

# User Manual

The BiancaMed BM08 Sensor is a 10.525GHz motion detector. It comprises a motherboard PCBA, an integral RF PCBA, die cast RF metalwork and a custom plastic anti-tamper enclosure.

## Physical Specifications

Parameter	Value	Remarks
Circuit board dimensions	44.5mm by 77.5mm by 6 mm	See diagram below
Complete assembly (including anti-tamper enclosure) dimensions	63.75mm (x) by 79.3mm (y) by 10mm (z) main body of enclosure,	13.8 mm (z) at enclosure hump 22.5mm (z) max by horn, see Figure 2 below

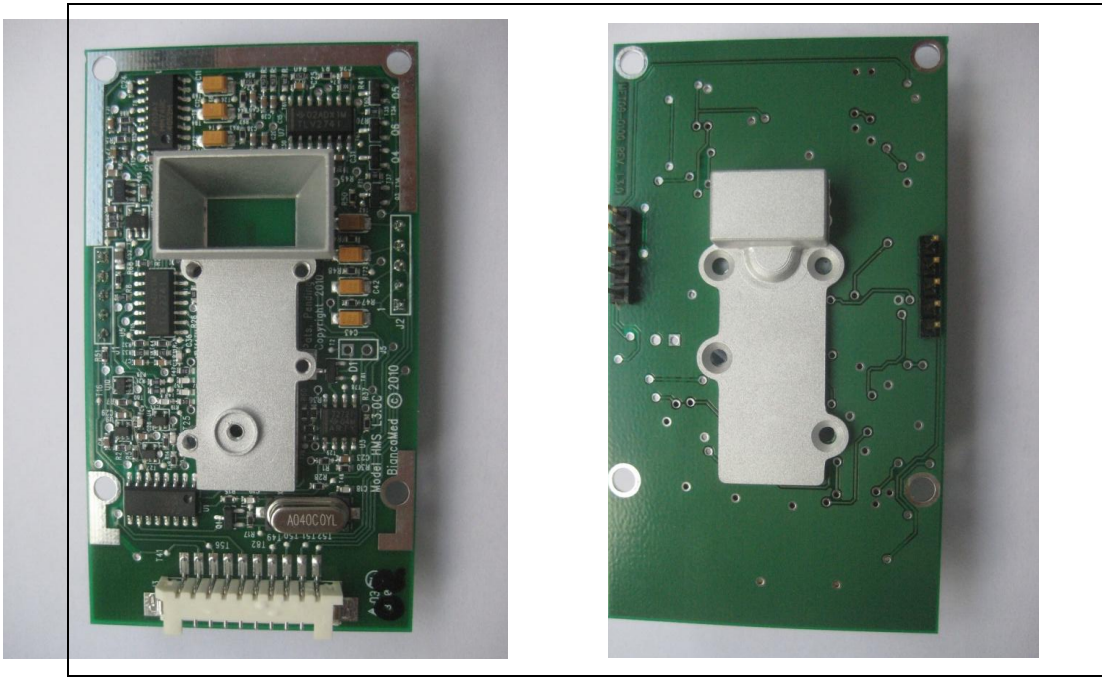


Figure 1: PCB Layout, showing the Antenna Horn on the top side and the connector at the bottom

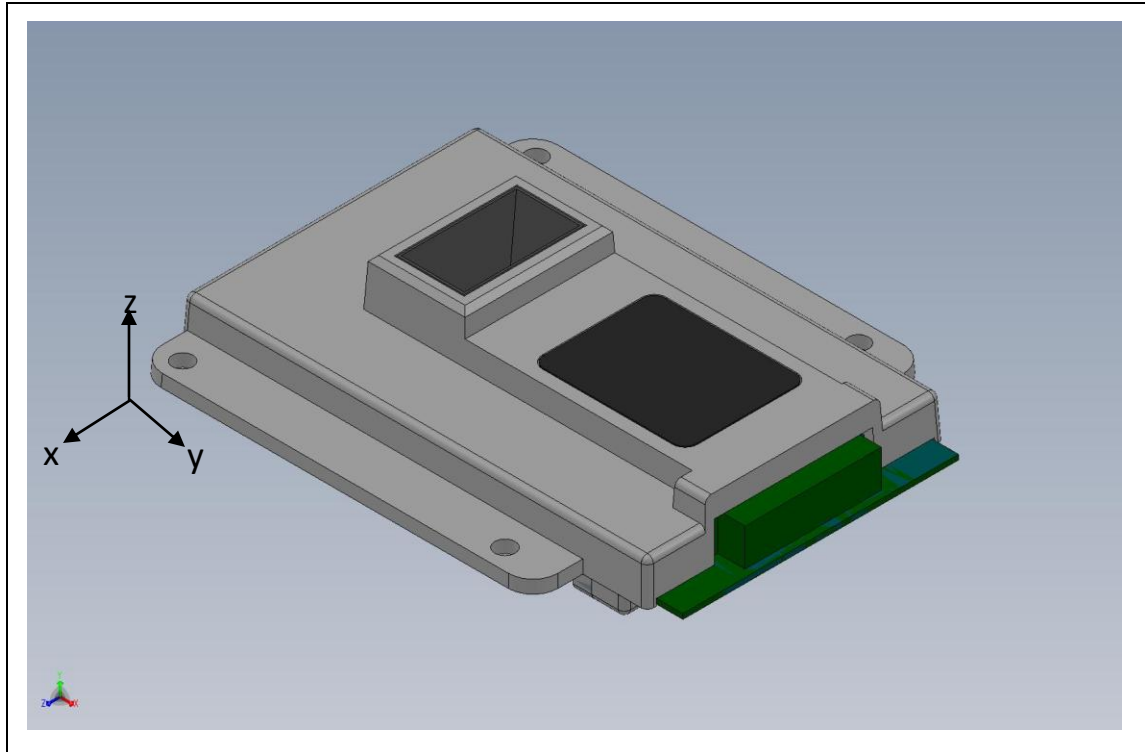


Figure 2: 3-D Model of PCB Enclosed in Anti-Tamper Enclosure

### Radio Frequency Sensor Specifications

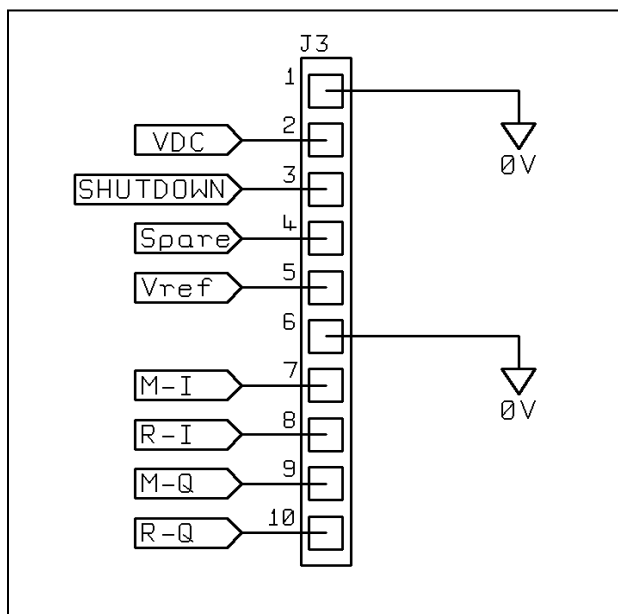
Parameter	Value	Remarks
Centre frequency	10.525 GHz	
RF t/x Pulse	500nS	
PRF	1MHz	
RF Duty Cycle	50%	

### Electrical Specifications

Parameter	Value	Remarks
Input voltage	+4.5 to 12 VDC	
Maximum current draw	25 mA	
nominal current draw	22mA	
Maximum voltage ripple allowed	100 nV <sub>rms</sub> /(root(Hz))	
Maximum supply voltage allowed	12 VDC	
Minimum tolerable supply	+4.5 VDC	

Parameter	Value	Remarks
voltage		
Reference Voltage	1.25 VDC	
Reference Voltage line output impedance	1 kOhm	
Sensor start time before data is available	40 s	
Connector	Hirose 10-Way 2mm Pitch Header Connector	

### Analogue Sensor Data



Where:

Input:

VDC = +4.5 to +12 VDC

Shutdown = active low, connect to pin 2 to enable sensor

Output:

Vref = +1.25 VDC

M-I= Movement I channel data

R-I= Respiration I channel data

M-Q= Movement Q channel data

R-Q= Respiration Q channel data

Figure 3: Pin out of Connector

### Environmental Specifications

Parameter	Value	Remarks
Operating Temperature Range	+5 to +35 deg C	
Operating Humidity Range	30 to 85% RH (non condensing)	
Storage Temperature range	-20 to +60C	
Storage Humidity Range	20 to 95 RH (non-condensing)	
IP value	Not Applicable	IP value provided by OEM enclosure

## FCC Warning Statements

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 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 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.

This device complies with Part 15 of the FCC Rules.

Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

**FCC Caution:** Any changes or modifications not expressly approved by BiancaMed could void the user's authority to operate this equipment.

**This transmitter module is authorized to be used in other devices only by OEM** further transmitter testing 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 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 manual of the end product.

### End Product Labeling

The final end product must be labeled in a visible area with the following:

“Contains TX FCC ID: YAKBM08” or “Contains FCC ID: YAKBM08”.