



User's Manual

MJ-80



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1. Introduction

Welcome to your MJ-80 Tablet PC.

To ensure the optimal performance of this product, please take the time to read this manual carefully.

The MJ-80 is a rugged tablet intended for medical or commercial uses.

Explanation of Advisements

In this manual we use three (3) levels of Advisements as follows:

-  The Notes symbol is used for notifying the user of something important or of something that needs special attention.
-  The Cautions symbol is used to inform of something that could cause harm to, or malfunction of, the equipment.
-  The Warnings symbol is used to inform of something in which there is a conceivable risk of harm to the user if the Warning is ignored.

Symbols and Markings

This section provides information about the symbols that are used on the MJ-80, its accessories, or packaging.

Symbol or Markings	Description
	Power On/Off Indicator
	Dispose of in accordance with your country's requirements.
	CE is the abbreviation of the European Communities and this mark tells customs officials in the European Union that the product complies with one or more of the ECDirectives.
	This is a certification mark employed on electronic products manufactured or sold in the United States which certifies that the electromagnetic interference from the device is under limits approved by the Federal Communications Commission.
	Consult User's Manual
	UL Marking
	The product meets UL's requirements for Canada and the United States.
	Conforms to relevant Australian EMC requirements

2. Exploring Your Device

Package Contents

In addition to the primary tablet unit, your product carton should contain all of the below items.

MJ-80 Tablet PC Packing Contents	
AC Adapter	
Documents	Packing Lists, etc..

Please inspect all items. If any items are missing or appear damaged, please inform your dealer immediately.



This packing list applies to standard models. Select models may have different items.

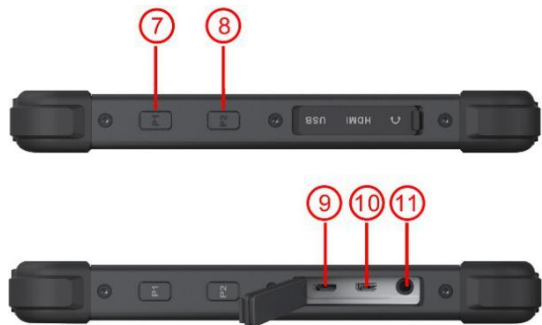
3. Device Layout

Front, Top and Bottom View



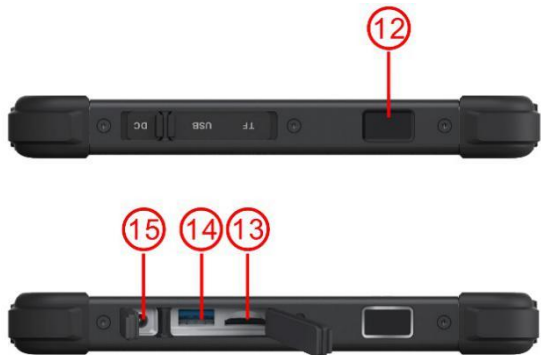
Item	Component	Description
1	Power Button	Turn power On/Off – Hold 10s to Reset
2	Volume + Button	Increases the audio volume
3	Volume - Button	Decreases the audio volume
4	Barcode Scanner (Optional)	Optically Scans 1D or 2D Barcodes, if Equipped
5	Front Camera	Records Photos/Video
6	Docking Connector	Connects the tablet with the Tablet Docking Station

Left-side View



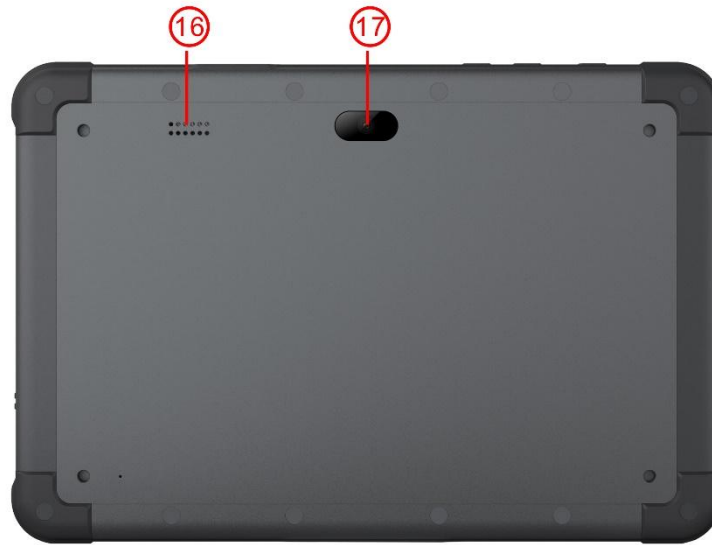
Item	Components	Description
7	Function Key 1	Programmable – Can be used for special functions
8	Function Key 2	Programmable – Can be used for special functions
9	USB 3.0	Connect any external USB device or storage volume.
10	HDMI	Connect a secondary display via HDMI
11	Audio	Connect headphones, speakers, or another external audio device

Right-side View



Position	Components	Description
12	Fingerprint Reader	Provides Fingerprint Authentication and Security for your device (if equipped).
13	MicroSD Slot	Accepts MicroSD Memory Cards
14	USB 2.0	Connect any external USB device or storage volume.
15	DC in	Direct current (DC) power for charging the tablet.

Rear View



Position	Components	Description
16	Speaker	Sends out Audio
17	Rear Camera	Records Photos/Video

4. Managing Device Power

AC adapter

The AC adapter accepts 100-240VAC Input

A standard US polarized, grounded two-pin plug adapter is included.



International plug AC adapters are available for certain regions, as it is shown below.



Use only the AC adapter included with your Tablet PC. Using other AC adapters may damage the device.

Optional Docking Station

You can also charge the MJ-80 tablet using an optional, available Docking Station. The Docking Station has DC input and USB ports, which connect to the tablet via the docking connector when the tablet is docked. The docking connector is shown in the layout view (Position 6) in chapter 2. The Docking Station is also designed to hold the tablet for viewing and use while stationary.



Use only the docking station included with your Tablet PC. Using any other docking station may damage the device.

Power Supply and Battery

Power is supplied to the MJ-80 tablet by one, internal, rechargeable battery. The Android OS will provide warnings to recharge your device at certain power levels as battery power drops. If the MJ-80 device exhausts available battery power, it will shut down automatically until a charger is connected or it is placed in a docking station connected to an AC power source. For more information about the Power Supply and Battery, please see Appendix A – Technical Specifications.

To charge the Battery Pack:

1. Connect the power cable to the charging port on the device.
2. Connect the power adapter to an electrical outlet and charge the tablet until the battery is fully charged.
3. After your device is fully charged, disconnect the charger from both the device and the electrical outlet.



NOTE: To prevent damage to batteries, please see Section 8: Safety



You can't overcharge the battery. It is fine to charge the battery overnight.

You can use the MJ-80 while the battery is charging.



Battery life naturally degrades over time. Failure to follow instructions for recommended operating temperatures, charge and discharge rates, and other instructions may accelerate battery decay rates. If your tablet battery will not accept or hold a satisfactory charge, it may need to be replaced.



For battery storage and charging temperatures, see Section 8: Safety

Checking the charging Level

To check the battery charge level of the MJ-80, use the battery monitor within android system.

Power LED Indicators



The Power LED will only light when the AC adapter is plugged in or the device is on the charging dock.

- Green — Fully charged
- Blue — Charging

5. Tablet Features

Using the Fingerprint Reader (Optional)

This device may include an internal Fingerprint Reader module to identify a person's fingerprint for security purposes. Its location is shown in product layout in Chapter 2 (Position 12, page 8). For more details, see Technical Specifications in Appendix A.

- Place your finger on the scanner. Follow the instructions for the specific software being used to scan to use Fingerprint reader function properly.



For optimal performance, both the scanning surface and the finger should be clean and dry. Clean the scanning surface when needed.



Users must place the finger firmly on the Fingerprint Reader area, otherwise the internal Reader module may not receive the signal from the finger.



If the Fingerprint Reader will not function properly, clean the reader area and try again. If it still does not work properly, please contact your supplier for further instructions

- You can use eController app to test the function of the Fingerprint Reader. See Chapter 6: eController App and its Applications.

Using the Barcode Scanner (Optional)

This device may include an optional internal Barcode Scanner module. This is an optical input device used to capture and read information contained in a barcode. Most common 1D and 2D barcode formats can be read. The location of the reader is shown in the product layout in Chapter 2 (Position 4).

Press the physical scan button (see Position 7 or 8 in chapter 2, page 8) on the tablet to activate the scanner). Any single barcode placed within the scanner field of view will be read. You can adjust settings and enable or disable the Barcode Scanner in the appropriate software settings.



The maximum operating temperature for the Barcode Scanner is 50 °C (122 °F).



The Barcode Scanner only works at close range under appropriate ambient light conditions. A small beep indicates that the barcode has been successfully read.

- You can use the eController app to test the function of the Barcode Scanner. See Chapter 6: eController App and its Applications.

USING GPS

This device includes an internal GPS module for navigation. Please follow the instructions in the specific software for your GPS applications. For more details, see Technical Specifications in Appendix A.

- You can use the eController app to test the function of the GPS unit. See Chapter 6: eController App and its Applications.

6. eController App and its Applications

The eController App is designed to quickly check if device modules are working properly. It tests the following modules:

1. Fingerprint Reader
2. Barcode Scanner
3. GPS
4. Assign function to programmable buttons F1 and F2



Many of the above the modules are optional items. If the eController top menu bars are greyed out or unselectable on certain items, the related modules are not installed (or have been disabled).



The eController is not application software. You need install appropriate application software (App) to use the modules for your desired functions.

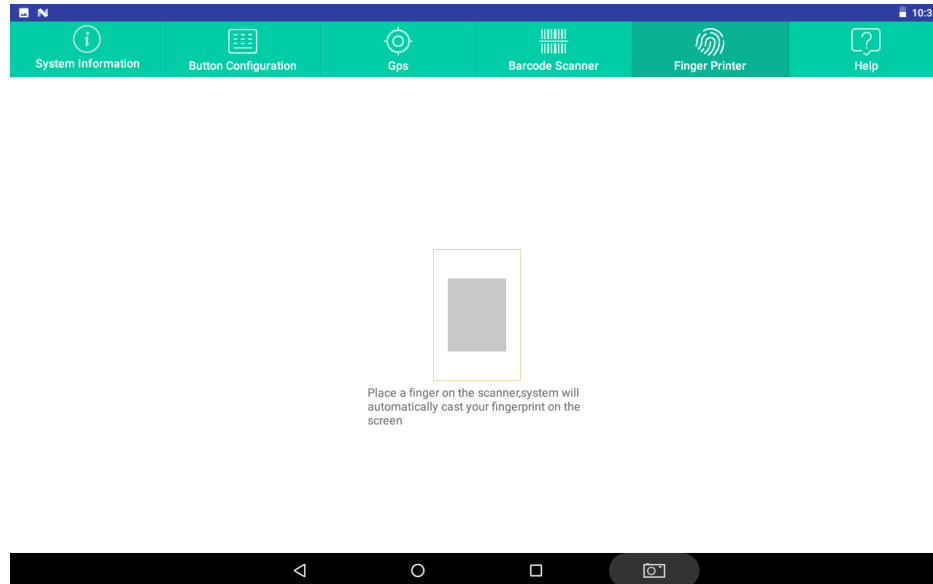
System information

The System Information component of the eController App will automatically check the tablet's information.

Summary	
Product Model	
CPU	RK3368 216 MHz~1200 MHz
Memory	1.93 GB
SSD	27.15 GB
TF	0
OS Version	Android 7.1.2
Quit	

Fingerprint scanner

When activated, the user may place a fingertip on the scanner, and the scanner will read the print and display it in the indicated area of the screen, until removed.



The fingerprint scanner will operate continuously once this test is selected until exited. To preserve battery and enable all tablet functions, please exit the test when complete.

Barcode Scanner

To test the Barcode Scanner, select the barcode test, point the scanner at a barcode (or QR code), and press the SCAN button on the screen or press the physical scan button on the body of the tablet. The system will quickly scan and display the barcode information on screen.

Press the button again to read the barcode again. The displayed info will refresh and display the new barcode information.



Please aim the laser at the center of barcode. Do not place the scanner too far from barcode.

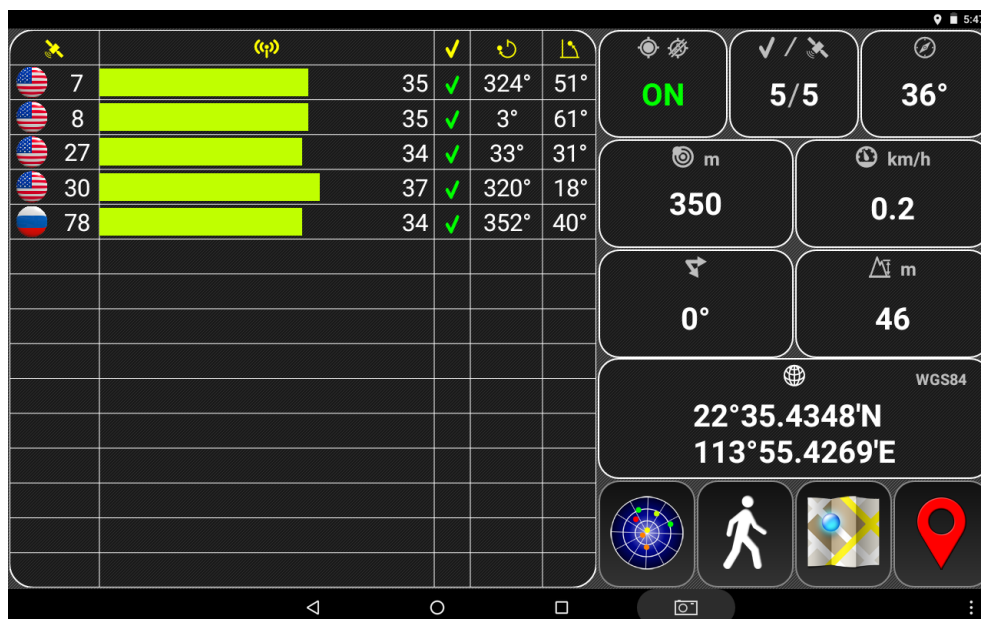


The Barcode Scanner uses laser technology, do not point it toward anyone's eyes.

GPS

The eController GPS test is based on Chart-cross Limited APP.

Turn on Location Services. The App will automatically run and check the GPS signal, satellite positions, your current location, speed, heading and altitude.



In the graphic below, please see the following elements:

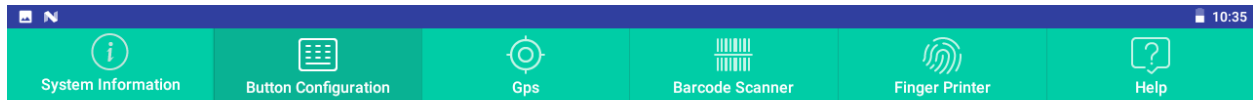
1. GPS signal bar chart, showing the signal strength for each satellite detected, as well as the accuracy and status of the GNSS network.
2. Satellite positions in the sky, shown on a rotating compass.
3. Your current location on the earth shown as text and on a world map. The current position of the sun and the day/night transition curve is also shown.
4. Compass
5. The current time read from the GPS and the local time in your current time zone, as well as the sunrise and sunset times at your location.
6. Your current speed, heading and altitude shown as text.

 Please test GPS in an open outdoor area. Otherwise, the GPS may not work properly.

 If you have any further questions about this help file, please contact the supplier.

Assign function to programmable buttons F1 and F2

Button configuration can program the P1 and P2 button on your tablet. Select the button you want to program, choose the desired function and press the SAVE button to save settings, or you can select cancel to discard the changes.



 If you want to program the buttons to a function not on the list, please contact your supplier for instruction.

7. Product Care

Temperature & Humidity

General Use - Operating temperature

The MJ-80 is best kept in dry conditions at room temperature. The recommended range for temperature and the humidity value for the device is as follows:

- Operation Temperature: 0-45°C (32 °F to 113 °F)
- Relative humidity: 10% to 90% (no condensation on the device)
- Atmospheric Pressure: 80 kPa to 106 kPa (600 mmHg to 795 mmHg)

Transportation and Storage

For transportation and storage, the recommended range for temperature and the humidity value for the device is as follows:

- Storage Temperature: -20°C to 60°C (−4°F to 140°F)
- Relative humidity: 10% to 90% (no condensation on the device)

Transporting the MJ-80 Device

Disconnect all the cables from the MJ-80 while carrying the device.

When you transport the device for any reason, it is best to use the original casing and packaging materials. It is recommended that you keep the original packaging materials for the MJ-80.

If the device needs to be returned to Device Manufacturer for Warranty related issues or repair, it is beneficial that the original packaging or equivalent is used for shipping. Most shipping carriers require at least 2 inches of packing material around the device.



Due to Joint Commission regulations, any shipping materials including boxes sent to the Device Manufacturer must be discarded. The device will be returned to you in equivalent packaging.

8. Safety



The MJ-80 device has been tested and approved as compliant to all the Specifications and Standards listed in Appendix B Compliance Information, and in the Appendix A Technical Specifications. Nevertheless, in order to ensure safe operation of your MJ-80 device, there are a few safety warnings to bear in mind:



Do not disassemble this product. You may receive an electric shock, or foreign matter may enter and result in a fire. If a malfunction or trouble occurs, immediately turn the power off and unplug the AC power source. Then contact your supplier's technical support office for repair.



Do not service or perform maintenance on the device while the device is in use. Make sure to shut the device down and unplug all cables before starting and service or maintenance work on the device.

8.1 Power Supply and Batteries

The MJ-80 device contains one rechargeable battery. All rechargeable batteries degrade over time. Thus, the possible usage times for the MJ-80 after a full charge can become shorter over time than when the device was new.



The MJ-80 device uses a Li-ion Polymer battery.

If you are in a hot environment, be aware that it can affect the ability to charge the battery. The internal temperature must be between 0 °C/32 °F and 45 °C/113 °F for the battery to charge. If the internal battery temperature rises above 45 °C/113 °F the battery will not charge at all.



Avoid exposing the MJ-80 device to fire or to temperatures above 60 °C/140 °F . These conditions may cause the battery to malfunction, generate heat, ignite or explode. Be aware that it is possible, in a worst-case scenario, for temperatures to reach greater than those stated above in, for example, the trunk of a car on a hot day.

Only charge the MJ-80 battery in an ambient temperature of 0 °C/32 °F to 45 °C/113 °F .



Use only the supplied power adapter to charge the MJ-80 device. Using unauthorized power adapters may severely damage the MJ-80 device.



For safe operation of the MJ-80 device, use only charger and accessories approved by Device Manufacturer.

If the Power Supply Cord is damaged it needs to be replaced by Service Personnel only. Do not use the Power Supply Cord until replaced.



Disconnect the AC power plug of the Power adapter from the wall socket when not charging the device and disconnect the power cable from the device.



Special regulations apply to shipping devices containing Li-ion Polymer batteries. If dropped, crushed, or short-circuited, these batteries can release dangerous amounts of heat, may ignite, and may be dangerous near fires.



The plug/adapter plug pins insulate the device from the main supply. Do not position the device in a position where it is difficult to disconnect the device from the supply mains to safely terminate operation of the device.

8.2 Temperature



Due to use in direct sunshine or in any other hot environment the MJ-80 device may have hot surfaces. There is a built-in temperature sensor that monitors the temperature. If the sensor detects high internal temperature, the device will automatically trigger a Shut Down. It may take a while before MJ-80 device can be restarted as the unit may first need time to cool down.

8.3 Electricity



The device contains no user serviceable parts. Do not open the case of the MJ-80 Tablet Device. Doing so will void the product warranty and may expose you to electrical hazards.

8.4 Software



Using an antivirus program is strongly recommended.



Software other than that which is pre-installed on the MJ-80 is installed at the user's own risk. External software could cause the MJ-80 to malfunction and might not be covered by the warranty.

8.5 Magnetic Field



The MJ-80 device contains magnets. Magnetic fields may interfere with pacemakers, defibrillators, or other medical devices. As a rule, maintain a minimum distance of 6 inches (15 centimeters) between any item with magnets and your heart device.

8.6 Third Party



Any use of the MJ-80 outside the intended use and together with any third-party software or hardware that changes the intended use voids the responsibility of the device manufacturer

Being a medical device, parts connected for a SIGNAL INPUT/OUTPUT must be compliant to the Medical IEC standard 60601-1.

9. Trouble shooting

In most cases, restarting your device will cure any problem. To restart your device, hold the power button for 5 seconds, then select Shut down/Restart. If your device has crashed (and displays nothing on the screen), hold down the power button for 10 seconds to hard shutdown. Press the power button again to turn the MJ-80 back on.

If this does not fix the problem, contact your supplier.

Please have your serial number ready. This can be found on the back of your device.

Appendix A Technical Specifications

Ruggedness	IP-65 Waterproof
	Drop: 4FT drop resistant on 26 corners to plywood (MIL-STD-810G)
	Shock resistant: MIL-STD-810G, method 516.6, procedure I
	ESD Protection: 8KV touch, 15KV air
Processor	Rockchip RK3368
	Octa-core Cortex-A53 1.5G
	G6110 GPU 4K@60fps H.265 HDMI2.0 with HDCP2.2
OS	Android 7.1
Security	Trust Zone Technology Support
System Memory	2GB LPDDR3-1866
	Option: 4GB LPDDR3
Storage	32GB eMMC 5.1
	Option: 64GB, 128GB.
Button	Power on/off (Hold 10s will reset system.)
	Vol-/Vol+
	Programmable button X 1, Programmable button X 1.
LCD	8" IPS, 800 x 1280 Resolution
	300 NIT Brightness.
Touch Screen	Capacitive 10-point Multi-touch
	Chemical harden cover glass
Audio	Built-in microphone
	One internal 8ohm 1W speaker
Camera	Front camera: 2M
	Rear Camera: 8M with Auto Focus
Wireless	WiFi 802.11 a/b/g/n
	Bluetooth 4.0
GPS	GPS able to track up to 16 satellites, 1575.42 MHz
	Device GPS accuracy <15m 95% typical
	Velocity Accuracy 0.05m/s
	Heading Accuracy 0.3 degree
	Horizontal Position Accuracy <10m
	Velocity min Accuracy 100m/s
Sensors	Gyroscope, Light sensor, Compass, Fingerprint identification.
Battery	24WH battery, Li-on polymer, 2S1P, 7.4V 3200mAh
	8 hours running time
I/O	1x Micro USB @1A.
	1x HDMI output: Type D
	1x Audio jack (3.5mm, 4 pole, support MIC input)
	1x DC jack: 5.5mm OD jack
	1x USB 2.0
Barcode (Option)	2D: PDF147, QR code
	1D: Code 128, 39, 11, 93, GS1, UPC A & E
Docking (Option)	DC 12V in, USB 2.0
Mechanical	Front chassis: Plastic + TPU rubber
	Rear chassis: Plastic

	Dimension: 227 x 151 x 24 mm
	Weight: 0.75KG
AC adaptor	12V 3A input
	110 -240V AC in, standard US plug
	Option: multi-nation plugs
Environmental	Operation temperature: 0-45°C
	Storage Temperature: -20 -- 60 °C
	Humidity: 10% to 90%
	ROHS: Compliant
Regulatory	FCC /IATA/IEC62133/IEC60601-1

Appendix B Compliance Information

B1 FCC Statement

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.



Modifications not expressly approved by Device Manufacturer could void the user's authority to operate the equipment under FCC rules.

Part 15B Equipment

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.



Any changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment . Modifications not expressly approved by Device Manufacturer could void the user's authority to operate the equipment under FCC rules.

FCC RF Radiation Exposure Statement:

- This Transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.
- This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This device was tested for typical hand-held operations with the device contacted directly to the human body to the sides of the device. To maintain compliance with FCC RF exposure compliance requirements, avoid direct contact to the transmitting antenna during transmitting.

B2 CE Statement

This equipment complies with the requirements relating to electromagnetic compatibility, the essential protection requirement of Electromagnetic Compatibility (EMC) Directive 2014/30/EU on the approximation of the laws of the Member States relating to electromagnetic compatibility and Radio Equipment Directive (RED) 2014/53/EU to meet the regulation of the radio equipment and telecommunications terminal equipment.

B3 Directives and Standards

The MJ-80 complies with the following directives:

- Medical Device Regulation (MDR)
- Low voltage Directive 2014/35/EU
- Electromagnetic Compatibility (EMC) Directive 2014/30/EU
- Radio Equipment Directive (RED) 2014/53/EU
- RoHS2 Directive 2011/65/EU
- WEEE Directive 2012/19/EU
- Reach Directive 2006/121/EC, 1907/2006/EC Annex 17
- Batteries Directive 2013/56/EU

The device has been tested to comply with FCC, IEC 60601-1, IATA/IEC62133, and other relevant standards for the intended markets.