

FCC RF Exposure

Applicant : Dongguan Xintai instrument Co.,Ltd.
Address : Room 201, Building 16, # 3, Yongtai Road, Tangxia Town,
Dongguan City,Guangdong Province,China,523710
Product Name : Thermal Imagers
Brand Mark : N/A
Model no. : HT A201
Series model : HT A202, HT A203
FCC ID : 2AVBO-A201
Report Number : BLA-EMC-202412-A6102
Date of Receipt : Dec. 19, 2024
Date of Test : Dec. 19, 2024 to Jan. 08, 2025
Test Standard : 47 CFR Part 15, Part1.1307
47 CFR Part 15, Part2.1093
KDB447498D04 General RF Exposure Guidance v01
Test Result : Pass

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Review by:

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Approved by:

13 Jan. Zheng

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Jan. 20, 2025



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Revise Record

Version No.	Date	Description
01	Jan. 20, 2025	Original

1 General information

1.1 General information

Applicant	Dongguan Xintai instrument Co.,Ltd.
Address	Room 201, Building 16, # 3, Yongtai Road, Tangxia Town, Dongguan City,Guangdong Province,China,523710
Manufacturer	Dongguan Xintai instrument Co.,Ltd.
Address	Room 201, Building 16, # 3, Yongtai Road, Tangxia Town, Dongguan City,Guangdong Province,China,523710
Factory	Dongguan Xintai instrument Co.,Ltd.
Address	Room 201, Building 16, # 3, Yongtai Road, Tangxia Town, Dongguan City,Guangdong Province,China,523710

1.2 General description of EUT

Product Name	Thermal Imagers
Model No.	HT A201
Series model	HT A202, HT A203
Differences of Series model	Their electrical circuit design layout, components used and internal wiring are identical, only the model name are different.
Operation Frequency:	2412MHz-2462MHz
Operation Frequency:	802.11b/g/n(HT20): 2412MHz to 2462MHz 802.11n(HT40): 2422MHz to 2452MHz
Modulation Type:	802.11b: DSSS(CCK/QPSK/BPSK) 802.11g: OFDM(BPSK/QPSK/16QAM/64QAM) 802.11n (HT20 and HT40): OFDM (64QAM, 16QAM, QPSK, BPSK)
Channel Spacing:	5MHz
Number of Channels:	802.11b/g/n(HT20):11 802.11n(HT40):7
Antenna Type:	PCB antenna
Antenna Gain:	3dBi(Provided by customer)
Power supply:	Battery DC 3.70V
Hardware Version	N/A
Software Version	N/A

Note: For a more detailed description, please refer to Specification or User's Manual supplied by the applicant and/or manufacturer.

2 RF Exposure Compliance Requirement

2.1 Standard Requirement

According to 447498 D04 Interim General RF Exposure Guidance v01

Standalone SAR test exclusion considerations

Unless specifically required by the published RF exposure KDB procedures, standalone 1-g head or body and 10-g extremity SAR evaluation for general population exposure conditions, by measurement or numerical simulation, is not required when the corresponding SAR Exclusion Threshold condition, listed below, is satisfied.

2.2 Limits

$$P_{th} \text{ (mW)} = \begin{cases} ERP_{20 \text{ cm}} (d/20 \text{ cm})^x & d \leq 20 \text{ cm} \\ ERP_{20 \text{ cm}} & 20 \text{ cm} < d \leq 40 \text{ cm} \end{cases} \quad (\text{B. 2})$$

where

$$x = -\log_{10} \left(\frac{60}{ERP_{20 \text{ cm}} \sqrt{f}} \right)$$

and f is in GHz, d is the separation distance (cm), and $ERP_{20 \text{ cm}}$ is per Formula (B.1).

Example values shown in Table B.2 are for illustration only.

Table B.2—Example Power Thresholds (mW)

Frequency (MHz)	Distance (mm)										
		5	10	15	20	25	30	35	40	45	50
	300	39	65	88	110	129	148	166	184	201	217
	450	22	44	67	89	112	135	158	180	203	226
	835	9	25	44	66	90	116	145	175	207	240
	1900	3	12	26	44	66	92	122	157	195	236
	2450	3	10	22	38	59	83	111	143	179	219
	3600	2	8	18	32	49	71	96	125	158	195
	5800	1	6	14	25	40	58	80	106	136	169

$$P_{th} \text{ (mW)} = ERP_{20 \text{ cm}} \text{ (mW)} = \begin{cases} 2040f & 0.3 \text{ GHz} \leq f < 1.5 \text{ GHz} \\ 3060 & 1.5 \text{ GHz} \leq f \leq 6 \text{ GHz} \end{cases} \quad (\text{B. 1})$$

2.3 Result

$$\text{EIRP} = \text{pt} \times \text{gt} = (\text{E} \times \text{d})^{2/30}$$

Where:

pt = transmitter output power in watts,

gt = numeric gain of the transmitting antenna (unitless),

E = electric field strength in V/m

d = measurement distance in meters (m)

$$\text{Spot} = (\text{E} \times \text{d})^{2/30} \times \text{gt}$$

$$\text{Ant gain} = 3\text{dBi}$$

2.4GWIFI 802.11n40(Worst):

Max Output power = 1.418dBm @2452MHz

$$\text{ERP} = 1.418\text{dBm} + 3\text{dBi} - 2.15 = 2.268\text{dBm} = 1.686\text{mW} < 2.742\text{ mW}$$

Comply with RF exposure exemption limit.

----END OF REPORT----

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