# CUM-1

UHF RFID Module

Chainway CUM-1 is a single channel UHF RFID reader module with high performance. It can be integrated in mobile UHF RFID readers, fixed UHF RFID readers, UHF card readers, integrated RFID readers and etc. With high integration level, this reliable module is small in size, low in power consumption. It is also resistant to electromagnetic interference and good at heat dispersion. All make it to absolutely satisfy needs of all environments. The module appeals to challenging industries like warehousing, logistics, apparel, production lines and such.
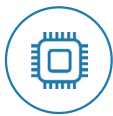
Industry-leading RF Chip

It employs impinj Indy R2000 UHF RFID RF chip, enabling unprecedented experience of UHF RFID reading and writing with high precision, wide angle and low-phase noise.

Excellent Reading Performance

It reads tags with high stability and receiving sensitivity even under harsh environment. The reading range is over 10 meters when using the 4dBi antenna, and reading rate to be over 200 tags per sec. The self-developed anti-collision algorithm makes it ideal in applications with numerous tags.

Low Voltage & Power Consumption

It operates perfectly well under DC 3.5-5.25V power input. It is born with low power consumption, to be 5.3W, 0.15W and 1μW under RF output mode, standby and power off mode respectively, which significantly extends the service time of UHF devices.

Superior Heat Dispersion Capacity

The internal heat sink made of heat sensitive material delivers high heat conduction rate, great heat dispersion capacity, and large contact surface design, thus the module doesn't need to connect any external cooling devices. Multi-board temperature sensor is adopted and temperature protection can be set to sustain long-term continuous full load working at room temperature.

Strong Stability

You can expect reliability when deploying it under temperature -25℃ to 65℃, and humidity 10% to 95%. It can work continuously for 24 hours x 365 days without crash and is resistant to electromagnetic interference. It detects antenna connection, protects RF receiver and can be cancelled by command. Integrated RF chip even makes it more stable, making it better to stand up to harsh environments.
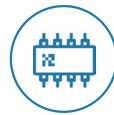
Outstanding Consistency

It adopts high-precision and reliable components and parts to ensure high consistency. It is definitely a masterpiece of consistency.

Interface Definition and Function
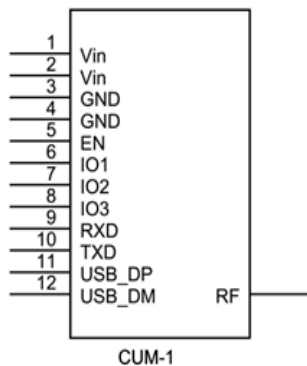
Interface Definition (12 PIN)

PIN#	Interface	Description
1	Vin	3.5-5.25VDC
2	Vin	
3	GND	Ground
4	GND	
5	EN	High LLT level (>1.2V) boot the module Low LLT level (<0.4V) out the module
6	IO1	Reserved GPIO 3.3V TTL level
7	IO2	Reserved GPIO 3.3V TTL level
8	IO3	Reserved GPIO 3.3V TTL level
9	RXD	UART receive 3.3V TTL level
10	TXD	UART transmit 3.3V TTL level
11	USB_DP	USB_DATA (+)
12	USB_DM	USB_DATA (-)

RF connector: MMCX Receptacle

CHAINWAY®

Model

UHF RFID Reader Module	CUM-1
Development Board Module	CUM-X_EDCB

Physical Characteristics

Dimensions	57.2mm x 36.8mm x 7.6mm
Weight	26.0g

RFID Features

RF Chip	Indy R2000
Air Interface Protocol	EPCglobal Gen2 (ISO18000-6C)
Working Frequency	860 – 960MHz
Output Power	5-30dBm adjustable 1dB step interval +/- 0.5dB precision
Output Power Flatness	+/- 0.2dB
Antenna Interface	50Ω RF connector MMCX Receptacle
Regions Supported	FCC 902-928 MHz ETSI 865.6-867.6 MHz China 920-925MHz Others for customization (865-868, 902-928MHz)
Receive Sensitivity	< -88 dBm
Tag RSSI	Supported
Antenna Detector	Supported
Ambient Temp Monitor	Supported
Working Mode	Single/DRM

Communication Interface

Connector	12 PIN FPC Connector
Host Communication	UART 3.3V TTL Level Baud Rate: 115200bps

Power Supply

Input Voltage	DC 3.5-5.25V
Power Consumption in RF Output Mode	5.3W@30dBm
Power Consumption in Standby (EN high TTL level)	0.15W
Power Consumption in Power Down (EN low TTL level)	1μW

User Environment

Operating Temp.	-25°C to 65°C
Storage Temp.	-40°C to 85°C
Humidity	10% - 95%

Reading Performance

Reading Rate	>200 tags/s
Reading Range	>10m (with 4dBi antenna)

Dimensions
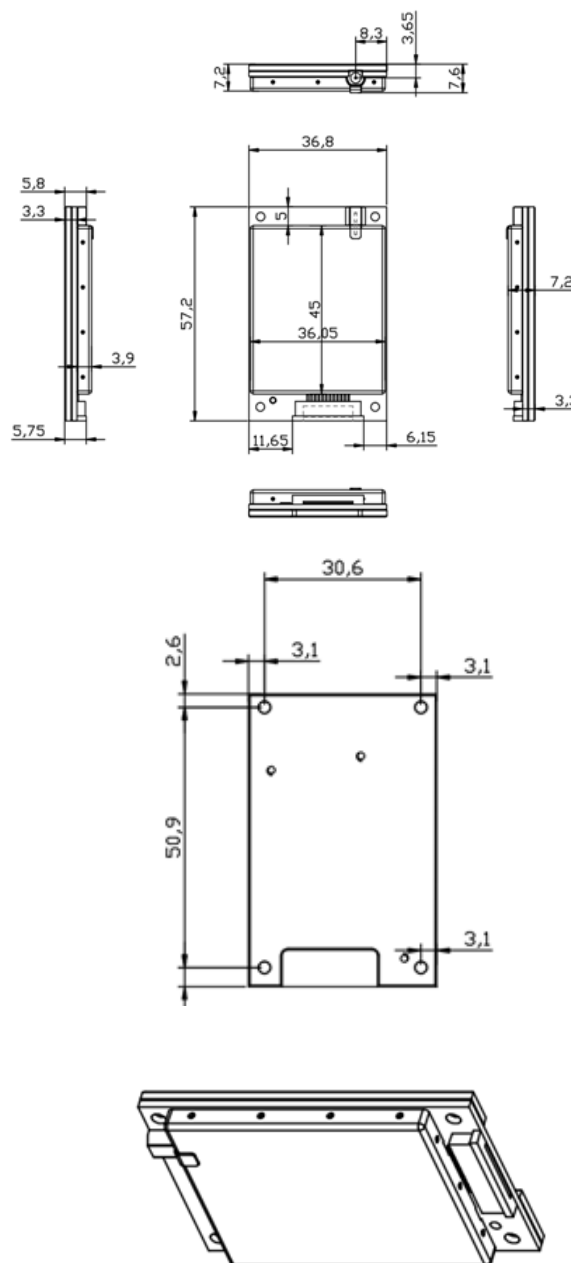
Notice: Product speci ications are subject to change without notice. / Version: CUM-1 V2.0.1 / Update Date: 2017-12-07

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