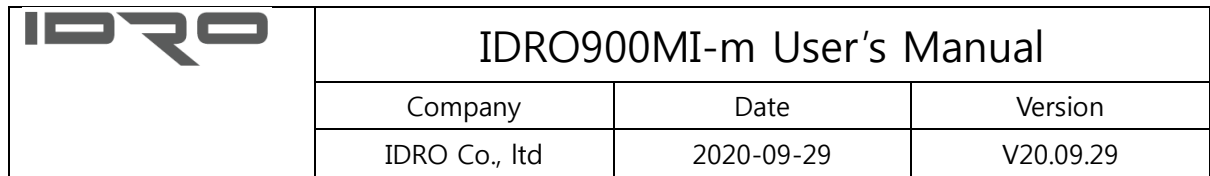


**IDRO900MI-m
USER' S MANUAL**

V20.09.29

September 2020

IDRO

[illegible]

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	Company	Date	Version
	IDRO Co., Ltd	2020-09-29	V20.09.29

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1.Introduction & System composition diagram

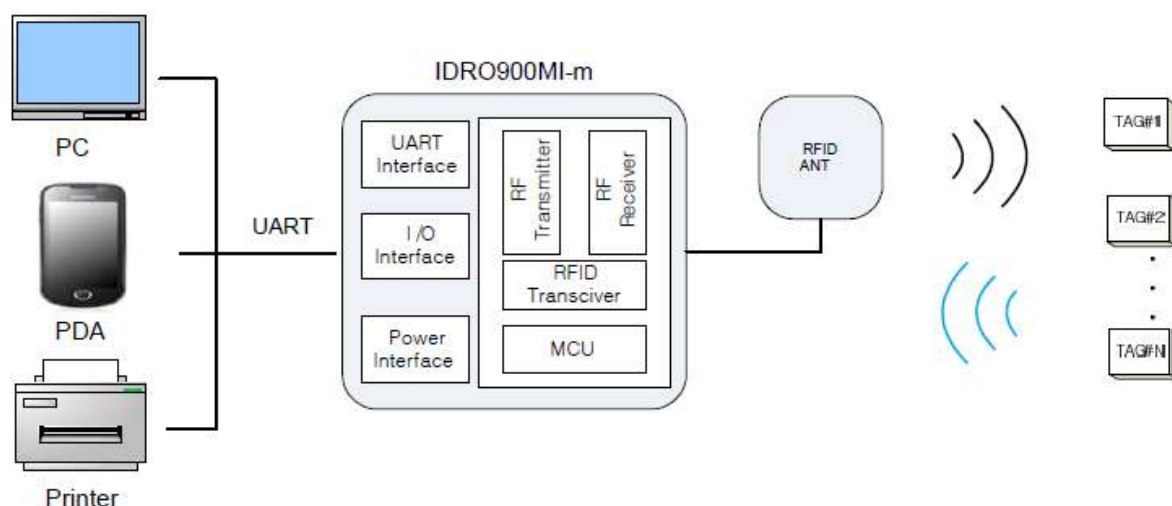
● Introduction

- The IDRO900MI-m is a compact size RFID reader module developed for the embedded reader market, which comprises printers, industrial PDA, and similar devices. It provides customers with compact size, low cost, high performance functions. It supports protocols of ISO18000-6C (EPC C1G2), and it interfaces with a host system via UART.

- Target Application

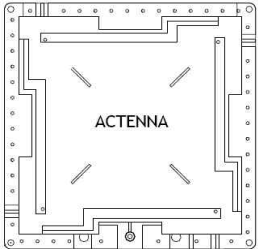
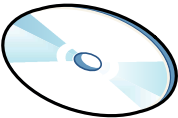
PDA type RFID Reader
 RFID Printers / Tag Encoders
 USB Readers
 Smart-Shelves

● System composition diagram



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2. Composition parts

RFID Reader module	
Interface Cable	
ANTENNA (option)	
UART to USB Converter (option)	
Reader Software & User Document CD-ROM	

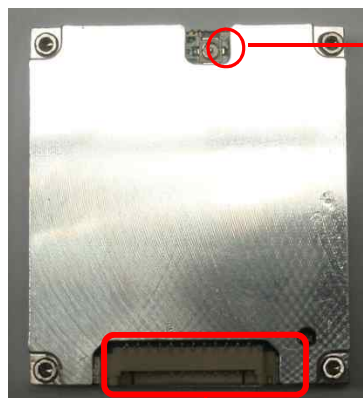
3. Reader Description

Status LED



DATA LED : The Red LED will twinkle when the reader is receiving data from a tag.

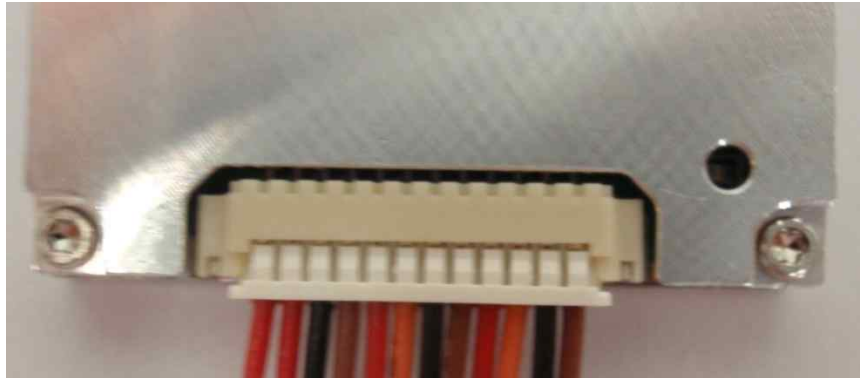
ANT Port



ANT Port : Connect RF Cable to reader module and ANT

Interface connector :

Supply voltage and interface with a host system(PC, PDA...) via UART.

Interface Pin-map**①****⑫**

1	VCC (3.8 ~ 4.2V, typ 4V)
2	VCC (3.8 ~ 4.2V, typ 4V)
3	GND
4	GND
5	GND
6	TXD (IDRO900MI-m → HOST)
7	RXD (IDRO900MI-m ← HOST)
8	PWR_ON
9	Not Used
10	Not Used
11	Not Used
12	Not Used

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4. Reader Specification

● Reader Performance (KOREA, USA, EUROPE, Canada, etc)

Description	Value
MODEL	IDRO900MI-m
Architecture	UHF RFID Reader Module
Protocol	EPC Gen2 (ISO 18000-6C)
Frequency	917.3MHz to 920.3MHz(Korea) 860MHz to 960MHz (Customizable)
Max Tx Power	30dBm±1dBm (1W)
Power control	5dBm to 30dBm (1dB step)
Hopping Channels	6 (Korea), 50(USA), 4(EUROPE)
Channel Spacing	600KHz (Korea, EUROPE), 500KHz(USA)
Channel Dwell time	< 0.4 seconds
Modulation Method	PR-ASK
Supply voltage	FCC/IC : 3.8 ~ 5.0V (typ. : 4V) Europe : 3.8 ~ 4.2V (typ. : 4V)
Max Current (max. power)	< 1.4A
Tag Read Distance (Max.)	<6m
Operating Temperature	-20°C to +60°C
LED Indicators	Data
Signaling	UART, Baud rate(115200bps)

● Interface

Host connector	Part No. : 12505WR-12 Manufacturer : Yeonho Electronics
ANT Connector	Part No. : CMJ-S00 Manufacturer : Giga Lane

● Physical Dimension

SIZE	36mm × 41mm × 8mm
Weight	16g

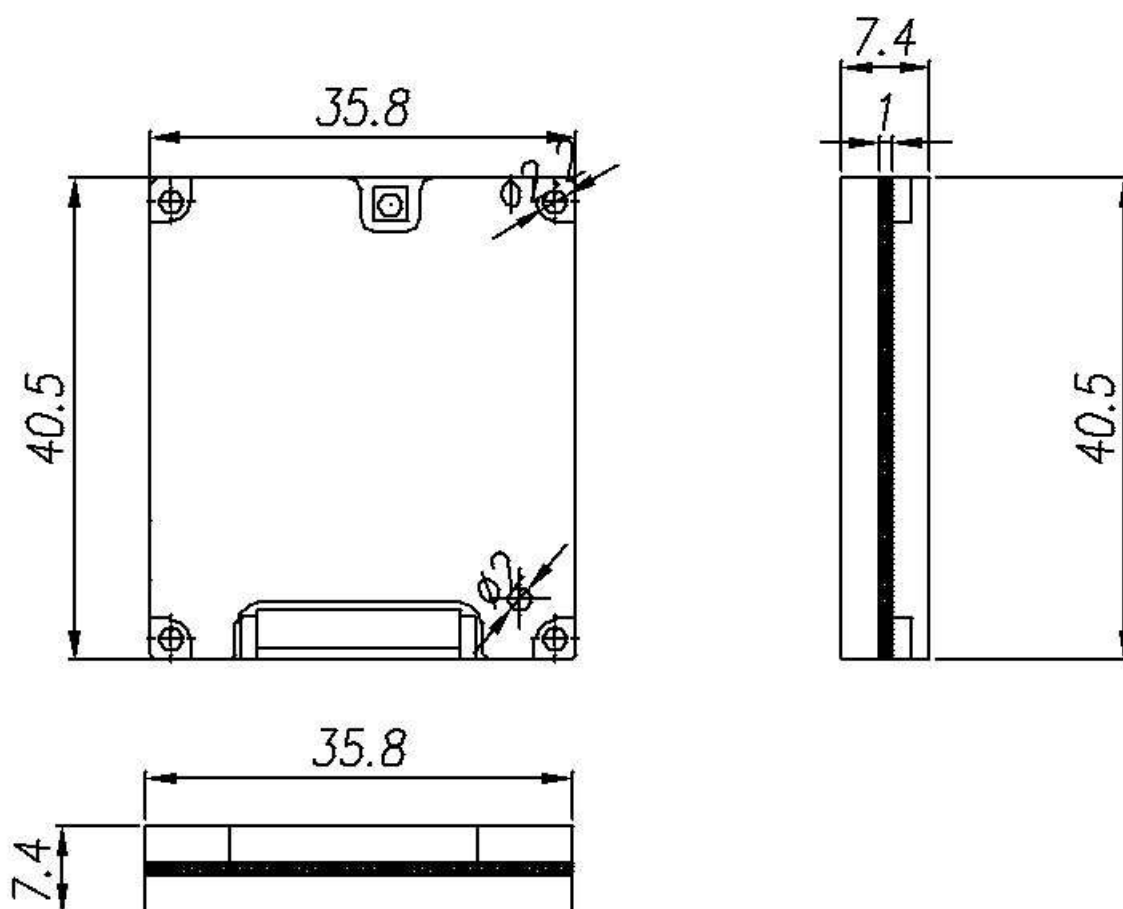
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● Channel number & Frequency table

CHANNEL NO.	KOREA	USA	EUROPE	CHANNEL NO.	KOREA	USA	EUROPE
0	917.3	902.75	865.7	25		915.25	
1	917.9	903.25	866.3	26		915.75	
2	918.5	903.75	866.9	27		916.25	
3	919.1	904.25	867.5	28		916.75	
4	919.7	904.75		29		917.25	
5	920.3	905.25		30		917.75	
6		905.75		31		918.25	
7		906.25		32		918.75	
8		906.75		33		919.25	
9		907.25		34		919.75	
10		907.75		35		920.25	
11		908.25		36		920.75	
12		908.75		37		921.25	
13		909.25		38		921.75	
14		909.75		39		922.25	
15		910.25		40		922.75	
16		910.75		41		923.25	
17		911.25		42		923.75	
18		911.75		43		924.25	
19		912.25		44		924.75	
20		912.75		45		925.25	
21		913.25		46		925.75	
22		913.75		47		926.25	
23		914.25		48		926.75	
24		914.75		49		927.25	

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- Mechanical Dimension



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

This equipment 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 equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment 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 equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

CAUTION : Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

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.

RF Radiation Exposure Statement:

This equipment complies with FCC/ISED radiation exposure limits set forth for an uncontrolled environment and meets the FCC radio frequency (RF) Exposure Guidelines and RSS-102 of the ISED radio frequency (RF) Exposure rules as this equipment has very low levels of RF energy.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

RSS-102 RF Exposure

L'antenne (ou les antennes) doit être installée de façon à maintenir à tout instant une distance minimum de au moins 20 cm entre la source de radiation (l'antenne) et toute personne physique.

Cet appareil ne doit pas être installé ou utilisé en conjonction avec une autre antenne ou émetteur.

IMPORTANT NOTE

This device complies with FCC & ISED radiation exposure limits set forth for an uncontrolled environment. This device should be installed and must not be co-located or operating in conjunction with any other antenna or transmitter.

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This device is intended only for OEM integrators under the following conditions:

- 1) This module may not be co-located with any other transmitters or antennas.
- 2) The antenna must be installed such that 20cm is maintained between the antenna and users.

As long as 2 conditions above are met, further transmitter test will not be required. However, the OEM integrator is still responsible for testing their end-product for any additional compliance requirements with this module installed.

In the event that these conditions cannot be met, then the FCC & IC authorizations are no longer considered valid and the FCC ID cannot be used on the final product. In these circumstances, the OEM integrator will be responsible for re-evaluating the end product including this module and obtaining separate FCC & IC authorizations.

- End Product Labeling

To satisfy FCC exterior labeling requirements, the following text must be placed on the exterior of the end product.

Contains Transmitter module FCC ID: 2AKMF-IDRO900MI

- Manual Information to the End User

The OEM integrator is responsible for ensuring the end-user has no manual instruction to remove or install module.

The end user manual shall include all required regulatory information/warning as show in this manual.