

RF Exposure Evaluation

FCC ID: 2ABES-GURUBOOK5

1. Client Information

Applicant : Pathway Innovations and Technologies, Inc.

Address : 9833 Pacific Heights Blvd., Suite D, San Diego, CA 92121

Manufacturer : ShenZhen KerunVisual Technology Co., LTD.

Address : 6th Floor Building 2, District 2, South Honghualing Industrial Zone, No.1213 Liuxian Road, Nanshan Branch, Shenzhen City, Guangdong, China

2. General Description of EUT

EUT Name	:	Gurubook 5/MID
Models No.	:	Gurubook 5, Gurubook 8, Gurubook 12, Gurubook 13, Gurubook 16
Model Difference	:	All the other models are identical in the same PCB layout, interior structure and electrical circuits, The only difference is model name for commercial purpose.
Product Description	:	Operation Frequency: 802.11b/g/n(HT20): 2412MHz~2462MHz 802.11b/g/n(HT40): 2422MHz~2452MHz Bluetooth: 2402MHz~2480MHz
	Number of Channel:	802.11b/g/n(HT20):11 channels 802.11b/g/n(HT40): 7 channels Bluetooth:79 Channels
	Max Peak Output Power:	802.11b: 9.80 dBm 802.11g: 9.46 dBm 802.11n (HT20): 9.36 dBm 802.11n (HT40): 9.30 dBm Bluetooth: GFSK: -2.094 dBm 8-DPSK: -2.524 dBm
	Antenna Gain:	0 dBi FPC Antenna
	Modulation Type:	802.11b: DSSS (CCK, QPSK, BPSK) 802.11g: OFDM 802.11n: OFDM GFSK 1Mbps(1 Mbps) π /4-DQPSK(2 Mbps) 8-DPSK(3 Mbps)
Power Supply	:	DC power supplied by AC/DC Adapter DC Voltage supplied from Li-Polymer battery.
Power Rating	:	AC/DC Adapter: Input: AC 100~240V 50/60Hz 0.35A Output: DC 5V 2A

TB-RF-074-1.0

		DC 3.7V 2800mAh from Li-ion battery
Connecting I/O Port(S)	:	Please refer to the User's Manual

Note:

More test information about the EUT please refer the RF Test Report.

SAR Test Exclusion Calculations

1. FCC: According to KDB 447498 D01 Mobile and Portable Devices RF Exposure Procedures and Equipment Authorization Policies v05r02.

(1) Clause 4.3: General SAR test reduction and exclusion guidance

Sub clause 4.31: Standalone SAR test exclusion considerations

1) The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6GHz at test separation distance ≤ 50 mm are determined by:

$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation, mm})] * [\sqrt{f_{(\text{GHz})}}] \leq 3.0$ for 1-g SAR

$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation, mm})] * [\sqrt{f_{(\text{GHz})}}] \leq 7.5.0$ for 10-g SAR

2. Calculation:

802.11b Mode						
Frequency (GHz)	Conducted Power (dBm)	Ant Gain (dBi)	TX Power (mW)	Distance (mm)	Calculation Value	Threshold Value
2.412	9.75	0	9.441	5	2.932	3.0
2.437	9.79	0	9.528	5	2.975	3.0
2.462	9.80	0	9.550	5	2.997	3.0
802.11g Mode						
Frequency (GHz)	Conducted Power (dBm)	Ant Gain (dBi)	TX Power (mW)	Distance (mm)	Calculation Value	Threshold Value
2.412	9.42	0	8.750	5	2.718	3.0
2.437	9.46	0	8.831	5	2.757	3.0
2.462	9.38	0	8.670	5	2.721	3.0
802.11n(HT20) Mode						
Frequency (GHz)	Conducted Power (dBm)	Ant Gain (dBi)	TX Power (mW)	Distance (mm)	Calculation Value	Threshold Value
2.412	9.36	0	8.630	5	2.681	3.0
2.437	9.32	0	8.551	5	2.670	3.0
2.462	9.27	0	8.453	5	2.653	3.0
802.11n(HT40) Mode						
Frequency (GHz)	Conducted Power (dBm)	Ant Gain (dBi)	TX Power (mW)	Distance (mm)	Calculation Value	Threshold Value
2.422	8.06	0	6.397	5	1.991	3.0
2.437	8.17	0	6.561	5	2.049	3.0
2.452	8.30	0	6.761	5	2.117	3.0
Bluetooth Mode (GFSK)						
Frequency (GHz)	Conducted Power (dBm)	Ant Gain (dBi)	TX Power (mW)	Distance (mm)	Calculation Value	Threshold Value
2.402	-5.102	0	0.309	5	0.096	3.0
2.441	-2.094	0	0.617	5	0.193	3.0
2.480	-3.934	0	0.404	5	0.127	3.0
Bluetooth Mode (8-DPSK)						
Frequency (GHz)	Conducted Power (dBm)	Ant Gain (dBi)	TX Power (mW)	Distance (mm)	Calculation Value	Threshold Value
2.402	-4.750	0	0.335	5	0.104	3.0
2.441	-2.524	0	0.559	5	0.175	3.0
2.480	-3.539	0	0.443	5	0.139	3.0

So standalone SAR measurements are not required.

Remark: WiFi and Bluetooth can't transmit at the same time.