# ABR105 ISO Reader Module

The Agrident ISO11784/11785 module is a low frequency OEM RFID reader module working on 134.2 KHz. It has been designed for the integration into mobile devices like PDAs. The ABR105 is not intended to be used as a stationary reader; stationary means: power supply via an AC/DC converter connected to the mains and the interface for communication connected to a desktop PC.
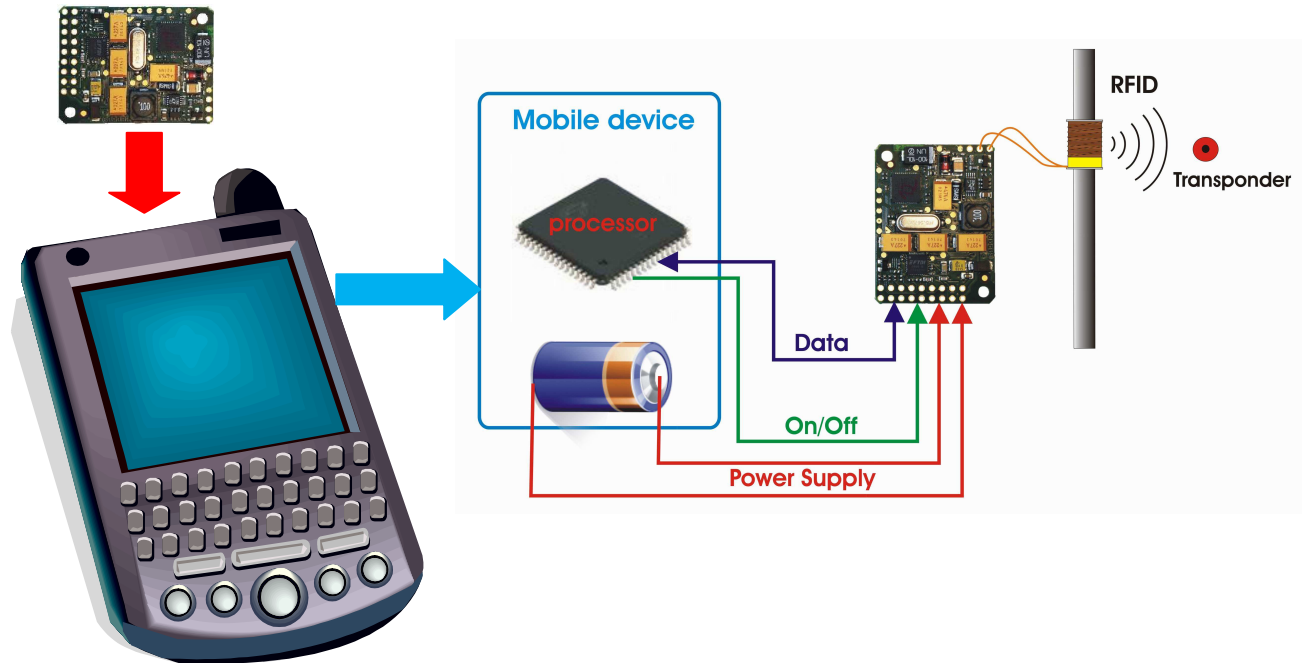
Agrident provides an Evaluation Board in order to make the development of an own software interface easier for the customer. In case of using the ABR105 with the Evaluation Kit, the reader board is powered by voltage regulators which are supplied with 8 to 12V from a DC-source. The reader can be connected to a desktop PC using either the RS232 or the USB connector on the Evaluation Board. However, this setup is different from the use of the reader board in the final application and has the purpose to evaluate the ABR105 only.
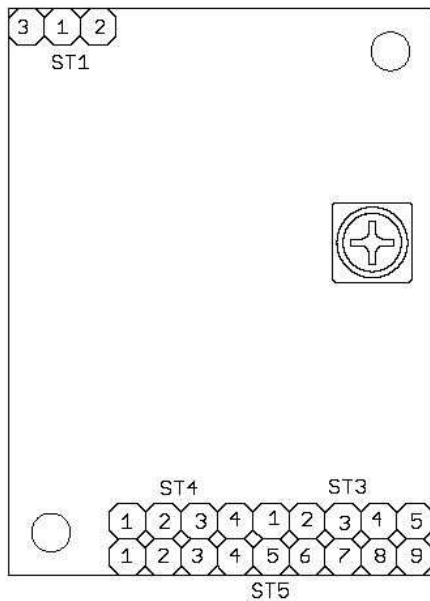
Power Supply options:

1) 2.5V – 4.2V DC (e.g. Lithium battery)
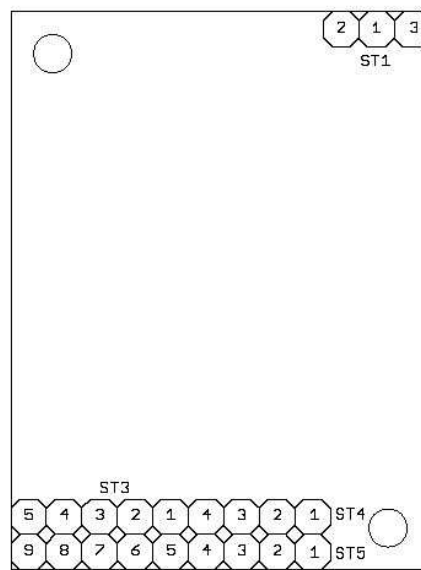2) 5V from voltage regulator (linear, stabilized, low ripple voltage)

Interface options:

1) TTL interface (Rx, Tx, Gnd)
2) USB interface (for applications where the mobile device has an USB port)

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ISO-reader module, top-view   ISO-reader module, bottom-view

Connector	Pin	Name	Type	Description
ST5	1	+U_{Batt}	IN	Input voltage for 3.3V version (battery)
	2	GND	IN	Common ground
	3	+5V	IN	Input voltage for 5V version
	4	+5V$_{out}$		+5VDC Switch-mode Power Supply output, Has to be connected to ST5 Pin3 for 3.3V version
	5	RxD-M	IN	Where the reader module receives data
	6	TxD-M	OUT	Where the reader module transmits data
	7	+5V$_{on}$	IN	+5V in order to switch the module on 0V in order to switch the module off (3.3V versions only!)
	8	LED	OUT	Possibility to connect an external LED (good read)
	9	Int. use		For internal use only

Connector	Pin	Name	Type	Description
ST4	1	+USB	IN	Supply voltage for the USB chip
	2	USBDM	I/O	USB data minus
	3	USBDP	I/O	USB data plus
	4	GND USB	IN	USB ground

Connector	Pin	Name	Type	Description
ST3	1	TxD	OUT	USB transmit data
	2	RxD	OUT	USB receive data
	3	RTS	OUT	USB request to send
	4	DTR	OUT	USB data terminal ready
	5	TXDEN_S2	OUT	Configurable CBUS Pin

Connector ST4 is a standard USB interface. ST3 provides the signals RxD and TxD plus 3 additional control lines which can be used for controlling external electronics, e.g. a barcode module. The status of these lines can be changed via commands on the USB interface.
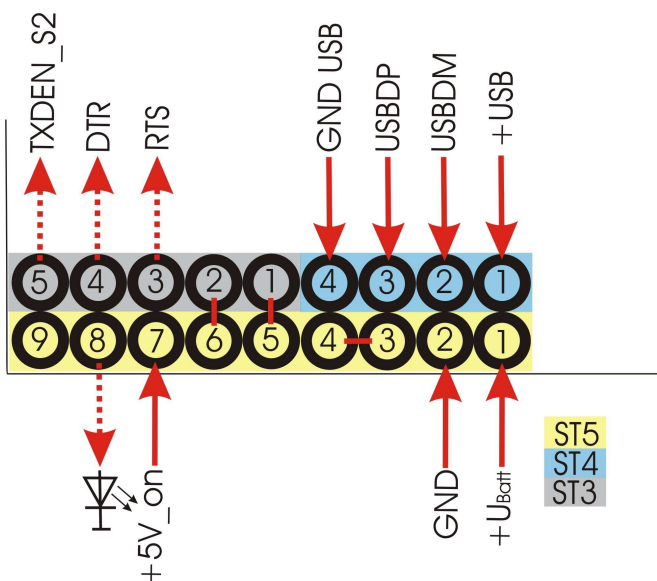
Connector	Pin	Description
ST1	1	Antenna 1
	2	Antenna 2
	3	Ground

The following drawings show, how the reader module has to be connect and which solder bridges have to be made for the corresponding modes:
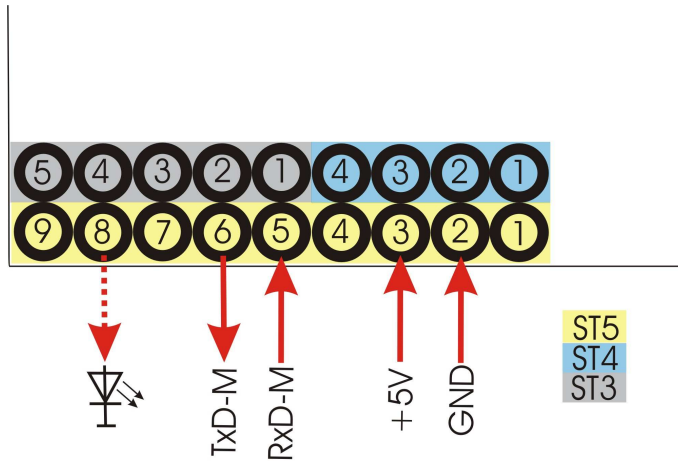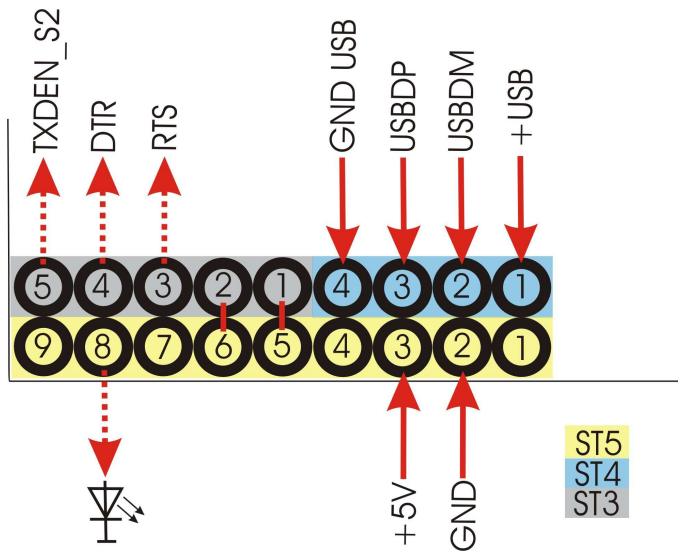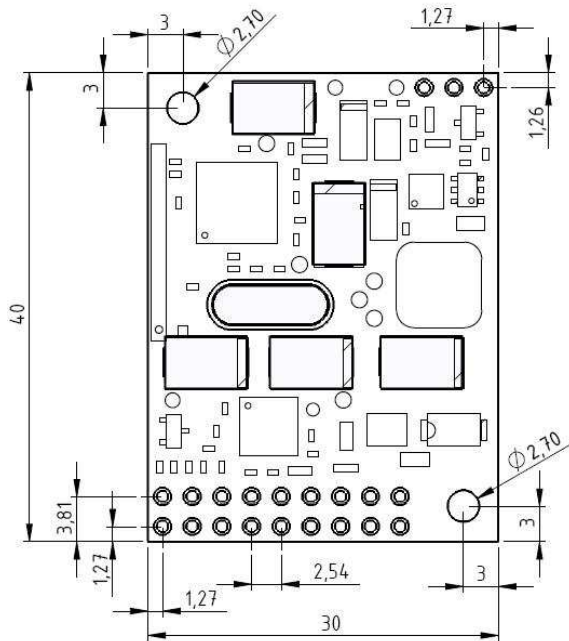
3.3Volt TTL (Bottom view)

3.3V USB (Bottom view)

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5V TTL (Bottom view)

ST5
ST4
ST3

Labels: TxD-M, RxD-M, +5V, GND

5V USB (Bottom view)

Labels: TXDEN_S2, DTR, RTS, GND USB, USBDP, USBDM, +USB, +5V, GND
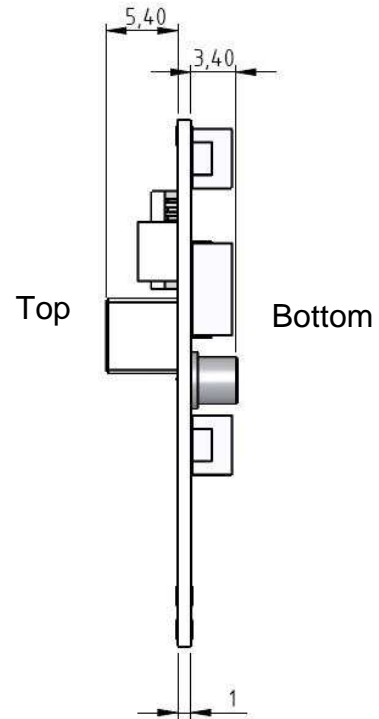
ST5
ST4
ST3
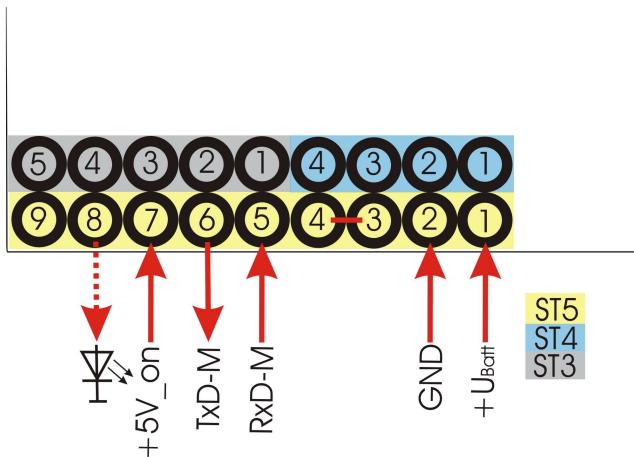
Mechanical Dimensions of the ABR105 Reader Module:

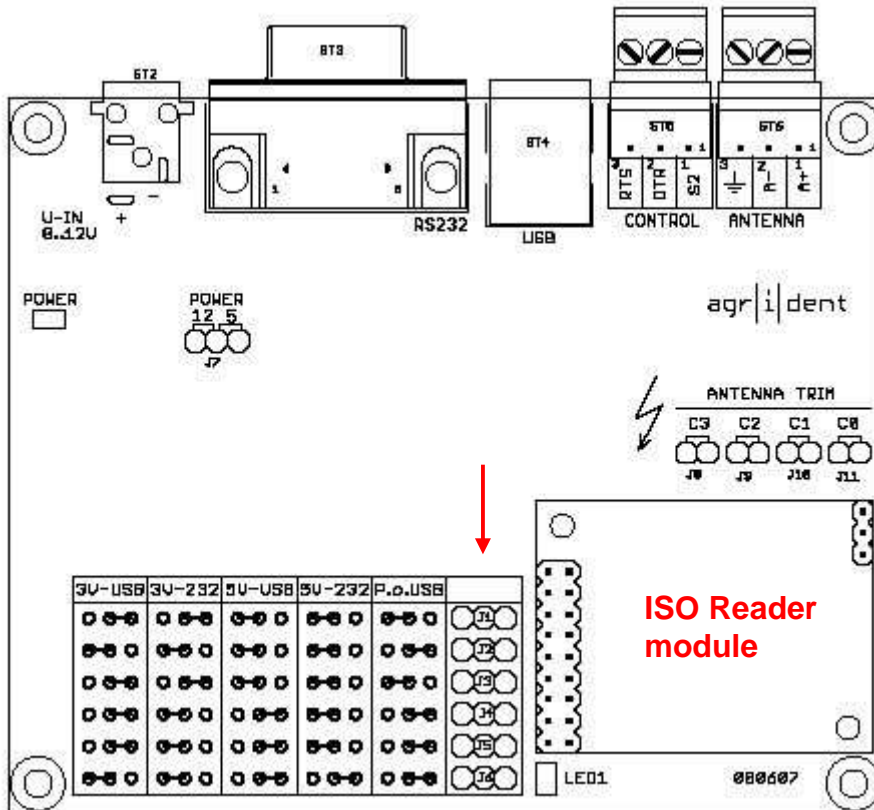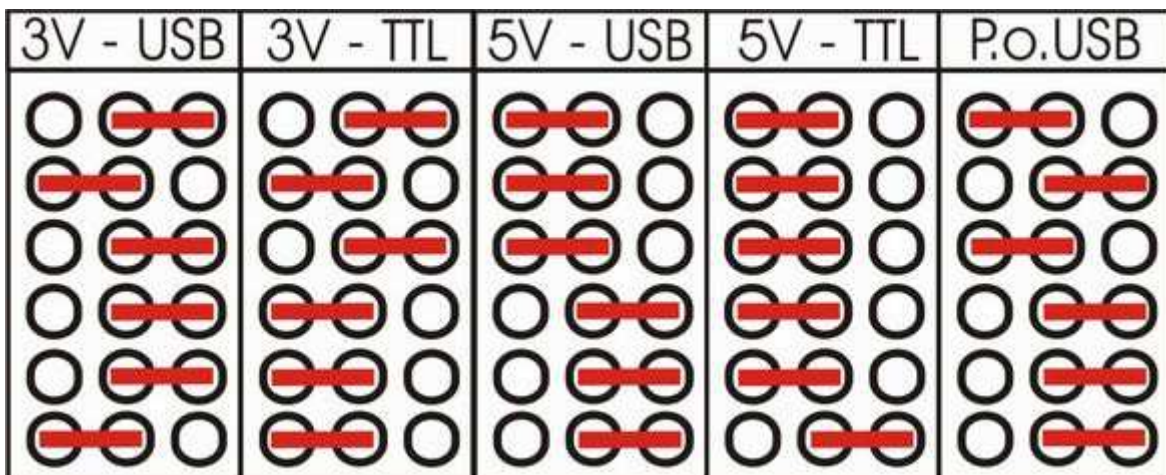Bottom View   Side View

All dimensions in mm

If the Evaluation Board is used, the different modes can be selected with jumpers:

The following combinations are possible:

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FCC and IC digital device limitations

The FCC approval is only valid with the tested antenna "ANT002". If other antennas should be used, the complete FCC Part 15 B test procedure has to be repeated!

Any additional antenna may be used with this device, provided that the new antenna is from same type and has equal or lesser gain than the certified antenna(s). The usage of any new antenna type or higher gain antenna require either a Class II Permissive Change (add new antennas) by the Grantee (Agrident) or a complete new authorization under a new FCC ID by the responsible party for compliance.

Important Note:

This module is restricted to OEM integration due to the fact that this RF Module is not equipped with an own shielding. The OEM integrator is still responsible for the compliance to the FCC rules of the final end-product, which integrates this module.

Labeling of end product:

The final end-product must be labeled clearly visible with the following "*Contains TX FCC ID: QG2ABR105*" and "*Contains TX IC: 6252A-ABR105*"

If the size of the end-product is larger than 8 x 10 cm, the following FCC Part 15.19 statement shall be also placed on the device:

This device complies with Part 15 of the FCC Rules.

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.

L'utilisation de ce dispositif est autorisée seulement aux deux conditions suivantes:

(1) il ne doit pas produire de brouillage, et
(2) l'utilisateur du dispositif doit être prêt à accepter tout brouillage radioélectrique reçu, même si ce brouillage est susceptible de compromettre le fonctionnement du dispositif.

If the size of the end product is too small (smaller than 8 x 10 cm) or it is not practicable to place this statement on the end-product; this statement shall be placed in a prominent location in the instruction manual or pamphlet supplied to the user or alternatively shall be placed on the container in which the device is sold.

User Manual of the end-product:

The end user has to be informed that any changes or modifications not expressly approved by the manufacturer could void the user's authority to operate this equipment.

FCC RF Radiation Exposure Statement

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. End users must follow the specific operating instructions for satisfying RF exposure compliance. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

FCC §15.105 Information to the user

(a) For a Class A digital device or peripheral, the instructions furnished the user shall include the following or similar statement, placed in a prominent location in the text of the manual:

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Canadian Radio Emissions Requirement

This Class A digital apparatus complies with Canadian ICES-003. Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

CE MARKING

Hereby, Agrident BV declares that this equipment, if used according to the instructions, is in compliance with the essential requirements and other relevant provisions of the RTTE Directive 1999/5/EC. For use in all countries of the EU.

To obtain a copy, contact Agrident BV and request the "Declaration of Conformity" document for Multi-technology readers.

Agrident BV
mail@agrident.com

In case of alteration of the product, not agreed to by us, this declaration will lose its validity.

This symbol indicates proof of conformity to applicable European Economic Community Council directives and harmonized standards published in the official journal of the European Communities.

Trouble shooting

For any problem please contact us:

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