

Quick Start Guide

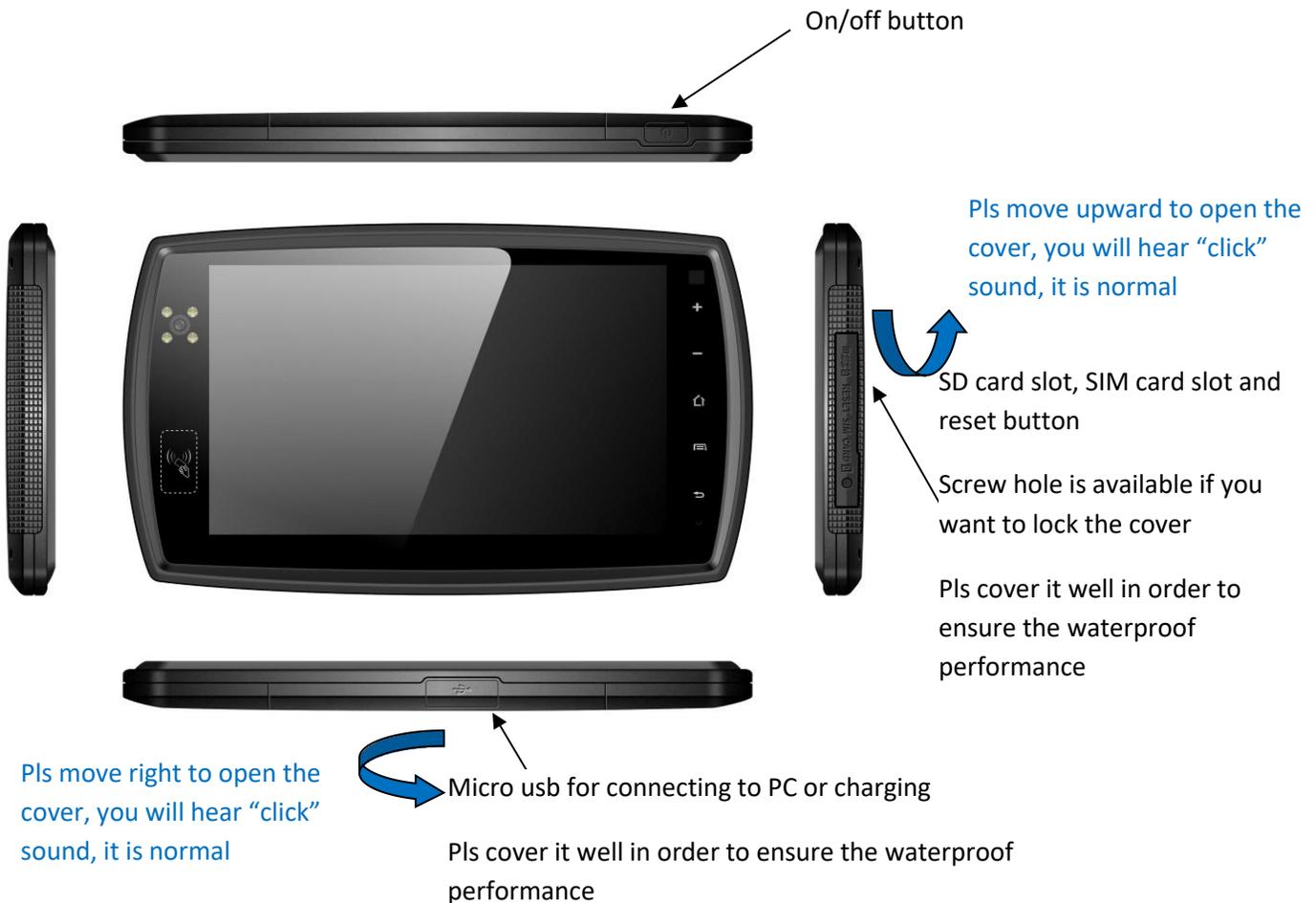
Product introduction

MDT740 has optional features (wifi, BT, GPS, 2G/3G/4G,LoRa, back camera, front camera, RFID, lightsensor, gyroscope, accelerometer)

Highlights:

4G – pls insert the SIM card when the device if complete off

front camera – there are 6 IR LED around the camera. if you enable the flash function in front camera, then you will see the IR LED is on. In this case, the picture will be in black and white

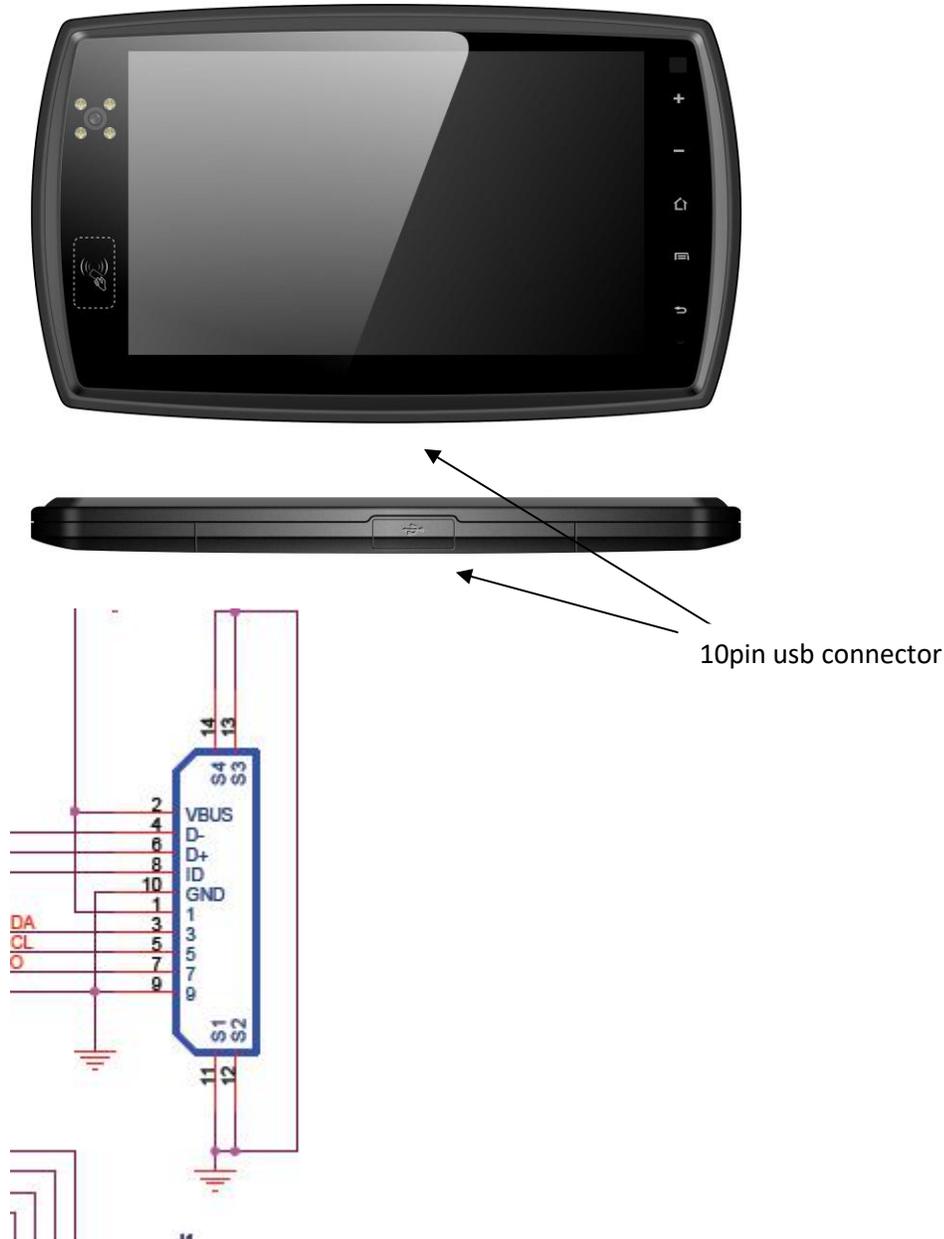


Direction of SIM card and SD card



Interface

1. There is TTL serial port (Tx/RX) or OTG from 10 pin usb connector



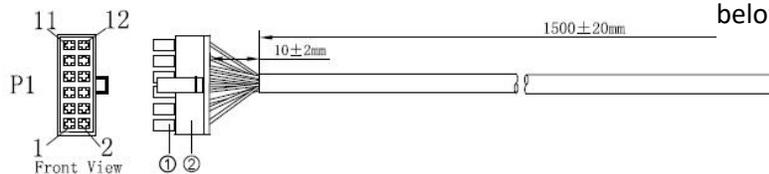
pls see the above schematics of our USB connector in our PND, it is 10 pin connector.
 Pin 4 and 6 can be used for USB or TTL serial interface (Rx/Tx) and Pin 8 is ID pin which is used to distinguish for USB or serial interface.
 if it is connected to GND, then the pin 4 and 6 will be Rx/Tx interface.
 if it is connected to Vcc, then the pin 4 and 6 will be D- and D+.

2. There are Rs232 interface and OTG from cradle.

Highlights: OTG port from device (10pin usb connector) and cradle are sharing same pins. Only 1 OTG interface can be used.



This cable can be customized when you placed order
 For sample, it will be 12 pins connector, pls see below or pins assignment



- Pin 1 – Ignition (Green), it can be wake up the device. see the software section for more details.
- Pin 2 – NOT connected
- Pin 3 – RTS (Orange)
- Pin 4 – car battery input (12-28V) (Red)
- Pin 5 – CTS (yellow)
- Pin 6 – TXD (purple)
- Pin 7 – RXD (White)
- Pin 8 – GND (grey)
- Pin 9 – GND (black)
- Pin 10 – NOT connected
- Pin 11 – NOT connected
- Pin 12 – 5V input (Pink)

Highlights: for RS232, it is master mode definition.

if you are using OTG with external device, you can only charge the device by 12V input.

Removing the cradle cable (12pin molex connector) if you don't want to use it.

1. you can find the rubber plug in our blackbox (see below picture).
2. open the cradle casing by screw driver
3. remove the 12pin molex cable from connector
4. put the rubber plug in the hole and close the cradle casing

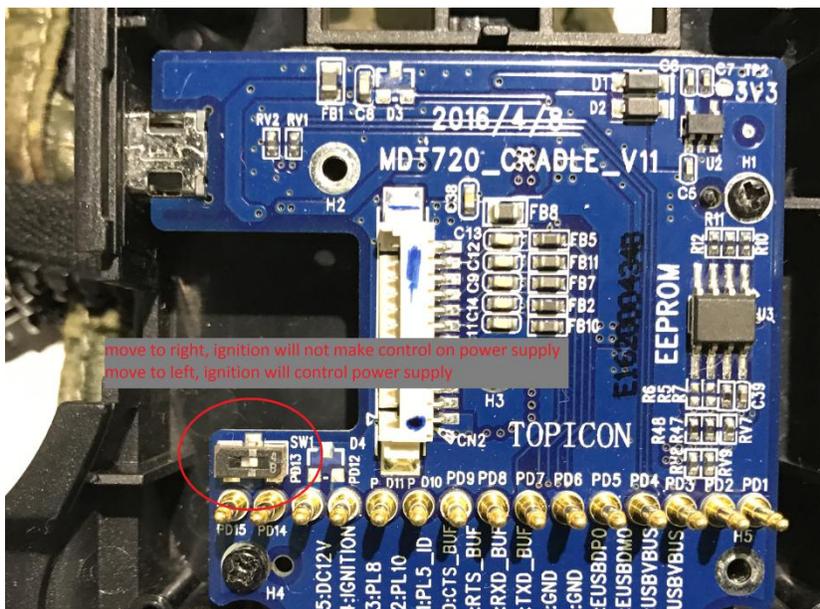


Option for ignition control the power supply

If ignition is OFF, the power supply will cut. Customer uses their application to control the device to power off or sleep mode.

If ignition is ON, there is power supply and able to charge the device. so, when the engine is ON, the device will power on automatically.

If you want to try this feature, pls open the cradle. There are switch inside the cradle PCB. (only production batch >1642)



Device installation

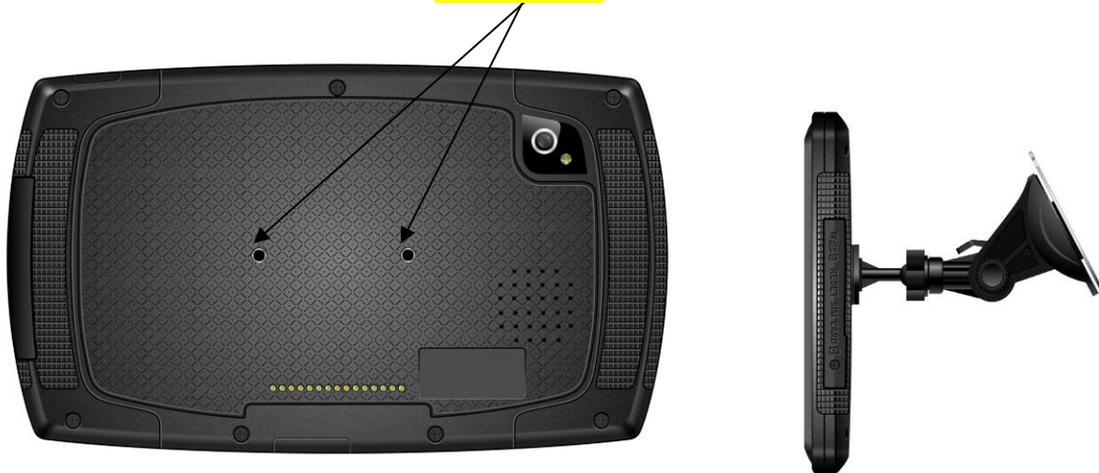
There are few options

1. Directly attach mount to device (no cradle in this case)

2 screw hole at the back

Pls use M4 15mm screw if the mount thickness is 9mm.

Pls note that the screw hole depth is only 6mm. Long screw may damage the PCB inside

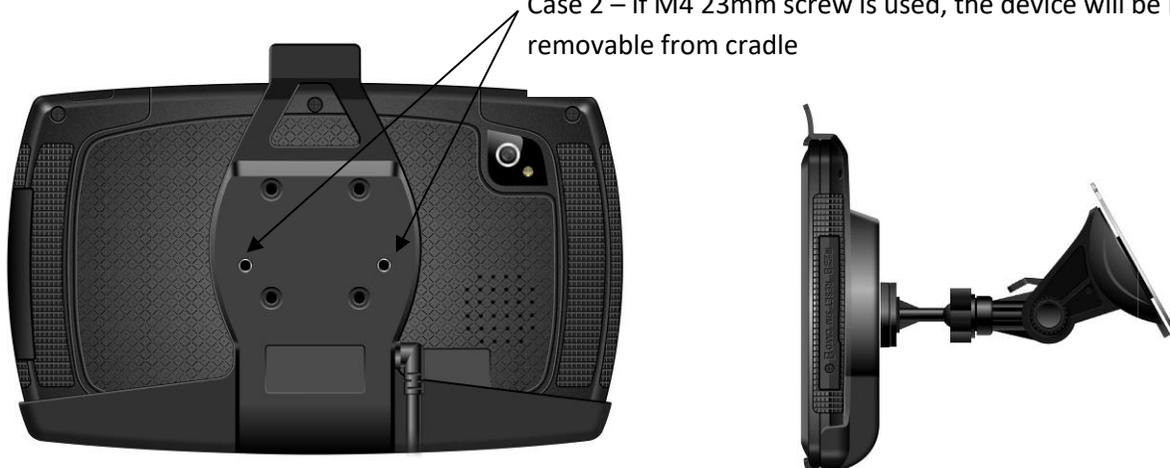


2. Cradle attached to car mount with different screw length

2 screw hole at the back

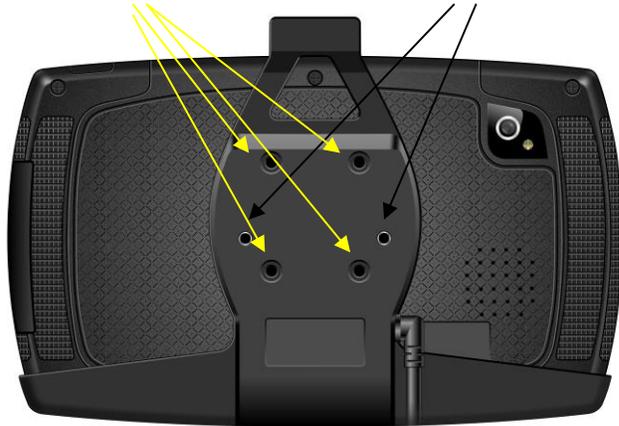
Case 1 – if M4 18mm screw is used, the device will be removable from cradle

Case 2 – if M4 23mm screw is used, the device will be not removable from cradle



Mount options:

There are many car mount options. You can use the 2 screw hole (black colour) or 4 screw hole (yellow colour) to attach the different mount system. **The 4 screw hole depth is 5mm long only, pls prepare correct screw. Pls note that wrong screw length may damage the cradle.**



Option 1:

Low cost wind shield car mount



Option 2:

Many mount option from RAM MOUNT

You can choose the mount you like from their website (www.rammount.com)

Example 1 (RAP-B-166-2U)



Example 2 (RAM-B-138-224-1U)



Example 3 (RAM-B-138U-A)



RAM Mount 1 Inch Diameter Ball Short Double Socket A Arm with 2.5 Inch Round Base and Diamond Adaptor (U)

Example 4 (RAP-B-138-AU)



Option 3:

You can also choose mount from HR (<http://www.hr-autocomfort.de/>)

There are 4 hole plate which you can lock in the cradle with 4 screw hole. then, you can choose the mount from HR.



Example 1 (1719/0)



Option 4:

Mounting solution from truck expert (ARAT)

http://www.arat-de.eu/index.php?ber_id=10&dia_id=1&lang=en



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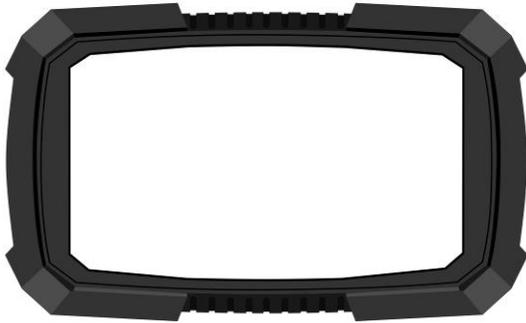
Option 5:

There are other mount which can support this 2 screw hole and 4 screw hole at the back can be used. For my understanding, there are other mount company also use this 2 or 4 screw hole as standard. Pls let know if you need other mounting system or solution.

New silicon sleeve

It can have more protection for the device.

1. It also support stylus. There are optional clip which you can install at the back of the sleeve.
2. There is new cradle (dock) to match the device with sleeve. This cradle can be used for the device with or without the sleeve.





Software support

We can provide serial port apk and NFC demo. Pls contact our Sales for details.

1. Pls also see the software setting for serial port

two serial ports are available on the device :

- one shares the the USB data pins of the mini A/B USB connector. Only TX and RX pins are available, voltage is TTL 3.3V.
- one is on the Pogopin interface (pins 3, 5, 6 and 7). TX, RX CTS and RTS are available, voltage is RS232.

On the software side, the tty devices corresponding to these ports are :

- for the RS232 port, /dev/user_external_tty
- for the TTL port, /dev/user_tty

In addition, one I2C port is available both on the USB and Procopin connectors.

- The I2C interface is accessible through /dev/user_i2c

2. if your application want to read the ignition state, pls use below API.

the 12V input is reported to the application as a key press (high level pressed, low level depressed) in the java Android API, this key is KeyEvent.KEYCODE_TV_INPUT

A second way to access the ignition state is to register a broadcast receiver for the action "hk.topicon.intent.action.IGNITION"

The current ignition status is given by the extra boolean "state".

This intent is sticky, ie the application will be immediately notified of the current status at registration, even if no transition occurred.

Here is a code snippet :

```
private static final String ACTION_IGNITION = "hk.topicon.intent.action.IGNITION";
private BroadcastReceiver mIgnitionReceiver = new BroadcastReceiver() {
    public void onReceive(Context context, Intent intent) {
        String action = intent.getAction();
        if(!action.equals(ACTION_IGNITION))
            return;
        boolean state = intent.getBooleanExtra("state", false);
        if(state)
            Log.d(TAG, "ignition event is on");
        else
            Log.d(TAG, "ignition event is off");
    }
};
```

Video input cradle

We made a new video input cradle

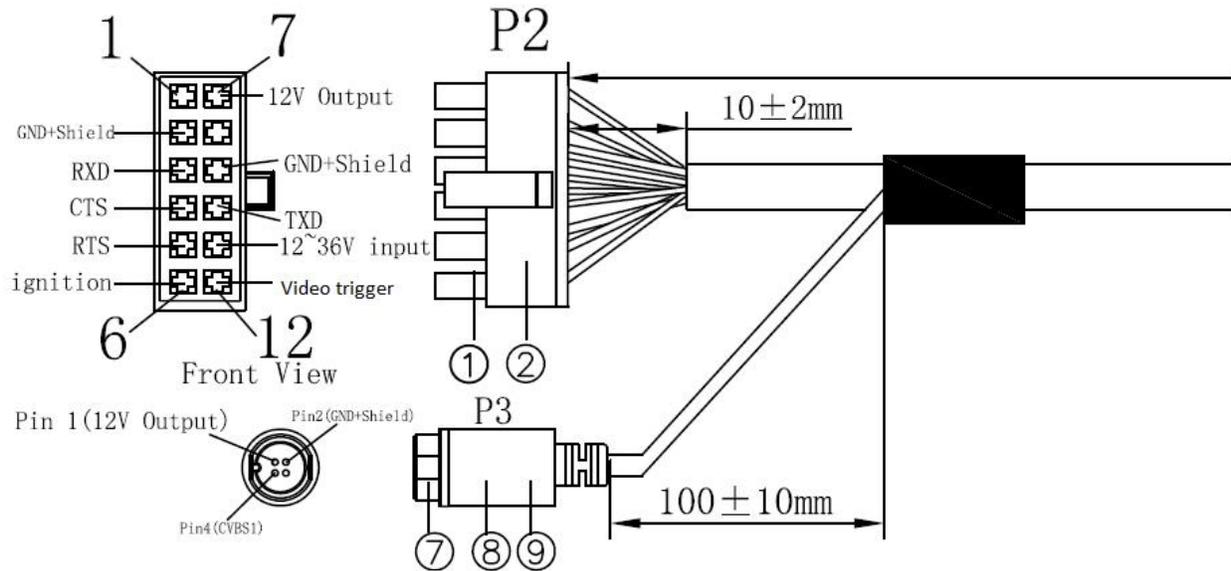
1. For rear view camera input, we have complete demo kit (part number: CRD741R)

Highlights for P2 connector:

1. It is same as before. We just add video trigger (pin 12), this video trigger can support only **9-32V**
2. The ignition status cannot read by device anymore. It is used only to control the power supply from the device. If ignition is ON, the device can be charged. If ignition is OFF, the device cannot be charged.

Highlights for P3 connector:

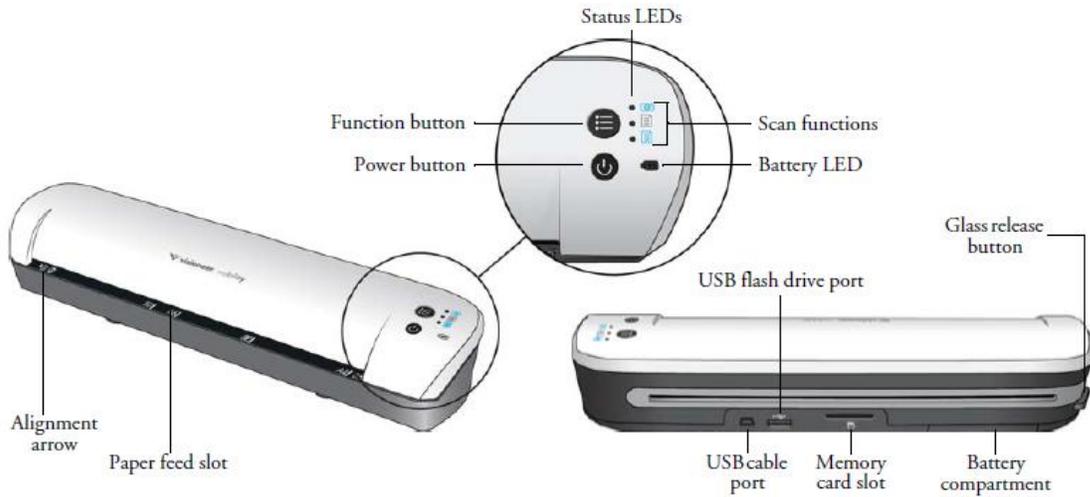
It used to connect camera module directly. It has power supply for camera.



For software, we made apk (topiconDemo_20161115). If the video trigger is HIGH, the device will pop up the video with external video input from P3

Scanner

You can using scanner to our device



1. Plug the special USB cable with marked “scanner” to the mini_USB port on the back of the scanner..



2. Plug the other end of the special USB cable with marked “MDT” to the Device or the Cradle



3. Turn on the scanner
4. Inserted a USB flash drive or a memory card in the scanner.



5. When scanning is finished, the image is saved on the memory card or USB flash drive. Will show in the ES File Explorer in the Device
6. You can charge the scanner battery by plug the special USB cable on the Device.



CE

Caution:

Use the Product in the environment with the temperature
Between -10°C and 40°C; Otherwise, it may damage your product.

For the following equipment:

Product Name: GPS

Model: MDT740, MDT741, MDT742, MDT752, MDT714D, OBC740, M710A, M710AG, M710AB, M710AKB,
M740B, MDT840, MDT841, MDT814D

Brand Name: /

TOPICON HK LIMITED

E-mail: keller.sin@topicon.hk

hereby declares that this [Name: GPS, Model: MDT740, MDT741, MDT742, MDT752, MDT714D, OBC740,
M710A, M710AG, M710AB, M710AKB, M740B, MDT840, MDT841, MDT814D] is in compliance with the
essential requirements and other relevant provisions of Directive 2014/53/EU.



The product shall only be connected to a USB interface of version USB2.0 and that the connection to a power
USB is allowed.

Use careful with the earphone maybe possible excessive sound pressure from earphones and headphones can
cause hearing loss.



CAUTION
RISK OF EXPLOSION IF BATTERY IS REPLACED
BY AN INCORRECT TYPE.
DISPOSE OF USED BATTERIES ACCORDING
TO THE INSTRUCTIONS

Adapter shall be installed near the equipment and shall be easily accessible.

Only can use adapter as below:

Travel Adapter Model: GLY-G19UB-050150-540A

Input: 100-240Vac, 50/60Hz, 0.3A; Output: 5.0V ,1.5A

Shenzhen Guangliyuan Electronic Co., LTD.

The plug considered as disconnect device of adapter.

This product is intended for sale and application in a business environment.

RED Article 10 2

-This product can be used across EU member states

RED Article 10 10

-The product is class 1 product, No restrictions

The RF distance between body and product is 0mm

Support Networks: GSM, GPRS, EDGE

RF Output Power: GSM900: 32.52dBm, GSM1800: 29.98dBm

EDGE900: 26.74dBm, EDGE1800: 27.85dBm

Support Networks: WCDMA, HSDPA, HSUPA

RF Output Power: WCDMA Band 1: 23.37dBm, WCDMA Band 8: 22.49dBm

Support Bands: FDD-LTE Band1, 3, 7, 8, 20

FDD-LTE Band 1: 23.51dBm, FDD-LTE Band 3: 23.92dBm,

FDD-LTE Band 7: 22.84dBm, FDD-LTE Band 8: 22.89dBm, FDD-LTE Band 20: 23.29dBm

Bluetooth Version: Bluetooth V4.0

Max.RF Output Power: 5.32dBm (EIRP)

Frequency Range: 2412-2472MHz for 802.11b/g/n(HT20); 2422-2462MHz for 802.11n(HT40)

Max.RF Output Power: 15.72dBm (EIRP)

Lora Frequency Range: 868.00MHz-868.6 MHz

869.4MHz-869.650 MHz

RF Output Power: 12.11dBm(ERP)

NFC Frequency Range: 13.56MHz

Radiated H-Field: MDT740: 16.90dBuA/m(@10m)

MDT840: 16.40dBuA/m(@10m)

EU Declaration of Conformity
for
RED Directive2014/53/EU

We,
TOPICON HK LIMITED

hereby, declare that the essential requirements set out in the **RED Directive 2014/53/EU**
have been fully fulfilled on our product with indication below:

Product Name: GPS

Brand Name: --

Model No.: MDT740, MDT741, MDT742, MDT752, MDT714D,OBC740, M710A,
M710AG, M710AB, M710AKB, M740B,MDT840, MDT841, MDT814D

The following standards have been applied for the investigation of compliance:

Draft ETSI EN 301 489-1 V2.2.1 (2019-03)
ETSI EN 301 489-3 V2.1.1 (2019-03)
Draft ETSI EN 301 489-17 V3.2.0 (2017-03)
ETSI EN 301 489-19 V2.1.1 (2019-04)
Draft ETSI EN 301 489-52 V1.1.0 (2016-11)
ETSI EN 300 328 V2.1.1 (2016-11)
ETSI EN 303 413 V1.1.1 (2017-06)
ETSI EN 300 220-1 V3.1.1 (2017-02)
ETSI EN 300 220-2 V3.1.1 (2017-02)
ETSI EN 300 330 V2.1.1 (2017-02)
ETSI EN 301 511 V12.5.1 (2017-03)
ETSI EN 301 908-1 V11.1.1 (2016-07)
ETSI EN 301 908-2 V11.1.2 (2017-08)
ETSI EN 301 908-13 V11.1.2 (2017-07)
EN 62479 :2010
EN 62209-2 :2016
EN 50566 :2017
EN 62368 : 2017
EN 62368-1:2014+A11:2017

And apply notified body assessment:

Notified Body number 1177

Timco Engineering, Inc.

849 NW State Road 45 Newberry FL 32669

America

Software Version:	MDT740: mdt740_gms_2.4.9; MDT840: mdt840_gms_2.0.6
Hardware Version:	MDT740/MDT840 : mdt740_v40
System Components	
Component 1	Li-Polymer Battery Model: 104180HT; 3.7V, 4300mAh HOWELL ENERGY CO., LTD
Optional Components	
Optional 1	Travel Adapter Model: GLY-G19UB-050150-540A Input: 100-240Vac, 50/60Hz, 0.3A; Output: 5.0V ,1.5A Shenzhen Guangliyuan Electronic Co., LTD.
Optional 2	Camera Model: 700SN-RV1A Input:12VDC 200mA Zhongshan YiHongDa Technology Co.,LTD
Optional 3	Cradle Model: CRD740 Input: 12V-24V, 2A Output: 5V, 2A Topicon HK Limited
Optional 4	Camera Hub Model: HH420 Input: 12V-24V Topicon HK Limited

Furthermore, the ISO requirement for the in-process quality control procedure as well as the manufacturing process has been reached. The technical document as well as the test reports will be kept for a period at least 10 years after the last product has been manufactured at the disposal of the relevant national authorities of any Member State for inspection.

Detail contact information for this declaration has been listed below as the window of any issues relevant for this declaration.

Manufacturer Contact

Company: TOPICON HK LIMITED

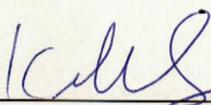
Address: Room 2314-2316, Tower C, Huangdu Plaza, Yitian Road, Futian District, Shenzhen, China

Name & Title: Keller Sin/Sales Director

Tel No.: (86) 755-82549331

Fax No.: (86) 755-82549331

E-mail: keller.sin@topicon.hk



 Signature Date 2019-08-20

FCC RF Exposure Information and Statement

This device meets the government's requirements for exposure to radio waves. The guidelines are based on standards that were developed by independent scientific organizations through periodic and thorough evaluation of scientific studies. The standards include a substantial safety margin designed to assure the safety of all persons regardless of age or health. The SAR limit of USA (FCC) is 1.6 W/kg averaged. Device types: portable device (FCC ID: 2AHAF-MDT740) has also been tested against this SAR limit. SAR information on this and other pad can be viewed on - line at <http://www.fcc.gov/oet/ea/fccid/>. Please use the device FCC ID number for search. This device was tested simulation typical 0mm to body. To maintain compliance with FCC RF exposure requirements, use accessories should maintain a separation distance between the user's bodies mentioned above.

FCC Warning

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.

NOTE 1: 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.

NOTE 2: Any changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
