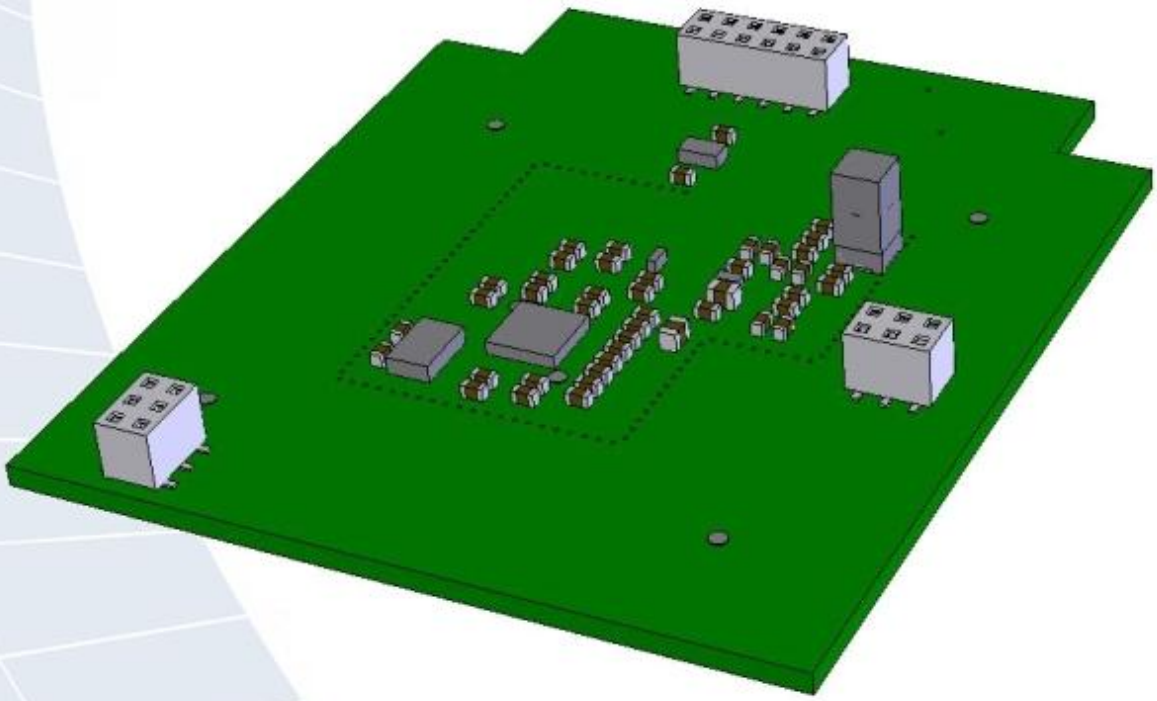
Instruction manual

RFID module ZBA987

01/2013 Edition feck/1.2



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1 General

1.1 Product description

The RFID Module ZBA987 is an easy to use RFID module which can be integrated into HACH LANGE electronics without big effort. This allows us to equip a HACH LANGE product with RFID functionality without designing extra RF board. Thanks to the tested and extremely flexible firmware
we can read and write data to any tag that follows the ISO 15693 standard in no time. The rfid module is equipped with a internal PCB antenna.

1.2 Specifications

Supply voltage	5 V DC
Dimensions	57 x 67 mm
RFID protocol	ISO 15693
Transmit frequency	13.56 MHz
Operating temperature	0…50 °C
Storage temperature	-40…60°C
Communication Interface	SPI Bus

1.3 FCC/IC Compliance

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.*

NOTICE:
This device complies with Part 15 of the FCC Rules [and with RSS-210 of Industry Canada]. 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.

Changes or modifications made to this equipment not expressly approved by HACH LANGE GmbH may void the FCC authorization to operate this equipment.

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2 HW Integration

2.1 Connector P101

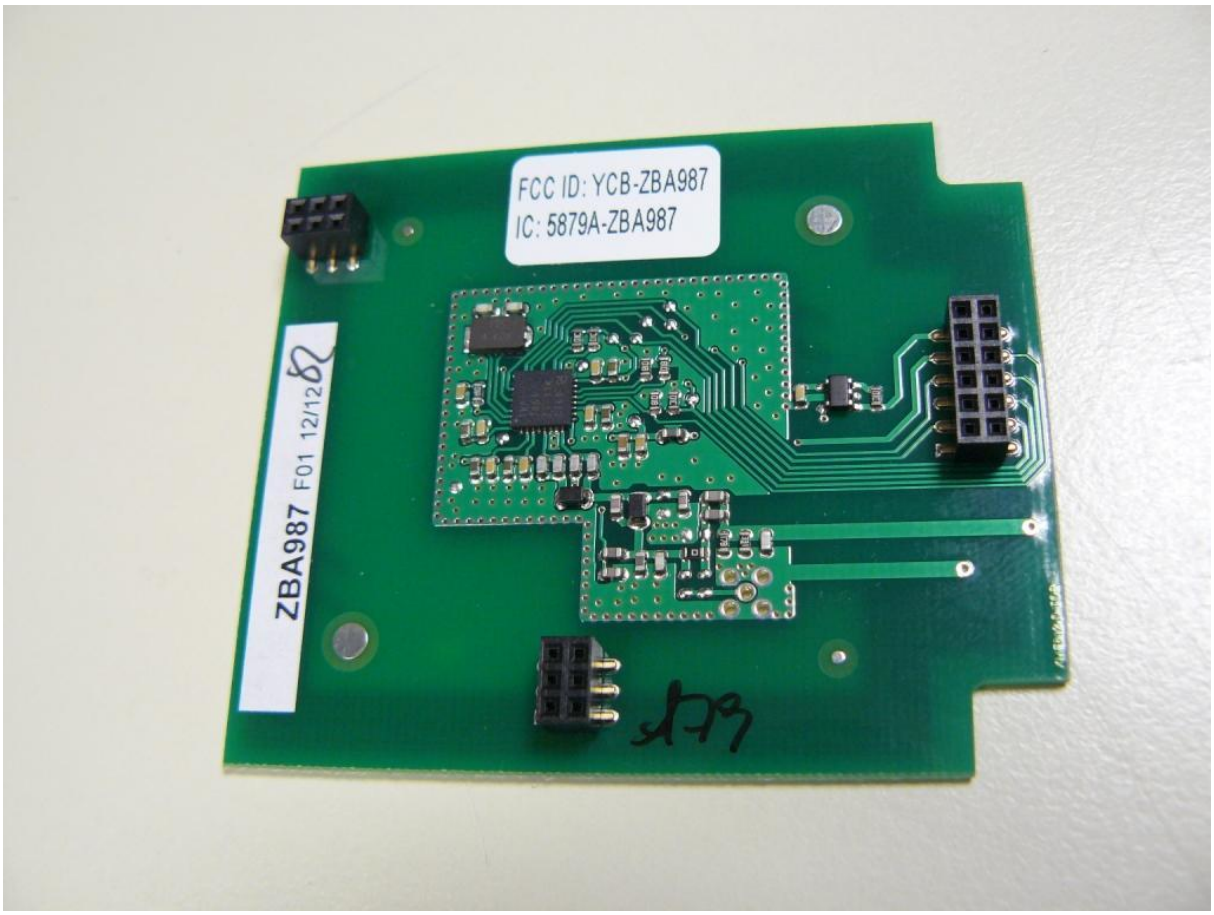
Pin	Function
1, 5, 9	GND
11,12	5 V DC
2,3,4,,6,7,8	SPI Bus

2.2 EMC filtering

The RFID Module contains an RF generator at 13.56 Mhz which generates harmonics. These will be radiated from the module below all official limits. When integrating the module into host device with long cables or big ground planes, this effect might increase. It might be advisable to add additional EMC filtering to comply with all relevant norms.

2.3 FCC/IC Compliance for host device

The use of the transceiver module is authorized in mobile or fixed host devices taking into account the conditions listed below:

- *OEM Integrator must ensure that the end user manual may not contain any information about the way to install or remove the module from the final product.*
- *Depending on the final host device additional authorization requirements for the non-transmitter functions of the transmitter module may be required (i.e., Verification, or Declaration of Conformity) The OEM integrator is responsible for ensuring that after the module is installed and operational the host continues to be compliant with the Part 15B unintentional radiator requirements.*
- *The information on the label and in the user manual is required to be incorporated in the user manual of the final host. see 47 CFR15 requirements for more details (e.g. 15.19 / 15.21 / 15.101 / 15.105 / RSS-GEN / ICES)*
- *Additional label with the words 'Contains FCC ID: YCB-ZBA987' and 'Contains IC:5879A-ZBA987' shall be applied and visible from the outside of the host product.*
- *The module must be installed and used in strict accordance with the manufacturer's instructions as described in the user documentation that comes with the module.*
- *The antenna of the module may not be removed, replaced nor modified. The antenna must not be co-located or operating in conjunction with any other antenna or transmitter. No additional antenna must be used.*
- *When the final host product operating with this transmitter deviate from above, installation of this module into specific final hosts may require the submission of a Class II permissive change application containing data pertinent to RF Exposure, spurious emissions, ERP/EIRP, and host/module authentication, or new application if appropriate.*
  Feel free to contact us if additional guidance is required.

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