



FCC Test Report

FCC ID	:	2AX7S-ATC63E
Equipment	:	Tablet PC
Model No.	:	ATC63E
Brand Name	:	AlMobile
Applicant	:	AlMobile Co., Ltd.
Address	:	6F,No. 166,Section 4, Chengde Road, Shilin District, Taipei City, 11167 Taiwan
Standard	:	47 CFR FCC Part 15.247
Received Date	:	Jan. 07, 2022
Tested Date	:	May 16 ~ May 23, 2022

We, International Certification Corporation, would like to declare that the tested sample has been evaluated and in compliance with the requirement of the above standards. The test results contained in this report refer exclusively to the product. It shall not be reproduced except in full without the written approval of our laboratory.

Reviewed by:

Approved by:

ong Chen

Along Cherk/ Assistant Manager

Gary Chang / Manager



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Release Record

Report No.	Version	Description	Issued Date
FR210701AE	Rev. 01	Initial issue	Aug. 17, 2022



Summary of Test Results

FCC Rules	Test Items	Measured	Result
15.207	AC Power Line Conducted Emissions	[dBuV]: 0.447MHz 39.48 (Margin -7.45dB) - AV	Pass
15.247(d)	Unwanted Emissions	[dBuV/m at 3m]: 71.64MHz	Pass
15.209		38.86 (Margin -1.14dB) - QP	F 855
15.247(b)(3)	Conducted Output Power	Power [dBm]: 6.67	Pass
15.247(a)(2)	6dB Bandwidth	Meet the requirement of limit	Pass
15.247(e)	Power Spectral Density	Meet the requirement of limit	Pass
15.203	Antenna Requirement	Meet the requirement of limit	Pass

Declaration of Conformity:

The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.

Comments and Explanations:

The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.



1 General Description

1.1 Information

The EUT had six SKU options (SKU1, SKU2, SKU3, SKU1-2, SKU2-2 and SKU3-2). Six options were assessed and SKU2-2 was found to be worst case and was selected for the final testing.

1.1.1 SKU Details

The following SUKs are provided to this EUT.

SKU No.	SKU1	SKU2	SKU3	SKU1-2	SKU2-2	SKU3-2
SKU Description	Intel i3-1115G4E	Intel i5-1145G7E	Intel Celeron 6305E	Intel i3-1115G4E	Intel i5-1145G7E	Intel Celeron 6305E
p			13.	3"		
M/B	1310A3325001	1310A3325002	1310A3325003	1310A3325001	1310A3325002	1310A3325003
VO Beerd		1310A332470	1		1310A3388801	
I/O Board	Aud	lio Codec ALC2	256M	Audio Codec ALC888S		
Memory (LPDDR4)	Samsung 16GB			Samsung 16GB		
Memory (LFDDR4)	M471A2K43EB1-CWE			M471A2K43EB1-CWE		
Storage (SSD)		Phison 1TB		Phison 1TB		
Storage (SSD)	PM81024	IGPKTCB5BIN	V-E13T4A	PM81024GPKTCB5BINV-E13T4A		
	Intel			Intel		
WLAN Module	AX210.NGWGII.NV			AX210.NGWGII.NV		
Note: The above SU was recorded in this		-2 was selected	d as a represent	ative one for th	e final test and	l only its data

1.1.2 Specification of the Equipment under Test (EUT)

RF General Information							
Frequency Range (MHz)	Bluetooth Mode	Ch. Freq. (MHz)	Channel Number	Data Rate			
	83.5 V5.0 LE 24	0400 0400	0-39 [40]	125 kbps			
2400-2483.5				500 kbps			
2400-2463.5		2402-2480		1 Mbps			
				2 Mbps			
Note: Bluetooth LE (L	Note: Bluetooth LE (Low energy) uses GFSK modulation.						



1.1.3 Antenna Details

Ant. No.	Brand	Model	Туре	Connector	Gain (dBi)
1	AWAN	AYF6Y-100184	PIFA	UFL	2.68

1.1.4 Power Supply Type of Equipment under Test (EUT)

Power Supply Type	19 Vdc from adapter 10.8 Vdc from battery

1.1.5 Accessories

	Accessories				
No.	Equipment	Description			
1	Adapter	Brand: FSP Model: FSP090-DBBN3 I/P: 100-240Vac, 50-60Hz, 1.5A O/P: 19.0Vdc, 4.74A, 90.0W Power Line: AC: 1m non-shielded without core DC: 1.45m non-shielded with one core			
2	Adapter	Brand: FSP Model: FSP090-RBBM1 I/P: 100-240Vac, 50-60Hz, 1.5-0.6A O/P: 19.0Vdc, 4.74A, 90.0W Power Line: AC: 1m non-shielded without core DC: 1.4m non-shielded with one core			
3	Rechargeable Li-ion Battery	Model: ATC-63E-BAT Normal Voltage: 10.8Vdc Rating: 4660mAh (50.3Wh) Charge Voltage Limit:12.6Vdc			

Note: Two adapters (FSP090-DBBN3 and FSP090-RBBM1) had been covered during the pretest, and found that FSP090-DBBN3 adapter was the worst case and was selected for final test.



1.1.6 Channel List

	Frequency band (MHz)				2400~2	2483.5	
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
37	2402	9	2422	18	2442	28	2462
0	2404	10	2424	19	2444	29	2464
1	2406	38	2426	20	2446	30	2466
2	2408	11	2428	21	2448	31	2468
3	2410	12	2430	22	2450	32	2470
4	2412	13	2432	23	2452	33	2472
5	2414	14	2434	24	2454	34	2474
6	2416	15	2436	25	2456	35	2476
7	2418	16	2438	26	2458	36	2478
8	2420	17	2440	27	2460	39	2480

1.1.7 Test Tool and Duty Cycle

Test Tool	DRTU, Version: V0.1032.22.130.0					
Modulation Mode	Duty Cycle Of Test Signal (%) Duty Factor (dB)					
BT-LE(125kbps)	98.39%	0.07				
BT-LE(500kbps)	92.19%	0.35				
BT-LE(1Mbps)	86.24%	0.64				
BT-LE(2Mbps)	59.07%	2.29				

1.1.8 Power Index of Test Tool

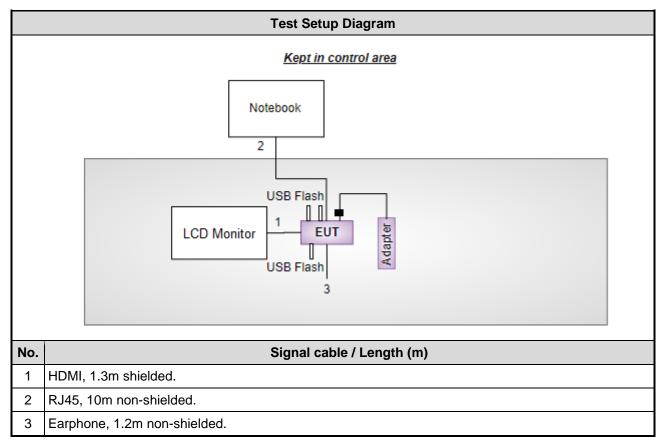
Modulation Mode	Test Frequency (MHz)				
woodulation wode	2402	2440	2480		
BT-LE(125kbps)	default	default	default		
BT-LE(500kbps)	default	default	default		
BT-LE(1Mbps)	default	default	default		
BT-LE(2Mbps)	default	default	default		



1.2 Local Support Equipment List

	Support Equipment List				
No.	Equipment	Brand	Model	FCC ID	Remarks
1	Notebook	DELL	Latitude E5470	DoC	
2	USB Flash	pqi(USB 3.1 Type-C)	Connect 313/16GB		
3	USB Flash	Transcend(USB 3.0)	JetFlash 700		
4	USB Flash	Transcend(USB 3.0)	JetFlash 700		
5	Earphone	Samsung	EHS64		
6	LCD Monitor	ASUS(27")	MX27UCS		

1.3 Test Setup Chart





1.4 Test Equipment List and Calibration Data

Test Item	Conducted Emission				
Test Site	Conduction room 1 / (CO01-WS)			
Tested Date	May 16, 2022				
Instrument	Brand	Model No.	Serial No.	Calibration Date	Calibration Until
Receiver	R&S	ESR3	101658	Feb. 16, 2022	Feb. 15, 2023
LISN	R&S	ENV216	101579	Apr. 21, 2022	Apr. 20, 2023
LISN (Support Unit)	SCHWARZBECK	Schwarzbeck 8127	8127667	Jan .07, 2022	Jan .06, 2023
RF Cable-CON	Woken	CFD200-NL	CFD200-NL-001	Oct. 19, 2021	Oct. 18, 2022
50 ohm terminal (Support Unit)	NA	50	04	May 25, 2021	May 24, 2022
Measurement Software	AUDIX	e3	6.120210k	NA	NA

Test Item	Radiated Emission				
Test Site	966 chamber1 / (03C	H01-WS)			
Tested Date	May 16, 2022				
Instrument	Brand	Model No.	Serial No.	Calibration Date	Calibration Until
Receiver	R&S	ESR3	101657	Mar. 15, 2022	Mar. 14, 2023
Spectrum Analyzer	R&S	FSV40	101498	Nov. 29, 2021	Nov. 28, 2022
Loop Antenna	R&S	HFH2-Z2	100330	Nov. 08, 2021	Nov. 07, 2022
Bilog Antenna	SCHWARZBECK	VULB9168	VULB9168-522	Jun. 30, 2021	Jun. 29, 2022
Horn Antenna 1G-18G	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D 1096	Dec. 03, 2021	Dec. 02, 2022
Horn Antenna 18G-40G	SCHWARZBECK	BBHA 9170	BBHA 9170508	Jan. 11, 2022	Jan. 10, 2023
Preamplifier	EMC	EMC02325	980225	Jun. 29, 2021	Jun. 28, 2022
Preamplifier	Agilent	83017A	MY39501308	Sep. 28, 2021	Sep. 27, 2022
Preamplifier	EMC	EMC184045B	980192	Jul. 14, 2021	Jul. 13, 2022
Loop Antenna Cable	KOAX KABEL	101354-BW	101354-BW	Oct. 05, 2021	Oct. 04, 2022
LF cable 3M	Woken	CFD400NL-LW	CFD400NL-001	Oct. 05, 2021	Oct. 04, 2022
LF cable 11M	EMC	EMCCFD400-NW-N W-11000	200801	Oct. 05, 2021	Oct. 04, 2022
LF cable 1M	EMC	EMCCFD400-NM-N M-1000	160502	Oct. 05, 2021	Oct. 04, 2022
RF Cable	EMC	EMC104-35M-35M- 8000	210920	Oct. 05, 2021	Oct. 04, 2022
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16019/4	Oct. 05, 2021	Oct. 04, 2022
Measurement Software	AUDIX	e3	6.120210g	NA	NA



Test Item	RF Conducted				
Test Site	(TH01-WS)				
Tested Date	May 23, 2022				
Instrument	Brand	Model No.	Serial No.	Calibration Date	Calibration Until
Spectrum Analyzer	R&S	FSV40	101910	Apr. 18, 2022	Apr. 17, 2023
Power Meter	Anritsu	ML2495A	1241002	Nov. 07, 2021	Nov. 06, 2022
Power Sensor	Anritsu	MA2411B	1207366	Nov. 07, 2021	Nov. 06, 2022
Measurement Software	Sporton	SENSE-15247_FS	V5.10.7.11	NA	NA

1.5 Test Standards

47 CFR FCC Part 15.247 ANSI C63.10-2013

1.6 Reference Guidance

FCC KDB 558074 D01 15.247 Meas Guidance v05r02

1.7 Deviation from Test Standard and Measurement Procedure

None

1.8 Measurement Uncertainty

The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2)).

Measurement Uncertainty	
Parameters	Uncertainty
Bandwidth	±34.130 Hz
Conducted power	±0.808 dB
Power density	±0.583 dB
Conducted emission	±2.715 dB
AC conducted emission	±2.92 dB
Unwanted Emission ≤ 1GHz	±3.41 dB
Unwanted Emission > 1GHz	±4.59 dB



2 Test Configuration

2.1 Testing Facility

Test Laboratory	International Certification Corporation
Test Site	CO01-WS, 03CH01-WS, TH01-WS
Address of Test Site	No.3-1, Lane 6, Wen San 3rd St., Kwei Shan Dist., Tao Yuan City 33381, Taiwan (R.O.C.)
	TH/0700

➢ FCC Designation No.: TW2732

➢ FCC site registration No.: 181692

- ➢ ISED#: 10807A
- ➤ CAB identifier: TW2732

2.2 The Worst Test Modes and Channel Details

AC Power Line Conducted EmissionsBT-LE(1Mbps)2402Unwanted Emissions < 1GHzBT-LE(1Mbps)2402Unwanted Emissions > 1GHzBT-LE(1Mbps) BT-LE(2Mbps)2402, 2440, 2480Conducted Output Power 6dB bandwidth Power spectral densityBT-LE(125kbps) BT-LE(2Mbps)2402, 2440, 2480	Test item	Mode	Test Frequency (MHz)	Test Configuration
Unwanted Emissions > 1GHzBT-LE(1Mbps) BT-LE(2Mbps)2402, 2440, 2480Conducted Output Power 6dB bandwidth Dewer epoctral densityBT-LE(500kbps) 	AC Power Line Conducted Emissions	BT-LE(1Mbps)	2402	
DriverBT-LE(2Mbps)2402, 2440, 2480Conducted Output PowerBT-LE(125kbps)6dB bandwidthBT-LE(500kbps)Driver operated densityBT-LE(1Mbps)	Unwanted Emissions \leq 1GHz	BT-LE(1Mbps)	2402	
BT-LE(500kbps)2402, 2440, 2480BT-LE(1Mbps)BT-LE(1Mbps)	Unwanted Emissions > 1GHz		2402, 2440, 2480	
	6dB bandwidth	BT-LE(500kbps) BT-LE(1Mbps)	2402, 2440, 2480	

1. The EUT was pretested with 3 orientations placed on the table for the radiated emission measurement – X, Y, and Z-plane. The **Z-plane** results were found as the worst case and were shown in this report.



3 Transmitter Test Results

3.1 6dB and Occupied Bandwidth

3.1.1 Limit of 6dB Bandwidth

The minimum 6dB bandwidth shall be at least 500 kHz.

3.1.2 Test Procedures

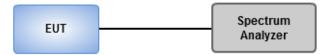
6dB Bandwidth

- 1. Set resolution bandwidth (RBW) = 100 kHz, Video bandwidth = 300 kHz.
- 2. Detector = Peak, Trace mode = max hold.
- 3. Sweep = auto couple, Allow the trace to stabilize.
- 4. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower) that are attenuated by 6dB relative to the maximum level measured in the fundamental emission.

Occupied Bandwidth

- 1. Set resolution bandwidth (RBW) = $1\% \sim 5\%$ of OBW, Video bandwidth = $3 \times RBW$
- 2. Detector = Sample, Trace mode = max hold.
- 3 Sweep = auto couple, Allow the trace to stabilize.
- 4. Use the OBW measurement function of spectrum analyzer to measure the occupied bandwidth.

3.1.3 Test Setup



3.1.4 Test Results

Ambient Condition23°C / 64%Tested ByBrad Wu

Refer to Appendix A.



3.2 Conducted Output Power

3.2.1 Limit of Conducted Output Power

Conducted power shall not exceed 1Watt.

Antenna gain <= 6dBi, no any corresponding reduction is in output power limit.

3.2.2 Test Procedures

A broadband RF power meter is used for output power measurement. The video bandwidth of power meter is greater than DTS bandwidth of EUT. If duty cycle of test signal is not 100 %, trigger and gating function of power meter will be enabled to capture transmission burst for measuring output power.

3.2.3 Test Setup



3.2.4 Test Results

Ambient Condition 23°C / 64%	Tested By	Brad Wu
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Refer to Appendix B.



3.3 **Power Spectral Density**

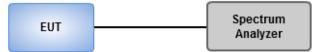
3.3.1 Limit of Power Spectral Density

Power spectral density shall not be greater than 8 dBm in any 3 kHz band.

3.3.2 Test Procedures

- 1. Set the RBW = 3 kHz, VBW = 10 kHz.
- 2. Detector = Peak, Sweep time = auto couple.
- 3. Trace mode = max hold, allow trace to fully stabilize.
- 4. Use the peak marker function to determine the maximum amplitude level.

3.3.3 Test Setup



3.3.4 Test Results

Ambient Condition23°C / 64%Tested ByBrad Wu

Refer to Appendix C.



3.4 Unwanted Emissions in Restricted Frequency Bands

3.4.1 Limit of Unwanted Emissions in Restricted Frequency Bands

Restricted Band Emissions Limit				
Frequency Range (MHz)	Field Strength (uV/m)	Field Strength (dBuV/m)	Measure Distance (m)	
0.009~0.490	2400/F(kHz)	48.5 - 13.8	300	
0.490~1.705	24000/F(kHz)	33.8 - 23	30	
1.705~30.0	30	29	30	
30~88	100	40	3	
88~216	150	43.5	3	
216~960	200	46	3	
Above 960	500	54	3	

Note 1:

Qusai-Peak value is measured for frequency below 1GHz except for 9–90 kHz, 110–490 kHz frequency band. Peak and average value are measured for frequency above 1GHz. The limit on average radio frequency emission is as above table. The limit on peak radio frequency emissions is 20 dB above the maximum permitted average emission limit **Note 2:**

Measurements may be performed at a distance other than what is specified provided. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor as below, Frequency at or above 30 MHz: 20 dB/decade Frequency below 30 MHz: 40 dB/decade.

3.4.2 Test Procedures

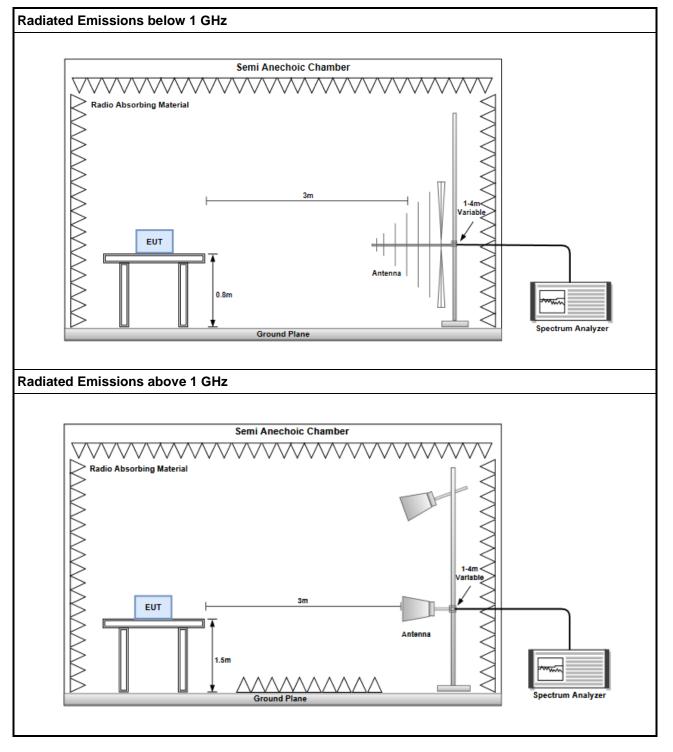
- Measurement is made at a semi-anechoic chamber that incorporates a turntable allowing a EUT rotation of 360°. A continuously-rotating, remotely-controlled turntable is installed at the test site to support the EUT and facilitate determination of the direction of maximum radiation for each EUT emission frequency. The EUT is placed at test table. For emissions testing at or below 1 GHz, the table height is 80 cm above the reference ground plane. For emission measurements above 1 GHz, the table height is 1.5 m
- 2. Measurement is made with the antenna positioned in both the horizontal and vertical planes of polarization. The measurement antenna is varied in height (1m ~ 4m) above the reference ground plane to obtain the maximum signal strength. Distance between EUT and antenna is 3 m.
- 3. This investigation is performed with the EUT rotated 360°, the antenna height scanned between 1 m and 4 m, and the antenna rotated to repeat the measurements for both the horizontal and vertical antenna polarizations.

Note:

- 1. 120kHz measurement bandwidth of test receiver and Quasi-peak detector is for radiated emission below 1GHz.
- 2. RBW=1MHz, VBW=3MHz and Peak detector is for peak measured value of radiated emission above 1GHz.
- 3. RBW=1MHz, VBW=1/T and Peak detector is for average measured value of radiated emission above 1GHz.



3.4.3 Test Setup



3.4.4 Test Results

Refer to Appendix D.



3.5 Emissions in non-restricted Frequency Bands

3.5.1 Emissions in non-restricted frequency bands limit

Peak power in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz.

3.5.2 Test Procedures

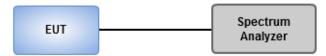
Reference level measurement

- 1. Set RBW=100kHz, VBW = 300kHz , Detector = Peak, Sweep time = Auto
- 2. Trace = max hold , Allow Trace to fully stabilize
- 3. Use the peak marker function to determine the maximum PSD level

Emission level measurement

- 1. Set RBW=100kHz, VBW = 300kHz , Detector = Peak, Sweep time = Auto
- 2. Trace = max hold , Allow Trace to fully stabilize
- 3. Scan Frequency range is up to 25GHz
- 4. Use the peak marker function to determine the maximum amplitude level

3.5.3 Test Setup



3.5.4 Test Results

Ambient Condition23°C / 64%	Tested By	Brad Wu
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Refer to Appendix E.



3.6 **AC Power Line Conducted Emissions**

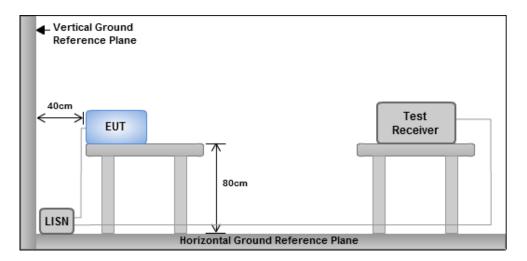
3.6.1 Limit of AC Power Line Conducted Emissions

Conducted Emissions Limit				
Frequency Emission (MHz)	Average			
0.15-0.5	66 - 56 *	56 - 46 *		
0.5-5	56	46		
5-30	60	50		
Note 1: * Decreases with the logarithm of the frequency.				

3.6.2 Test Procedures

- 1. The device is placed on a test table, raised 80 cm above the reference ground plane. The vertical conducting plane is located 40 cm to the rear of the device.
- The device is connected to line impedance stabilization network (LISN) and other accessories are 2. connected to other LISN. Measured levels of AC power line conducted emission are across the 50 Ω LISN port.
- 3. AC conducted emission measurements is made over frequency range from 150 kHz to 30 MHz.
- This measurement was performed with AC 120V/60Hz 4.

3.6.3 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

3.6.4 Test Results

Refer to Appendix F.



4 Test laboratory information

Established in 2012, ICC provides foremost EMC & RF Testing and advisory consultation services by our skilled engineers and technicians. Our services employ a wide variety of advanced edge test equipment and one of the widest certification extents in the business.

International Certification Corporation (EMC and Wireless Communication Laboratory), it is our definitive objective is to institute long term, trust-based associations with our clients. The expectation we set up with our clients is based on outstanding service, practical expertise and devotion to a certified value structure. Our passion is to grant our clients with best EMC / RF services by oriented knowledgeable and accommodating staff.

Our Test sites are located at Linkou District and Kwei Shan District. Location map can be found on our website <u>http://www.icertifi.com.tw</u>.

Linkou

Tel: 886-2-2601-1640 No.30-2, Ding Fwu Tsuen, Lin Kou District, New Taipei City, Taiwan (R.O.C.)

Kwei Shan

Tel: 886-3-271-8666 No.3-1, Lane 6, Wen San 3rd St., Kwei Shan Dist., Tao Yuan City 33381, Taiwan (R.O.C.) No.2-1, Lane 6, Wen San 3rd St., Kwei Shan Dist., Tao Yuan City 33381, Taiwan (R.O.C.)

Kwei Shan Site II

Tel: 886-3-271-8640 No.14-1, Lane 19, Wen San 3rd St., Kwei Shan Dist., Tao Yuan City 333, Taiwan (R.O.C.)

If you have any suggestion, please feel free to contact us as below information.

Tel: 886-3-271-8666 Fax: 886-3-318-0155 Email: ICC_Service@icertifi.com.tw

—END—



Gammary					
Mode	Max-N dB	Max-OBW	ITU-Code	Min-N dB	Min-OBW
	(Hz)	(Hz)		(Hz)	(Hz)
2.4-2.4835GHz	-	-	-	-	-
BT-LE(125kbps)	717.391k	1.075M	1M08F1D	605.072k	1.071M
BT-LE(500kbps)	699.275k	1.038M	1M04F1D	666.667k	1.031M
BT-LE(1Mbps)	692.029k	1.046M	1M05F1D	670.29k	1.038M
BT-LE(2Mbps)	1.246M	2.048M	2M05F1D	1.116M	2.041M

Max-N dB = Maximum 6dB down bandwidth; Max-OBW = Maximum 99% occupied bandwidth; Min-N dB = Minimum 6dB down bandwidth; Min-OBW = Minimum 99% occupied bandwidth

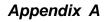


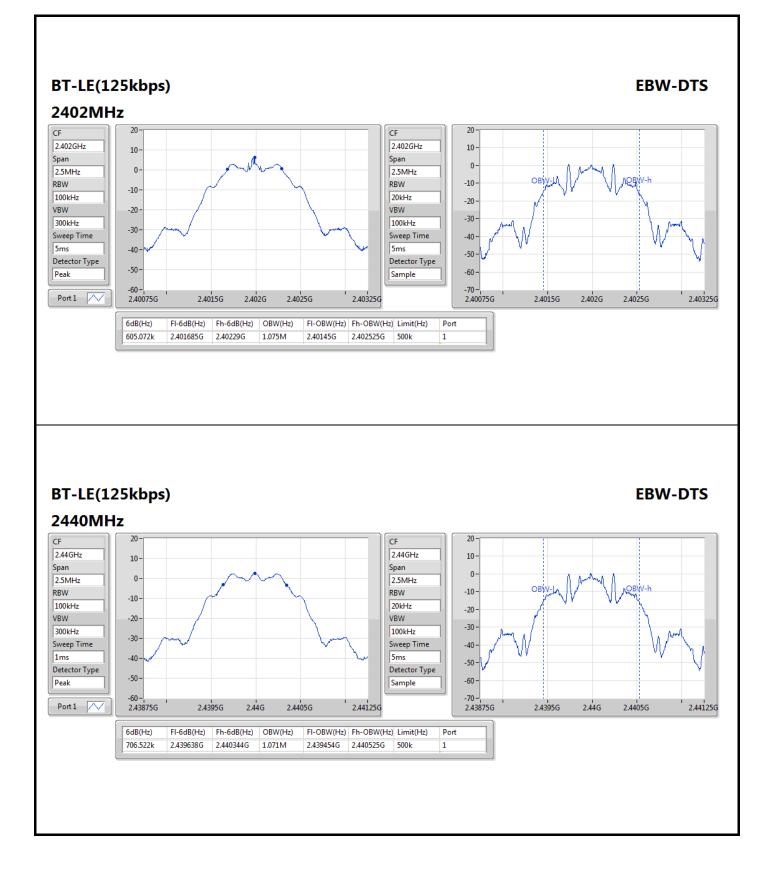
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Mode	Result	Limit	Port 1-N dB	Port 1-OBW
		(Hz)	(Hz)	(Hz)
BT-LE(125kbps)	-	-	-	-
2402MHz	Pass	500k	605.072k	1.075M
2440MHz	Pass	500k	706.522k	1.071M
2480MHz	Pass	500k	717.391k	1.071M
BT-LE(500kbps)	-	-	-	-
2402MHz	Pass	500k	666.667k	1.038M
2440MHz	Pass	500k	699.275k	1.031M
2480MHz	Pass	500k	677.536k	1.038M
BT-LE(1Mbps)	-	-	-	-
2402MHz	Pass	500k	673.913k	1.046M
2440MHz	Pass	500k	670.29k	1.038M
2480MHz	Pass	500k	692.029k	1.042M
BT-LE(2Mbps)	-	-	-	-
2402MHz	Pass	500k	1.246M	2.041M
2440MHz	Pass	500k	1.138M	2.041M
2480MHz	Pass	500k	1.116M	2.048M

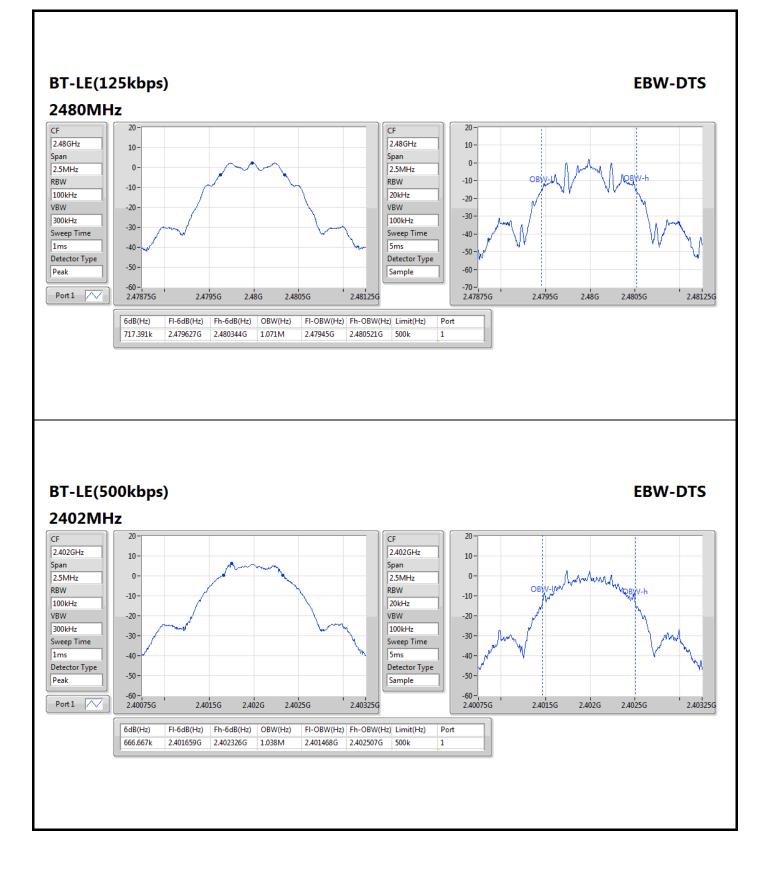
Port X-N dB = Port X 6dB down bandwidth; Port X-OBW = Port X 99% occupied bandwidth



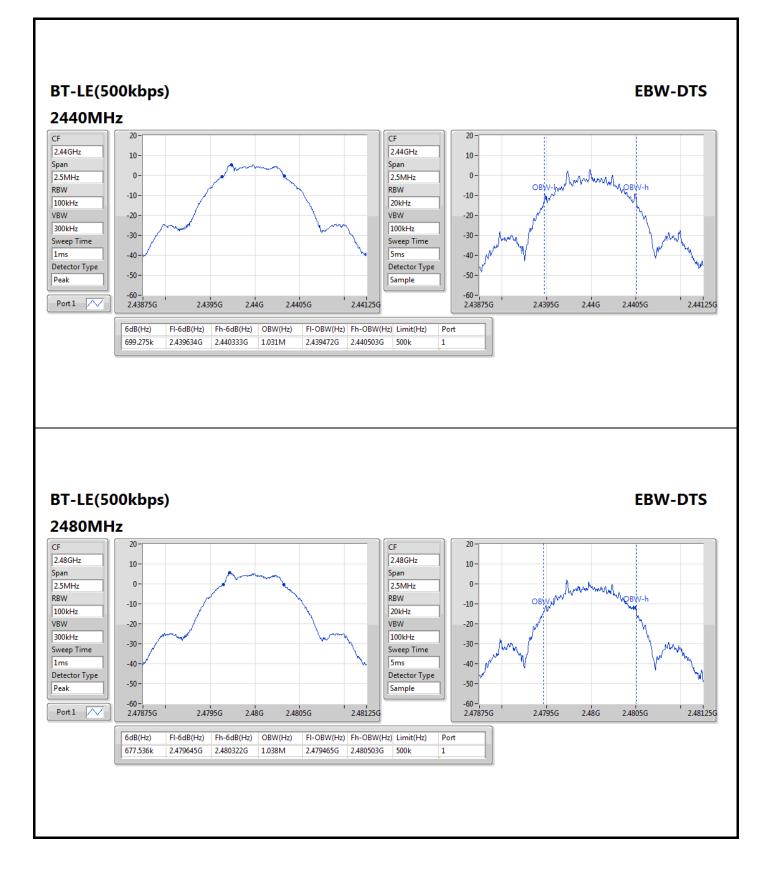




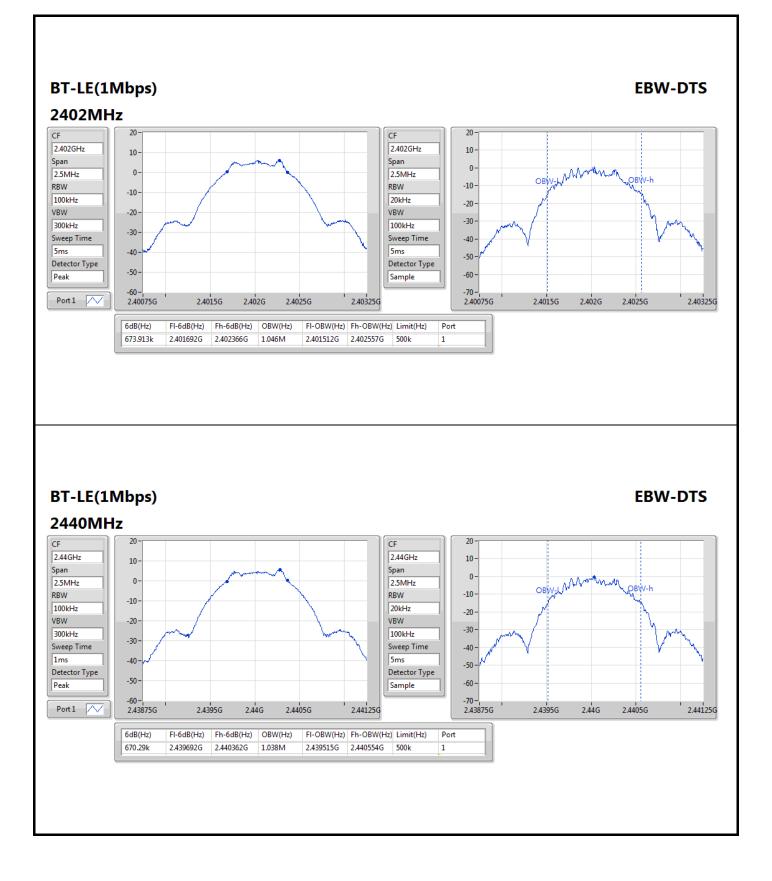




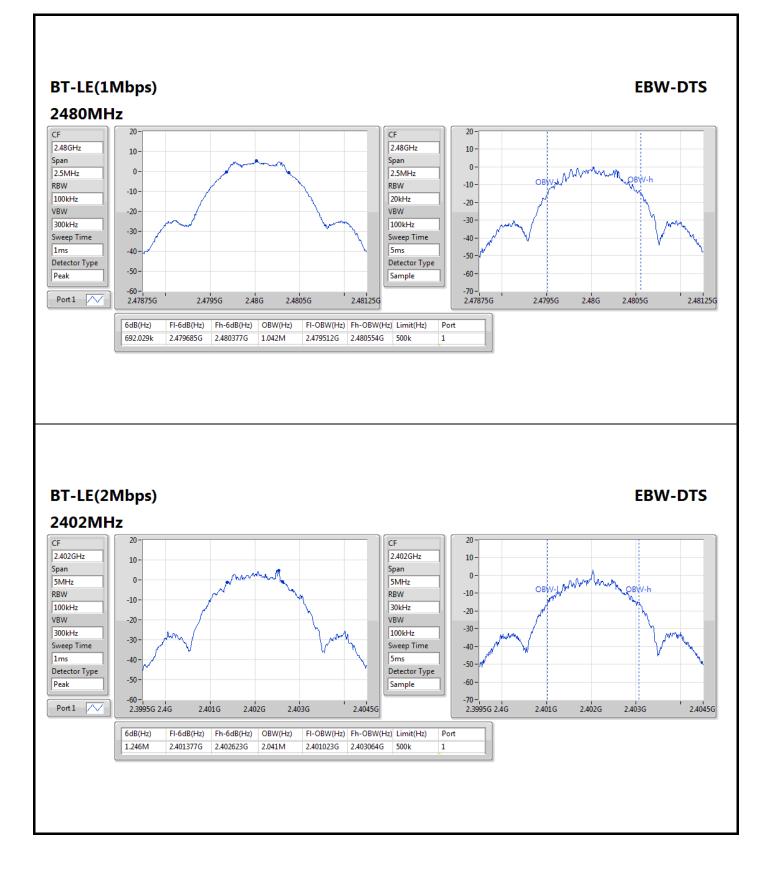




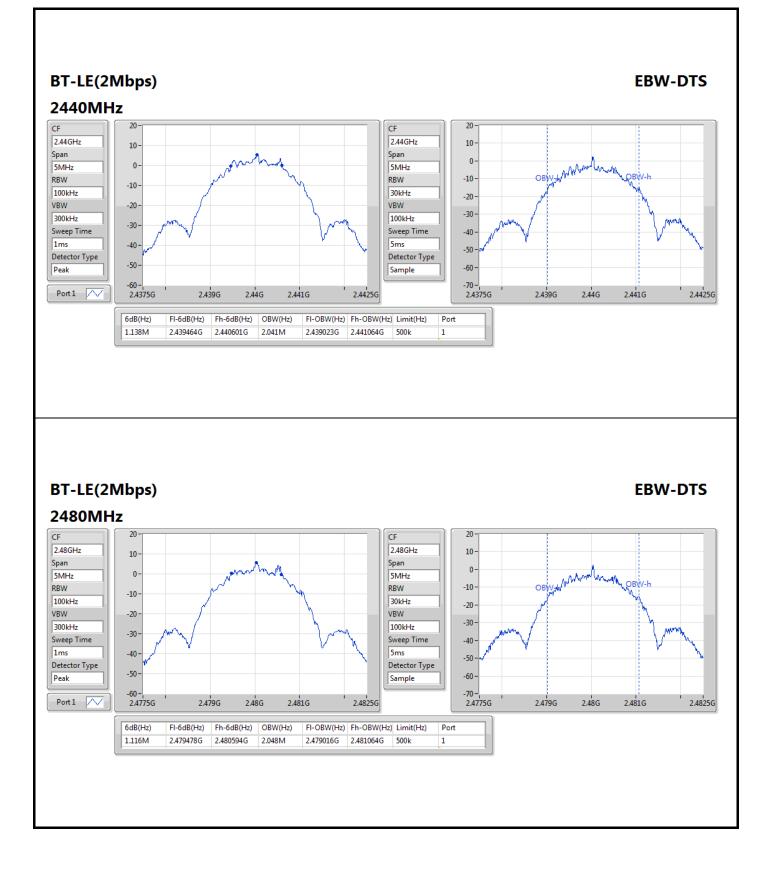














Mode	Power (dBm)	Power (W)
2.4-2.4835GHz	-	-
BT-LE(125kbps)	6.51	0.00448
BT-LE(500kbps)	6.55	0.00452
BT-LE(1Mbps)	6.57	0.00454
BT-LE(2Mbps)	6.56	0.00453

Result

Mode	Result	Antenna Gain	Power	Power Limit
		(dBi)	(dBm)	(dBm)
BT-LE(125kbps)	-	-	-	-
2402MHz	Pass	2.68	6.51	-
2440MHz	Pass	2.68	6.09	-
2480MHz	Pass	2.68	6.02	-
BT-LE(500kbps)	-	-	-	-
2402MHz	Pass	2.68	6.55	-
2440MHz	Pass	2.68	6.09	-
2480MHz	Pass	2.68	6.02	-
BT-LE(1Mbps)	-	-	-	-
2402MHz	Pass	2.68	6.57	-
2440MHz	Pass	2.68	6.12	-
2480MHz	Pass	2.68	6.03	-
BT-LE(2Mbps)	-	-	-	-
2402MHz	Pass	2.68	6.56	-
2440MHz	Pass	2.68	6.10	-
2480MHz	Pass	2.68	6.02	-

Note: Average power is for reference only.



Mode	Power (dBm)	Power (W)
2.4-2.4835GHz	-	-
BT-LE(125kbps)	6.65	0.00462
BT-LE(500kbps)	6.65	0.00462
BT-LE(1Mbps)	6.67	0.00465
BT-LE(2Mbps)	6.66	0.00463

Result

Mode	Result	Antenna Gain	Power	Power Limit
		(dBi)	(dBm)	(dBm)
BT-LE(125kbps)	-	-	-	-
2402MHz	Pass	2.68	6.65	30.00
2440MHz	Pass	2.68	6.21	30.00
2480MHz	Pass	2.68	6.12	30.00
BT-LE(500kbps)	-	-	-	-
2402MHz	Pass	2.68	6.65	30.00
2440MHz	Pass	2.68	6.21	30.00
2480MHz	Pass	2.68	6.12	30.00
BT-LE(1Mbps)	-	-	-	-
2402MHz	Pass	2.68	6.67	30.00
2440MHz	Pass	2.68	6.23	30.00
2480MHz	Pass	2.68	6.14	30.00
BT-LE(2Mbps)	-	-	-	-
2402MHz	Pass	2.68	6.66	30.00
2440MHz	Pass	2.68	6.22	30.00
2480MHz	Pass	2.68	6.13	30.00

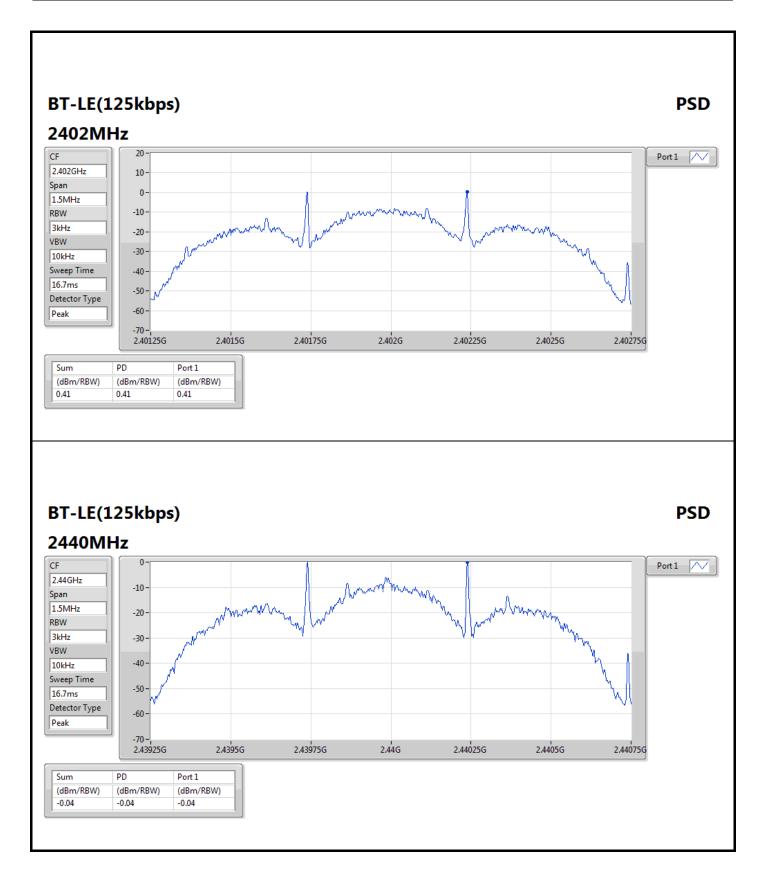


Mode	PD
	(dBm/3kHz)
2.4-2.4835GHz	-
BT-LE(125kbps)	0.41
BT-LE(500kbps)	0.06
BT-LE(1Mbps)	-10.15
BT-LE(2Mbps)	-11.41

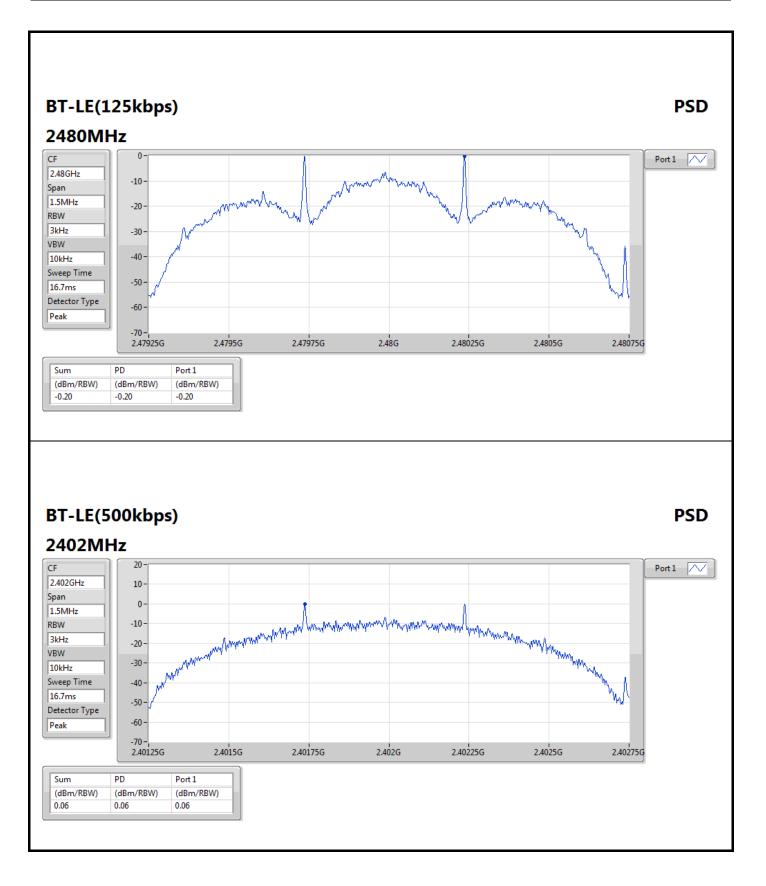
Result

Mode	Result	Antenna Gain	Power Density	Power Density Limit
		(dBi)	(dBm/3kHz)	(dBm/3kHz)
BT-LE(125kbps)	-	-	-	-
2402MHz	Pass	2.68	0.41	8.00
2440MHz	Pass	2.68	-0.04	8.00
2480MHz	Pass	2.68	-0.20	8.00
BT-LE(500kbps)	-	-	-	-
2402MHz	Pass	2.68	0.06	8.00
2440MHz	Pass	2.68	-0.32	8.00
2480MHz	Pass	2.68	-0.44	8.00
BT-LE(1Mbps)	-	-	-	-
2402MHz	Pass	2.68	-10.15	8.00
2440MHz	Pass	2.68	-10.79	8.00
2480MHz	Pass	2.68	-10.83	8.00
BT-LE(2Mbps)	-	-	-	-
2402MHz	Pass	2.68	-11.41	8.00
2440MHz	Pass	2.68	-11.94	8.00
2480MHz	Pass	2.68	-11.71	8.00

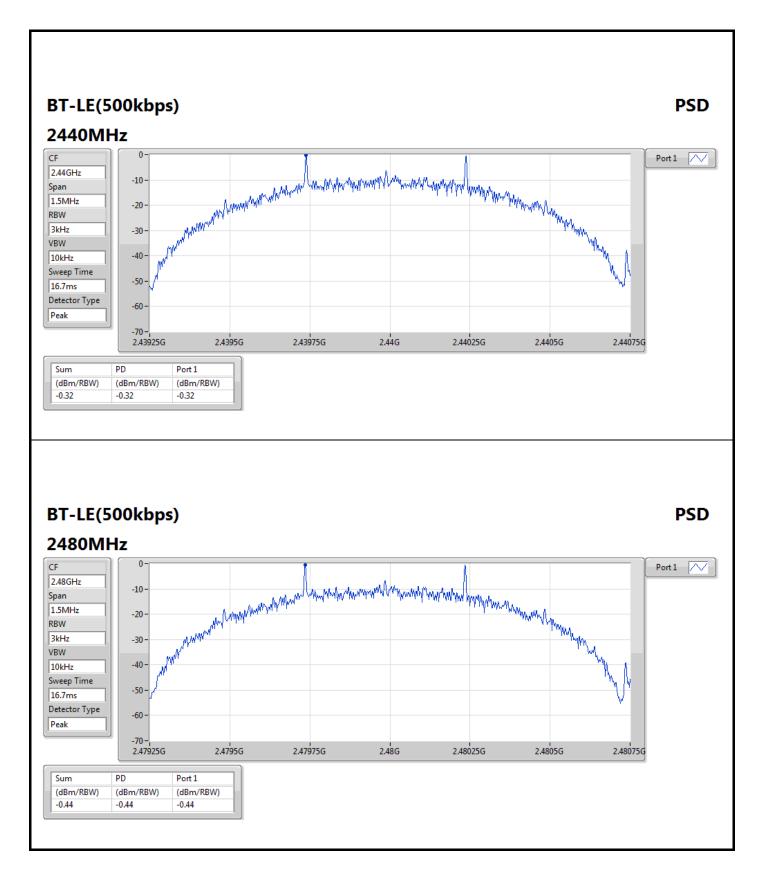




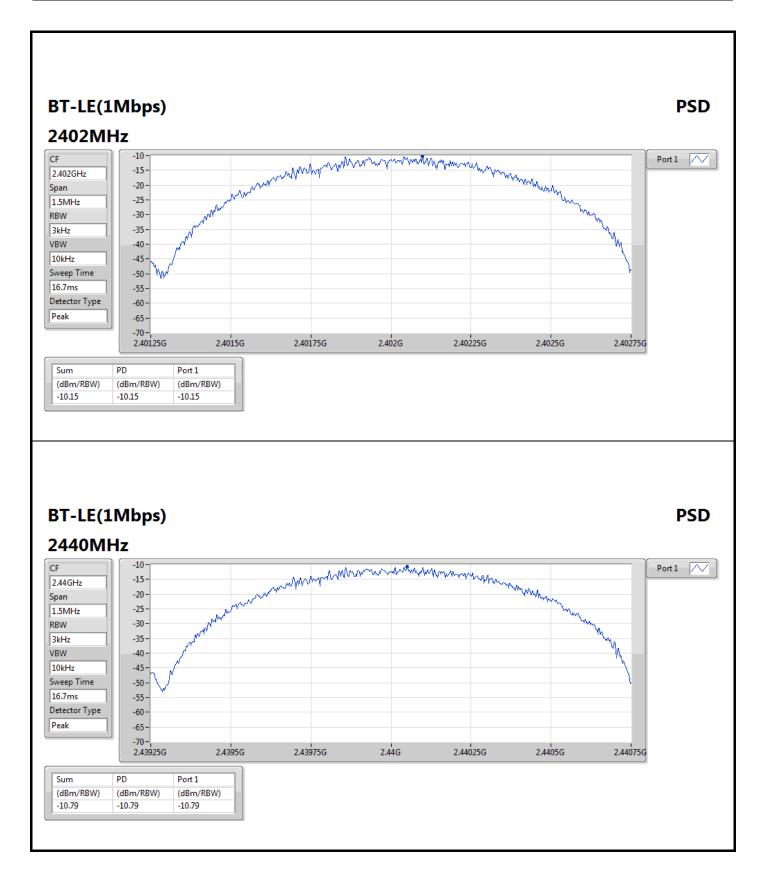




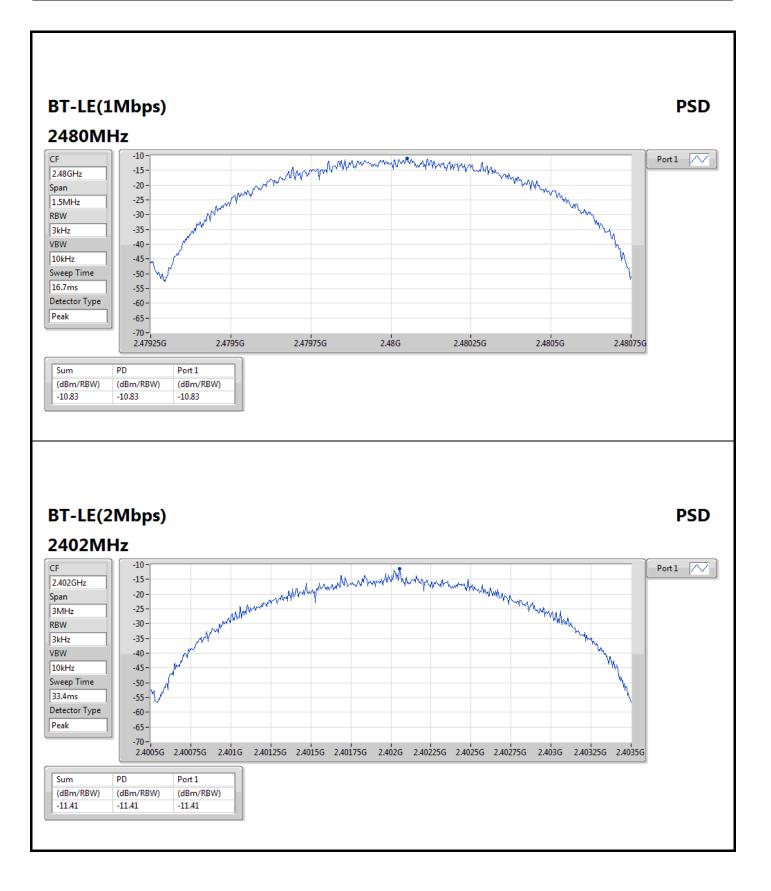




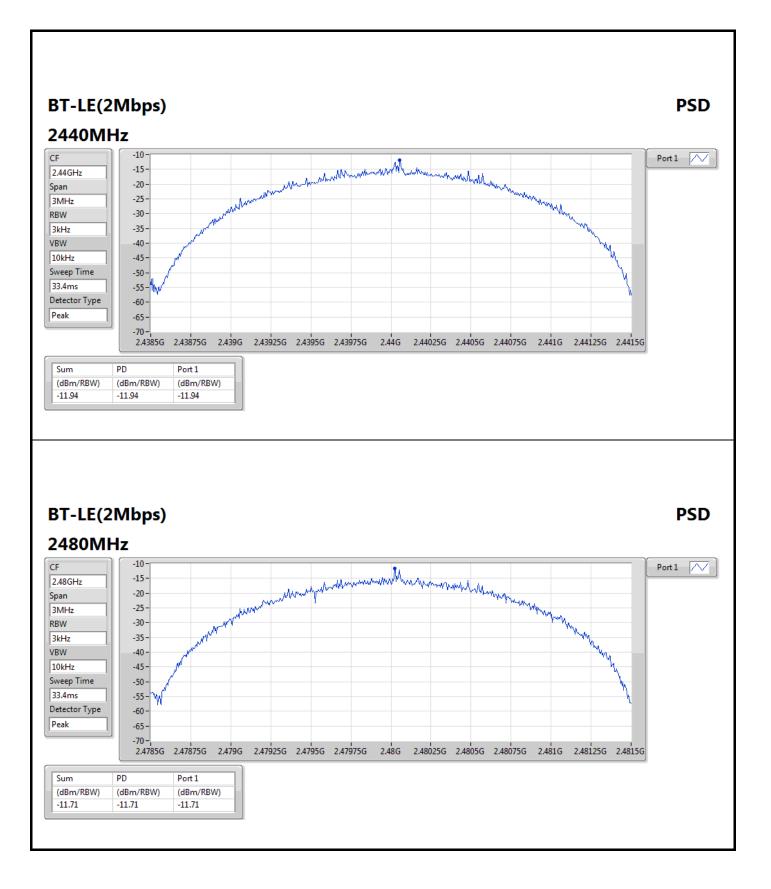






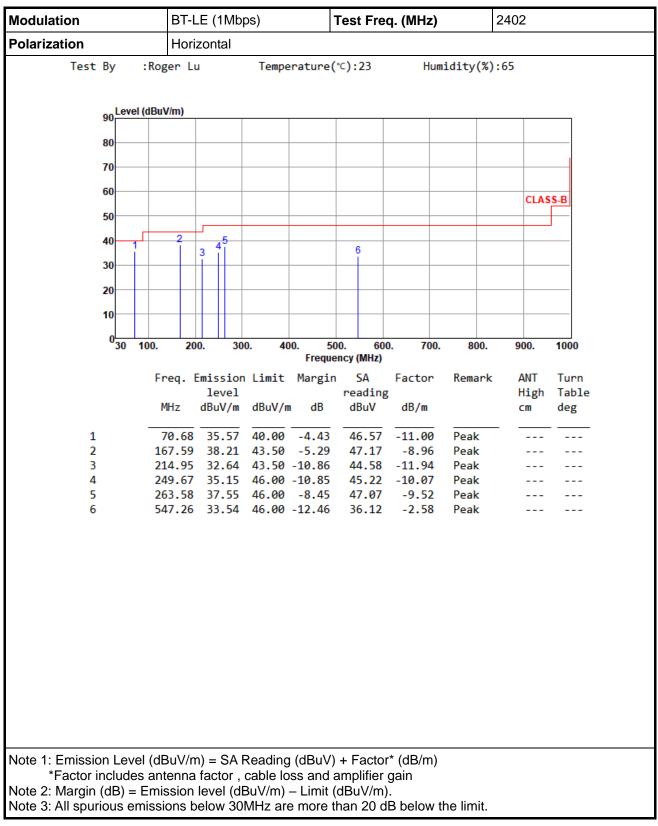




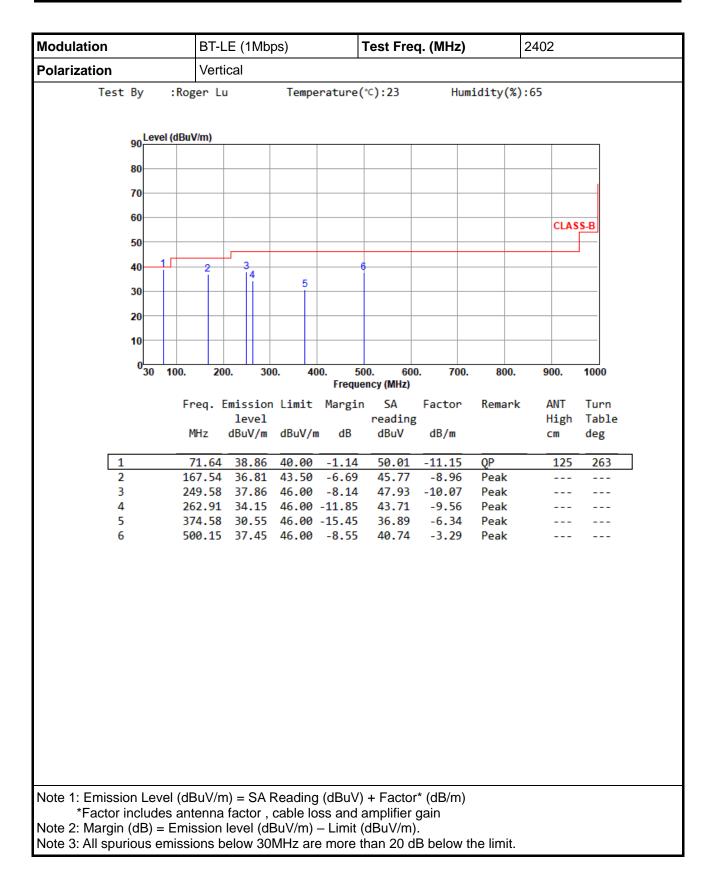




Unwanted Emissions (Below 1GHz)









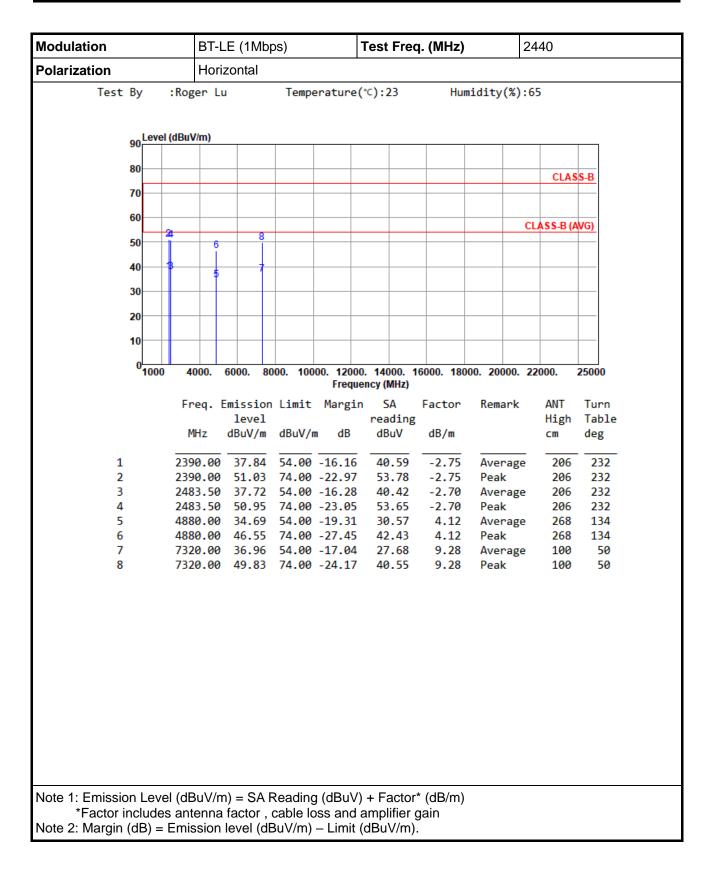
Modulation		BT-L	E (1Mb	os)		Test F	req. (M	Hz)		2402	2	
Polarization		Hori	zontal									
Test By	:Rog		L	Tempe	erature	(℃):23		Humi	dity(%)):65		
90 Leve	l (dBuV	/m)										
80												
											CLAS	<mark>\$-В</mark>
70												
60					6					CLAS	S-B (4	WG)
50	2	4										
40					5							
		3										
30												
20												
10												
0												
0 <mark>1000</mark>	40	00.	6000. 80	00. 100		0. 14000 ency (MH). 16000. z)	1800	0. 20000	. 2200	0.	25000
	Fre	eq.	Emission	Limit			Fact	or	Remark	<u>م</u>	NT	Turn
			level			readi					ligh	Table
	M	Hz	dBuV/m	dBuV/m	n dB	dBu∖	/ dB/	m		C	m	deg
1	239	0.00	37.81	54.00	-16.19	40.5	-2.	75	Averag	ge -	204	234
2 3				74.00					Peak		204	234 135
4			35.02 46.52					13 13	Averag Peak		265 265	135
5	1201	0.00	42.07	54.00	-11.93	28.4	5 13.	62	Averag	ge	100	50
6	1201	0.00	55.20	74.00	-18.80	41.5	8 13.	62	Peak		100	50
Ū	1201		55.20	74.00	-10.00	-1	.0 13.	UZ	Teak		100	50

Unwanted Emissions (Above 1GHz)



8 7 6	0 D D D D	Vertic:		Tempe	erature	(℃):23	\$	Hum	idity	(%):65	5	
9 8 7 6	0 D D D D	_		Tempe	erature	(°⊂):23	•	Hum	idity	(%):65	5	
8 7 6	0											
7 6	0											
6											CLAS	S R
											CLAS	
	0											
5	2				•					CL	ASS-B (A	VG)
		4			5							
4		3										
3	0											
2	0											
1	0											
	0 <mark></mark> 1000	4000. 60	00. 80	00. 100	00. 1200	0. 1400	0. 160	00. 180	00. 200	00. 22	000.	25000
					Frequ	ency (Mi	Hz)					
	F	req. Em		Limit	Margi			actor	Rema	ark	ANT High	Turn Table
			BuV/m	dBuV/r	n dB	dBu		dB/m			cm	deg
1	2	90 00	37 37	54 00	-16 63	40	12 -	-2 75		age	326	257
2	23	90.00	50.67	74.00	-23.33	53.	42	-2.75	Peal	c	326	257
										-		
5	120	10.00	41.87	54.00	-12.13	28.	25	13.62	Ave	rage	100	30
6	120	10.00	55.04	74.00	-18.96	41.	42	13.62	Peal	c	100	30
3 4	23 48 48 120	MHz d 390.00 390.00 390.00 304.00 304.00	37.37 50.67 33.38 45.69 41.87	54.00 74.00 54.00 74.00 54.00	-16.63 -23.33 -20.62 -28.31 -12.13	40. 53. 29. 41. 28.	V 12 42 25 56 25	-2.75 -2.75 4.13 4.13	Peal Avei Peal	rage c rage	326 326 100 100	deg 257 257 178 178 30

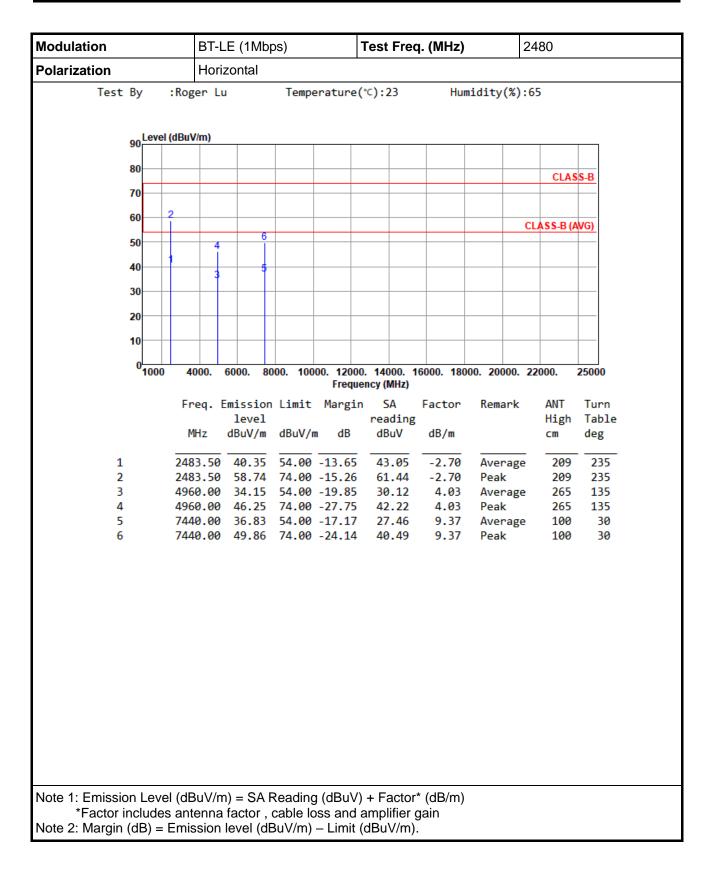






odulation	BT-L	E (1Mb	os)	·	Test Fred	q. (MHz)	24	140	
olarization	Vert	ical							
-	:Roger Lu	u	Tempe	erature((℃):23	Hum	idity(%):6	5	
90 Level	(dBuV/m)								
80									
						_		CLAS	S-B
70									
60							CI	ASS-B (A	VG)
50	4 6	8							
40									
	5	1							
30									
20						_			
10									
0 <mark>1000</mark>	4000.	6000. 80	00. 100		0. 14000. 1 ency (MHz)	6000. 180	00. 20000. 2	2000.	25000
	Free	Emission	1 4 - 4 +			Factor	Remark	ANT	Turn
	Freq. 1	level	LIMIC	mangin	reading		кешанк	High	Table
	MHz	dBuV/m	dBuV/n	n dB	dBuV	dB/m		cm	deg
4	2200.00		<u></u>	46.60				4	
1 2	2390.00 2390.00			-16.60 -23.10	40.15 53.65	-2.75 -2.75	Average Peak	331 331	232 232
3	2483.50			-16.41	40.29	-2.70	Average	331	232
4	2483.50			-23.22		-2.70	Peak	331	232
5	4880.00					4.12		100	180
6 7	4880.00 7320.00			-28.50 -17.27		4.12 9.28	Peak Average	100 100	180 60
· · · ·			74.00			9.28	_	100	60
8	7320.00	49.45	/4.00	-24.37	40.15	9.20	Peak	100	
8	7320.00	49.43	74.00	-24.37	40.13	9.20	Peak	100	
8	7320.00	49.43	74.00	-24.37	40.13	5.20	Peak	100	
8	7320.00	49.43	74.00	-24.37	40.13	9.20	Peak	100	
8	7320.00	49.43	,4.00	-24.37	40.13	5.20	Peak	100	
8	7320.00	49.43	74.00	-24.37	40.13	5.20	Peak	100	
8	7320.00	49.43	74.00	-24.37	40.13	5.20	Peak	100	
8	7320.00	47.43		-24.37	40.13	5.20	Peak	100	
ote 1: Emission Leve	I (dBuV/n	n) = SA I	Reading	g (dBuV)) + Factor	* (dB/m)	Peak	100	
	I (dBuV/n antenna	n) = SA I	Reading	g (dBuV) oss and a) + Factor amplifier (* (dB/m) gain	Peak		







Test By :Roger Lu Temperature(°C):23 Humidity(%):65 90 Level (dBuV/m) CLASS-B 80 0 0 CLASS-B 70 0 0 0 70 0 0 0 70 0 0 0 70 0 0 0 70 0 0 0 70 0 0 0 70 0 0 0 70 0 0 0 70 0 0 0 <th>odulation</th> <th></th> <th>BT-I</th> <th>LE (1Mb</th> <th>ps)</th> <th></th> <th>Test Fred</th> <th>ą. (MHz)</th> <th>24</th> <th>480</th> <th></th>	odulation		BT-I	LE (1Mb	ps)		Test Fred	ą. (MHz)	24	480	
00 Level (dBuV/m) 00 0 00 </td <td>olarization</td> <td></td> <td>Vert</td> <td>ical</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	olarization		Vert	ical							
30 30 CLASS-B 70 2 6 2 6 70 4 6 2 6 50 4 6 2 6 50 4 6 2 6 30 3 3 3 1 1 40 3 5 1 1 1 1 10 4 4 1 1 1 1 1 10 4 1	Test By	:Ro	ger L	u	Tempe	erature((℃):23	Hum	idity(%):6	5	
70 2 6 2 6 2 6 1	90 90	Level (dBi	ıV/m)								
70 2 6 2 6 2 6 1	80										
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $										CLAS	S-B
50 6 6 CLASS-B (AVG) 40 6 6 1	70										
50 4 6 1	60	2							CI	ASS-B (A	WG)
40 3 5 1	50										
30 3	40		Ī								
20 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 100 1000 6000. 8000. 10000. 12000. 14000. 16000. 18000. 20000. 22000. 25000 25000 Freq. Emission Limit Margin SA Factor Remark ANT Turn level reading MHz dBuV/m dBuV/m dBuV dB/m cm deg 1 2483.50 39.32 54.00 -14.68 42.02 -2.70 Average 332 258 2 2483.50 57.45 74.00 -16.55 60.15 -2.70 Peak 332 258 3 4960.00 33.08 54.00 -20.92 29.05 4.03 Average 100 177 4 4960.00 45.41 74.00 -28.59 41.38 4.03 Peak 100 177 5 7440.00 36.76 54.00 -17.24 27.39 9.37 Average 100 100			3								
10 10 10 100 1000 1000 6000. 8000. 12000. 14000. 16000. 18000. 22000. 25000 Freq. Emission Limit Margin SA level Factor Remark ANT Turn High Table reading High Table deg 1 2483.50 39.32 54.00 -14.68 42.02 -2.70 Average 332 258 2 2483.50 57.45 74.00 -16.55 60.15 -2.70 Peak 332 258 3 4960.00 33.08 54.00 -28.59 41.38 4.03 Peak 100 177 4 4960.00 36.76 54.00 -17.24 27.39 9.37 Average 100 100	30										
0 1000 4000. 6000. 8000. 10000. 12000. 14000. 16000. 18000. 20000. 22000. 25000 Frequency (MHz) Freq. Emission Limit Margin SA Factor Remark ANT Turn level reading High Table MHz dBuV/m dBuV/m dB dBuV dB/m cm deg 1 2483.50 39.32 54.00 -14.68 42.02 -2.70 Average 332 258 2 2483.50 57.45 74.00 -16.55 60.15 -2.70 Peak 332 258 3 4960.00 33.08 54.00 -20.92 29.05 4.03 Average 100 177 4 4960.00 45.41 74.00 -28.59 41.38 4.03 Peak 100 177 5 7440.00 36.76 54.00 -17.24 27.39 9.37 Average 100 100	20										
0 1000 4000. 6000. 8000. 10000. 12000. 14000. 16000. 18000. 20000. 22000. 25000 Frequency (MHz) Freq. Emission Limit Margin SA Factor Remark ANT Turn level reading High Table MHz dBuV/m dBuV/m dB dBuV dB/m cm deg 1 2483.50 39.32 54.00 -14.68 42.02 -2.70 Average 332 258 2 2483.50 57.45 74.00 -16.55 60.15 -2.70 Peak 332 258 3 4960.00 33.08 54.00 -20.92 29.05 4.03 Average 100 177 4 4960.00 45.41 74.00 -28.59 41.38 4.03 Peak 100 177 5 7440.00 36.76 54.00 -17.24 27.39 9.37 Average 100 100	10										
Frequency (MH2) Freq. Emission Limit Margin SA reading Factor Remark ANT Turn High Table 1 <td></td>											
Freq. Emission Limit Margin level SA reading dBuV Factor reading dBuV Remark dBu ANT Turn High deg MHz dBuV/m dBuV/m dB dBuV dB/m and the deg 1 2483.50 39.32 54.00 -14.68 42.02 -2.70 Average 332 258 2 2483.50 57.45 74.00 -16.55 60.15 -2.70 Peak 332 258 3 4960.00 33.08 54.00 -20.92 29.05 4.03 Average 100 177 4 4960.00 45.41 74.00 -28.59 41.38 4.03 Peak 100 177 5 7440.00 36.76 54.00 -17.24 27.39 9.37 Average 100 100	U	1000	4000.	6000. 8	000. 100			6000. 180	00. 20000. 2	2000.	25000
level reading High Table MHz dBuV/m dBuV/m dBuV dBuV dB/m cm deg 1 2483.50 39.32 54.00 -14.68 42.02 -2.70 Average 332 258 2 2483.50 57.45 74.00 -16.55 60.15 -2.70 Peak 332 258 3 4960.00 33.08 54.00 -20.92 29.05 4.03 Average 100 177 4 4960.00 45.41 74.00 -28.59 41.38 4.03 Peak 100 177 5 7440.00 36.76 54.00 -17.24 27.39 9.37 Average 100 100				Emission				Factor	Romank	ANT	Tunn
MHz dBuV/m dBuV/m dB dBuV dB/m cm deg 1 2483.50 39.32 54.00 -14.68 42.02 -2.70 Average 332 258 2 2483.50 57.45 74.00 -16.55 60.15 -2.70 Peak 332 258 3 4960.00 33.08 54.00 -20.92 29.05 4.03 Average 100 177 4 4960.00 45.41 74.00 -28.59 41.38 4.03 Peak 100 177 5 7440.00 36.76 54.00 -17.24 27.39 9.37 Average 100 100		F	req.		1 LIMIC	margin			кетарк		
2 2483.50 57.45 74.00 -16.55 60.15 -2.70 Peak 332 258 3 4960.00 33.08 54.00 -20.92 29.05 4.03 Average 100 177 4 4960.00 45.41 74.00 -28.59 41.38 4.03 Peak 100 177 5 7440.00 36.76 54.00 -17.24 27.39 9.37 Average 100 100			MHz		dBuV/r	n dB				_	
2 2483.50 57.45 74.00 -16.55 60.15 -2.70 Peak 332 258 3 4960.00 33.08 54.00 -20.92 29.05 4.03 Average 100 177 4 4960.00 45.41 74.00 -28.59 41.38 4.03 Peak 100 177 5 7440.00 36.76 54.00 -17.24 27.39 9.37 Average 100 100	1	2/	192 60	20.22	E4 00	14 69	42.02	- 2 70	Avanaga	222	- <u></u>
34960.0033.0854.00-20.9229.054.03Average10017744960.0045.4174.00-28.5941.384.03Peak10017757440.0036.7654.00-17.2427.399.37Average100100									_		
5 7440.00 36.76 54.00 -17.24 27.39 9.37 Average 100 100	3			33.08	54.00	-20.92	29.05	4.03	_	100	177
	-									200	200
								* (-12) ()			
te 1: Emission Level (dBuV/m) = SA Reading (dBuV) + Factor* (dB/m) *Factor includes antenna factor , cable loss and amplifier gain											

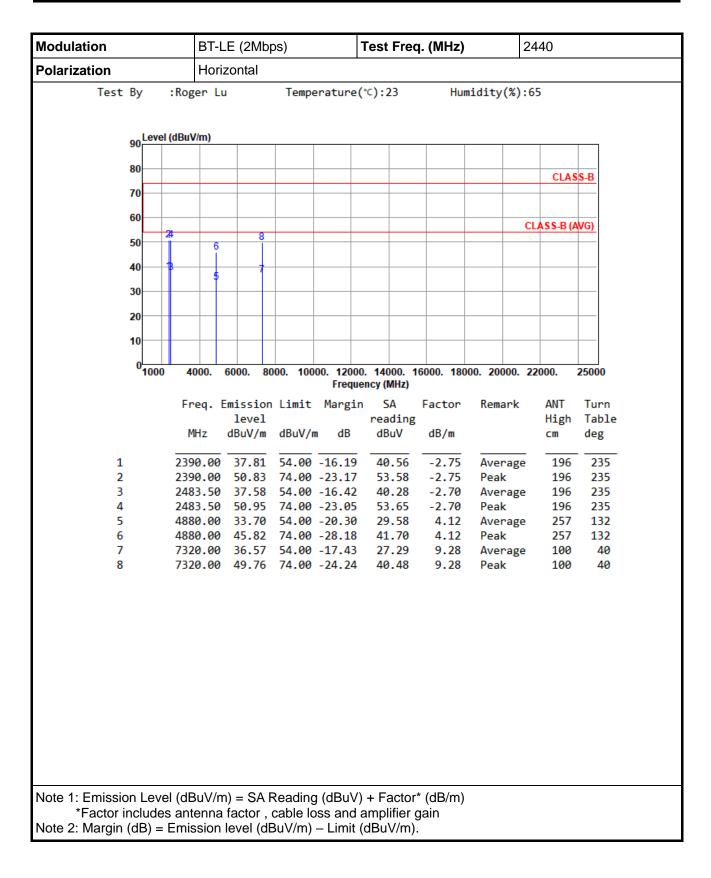


Test By :Roger 90 80 70 60 50 2 40 30 20 10		Temperature	e(°⊂):23	Humidi	Lty(%):6	5 CLASS ASS-B (AV	
90 Level (dBuV/m) 80 70 60 50 40 30 20 10)	Temperature	e(°¢):23	Humidi		CLASS	
90 80 70 60 50 40 30 20 10					CL		
70 60 50 40 30 20 10	4	6 6 5			CL		
70 60 50 40 30 20 10	4	6 			CL		
60 50 40 30 20 10	4	6 5			CL	ASS-B (AV	/G)
50 40 30 20 10	3	5			CL	ASS-B (AV	/G)
40	3	5					
30 20 10	3	¢					
20							
10							
10							
0							
0 <mark>1000 4000</mark>	. 6000. 80			6000. 18000.	20000. 22	000. 2	5000
	Emission		uency (MHz)	Factor R	emark	ANT	Turn
Freq	level	Limit Margi	reading	Factor N	emark		Table
MHz	dBuV/m	dBuV/m dB	dBuV	dB/m		cm	deg
1 2390.0	00 39.31	54.00 -14.69	42.06	-2.75 A	verage	207	233
2 2390.0		74.00 -23.27		-2.75 P	eak	207	233
3 4804.0 4 4804.0		54.00 -19.72			verage eak	255 255	135 135
5 12010.0	00 41.85	54.00 -12.15	28.23	13.62 A	verage	100	30
6 12010.0	00 54.79	74.00 -19.21	41.17	13.62 P	eak	100	30
5 12010.0	00 41.85	74.00 -27.84 54.00 -12.15 74.00 -19.21	28.23	13.62 A	_		



dulation	BT	-LE (2Mb	ps)		Test Fre	q. (MHz)	24	102	
arization	Ve	rtical							
Test By	:Roger	Lu	Tempe	rature	(℃):23	Hum	idity(%):6	5	
90	(dBuV/m)								
80						_		CLAS	SS-B
70									
60				6		_		ASS-B (A	WG
50	2	4		Ť				-M33-D (F	<u></u>
40				5					
30		3							
20									
10									
0 ^L 1000	4000.	6000. 80	000. 100		0. 14000. ency (MHz)	16000. 180	00. 20000. 2	2000.	25000
1 2 3 4 5	MHz 2390.0 2390.0 4804.0 4804.0	0 50.40 0 33.15 0 45.41 0 41.73	dBuV/m 54.00 74.00 54.00 74.00	dB -15.88 -23.60 -20.85 -28.59 -12.27	reading dBuV 40.87 53.15 29.02 41.28 28.11	Factor dB/m -2.75 -2.75 4.13 4.13 13.62 13.62	Remark Average Peak Average Peak Average Peak	ANT High cm 333 333 100 100 100 100	Turn Table deg 258 258 176 176 90 90

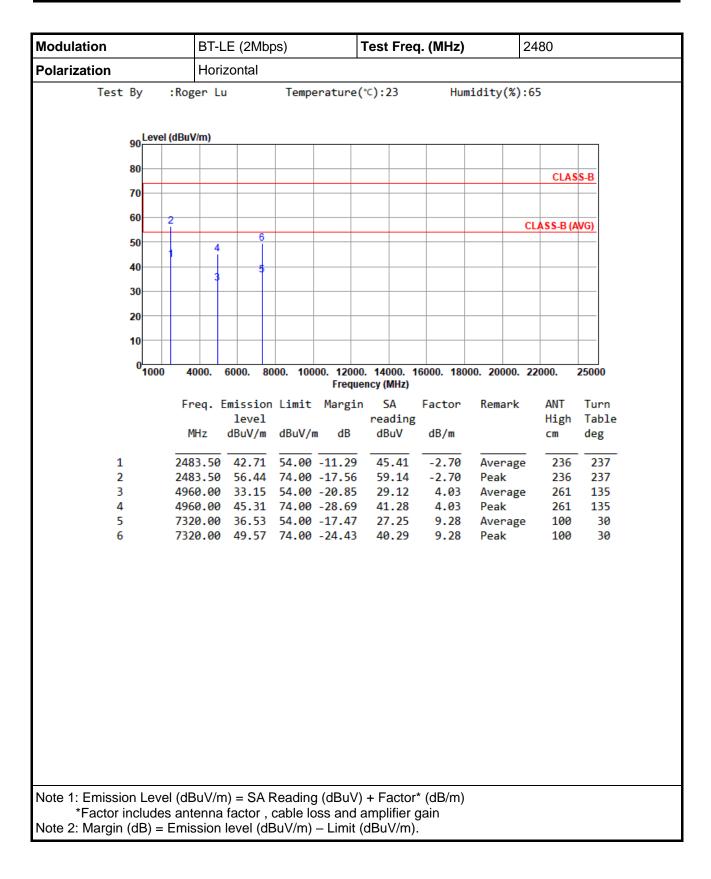






ulation	BT-LE (2M	ops)	Test Freq.	(MHz)	24	40	
rization	Vertical						
-	oger Lu	Temperature	(℃):23	Humi	idity(%):65	5	
90 Level (dl	BuV/m)						
80							
70						CLAS	<u>S-B</u>
60					CL	ASS-B (A	VG)
50 4	6						
40 3							
30	5						
30							
20							
10							
0 <mark></mark> 1000	4000. 6000.)0. 14000. 160 Jency (MHz)	000. 1800	0. 20000. 22	000.	25000
	Freq. Emissic	on Limit Margi		actor	Remark	ANT	Turn
	level		reading	actor	NCIII N	High	Table
	MHz dBuV/n	n dBuV∕m dB	dBuV	dB/m		cm	deg
1 2	390.00 37.50	54.00 -16.50	40.25	-2.75	Average	326	255
		1 74.00 -23.29		-2.75	Peak	326	255
		5 54.00 -16.55		-2.70	Average	326	255
		3 74.00 -23.27		-2.70	Peak	326	255
		4 54.00 -21.46 7 74.00 -28.63		4.12 4.12	Average Peak	100 100	179 179
		3 54.00 -17.57		9.28	Average	100	30
8 7	320.00 49.57	7 74.00 -24.43	40.29	9.28	Peak	100	30

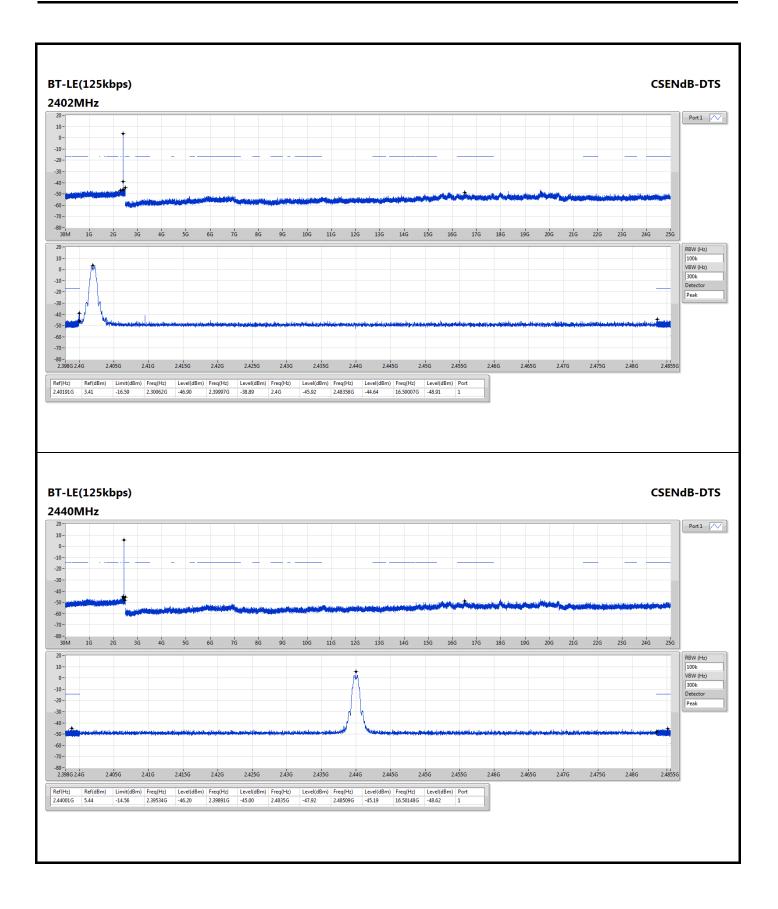




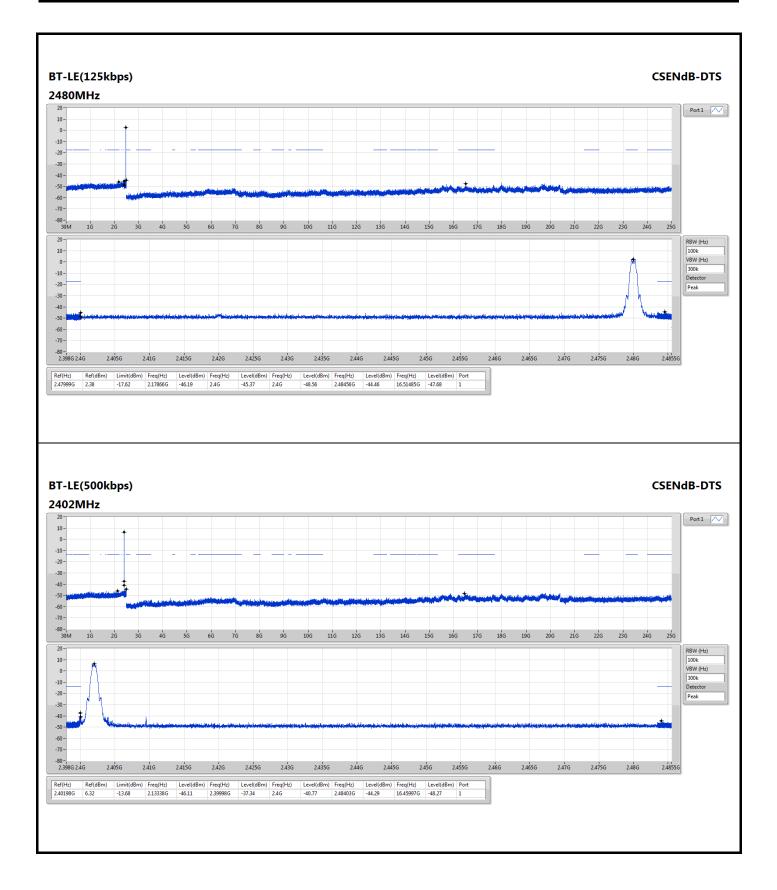


odulation		BT-	LE (2Mb	ps)		Test Free	q. (MHz)	2	480	
olarization		Ver	tical							
Test B	-	:Roger I	.u	Temp	erature	(℃):23	Hum	nidity(%):6	5	
9	0 Level	(dBuV/m)								
8	0								CLAG	
7	'o								CLAS	<u>5-B</u>
6	0	2						С	LASS-B (A	WG)
5	0	4	6							
4	0		- 5							
3	0	3	,							
2										
2	0									
1	0									
	0 <mark>1000</mark>	4000.	6000. 8	000. 100	00. 1200	0. 14000. 1	16000. 180	00. 20000. 2	2000.	25000
						ency (MHz)				
		Freq.	Emission level	n Limit	Margi	n SA reading	Factor	Remark	ANT High	Turn Table
		MHz		dBuV/ı	m dB	dBuV	dB/m		cm	deg
		- 402 54								
1 2		2483.56	39.26 50.97	54.00 74.00	-14.74	41.96 53.67	-2.70 -2.70	Average Peak	330 330	260 260
3		4960.00	32.25	54.00	-21.75	28.22	4.03	Average	100	176
4 5			45.06 36.40			41.03 27.12	4.03 9.28		100 100	176 25
6) 49.41				9.28	Average Peak	100	25

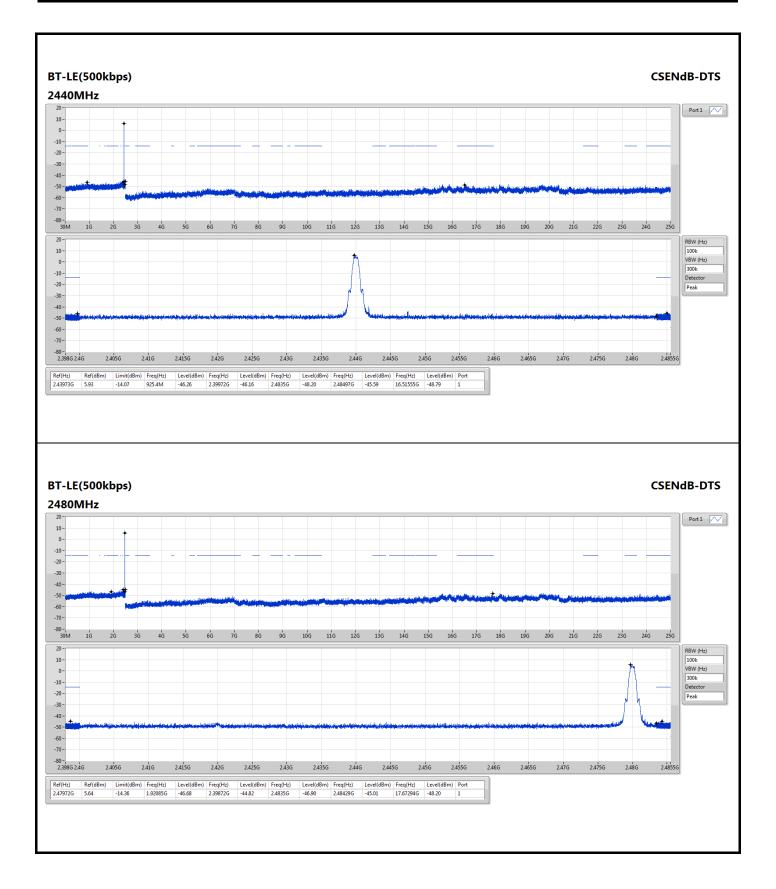




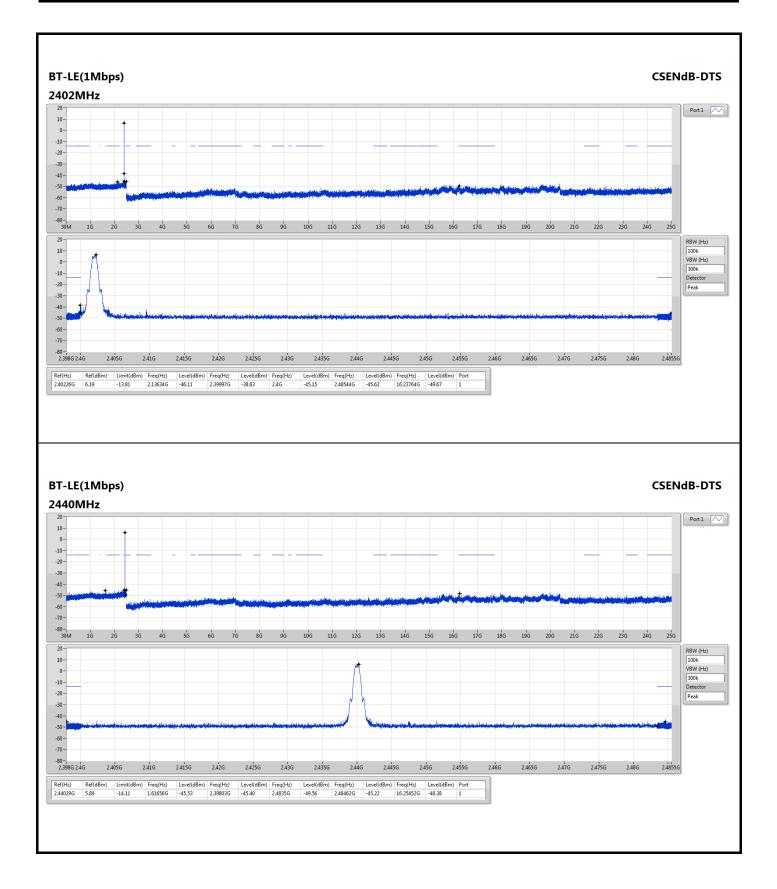




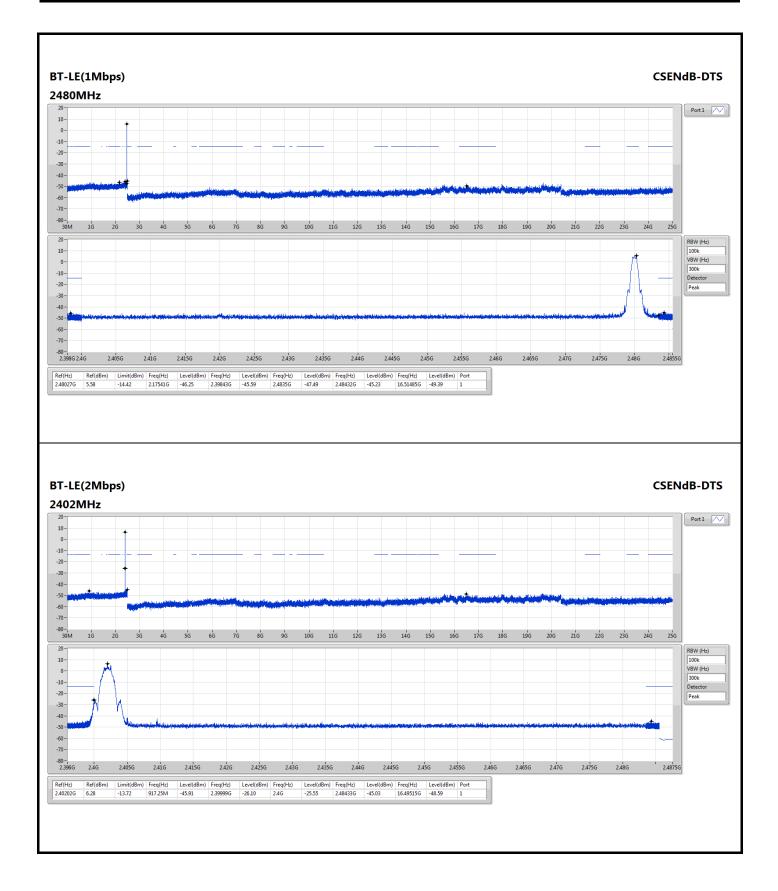




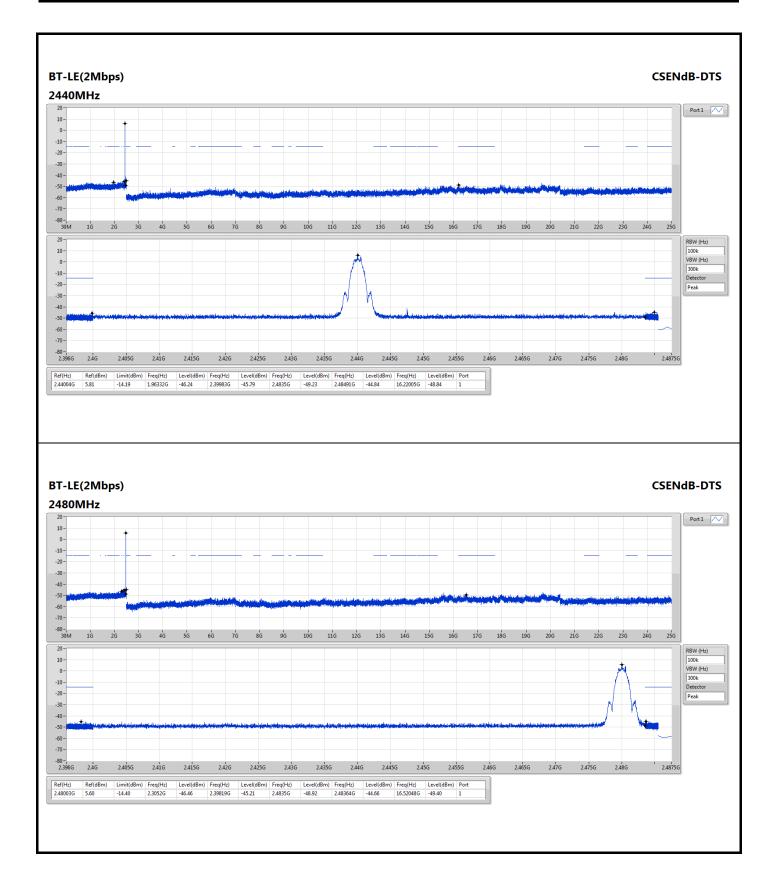




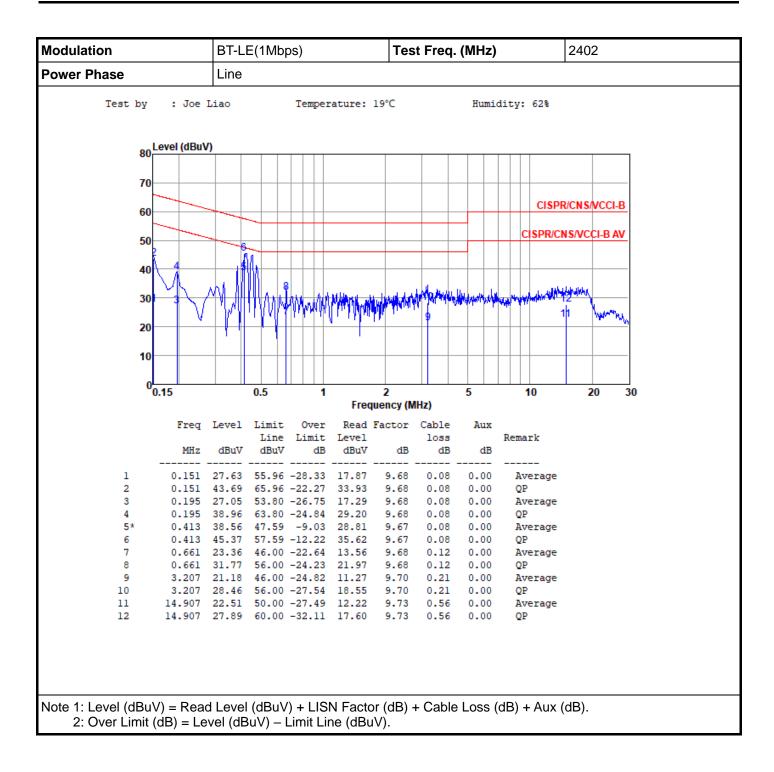














Appendix F

