



1-Wire® RFID Reader (125kHz)

DATASHEET (Version 2.0)



ORMAT Technologies Pvt. Ltd.

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PRODUCT FEATURES

- Sensitive 125kHz RFID Module based reader with accurate reading distance up to 40mm
- Dallas iButton Emulation over 1-Wire®
- Works with all iButton Readers
- Communicates at Standard 1-Wire speed and RFID reader communicates at 9600 baud rate.
- Operates at 9VDC to 32VDC input voltage
- Onboard surge protection and voltage regulation
- Bi-color LED for visual indication of successful card read
- PCB mounted Buzzer for audible indication of successful card read
- ABS plastic enclosure provides protection against dust and moisture according to the standard IP54

WIRING DETAILS

RED	Power Supply + (9V-32VDC)
BLACK	Power Supply – (Ground)
GREEN	1-Wire Data

ORDERING INFORMATION

Part	Temperature Range
1-Wire® RFID Reader (EM125kHz)	-40°C to +65°C

DESCRIPTION

1-Wire® RFID Reader by ORMAT, reads-out the popular RFID tags that works in UNIQUE standard with 125kHz frequency (Manchester coding). Each tag has its own unique identification number. 1-Wire® RFID Reader supports extra long lengths of cabling, up to 6 meters. It can be used in wide range of applications such as Driver Identification & Authentication in GPS Trackers, RFID card based attendance system in Advanced Vehicle Tracking, GPRS modem based controllers, Access control systems and other Security appliances for authentication. The on-board power regulation & surge protections make it suitable In-Vehicle uses. The ABS enclosure is IP54 compliant to make the product suitable for use in dusty environments as well. Built-in Bi-color LED & Buzzer saves the cost for system integrators.

OUTPUT DATA DESCRIPTION

The emulated i-Button data is available as below (Total 8-bytes):

CRC (1 Byte)	Constant Value (0x00) (1 Byte)	RFID Value of ID card (in Hex.) (4 Bytes)	Manufacturer ID (1 Byte)	1-Wire Device Class (0x01) (1 Byte)
MSB				LSB

Please note that, the RFID Value will be Hexadecimal coded, of 4 Bytes (32-bit) length and reflects the Serial number (Card ID value) of the RFID Card. The packing of the 4 Bytes of RFID depends on the 1-Wire Master device (e.g. GPS Tracker). Please check the iButton value output by your 1-Wire Master to know the correct packing format.

1-Wire and iButton are registered trademarks of Maxim Integrated Products, Inc.



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WORKING OF RFID READER

Following are the states of RFID Reader device.

State	Notification	Inference
Power ON	LED turns into GREEN	Ready to read RFID cards
RFID Card Flash	Buzzer will beep for Half second, LED turns RED and Buzzer goes OFF	RFID Card successfully read
	LED turns GREEN	RFID card data is successfully transmitted to 1-Wire Master
	LED remains RED for more than 5 seconds. Note: The device will RESET and go back to Power ON state after 30 seconds.	RFID card data is <u>NOT</u> read by 1-Wire Master. This can be due to following cases: a) 1-Wire data line is disconnected. b) 1-Wire Master may be faulty & is <u>NOT</u> issuing SEARCH command c) RFID Reader's and 1-Wire Master are <u>NOT</u> having common electrical ground.