

Report No: JYTSZB-R12-2101120

FCC	REPORT
	(BLE)

Applicant:	SHENZHEN YUNJI INTELLIGENT TECHNOLOGY CO., LTD		
Address of Applicant:	A2 2F BUILDING ENET NEW INDUSTRIAL PARK, DAFU INDUSTRIAL ZONE, GUANLAN, LONGHUA SHENZHEN CHINA		
Equipment Under Test (B	EUT)		
Product Name:	Smart Phone		
Model No.:	WP15		
Trade mark:	OUKITEL		
FCC ID:	2ANMU-WP15		
Applicable standards:	FCC CFR Title 47 Part 15 Subpart C Section 15.247		
Date of sample receipt:	17 Jun., 2021		
Date of Test:	17 Jun., to 28 Jul., 2021		
Date of report issued:	28 Jul., 2021		
Test Result:	PASS *		

* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:



Bruce Zhang Laboratory Manager

This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product and does not permit the use of the JYT product certification mark. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

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Version 2

Version No.	Date	Description
00	28 Jul., 2021	Original

Tested by:

Mike.DU Test Engineer

Date: 28 Jul., 2021

Reviewed by:

Winner Thang

Project Engineer

28 Jul., 2021 Date:

Project No.: JYTSZE2106052



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4 Test Summary

Test Items	Section in CFR 47	Test Data	Result			
Antenna requirement	15.203 & 15.247 (b)	See Section 6.1	Pass			
AC Power Line Conducted Emission	15.207	See Section 6.2	Pass			
Conducted Peak Output Power	15.247 (b)(3)	Appendix A - BLE	Pass			
6dB Emission Bandwidth 99% Occupied Bandwidth	15.247 (a)(2)	Appendix A - BLE	Pass			
Power Spectral Density 15.247 (e) Appendix A - BLE						
Conducted Band Edge		Appendix A - BLE	Pass			
Radiated Band Edge	15.247 (d)	See Section 6.6.2	Pass			
Conducted Spurious Emission	15.205 & 15.209	Appendix A - BLE	Pass			
Radiated Spurious Emission	15.205 & 15.209	See Section 6.7.2	Pass			
 Remark: Pass: The EUT complies with the essential requirements in the standard. N/A: Not Applicable. The cable insertion loss used by "RF Output Power" and other conduction measurement items is 0.5dB (provided by the customer). 						
Test Method: KDB 558074 D01 15.247 Meas Guidance v05r02						



5 General Information

5.1 Client Information

Applicant:	SHENZHEN YUNJI INTELLIGENT TECHNOLOGY CO., LTD
Address:	A2 2F BUILDING ENET NEW INDUSTRIAL PARK, DAFU INDUSTRIAL ZONE, GUANLAN, LONGHUA SHENZHEN CHINA
Manufacturer:	SHENZHEN YUNJI INTELLIGENT TECHNOLOGY CO., LTD
Address:	A2 2F BUILDING ENET NEW INDUSTRIAL PARK, DAFU INDUSTRIAL ZONE, GUANLAN, LONGHUA SHENZHEN CHINA

5.2 General Description of E.U.T.

Product Name:	Smart Phone
Model No.:	WP15
Operation Frequency:	2402-2480 MHz
Channel numbers:	40
Channel separation:	2 MHz
Modulation technology:	GFSK
Data speed :	1Mbps & 2Mbps
Antenna Type:	Internal Antenna
Antenna gain:	1.01 dBi
Power supply:	Rechargeable Li-ion Polymer Battery DC3.87V, 15600mAh
AC adapter:	Model: HJ-FC017K7-US
	Input: AC100-240V, 50/60Hz 0.6A
	Output: DC 5.0V, 2.0A or DC 7.0V, 2.0A,
	or DC 9.0V, 2.0A or DC 12V, 1.5A
Test Sample Condition:	The test samples were provided in good working order with no visible defects.

Operation Frequency each of channel							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
0	2402MHz	10	2422MHz	20	2442MHz	30	2462MHz
1	2404MHz	11	2424MHz	21	2444MHz	31	2464MHz
2	2406MHz	12	2426MHz	22	2446MHz	32	2466MHz
3	2408MHz	13	2428MHz	23	2448MHz	33	2468MHz
4	2410MHz	14	2430MHz	24	2450MHz	34	2470MHz
5	2412MHz	15	2432MHz	25	2452MHz	35	2472MHz
6	2414MHz	16	2434MHz	26	2454MHz	36	2474MHz
7	2416MHz	17	2436MHz	27	2456MHz	37	2476MHz
8	2418MHz	18	2438MHz	28	2458MHz	38	2478MHz
9	2420MHz	19	2440MHz	29	2460MHz	39	2480MHz
N1 /							

Note:

In section 15.31(*m*), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test. Channel No. 0, 20 & 39 were selected as Lowest, Middle and Highest channel.



5.3 Test environment and mode

Operating Environment:

Operating Environment.		
Temperature:	24.0 °C	
Humidity:	54 % RH	
Atmospheric Pressure:	1010 mbar	
Test mode:		
Transmitting mode	Keep the EUT in continuous transmitting with modulation	

Radiated Emission: The sample was placed 0.8m (below 1GHz)/1.5m (above 1GHz) above the ground plane of 3m chamber. Measurements in both horizontal and vertical polarities were performed. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, rotating the turntable, varying antenna height from 1m to 4m in both horizontal and vertical polarizations. The emissions worst-case are shown in Test Results of the following pages. Duty cycle setting during the transmission is 100% with maximum power setting for all modulations.

5.4 Description of Support Units

The EUT has been tested as an independent unit.

5.5 Measurement Uncertainty

Parameters	Expanded Uncertainty
Conducted Emission (9kHz ~ 30MHz)	±1.60 dB (k=2)
Radiated Emission (9kHz ~ 30MHz)	±3.12 dB (k=2)
Radiated Emission (30MHz ~ 1000MHz)	±4.32 dB (k=2)
Radiated Emission (1GHz ~ 18GHz)	±5.16 dB (k=2)
Radiated Emission (18GHz ~ 40GHz)	±3.20 dB (k=2)

5.6 Laboratory Facility

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

• FCC - Designation No.: CN1211

JianYan Testing Group Shenzhen Co., Ltd. has been accredited as a testing laboratory by FCC(Federal Communications Commission). The test firm Registration No. is 727551.

• ISED – CAB identifier.: CN0021

The 3m Semi-anechoic chamber of JianYan Testing Group Shenzhen Co., Ltd. has been Registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 10106A-1.

• A2LA - Registration No.: 4346.01

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 General requirements for the competence of testing and calibration laboratories. The test scope can be found as below link: <u>https://portal.a2la.org/scopepdf/4346-01.pdf</u>

5.7 Laboratory Location

JianYan Testing Group Shenzhen Co., Ltd. Address: No.101, Building 8, Innovation Wisdom Port, No.155 Hongtian Road, Huangpu Community, Xinqiao Street, Bao'an District, Shenzhen, Guangdong, People's Republic of China. Tel: +86-755-23118282, Fax: +86-755-23116366 Email: info-JYTee@lets.com, Website: http://www.ccis-cb.com



5.8 Test Instruments list

Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Date (mm-dd-yy)	Cal. Due date (mm-dd-yy)
3m SAC	ETS	9m*6m*6m	966	01-19-2021	01-18-2024
BiConiLog Antenna	SCHWARZBECK	VULB9163	497	03-03-2021	03-02-2022
Biconical Antenna	SCHWARZBECK	VUBA9117	359	06-17-2021	06-16-2022
Horn Antenna	SCHWARZBECK	BBHA9120D	916	03-03-2021	03-02-2022
Horn Antenna	SCHWARZBECK	BBHA9120D	1805	06-17-2021	06-16-2022
Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170582	11-18-2020	11-17-2021
EMI Test Software	AUDIX	E3	l V	/ersion: 6.110919b	
Pre-amplifier	HP	8447D	2944A09358	03-03-2021	03-02-2022
Pre-amplifier	CD	PAP-1G18	11804	03-03-2021	03-02-2022
Spectrum analyzer	Rohde & Schwarz	FSP30	101454	03-03-2021	03-02-2022
Spectrum analyzer	Rohde & Schwarz	FSP40	100363	11-18-2020	11-17-2021
EMI Test Receiver	Rohde & Schwarz	ESRP7	101070	03-03-2021	03-02-2022
Spectrum Analyzer	Agilent	N9020A	MY50510123	11-18-2020	11-17-2021
Signal Generator	Rohde & Schwarz	SMX	835454/016	03-03-2021	03-02-2022
Signal Generator	R&S	SMR20	1008100050	03-03-2021	03-02-2022
RF Switch Unit	MWRFTEST	MW200	N/A	N/A	N/A
Test Software	MWRFTEST	MTS8200	Version: 2.0.0.0		
Cable	ZDECL	Z108-NJ-NJ-81	1608458	03-03-2021	03-02-2022
Cable	MICRO-COAX	MFR64639	K10742-5	03-03-2021	03-02-2022
Cable	SUHNER	SUCOFLEX100	58193/4PE	03-03-2021	03-02-2022
DC Power Supply	XinNuoEr	WYK-10020K	1409050110020	09-25-2020	09-24-2021
Temperature Humidity Chamber	HengPu	HPGDS-500	20140828008	11-01-2020	10-31-2021
Simulated Station	Rohde & Schwarz	CMW500	140493	07-22-2020	07-21-2021
Simulated Station	Ronde & Schwarz	CIVIV500	140493	07-21-2021	07-20-2022
10m SAC	ETS	RFSD-100-F/A	Q2005	03-31-2021	04-01-2024
BiConiLog Antenna	SCHWARZBECK	VULB 9168	1249	03-31-2021	04-01-2022
BiConiLog Antenna	SCHWARZBECK	VULB 9168	1250	03-31-2021	04-01-2022
EMI Test Receiver	R&S	ESR 3	102800	04-06-2021	04-07-2022
EMI Test Receiver	R&S	ESR 3	102802	04-06-2021	04-07-2022
Pre-amplifier	Bost	LNA 0920N	2016	04-06-2021	04-07-2022
Pre-amplifier	Bost	LNA 0920N	2019	04-06-2021	04-07-2022
Test Software	R&S	EMC32	Version: 10.50.40		

Conducted Emission:					
Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Date (mm-dd-yy)	Cal. Due date (mm-dd-yy)
EMI Test Receiver	Rohde & Schwarz	ESCI	101189	03-03-2021	03-02-2022
Pulse Limiter	SCHWARZBECK	OSRAM 2306	9731	03-03-2021	03-02-2022
LISN	CHASE	MN2050D	1447	03-03-2021	03-02-2022
LISN	Rohde & Schwarz	ESH3-Z5	8438621/010	06-17-2021	06-16-2022
Cable	HP	10503A	N/A	03-03-2021	03-02-2022
EMI Test Software	AUDIX	E3	Version: 6.110919b		



Conducted method:					
Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Date (mm-dd-yy)	Cal. Due date (mm-dd-yy)
Spectrum Analyzer	Keysight	N9010B	MY60240202	11-27-2020	11-26-2021
Vector Signal Generator	Keysight	N5182B	MY59101009	11-27-2020	11-26-2021
Analog Signal Generator	Keysight	N5173B	MY59100765	11-27-2020	11-26-2021
Power Detector Box	MWRF-test	MW100-PSB	MW201020JYT	11-27-2020	11-26-2021
Simulated Station	Rohde & Schwarz	CMW270	102335	11-27-2020	11-26-2021
RF Control Box	MWRF-test	MW100-RFCB	MW200927JYT	N/A	N/A
PDU	MWRF-test	XY-G10	N/A	N/A	N/A
Test Software	MWRF-tes	MTS 8310	N	Version: 2.0.0.0	
DC Power Supply	Keysight	E3642A	MY60296194	11-27-2020	11-26-2021

6 Test results and Measurement Data

6.1 Antenna requirement:

Standard requirement:	FCC Part 15 C Section 15.203 /247(b)
responsible party shall be us antenna that uses a unique so that a broken antenna ca electrical connector is prohil 15.247(b) (4) requirement: (4) The conducted output po antennas with directional ga section, if transmitting anten power from the intentional ra	be designed to ensure that no antenna other than that furnished by the sed with the device. The use of a permanently attached antenna or of an coupling to the intentional radiator, the manufacturer may design the unit in be replaced by the user, but the use of a standard antenna jack or bited. be the intervence of the end of the end of the use of the use of ins that do not exceed 6 dBi. Except as shown in paragraph (c) of this in as of directional gain greater than 6 dBi are used, the conducted output adiator shall be reduced below the stated values in paragraphs (b)(1), tion, as appropriate, by the amount in dB that the directional gain of the
E.U.T Antenna:	
The BLE antenna is an Interr antenna is 1.01dBi.	hal antenna which cannot replace by end-user, the best-case gain of the



6.2 Conducted Emission

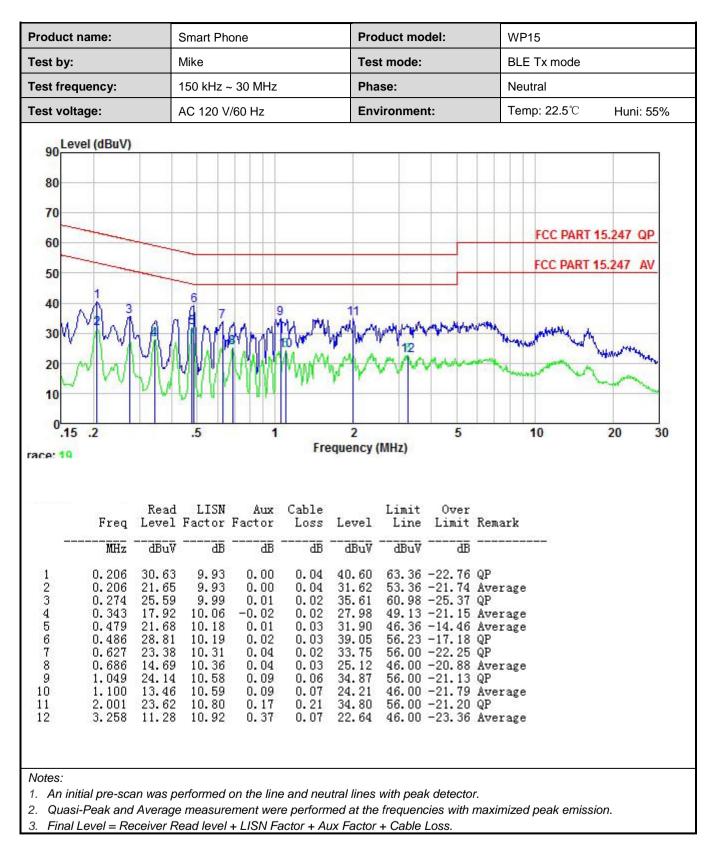
Test Requirement:	FCC Part 15 C Section 15.207	7	
Test Frequency Range:	150 kHz to 30 MHz		
Class / Severity:	Class B		
Receiver setup:	RBW=9kHz, VBW=30kHz		
Limit:	Frequency range (MHz)	Limit (dBuV)
	, , , , , , , , , , , , , , , , ,	Quasi-peak	Average
	0.15-0.5	66 to 56*	56 to 46*
	0.5-5	56	46
	5-30	60	50
	 * Decreases with the logarithm The E.U.T and simulators 		
Test procedure:	 The E.U.T and simulators line impedance stabilizati 50ohm/50uH coupling im The peripheral devices ar LISN that provides a 50ol termination. (Please refer photographs). Both sides of A.C. line ard interference. In order to fi positions of equipment ar according to ANSI C63.10 	on network (L.I.S.N.), wh pedance for the measuring re also connected to the hm/50uH coupling imped to the block diagram of the checked for maximum and the maximum emission and all of the interface cab	nich provides a ng equipment. main power through a lance with 50ohm the test setup and conducted on, the relative les must be changed
Test setup:	LISN 40cm	Blane	
	AUX E.U.T Equipment E.U.T Test table/Insulation plane Remarkc E.U.T: Equipment Under Test LISN: Line Impedence Stabilization New Test table height=0.8m	EMI Receiver	– AC power
Test Instruments:	Refer to section 5.9 for details	i	
Test mode:	Refer to section 5.3 for details		
Test results:	Passed		



Measurement Data:

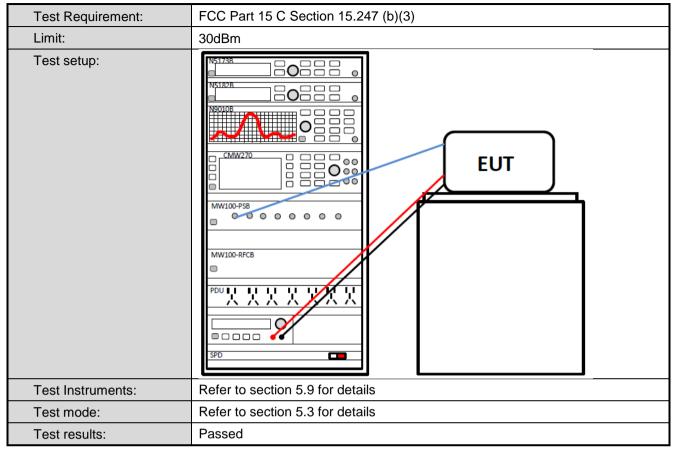
Product name:	Smart Phone	e	Produ	uct model:	WP15			
Test by:	Mike		Test r	node:	BLE Tx mode			
est frequency:	150 kHz ~ 3	0 MHz	Phase	e:	Line	Line		
Fest voltage:	AC 120 V/60 Hz		Envir	onment:	Temp: 22.5 ℃	Huni: 55%		
90 Level (dBuV) 80 70 60 50 40 30 40 20 10 0.15 .2 Frace: 17	4		2 uency (Mł	May Manauman 5	FCC PART	Sector Sector		
Freq L 	Read LISN .evel Factor I dBuV dB 00.77 10.15 21.97 10.15 7.23 10.29 29.08 10.33 24.40 10.48 2.98 10.48 2.98 10.52 2.18 10.72 24.40 10.72 2.18 10.72 2.18 10.72 2.10 10.88 9.24 10.88	$\begin{array}{c cccc} Aux & Cable\\ Factor & Loss\\ \hline \\ \hline \\ dB & dB\\ \hline \\ -0.17 & 0.04\\ \hline \\ -0.17 & 0.04\\ \hline \\ 0.31 & 0.04\\ \hline \\ -0.15 & 0.03\\ \hline \\ -0.21 & 0.03\\ \hline \\ 0.46 & 0.05\\ \hline \\ 0.42 & 0.06\\ \hline \\ -0.03 & 0.15\\ \hline \\ 1.09 & 0.10\\ \hline \\ 1.15 & 0.10\\ \hline \\ 2.35 & 0.11\\ \hline \\ 2.35 & 0.11\\ \hline \end{array}$	Level dBuV 40.79 31.99 27.87 39.29 31.25 35.39 23.94 35.77 24.09 36.37 34.63 22.58	53.36 -21.3	Remark Remark Average Average Average Average Average Average Average Average QP Average QP			





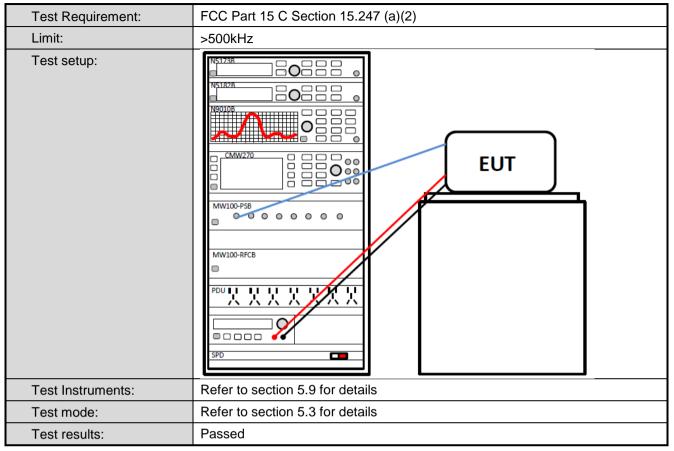


6.3 Conducted Output Power



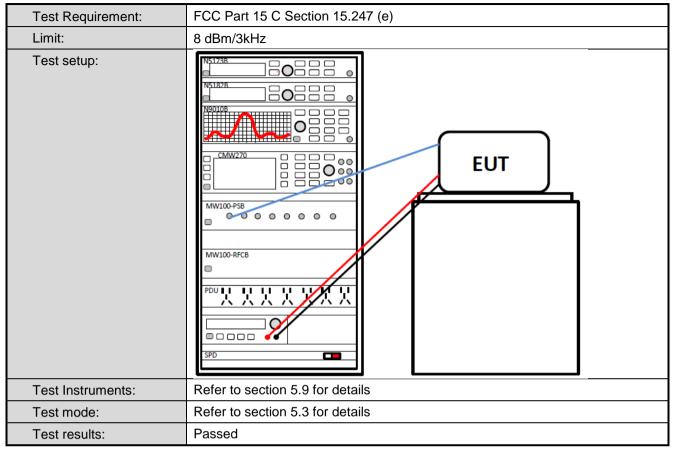


6.4 Occupy Bandwidth





6.5 Power Spectral Density





6.6 Band Edge

6.6.1 Conducted Emission Method

Test Requirement:	FCC Part 15 C Section 15.247 (d)
Limit:	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.
Test setup:	
Test Instruments:	Refer to section 5.9 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed



6.6.2 Radiated Emission Method

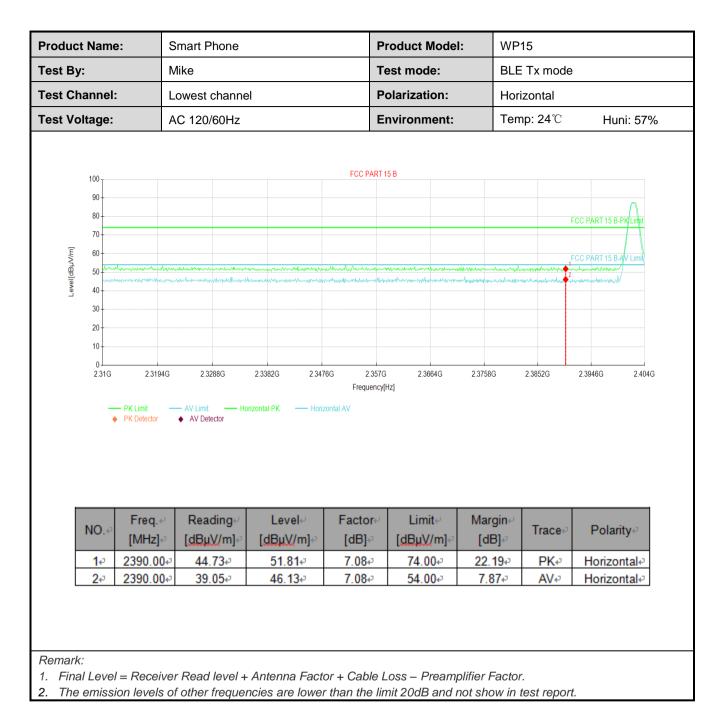
Test Requirement:	FCC Part 15 C Section 15.205 and 15.209								
Test Frequency Range:	2310 MHz to 2	2390 MHz an	d 2483.5MHz to 2	2500 MHz	<u>-</u>				
Test Distance:	3m								
Receiver setup:	Frequency	Detector	RBW	VBW	Remark				
	Above 1GHz	Peak	1MHz	3MHz					
		RMS	1MHz	3MHz					
Limit:	Frequen	icy I	<u>imit (dBuV/m @:</u> 54.00	3m)	Remark Average Value				
	Above 10	GHz –	74.00		Peak Value				
Test Procedure:	 the groun to determ 2. The EUT antenna, tower. 3. The anter the groun Both horiz make the 4. For each case and meters ar to find the 5. The test-r Specified 6. If the emist the limit s of the EU have 10 c 	d at a 3 meter ine the positi was set 3 meter which was me and height is d to determine contal and ver measurement suspected en then the anter a maximum re receiver syste Bandwidth we ssion level of pecified, then T would be re B margin wo	er camber. The ta on of the highest eters away from t ounted on the top varied from one in the the maximum entical polarization nt. mission, the EUT enna was tuned to ble was turned fre eading. em was set to Pe vith Maximum Ho the EUT in peak in testing could be eported. Otherwise	able was ro radiation. he interfer of a varia meter to for value of the so of the an was arrar o heights om 0 degr ak Detect Id Mode. so the emi one by on	rence-receiving able-height antenna our meters above he field strength. Intenna are set to inged to its worst from 1 meter to 4 rees to 360 degrees Function and is 10 dB lower than and the peak values issions that did not e using peak, quasi-				
Test setup:		LEUT urntable) Gro Test Receive	Horn Antenna 3m Horn Antenna 3m Horn Antenna are the second	Antenna Tower	Swwwww				
Test Instruments:	Refer to section	on 5.9 for det	ails						
Test mode:	Refer to section	on 5.3 for det	ails						
Test results:	Passed								



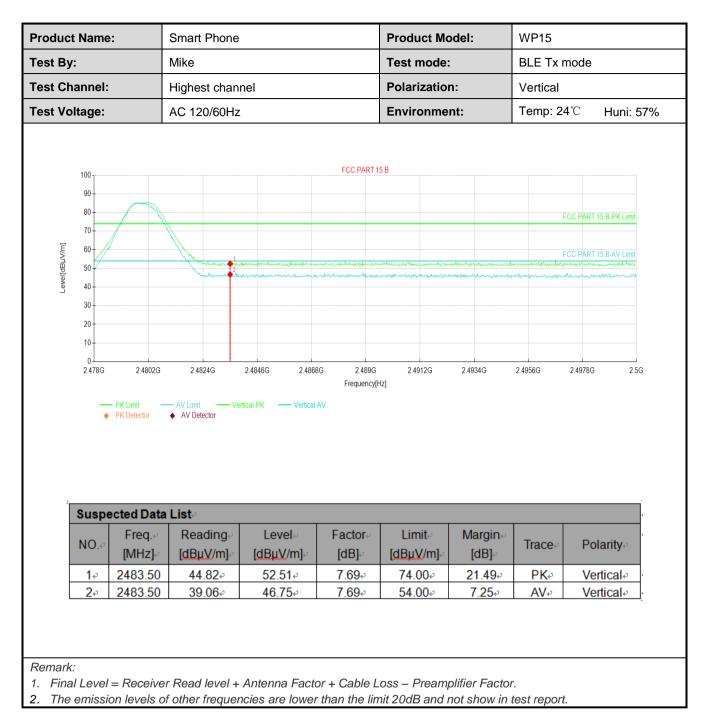
1M PHY

	Product Name:		Smart Phone)		Product Mo	odel:	WP15	
Test By:			Mike			Test mode:		BLE Tx n	node
est Ch	annel	:	Lowest channel Polarization: Vertical			Vertical			
Test Voltage:			AC 120/60Hz			Environme	nt:	Temp: 24	P℃ Huni: 57%
Level(dBh/V/m]	100 90 80 70 60 50 40		ugat, Na Ala Maria and a state and a		FCC PART 1	5 B	annya na		CC PART 15 B-PK init
	20- 10- 0- 2.31G	2.3194G	2.3288G	23382G 2.347	76G 2.357G Frequency[ł		2.3758G	2.3852G	2.3946G 2.404G
	•	PK Limit -	AV Limit Ve	ertical PK — Vertical	AV	-			
	NO.₽			ertical PK Vertical Level↔ [dBµV/m]√	av Factor↩ [dB]↩	Limit⊷ [dBµV/m]∾	Margin∉ [dB]∉	Trace₽	Polarity₽
	NO.¢ 1€	Freq. ↔ [MHz] ↔ 2390.00 ↔	 AV Detector Reading ℓ^J [dBµV/m] ℓ^J 43.49 ℓ^J 	Level↩ [dΒμV/m]↩ 50.57↩	Factor⊮ [dB]⊮ 7.08⊮	Limit↩ [dBµV/m]↩ 74.00↩	[dB]∉ 23.43₽	PK₽	Vertical⊷
-	NO.¢	Freq.↩ [MHz]↩	 AV Detector Reading ℓ^J [dBµV/m] ℓ^J 43.49 ℓ^J 	Level↩ [dBµV/m]↩	Factor⊌ [dB]₽	Limit↩ [dBµV/m]↩	[dB]↩		

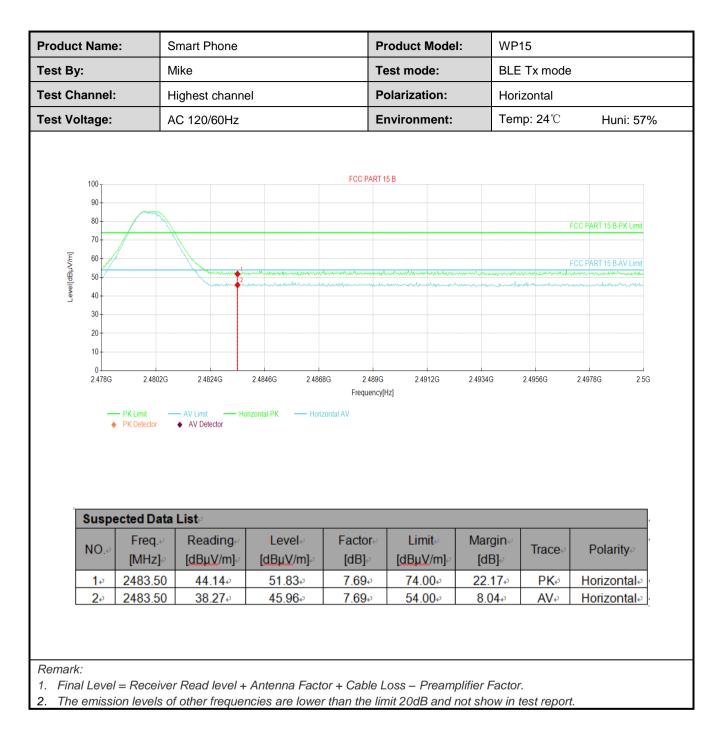










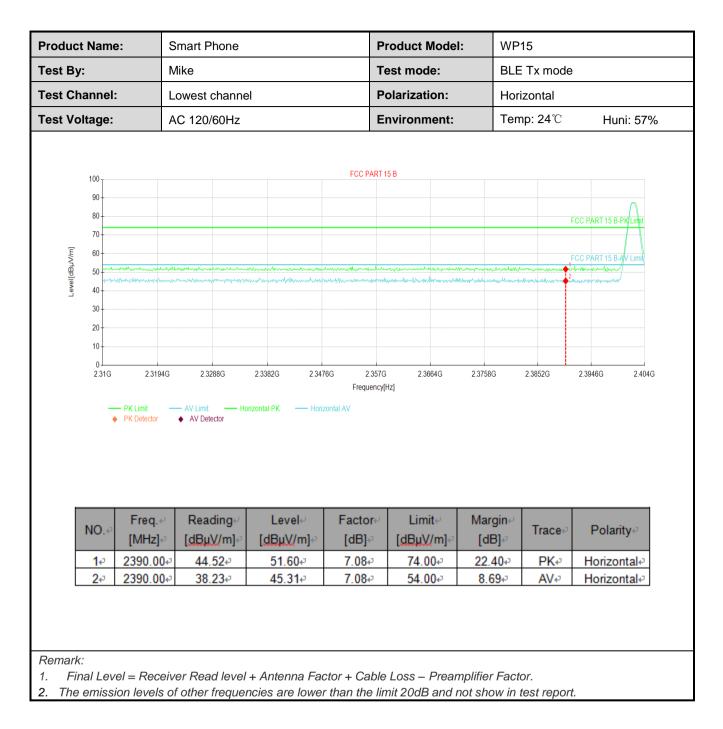




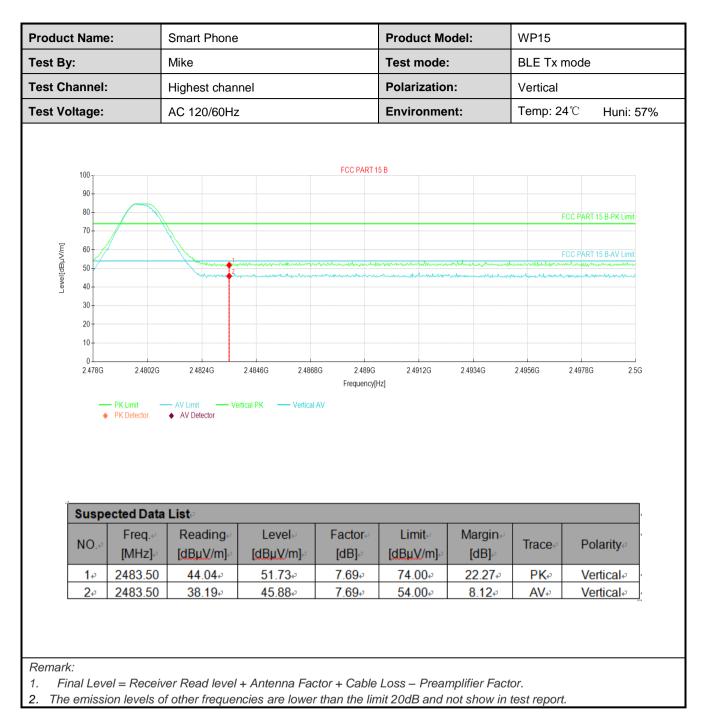
2M PHY

	Product Name:		Smart Phone	1	Product Mo	odel:	WP15		
Test By:			Mike			Test mode:	:	BLE Tx n	node
Fest Ch	annel	:	Lowest chan	nel		Polarizatio	rization: Vertical		
Test Voltage:			AC 120/60Hz			Environme	nt:	Temp: 24	4℃ Huni: 57%
	100				FCC PART 1	5 B			
	90								
	80							F	CC PART 15 B-PK
	70								
[m/M	60							F	CC PART 15 B-AV Limit
Level[dBµV/m]	50	mether work	www.hom when when	warden	www.www.wheeline		mander and a second s	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	much man and a second sec
Lev	40								
	30								
	10								
	0								
		2.3194G	2.3288G	2.3382G 2.347	76G 2.357G Frequency[ł	2.3664G Iz]	2.3758G	2.3852G	2.3946G 2.404G
	NO.*	PK Limit - PK Detector -	AV Limit Ve ◆ AV Detector	ertical PK Vertical Level&	Frequency[ł AV Factor⊷	tz] Limit⊷	Margin⊬	2.3852G	23946G 2404G Polarity
ſ	NO.43	PK Limit PK Detector	AV Limit → Ve AV Detector Reading	ertical PK Vertical Level↔ [dBµV/m]√	Frequency[ł AV Factor⊌ [dB]⊮	Limit⊬ [dBµV/m]₽	Margin↩ [dB]↩	Trace	Polarity
	NO.¢ 1¢	PK Limit PK Detector Freq. 4 [MHz] 4 2390.004 ³	AV Limit	ertical PK — Vertical Level↩ [dBµV/m]↩ 51.62↩	Frequency[ł AV Factor⊮ [dB]⊮ 7.0843	Limit⊮ [dBµV/m]⊮ 74.00≁	Margin.⊌ [dB].₽ 22.38+ ³	Trace. ² PK-2	Polarity⊮ Vertical⊮
	NO.43	PK Limit PK Detector	AV Limit → Ve AV Detector Reading	ertical PK Vertical Level↔ [dBµV/m]√	Frequency[ł AV Factor⊌ [dB]⊮	Limit⊬ [dBµV/m]₽	Margin↩ [dB]↩	Trace	Polarity
	NO.¢ 1¢	PK Limit PK Detector Freq. 4 [MHz] 4 2390.004 ³	AV Limit	ertical PK — Vertical Level↩ [dBµV/m]↩ 51.62↩	Frequency[ł AV Factor⊮ [dB]⊮ 7.0843	Limit⊮ [dBµV/m]⊮ 74.00₽	Margin.⊌ [dB].₽ 22.38+ ³	Trace. ² PK-2	Polarity⊮ Vertical⊮
Remark.	NO.∉ 1∉ 2₽	PK Limit PK Detector Freq.44 [MHz]49 2390.0049 2390.0049	AV Limit Ve AV Detector Reading-U [dBµV/m]-2 44.54+3 38.38+3	ertical PK — Vertical Level↩ [dBµV/m]↩ 51.62↩	Frequency(F AV Factor [dB] ⁽²⁾ 7.08 ⁽²⁾ 7.08 ⁽²⁾	Limit-/ [dBµV/m]-/ 74.00+/ 54.00+/	Margin.∉ [dB].∉ 22.38.≠ 8.54.₽	Trace₽ PK₽ AV₽	Polarity⊮ Vertical⊮

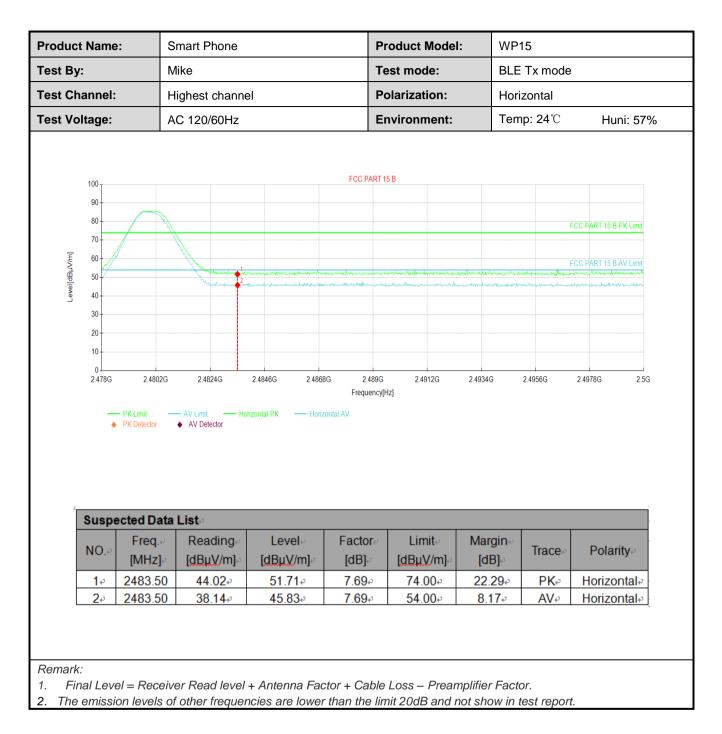










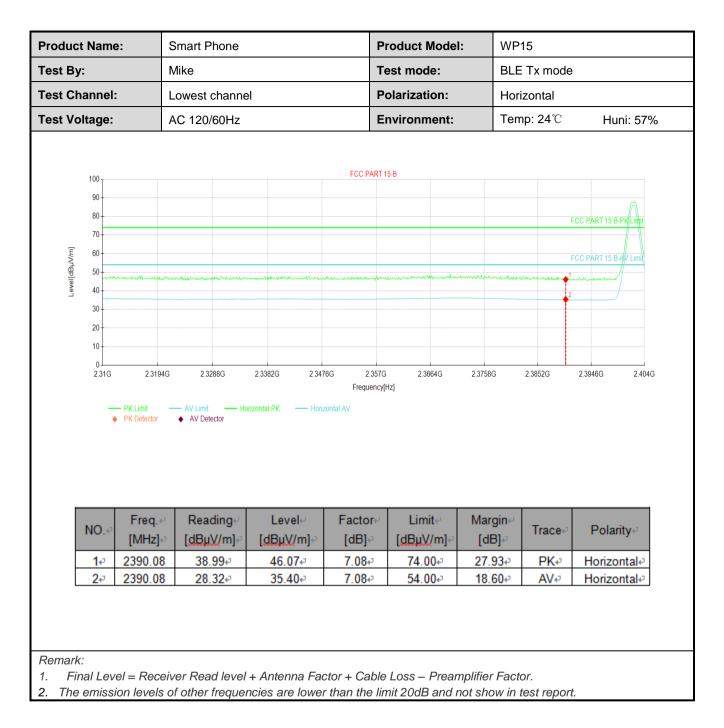




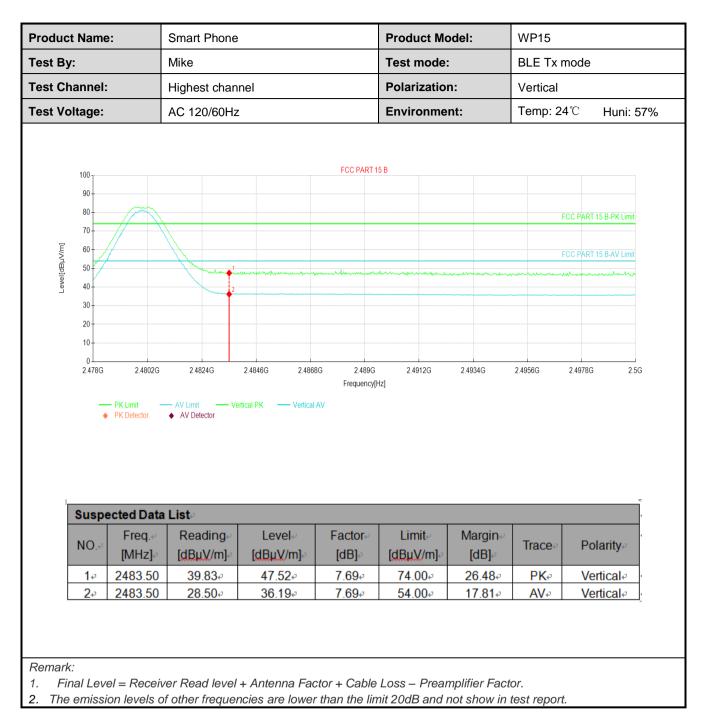
Coded PHY, S=2

	e:	Smart Phone	•	Product Me	odel:	WP15			
Test By:		Mike			Test mode	:	BLE Tx m	ode	
annel		Lowest chan	nel		Polarizatio	tion: Vertical			
tage:		AC 120/60Hz			Environme	nt:	Temp: 24℃ Huni: 57%		
100				FCC PART 1	5 B				
80									
70							FC	C PART 15 B-PK Cimit	
60							EC	C PART 15 B-AV Limit	
50	Apr-1 10 4144	when we have a state of the second state of th	ut where we recorded when the		und whether the second whether	mmunul			
40							2		
30									
20									
10									
0	2 21040	2 22000	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	760 2.2570	2.2664.0	2 27590	2.3852G	2.3946G 2.404G	
				Frequency[2.07000	2.30320	2.3940G 2.404G	
NO.₽	PK Limit PK Detector Freq. 44 [MHz]+	AV Limit Ve AV Detector Reading 4 [dBµV/m] 4	ertical PK Vertical Level↔ [dBµV/m]↔			Margin⊷ [dB]⊷	Trace⊷	Polarity+2	
	PK Detector Freq. € ¹	 AV Detector Reading.e[⊥] 	Level	^{AV} Factor⊷	tz] Limit	Margin⊷			
	100 90 80 70 60 50 40 30 20 10	tage:	tage: AC 120/60Hz	tage: AC 120/60Hz	tage: AC 120/60Hz	tage: AC 120/60Hz Environme	tage: AC 120/60Hz Environment:	tage: AC 120/60Hz Environment: Temp: 24	

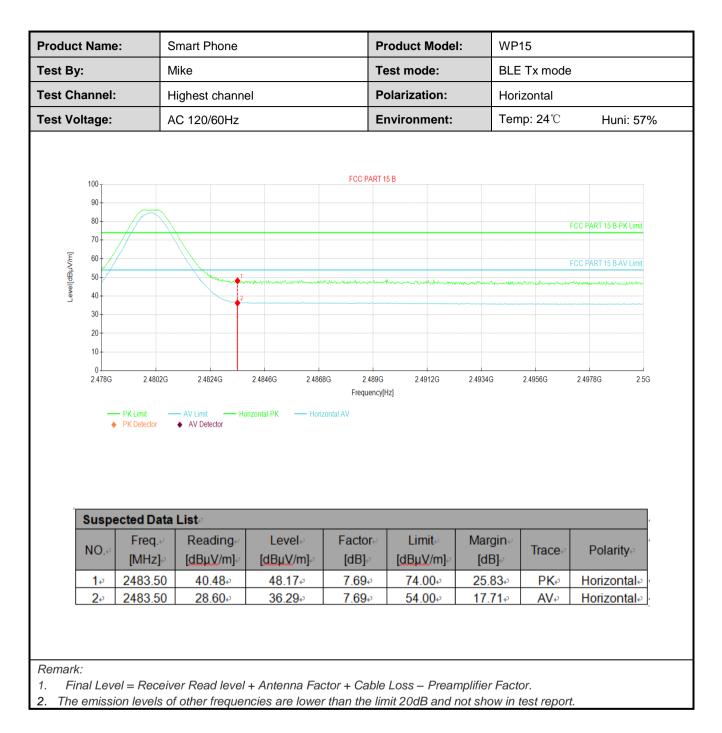










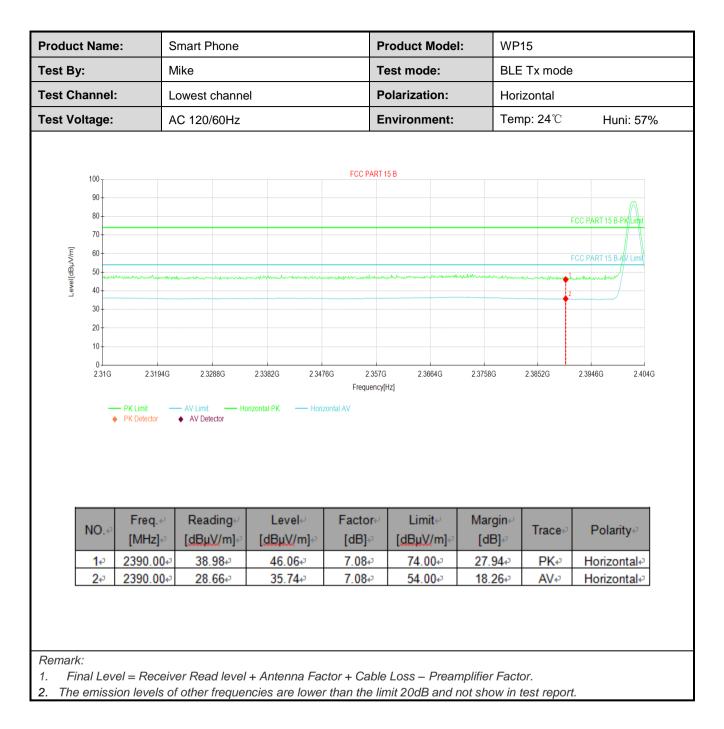




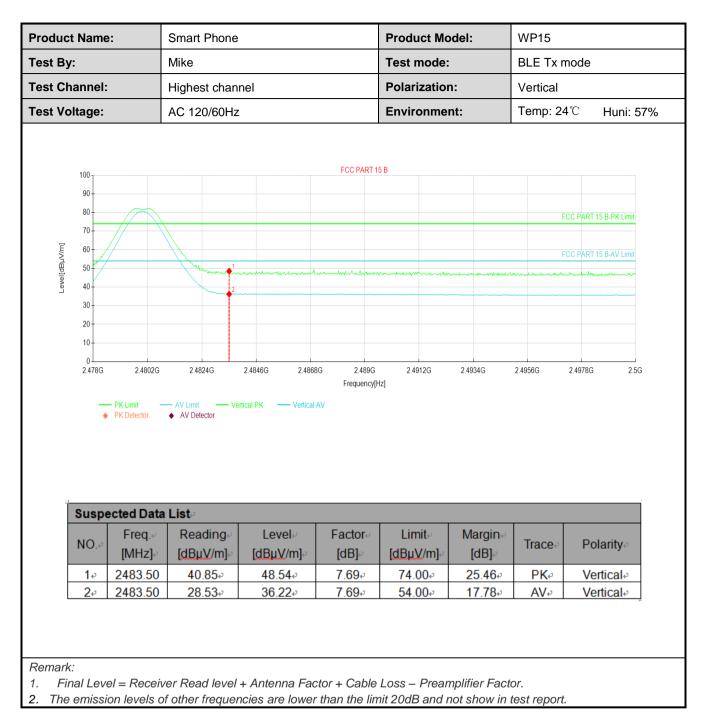
Coded PHY, S=8

Product Name:			Smart Phone)		Product Mo	odel:	WP15					
est By:	:		Mike		Test mode:	:	BLE Tx r	mode					
est Cha	annel	:	Lowest chan	nel		Polarization:		: Vertical			Vertical		
est Vol	Itage:		AC 120/60Hz	2	Environme	nt:	Temp: 2	4℃ Huni: 579					
	100				FCC PART 1	5 B							
	100 90												
	80								FCC PART 15 B-PK				
	70												
[m//	60							F	FCC PART 15 B-AV Limit				
Level[dBµV/m]	50	umpunnt mark	warman Marina	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	man and a second	han an a	and an an an an a	- And a start of the start of t				
Lev	40							2					
	30 20												
	10												
	0⊥ 2.31G	2.3194G	2.3288G	2.3382G 2.347	Frequency[2.3758G	2.3852G	2.3946G 2.404G				
		PK Limit PK Detector	AV Limit Vi AV Detector	ertical PK — Vertical	Frequency[AV Factor⊷	Hz] Limit⊷	Margin⊭	23852G	2.3946G 2.404G Polarity <i>e</i> ⊅				
	231G	PK Limit PK Detector	AV Limit	ertical PK Vertical Level& [dBµV/m]&	Frequency[AV Factor⊷ [dB]⊷	Limit↩ [dBµV/m]↩	Margin↩ [dB]↩	Trace≠	Polarity₀				
	2.31G	PK Limit PK Detector	AV Limit Vi AV Detector	ertical PK — Vertical	Frequency[AV Factor⊷	Hz] Limit⊷	Margin⊭						

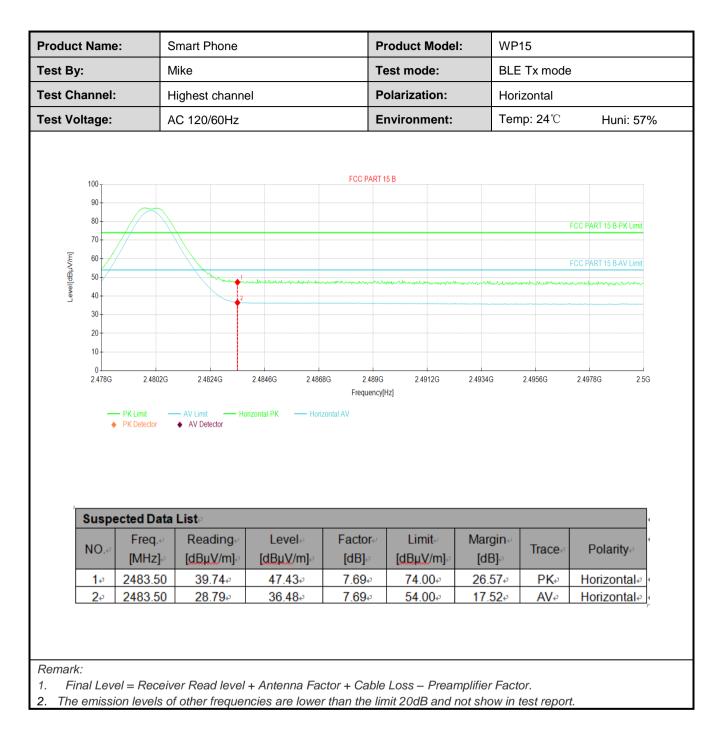














6.7 Spurious Emission

6.7.1 Conducted Emission Method

Test Requirement:	FCC Part 15 C Section 15.247 (d)
Limit:	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.
Test setup:	
Test Instruments:	Refer to section 5.9 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed



6.7.2 Radiated Emission Method

Test Requirement:	FCC Part 15 C	Section 15.	.205	5 and 15.209			
Test Frequency Range:	9kHz to 25GHz						
Test Distance:	3m						
Receiver setup:	Frequency	Detector	r	RBW	VB	W	Remark
	30MHz-1GHz	Quasi-pea	ak	120KHz	300ł	≺Нz	Quasi-peak Value
	Above 1GHz	Peak		1MHz	3M	Hz	Peak Value
		RMS		1MHz	3M	Hz	Average Value
Limit:	Frequency		Lim	iit (dBuV/m @	10m)		Remark
	30MHz-88M			40.0			uasi-peak Value
	88MHz-216M			43.5			uasi-peak Value
	216MHz-960			46.0			Quasi-peak Value
	960MHz-1G		Lin	54.0	2m)	G	Nuasi-peak Value Remark
	Frequency	/	LIII	nit (dBuV/m @ 54.0	311)		Average Value
	Above 1GH	lz		74.0			Peak Value
Test Procedure:	 1GHz)/1.5r The table of highest rad The EUT wareceiving a height ante The antenry the ground Both horized make the n For each s case and t meters and to find the r The test-rest Specified E If the emiss the limit sp of the EUT have 10 dE 	n(above 10 was rotated iation. vas set 3 m antenna, w nna tower. na height is to determ ontal and w neasureme suspected hen the an the rota ta maximum re ceciver sys andwidth v sion level o ecified, the would be margin wo	GHz d 36 nete vhich is vanine verti ent. emi nten able read sten with of th en te rep ould	z) above the 50 degrees to rs(below 1Gl n was mour aried from or the maximu ical polarizat ission, the E na was turned ing. n was set was turned ing. n was set to Maximum H the EUT in pe esting could bo orted. Other to be re-tested	groun o deter Hz) awa ted on he met um valu ions of UT wa d to he from 0 to Pea old Moo ak moo be stop wise th d one b	d at a mine ay from the f er to f ue of the a as arra eights degre k Det de. de was ped ar e emis y one	table 0.8m(below a 3 meter camber. the position of the m the interference- top of a variable- four meters above the field strength. Intenna are set to anged to its worst from 1 meter to 4 es to 360 degrees sect Function and a 10 dB lower than and the peak values ssions that did not using peak, quasi- reported in a data
Test setup:		4m 4m 0.8m 1m	-			Antenna Search Antenn Test eiver –	

Project No.: JYTSZE2106052



Report No: JYTSZB-R12-2101120

	AE EUT Horn Antenna Tower Horn Antenna Tower Ground Reference Plane Test Receiver Controller
Test Instruments:	Refer to section 5.9 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed
Remark:	 Pre-scan all kind of the place mode (X-axis, Y-axis, Z-axis), and found the Y-axis is the worst case. 9 kHz to 30MHz is lower than the limit 20dB, so only shows the data of above 30MHz in this report.



Measurement Data (worst case):

Below 1GHz:

est By: est Frequency: est Voltage:	Mike 30 MHz ~ 1 C AC 120/60Hz	-	FCC PART	Test mode Polarizatio Environme	n:	BLE Tx n Horizonta Temp: 24	al
Pest Voltage:		-	FCC PART	Environme			
	AC 120/60Hz		FCC PART		nt:	Temp: 24	4℃ Huni: 57%
90 80 70 60 50 50 30			FCC PART	15 247			
10 + QP Limit O 30M QP Limit \$ QP Detector	- Horizontal PK	2 100M	Frequency	/(Hz]		FC	C PART 15247-QP Limit
	ata Lista						
Suspected D							
Suspected D NO.e Freq [MHz	.e Reading[d	Level↩ [dBµV/m]↩	Factor⊭ [dB]∉	Limit⊮ [dBµV/m]∉	Margin∉ [dB]∉	Trace₽	Polarity
NO.@ Freq [MHz 1@ 52.916	Reading[d [] BµV/m] 63 3141	[dBµV/m]⊮ 14.40⊮	[dB]⊮ -17.01⊮	[dBµV/m]∂ 40.00∢	[dB]∂ 25.60₽	PK₽	Horizontal.
NO.* Freq [MHz 1* 52.910 2* 76.68	Reading[d gl> BuV/m]> 63+ 31.41+ 13+ 39.88+	[dBµV/m]∂ 14.40₽ 20.59₽	[dB]↩ -17.01↩ -19.29↩	[dBµV/m]. 40.004 40.004	[dB]∉ 25.60₽ 19.41₽	PK₽ PK₽	Horizontal d Horizontal d
NO. Freq [MHz] 1.0 52.910 2.0 76.68° 3.0 172.8°	P Reading[d BµV/m] BµV/m] 33+ 31.41 13+ 39.88 32 36.95	[dBµV/m]↔ 14.40↔ 20.59↔ 18.12↔	[dB].₀ -17.01.₀ -19.29.₀ -18.83.₀	[dBµV/m]₊ 40.00₊ 40.00₊ 43.50₊	[dB]⇒ 25.60↔ 19.41↔ 25.38↔	PKe PKe PKe	Horizontal Horizontal Horizontal
NO.* Freq [MHz 1* 52.910 2* 76.68	P Reading[d BµV/m] BµV/m] 33+ 31.41+ 13+ 39.88+ 32 36.95+ 51 39.48+	[dBµV/m]∂ 14.40₽ 20.59₽	[dB]↩ -17.01↩ -19.29↩	[dBµV/m]. 40.004 40.004	[dB]∉ 25.60₽ 19.41₽	PK₽ PK₽	Horizontale Horizontale



	ame: Smart Phone				Product M	odel:	WP15				
est By:		Mike			Test mode:		BLE Tx mode				
est Frequer	ncy:	30 MHz ~ 1 G	GHz		Polarization: Environment:		Vertical Temp: 24°C Huni: 5				
est Voltage	:	AC 120/60Hz									
100- 90- 80- 70- Egg 50- 50- 3- 40-			2	FCC PART	15 247		5	C PART 15.247-QP Limit			
30 20 10 30M	QP Limit QP Detector	- Vertical PK	100M	Frequency	(Hz]			16			
20 10 30M			100M	Frequency	(HZ)			1G			
20 10 30M	QP Detector		Level- [dBµV/m]+	Frequency Factor	(Hz]	Margin√ [dB]₀	Trace	16 To Polarity⊮			
20 10 30M	QP Detector	List Reading[d	Level	Factor	Limit	Margine	Trace⊧ PK₊				
20 10 30M Susp	QP Detector	List∉ Reading[d BµV/m]∉	Level⊮ [dBµV/m]↩	Factor⊮ [dB]∘	Limit⊮ [dBµV/m]⊬	Margin.e [dB]-2		Polarity			
20 10 30M Susp NO 1+2	CP Detector CP D	List Reading[d BµV/m] 43.26	Level⊮ [dBµV/m]⊮ 26.14⊷	Factor⊮ [dB]∞ -17.12⊷	Limit/ [dBµV/m]₽ 40.00₽	Margin.4 [dB]-2 13.86+2	PK₽	Polarity Vertical			
20 10 30M Susp NO. 1+2 2+3	QP Detector QP Detector Freq.4 [MHz]4 50.24884 75.95384	List Reading[d BµV/m] 43.26 44.07	Level₊/ [dBµV/m]₊/ 26.14₊/ 24.81₊/	Factor-√ [dB]-∘ -17.12-∘ -19.26-∘	Limit-/ [dBµV/m]₽ 40.00₽ 40.00₽	Margin⊮ [dB]∞ 13.86⊷ 15.19⊷	PK. PK.	Polarity Vertical			
20 10 30M Susp NO 1+ ² 2+ ² 3+ ²	 ♦ QP Detector ♦ Petector ♦ Freq ♦ Freq ♦ 50.2488*³ ♦ 75.9538*³ ♦ 96.0813*³ 	List Reading[d BµV/m] 43.26 44.07 39.83 4	Level₊ [dBµV/m]₊ 26.14₊ 24.81₊ 20.88₊	Factor⊮ [dB]⊮ -17.12₽ -19.26₽ -18.95₽	Limit- [dBµV/m]+ 40.00+ 40.00+ 43.50+	Margin⊮ [dB]⊮ 13.86₽ 15.19₽ 22.62₽	PK₀ PK₀ PK₀	Polarity			

3. The Aux Factor is a notch filter switch box loss, this item is not used.



Above 1GHz

1M PHY

			annel: Lowest ch			
	I	Det	tector: Peak Valu	-	I	
Frequency (MHz)	Read Level (dBuV)	Factor(dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin (dB)	Polarizatior
4804.00	45.18	-9.60	35.58	74.00	38.42	Vertical
4804.00	45.36	-9.60	35.76	74.00	38.24	Horizontal
		Dete	ctor: Average Va	lue		
Frequency (MHz)	Read Level (dBuV)	Factor(dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin (dB)	Polarizatio
4804.00	37.74	-9.60	28.14	54.00	25.86	Vertical
4804.00	38.02	-9.60	28.42	54.00	25.58	Horizontal
		Test ch	annel: Middle ch	annel		
			ector: Peak Valu			
Frequency (MHz)	Read Level (dBuV)	Factor(dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin (dB)	Polarizatio
4884.00	45.21	-9.04	36.17	74.00	37.83	Vertical
4884.00	45.38	-9.04	36.34	74.00	37.66	Horizonta
		Dete	ctor: Average Va	lue		
Frequency (MHz)	Read Level (dBuV)	Factor(dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin (dB)	Polarizatio
4884.00	37.73	-9.04	28.69	54.00	25.31	Vertical
4884.00	38.07	-9.04	29.03	54.00	24.97	Horizonta
		Test ch	annel: Highest cl	nannel		
			ector: Peak Valu			
Frequency (MHz)	Read Level (dBuV)	Factor(dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin (dB)	Polarizatio
4960.00	44.79	-8.45	36.34	74.00	37.66	Vertical
4960.00	45.39	-8.45	36.94	74.00	37.06	Horizonta
		Dete	ctor: Average Va	lue		
Frequency (MHz)	Read Level (dBuV)	Factor(dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin (dB)	Polarizatio
4960.00	38.00	-8.45	29.55	54.00	24.45	Vertical
4960.00	38.34	-8.45	29.89	54.00	24.11	Horizonta

1. Final Level =Receiver Read level + Factor.



2M PHY

			annel: Lowest ch			
	T	Det	tector: Peak Valu	ie	1	
Frequency (MHz)	Read Level (dBuV)	Factor(dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin (dB)	Polarizatio
4804.00	45.30	-9.60	35.70	74.00	38.30	Vertical
4804.00	44.73	-9.60	35.13	74.00	38.87	Horizonta
		Dete	ctor: Average Va	alue		
Frequency (MHz)	Read Level (dBuV)	Factor(dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin (dB)	Polarizatio
4804.00	37.87	-9.60	28.27	54.00	25.73	Vertical
4804.00	37.20	-9.60	27.60	54.00	26.40	Horizonta
		Test ch	annel: Middle ch	annel		
	-	Det	tector: Peak Valu	le		
Frequency (MHz)	Read Level (dBuV)	Factor(dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin (dB)	Polarizatio
4884.00	44.85	-9.04	35.81	74.00	38.19	Vertical
4884.00	45.19	-9.04	36.15	74.00	37.85	Horizonta
		Dete	ctor: Average Va	alue		
Frequency (MHz)	Read Level (dBuV)	Factor(dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin (dB)	Polarizatio
4884.00	38.25	-9.04	29.21	54.00	24.79	Vertical
4884.00	37.68	-9.04	28.64	54.00	25.36	Horizonta
		Testab				
			annel: Highest ch tector: Peak Valu			
Fraguanay	Read Level	Del		Limit Line	Margin	
Frequency (MHz)	(dBuV)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	Polarizatio
4960.00	44.72	-8.45	36.27	74.00	37.73	Vertical
4960.00	44.83	-8.45	36.38	74.00	37.62	Horizonta
	Т	Dete	ctor: Average Va		T	
	Read Level	Factor(dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin (dB)	Polarizatio
Frequency (MHz)	(dBuV)	()	(ubu v/m)	(@(````)	(0.2)	
	(dBuV) 37.86	-8.45	(dBd V/III) 29.41	54.00	24.59	Vertical



Coded PHY, S=2

			annel: Lowest ch			
		De	tector: Peak Valu			
Frequency (MHz)	Read Level (dBuV)	Factor(dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin (dB)	Polarizatio
4804.00	45.42	-9.60	35.82	74.00	38.18	Vertical
4804.00	45.29	-9.60	35.69	74.00	38.31	Horizonta
		Dete	ctor: Average Va	lue		1
Frequency (MHz)	Read Level (dBuV)	Factor(dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin (dB)	Polarizatio
4804.00	37.63	-9.60	28.03	54.00	25.97	Vertical
4804.00	38.03	-9.60	28.43	54.00	25.57	Horizonta
		Test ch	annel: Middle ch	annel		
		Det	tector: Peak Valu	ie		
Frequency (MHz)	Read Level (dBuV)	Factor(dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin (dB)	Polarizatio
4884.00	45.62	-9.04	36.58	74.00	37.42	Vertical
4884.00	45.49	-9.04	36.45	74.00	37.55	Horizonta
		Dete	ctor: Average Va	lue		
Frequency (MHz)	Read Level (dBuV)	Factor(dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin (dB)	Polarizatio
4884.00	37.93	-9.04	28.89	54.00	25.11	Vertical
4884.00	37.71	-9.04	28.67	54.00	25.33	Horizonta
			annel: Highest ch tector: Peak Valu			
Frequency (MHz)	Read Level (dBuV)	Factor(dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin (dB)	Polarizatio
4960.00	45.45	-8.45	37.00	74.00	37.00	Vertical
4960.00	45.00	-8.45	36.55	74.00	37.45	Horizonta
		Dete	ctor: Average Va	lue		
Frequency	Read Level (dBuV)	Factor(dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin (dB)	Polarizatio
(MHz)	(- /		M
	37.85	-8.45	29.40	54.00	24.60	Vertical



Coded PHY, S=8

			annel: Lowest ch			
		De	tector: Peak Valu			
Frequency (MHz)	Read Level (dBuV)	Factor(dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin (dB)	Polarizatio
4804.00	45.86	-9.60	36.26	74.00	37.74	Vertical
4804.00	45.72	-9.60	36.12	74.00	37.88	Horizonta
		Dete	ctor: Average Va	lue		
Frequency (MHz)	Read Level (dBuV)	Factor(dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin (dB)	Polarizatio
4804.00	38.04	-9.60	28.44	54.00	25.56	Vertical
4804.00	37.44	-9.60	27.84	54.00	26.16	Horizonta
		Test ch	annel: Middle ch	annel		
		Det	tector: Peak Valu	ie		
Frequency (MHz)	Read Level (dBuV)	Factor(dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin (dB)	Polarizatio
4884.00	45.85	-9.04	36.81	74.00	37.19	Vertical
4884.00	45.65	-9.04	36.61	74.00	37.39	Horizonta
		Dete	ctor: Average Va	llue	·	
Frequency (MHz)	Read Level (dBuV)	Factor(dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin (dB)	Polarizatio
4884.00	37.63	-9.04	28.59	54.00	25.41	Vertical
4884.00	37.71	-9.04	28.67	54.00	25.33	Horizonta
			annel: Highest ch tector: Peak Valu			
Frequency (MHz)	Read Level (dBuV)	Factor(dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin (dB)	Polarizatio
4960.00	45.80	-8.45	37.35	74.00	36.65	Vertical
4960.00	45.71	-8.45	37.26	74.00	36.74	Horizonta
	•	Dete	ctor: Average Va	llue		
Frequency	Read Level (dBuV)	Factor(dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin (dB)	Polarizati
(MHz)				54.00	04.00	Vartical
	37.63	-8.45	29.18	54.00	24.82	Vertical