TÜV NORD Hochfrequenztechnik

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Annex acc. to FCC Title 47 CFR Part 15
relating to
FEIG Electronic GmbH
ID PM-ECCO+

Annex no. 5
User Manual
Functional Description

Title 47 - Telecommunication
Part 15 - Radio Frequency Devices
Subpart C – Intentional Radiators
ANSI C63.4-2014
ANSI C63.10-2013

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PANMOBIL | **FEIG**
portable solutions by | ELECTRONIC

MANUAL

ID PM ECCO+

Compact and Robust RFID-/Barcode Scanner

Note

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With the edition of this document, all previous editions become void. Indications made in this manual may be changed without previous notice.

Composition of the information in this document has been done to the best of our knowledge.
FEIG ELECTRONIC GmbH does not guarantee the correctness and completeness of the details given in this manual and may not be held liable for damages ensuing from incorrect or incomplete information. Since, despite all our efforts, errors may not be completely avoided, we are always grateful for your useful tips.

The instructions given in this manual are based on advantageous boundary conditions.
FEIG ELECTRONIC GmbH does not give any guarantee promise for perfect function in cross environments and does not give any guarantee for the functionality of the complete system which incorporates the subject of this document.

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Contents

1 Introduction

The ID PM ECCO+ captures and stores barcodes and RFID data for a variety of uses and transmits those to a host via USB connection, Bluetooth or WiFi. This document provides a basic instruction for using the ID PM ECCO+ device.
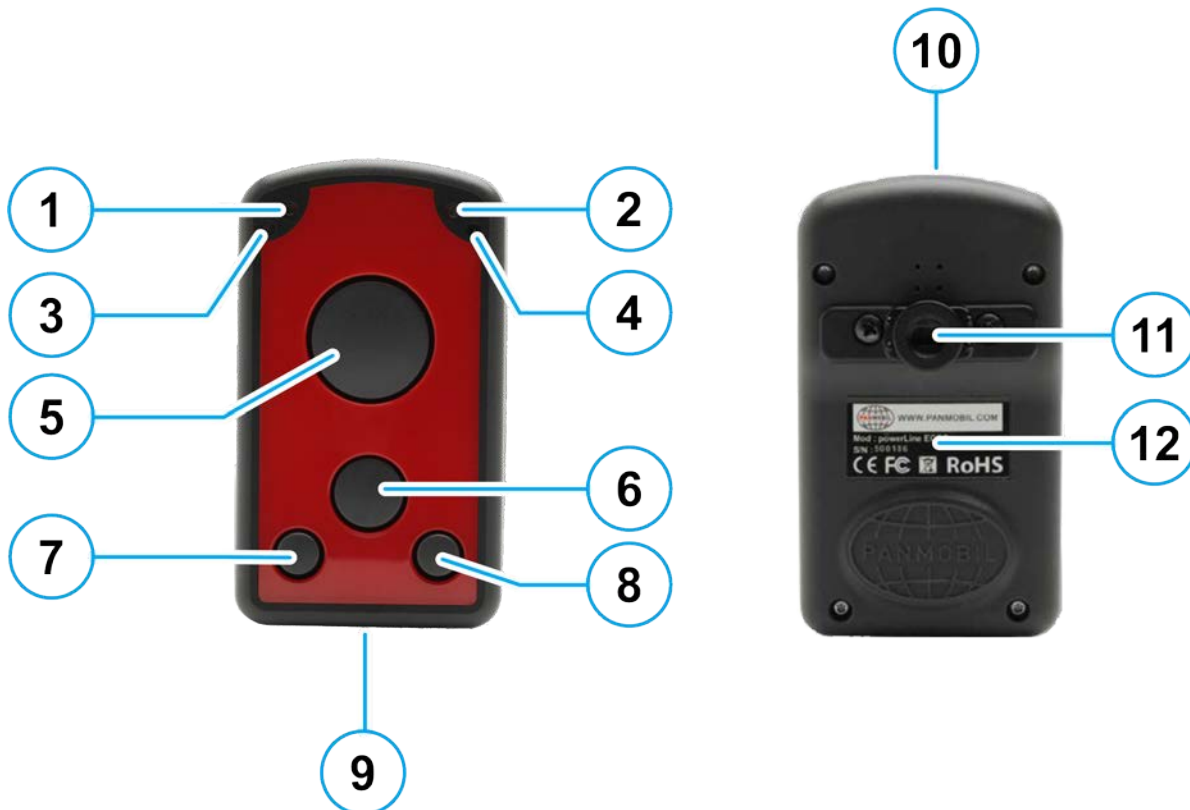

Fig. 1: ID PM ECCO+ device overview

Label	Description	Function
1	Green LED	Lights up green when ECCO+ is turned ON.
		When the battery level is empty, it flashes every 2 sec.
		(Further function can be user defined with the programming interface)
2	Yellow LED	Lights up yellow if a barcode or RFID tag was read successfully.
		Is flashing yellow (500ms) when connected to USB.
		(Further function can be user defined with the programming interface)
3	Red LED	Lights up red if connected to a battery charger (USB or power adapter).
		Red = Battery charging
		Off = Battery fully charged
4	Blue LED	Lights up blue when ECCO+ is connected to Bluetooth.
		Is flashing fast (500ms) while Wi-Fi is associated.
		Is flashing blue (3 sec.) when Wi-Fi is connected.
		(Further function can be user defined with the programming interface)
5	Key 1 (trigger button)	Triggers the barcode and/or the RFID reader.
		(Further function can be user defined by Master Setup or with the programming interface)
6	Key 2 (custom)	(This function can be configured by using Master Setup or with the

		programming interface)
7	Key 3 (custom)	(This function can be configured by using Master Setup or with the programming interface)
8	Key 4 (custom)	(This function can be configured by using Master Setup or with the programming interface)
	Power ON/OFF button	Power key to turn the unit ON. Pressing this key for 3 sec. turns the unit OFF.
9	USB protection clip	Rubber clip to protect the Mini USB port.
	Mini-USB interface	Main communication and battery charging interface.
10	Scanning window	Protection glass for the barcode and RFID reader. To have the best reading performance, keep the glass clean and free of scratches.
	RFID antenna (option)	Antenna for RFID reader/writer
11	Clip holder (accessories)	Holder to fix the belt clip (accessories).
12	Int. Li-Ion battery	Rechargeable Li-Ion battery 1250 mAh

2 Reset

To reset the ID PM ECCO+ press and hold the keys 1, 2, 3 and 4 for 5 seconds.

ⓘ *NOTE:*

- *By reset the device loses its timestamp. Before continuing to use it you must synchronize the time settings by connecting the ID PM ECCO+ with the Master Setup. The time thereby will be automatically synchronized with the system time of your PC.*
- *Specific configuration settings and data will not be lost by the reset.*

3 Configuration Mode

To set the alternative configuration mode follow the steps below:

1. Switch off the device.
2. Press and hold keys 4 and 5 until a beep sound appears (this may take a few seconds).
3. Connect the ID PM ECCO+ to a computer via USB.
4. The device will be mounted as a removable drive "SCANNDY".
5. Open the file "config.ini" or use the Universal Configurator to modify the settings.
6. Press button 3 (trigger) until a beep sound appears.
7. The device restarts with the new settings.

4 Charging the Battery

Before the first operation, the main battery should be fully charged by using the included power adapter or through the USB interface of a computer. As long as the battery is charging the red LED (3) will light solid red. After the battery is fully charged the red LED (3) turns off. A full recharge of the battery takes approx. 4 to 5 hours when using the included power adapter. Recharging the battery via USB may take longer.

To charge the battery via USB follow the instructions below:

1. Remove the USB protection clip (9) from the device.
2. Connect the device to the USB port of a computer or to the USB power adapter (accessories).
3. As long as the battery is charging, the red LED (3) lights solid red.
4. After the battery is fully charged the red LED (3) turns off.

5   Scanning Barcode

5.1   1D Laser

To scan a barcode follow the steps below:

1.   Aim the scanner on the barcode.
2.   Press the trigger key (5).
3.   Ensure that the scanning line is directed straight on the barcode.
4.   The ID PM ECCO+ beeps and the yellow LED (2) lights up to indicate a successful decode.

Fig. 2: Barcode Scanner Alignment

5.2   1D/2D Imager

To scan a barcode follow the steps below:

1.   Aim the scanner on the barcode.

2.   Press the trigger key (5).

3.   The ID PM ECCO+ decodes the barcode closest to the cross center unless you disable the Pick-List Mode (see below) in the 2D cameras.

4.   The device beeps and the yellow LED (2) lights up yellow to indicate a successful decode.

Fig. 3: Scan Example 1D/2D Imager

6 Scanning RFID

To scan an RFID tag follow the steps below:

1. Aim the scanner on the RFID tag.

2. Make sure the tag is within the reader range.

3. Press the trigger key (5) to read data of the RFID tag.

4. The device beeps and the yellow LED (2) lights up to indicate a successful decode.

7 Bluetooth Connection

To pair the Bluetooth enabled devices to a Bluetooth enabled host.

1. Connect the device to the host using the USB port and use the Master Setup to set the data output mode to Bluetooth.

   Select the Bluetooth profile supported by the host or required by the application.

- Serial Port Profile (SPP)
  The scanner connects to the host via Bluetooth and emulates a serial connection. The scanner accepts an incoming connection requested by a Bluetooth host.

- Bluetooth Keyboard Emulation (HID)
  The scanner connects to the host via Bluetooth and emulates a keyboard. The scanner accepts an incoming connection, requested by a Bluetooth host.

2. Save the settings and disconnect the device from the computer.

   On the host computer, launch the third party Bluetooth pairing application and place the application into discover Bluetooth device mode.

3. Select the ECCO+ from the discovered device list. The Bluetooth application may prompt you to scan a passkey it generated, or for you to create one and then scan the pin code.

4. If the Bluetooth application prompts you to generate a pin, enter the configured Bluetooth pin DEFAULT: 1234

5. If the Bluetooth application prompts you to enter the pass key it generated, scan numeric barcodes on page 13 and confirm by scanning ENTER.

6. The right LED (4) lights constantly blue as long as the device is connected.

7.1   Numeric Barcodes for Bluetooth Pairing

1

2

3

4

5

6

7

8

9

0

ENTER

8 Wi-Fi Connection

To connect Wi-Fi enabled devices to a host.

1. Connect the device to the host using the USB port and use the Master Setup to set the data output mode to Wi-Fi.

2. Open the file "config.ini" setup the parameters for Wi-Fi and host connection (See the document "Config_ini" section Wi-Fi to learn how to set the parameters for Wi-Fi communication).

3. Save the settings and disconnect the device from the computer.

4. The device tries to connect to the configured wireless network. The right LED (4) flashes blue every second. If the device could connect to the wireless network and to the host, the right LED (4) flashes slowly blue every 3 seconds.

If the device fails to connect, please check the parameters configured in the file "config.ini". Ask your network administrator for assistance if necessary.

9 Transmitting Barcode and/or RFID Data to a Host

Batch mode

All barcodes and RFID data scanned in batch mode are saved in the file "Output.txt" on the removable drive "SCANNDY". Connect the device to the host computer via USB and use the Windows-Explorer to navigate to the device "SCANNDY". Copy the file "Output.txt" to the host.

To delete the data from the device just delete the file "Output.txt".

Transmitting data from a Bluetooth or Wi-Fi device

When the scanner is paired to a host via Bluetooth, the data transmits to the host after each scanning procedure and is not stored on the scanner unless the scanner moves out of the range of the host. For out of range usage you can configure the device to either store the data in a cache memory or do not allow scanning.

If the device was configured to store the out of range captured data, it stores the data in a file Cache.txt. After reconnection, it transmits all cached data to the host.

Bidirectional communication for Bluetooth and Wi-Fi connected devices

For applications that require bidirectional communication between the device and the host, PANMOBIL devices support an embedded communication protocol SCOMP and REMOTE mode.

10 Technical specification

Mechanical Data	
Housing	Double-walled Inside: robust ABS Outside: protective rubber coating
Dimension (W x H x D)	87 mm x 48 mm x 26 mm (3.42" x 1.89" x 1.02")
Weight	98 g (3.46 oz)
Protection Class	IP 64
Color	black, red
Electrical Data	
Operating Frequency RFID (optional)	
• HF	13.56 MHz
• UHF	865 MHz to 928 MHz
Supported Transponders (optional)	ISO 14443, ISO 15693 EPC Class 1 Gen 2, ISO 18000-6-C
Barcode (optional)	1D: EAN-8, EAN-13, UPC-A, UPC-E Code 128, Code 39, Code 93, Interleaved 2of5, Chinese 2of5, Codabar, Codablock_F 2D: DataMatrix, QR Code, Micro QR, Aztec Code, Maxi Code, PDF417, MicroPDF
Interfaces	
• USB	USB mass storage, USB HID, USB Ethernet, USB Serial
• WiFi	2.4 GHz (IEEE 802.11 b/g/n)
• Bluetooth	Bluetooth Class 2, HiD SPP
Battery	1250 mAh Lithium Ion, 3.7 V
Indicators	LED (red, green, yellow, blue) Speaker Vibration feedback
Keyboard	4 keys; each key is programmable / configurable
CPU	ARM9, 400 MHz
Memory	128 MB RAM 1 GB Flash (500 MB internal / 500 MB external)
Proof of Data	Non-volatile memory
Date / Time	Real-time clock
Supported OS	Win 7 / Win 8 / Win 10 (32 and 64 bit) / Server 2003/2000
Programming	ECLIPSE IDD for C/C++
Configuration	MasterSetup
Environmental Conditions	
Temperature Range	
• Operation	0 °C up to 55 °C (32 °F up to 131 °F)
• Storage	-20 °C up to 60 °C (-4 °F up to 140 °F)
Humidity	5 % up to 95 % (non-condensing)
Drop	1.6 m drop to concrete
Standard Compliance	
	RoHS, WEEE, CE

11 Troubleshooting

Problem	Possible Solution
Device does not turn on.	Make sure the battery is charged.
Laser comes on but device does not decode barcode.	• Ensure the device is configured to read the type of code being scanned. • Ensure the code is not defaced. Try to read another barcode. • Move the device closer to or further from the code. This depends on your barcode size.
The device is on but does not react on any keystroke.	• Press and hold the keys 1+2+3+4 for 5 seconds to reset the device. **By reset the device loses its timestamp. Before you continue to use it, you must synchronize the time settings by connecting to a host. Connect the device again with the Master Setup. The time will be automatically synchronized with the system time of your PC. Specific configuration settings and data will not be lost by the reset. Stored data and configuration are not affected by a reset.**
Bluetooth is not working.	• Ensure that the device is in the correct Bluetooth Mode (HID or SPP). • Ensure that you are paired correct to your host. • Renew your pairing with your host system.
Wi-Fi is not working.	• Ensured that the device is in the correct Wi-Fi Mode (Wi-Fi or Wi-Fi Batch) • Ensure that your Wi-Fi configuration (in Config.ini file) is correct (SSID, Key, Crypto, Host, Port, DHCP, etc.) • Move the device closer to your access point.
Barcode reading ability has degraded.	• Maybe the scan window has become dirty. Please clean your scan window with a soft cloth with water.
Nothing happens when the scan key is pushed.	• Make sure your device is powered on (green LED on the left must be on). • Ensure that your keys are correctly configured.

12 Advanced Device Configuration

The ID PM ECCO+ config.ini file contains the most common device settings. For information about the configuration for options like Bluetooth, Wi-Fi, HF RFID as well as barcode configuration please refer to the document Config_ini.pdf.

13 Approvals

13.1 USA (FCC) and Canada (IC)

Product name:	HF Variante	UHF Variante
FCC ID:	PJMECCOPLUS	2AACD-ECCOPLUS
IC:	6633A-ECCOPLUS	20859-ECCOPLUS
Notice for USA and Canada	This device complies with Part 15 of the FCC Rules and with RSS-210 of Industry Canada. 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. Unauthorized modifications may void the authority granted under Federal communications Commission Rules permitting the operation of this device. This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense. 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.	

Wireless notice:

This product emits radio frequency energy, but the radiated output power of this device is far below the FCC radio frequency exposure limits. Nevertheless, the device should be used in such a manner that the potential for human contact with the antenna during normal operation is minimized. The system antenna(s) used for this transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

ⓘ *NOTE:*

Changes or modifications made to this equipment not expressly approved by
FEIG ELECTRONIC GmbH may void the FCC authorization to operate this equipment.

13.2 Europe (CE)

This equipment is intended to be commercialized in all the countries of the European Union and there is no commercialization or operational restrictions in any of the countries.

Hereby, advanced PANMOBIL systems GmbH & Co. KG declares that this Bluetooth, Wi-Fi barcode scanner is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC

European countries, where this equipment can be used are : Austria (AT) - Belgium (BE) - Bulgaria (BG) - Switzerland/Liechtenstein (CH) - Cyprus (CY) - Czech Republic (CZ) - Germany (DE) – Denmark (DK) - Estonia (EE) - Finland (FI) - France (FR) - Greece (GR) - Hungary (HU) - Ireland (IE) - Iceland (IS) - Lithuania (LT) – Luxembourg (LU) - Latvia (LV) - Malta (MT) - Netherlands (NL) - Norway (NO) - Portugal (PT) - Romania (RO) - Sweden (SE) - Slovenia (SI) – Slovak Republic (SK) - United Kingdom (UK)-Italy (IT)-Poland (PO)-Spain (SP).

$$C\,E$$

Performance Classification according to ETSI EN 301 489: Class 2

~~13.3 Label~~

13.4 Ergonomic Recommendations

In order to avoid or minimize the potential risk of ergonomic injury, follow the recommendations below. Consult with your local Health & Safety Manager to ensure that you are adhering to your company's safety programs to prevent employee injury. Repairs may only be executed by the manufacturer. Installation, operation, and maintenance procedures should only be carried out by instructed personnel. Use of the device and its installation must be in accordance with national legal requirements and local electrical codes .

- Keep objects that are used frequently within easy reach.

- Reduce or eliminate repetitive motion.

- Reduce or eliminate excessive force.

- Maintain a natural position.

- Improve work procedures.

- Perform tasks at correct heights.

- Provide adjustable workstations.

- Provide adequate clearance.

- Reduce or eliminate direct pressure.

- Reduce or eliminate vibration.

- Provide a suitable working environment.

13.5 Vehicle Installation

RF signals may affect improperly installed or inadequately shielded electronic systems in motor vehicles. You should consult the manufacturer of any equipment that has been added to your vehicle.

An air bag inflates with great force. DO NOT place objects in the area over the air bag or in the air bag deployment area. Improperly installed wireless equipment could result in serious injury when the air bag inflates. Position your device in easy reach. Make sure your device is accessible without removing your eyes from the road.

13.6 Safety on the Road

Do not take note or use the device while driving. When driving a car, driving is your first responsibility.

GIVE FULL ATTENTION TO DRIVING!

13.7 Warnings for Use of Wireless Devices

Please observe all warning notices with regard to the usage of wireless devices.

13.8 Potentially Hazaedous Atmospheres – Vehicle Use

You are reminded to observe restrictions on the use of radio devices in fuel depots, chemical plants and areas where the air contains chemicals or particles such as grain, dust or metal powder, as well as any other area where you are advised to turn off your vehicle engine.

13.9 Safety in Aircrafts

Switch off your wireless device whenever you are instructed to do so by airport or airline staff.

Consult airline staff and ask for its use in flight.

13.10   Safety in Hospitals

Wireless devices transmit radio frequency and may affect medical electrical equipment. Wireless devices should be switched off wherever you are requested to do so in hospitals or healthcare facilities to prevent interference with sensitive medical equipment.

13.11   Pacemakers

It is recommended by pacemaker manufacturers to maintain a minimum of 15cm (6 inches) between a handheld wireless devices and a pacemaker to avoid potential interference. These recommendations are consistent with independent research and recommendations by Wireless Technology Research. Persons with pacemakers:

- Should not carry the device in a breast pocket

- Should use the ear furthest from the pacemaker to minimize the potential of interference.

- Should ALWAYS keep the device more than 15cm (6 Inches) from their pacemakers when turned on.

- Turn OFF your device if you have any reason to suspect that interference is taking place.

13.12   Other Medical Devices

Please consult the manufacturer of the medical device to determine if the operation of your wireless product may interfere with the medical device.

13.13   RF Exposure Guidelines

Safety Information

Reducing RF exposure – use properly.

Only operate the device in accordance with the instructions supplied.

International

The device complies with international standards covering human exposure to electromagnetic fields from radio devices.

EU

To comply EU RF exposure requirements, this device must be operated in the hand with a minimum separation distance of 20cm from a person's body. Other operation configurations should be avoided.

USA and Canada

To comply with FCC exposure compliance requirement, the antenna used for this transmitter must not be co-located or operating in conjunction with any other transmitter/antenna expect those already approved in this filling.
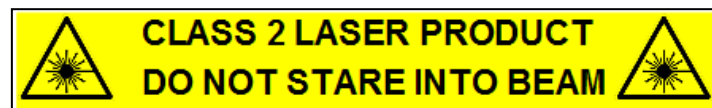
Handheld Devices

To comply with FCC RF exposure requirements the device must be operated in the hand with a minimum separation distance of 20cm from a person's body.

Other operation configurations should be avoided.

13.14   Laser Devices

Use of controls or adjustments or performance of procedures other than those specified herein may result in exposure to hazardous visible laser light. The laser scanner utilizes a low-power laser diode. Although staring directly at the laser beam momentarily causes no known biological damage, avoid staring into the beam as one would with any very strong light source, such as sunlight. Avoid that the laser beam hits the eye of an observer, even through reflective surfaces like mirrors, etc.

The following information is shown on the laser scanner device class label:

**CLASS 2 LASER PRODUCT
DO NOT STARE INTO BEAM**

User Manual / Functional Description of the test equipment (EUT)

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