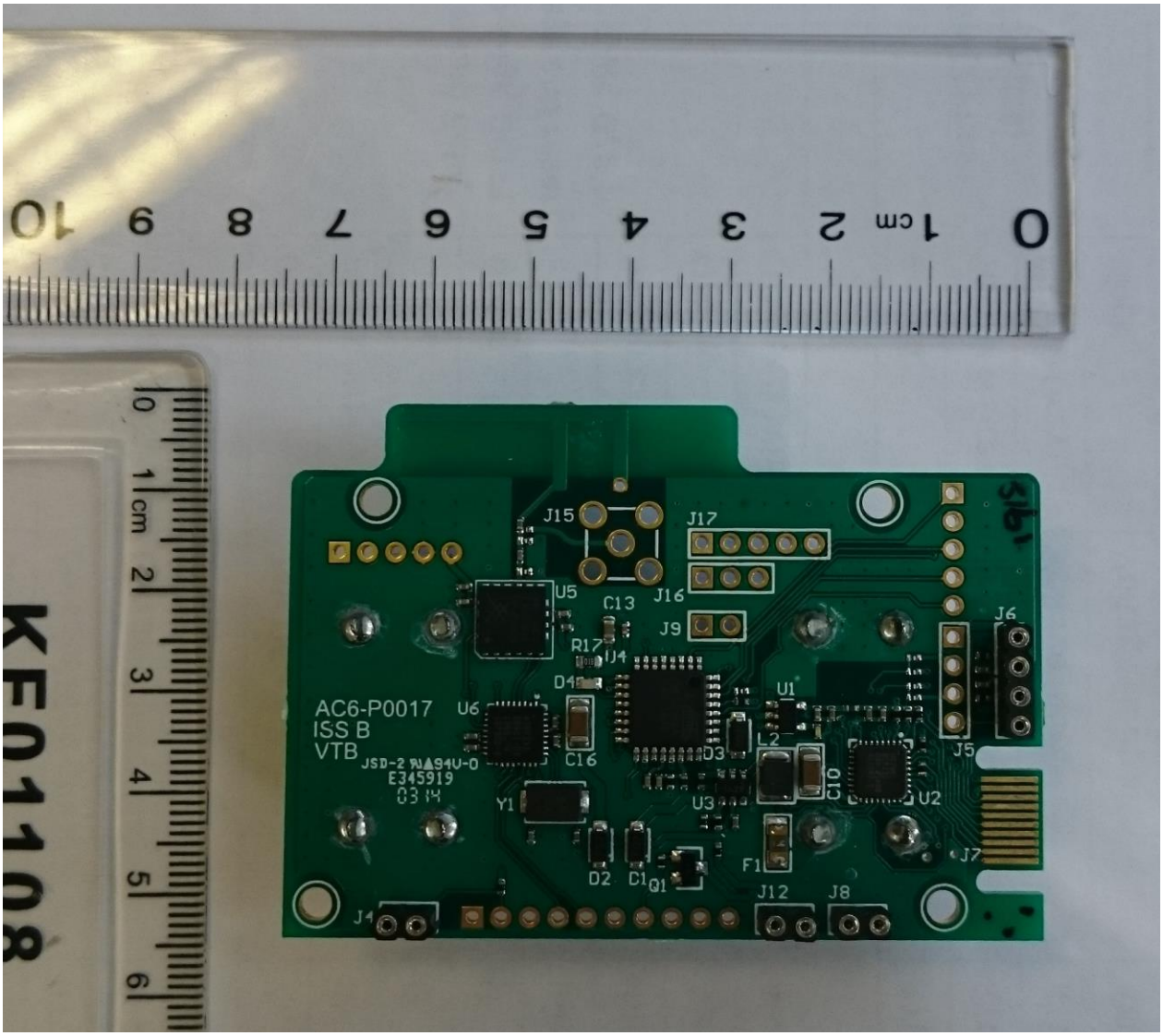
VTB User Guide

Date: 7h July 2015
Issue: A

LOG OF REVISIONS

Rev	Date	Description	Approved
A	7th Jul 2015	Initial Release	SJB

1 Pin function and description



J4. Pairing socket:

- Pin 1 (left): Ground
- Pin 2: Pairing

J5. Bridge connection socket: NOT USED

- Pin1 (Upper most): Ground
- Pin 2: positive
- Pin 3: negative
- Pin4: Supply voltage

J6. Bridge connection socket

- Pin1 (Upper most): Ground
- Pin 2: positive

- Pin 3: negative
- Pin4: Supply voltage

J7. Programming header, debug only

- Pin 1 (bottom – non battery side): ADC JTAG reset
- Pin 2 (bottom – battery side): VCC
- Pin 3: ADC TMS
- Pin 4: Ground
- Pin 5: ADC TCK
- Pin 6: ATMega168 MOSI
- Pin 7: ADC TDI
- Pin 8: ATMega168 MISO
- Pin 9: ADC TDO
- Pin 10: ATMega168 reset
- Pin 11: RS232 chip MISO
- Pin 12: ATMega168 SCLK
- Pin 13: ADC chip reset
- Pin 14: RS232 chip MOSI
- Pin 15: RS232 chip clock
- Pin 16: NOT CONNECTED
- Pin 17: ADC Ground
- Pin 18: RS232 chip SPI select
- Pin 19: ADC 2.5V supply
- Pin 20: RS232 chip IRQ

J8. Battery charge socket

- Pin 1 (left): Battery charge
- Pin 2: Ground

J9. DAC spare socket: NOT USED

- Pin 1 (left): spare IO
- Pin 2: DAC spare output

J12. External LED socket

- Pin 1 (left): Anode
- Pin 2: Cathode

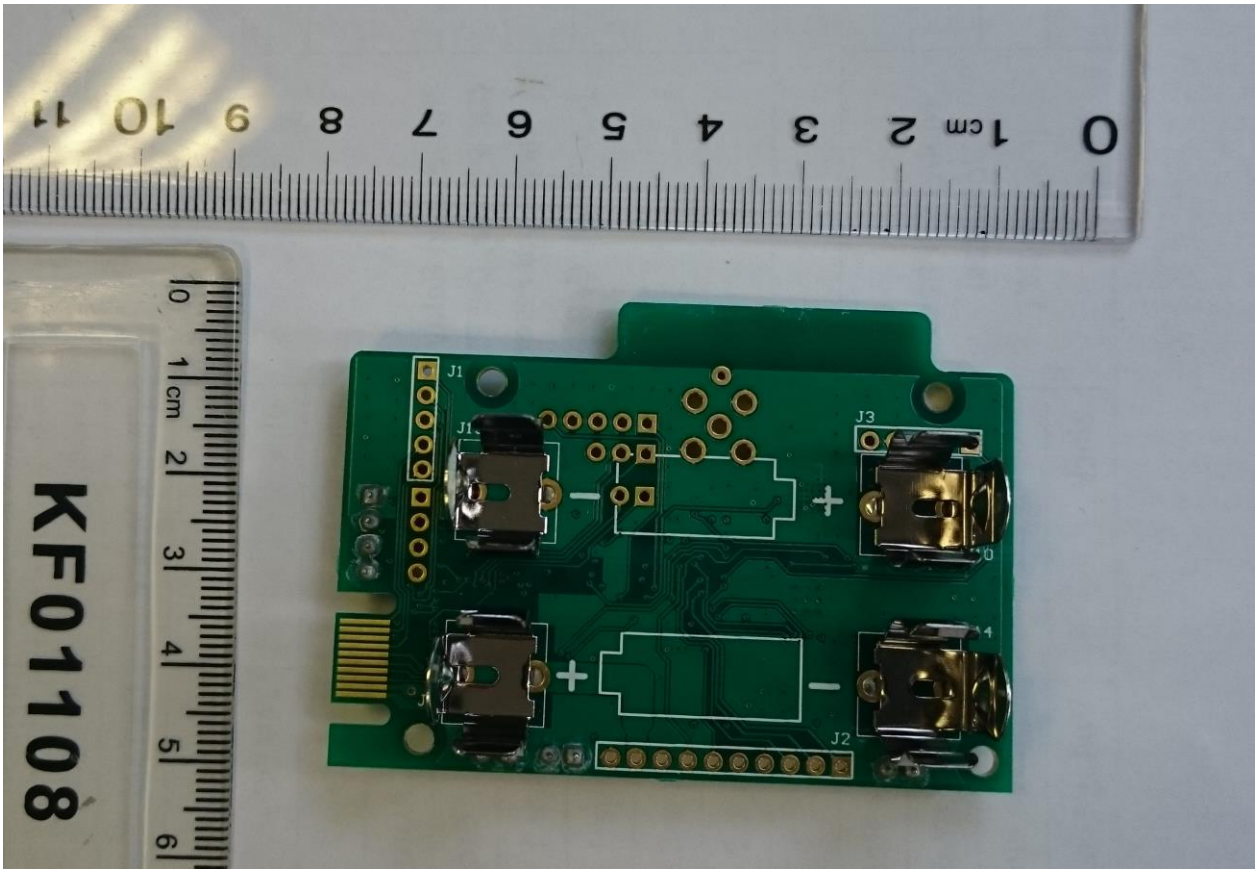
J16. Serial data socket: NOT USED

- Pin 1 (left): Serial out
- Pin 2: Serial in
- Pin 3: Ground

J15. SMA socket: NOT USED

J17. Debug signals: NOT USED

- Pin 1(left): ADC output
- Pin 2: RS232 chip select
- Pin 3: 3V supply enable
- Pin 4: LCD display chip select
- Pin 5: ADC request



J1. RS232 chip connection

- Pin 1 (top): RS232 chip clock
- Pin 2: RS232 chip MISO
- Pin 3: RS232 chip MOSI
- Pin 4: RS232 chip IRQ
- Pin 5: RS232 chip SPI select

J2: LCD display connection

- Pin 1(right): LCD display select
- Pin 2: Keyboard select
- Pin 3: Expansion signal
- Pin 4: ATMega168 MISO
- Pin 5: ATMega168 MOSI
- Pin 6: ATMega168 SCLK
- Pin 7: LED chip select
- Pin 8: NOT CONNECTED
- Pin 9: Battery supply pin
- Pin 10: Ground

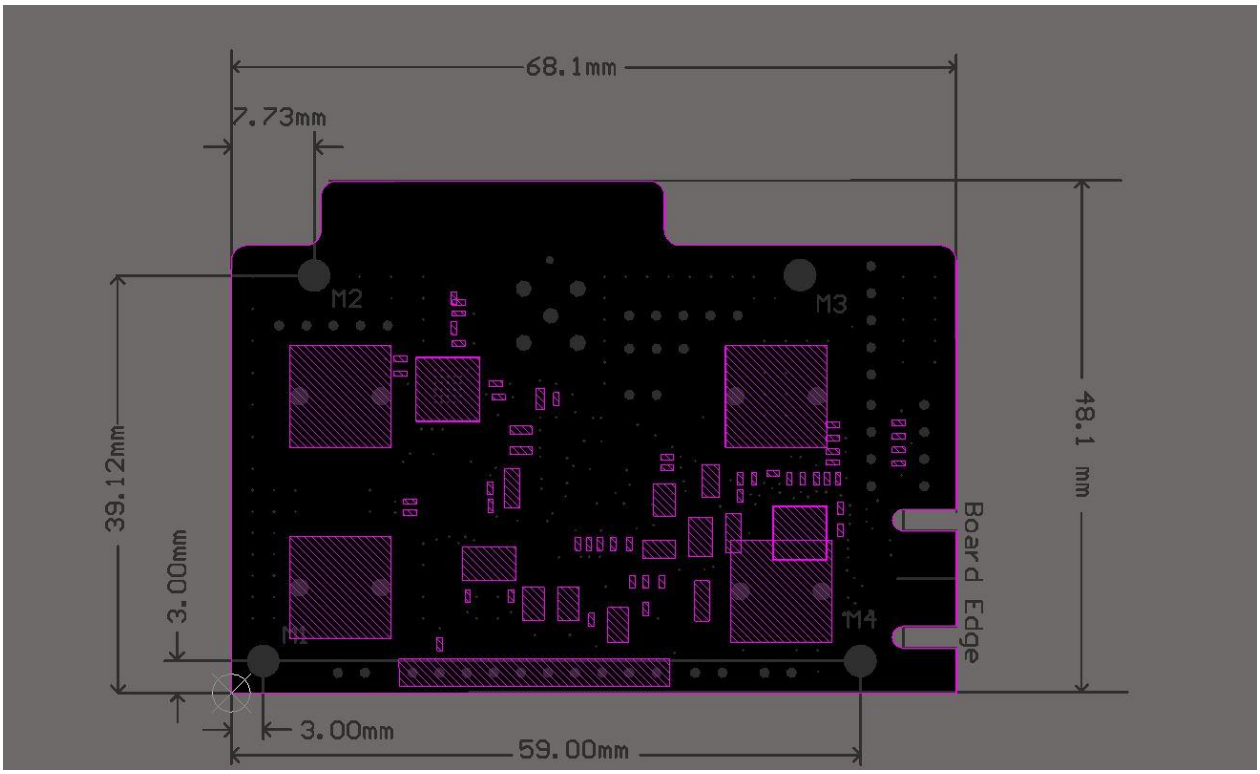
J3: Power connections:

- Pin 1(right): Power key
- Pin 2: NOT CONNECTED
- Pin 3: VCC
- Pin 4: Ground
- Pin 5: 3.3V

J10, J11: Positive battery terminal

J 13, J14: Negative battery terminal

2 Dimension



3 Host system connection

The VTB module is attached to a host product using four M2.5 mounting holes.

4 Module operation

The VTB transmits measurements wirelessly on power-up.

The connections to the host product are as follows:

- The analogue signal from a transducer inside the host is connected to J6 for digitalization.
- Connect J4 to the PAIR button.
- Connect J8 to the CHARGING socket.
- Connect J12 to the EXTERNAL LED.

To pair the VTB with a handset, press the PAIR button on the host product and the handset to initiate handshake protocol.

5 PSU operation

2 x 1.5V AA batteries

6 FCC INFORMATION (FOR US CUSTOMERS)

6.1 PRODUCT

This product complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operation.

6.2 IMPORTANT NOTICE: DO NOT MODIFY THIS PRODUCT

This product, when installed as indicated in the instructions contained in this manual, meets FCC requirements. Modification not expressly approved by ARCAM may void your authority, granted by the FCC, to use the product.

6.3 NOTE

This product has been tested and found to comply with the limits for a Class A digital device, persuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This product 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 product does cause harmful interference to radio or television reception, which can be determined by turning the product 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 product into an outlet on a circuit different from that to which the receiver is connected.
- Consult the local retailer authorized to distribute this type of product or an experienced radio/TV technician for help.

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

Antenna type: F-type PCB integral antenna.

7 INDUSTRY CANADA INFORMATION (FOR CANADIAN CUSTOMERS)

This Class A digital apparatus complies with Canadian ICES-003

1.“This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement”

2.“This radio transmitter has been approved by Industry Canada to operate with the antenna types listed below with the maximum permissible gain and required antenna impedance for each antenna type indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device.

Le présent émetteur radio a été approuvé par Industrie Canada pour fonctionner avec les types d'antenne énumérés ci-dessous et ayant un gain admissible maximal et l'impédance requise pour chaque type d'antenne. Les types d'antenne non inclus dans cette liste, ou dont le gain est supérieur au gain maximal indiqué, sont strictement interdits pour l'exploitation de l'émetteur.”

Antenna type / type d'antenne
F-type PCB integral antenna, Antenna Gain +1dBi

3. “This equipment complies with IC RSS-102 radiation exposure limits set forth for an uncontrolled environment. This equipment may be installed and operated with minimum distance 20 cm between the antenna and your body.

Cet équipement est conforme aux limites IC RSS-102 d'exposition aux rayonnements définies pour un environnement non contrôlé. Cet équipement peut être installé et utilisé à distance minimale de 20 cm entre l'antenne et votre corps.

End Product Labelling

The VTB module is labelled with its own FCC ID and IC Certification Number. If the FCC ID and IC Certification Number are not visible when the module is installed inside another device, then the outside of the device into which the module is installed must also display a label

referring to the enclosed module. In that case, the final end product must be labelled in a visible area with the following:

“Contains Transmitter Module FCC ID: 2AEAI-VTB1”
“Contains Transmitter Module IC: YYXX-VTB1”
Or
“Contains FCC ID: 2AEAI-VTB1”
“Contains IC: YYXX-VTB1”

If these conditions cannot be complied with then the OEM integrator is responsible for re-evaluating the host product with integrated module and obtaining a new FCC ID.

The OEM integrator has to be aware not to provide information to the end user regarding how to install or remove this RF module or change RF related parameters in the user manual of the end product.

Étiquetage du produit final

Le module L221AY est étiqueté avec sa propre identification FCC et son propre numéro de certification IC. Si l’identification FCC et le numéro de certification IC ne sont pas visibles lorsque le module est installé à l’intérieur d’un autre dispositif, la partie externe du dispositif dans lequel le module est installé devra également présenter une étiquette faisant référence au module inclus. Dans ce cas, le produit final devra être étiqueté sur une zone visible avec les informations suivantes:

“Contient module émetteur identification FCC: 2AEAI-VTB1”
“Contient module émetteur IC: YYXX-VTB1”
Ou
“Contient identification FCC: 2AEAI-VTB1”
“Contient IC: YYXX-VTB1”

Dans le guide d’utilisation du produit final, l’intégrateur OEM doit s’abstenir de fournir des informations à l’utilisateur final portant sur les procédures à suivre pour installer ou retirer ce module RF ou pour changer les paramètres RF. Si ces conditions ne peuvent être respectées lors de l'intégrateur OEM est chargé de réévaluer le produit hôte avec module intégré et d'obtenir un nouvel identifiant FCC.