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RF Exposure Evaluation Report

Report No.: CQASZ20241202754E-06
Applicant: KIWISAT LLC
Address of Applicant: 1111 Pennsylvania Avenue, NW Washington, District of Columbia 20004, United States
Equipment Under Test (EUT):
EUT Name: AAFiber/KIWISAT IPTV box
Android IPTV Device
AAFiber/KIWISAT IPTV Device
KIWISAT, AAFiber, AAKIWI compatible IPTV device
Model No.: AAGS-P1, AAGS-P1S
Test Model No.: AAGS-P1
Brand Name: 
FCC ID: 2AR5S-AAGS-P1
Standards: 47 CFR Part 1.1307
47 CFR Part 1.1310
447498 D04 Interim General RF Exposure Guidance v01
Date of Receipt: 2024-12-31
Date of Test: 2024-12-31 to 2025-02-20
Date of Issue: 2025-3-4
Test Result: **PASS***

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

Tested By: Lewis Zhou
(Lewis Zhou)

Reviewed By: Timo Lei
(Timo Lei)

Approved By: Jack Ai
(Jack Ai)



1 Version

Revision History Of Report

Report No.	Version	Description	Issue Date
CQASZ20241202754E-06	Rev.01	Initial report	2025-3-4

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3 General Information

3.1 Client Information

Applicant:	KIWISAT LLC
Address of Applicant:	1111 Pennsylvania Avenue, NW Washington, District of Columbia 20004, United States
Manufacturer:	SHENZHEN GOLDEN STAR TECHNOLOGY LTD
Address of Manufacturer:	2-3Floor, No.181-183 FengHuang Avenue, FengHuang Community, Fuyong Street, Bao'an District, Shenzhen, China.
Factory:	SHENZHEN GOLDEN STAR TECHNOLOGY LTD
Address of Factory:	2-3Floor, No.181-183 FengHuang Avenue, FengHuang Community, Fuyong Street, Bao'an District, Shenzhen, China.

3.2 General Description of EUT

Product Name:	AAFiber/KIWISAT IPTV box Android IPTV Device AAFiber/KIWISAT IPTV Device KIWISAT, AAFiber, AAKIWI compatible IPTV device
Model No.:	AAGS-P1, AAGS-P1S
Test Model No.:	AAGS-P1
Trade Mark:	
Software Version:	Android 11
Hardware Version:	S905Y4-M500-2024-10-10
EUT Power Supply:	Power supply DC12V

3.3 General Description of BT Classic

Operation Frequency:	2402MHz~2480MHz
Bluetooth Version:	Bluetooth Spec 5.4
Modulation Technique:	Frequency Hopping Spread Spectrum(FHSS)
Modulation Type:	GFSK, $\pi/4$ DQPSK, 8DPSK
Number of Channel:	79
Transfer Rate:	1Mbps/2Mbps/3Mbps
Hopping Channel Type:	Adaptive Frequency Hopping systems
Sample Type:	☒ Mobile ☐ Portable
Antenna Type:	FPC antenna
Antenna Gain:	2dBi

3.4 General Description of BLE

Operation Frequency:	2402MHz~2480MHz
Bluetooth Version:	Bluetooth Spec 5.4
Modulation Technique:	Frequency Hopping Spread Spectrum(FHSS)
Modulation Type:	GFSK
Number of Channel:	40
Transfer Rate:	1Mbps/2Mbps
Hopping Channel Type:	Adaptive Frequency Hopping systems
Sample Type:	☒ Mobile ☐ Portable ☐ Fix Location
Antenna Type:	FPC antenna
Antenna Gain:	2dBi

3.5 General Description of 2.4G WIFI Classic

Operation Frequency:	IEEE 802.11b/g/n(HT20)/ax(HT20): 2412MHz to 2462MHz IEEE 802.11n(HT40)/ax(HT40): 2422MHz to 2452MHz
Type of Modulation:	802.11b: DSSS(CCK/QPSK/BPSK) 802.11g: OFDM(BPSK/QPSK/16QAM/64QAM) 802.11n : OFDM (64QAM, 16QAM, QPSK, BPSK) 802.11ax : OFDMA(1024QAM, 256QAM, 64QAM, 16QAM, QPSK, BPSK)
Number of Channel:	IEEE 802.11b/g, IEEE 802.11n HT20/ax HT20: 11 Channels IEEE 802.11n HT40/ax HT40 : 7 Channels
Channel Separation:	5MHz
Transfer Rate:	802.11b: 1M/2M/5.5M/11M bps 802.11g: 6M/9M/12M/18M/24M/36M/48M/54M bps 802.11n: 7.2M/14.4M/21.7M/28.9M/43.3M/57.8M/65M/72.2M bps 802.11ax: 8.6M/17.2M/25.8M/34.4M/51.6M/68.8M/77.4M/86M/103.2M/114.7M /129M/143.4Mbps
Sample Type:	☒ Mobile ☐ Portable
Antenna Type:	FPC antenna
Antenna Gain:	2dBi

3.6 General Description of 5G WIFI Classic

Operation Frequency:	IEEE 802.11a/n/ac/ax(20M): 5150MHz ~5250 MHz IEEE802.11n/ac/ax(40M): 5150MHz ~5250 MHz IEEE 802.11a/n/ac/ax(20M): 5250MHz ~5350 MHz IEEE802.11n/ac/ax(40M): 5250MHz ~5350 MHz IEEE 802.11a/n/ac/ax(20M): 5470MHz ~5725 MHz IEEE802.11n/ac/ax(40M): 5470MHz ~5725 MHz IEEE 802.11a/n/ac/ax(20M): 5725MHz ~5850 MHz IEEE802.11n/ac/ax(40M): 5725MHz ~5850 MHz
Channel Numbers:	IEEE 802.11a/n/ac/ax(20M): 5150MHz ~5250MHz/ 4 channel IEEE 802.11n/ac/ax(40M): 5150MHz ~5250MHz/ 2 channel IEEE 802.11a/n/ac/ax(20M): 5250MHz ~5350MHz/ 4 channel IEEE 802.11n/ac/ax(40M): 5250MHz ~5350MHz/ 2 channel IEEE 802.11a/n/ac/ax(20M): 5470MHz ~5725MHz/ 12 channel IEEE 802.11n/ac/ax(40M): 5470MHz ~5725MHz/ 6 channel IEEE 802.11a/n/ac/ax(20M): 5725MHz ~5850MHz/ 5 channel IEEE 802.11n/ac/ax(40M): 5725MHz ~5850MHz/ 2 channel
Type of Modulation:	OFDM
Sample Type:	☒ Mobile ☐ Portable
Test Software of EUT:	Serial
Antenna Type:	FPC antenna
Antenna gain:	5.73dBi
Cable loss:	1.0 dB

Note:

The above parameters will directly affect the test results. The information is provided by the applicant.

4 MPE Evaluation

4.1 RF Exposure Compliance Requirement

4.1.1 Limits

The table applies to any RF source (i.e., single fixed, mobile, and portable transmitters) and specifies power and distance criteria for each of the five frequency ranges used for the MPE limits. These criteria apply at separation distances from any part of the radiating structure of at least $\lambda/2\pi$. The thresholds are based on the general population MPE limits with a single perfect reflection, outside of the reactive near-field, and in the main beam of the radiator. For mobile devices that are not exempt per Table B.1 [Table 1 of § 1.1307(b)(1)(i)(C)] at distances from 20 cm to 40 cm and in 0.3 GHz to 6 GHz, evaluation of compliance with the exposure limits in § 1.1310 is necessary if the ERP of the device is greater than ERP_{20cm} in Formula (B.1) [repeated from § 2.1091(c)(1) and § 1.1307(b)(1)(i)(B)].

$$P_{th} \text{ (mW)} = ERP_{20 \text{ cm}} \text{ (mW)} = \begin{cases} 2040f & 0.3 \text{ GHz} \leq f < 1.5 \text{ GHz} \\ 3060 & 1.5 \text{ GHz} \leq f \leq 6 \text{ GHz} \end{cases}$$

If the ERP is not easily obtained, then the available maximum time-averaged power may be used (i.e., without consideration of ERP only if the physical dimensions of the radiating structure(s) do not exceed the electrical length of $\lambda/4$ or if the antenna gain is less than that of a half-wave Dipole.

SAR-based exemptions are constant at separation distances between 20 cm and 40 cm to avoid discontinuities in the threshold when transitioning between SAR-based and MPE-based exemption criteria at 40 cm, considering the importance of reflections.

4.1.2 Test Procedure

Software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.

4.1.3 EUT RF Exposure

1) For BT Classic

Measurement Data

8DPSK mode				
Test channel	Max.Peak Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	ERP (dBm)
2480MHz	3.79	2	5.79	3.64
Tune-up				
Tune up tolerance (dBm)		Maximum tune-up Power		
		(dBm)	(mW)	
3.5±1		4.5	2.82	

The ERP of this product is less than 3060mW

Note: 1) Refer to report No. CQASZ20241202754E-01 for EUT test Max Conducted Peak Output Power value.

2) EUT's module is more than 20cm away from the human body.

2) For BLE

Measurement Data

GFSK mode				
Test channel	Max.Peak Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	ERP (dBm)
2480MHz	8.88	2	10.88	8.73
Tune-up				
Tune up tolerance (dBm)		Maximum tune-up Power		
		(dBm)	(mW)	
8.5±1		9.5	8.91	

The ERP of this product is less than 3060mW

Note: 1) Refer to report No. CQASZ20241202754E-02 for EUT test Max Conducted Peak Output Power value.

2) EUT's module is more than 20cm away from the human body.

3) For 2.4G WIFI Classic

Measurement Data

11G mode				
Test channel	Max.Peak Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	ERP (dBm)
2437MHz	15.06	2	17.06	14.91
Tune-up				
Tune up tolerance (dBm)		Maximum tune-up Power		
		(dBm)	(mW)	
15.0±1		16.0	39.81	

The ERP of this product is less than 3060mW

Note: 1) Refer to report No. CQASZ20241202754E-03 for EUT test Max Conducted AV Output Power value.

2) EUT's module is more than 20cm away from the human body.

4) For 5G WIFI Classic

11A mode				
Test channel	Max.Peak Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	ERP (dBm)
5180MHz	15.04	5.73	20.77	18.62
Tune-up				
Tune up tolerance (dBm)		Maximum tune-up Power		
		(dBm)	(mW)	
18.5±1		19.5	89.13	

The ERP of this product is less than 3060mW

Note: 1) Refer to report No. CQASZ20241202754E-04 for EUT test Max Conducted Peak Output Power value.
2) EUT's module is more than 20cm away from the human body.

*** END OF REPORT ***