



# RF EXPOSURE EVALUATION REPORT

**APPLICANT** : Udisense Inc. DBA: Nanit  
**EQUIPMENT** : Nanit Pro Baby Monitor  
**BRAND NAME** : Nanit  
**MODEL NAME** : N301  
**FCC ID** : 2AIWVN301  
**STANDARD** : 47 CFR Part 2.1091

We, Sporton International (ShenZhen) Inc., has been evaluated this product in accordance with 47 CFR Part 2.1091 and it complies with applicable limit.

The results in this report apply exclusively to the tested model / sample. Without written approval of Sporton International (ShenZhen) Inc., the test report shall not be reproduced except in full.

Reviewed by: Hank Huang / Supervisor

Approved by: Johnny Chen / Manager

**Sporton International (ShenZhen) Inc.**



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Revision History

Table with 4 columns: REPORT NO., VERSION, DESCRIPTION, ISSUED DATE. Row 1: FA081502, Rev. 01, Initial issue of report, Sep. 18, 2020.



## 1. Administration Data

### 1.1. Testing Laboratory

Sporton International (Shenzhen) Inc. is accredited to ISO/IEC 17025:2017 by American Association for Laboratory Accreditation with Certificate Number 5145.01.

Testing Laboratory		
Test Firm	Sporton International (Shenzhen) Inc.	
Test Site Location	1/F, 2/F, Bldg 5, Shiling Industrial Zone, Xinwei Village, Xili, Nanshan, Shenzhen, 518055 People's Republic of China TEL: +86-755-86379589 FAX: +86-755-86379595	
Test Site No.	FCC Designation No.	FCC Test Firm Registration No.
	CN1256	421272

Applicant	
Company Name	Udisense Inc. DBA: Nanit
Address	244 Fifth Avenue Suite #2702, New York, NY, United States 10001

Manufacturer	
Company Name	WISTRON CORPORATION
Address	21F, No. 88, Sec. 1, Hsin Tai Wu Rd., Hsichih Dist, New Taipei City 221, Taiwan (R.O.C.)



2. Description of Equipment Under Test (EUT)

Product Feature & Specification			
EUT Type	Nanit Pro Baby Monitor		
Brand Name	Nanit		
Model Name	N301		
FCC ID	2AIWVN301		
Wireless Technology and Frequency Range	WLAN 2.4GHz Band: 2412 MHz ~ 2462 MHz WLAN 5.2GHz Band: 5180 MHz ~ 5240 MHz WLAN 5.3GHz Band: 5260 MHz ~ 5320 MHz WLAN 5.5GHz Band: 5500 MHz ~ 5720 MHz WLAN 5.8GHz Band: 5745 MHz ~ 5825 MHz Bluetooth: 2402 MHz ~ 2480 MHz		
Mode	WLAN 2.4GHz : 802.11b/g/n/ HT20/HT40 WLAN 5GHz : 802.11a/n/ac HT20/HT40/VHT20/VHT40/VHT80 Bluetooth BR/EDR/LE		
Antenna Function Description		Ant. 1	Ant. 2
	Bluetooth BR/EDR/LE SISO	-	V
	WLAN 2.4GHz 802.11 b/g SISO	V	V
	WLAN 2.4GHz 802.11 n SISO/MIMO	V	V
	WLAN 5GHz 802.11 a SISO	V	V
Antenna Type	Dipole Antenna		
Antenna Type/gain	<Ant. 1> WLAN 2.4GHz: gain 2.0 dBi WLAN 5.2GHz: gain 1.5 dBi WLAN 5.3GHz: gain 1.5 dBi WLAN 5.5GHz: gain 1.9 dBi WLAN 5.8GHz: gain 3.0 dBi		
	<Ant. 2> Bluetooth: gain 3.9 dBi WLAN 2.4GHz: gain 3.9 dBi WLAN 5.2GHz: gain 4.5 dBi WLAN 5.3GHz: gain 4.5 dBi WLAN 5.5GHz: gain 3.9 dBi WLAN 5.8GHz: gain 2.5 dBi		
HW Version	20H000-1A		
SW Version	Linux Ambarella 4.9.202		
EUT Stage	Production Unit		
Remark:	<ol style="list-style-type: none"> <li>The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.</li> <li>This device does not support voice function.</li> </ol>		

Comments and Explanations:
<ol style="list-style-type: none"> <li>The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.</li> <li>The maximum RF output tune up power, antenna gain also the safe distance used for evaluate RF exposure were declared by manufacturer.</li> </ol>



**3. Maximum RF average output power among production units**

**<Bluetooth>**

Mode	Maximum Average Power (dBm)
Bluetooth BR/EDR	8.0
Bluetooth LE	8.0

**<WLAN 2.4GHz>**

**<Ant. 1>**

Mode	Maximum Average Power (dBm)
802.11b	18.00
802.11g CH 01	11.0
802.11g CH 06	17.0
802.11g CH 11	10.0
802.11n-HT20 CH 01	12.0
802.11n-HT20 CH 06	18.0
802.11n-HT20 CH 11	12.0
802.11n-HT40 CH 03	11.5
802.11n-HT40 CH 06	15.5
802.11n-HT40 CH 09	12.0

**<Ant. 2>**

Mode	Maximum Average Power (dBm)
802.11b	18.0
802.11g CH 01	12.0
802.11g CH 06	17.0
802.11g CH 11	12.0
802.11n-HT20 CH 01	12.0
802.11n-HT20 CH 06	17.5
802.11n-HT20 CH 11	12.0
802.11n-HT40 CH 03	12.0
802.11n-HT40 CH 06	15.0
802.11n-HT40 CH 09	12.0

**<Ant. 1+2>**

Mode	Maximum Average Power (dBm)
802.11n-HT20 CH 01	14.0
802.11n-HT20 CH 06	19.5
802.11n-HT20 CH 11	14.0
802.11n-HT40 CH 03	13.0
802.11n-HT40 CH 06	17.0
802.11n-HT40 CH 09	14.0



**<WLAN 5GHz>**

**<Ant. 1>**

	Mode	Maximum Average Power (dBm)
WLAN 5.2GHz	802.11a	16.0
	802.11n-HT20	14.5
	802.11n-HT40	13.5
	802.11ac-VHT20	14.5
	802.11ac-VHT40	13.5
	802.11ac-VHT80	12.5
WLAN 5.3GHz	802.11a	15.0
	802.11n-HT20	14.0
	802.11n-HT40	13.0
	802.11ac-VHT20	14.0
	802.11ac-VHT40	13.0
	802.11ac-VHT80	11.5
WLAN 5.5GHz	802.11a	17.0
	802.11n-HT20	15.5
	802.11n-HT40	14.0
	802.11ac-VHT20	15.5
	802.11ac-VHT40	14.0
	802.11ac-VHT80	15.5
WLAN 5.8GHz	802.11a	16.0
	802.11n-HT20	15.5
	802.11n-HT40	13.5
	802.11ac-VHT20	15.5
	802.11ac-VHT40	13.5
	802.11ac-VHT80	14.0



<Ant. 2>

	Mode	Maximum Average Power (dBm)
WLAN 5.2GHz	802.11a	16.0
	802.11n-HT20	15.0
	802.11n-HT40	13.5
	802.11ac-VHT20	15.0
	802.11ac-VHT40	13.5
	802.11ac-VHT80	12.0
WLAN 5.3GHz	802.11a	16.5
	802.11n-HT20	16.0
	802.11n-HT40	14.0
	802.11ac-VHT20	16.0
	802.11ac-VHT40	14.0
	802.11ac-VHT80	12.0
WLAN 5.5GHz	802.11a	15.5
	802.11n-HT20	15.0
	802.11n-HT40	14.0
	802.11ac-VHT20	15.0
	802.11ac-VHT40	14.0
	802.11ac-VHT80	14.0
WLAN 5.8GHz	802.11a	15.5
	802.11n-HT20	14.5
	802.11n-HT40	12.5
	802.11ac-VHT20	14.5
	802.11ac-VHT40	12.5
	802.11ac-VHT80	13.5





<Ant. 1+2>

	Mode	Maximum Average Power (dBm)
WLAN 5.2GHz	802.11n-HT20	15.0
	802.11n-HT40	14.0
	802.11ac-VHT20	15.0
	802.11ac-VHT40	14.0
	802.11ac-VHT80	12.0
WLAN 5.3GHz	802.11n-HT20	15.0
	802.11n-HT40	14.0
	802.11ac-VHT20	15.0
	802.11ac-VHT40	14.0
	802.11ac-VHT80	12.0
WLAN 5.5GHz	802.11n-HT20	14.5
	802.11n-HT40	14.5
	802.11ac-VHT20	14.5
	802.11ac-VHT40	14.5
	802.11ac-VHT80	14.5
WLAN 5.8GHz	802.11n-HT20	16.0
	802.11n-HT40	14.5
	802.11ac-VHT20	16.0
	802.11ac-VHT40	14.5
	802.11ac-VHT80	13.0



4. RF Exposure Limit Introduction

According to ANSI/IEEE C95.1-1992, the criteria listed in Table 1 shall be used to evaluate the environmental impact of human exposure to radio frequency (RF) radiation as specified in §1.1310.

Table with 5 columns: Frequency range (MHz), Electric field strength (V/m), Magnetic field strength (A/m), Power density (mW/cm²), Averaging time (minutes). It is divided into two sections: (A) Limits for Occupational/Controlled Exposures and (B) Limits for General Population/Uncontrolled Exposure.

The MPE was calculated at 20 cm to show compliance with the power density limit.

The following formula was used to calculate the Power Density:

S = PG / (4πR²)

Where:

- S = Power Density
P = Output Power at Antenna Terminals
G = Gain of Transmit Antenna (linear gain)
R = Distance from Transmitting Antenna



5. Radio Frequency Radiation Exposure Evaluation

5.1. Standalone Power Density Calculation

<Ant. 1>

Table with 10 columns: Band, Frequency (MHz), Antenna Gain (dBi), Maximum Power (dBm), Maximum EIRP (dBm), Maximum EIRP (W), Average EIRP (mW), Power Density at 20cm (mW/cm^2), Limit (mW/cm^2), Power Density / Limit. Rows include WLAN 2.4GHz, 5.2GHz, 5.3GHz, 5.5GHz, and 5.8GHz.

<Ant. 2>

Table with 10 columns: Band, Frequency (MHz), Antenna Gain (dBi), Maximum Power (dBm), Maximum EIRP (dBm), Maximum EIRP (W), Average EIRP (mW), Power Density at 20cm (mW/cm^2), Limit (mW/cm^2), Power Density / Limit. Rows include WLAN 2.4GHz, 5.2GHz, 5.3GHz, 5.5GHz, 5.8GHz, and Bluetooth.

<Ant. 1+2>

Table with 10 columns: Band, Frequency (MHz), Antenna Gain (dBi), Maximum Power (dBm), Maximum EIRP (dBm), Maximum EIRP (W), Average EIRP (mW), Power Density at 20cm (mW/cm^2), Limit (mW/cm^2), Power Density / Limit. Rows include WLAN 2.4GHz, 5.2GHz, 5.3GHz, 5.5GHz, and 5.8GHz.

Note:

- 1. For conservativeness, the lowest frequency of each band is used to determine the MPE limit of that band.
2. Chose the maximum power to do MPE analysis.



5.2. Collocated Power Density Calculation

WLAN5GHz Ant 1 Power Density / Limit	Bluetooth Ant 2 Power Density / Limit	$\Sigma$ (Power Density / Limit) of WLAN5GHz Ant 1 + Bluetooth Ant 2
0.016	0.003	0.019

WLAN5GHz Ant 1+2 Power Density / Limit	Bluetooth Ant 2 Power Density / Limit	$\Sigma$ (Power Density / Limit) of WLAN5GHz Ant 1+2 + Bluetooth Ant 2
0.018	0.003	0.021

WLAN2.4GHz Ant 1 Power Density / Limit	Bluetooth Ant 2 Power Density / Limit	$\Sigma$ (Power Density / Limit) of WLAN2.4GHz Ant 1 + Bluetooth Ant 2
0.020	0.003	0.023

Note:

- $\Sigma$ (Power Density / Limit): This is a summation of [(power density for each transmitter/antenna included in the simultaneous transmission)/ (corresponding MPE limit)], for WLAN 5GHz Ant 1 + Bluetooth Ant 2, WLAN 5GHz Ant 1+2 + Bluetooth Ant 2, WLAN 2.4GHz Ant 1 + Bluetooth Ant 2.
- The worst of case WLAN5 GHz or WLAN2.4 GHz or Bluetooth MPE for each configuration was used for MPE summation.
- WLAN 5GHz Ant 1/ Ant 1+2 and Bluetooth can transmit simultaneously.
- WLAN 2.4GHz Ant 1 and Bluetooth can transmit simultaneously.
- WLAN 5GHz and WLAN 2.4GHz cannot transmit simultaneously.
- Bluetooth and WLAN 2.4GHz Ant 2 cannot transmit simultaneously.

Conclusion:

According to 47 CFR §2.1091, the RF exposure analysis concludes that the RF Exposure is FCC compliant.

-----THE END-----