

FCC Test Report

Report No.: AGC01689220609FE09

FCC ID : 2A2UU-P8

APPLICATION PURPOSE : Original Equipment

PRODUCT DESIGNATION: AI POS Terminal

BRAND NAME : Kobile, Clip

MODEL NAME : P8

APPLICANT: Shanghai Xiangcheng Communication Technology Co.,Ltd

DATE OF ISSUE : Aug. 16, 2022

STANDARD(S) TEST PROCEDURE(S)FCC Part 15.407
KDB 905462 D02

REPORT VERSION: V1.0

Attestation of Global Compliance (Shenzhen) Co., Ltd





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Report Revise Record

Report Ver	sion	Revise Time	Issued Date	Valid Version	Notes
V1.0		/	Aug. 16, 2022	Valid	Initial Release

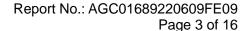




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1. VERIFICATION OF CONFORMITY

Applicant	Shanghai Xiangcheng Communication Technology Co.,Ltd		
Address	6th Floor, Building 10, No.3000 Longdong Avenue, Pudong New District, Shanghai, China		
Manufacturer	Shanghai Xiangcheng Communication Technology Co.,Ltd		
Address	6th Floor, Building 10, No.3000 Longdong Avenue, Pudong New District, Shanghai, China		
Factory	Sichuan Xiangcheng Intelligent Technology Co, Ltd		
Address Factory No. 2, Zone A, Intelligent Terminal Demonstration Park, West Sec Gangyuan Road, Lingang Economic Development Zone, Yibin City, Sichu Province			
Product Designation Al POS Terminal			
Brand Name Kobile, Clip			
Test Model	P8		
Date of receipt of test item	Jul. 04, 2022		
Date of test Jul. 04, 2022~Aug. 16, 2022			
Deviation	No any deviation from the test method		
Condition of Test Sample Normal			
Test Result	Pass		
Report Template	AGCRT-US-BGN/RF		

We hereby certify that:

The above equipment was tested by Attestation of Global Compliance (Shenzhen) 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 KDB 905462 D02.

Reviewed By

Calvin Liu
(Reviewer)

Aug. 16, 2022

Aug. 16, 2022

Approved By

Max Zhang
Aug. 16, 2022

Aug. 16, 2022

Aug. 16, 2022

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2. GENERAL INFORMATION

The EUT is designed as "AI POS Terminal". It is designed by way of utilizing the OFDM technology to achieve the system operation.

Equipment Type	☐ Outdoor access points ☐ Indoor access points		
Equipment Type	☐ Fixed P2P access points ☐ Client devices		
Operation Fraguency	☑ U-NII 1:5150MHz~5250MHz ☑ U-NII 2A: 5250MHz~5350MHz		
Operation Frequency	□ U-NII 2C:5470MHz~5725MHz □ U-NII 3: 5725MHz~5850MHz		
DFS Design Type ☐ Master ☐ Slave with radar detection ☒ Slave without			
TPC Function	☐ Yes ☐ No		
	For 802.11a/n-HT20/ac-VHT20: 5180~5240MHz, 5260~5320MH,		
	5745~5825MHz		
Test Frequency Range	For 802.11n-HT40/ac-VHT40: 5190~5230MHz, 5270~5310MHz,		
	5755~5795MHz		
	For 802.11ac-VHT80: 5210MHz, 5290MHz, 5775MHz		
	IEEE 802.11a:13.02dBm; IEEE 802.11n-HT20:11.59dBm;		
Output Power	IEEE 802.11n-HT40:11.61dBm; IEEE 802.11ac-VHT20:11.66dBm;		
	IEEE 802.11ac-VHT40:10.81dBm; IEEE 802.11ac-VHT80:10.75dBm		
	802.11a: OFDM (BPSK, QPSK, 16QAM, 64QAM)		
Modulation	802.11n: OFDM (BPSK, QPSK, 16QAM, 64QAM,128QAM)		
	802.11ac: OFDM (BPSK, QPSK, 16QAM, 64QAM,128QAM,256QAM)		
	802.11a: 6/9/12/18/24/36/48/54Mbps		
Data Rate	802.11n: up to 300Mbps		
	802.11ac: up to 866.6Mbps		
	7 channels of U-NII-1 Band		
Number of channels	7 channels of U-NII-2A Band		
	8 channels of U-NII-3 Band		
Hardware Version V1.0A			
Software Version	P0821_ALL_V1.0_20220613		
Antenna Designation PIFA Antenna (Comply with requirements of the FCC part 15.203)			
Antenna Gain 2.0dBi			
Power Supply DC 7.60V by battery			

Note:

- 1. This device does not support radar monitoring.
- 2. The signal loading method between the client device and the Master device is TCP technology.
- 3. Distribution of start-up time of Master device and client device:

Equipment	Boot time(s)	
Passive device(client)	10s	
Active device(master)	40s	



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3. DESCRIPTION OF TEST MODES

The tests in this section are run sequentially and the UUT must pass all tests successfully.

If the UUT fails any one of the tests it will count as a failure of compliance.

To show compliance, all tests must be performed with waveforms randomly generated as specified with test results meeting the required percentage of successful detection criteria.

One frequency will be chosen from the operating Channels of the UUT within the 5250-5350 MHz or 5470-5725 MHz bands.

4. SUMMARY OF TEST RESULTS

FCC RULES	DESCRIPTION OF TEST	RESULT
§15.407(h)(2)	Dynamic Frequency Selection Channel Move Time and Channel Closing Transmission Time	Compliant

5. TEST FACILITY

Test Site Attestation of Global Compliance (Shenzhen) Co., Ltd	
Location 1-2/F, Building 19, Junfeng Industrial Park, Chongqing Road, Heping Comr Fuhai Street, Bao'an District, Shenzhen, Guangdong, China	
Designation Number CN1259	
FCC Test Firm Registration Number 975832	
A2LA Cert. No.	5054.02
Description Attestation of Global Compliance(Shenzhen) Co., Ltd is accredited by	

Description	Manufacturer	Model No.	S/N	Calibration Due.	Calibration Due.
MXG X-Series Vector Signal Generator	Agilent	N5182B	MY53050647	Aug. 18, 2021	Aug. 17, 2022
EXA Signal Analyzer	Agilent	N9020A	MY49100060	Aug. 18, 2021	Aug. 17, 2022
Attenuator	ZHINAN	E-002	N/A	Sep. 03, 2020	Sep. 02, 2022
Power spliter	Mini-Circuits	ZFRSC-183-s	3122	N/A	N/A
RF Cable	Harbour	SHWCB-3000-N	N/A	May 13, 2022	May 12, 2023
DFS waveform Generator software	Keysight	N7607C V2.0.0.0	N/A	N/A	N/A
DFS data Analyzer software	Tonscend	JS1120-2	N/A	N/A	N/A
AP(Master)	ZTE	ZXHN F670	N/A	N/A	N/A

FCC ID of AP(Master): Q78-ZXHNF670E



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6. DYNAMIC FREQUENCY SELECTION (DFS)

6.1. APPLICABILITY OF DFS REQUIREMENTS

Table 1: Applicability of DFS Requirements Prior to Use of a Channel

	Operational Mode			
Requirement	□Master	⊠Client Without Radar ☐ Client With R		
		Detection	Detection	
Non-Occupancy Period	Yes	Not required	Yes	
DFS Detection Threshold	Yes	Not required	Yes	
Channel Availability Check Time	Yes	Not required	Not required	
U-NII Detection Bandwidth	Yes	Not required	Yes	

Table 2: Applicability of DFS requirements during normal operation

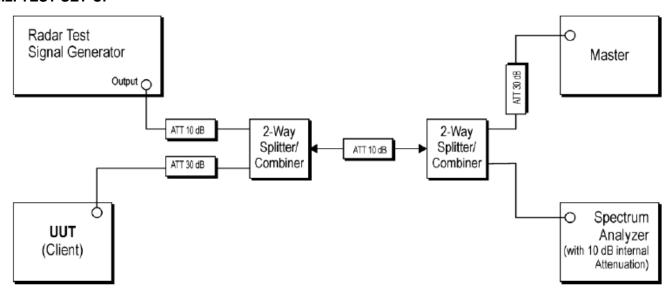
	Operational Mode		
Requirement	☐ Master Device or Client with	⊠Client Without Radar	
	Radar Detection	Detection	
DFS Detection Threshold	Yes	Not required	
Channel Closing Transmission Time	Yes	Yes	
Channel Move Time	Yes	Yes	
U-NII Detection Bandwidth	Yes	Not required	

Additional requirements for devices	☐Master Device or Client with	⊠Client Without Radar	
with multiple bandwidth modes	Radar Detection	Detection	
U-NII Detection Bandwidth and	All BW modes must be tested	Not required	
Statistical Performance Check			
Channel Move Time and Channel	Test using widest BW mode	Test using the widest BW mode	
Closing Transmission Time	available	available for the link	
All other tests	Any single BW mode	Not required	

Note: Frequencies selected for statistical performance check (Section 7.8.4) should include several frequencies within the radar detection bandwidth and frequencies near the edge of the radar detection bandwidth. For 802.11 devices it is suggested to select frequencies in each of the bonded 20 MHz channels and the channel center frequency.



6.2. TEST SET-UP



6.3. LIMITS

Table 3: DFS Detection Thresholds for Master Devices and Client Devices with Radar Detection

Maximum Transmit Power	Value (See Notes 1, 2, and 3)	
EIRP ≥ 200 milliwatt	-64 dBm	
EIRP < 200 milliwatt and	CO 4D	
power spectral density < 10 dBm/MHz	-62 dBm	
EIRP < 200 milliwatt that do not meet the power	-64 dBm	
spectral density requirement		

Note 1: This is the level at the input of the receiver assuming a 0 dBi receive antenna.

Note 2: Throughout these test procedures an additional 1 dB has been added to the amplitude of the test transmission waveforms to account for variations in measurement equipment. This will ensure that the test signal is at or above the detection threshold level to trigger a DFS response.

Note3: EIRP is based on the highest antenna gain. For MIMO devices refer to KDB Publication 662911 D01.



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Table 4: DFS Response Requirement Values

Parameter	rameter Value		
Non-occupancy period	Minimum 30 minutes		
Channel Availability Check Time	60 seconds		
Oles and Maria Trees	10 seconds		
Channel Move Time	See Note 1.		
	200 milliseconds + an		
	aggregate of 60		
Channel Closing Transmission Time	milliseconds over remaining		
	10 second period.		
	See Notes 1 and 2.		
	Minimum 100% of the U-		
U-NII Detection Bandwidth	NII 99% transmission power bandwidth.		
	See Note 3.		

Note 1: Channel Move Time and the Channel Closing Transmission Time should be performed with Radar Type 0. The measurement timing begins at the end of the Radar Type 0 burst.

Note 2: The Channel Closing Transmission Time is comprised of 200 milliseconds starting at the beginning of the Channel Move Time plus any additional intermittent control signals required to facilitate a Channel move (an aggregate of 60 milliseconds) during the remainder of the 10 second period. The aggregate duration of control signals will not count quiet periods in between transmissions.

Note 3: During the U-NII Detection Bandwidth detection test, radar type 0 should be used. For each frequency step the minimum percentage of detection is 90 percent. Measurements are performed with no data traffic.



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6.4. RADAR TEST WAVEFORMS

Table 5 -	Short	Pulco	Radar	Tost W	Vaveforms
rable 5 –	SHOLL	ruise	rxauar	I est v	v aveloriis

Radar	Pulse Width	PRI	Number of Pulses	Minimum	Minimum
Туре	(µsec)	(µsec)		Percentage of	Number of
				Successful	Trials
				Detection	
0	1	1428	18	See Note 1	See Note 1

6.5. TEST PROCEDURE

- 1. When a Client Device without Radar Detection is the UUT, the Master Device is the Radar Detection Device.
- 2. A spectrum analyzer is used to establish the test signal level for each radar type.
- 3. During this process, there are no transmissions by either the Master Device or Client Device.
- 4. The spectrum analyzer is switched to the zero span (time domain) mode at the frequency of the Radar Waveform generator. The peak detector function of the spectrum analyzer is utilized. The spectrum analyzer resolution bandwidth (RBW) and video bandwidth (VBW) are set to at least 3 MHz.
- 5. The measured channels are 5530MHz in 80MHz Bandwidth and 5290MHz in 80MHz Bandwidth. The Radar signal was the same as transmitted channels, and injected into the antenna port of AP(master) ,measured the DFS parameters. The master transmitted the test data to client, the transmitted duty cycle is 30.8%.

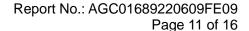
6.6. TEST RESULT

6.6.1 DFS DETECTION THRESHOLD

Calibration:

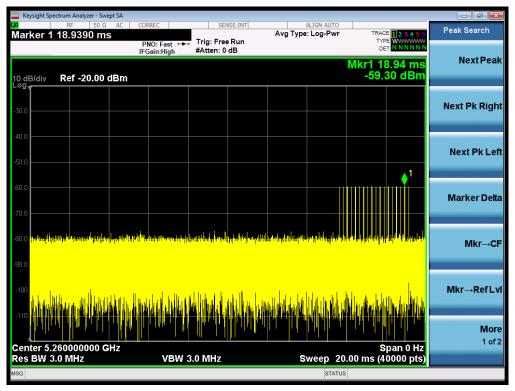
For a detection threshold level of -64dBm and the antenna gain is 5dBi, required detection threshold is -62dBm (= -64+2).

Note: Maximum Transmit Power is greater than 200 milliwatt in this report, so detection threshold level is -64dBm.





Radar Type 0



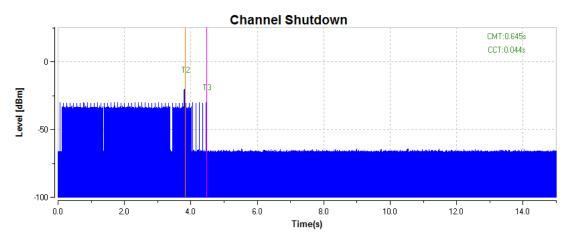
6.6.2TEST RESULT

Channel Move Time and Channel Closing Transmission Time

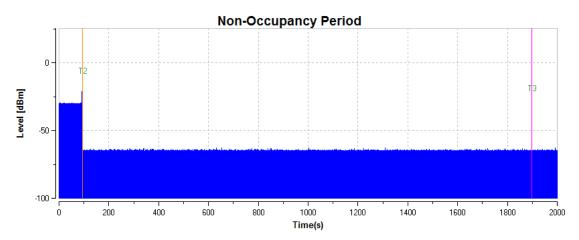
Test Frequency	Requirement	Measurement Level	Limit
5260MHz	Channel Closing Transmission Time	0.044	≤0.26s
5200IVITZ	Channel Move Time	0.645	≤10s
5500MHz	Channel Closing Transmission Time	0.023	≤0.26s
5500IVITZ	Channel Move Time	0.605	≤10s
5290MHz	Channel Closing Transmission Time	0.011	≤0.26s
5290IVITZ	Channel Move Time	0.625	≤10s
FF20MU¬	Channel Closing Transmission Time	0.024	≤0.26s
5530MHz	Channel Move Time	0.605	≤10s



Radar Type 0(20MHz/5530MHz)

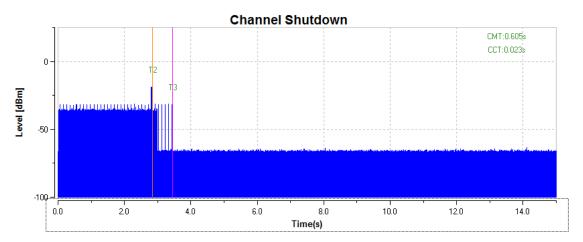


Non-occupancy Period-Elapse time 30minutes

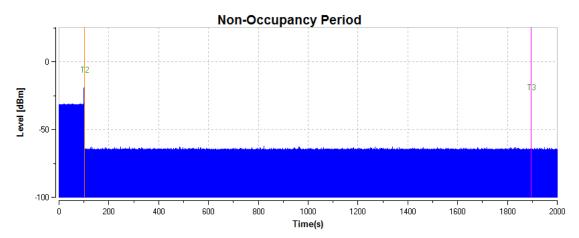




Radar Type 0(20MHz/5500MHz)

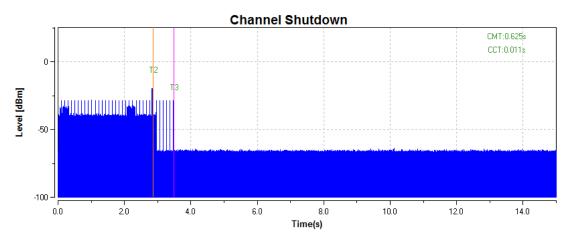


Non-occupancy Period-Elapse time 30minutes

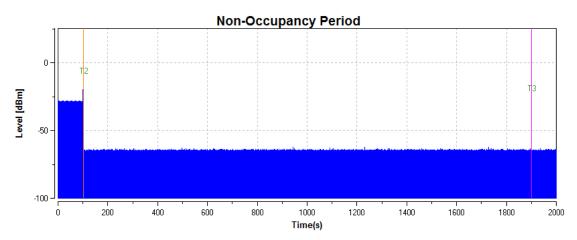




Radar Type 0(80MHz/5290MHz)

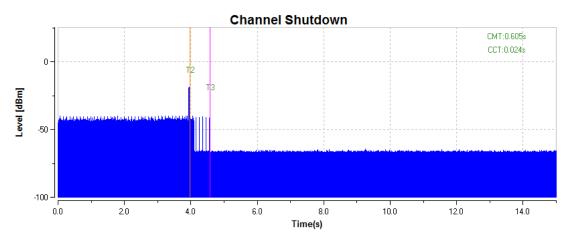


Non-occupancy Period-Elapse time 30minutes

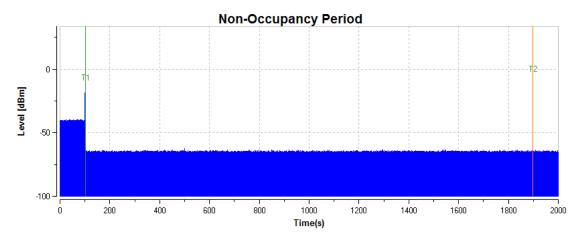




Radar Type 0(80MHz/5530MHz)



Non-occupancy Period-Elapse time 30minutes



RESULT: PASS



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APPENDIX A: PHOTOGRAPHS OF TEST SETUP

Refer to the Report No.: AGC01689220609AP01

APPENDIX B: PHOTOGRAPHS OF EUT

Refer to the Report No.: AGC01689220609AP02

----END OF REPORT----



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