



R&D

Technical

Documentation

Revision	Modified		Checked		Module Name
	Date	By	Date	By	
A	Dec12-2016	AM			ERGO-120
B-PTI	Dec25-2018	EBL			
					Description
					Coder Board with 10 front panel switches for 1-2 steps, Four side switches, up to 2 STD,RFS,MFS,USB key and 2.4 inch LCD or LED versions.
					Remarks
					Item Number
					66709440

1. COMPLIANCE STATEMENTS

1.1. FCC Interference Statement (Part 15.105 (b))

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 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.

1.2. FCC Part 15 Clause 15.21

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

1.3. FCC Part 15.19(a)


This device complies with part 15 of the FCC Rules. 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.

1.4. ISED RSS-Gen Notice, ICES Notice:

(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.

1) l'appareil ne doit pas produire de brouillage; 2) l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.“

“CAN ICES-3 (B)/NMB-3(B)“

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3. TECHNICAL SPECIFICATION


Electrical

Battery Type	Li-polymer	Additional
Battery Rating	3.6V 3000mAh	
Operating Temperature	-20°C to +70°C	
Storage Temperature	-40° to +85° Celsius	
Supply Voltage Range	3.3 to 4.0V	
Current Consumption (max)	0.25A	
Communication Interface	UART, USB,I2C & SPI	
RF output power	10mW	
RF Range (Line of Sight)	300 Meters	Using CS434TR
TFT Resolution	240x230	Display up to 262K colors

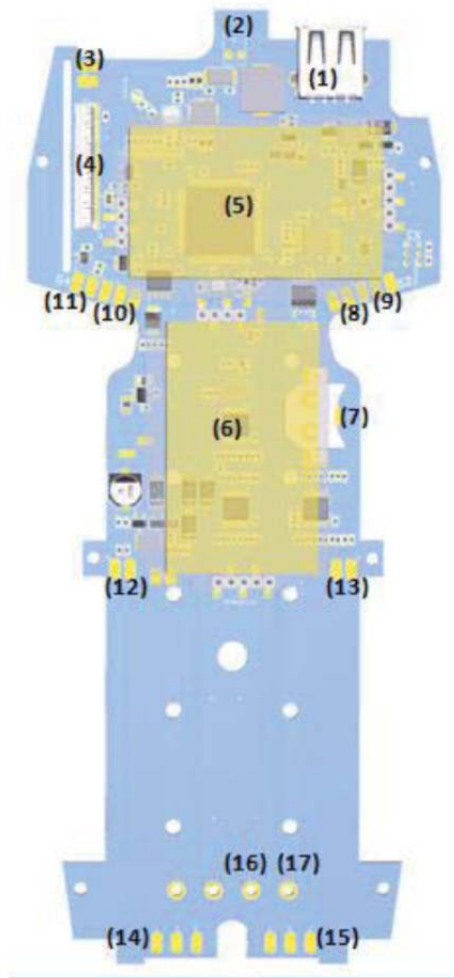
Table 1: Electrical Specifications

Mechanical

Enclosure Material	Reinforced Polyamide polymer with rubber over mold
Unit Weight with Battery	500g
Push Button Lifetime	1M cycle

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4.1. Board Connections



(1)	USB
(2)	INFRARED
(3)	Main Power ON/OFF button
(4)	LCD Connector
(5)	RF-Transceiver 1
(6)	RF-Transceiver 2
(7)	RTC Battery
(8,9)	Side Pushbutton 1/Analog1
(10,11)	Side Pushbutton 2/Analog2
(12)	Side Button 3
(13)	Side Button 4
(14)	Emergency Button
(15)	Emergency Button
(16)	Battery +V
(17)	Battery GND

Table 3: Connections


Figure 2: Board Connections
Bottom View

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4.2. LED Description

LED	Color	Description
LED1	Red	Error
LED2	Green	Baud rate

Table 4: LEDs

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5 FUNCTIONAL DESCRIPTION

Switch Operations

- SW1-SW20: momentary switches
- S1, S2, S3&S4: Side momentary switches and/or proportional switches.
- S5 : Emergency Stop
- S6 : Power ON SW

Control Signals to Receiver

The coder can be set to transmit 32DK type or 32DK+8AK type telegram. A switch can be Assigned with a maximum of 3-DKs except for the Stop SW (DK31). The Start SW & emergency Fixed .The rest of the switches settings can be configured via H-LINK.

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Power Supply Functions

- If the Stop key is active when the Start key is pressed to turn ON the transmitter, it Shall enter [E-Stop] mode to start transmitting E-Stop telegrams. If the Stop key is Released while the Start key is still pressed, the transmitter shall remain in [E-Stop] And shall automatically turn OFF 1sec after the Stop key is released
- If Stop key is pressed during [Transmit] mode, the transmitter shall enter [E-Stop] Mode to start transmitting E-Stop telegrams to receiver. The transmitter shall remain in [E-Stop] mode for at least 2secs or while the Stop key is still pressed before it
- If E-STOP Key is pressed & USB is connected the board enters the boot loader mode.

Panel Switches Interlocking Functions

Auto-OFF Function

- During [Transmit] mode, if there is no operation or the switch status remained Unchanged for a certain period of time, the transmitter will automatically turn OFF Provided that the auto-OFF function is enabled.
- Auto-OFF wait time is adjustable via H-Link.

Low Battery Detection

- If a low battery level is detected while in [Transmit] mode, the red led will turn ON.
- If the battery level has recovered to 3.6V~ after low battery has been detected, the low Battery status and warning indication will be cleared.
- If the battery level dropped to ~3.2V while in [Transmit] mode, the transmitter will automatically turn OFF.
- The low battery detection level can be set to Normal (~3.4V) or advance (~3.5V).

LED Indicators

- Green blinking (Baud Rate)
- Red Blinking (Error)
- Red ON, Low battery

Feedback Telegram


- The transmitter is capable of receiving Feedback telegram with 4 digital inputs.
- To activate the feedback function, the RF module must be a transceiver and the correct
- Feedback DK must be set via H-Link.
- Feedback status will be displayed on the LCD.


LCD Display

- Feedback status display configurable via H-Link
- customized icons & images can be set through h-link

11. H-Link Configurations

- Address: 000001~999999
- Baud rate: 2400 ~115200
- RF Module Frequency / Group setting
- Auto-OFF: Disabled, 1 min ~ 1hr
- Panel Switch Interlocking
- DK assignments
- Feedback Setting and display

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