



BLE Module - WIM1280E

WIM1280E, Light module enables ultra-low-power connectivity and basic data transfer for applications previously limited by the power consumption, size constraints and complexity of other wireless standards. WIM1280E is intended to provide considerably reduced power consumption



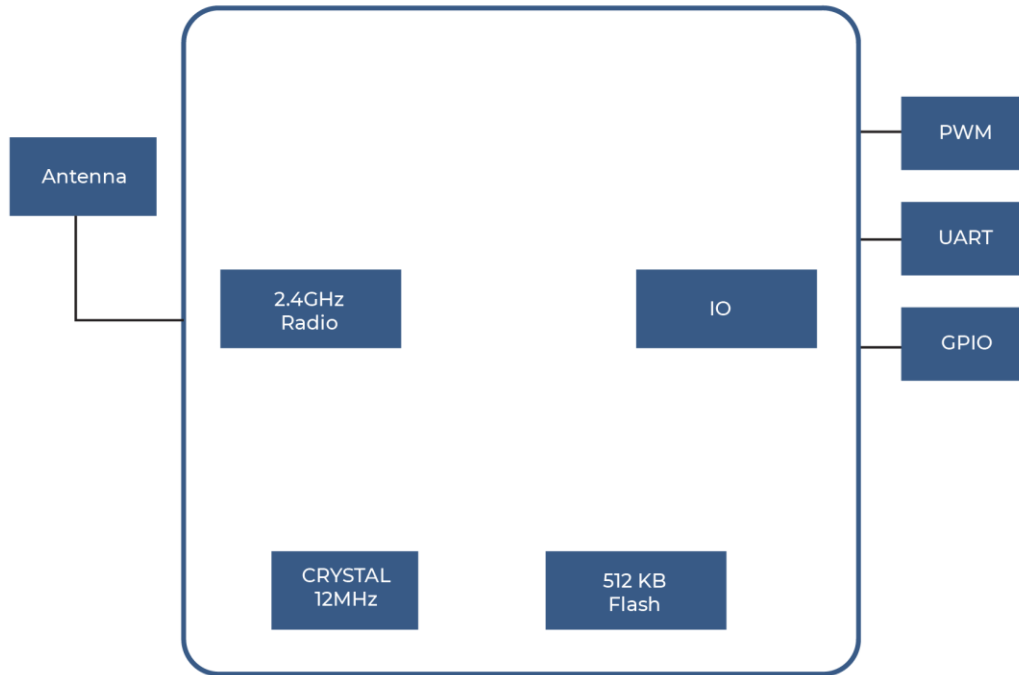
Key Features

- Support for Bluetooth 4.2 specification host stack
- 512KB of Flash memory
- 12 MHz clock system
- TX output power upto +8dbm
- -92dbm BT4.2 RX sensitivity
- RSSI Monitoring
- UFL Connector for External Antenna
- 7 programmable GPIO's/ 6 PWM channels

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1. Block Diagram



2. Specifications

Electrical	Symbol	Min	Typ.	Max.	Unit.	Remarks
Storage Temperature		-65		125	°C	
Supply Voltage		2	3.3	3.6	V	
IO Supply Voltage				3.6	V	
Operating Temperature		-40		85	°C	

PWM	Symbol	Min	Typ.	Max.	Unit.	Remarks
PWM Frequency		0.5		55	kHz	
Maximum voltage for logic low	VIL		0		V	
Absolute maximum current sourced	IMAX				mA	
Absolute maximum voltage level	VMAX		3.6		V	

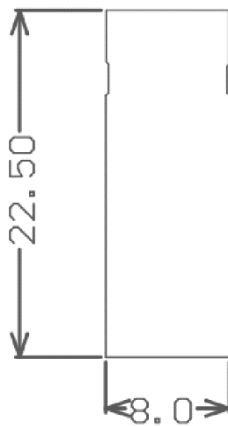
RF	Symbol	Min	Typ.	Max.	Unit.	Remarks
Operating Frequency		2402		2480	MHz	
Maximum output power			8		dBm	
2nd harmonic				54	dBuV	
3rd harmonic				54	dBuV	

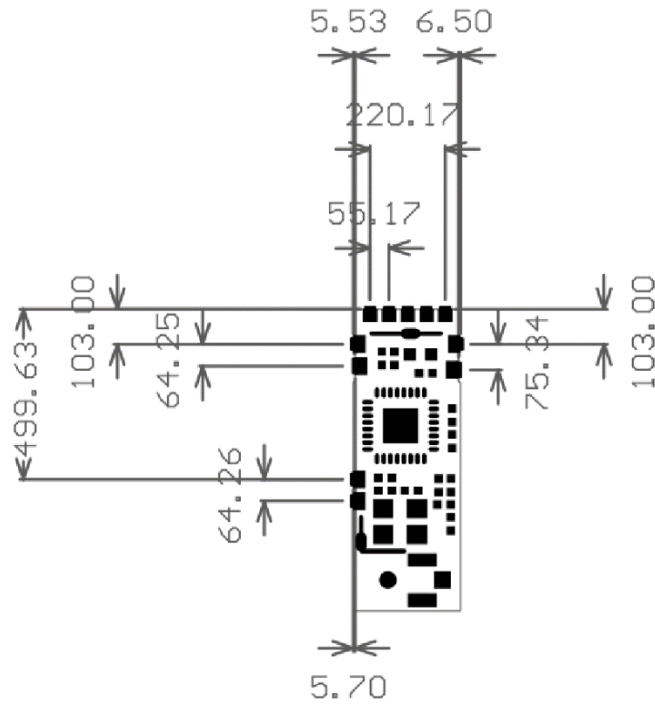
RX	Receiver Sensitivity		-94			dBm
	Receiver Sensitivity (with dirty transmitter)		-93			dBm
	Maximum received signal at 30.8% PER		-10			dBm
TX	Modulation delta F1 average	225	255	275		kHz
	Modulation delta F1 / F2	0.8				
	Modulation delta F2 max		100			%
	Frequency accuracy	-100	25	100		kHz
	Frequency offset	-100	25	100		kHz

Current Consumption

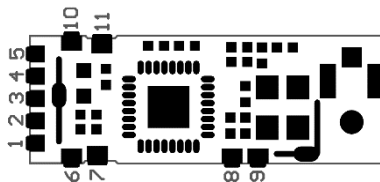
Sleep Mode		5				μA
RX/TX active		~15mA @ 3V peak current				mA

3. Device Dimensions (mm)



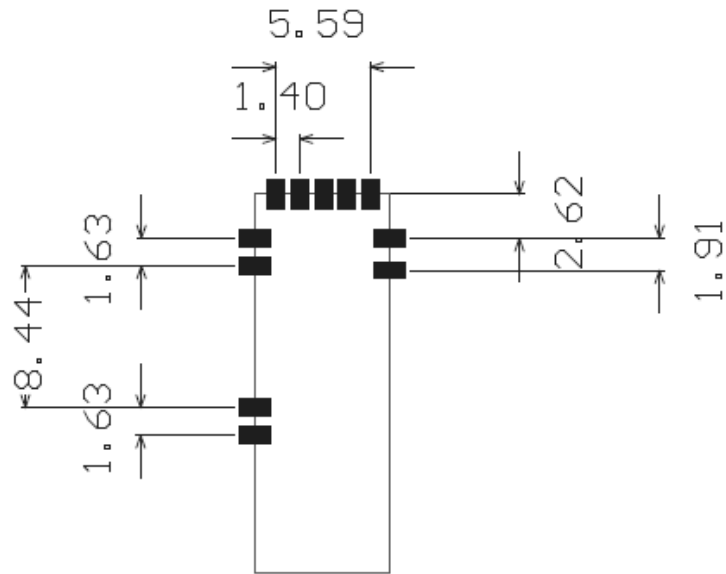


4. Pinout Diagram

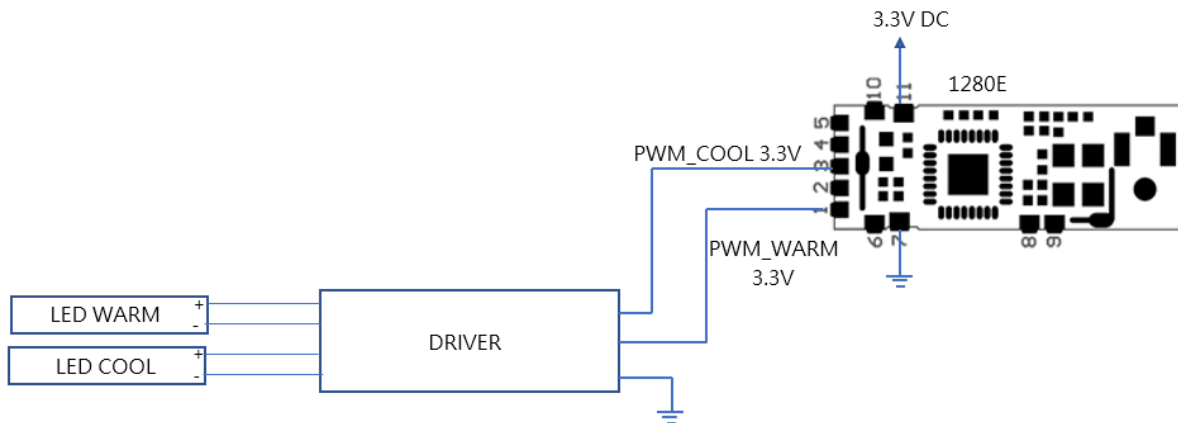


PINS	NAME	FUNCTIONS	COMMENTS
1	IO/PWM5	PWM/IO	Programmable I/O
2,8	TX/PWM2	PWM/IO	TX or Programmable I/O
3	IO/PWM4	PWM/IO	Programmable I/O
4	IO/PWM0	PWM/IO	Programmable I/O
5	IO/PWM1	PWM/IO	Programmable I/O
6	SWS		Programmable Pin
7	GND	POWER	GND
9	RX/PWM3	PWM3/IO	RX or Programmable I/O
10	IO	IO	Programmable I/O
11	3v3	POWER	3.3V

5. Land Pattern Dimension



6. LED Connectivity Diagram



7. Antennas

External Wire Antenna - 37mm

1. Frequency Range.....2.4GHz-2.5GHz
2. Impedance.....50Ω Nominal
3. VSWR.....1.92:1 Max
4. Return Loss..... -10dB Max
5. Gain (Peak).....2dBi
6. Cable loss.....0.3dBi Max



37mm Wire antenna

Stick Antenna

1. Frequency..... 2.4GHz-2.5GHz
2. Peak Gain..... 2dBi
3. VSWR..... ≤ 1.8
4. Return Loss..... ≥ 12 dB
5. Polarization..... Vertical
6. Impedance..... 50 Ω
7. Radiation pattern.....Omni-directional
8. Power handling.....10W



Stick antenna

External Wire Antenna – 600mm

1. Frequency..... 2.4GHz-2.5GHz
2. Impedance..... 50 Ω
3. VSWR..... 1.92:1 Max
4. Return Loss..... -10dB Max
5. Gain (Peak)..... .2dBi
6. Cable Loss.....0.3dBi Max
7. Polarization..... Vertical
8. Admitted Power2W



600 mm Wire Antenna

Spring Antenna

1. Gain (Peak).....1dBi
2. Impedance..... 50 Ω



Spring Antenna

8. Precautions

- While integrating module make sure all the pads are soldered properly.
- Please use a voltage regulator if the power supply is over 3.3V.
- For best wireless signals, please avoid packing the antenna close to metal parts or case.

9. FCC Statement

This equipment has been tested and found to comply with the limits for a Class B digital device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does not cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures.

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced Radio/TV technician for help

Caution: Any changes or modification to this device not explicitly approved by manufacturer could void your authority to operate this equipment

This device complies with part 15 of the FCC rule. Operation is subjected to the following two conditions:

- 1) This device may not cause any harmful interference.
- 2) The device must accept any interference received, including interference that may cause undesired operations.

FCC Radiation Exposure Statement

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment.

OEM INTEGRATION INSTRUCTIONS

This device is intended only for OEM integrators under the following condition:

- The transmitter module may not be co-located with any other transmitter or antenna.
- The module shall be only used with the three antennas that has been originally tested and certified with this module. No other antennas are supported.

As long as these two conditions above are met, further transmitter test will not be required.

However, the OEM integrator is still responsible for testing their end-product for any additional compliance requirements required with this module installed (for example, digital device emissions, PC peripheral requirements, etc.). The end-product may need sDoc testing, Declaration of sDoc testing, a Permissive Class II Change or new Certification. Please involve a FCC certification specialist in order to determine what will be exactly applicable for the end-product.

Validity of using the module certification:

In the event that these conditions cannot be met (for example certain laptop configurations or co-location with another transmitter), then the FCC authorization for this module in combination with the host equipment is no longer considered valid and the FCC ID of the module cannot be used on the final product. In these circumstances, the OEM integrator will be responsible for re-evaluating the end product (including the transmitter) and obtaining a separate FCC authorization. In such cases, please

involve a FCC certification specialist in order to determine if a Permissive Class II Change or new Certification is required.

Upgrade Firmware

The software provided for firmware upgrade will not be capable to affect any RF parameters as certified for the FCC for this module, in order to prevent compliance issues.

End Product Labeling

The final end product must be labeled in a visible area with the following: Contains FCCID: 2AG4N-WIM1280E.

Information That Must Be Placed In The End User Manual

The OEM integrator has to be aware not to provide information to the end user regarding how to install or remove this RF module in the user's manual of the end product which integrates this module.

The end user manual shall include all required regulatory information/warning as show in this manual.



CONNECTING THINGS TO LIFE

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