (MHz)	MODULATION TYPE
A	1	13.56	ASK

PERMITTED RANGE OF OPERATING FREQUENCY:

- Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations 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	OPERATING FREQUENCY (MHz)	MODULATION TYPE
A	1	13.56	ASK



MODULATION BANDWIDTH:

- Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations 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	OPERATING FREQUENCY (MHz)	MODULATION TYPE
A	1	13.56	ASK

TRANSMITTER SPURIOUS EMISSIONS TEST:

- Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations 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	OPERATING FREQUENCY (MHz)	MODULATION TYPE
A	1	13.56	ASK

TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
THFR	25deg. C, 60%RH	DC 5V From Adapter	Robert Cheng
PROF	25deg. C, 60%RH	DC 3.7V From Battery	Robert Cheng
MBW	25deg. C, 60%RH	DC 3.7V From Battery	Robert Cheng
TSE	21deg. C, 58%RH	DC 5V From Adapter	Daniel
RSE	N/A	N/A	N/A
RB	N/A	N/A	N/A



2.4. GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a RF product. According to the specifications of the manufacturer, it must comply with the requirements of the following standard:

EN 300 330 V2.1.1 (2017-02)

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

2.5. 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.

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	DC source	LONG WEI	PS-6403D	010934269	N/A
2	Li-ion Battery	N/A	DC3.7V	N/A	N/A
3	Adapter	N/A	DC5V 1.5A	N/A	N/A
4	Mobile phone	mobile Phone	Galaxy S9+	SM-G9650/DS	N/A

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	DC Line: Unshielded, Detachable 1.0m
2	N/A
3	USB Line: Unshielded, Detachable 0.6m
4	N/A

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



3. TEST PROCEDURES AND RESULTS

TRANSMITTER PARAMETERS

3.1 TRANSMITTER H-FIELD REQUIREMENTS

3.1.1 LIMITS OF TRANSMITTER H-FIELD REQUIREMENTS

Frequency Range (MHz)	H-field Strength Limit (H _f) dBμA/m at 10 m
13.553 ≤ f < 13.567	42

3.1.2 TEST PROCEDURES

Please refer to Subclause 6.2.4 of EN 300 330 V2.1.1 (2017-02).

3.1.3 DEVIATION FROM TEST STANDARD

No deviation.

3.1.4 TEST SETUP

The EUT was placed on the turntable in semi anechoic chamber and supplied with nominated power source. It was adjusted to the maximum output power during the test.

3.1.5 TEST RESULTS

FREQUENCY (MHz)	H-field Strength (dBμA/m)	Polar 90°/180°	LIMIT (dBμA/m)	PASS / FAIL
13.56	19.84	180°	42	PASS
13.56	21.14	90°	42	PASS



3.2 PERMITTED RANGE OF OPERATING FREQUENCY/OPERATING FREQUENCY RANGES

3.2.1 LIMITS OF PERMITTED RANGE OF OPERATING FREQUENCY/OPERATING FREQUENCY RANGES

The permitted range of operating frequencies for intentional emissions shall be entirely within the frequency bands

Table 1: Short Range Devices within the 9 kHz to 30 MHz permitted frequency bands

	Frequency Bands/frequencies	Applications
Transmit and Receive	9 kHz to 90 kHz	Inductive devices, Generic use
Transmit and Receive	90 kHz to 119 kHz	Inductive devices, Generic use
Transmit and Receive	119 kHz to 140 kHz	Inductive devices, Generic use
Transmit and Receive	140 kHz to 148,5 kHz	Inductive devices, Generic use
Transmit and Receive	148,5 kHz to 5 MHz	Inductive devices, Generic use
Transmit and Receive	400 kHz to 600 kHz	RFID only
Transmit and Receive	5 MHz to 30 MHz	Inductive devices, Generic use
Transmit and Receive	3 155 kHz to 3 400 kHz	Inductive devices, Generic use
Transmit and Receive	984 kHz to 7 484 kHz (Note 3, Centre frequency is 4 234 kHz)	Inductive devices, Railway applications
Transmit and Receive	4 516 kHz	Inductive devices, Railway applications
Transmit and Receive	6 765 kHz to 6 795 kHz	Inductive devices, Generic use
Transmit and Receive	7 400 kHz to 8 800 kHz	Inductive devices, Generic use
Transmit and Receive	10 200 kHz to 11,000 MHz	Inductive devices, Generic use
Transmit and Receive	11,810 MHz to 15,310 MHz (Centre frequency is 13,56 MHz)	RFID only
Transmit and Receive	12,5 MHz to 20 MHz	Inductive devices, Wireless healthcare
Transmit and Receive	13,553 MHz to 13,567 MHz	Inductive devices, Generic use
Transmit and Receive	26,957 MHz to 27,283 MHz	Inductive devices, Generic use
Transmit and Receive	27,090 MHz to 27,100 MHz	Inductive devices, Railway applications
NOTE 1: In addition, it should be noted that other frequency bands may be available in a country within the frequency range 9 kHz to 30 MHz.		
NOTE 2: On non-harmonised parameters, national administrations may impose certain conditions such as the type of modulation, frequency, channel/frequency separations, maximum transmitter radiated power, duty cycle, and the inclusion of an automatic transmitter shut-off facility, as a condition for the issue of an Individual Rights for use of spectrum or General Authorization, or as a condition for use under "licence exemption" as it is in most cases for Short Range Devices.		
NOTE 3: Transmitting only on receipt of a Balise/Eurobalise tele-powering signal from a train.		

3.2.2 TEST PROCEDURES

Please refer to Subclause 6.2.2.2 of EN 300 330 V2.1.1 (2017-02)

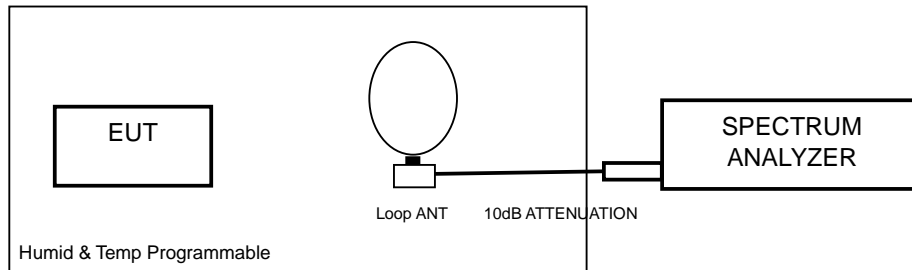
3.2.3 DEVIATION FROM TEST STANDARD

No deviation.



3.2.4 TEST SETUP

Under normal use condition, the transmitter will transmit power only when the EUT power on.



3.2.5 TEST RESULTS

Frequency (13.56MHz)			Measured Frequencies		Limit	Pass/Fail
Test Condition			F _L (MHz)	F _H (MHz)		
T _{nom} (°C)	+20	V _{nom} (v)	13.5574	13.5624	F _L > 13.553 MHz and F _H < 13.567 MHz	Pass
T _{min} (°C)	-20	V _{min} (v)	13.5565	13.5628		
		V _{max} (v)	13.5571	13.5619		
T _{max} (°C)	+80	V _{min} (v)	13.5569	13.5625		
		V _{max} (v)	13.5570	13.5625		



3.3 MODULATION BANDWIDTH

3.3.1 LIMITS OF MODULATION BANDWIDTH

The modulation bandwidth shall be within the assigned frequency band see table 1 or $\pm 7.5\%$ of the carrier frequency whichever is the smallest. For RFID and EAS systems, the modulation bandwidth shall be within the transmitter emission boundary of figure I.1, I.2, I.3 and I.4.

For further information, see CEPT/ERC/REC 70-03 [i.1] or ERC/ECC/CEPT Decisions as implemented through National Radio Interfaces (NRI) and additional NRI as relevant.

3.3.2 TEST PROCEDURES

Please refer to Subclause 6.2.3 of EN 300 330 V2.1.1 (2017-02)

3.3.3 DEVIATION FROM TEST STANDARD

No deviation.

3.3.4 TEST SETUP

The EUT was placed on the turntable in semi anechoic chamber and supplied with nominated power source. It was adjusted to the maximum output power during the test.



3.3.5 TEST RESULTS

FREQUENCY	13.56MHz
-----------	----------

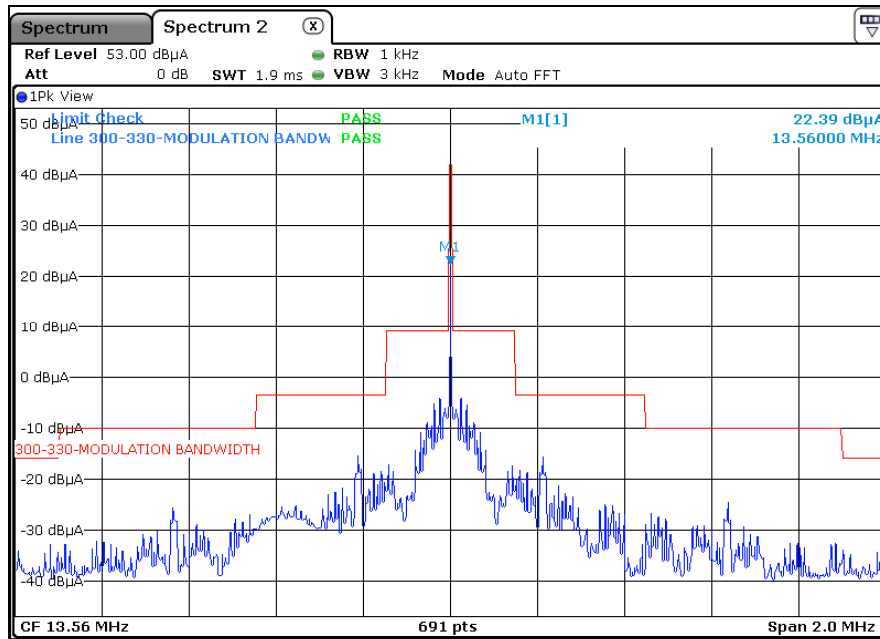


Figure I.3



3.4 SPURIOUS DOMAIN EMISSION LIMITS

3.4.1 LIMITS OF SPURIOUS DOMAIN EMISSION LIMITS (<30MHz)

FREQUENCY RANGE	9 kHz ≤ f < 10MHz(at 10m)	10MHz ≤ f < 30MHz(at 10m)
Limit (Operating)	27 dBμA/m at 9kHz descending 3 dB/oct	-3.5 dBμA/m
	78.5 dBμV/m descending 3 dB/oct	48 dBμV/m
Limit (Standby)	5.5 dBμA/m at 9kHz descending 3 dB/oct	-25 dBμA/m
	57 dBμV/m descending 3 dB/oct	26.5 dBμV/m

3.4.2 LIMITS OF SPURIOUS DOMAIN EMISSION LIMITS (≥30MHz)

FREQUENCY RANGE	47MHz to 74MHz 87.5MHz to 118MHz 174MHz to 230MHz 470MHz to 790MHz	OTHER FREQUENCIES BELOW 1GHz
Limit (Operating)	4nW (-54dBm)	250nW (-36dBm)
Limit (Standby)	2nW (-57dBm)	2nW (-57dBm)

3.4.3 TEST PROCEDURES

Please refer to Subclause 6.2.8 and 6.2.9 of EN 300 330 V2.1.1 (2017-02)

3.4.4 DEVIATION FROM TEST STANDARD

No deviation.

3.4.5 TEST SETUP

- 1 For the actual test configuration, please refer to the related Item in this test report (Photographs of the Test Configuration).
- 2 Set the transmitter part of EUT under transmission condition continuously at specific channel frequency.



3.4.6 TEST RESULTS

SPURIOUS EMISSION FREQUENCY RANGE	9kHz ~ 30MHz	OPERATING STATE	Operating
--	--------------	------------------------	-----------

SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Angle (°)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)
0.035	180	29.41	72.59	-43.18
0.064	180	28.63	69.99	-41.36
0.071	180	25.15	69.54	-44.39
0.078	180	23.93	69.16	-45.23
0.099	180	23.15	68.13	-44.98
0.129	180	26.30	66.99	-40.69
0.175	180	39.65	65.63	-25.98
0.619	180	33.21	60.19	-26.98
2.522	180	26.63	54.11	-27.48
5.719	180	25.54	50.57	-25.03
8.110	180	26.83	49.05	-22.22
11.079	180	25.85	48.00	-22.15
0.035	90	29.28	72.59	-43.31
0.064	90	27.95	69.99	-42.04
0.071	90	24.32	69.54	-45.22
0.078	90	24.58	69.16	-44.58
0.093	90	23.58	68.40	-44.82
0.129	90	25.95	66.99	-41.04
0.156	90	40.98	66.13	-25.15
0.622	90	33.71	60.17	-26.46
3.293	90	26.41	52.95	-26.54
4.129	90	26.87	51.97	-25.10
6.914	90	27.07	49.74	-22.67
8.688	90	26.61	48.76	-22.15

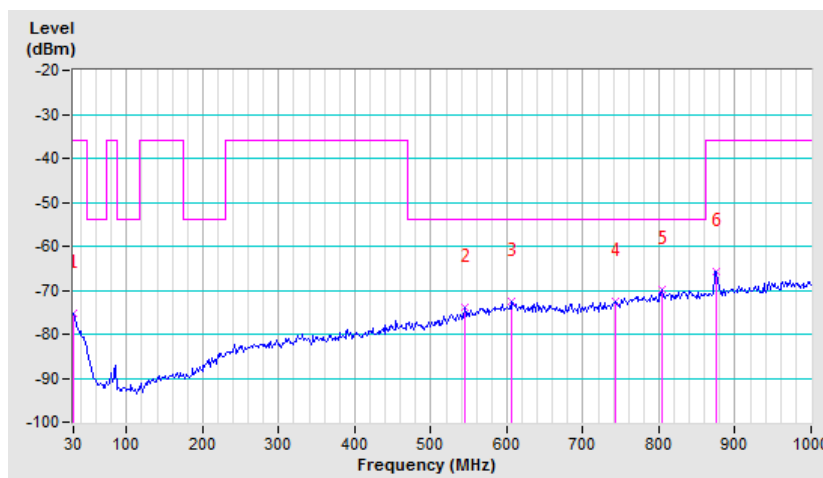


SPURIOUS EMISSION FREQUENCY RANGE	9kHz ~ 30MHz	OPERATING STATE	Standby
--	--------------	------------------------	---------

SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Angle(°)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)
0.012	180	22.58	55.91	-33.33
0.019	180	23.75	53.67	-29.92
0.026	180	23.88	52.44	-28.56
0.035	180	28.97	51.10	-22.13
0.064	180	26.96	48.49	-21.53
0.129	180	25.66	45.49	-19.83
0.156	180	39.28	44.63	-5.35
3.698	180	25.78	30.95	-5.17
7.870	180	26.07	27.68	-1.61
8.970	180	25.77	27.12	-1.35
17.122	180	24.29	26.50	-2.21
21.860	180	25.71	26.50	-0.79
0.035	90	29.13	51.09	-21.96
0.039	90	24.11	50.67	-26.56
0.045	90	22.23	50.02	-27.79
0.064	90	27.21	48.49	-21.28
0.078	90	22.20	47.64	-25.44
0.129	90	25.59	45.49	-19.90
0.158	90	39.79	44.59	-4.80
2.387	90	26.15	32.85	-6.70
5.456	90	26.26	29.27	-3.01
9.565	90	25.98	26.77	-0.79
14.544	90	25.20	26.50	-1.30
18.773	90	25.20	26.50	-1.30

SPURIOUS EMISSION FREQUENCY RANGE	30MHz ~ 1GHz	OPERATING STATE	Operating
--	--------------	------------------------	-----------

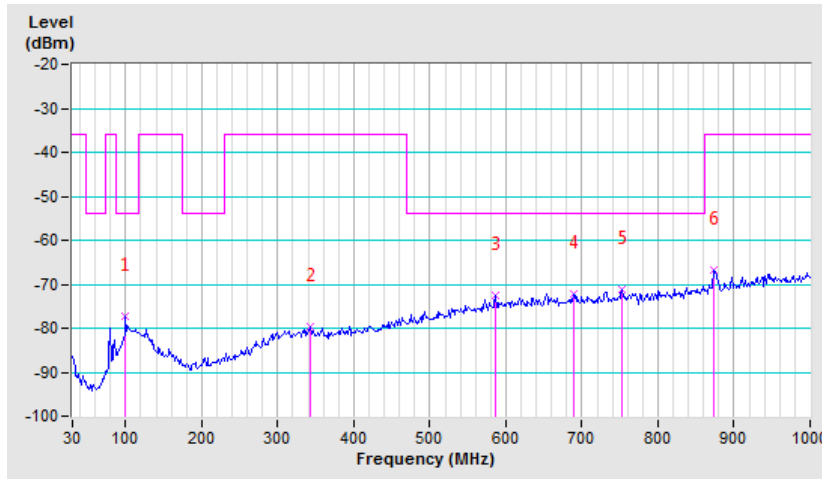
SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
30.00	H	-75.17	-36.00	-39.17
544.54	H	-73.82	-54.00	-19.82
605.16	H	-72.45	-54.00	-18.45
743.51	H	-72.37	-54.00	-18.37
804.13	H	-69.68	-54.00	-15.68
875.64	H	-65.81	-36.00	-29.81





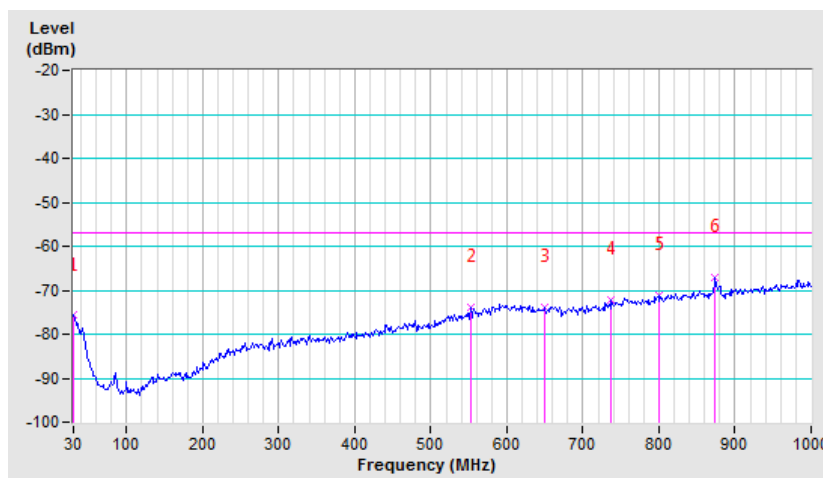
SPURIOUS EMISSION FREQUENCY RANGE	30MHz ~ 1GHz	OPERATING STATE	Operating
--	--------------	------------------------	-----------

SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
99.95	V	-77.25	-54.00	-23.25
342.45	V	-79.56	-36.00	-43.56
586.51	V	-72.47	-54.00	-18.47
689.10	V	-72.17	-54.00	-18.17
752.84	V	-71.09	-54.00	-17.09
872.53	V	-66.66	-36.00	-30.66



SPURIOUS EMISSION FREQUENCY RANGE	30MHz ~ 1GHz	OPERATING STATE	Standby
--	--------------	------------------------	---------

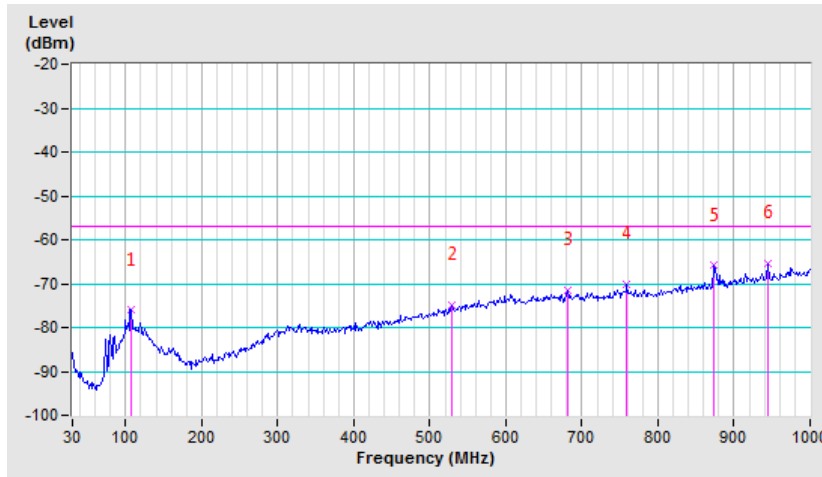
SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
30.00	H	-75.72	-57.00	-18.72
552.31	H	-73.91	-57.00	-16.91
650.24	H	-73.77	-57.00	-16.77
737.29	H	-72.19	-57.00	-15.19
799.47	H	-71.06	-57.00	-14.06
874.09	H	-67.06	-57.00	-10.06





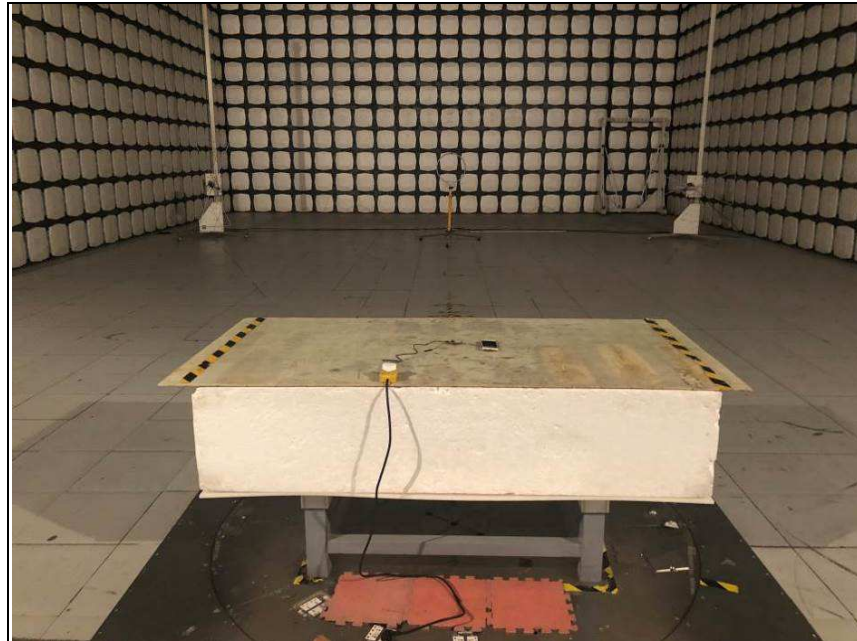
SPURIOUS EMISSION FREQUENCY RANGE	30MHz ~ 1GHz	OPERATING STATE	Standby
--	--------------	------------------------	---------

SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
107.72	V	-76.05	-57.00	-19.05
528.99	V	-74.99	-57.00	-17.99
681.33	V	-71.56	-57.00	-14.56
759.05	V	-70.21	-57.00	-13.21
874.09	V	-65.85	-57.00	-8.85
944.04	V	-65.48	-57.00	-8.48



4. PHOTOGRAPHS OF THE TEST CONFIGURATION

SPURIOUS EMISSION (9KHz-30MHz)



SPURIOUS EMISSION (30MHz-1GHz)





5. APPENDIX A – MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

No any modifications were made to the EUT by the lab during the test.

--- END ---