FCC Test Report

Report No.: AGC05843161101FE03

FCC ID	:	2AKLPA8
APPLICATION PURPOSE	:	Original Equipment
PRODUCT DESIGNATION	:	Smart Phone
BRAND NAME	:	Blackview
MODEL NAME	:	A8
CLIENT	:	TOOCAN ELECTRONICS S.A.S
DATE OF ISSUE	:	Dec. 07, 2016
STANDARD(S) TEST PROCEDURE(S)	:	FCC Part 15 Rules DA 00-705
REPORT VERSION	:	V1.0

Attestation of Global Compliance (Shenzhen) Co., Ltd

A GC (shenzhen)

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Report Revise Record

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	Dec. 07, 2016	Valid	Original Report

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Applicant	TOOCAN ELECTRONICS S.A.S
Address	Calle 45 # 53-50 oficina 0911 CC gran plaza medellin Colombia
Manufacturer	Shenzhen JEKO Communication Co., Ltd.
Address	13th Floor, Weidonglong Commercial Building B, Meilong Avenue, Longhua New District, Shenzhen, China
Product Designation	Smart Phone
Brand Name	Blackview
Test Model	A8
Date of test	Nov. 20, 2016~Dec. 05, 2016
Deviation	None
Condition of Test Sample	Normal
Report Template	AGCRT-US-BR/RF

1. VERIFICATION OF CONFORMITY

We hereby certify that:

The above equipment was tested by Dongguan Precise Testing Service Co., Ltd. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.10 (2013) and the energy emitted by the sample EUT tested as described in this report is in compliance with radiated emission limits of FCC Rules Part 15.247.

Tested By	demare itmoorg	
	Donjon Yang Huang(Huang Dongyang)	Dec. 05, 2016
Reviewed By	Bong xie	
	Bart Xie(Xie Xiaobin)	Dec. 07, 2016
Approved By	Solya shory	
	Solger Zhang(Zhang Hongyi) Authorized Officer	Dec. 07, 2016

2. GENERAL INFORMATION

2.1. PRODUCT DESCRIPTION

The EUT is "Smart Phone " designed as a "Communication Device". It is designed by way of utilizing the FHSS technology to achieve the system operation.

Operation Frequency	2.402 GHz to 2.480GHz
RF Output Power	4.66 dBm(Max)
Bluetooth Version	V 3.0
Modulation	GFSK, π /4-DQPSK, 8DPSK
Number of channels	79(For BR/EDR)
Hardware Version	Y813
Software Version	Y813.YX.A8.Panama.b2b5.5.1Y813.YX-A8-Blackview-2016.09.22_12.3
Antenna Designation	Integrated Antenna
Antenna Gain	0.5dBi
Power Supply	DC3.8V by Battery

A major technical description of EUT is described as following

2.2. TABLE OF CARRIER FREQUENCYS

Frequency Band	Channel Number	Frequency
2400~2483.5MHZ	0	2402MHZ
	1	2403MHZ
	:	:
	38	2440 MHZ
	39	2441 MHZ
	40	2442 MHZ
	•	:
	77	2479 MHZ
	78	2480 MHZ

2.3. RECEIVER INPUT BANDWIDTH

The input bandwidth of the receiver is 1.3MHZ, In every connection one Bluetooth device is the master and the other one is slave. The master determines the hopping sequence. The slave follows this sequence. Both devices shift between RX and TX time slot according to the clock of the master. Additionally the type of connection(e.g. single of multislot packet) is set up at the beginning of the connection. The master adapts its hopping frequency and its TX/RX timing according to the packet type of the connection. Also the slave of the connection will use these settings.

Repeating of a packet has no influence on the hopping sequence. The hopping sequence generated by the master of the connection will be followed in any case. That means, a repeated packet will not be send on the same frequency, it is send on the next frequency of the hopping sequence.

2.4. EXAMPLE OF A HOPPING SEQUENCY IN DATA MODE

Example of a 79 hopping sequence in data mode: 40,21,44,23,42,53,46,55,48,33,52,35,50,65,54,67 56,37,60,39,58,69,62,71,64,25,68,27,66,57,70,59 72,29,76,31,74,61,78,63,01,41,05,43,03,73,07,75 09,45,13,47,11,77,15,00,64,49,66,53,68,02,70,06 01, 51, 03, 55, 05, 04

2.5. EQUALLY AVERAGE USE OF FREQUENCIES AND BEHAVIOUR

The generation of the hopping sequence in connection mode depends essentially on two input values: 1. LAP/UAP of the master of the connection.

2. Internal master clock

The LAP(lower address part) are the 24 LSB's of the 48 BD_ADDRESS. The BD_ADDRESS is an unambiguous number of every Bluetooth unit. The UAP(upper address part) are the 24MSB's of the 48BD_ADDRESS

The internal clock of a Bluetooth unit is derived from a free running clock which is never adjusted and is never turned off. For ehavior zation with other units only offset are used. It has no relation to the time of the day. Its resolution is at least half the RX/TX slot length of 312.5us.The clock has a cycle of about one day(23h30).In most case it is implemented as 28 bit counter. For the deriving of the hopping sequence the entire. LAP(24 bits),4LSB's(4bits)(Input 1) and the 27MSB's of the clock(Input 2) are used. With this input values different mathematical procedures(permutations, additions, XOR-operations)are performed to generate te Sequence. This will be done at the beginning of every new transmission.

Regarding short transmissions the Bluetooth system has the following ehavior:

The first connection between the two devices is established, a hopping sequence was generated. For Transmitting the wanted data the complete hopping sequence was not used. The connection ended. The second connection will be established. A new hopping sequence is generated. Due to the fact the Bluetooth clock has a different value, because the period between the two transmission is longer(and it Cannot be shorter) than the minimum resolution of the clock(312.5us).The hopping sequence will always Differ from the first one.

2.6. RELATED SUBMITTAL(S) / GRANT (S)

This submittal(s) (test report) is intended for **FCC ID: 2AKLPA8** filing to comply with Section 15.247 of the FCC Part 15, Subpart C Rules.

2.7. TEST METHODOLOGY

Both conducted and radiated testing was performed according to the procedures in FCC DA 00-705. Radiated testing was performed at an antenna to EUT distance 3 meters.

2.8. SPECIAL ACCESSORIES

Refer to section 5.2.

2.9. EQUIPMENT MODIFICATIONS

Not available for this EUT intended for grant.

3. MEASUREMENT UNCERTAINTY

Conducted measurement: +/- 2.75dB Radiated measurement: +/- 3.2dB

4. DESCRIPTION OF TEST MODES

NO.	TEST MODE DESCRIPTION
1	Low channel GFSK
2	Middle channel GFSK
3	High channel GFSK
4	Low channel π /4-DQPSK
5	Middle channel π /4-DQPSK
6	High channel π /4-DQPSK
7	Low channel 8DPSK
8	Middle channel 8DPSK
9	High channel 8DPSK
10	Normal Hopping

Note:

1. All the test modes can be supply by Built-in Li-ion battery, only the result of the worst case was recorded in the report, if no other cases.

2. For Radiated Emission, 3axis were chosen for testing for each applicable mode.

5. SYSTEM TEST CONFIGURATION

5.1. CONFIGURATION OF EUT SYSTEM Configuration:



5.2. EQUIPMENT USED IN EUT SYSTEM

ltem	Equipment	Model No.	ID or Specification	Remark
1	Smart Phone	A8	2AKLPA8	EUT
2	Adapter	A050100U01	DC5V /1000mA	Accessory
3	Battery	A8	DC3.8V/2350mAh	Accessory
4	Earphone	A8	N/A	Accessory
5	USB Cable	A8	N/A	Accessory

5.3. SUMMARY OF TEST RESULTS

FCC RULES	DESCRIPTION OF TEST	RESULT
§15.247	Peak Output Power	Compliant
§15.247	20 dB Bandwidth	Compliant
§15.247	Spurious Emission	Compliant
§15.209	Radiated Emission	Compliant
§15.247	Band Edges	Compliant
§15.207	Conduction Emission	Compliant
§15.247	Number of Hopping Frequency	Compliant
§15.247	Time of Occupancy	Compliant
§15.247	Frequency Separation	Compliant

6. TEST FACILITY

Site	Dongguan Precise Testing Service Co., Ltd.
Location	Building D,Baoding Technology Park,Guangming Road2,Dongcheng District, Dongguan, Guangdong, China,
FCC Registration No.	371540
Description	The test site is constructed and calibrated to meet the FCC requirements in documents ANSI C63.10:2013.

ALL TEST EQUIPMENT LIST

FOR RADIATED EMISSION TEST (BELOW 1GHZ)

	Radiat	ed Emission Tes	st Site		
Name of Equipment	Manufacturer	Model Number	Serial Number	Last Calibration	Due Calibration
EMI Test Receiver	Rohde & Schwarz	ESCI	101417	July 3, 2016	July 2, 2017
Trilog Broadband Antenna (25M-1GHz)	SCHWARZBECK	VULB9160	9160-3355	July 3, 2016	July 2, 2017
Signal Amplifier	SCHWARZBECK	BBV 9475	9745-0013	July 3, 2016	July 2, 2017
RF Cable	SCHWARZBECK	AK9515E	96221	July 3, 2016	July 2, 2017
3m Anechoic Chamber	CHENGYU	966	PTS-001	June 5, 2016	June 4, 2017
MULTI-DEVICE Positioning Controller	Max-Full	MF-7802	MF780208339	N/A	N/A
Active loop antenna (9K-30MHz)	Schwarzbeck	FMZB1519	1519-038	June 5, 2016	June 4, 2017
Spectrum analyzer	Agilent	E4407B	MY46185649	June 5, 2016	June 4, 2017
Power Probe	R&S	NRP-Z23	100323	July 24,2016	July 23,2017
RF attenuator	N/A	RFA20db	68	N/A	N/A

FOR RADIATED EMISSION TEST (1GHZ ABOVE)

	Radia	ted Emission Tes	st Site		
Name of Equipment	Manufacturer	Model Number	Serial Number	Last Calibration	Due Calibration
EMI Test Receiver	Rohde & Schwarz	ESCI	101417	July 3, 2016	July 2, 2017
Horn Antenna (1G-18GHz)	SCHWARZBECK	BBHA9120D	9120D-1246	July 10, 2016	July 9, 2017
Spectrum Analyzer	Agilent	E4411B	MY4511453	July 3, 2016	July 2, 2017
Signal Amplifier	SCHWARZBECK	BBV 9718	9718-269	July 6, 2016	July 5, 2017
RF Cable	SCHWARZBECK	AK9515H	96220	July 7, 2016	July 6, 2017
3m Anechoic Chamber	CHENGYU	966	PTS-001	June 5, 2016	June 4, 2017
MULTI-DEVICE Positioning Controller	Max-Full	MF-7802	MF780208339	N/A	N/A

Horn Ant (18G-40GH	lz) Schwarzbe	ck	BBHA 9170)	9170-181	June 5, 2	016	June 4, 2017
Power Probe	R&S		NRP-Z23		100323	July 24,2	016	July 23,2017
RF attenuator	N/A		RFA20db		68	N/A		N/A
	C	Condu	cted Emissior	ו Te	st Site			
Name of Equipment	Manufacturer	Мо	del Number	Ser	rial Number	Last Calibration	Du	e Calibration
EMI Test Receiver	Rohde & Schwarz		ESCI		101417	July 3, 2016	J	uly 2, 2017
Artificial Mains Network	Narda		L2-16B	00	0WX31025	July 7, 2016	J	uly 6, 2017
Artificial Mains Network (AUX)	Narda		L2-16B	00	0WX31026	July 7, 2016	J	uly 6, 2017
RF Cable	SCHWARZBECK	A	AK9515E		96222	July 3, 2016	J	uly 2, 2017
Shielded Room	CHENGYU		843		PTS-002	June 5,2016	J	une 4,2017

7. PEAK OUTPUT POWER

7.1. MEASUREMENT PROCEDURE

For peak power test:

- 1. Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
- 2. Set the EUT Work on the top, middle and the bottom operation frequency individually.
- 3. RBW > the 20 dB bandwidth of the emission being measured, VBW \ge RBW.
- 4. Record the maximum power from the Spectrum Analyzer.

For average power test:

- 1. Connect EUT RF output port to power probe through an RF attenuator.
- 2. Connect the power probe to the PC.
- 3. Set the EUT Work on the top, the middle and the bottom operation frequency individually.
- 4. Record the maximum power from the software.
- 5. The maximum peak power shall be less 125mW (21dBm).

Note : The EUT was tested according to DA000705 for compliance to FCC 47CFR 15.247 requirements.

7.2. TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)

PEAK POWER TEST SETUP

RF Attenuator





7.3. LIMITS AND MEASUREMENT RESULT

Frequency (GHz)	Peak Power (dBm)	Applicable Limits (dBm)	Pass or Fail
2.402	4.660	21	Pass
2.441	4.127	21	Pass
2.480	3.771	21	Pass

Frequency (GHz)	Peak Power (dBm)	Applicable Limits (dBm)	Pass or Fail
2.402	3.894	21	Pass
2.441	3.375	21	Pass
2.480	2.939	21	Pass

Frequency (GHz)	Peak Power (dBm)	Applicable Limits (dBm)	Pass or Fail
2.402	3.900	21	Pass
2.441	3.368	21	Pass
2.480	3.038	21	Pass

Test Graph



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8. 20DB BANDWIDTH

8.1. MEASUREMENT PROCEDURE

- 1. Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
- 2, Set the EUT Work on the top, the middle and the bottom operation frequency individually.
- 3. Set Span = approximately 2 to 3 times the 20 dB bandwidth, centered on a hoping channel $RBW \ge 1\%$ of the 20 dB bandwidth, VBW $\ge RBW$; Sweep = auto; Detector function = peak
- 4. Set SPA Trace 1 Max hold, then View.

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



8.3. LIMITS AND MEASUREMENT RESULTS

Mode	Channel.	EBW [KHz]	Verdict
GFSK	LCH	902.2	PASS
GFSK	MCH	901.4	PASS
GFSK	НСН	902.7	PASS
π/4DQPSK	LCH	1150	PASS
π/4DQPSK	MCH	1144	PASS
π/4DQPSK	НСН	1149	PASS
8DPSK	LCH	1143	PASS
8DPSK	MCH	1143	PASS
8DPSK	HCH	1143	PASS

Test Graph

GFSK/LCH GFSK/MCH GFSK/MCH GFSK/MCH GFSK/MCH		Graphs
GFSK/LCH GFS		Majlent Spectrum Analyzer- Occupied BW R AllGN OFF 06:22:48 PM Nov 28, 2015 Frequency Center Freq 2.402000000 GHz Genter Freq: 2.402000000 GHz Radio Std: None Frequency #IFGain:Low #IFGain:Low AllGN OFF 06:22:48 PM Nov 28, 2015 Frequency 0 dB/div Ref 10.00 dBm Radio Device: BTS Radio Device: BTS
GFSK/MCH GFS	GFSK/LCH	Com 100 200 300 400 500 500 500 500 500 500 5
GFSK/MCH Occupied Bandwidth Total Power 10.7 dBm Auto Man Freq Offset 0.851.72 kHz OBW Power 99.00 % 7 0.12 Mail Freq Offset 0.12 0.12 0.12 0.12 0.12 Mail 902.2 kHz x dB -20.00 dB 0.12		Center 2.402 GHz Span 3 MHz CF Step #Res BW 30 kHz #VBW 100 kHz Sweep 3.2 ms 300 000 kHz
GFSK/MCH		Occupied Bandwidth Total Power 10.7 dBm
GFSK/MCH		851./2 KHZ Freq Offset Transmit Freq Error 1.967 kHz OBW Power 99.00 % 0 Hz
GFSK/MCH Group and and a state of the second		x dB Bandwidth 902.2 kHz x dB -20.00 dB
GFSK/MCH		
Center 2.441 GHz #Res BW 30 kHz Center 2.441 GHz #Res BW 30 kHz Transmit Freq Error 1.279 kHz x dB Bandwidth 901.4 kHz x dB 2.000 dB Bandwidth 901.4 kHz x dB 2.000 dB CF Step 300.000 kHz Sweep 3.2 ms Auto Man Freq Offset 0 Hz		MSO J File <screen_0019.png> saved STATUS Majent Spectrum Analyzer - Occupied BW Majent Spectrum Analyzer - Occupied BW Center Freq 2.441000000 GHz #FGain:Low #FGain:Low #Gain:Low Conter Freq: 2.44100000 GHz #Fain:Low Center Freq: 2.44100000 GHz #Gain:Low Center Freq: 2.44100000 GHz #Atten: 20 dB Radio Device: BTS</screen_0019.png>
Celler2.44 CM2#VBW 100 kHzSweep 3.2 ms#Res BW 30 kHz#VBW 100 kHzSweep 3.2 msOccupied BandwidthTotal Power10.1 dBm850.70 kHzFreq OffsetTransmit Freq Error1.279 kHzOBW Power99.00 %x dB Bandwidth901.4 kHzx dB-20.00 dBCE Step	GESK/MCH	HISO FILe <screen_0019.png> saved [STATUS]</screen_0019.png>
Occupied Bandwidth Total Power 10.1 dBm 850.70 kHz Freq Offset Transmit Freq Error 1.279 kHz OBW Power 99.00 % 0 Hz x dB Bandwidth 901.4 kHz x dB -20.00 dB 0 Hz	GFSK/MCH	HISO File <screen_0019.png> saved [STATUS] Aglien Spectrum Analyzer - Occupied BW OF 05 0 AC Center Freq 2.441000000 GHz FF FGain:Low FF FGain:Low Center Freq: 2.44100000 GHz Center F</screen_0019.png>
Transmit Freq Error 1.279 kHz OBW Power 99.00 % 0 Hz x dB Bandwidth 901.4 kHz x dB -20.00 dB	GFSK/MCH	HSG File <screen_0019.png> saved [STATUS] PE 50 AC SENSE INT Avalues - Occupied BW PE 50 AC SENSE INT Avalues - Occupied BW Center Freq 2.441000000 GHz Frequency AvglHold:>1010 Radio Device: BTS 10 dB/d/v Ref 10.00 dBm Center Freq 2.44100000 GHz Center Freq 2.441 GHz #Kes BW 30 KHz #VEW 100 KHz Sweep 3.22 ms</screen_0019.png>
x dB Bandwidth 901.4 kHz x dB -20.00 dB	GFSK/MCH	HIS FILE <screen_0019.png> saved [STATUS] Allow OFF_D62442 PM Nov 28.2015 Center Freq 2.441000000 GHz FF Gain:Low FF Gain:Low FF Gain:Low Center Freq 2.441000000 GHz Center Freq 2.441000000 GHz Center Freq 2.44100000 GHz Center State Center 2.441 GHz Free BW 30 kHz Center 2.441 GHz Span 3 MHz Sweep 3.2 ms Cocupied Bandwidth Total Power 10.1 dBm</screen_0019.png>
	GFSK/MCH	Allow Screen _0019,png> saved [status]
	GFSK/MCH	Instruction

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9. CONDUCTED SPURIOUS EMISSION

9.1. MEASUREMENT PROCEDURE

- 1. Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
- 2. Set the EUT Work on the top, the Middle and the bottom operation frequency individually.
- Set the Span = wide enough to capture the peak level of the in-band emission and all spurious emissions from the lowest frequency generated in the EUT up through the 10th harmonic.
 RBW = 100 kHz; VBW ≥ RBW; Sweep = auto; Detector function = peak.
- 4. Set SPA Trace 1 Max hold, then View.

Note: The EUT was tested according to DA000705 for compliance to FCC 47CFR 15.247 requirements. Owing to satisfy the requirements of the number of measurement points, we set the RBW=1MHz, VBW > RBW, scan up through 10th harmonic, and consider the tested results as the worst case, if the tested results conform to the requirement, we can deem that the real tested results(set the RBW=100KHz, VBW > RBW) are conform to the requirement.

9.2. TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)

The same as described in section 8.2

9.3. MEASUREMENT EQUIPMENT USED

The same as described in section 6

9.4. LIMITS AND MEASUREMENT RESULT

LIMITS AND MEA	SUREMENT RESULT	
Ampliashla Limita	Measurement Re	esult
	Test Data	Criteria
In any 100 KHz Bandwidth Outside the	At least -20dBc than the limit	
frequency band in which the spread spectrum	Specified on the BOTTOM	PASS
intentional radiator is operating, the radio frequency	Channel	
power that is produce by the intentional radiator		
shall be at least 20 dB below that in 100KHz		
bandwidth within the band that contains the highest		
level of the desired power.	At least -20dBc than the limit	DASS
In addition, radiation emissions which fall in the	Specified on the TOP Channel	PASS
restricted bands, as defined in §15.205(a), must also		
comply with the radiated emission limits specified		
in§15.209(a))		





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Start Freq 1.000000	000 GHz	Tria: Erec Dun	Avg Type: Log-Pwr	TRACE 1 2 3 4 5 6	Frequency
	PNO: Fast	#Atten: 20 dB	Avginola:>10/10	DET PNNNNN	Parte T
Ref Offset 1.	5 dB		Mkr2	9.607 375 GHz	Auto rur
10 dB/div Ref 11.50	dBm			-55.411 0.811	
1.50					Center Fre
-18.5				-15.40 dBm	5.50000000 GP
-28.5					Start Erg
-38.5	<u> </u>				1.000000000 GH
-48.5				2 −	
-58.5		and a state of the second s		والقربي ومخاطعه والمروانة والمعادية	Stop Fre
-78.5		والأعلاقي فكالتفريخين		أنعكم متقتلين	10.00000000 GH
Start 1 000 GHz	^			Stop 10 000 GHz	CESto
#Res BW 100 kHz	#VBW	300 kHz	Sweep 86	61.3 ms (40001 pts)	900.000000 MH
MKR MODE TRC SCL	X 2.602.025.011	Y FU	NCTION FUNCTION WIDTH	FUNCTION VALUE	Auto Ma
2 N 1 f	9.607 375 GHz	-55.411 dBm			Frea Offse
4				=	0+
6					
8					
10					
11					
		m	CTATIN	•	
11 MSG		m	STATUS	s	
11 WSG Mgilent Spectrum Analyzer - Swe RF 50 Ω	pt SA	m SENSE:INT	STATUS ALIGN AUTO	s 11:38:52 AM Nov 29, 2016	Peak Search
11 MSG MSG Majlent Spectrum Analyzer - Swe Marker 1 24.984250	pt SA ∴ AC 000000 GHZ 	m SENSE:INT Trig: Free Run	ALIGN AUTO Avg Type: Log-Pwr Avg Hold:>10/10	s 11:38:52 AM Nov 29, 2016 TRACE 2 3 4 5 6 TYPE MAXWAW	Peak Search
11 MSG MsG Mailent Spectrum Analyzer - Swe RF 50 Ω Marker 1 24.9842500	pt SA AC 000000 GHz PNO: Fast C IFGain:Low	III SENSE:INT Trig: Free Run #Atten: 20 dB	ALIGN AUTO Avg Type: Log-Pwr Avg Hold:>10/10	s 11:38:52 AM Nov 29, 2016 TRACE 1 2 3 4 5 6 TVPE MWWWW DET P NNNN 24.984 250 GHz	Peak Search Next Pea
11 wsg Magilent Spectrum Analyzer - Swe Marker 1 24.984250 Ref Offset 1: 10 dB/div Ref 11.50 d	AC O00000 GHZ PN0: Fast IFGain:Low 5 dB dBm	" SENSE:INT Trig: Free Run #Atten: 20 dB	ALIGN AUTO Avg Type: Log-Pwr Avg Hoid:>10/10 Mkr1 2	s 11:38:52 AM Nov 29, 2016 TRACE 1 2 3 4 5 0 TYPE M WWW DET P NNNN 24.984 250 GHz -57.148 dBm	Peak Search Next Pea
11 ₩SG ₩SG ₩Agilent Spectrum Analyzer - Swe ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩	pt SA AC 000000 GHz PNO: Fast IFGain:Low 5 dB dBm	III SENSE:INT Trig: Free Run #Atten: 20 dB	ALIGN AUTO Avg Type: Log-Pwr Avg Hold:>10/10 MKr1 2	11:38:52 AM Nov 29, 2016 TRACE 2 3 4 5 6 TYPE MWWWW DET PNNNNN 24.984 250 GHz -57.148 dBm	Peak Search Next Pea
11 MSG 21 Agilent Spectrum Analyzer - Swe C2 RF JS0 Ω Marker 1 24.9842500 Ref Offset 1.4 Log 1.50 -8.50	pt SA AC 000000 GHz PNO: Fast C IFGain:Low 5 dB dBm	III SENSE:INT Trig: Free Run #Atten: 20 dB	ALIGN AUTO Avg Type: Log-Pwr Avg Hold:>10/10 Mkr1 2	s 11:38:52 AM Nov 29, 2016 TRACE [1 2 3 4 5 6 TVPE MWWWW DET P NNNNN 24.984 250 GHz -57.148 dBm	Peak Search Next Pea Next Pk Righ
11 WSG Marker 1 24.984250 Ref Offset 1. 10 dB/div Ref 11.50 of 1.50 -8.50 -18.5	pt SA AC PNO: Fast IFGain:Low 5 dB dBm	" SENSE:INT Trig: Free Run #Atten: 20 dB	ALIGN AUTO Avg Type: Log-Pwr Avg Hold:>10/10	s 11:38:52 AM Nov 29, 2016 TRACE 1 2 3 4 5 6 TYPE M WWW DET P NNNN 24.984 250 GHz -57.148 dBm -15:40 dBm	Peak Search Next Pea
11 WSG Marker 1 24.9842500 Ref Offset 1.3 10 dB/div Ref 11.50 (1.50 -8.50 -18.5 -28.5 -28.5 -28.5	pt SA AC PNO: Fast IFGain:Low 5 dB dBm	" SENSE:INT Trig: Free Run #Atten: 20 dB	ALIGN AUTO Avg Type: Log-Pwr Avg Hold:>10/10	11:38:52 AM Nov 29, 2016 TRACE 2 3 4 5 6 TYPE WWWWW DET P N N N N 24.984 250 GHz -57.148 dBm	Peak Search Next Pea Next Pk Righ
11 MSG Marker 124.9842500 Marker 124.9842500 Ref Offset 1.4 10 dB/div Ref 11.50 1.50 -8.50 -18.5 -28.5 -38.5 -48.5	pt SA AC 000000 GHz PNO: Fast G IFGain:Low 5 dB dBm	III SENSE:INT Trig: Free Run #Atten: 20 dB	ALIGN AUTO Avg Type: Log-Pwr Avg Hold:>10/10	11:38:52 AM Nov 29, 2016 TRACE 2 3 4 5 6 TYPE MWWWWW DET PNNNNN 24.984 250 GHz -57.148 dBm -15.40 dBm	Peak Search Next Pea Next Pk Righ
11 WSG Marker 1 24.984250 Ref Offset 1: 10 dB/div Ref 11.50 d 1.50 -8.50 -18.5 -38.5 -38.5 -38.5 -38.5 -38.5 -38.5	pt SA AC PNO: Fast PNO: Fast FGain:Low 5 dB dBm	Trig: Free Run #Atten: 20 dB	ALIGN AUTO Avg Type: Log-Pwr Avg Hold:>10/10 Mkr1 2	s 11:38:52 AM Nov 29, 2016 TRACE 1 2 3 4 5 6 TYPE M WWW DET P NNNN 24.984 250 GHz -57.148 dBm -15.40 dBm -15.40 dBm -15.40 dBm	Peak Search Next Pea Next Pk Righ
11 WSG Marker 1 24.9842500 Ref Offset 1. 10 dB/div Ref 11.50 (1.50 -8.50 -18.5 -38.5 -68.5 Wather a taget of the taget of ta	pt SA AC PNO: Fast IFGain:Low 5 dB dBm	Image: sense intervention Trig: Free Run #Atten: 20 dB	STATUS	11:38:52 AM Nov 29, 2016 TRACE 2 3 4 5 6 TYPE MANNAN DET P NNNN 24.984 250 GHz -57.148 dBm	Peak Search Next Pea Next Pk Righ Next Pk Le
11 MSG Marker 1 24.9842500 Marker 1 24.9842500 Ref Offset 1.4 10 dB/div Ref 11.50 1.50 1.50 -8.50 -8.50 -8.5 -8.5 -8.5 -8.5 -78.5	pt SA AC PNO: Fast IFGain:Low 5 dB dBm	Image: sense:int Trig: Free Run #Atten: 20 dB	ALIGN AUTO Avg Type: Log-Pwr Avg/Hold:>10/10 MKr1 2	s 11:38:52 AM Nov 29, 2016 TRACE 2 3 4 5 G TYPE MANNAN DET PININNN 24.984 250 GHz -57.148 dBm -15:40 dBm 1 -15:40 dBm 1 -15:40 dBm	Peak Search Next Pea Next Pk Righ Next Pk Le
11 MSG Marker 124.9842500 Ref Offset 1.4 10 dB/div Ref 11.50 150 150 150 150 150 160 1750 18.50 19.50 19.50 19.50 10.000 GHz HPace BW 100 kHz	pt SA AC DIVISION CHZ PNO: Fast C IFGain:Low 5 dB dBm 6 dBm 6 dBm 7 dBm	III SENSE:INT Trig: Free Run #Atten: 20 dB	ALIGN AUTO Avg Type: Log-Pwr Avg Hold:>10/10 MKr1 2	11:38:52 AM Nov 29, 2016 TRACE 2 3 4 5 6 TYPE MWWWWW DET PNNNNN 24.984 250 GHz -57.148 dBm -15.40 dBm	Peak Search Next Pea Next Pk Righ Next Pk Le
11 WSG Image: Spectrum Analyzer - Sweet QX RF Image: Spectrum Analyzer - Sweet QX RF Image: Spectrum Analyzer - Sweet QX RF Image: Spectrum Analyzer - Sweet	pt SA AC PNO: Fast PNO: Fast FGain:Low 5 dB dBm 5 dB 4 m 5 dB 4 m 5 dB 4 m 5 dB 6 m 6 m 7 m 7 m 7 m 7 m 7 m 7 m 7 m 7	Trig: Free Run #Atten: 20 dB	STATUS	11:38:52 AM Nov29, 2016 TRACE 2 3 4 5 6 TYPE MANNAN DET PNNNN 24.984 250 GHz -57.148 dBm -1540 dBm 1540 dBm 1540 dBm 14.05 5 (40001 pts) EINCTION VALUE	Peak Search Next Pea Next Pk Righ Next Pk Lee Marker Def
II Kit MSG RF 50 Ω Marker 1 24.9842500 Ref Offset 1.8 Start 11.50 € 10 dB/div Ref 11.50 € Ref 11.50 € -28.5 -28.5 -28.5 -38.5 -28.5 -28.5 -8.5 -28.5 -28.5 -28.5 -28.5 -28.5 -28.5 -28.5 -28.5 -28.5 -28.5 -28.5 -28.5 -28.5 -28.5 -28.5 -28.5 -28.5 -28.5 -28.5 -28.5 -28.5 -28.5 -28.5 -28.5 -28.5 -28.5 -28.5 -28.5 -28.5 -28.5 -28.5 -28.5 -28.5 -28.5 -28.5 -28.5 -28.5 -28.5 -28.5 -28.5 -28.5 -28.5 -28.5 -28.5 -28.5 -28.5 -28.5 -28.5 -28.5 -28.5 <tr< td=""><td>pt SA AC DO0000 GHz PNO: Fast IFGain:Low 5 dB dBm 4 4 WBW X 24.984 250 GHz</td><td>"" SENSE:INT Trig: Free Run #Atten: 20 dB #Atten: 20 dB 300 kHz Y FU</td><td>STATUS</td><td>11:38:52 AM Nov 29, 2016 TRACE 2 3 4 5 6 TYPE MWWWWW DET P N N N N 24.984 250 GHz -57.148 dBm -15.40 dBm -15.4</td><td>Peak Search Next Pea Next Pk Rigi Next Pk Le Marker Del Mkr-C</td></tr<>	pt SA AC DO0000 GHz PNO: Fast IFGain:Low 5 dB dBm 4 4 WBW X 24.984 250 GHz	"" SENSE:INT Trig: Free Run #Atten: 20 dB #Atten: 20 dB 300 kHz Y FU	STATUS	11:38:52 AM Nov 29, 2016 TRACE 2 3 4 5 6 TYPE MWWWWW DET P N N N N 24.984 250 GHz -57.148 dBm -15.40 dBm -15.4	Peak Search Next Pea Next Pk Rigi Next Pk Le Marker Del Mkr-C
11 ■ Agilent Spectrum Analyzer - Swe Warker 1 24.9842500 ■ Ref Offset 1.2 ■ Agilent Spectrum Analyzer - Swe Warker 1 24.9842500 ■ Ref Offset 1.2 ■ So Q 1.50 ■ So Q 1.50 ■ So Q ■	pt SA AC PNO: Fast IFGain:Low 5 dB dBm 4 4 4 4 4 4 4 4 4 4 4 4 4	"" SENSE:INT Trig: Free Run #Atten: 20 dB #Atten: 20 dB 300 kHz Y FU -57.148 dBm	STATUS	S 11:38:52 AM Nov 29, 2016 TRACE 2 3 4 5 G TYPE M WWWWW DET PINNNNN 24.984 250 GHz -57.148 dBm -15:40 dBm -15:40 dBm -15:40 dBm Stop 25:000 GHz 1.435 s (40001 pts) FUNCTION VALUE	Peak Search Next Pea Next Pk Righ Next Pk Le Marker Def Mkr→C
11 ■ Agilent Spectrum Analyzer - Swe (X) RF 50 Ω Marker 1 24.9842500 ■ Ref Offset 1.4 10 dB/div Ref 11.50 ■ .50 ■	pt SA AC PNO: Fast IFGain:Low 5 dB dBm 5 dB dBm 4 24.924 250 GHz 4 24.924 250 GHz	"" SENSE:INT Trig: Free Run #Atten: 20 dB #Atten: 20 dB 300 kHz Y FU -57.148 dBm	STATUS	11:39:52 AM Nov 29, 2016 TRACE 2 3 4 5 6 TYPE MANNAN DET PINININ 24.984 250 GHz -57.148 dBm -15.40 dBm -15.40 dBm 1 Stop 25.000 GHz 1.435 s (40001 pts) FUNCTION VALUE	Peak Search Next Pea Next Pk Righ Next Pk Le Marker Del Mkr-C
Image: Agilent Spectrum Analyzer - Sweet Msc Marker 1 24.9842500 Ref Offset 1.2 Ref Offset 1.50 Image: Agilent Spectrum Analyzer - Sweet Ref Offset 1.50 Image: Agilent Spectrum Analyzer - Sweet Ref Offset 1.50 Image: Agilent Spectrum Analyzer - Sweet Ref Offset 1.50 Image: Agilent Spectrum Analyzer - Sweet Start 10.000 GHz #Res BW 100 KHz MKR MODE TRC SCLI Image: Agilent Agil	pt SA ⇒ AC PNO: Fast PNO: Fast PNO: Fast FGain:Low 5 dB dBm 5 dB 4 24.984 250 GHz 4 24.984 250 GHz	"" SENSE:INT Trig: Free Run #Atten: 20 dB 300 kHz Y FU -57.148 dBm	STATUS	11:38:52 AM Nov 29, 2016 TRACE 2 3 4 5 6 TYPE WWWWWW DET WNNNN 24.984 250 GHz -57.148 dBm -15 40 dBm -15 40 dBm Stop 25.000 GHz 1.435 s (40001 pts) FUNCTION VALUE	Peak Search Next Pea Next Pk Righ Next Pk Le Marker Del Mkr→C
II III MSG Ref Offset 1.8 Marker 1 24.9842500 Ref Offset 1.8 Ref Offset 1.8 Ref 11.50 (1	pt SA AC PNO: Fast IFGain:Low 5 dB dBm 4 4 24.984 250 GHz 4 24.984 250 GHz	"" SENSE:INT Trig: Free Run #Atten: 20 dB #Atten: 20 dB 300 kHz Y FU -57.148 dBm	STATUS	11:38:52 AM Nov 29, 2016 TRACE 2 3 4 5 6 TYPE MWWWWW DET PINNNN 24.984 250 GHz -57.148 dBm -15.40 dBm -15.40 dBm Stop 25.000 GHz 1.435 s (40001 pts) FUNCTION VALUE	Peak Search Next Pea Next Pk Righ Next Pk Le Marker Del Mkr→C Mkr→Ref L Mor



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5 GHz Auto Tun	2 dBm 	1.00000000 GH Stop Fre 10.00000000 GH	00 GHz 001 pts) VALUE ▲ Ma	Freq Offse		Nov 29, 2016 1 2 3 4 5 6 M WWWWW	5 GHz NextPea 2 dBm	Next Pk Righ	Next Pk Le	Marker Delt	000 GHz 001 pts) Mkr→C	Mkr→RefL	Mor
3.661 525 GH	-53.672 dBr		Stop 10.000 GH 1.3 ms (40001 pt FUNCTION VALUE			12:24:38 PM Nov 29, 201 TRACE 1 2 3 4 5 TYPE MWWWW	4.944 125 GH -57.392 dBr	-16.51 dE			Stop 25.000 GH .435 s (40001 pts FUNCTION VALUE		
Avg Hold:>10/10			Sweep 86		STATUS	ALIGN AUTO Avg Type: Log-Pwr Avg Hold:>10/10	Mkr1 2				Sweep 1		
☐ Trig: Free Run #Atten: 20 dB			V 300 KHz Y FL	-53.672 dBm		SENSE:INT	#Atten: 20 dB				V 300 kHz Y FL	-57.392 dBm	
PNO: Fast IFGain:Low	50 dBm		#VBM	3.661 525 GHz	Surrent SA	- swept SA 50 Ω AC 25000000 GHz	IFGain:Low et 1.5 dB 50 dBm				#VBW	24.944 125 GHz	
Ref Offset 1	10 dB/div Ref 11.50	-38.5	Start 1.000 GHz #Res BW 100 kHz	1 1 f 2 3 4 4 4 4 5 4 4 6 4 4 8 4 4 9 4 4 10 4 4 11 4 4	MSG	RF 50 Marker 1 24.94412	Ref Offset 1 10 dB/div Ref 11.50	1.50 -8.50 -18.5 -28.5	-38.5	-68.5 -78.5	Start 10.000 GHz #Res BW 100 kHz	1 N 1 f 2 3 4 4 5 6 6	7



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12:27:14 PM Nov 29, 2016 TRACE 1 2 3 4 5 6 TYPE M WWWWW	9.919 225 GHz		3	Stop 10.000 GHz 1.3 ms (40001 pts) FUNCTION VALUE		12:27:55 PM Nov 29, 2016 TRACE 1 2 3 4 5 6 TYPE MWWWWWW	24.987 625 GHz -57.217 dBm	-17.10 dBm	1 ,		
ALIGN AUTO Avg Type: Log-Pwr Avg Hold:>10/10	Mkr2			Sweep 867		ALIGN AUTO Avg Type: Log-Pwr AvgIHold:>10/10	Mkr1 2				
SENSE:INT	#Atten: 20 dB			V 300 kHz Y FUT	-57.002 dBm	SENSE:INT	#Atten: 20 dB				
	IFGain:Low) dBm		#VBV	9,919 225 GHz	wept SA 1Ω AC 50000000 GHz DNO: Fact (IFGain:Low IFGain:Low				
RF 50 Start Freq 1.00000	Ref Offset 1	10 dB/div Ref 11.50 -99 1.50 -8.50 -18.5 -28.5	-38.5 -48.5 -58.5 -68.5	785 Start 1.000 GHz #Res BW 100 kHz MKR MODE TRC SCL	2 N 1 f 3 4 5 5 6 7 8 9 10 11	ISG Agilent Spectrum Analyzer - Sw Agilent Spectrum Analyzer - Sw Rarker 1 24.98762	Ref Offset 1 10 dB/div Ref 11.50	1.50 -8.50 -18.5	-48.5	-58.5	-68.5 - 68.5