Technical Information Manual

Revision n. 5
22 February 2008

Mod. A828US

OEM UHF COMPACT READER (FCC PART 15)

NPO:
00107/05:828US.MUTx/05

Federal Communications Commission (FCC) Notice

This device was tested and found to comply with the limits set forth in Part 15 of the FCC Rules. Operation is subject to the following 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. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.

This device generates, uses, and can radiate radio frequency energy. If not installed and used in accordance with the instruction manual, the product may cause harmful interference to radio communications. Operation of this product in a residential area is likely to cause harmful interference, in which case, the user is required to correct the interference at their own expense. The authority to operate this product is conditioned by the requirements that no modifications be made to the equipment unless the changes or modifications are expressly approved by CAEN RFID.

Disclaimer

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1. Introduction

The A828US OEM UHF compact reader (FCC part 15), is a CAEN multi protocol OEM compact module for integration into label printers, label applicators, handheld devices and in general any fixed or mobile short range device requiring UHF tag programming and reading.

The A828US is fully compliant to the US telecommunication regulation FCC part 15 (902-928 MHz).

The reader supports ISO 18000-6B, Philips UCODE EPC 1.19 and EPC Class1 Gen2. Other UHF protocols may be available by firmware upgrade. The A828US is ideal for integration in portable battery powered devices thanks to its compact size, low power consumption and power saving modes.

Service boards (Mod. A827 and A943), which allows to manage the A828 via USB and RS232, are available.

Fig. 1.1: Mod. A828US OEM UHF compact reader (FCC part 15)

2. Mod. A828US Technical Specifications

2.1. Mod. A828US Technical Specifications Table

Table 2.1: Mod. A828US Technical Specifications

Frequency	912.500÷917.400 MHz (FCC part 15)
Output Power	Fixed. Maximum: 50 mW (17 dBm); Typical: 40 mW (16 dBm)
Antenna connector	Nr.1 MMCX type
Frequency Tolerance	±10 ppm over the entire temperature range
Number of Channels	50 hopping channels (compliant to FCC part 15
Standard Compliance	ISO 18000-6B Philips UCODE EPC 1.19 EPC C1G2 EPC C1G1 (via firmware upgrade)
Digital I/O	Five I/O lines 3.3V out, 5V tolerant
UART Serial Port	Baudrate: 115200 Databits: 8 Stopbits: 1 Parity: none Flow control: none 3.3 V out, 5 V tolerant 9.6÷115 kbit/s data rate (settable)
Dimensions	41 x 62.4 x 5.9 mm3 (1.61 x 2.46 x 0.23 inches3)
Electrical Power	180 mA @ 5 V (TX/RX mode) 80 mA @ 5 V (idle mode) 200 µA @ 5 V (stby mode)
Operating Temperature	-20 °C to 60 °C
Weight	24 g (0.05 lbs)

2.2. External connections

The location of the connectors is shown in Fig. 2.1. Their mechanical specifications are listed here below:

Antenna Port: RF Coax Connector Huber+Suhner type 82MMCX-S50-0-2/111_K (to be used with Huber+Suhner type 11MMCX-50-1-1/111_O)

MOLEX Connector: PCB Headers Molex type 53261-1290
(to be used with Molex Type 51021-1200 + 12pcs crimp terminal type 50058-8100)

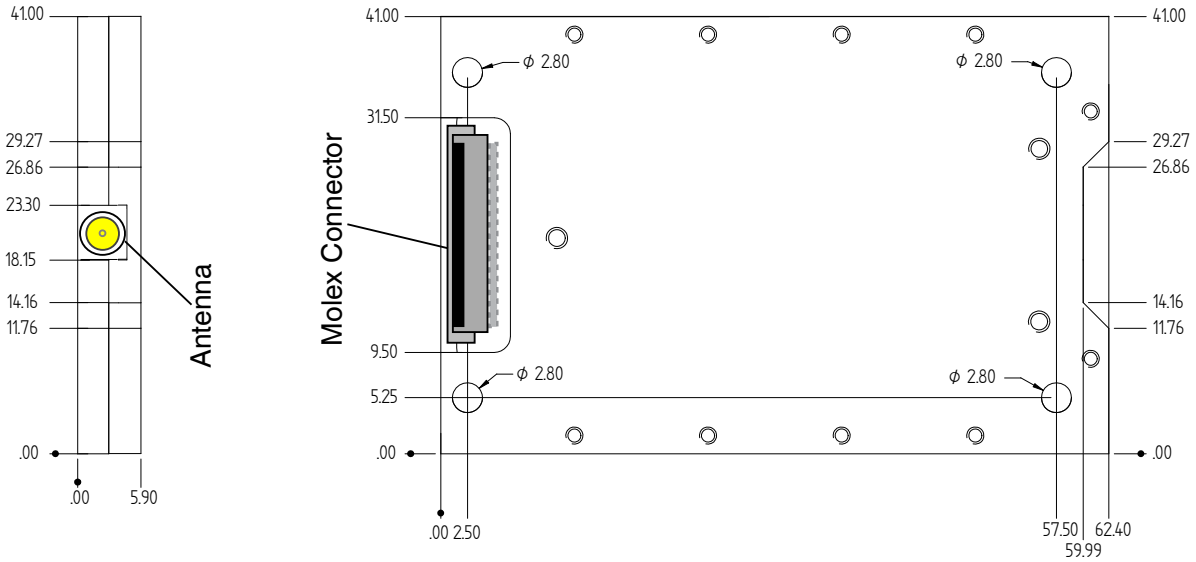

Fig. 2.1: Mod. A828US technical drawings

2.2.1. MOLEX Connector Specifications

The compact reader A828US external connector is a SMD, 12 poles, 1.27 pitch connector whose pinout is shown in table below.

Table 2.2: MOLEX Connector electrical specifications

Pin	Function	Direction	Duration (min.)
1	Power Line (+5V)	-	-
2	/RESET(active low)	IN	200 ns
3	GPIO0	IN/OUT	-
4	GPIO1	IN/OUT	-
5	GPIO2	IN/OUT	-
6	GPIO3	IN/OUT	-
7	GPI/O 4 - /TAG ID	IN/OUT	-
8	/WAKEUP(active low)	IN	200 ns
9	RXD	IN	-
10	TXD	OUT	-
11	GND	-	-
12	GND	-	-

The GPIO0-GPIO4 pin are 5 general purpose bidirectional pins, their default direction (or after a Reset) is *Out*; GPIO4 works also as Identify Tag signal. the Wakeup pin (active low) must be used when the A828US board is put into power down mode.

The RXD/TXD pins are used to communicate with the A828US board via UART port; to establish a link with the device you must configure your COM port as follows:

1. Baud rate : 115200
2. Parity : None
3. Data bits : 8
4. Stop bits : 1

The following diagram shows the A828US status:

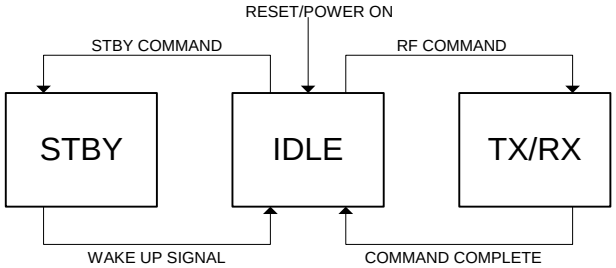

Fig. 2.2: Status block diagram

2.2.2. Regulatory Compliance

This equipment has been tested and found to comply with Part 15 of the FCC Rules.

NOTE:
(a) Any changes or modification not approved by CAEN RFID could void the user's authority to operate the equipment.

(b) The A828US Module, which is rated at 50 mW output, are approved for operation with the CAENRFID antenna Mod. WANTENNAX010 (Linear polarized 3db gain 915 MHz PIFA antenna). Use of other than the approved antenna with this unit may result in harmful interference with other users, and cause the unit to fail to meet regulatory requirements. Professional installation is required for A828US Module.