

# Maximum Permissible Exposure

## Evaluation

### FCC ID: 2AGZE-NXST22

#### 1. Client Information

**Applicant** : Nexersys Corporation  
**Address** : 1021 East 7th Street, Suite 100, Austin, TX 78702, United States  
**Manufacturer** : Nexersys Corporation  
**Address** : 1021 East 7th Street, Suite 100, Austin, TX 78702, United States

#### 2. General Description of EUT

<b>EUT Name</b>	: Nexersys Console	
<b>Models No.</b>	: NXST22, NXST19, WF1851T, WF2151T, NXST-XX(The XX is client number from 01 to 50)	
<b>Model Difference</b>	: They are identical in circuitry design, PCB layout, electrical components used, internal wiring and functions, only different on color.	
<b>Product Description</b>	Operation Frequency: WIFI 802.11b/g/n(H20): 2412MHz~2462MHz 802.11n(H40): 2422MHz~2452MHz BLE: 2402MHz~2480MHz	
	Number of Channel:	Bluetooth 4.0 (BLE): 40 channels WIFI: 802.11b/g/n(HT20):11channels 802.11n(HT40): 7 channels
	Output Power:	Bluetooth 4.0 (BLE): 1.008 dBm WIFI: 802.11b: 18.60dBm 802.11g: 16.68dBm 802.11n (HT20): 15.84dBm 802.11n (HT40): 12.84dBm
	Antenna Gain:	3.12 dBi Embedded Antenna
	Modulation Type:	BLE: GFSK 802.11b:DSSS(CCK, DQPSK, DBPSK) 802.11g/n:OFDM(BPSK,QPSK,16QAM,64QAM)
<b>Power Supply</b>	: DC power supplied by AC/DC Adapter.	

***TB-RF-075-1.0***

<b>Power Rating</b>	:	AC/DC Adapter: Input:100~240V, 50/60Hz , 2A Output:12V, 3.0A
<b>Connecting I/O Port(S)</b>	:	Please refer to the User's Manual

**Note:** More detail information about Equipment, please refer to User's manual, more information about the RF, please refer to test report.

## MPE Calculations for WIFI

### 1. Antenna Gain:

FPC Antenna: 3.12 dBi.

### 2. EUT Operation Condition:

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

### 3. Exposure Evaluation:

Equation from page 18 of OET Bulletin 65, Edition 97-01

$$S = (P/G)/4\pi r^2$$

Where

**S**: power density

**P**: power input to the antenna

**G**: power gain of the antenna in the direction of interest relative to an isotropic radiator.

**R**: distance to the center of radiation of the antenna

### 4. Test Result:

Worst Maximum MPE Result							
Mode	N <sub>TX</sub>	Frequency (MHz)	Power (dBm) [P]	ANT Gain (dBi) [G]	Turn-up Power Tolerance (dB)	Distance (cm) [R]	Power Density (Mw/ cm <sup>2</sup> ) [S]
2.4G							
802.11b	1	2437	18.60	3.12	±1	20	0.03721714
802.11g	1	2412	16.68	3.12	±1	20	0.02391900
802.11n (HT20)	1	2437	15.84	3.12	±1	20	0.01971256
802.11n (HT40)	1	2452	12.84	3.12	±1	20	0.00987968
BLE	1	2480	1.008	3.12	±1	20	0.00064795

**Note:**

(1) N<sub>TX</sub>= Number of Transmit Antennas

(2) RF Output power specifies that Maximum Conducted Peak Output Power.

**5. Conclusion:**

As specified in Table 1B of 47 CFR 1.1310- Limits for Maximum Permissible Exposure (MPE),

**Limits for General Population/ Uncontrolled Exposure**

Frequency Range (MHz)	Power density (mW/ cm <sup>2</sup> )
300-1,500	F/1500
1,500-100,000	1.0

For 802.11b/g/n(2412~2462 MHz) and Bluetooth 4.0(BLE)

MPE limit S: 1 mW/ cm<sup>2</sup>

The MPE is calculated as  $0.03721714 \text{ mW / cm}^2 < \text{limit } 1 \text{ mW / cm}^2$ . So, RF exposure limit warning or SAR test are not required.

The EUT will only be used with a separation of 20cm or greater between the antenna and nearby persons and can therefore be considered a mobile transmitter per 47 CFR2.1091 (b).

The RF Exposure Information page from the manual is included here for reference.

**Note**

For a more detailed features description, please refer to the RF Test Report.