

## Air Quality Module IAQ-BT

- Works as stand-alone **indoor air quality sensing board** or module.
- **Low Power Bluetooth 5.0** (with free Android App) and E-ink (E-paper) display included.
- IAQ index range: 1.0-1.9 Best / 2.0-2.9 Good / 3.0-3.9 Mid / 4.0-4.9 Poor / 5.0-10 Bad
- EtOH reading: Equivalent Ethanol concentration in ppm.
- TVOC range: 0,0-10.0 mg/m<sup>3</sup> (Total Volatile Organic Compounds.)
- eCO<sub>2</sub> range: estimated CO<sub>2</sub> 400-5000 ppm.
- Temperature and Relative Humidity sensor included.
- Sensing interval (internal): once per 8 seconds.
- Display and Bluetooth update interval: once per 150 seconds (slow to save power.)
- **Battery operated** from +2,3...+3V, especially designed for rechargeable NiMh battery types.
- PCB Dimensions: 68 x 79 mm.
- Fitting housing box: red, blue or yellow available (optional).



Fig. 1: Boxed Air Q Module.

**Air Q Sensor:** needs an initial ‘learning’ period of approx. 2 days in clean air to assure subsequent readings.

**Android App:** freely available for customers. Location access needed for basic functionality.

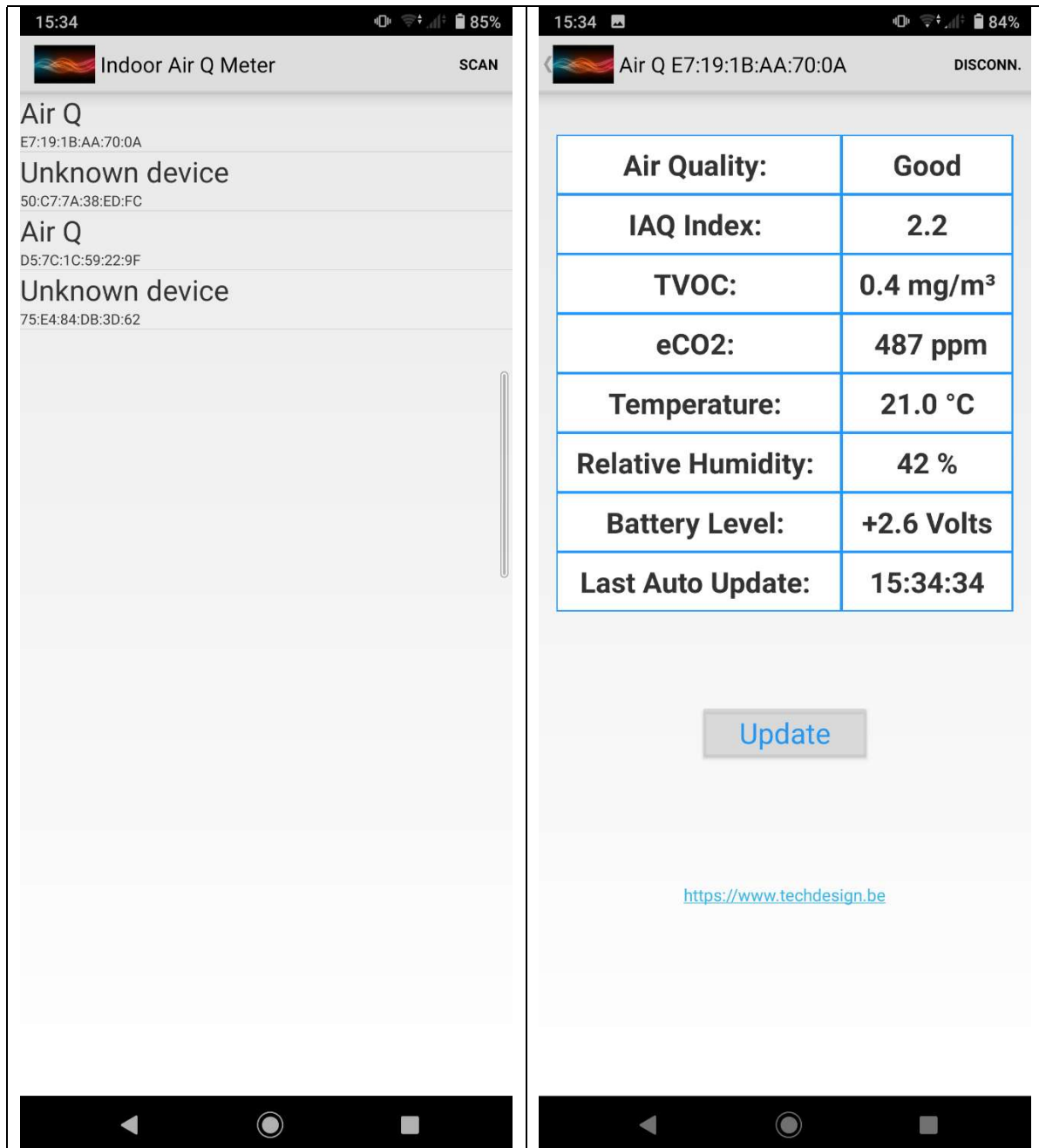


Fig. 2: Air Q Module: Android App screenshot.

**Technical Data:**

Parameter	Min .	Typ.	Max.	Unit
Average Module Power consumption	0,03	0,50	12,50	mA @2,5V DC supply
Sensor Reading Phase (500 mS)		12,50		mA @Id.
.. then Bluetooth Advertising (7500 mS)		0,22		mA @Id.
.. or then Bluetooth Connected (7500 mS)	0,03	0,03	0,45	mA @Id.
Power on to normal operation	-	3	5	Seconds.
Power on to first IAQ reading (WarmUp)	60	120	300	Seconds
Initial Air Q Sensor learning period		2		Days

Table 1: Technical Data.

Module Function Block	Chip or Component
Air Q sensor	ZMOD4410 Renesas
MicroController	PIC18F46K20-I/PT Microchip XLP
Bluetooth Module	BL654 Laird Bluetooth 5.0 Module
E-ink display	MDE0154A152152BW 152x152 pixels MIDAS
Temperature and Humidity sensor	HPP845E034R5

Table 2: Chip Data.

**Battery Connector X4 ( PCB bottom-left):**

3,5 mm pitch Terminal Block Phoenix Contact MKDS 1/ 2-3,5

Pin number	Pin function
1 top	Ground (Battery -)
2 bottom corner	Battery + from +2,3...+3,3V

Table 3: Battery Connector pinout.

## Mechanical Data:

PCB Module Dimensions: 67 x 78,2 x 10 mm.

Weight: 25 grams.

Fitting housing (box): Hammond Hand Held Instrument 1593BBAT (red, yellow or blue.)

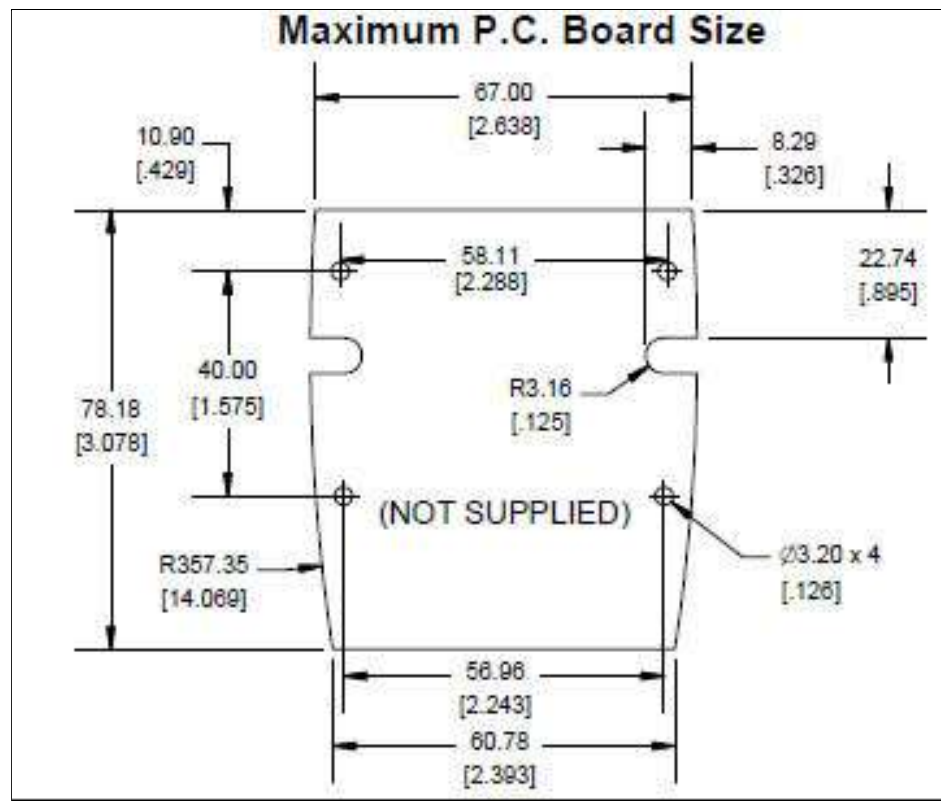


Fig. 2: Module PCB dimension details in mm and [inches] (PCB top is down)