



IT6000-IOT series

The touch screen interface the user manual



A00

Data coding 19010432

Foreword

Thank you for purchasing Kymmene Control Technology Co., Ltd. independent research and development, production IT6000-IOT Series touch screen interface (HMI , Hereinafter referred to as HMI). The series is a wireless communications HMI in IT6000 An increase of M2M communications, and remote access services on the basis of a fully functional, can achieve one-stop remote intelligent management of field devices. IT6000-IOT series HMI It follows the powerful A8 Core processors, data processing, faster response. Supports GPRS Or Ethernet connection to the server, in the original IT6000 Feature basis, further to achieve a wireless remote PLC Conduct program upload, download and monitoring operations.



Map 1 Product Appearance

This manual describes the InoTouch series HMI Specifications, characteristics and use of methods. Before using this product, please read this manual carefully, in order to more clearly grasp the characteristics of the product, more safely use this product. Use and user programming technique of the product user program development environment, please refer to the Company issued additional " InoTouch Editor Programming Software Manual ", version information please Kymmene technology website www.inovance.cn The latest announcement shall prevail.

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1. Functional advantages

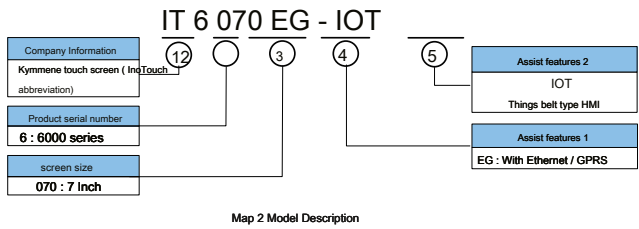
Functional advantages	Functional Description
Easy PLC , Remote monitoring network inverter and other equipment	this HMI Products are available through the Ethernet interface, RS485 interface, RS232 interface connection PLC , Inverter or other servo device, its operation data collected by the antenna and a built-in wireless communication module, to the server via a wide area network; and may also transmit a control command sent to the server PLC , Frequency converters or servo, achieve control.
Built-in multi-level access	multiple levels of access privilege management functionality that visitors to the different roles assigned different Access to objects or operating authority.
Download via wireless remote GPRS , PC End of may HMI And its affiliated equipment updates, a	Maintaining multi-drop network node device, without operator personality to the scene.
History function	This product can be real-time monitoring and recording equipment running, WEB A detailed record of the online status of the end device, alarm information, and historical data records. When the device fails, the system will record and failure to upload in the server.
Communications and program Range function	Users can apply Autoshop Software HMI It is programmed, and can be modified communication protocol logic control.
Other advantages	Embedded in GPRS Antenna without wire, no field wiring; General GPRS Networks, support China Mobile, China Unicom; Kymmene things dedicated support APN Card, ultra-low traffic costs.

2. Safety Precautions

Safety Precautions	
design	<ul style="list-style-type: none">emergency stop and interlock circuit, other conventional circuit protection, reversing etc., to prevent Means damage to the equipment should be arranged outside the product; • disposed outside of the product "Fault protection circuit" and emergency manual safety device to prevent unauthorized Security accidental mechanical movement;Make sure to design a user program, it occurs in the product display, control, communications, power supply When failure, the user can ensure system security; • ensure communication failure between the product and its host controller will not cause equipment to malfunction, To avoid personal injury or equipment damage.
installation	<ul style="list-style-type: none">Do not touch panels which may cause open operator injury or damage to the equipment Guan, please separate switch designed to perform important operations, incorrect output or malfunction could lead to accidents;Do not create a safety control device for operating the touch panel switches, such as an emergency stop switch turn off. Set hardware switches such operations be performed alone, or it may cause serious personal injury or equipment damage;Do not use this product for may cause serious personal injury, damage to the equipment or system downtime Major alarm warning device. Please use a separate hardware and / or mechanical interlocking design Critical alarm indicators and their control / trigger device.
wiring	<ul style="list-style-type: none">Make sure that the environment comply with the limits of hardware specifications (For details, please refer to the "basic parameters Number: General Specifications");Do not install the magnetic field is too strong, direct sunlight, high temperatures, Qiang Lie mechanical vibrations of the place, please Do not in flammable gas, vapor or dust- the use of this product, otherwise there is danger of explosion; • Do not possible rapid changes in temperature or humidity, great environment using this product, This may lead to condensation of water inside the device, resulting in damage to the equipment; • sure all cable connectors are securely attached to the product. If the connection is loose, it may Will generate an error signal is input or output.The product should be installed at a depth of more than 105 Mm in the enclosure, for at least four weeks 25 Millimeter Spatial distance, positive prohibit the use of metal shielding is required when things function. • When you install another device, be sure to keep the electrical interface device farther away from the back of the product Off, and the shielded cable, and shielding to the system star point.
power supply	<ul style="list-style-type: none">Installation, wiring work, be sure to always be all power; avoid charging state Wiring, cable plug connector, otherwise easily lead to electric shock or damage to the circuit; • press this Manual, the DC power supply wiring is connected to a dedicated terminal; • when screw hole processing and wiring is performed, the metal not allow chips or wire head fall HMI internal, In order to avoid failure, a fire or damage of electronic components; • location should be carefully checked after completion of wiring, and ensure the voltage terminals are not properly error. Doing so could cause a fire or an accident.To avoid electrical shock, before connecting the power source of the product, turn the power OFF; • input power is the product DC24V ± 20 % Regularly check DC Power source is stable. • 24V Power supply lines and communication cables, AC power cable, and should be avoided or motor driving Moving the cable lines and strong interference with walking. At least remain 30cm distance. • DC power supply must be properly isolated from the AC mains; do not expose the product and negative emotional The load circuit (e.g., solenoid valves) common supply, to avoid electromagnetic interference.
Run maintenance	<ul style="list-style-type: none">During use, avoid using tools to touch panel display, external force caused by too much surface Board damage responsibility of the user;To modify the program when the system is running, use of locks or other measures must be considered To ensure that only authorized personnel can make changes. • Lithium battery, LCD Panel, lithium batteries, capacitors, etc. may contain health hazards and environmental pollution Ingredients, when disposing of this product, please deal with industrial waste.

3. product information

1) Naming Rules



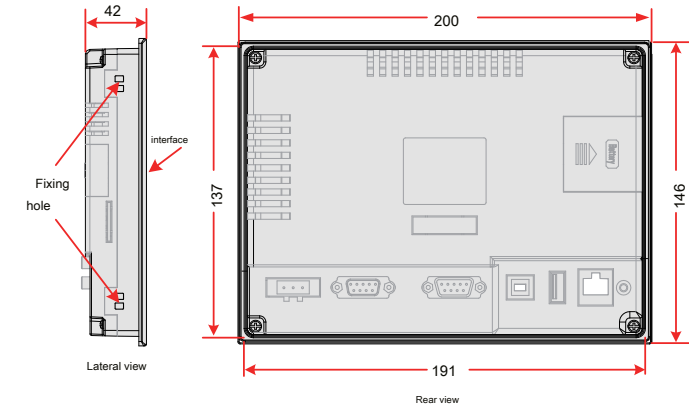
2) Basic parameters

parameter	specification	parameter	specification
Hardware Specifications			
Display Size	7.0 ."	Resolution	800 * 480
brightness (cd / M)	300	Color display	twenty four Bit True Color
Backlight	led	Backlight life	30000hrs
CPU	Cortex A8 600Mhz	Flash	128MB
DRAM	128MB DDR3	Recipe memory	256KB
SD Card Interface	✓	USB Host	✓
USB Client	✓	Ethernet Interface	✓
Serial ports	COM1 (RS422 / RS485) COM2 (RS232) COM3 (RS485)	RTC	✓
Wireless type	GPRS	-	-
Electrical Specifications			
Input voltage	24VDC ± 20%	Current Rating	500mA
Structural Specifications			
Shell color	metal gray	Housing material	ABS + PC Engineering Plastics
Hole Size	192 * 138 (mm)	-	-
General Specifications			
Operating temperature	0 °C ~ 50 °C	storage temperature	-20 °C ~ 70 °C
Working humidity	10% ~ 90% RH (No condensation)	Cooling air	
Electromagnetic Compatibility	CE standard	Panel Protection	IP65
Mounting	according to NEMA 4 standard	-	-
Communication specifications			
functional module	parameter	specification	
GPRS	RF Bands	GSM900 , DCS1800 Band automatic search; accord GSM Phase 2/2 + ;	
	Transmission power	Class4 (2W) : GSM900 Class1 (1W) : DCS1800	
	Data Property	GPRS Downlink data transmission: Maximum 85.6kbps GPRS Uplink data transmission: Maximum 42.8kbps	
	Reception sensitivity	<-108.5dBm	
	Certification Standards	CCC	
RS485	Transmission rate	Baud Rate ≤115200bps	
RS232	Transmission rate	Baud Rate ≤38400bps	
USB (DEVICE)	USB2.0	compatible USB2.0 Full-speed transmission	

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4. installation

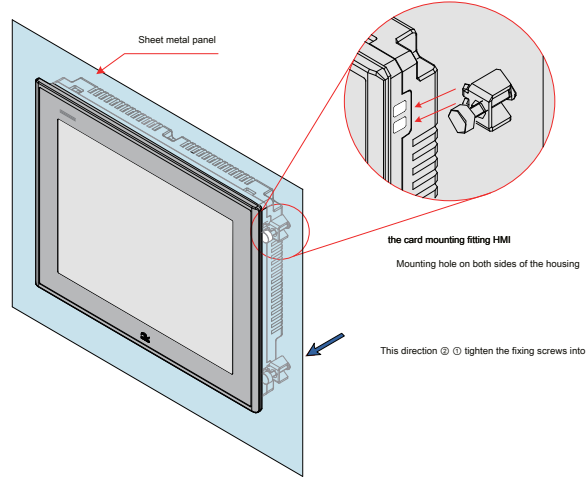
1) FIG dimensions



Map 3 Dimension (Unit mm)

2) Mounting

InoTouch Series Product Support NEMA-4 Installation standards.



Map 4 Installation diagram

- Put the mounting hole in the panel cut;
- From the back panel 4 Mounting accessories (supplied) are engaged with left and right sides of the housing into the product 4 A fixing hole (FIG ①);
- Individually mounted locking screw (above ②); Recommended torque values: 6.0 +/- 0.5kgfcm (To It is waterproof effect and to prevent deformation of the shell side).

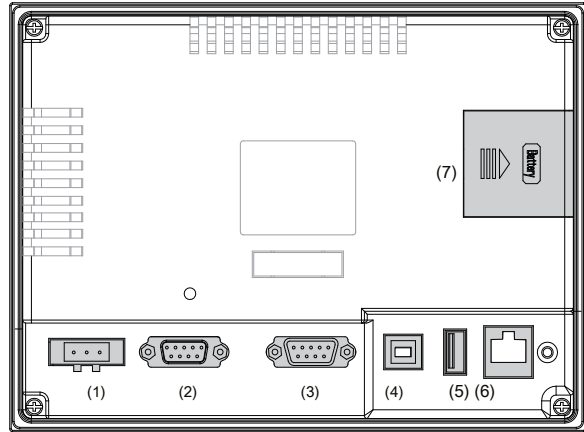


To ensure compliance NEMA4 Seal specification, all parts installed with the product (Inovance parts, encoding: 20140261) Must be used, do not use excessive force lock mounting screws, and the mounting panel can not flex more than 0.010 . "

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5. Electrical Design Reference

1) Terminal Description



Map 5 Distribution terminal external connection terminal

2) Interface function:

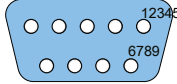
Port number	Terminal name	Terminal Function
(1)	Power Interface	HMI of 24Vdc Working power input port (supplied with a 1 interfaces connected to the power supply terminal.)
(2)	COM1 / COM3 Serial communication port (DB9 Female)	HMI versus PLC Communication port, built between there COM1 , COM3 Two serial communications ports, COM1 Mouth has RS485 / 422 Level interface; COM3 Just RS485 interface
(3)	COM2 Serial communication port (DB9 Male connector)	HMI versus PLC Communication port, built between there COM2 Serial communication port, RS232 interface
(4)	USB Client V2.0 (Type B)	USB Communication Device Ports for PC Download, debug the user program
(5)	USB Host V2.0 (Type A)	USB Communication Host Ports for U Disk read and write data, to connect a mouse, printouts and other equipment
(6)	Ethernet port (RJ45)	Ethernet communications port, built-in Modbus / TCP Protocol can be used to visit Have added LAN Mouth PLC It can also be used PC Access
(7)	SIM Card socket cover	For SIM Card replacement

6 Communication function

1) RS485 / 422 Communicate

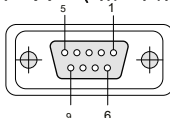

RS485 / 422 Communication port

Corresponding to the communication port DB9 Female , DB9 Female built COM1 , COM3 Two serial communications ports, can be used to connect PLC , Drive, printer, or other smart devices, etc. have RS485 / RS422 The communication controller port pin arrangement in the following table:

Pin Number	signal			DB9 Female pin arrangement of FIG.
	COM1 [RS485] 2 Wires	COM1 [RS485] 4 Wires	COM3 [RS485]	
1	RS485-	RX- (Receiving negative) -		 <p>COM1 [RS485 2 / 4W] COM3 [RS485]</p> <p>DB9 Female (Block pinhole signal)</p>
2	RS485 +	RX + (Receiving positive) -		
3	-	TX- (Sending negative) -		
4	-	TX + (Being sent) -		
5	GND (Signal ground)			
6	-	-	RS485-	
7	-	-	-	
8	-	-	-	
9	-	-	RS485 +	

(COM1 [RS485] 4wire That is COM1 [RS422])

RS485 / 422 Communication cable port

ITS-H2U-CAB * (Recommended buy the cable, cable length 3 M, order number: 15,041,140)				
				
Cable connector and pin	DB9 Male		(8 needle Din Round plug)	
Signal level	RS422		RS422	
Internal cable connection relationship	Pin Number	signal	Pin Number	signal
	1	RX-	4	TX-
	2	RX +	7	TX +
	3	TX-	1	RX-
	4	TX +	2	RX +
	5	GND	3	GND
Applicable models with cable end mouth	IT6xxx HMI COM1 [RS485] 4w		Kymmene H1U / H2U / H3U RS422 Mitsubishi communications port FX1N / 2N / 3U / 3G RS422 Communication Port	
When using this cable HMI User settings	HMI The user program, to select COM1 Port, configured to "RS485-4W" ; HMI versus PLC To select the same on both sides of the communication protocol, data format.			

The cable is easy with the RS232 Communication cables (H2U-232-CAB ,Numbering: 15,042,148) Confusion, to distinguish when in use.

Communication Notes

- Do not close the communication cable or a power cable AC source of electrical noise, do not plug the communication cable in the communication process;
- To ensure normal communication, communication cable length should not exceed 150 Meter;
- In a long communication cables or electrical noise is large, the cable must be shielded to make a communication cable;
- If the communication error HMI Status bar " PLC no response ... "The fault tips.

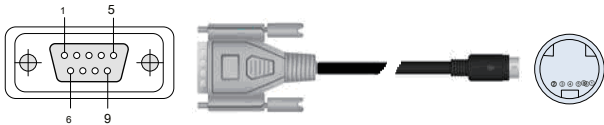
RS232 Communicate

RS232 Communication port

RS232 Corresponding to the communication port DB9 Male connector, built-in COM2 Communication port, RS232 Level signal, for the connection having RS232 The communication controller port pin arrangement in the following table:

Pin Number	signal	DB9 Male connector pin arrangement of FIG.
	COM2 [RS-232]	
1	-	
2	RXD (Receive data)	
3	TXD (send data)	
4	-	
5	GND (Signal ground)	
6	-	
7	-	
8	-	
9	-	

RS232 Communication cable port

H2U-232-CAB (Order Number: 15,042,148)				
				
Cable connector and pin	DB9 Female			-
Signal level	RS232 Built-in RS232-RS485 turn Switching circuit			RS485
Internal cable connection relationship	Pin Number	signal	Pin Number	signal
	1		4	TX-
	2	RXD	7	TX +
	3	TXD	1	RX-
	4		2	RX +
	5	GND	3	GND
Applicable models with cable end mouth	IT6xxxE HMI COM2 [RS232]		Kymene H1U / H2U / H3U RS422 Mitsubishi communications port FX1N / 2N / 3U / 3G RS422 Communication Port	
When using this cable HMI User settings	HMI The user program, to select COM2 Port, configured to "RS232"; HMI versus PLC To select the same on both sides of the communication protocol, data format.			

Communication Notes

- To ensure normal communication, communication cable length should not exceed 15 M, please refer to the other RS485 / 422 Communication considerations.

3) Ethernet communication

Communication port

Ethernet port 10M / 100M Ethernet ports, and functions as follows:

- It can be used HMI The configuration / download, set system parameters and online simulation configuration;
- May be connected by a plurality of Ethernet HMI Constitute more than HMI Online;
- Via Ethernet PLC And other communications;
- Via a standard Ethernet cable and HUB Or is connected to Ethernet switch connected to the LAN;
- By one pair of interconnection cable directly PC Ethernet port connection.

Communication Cable

To improve the reliability of communication devices, require the use of Ethernet cable 5 Shielded twisted pair, moid the steel strip.

IP address

default IP Address: 192.168.1.100 , The system can be modified by setting the original IP Address details, see HMI Backstage help.

Communication Notes

- Ethernet requires the use of shielded cable in order to protect the stability of communications.

4) GPRS Communicate

This product can be built SIM Card support GPRS Wireless communication.

WEB The wireless communication terminal configuration instructions

Step one: use the latest project configuration user InoTouch Editor Software (For details, see: 8. Programming Reference) -> New Construction -> System Configuration -> IOT parameter

System configuration page is shown below:



[Number Group]: this number to the server-side configuration of the same, may not be continuous.

Start address: the set of data in HMI of LW Start address register stored in the buffer, for example, in order to LW1000 Start, then enter 1000 .

[Length]: This set of data how many words together accounted for (16 Bit), will account number LW register.

Step Two: Data Collection

New macro, the data (function code) in each set of parameters read from the target device (e.g., air compressor) in (Get) Out into the (Set) Above configuration LW Register.

in HMI Engineering timing (e.g. 1 Seconds refresh cycle, real-time data must be consistent with the server settings) calls the macro data collection. Compile HMI Download the project HMI When in, pay attention to first download, the first download or restore the factory settings, must be checked fi mware Option, the device model is IT6070E-IOT .

Step three: WEB Setting end

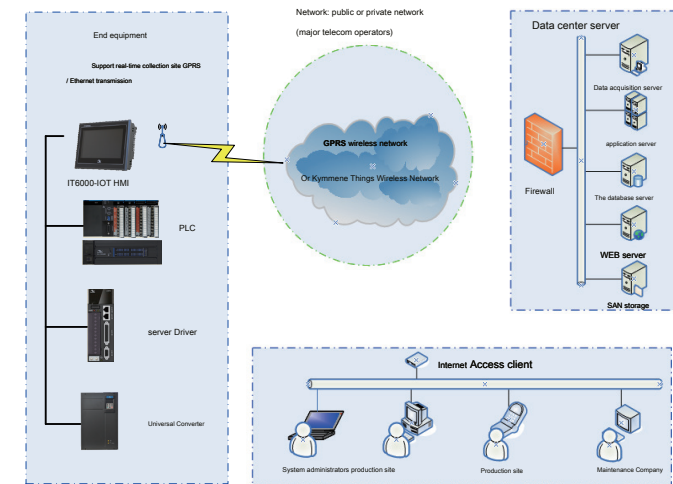
Before using the monitor, you need to apply for permission Kymmene, and then use the appropriate account number and password, log in to view the data specified web page. Label each device a unique registration information corresponding to the device attached to the rear housing.

Signal strength instructions:

Signal icon	A schematic signal
	No connection to the server device
	Devices and servers through GPRS Connection, green plaid representative signal strength at that time. 0 to 1 Grid: poor signal quality, use may appear broken, it is recommended to adjust the direction; 2-3 Specifications: Medium quality signal, it can be used normally, there may be a slight transmission delay; 4-5 Grid: strong signal quality, smooth communication.
	Equipment connected to the server via Ethernet
	Before the device is connected successfully with the server via Ethernet, Ethernet appear broken

7. typical application

Things type HMI Typical application as shown below:



Map 6 Typical Application Diagram

Things type HMI by RS485 , RS232 Or connect the Ethernet port and the site of operation of equipment, access to real-time data to GPRS Kymmene remote access mode or Ethernet network (VPN Private network), users get access to the server through HMI And operating under the status of the device.

8. Programming Reference

1) To InoTouch series HMI Program, you need to prepare:

hardware	Explanation
a computer	Installed Kymmene technology development InoTouch Editor Software, the software can: HMI supplier, http://www.inovance.cn , China Industrial Network download Kymmene acquired on the topic.
A programming cable	this HMI The conventional programming cables USB Programming cable, the cable companies to provide Kymmene (optional), order model is: ITS-USB-CAB , Order number: 15,041,123 .
IT6000-IOT series HMI	-

2) Computer Requirements (recommended)

Configuration	specification
CPU	Clocked 2G Above Intel or AMD product
RAM	1GB or above
hard disk	A minimum of 1GB More free disk space
monitor	Supported resolutions 1024 x 768 More color display
Ethernet Port or USB Download the program on the screen when using the mouth	
operating system	Windows XP / Windows 7

The products and other brands PLC Please refer to the wiring instructions " InoTouch Editor "Help.

3) HMI Programming Resource Description:

GPRS Programming Resources wireless capabilities in IT6000 a series of HMI Integration of resources on the basis of programming, including the following table IT6000-IOT Most programming resources with a series of things function, and further information please refer to the resource " InoTouch Editor "Help.

Name	Width	description
LB	0 ~ 11999 Bit	system registers
LW	0 ~ 10255 Byte	register system (partially defined registers, see " Inotouch Editor " Help)
RW	0 to 65535 System	with power-down save byte register
RW_A	0 to 65535 With a power-down save byte register system, and RW different	
LB	10808 Server connection status (ON: connection, OFF: disconnect)	
LW	9844	Signal strength and connection status. 0 --- no connection 1-6 Server connection is successful, the signal strength 0 ~ 57 Ethernet connection is normal, 8 Ethernet disconnected
LW	9846	When it is judged in the macro set to have an event alarm 1 Representing incidental to upload real-time data

9. Product touch calibration

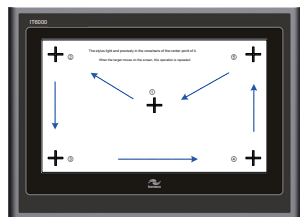
HMI The touch occurs at the touch dead or abnormal conditions using the calibration procedure to calibrate the touch during use HMI .

1) Enter the touch calibration procedure

- By entering the System Settings menu: HMI Power-up process, the finger lightly hold the screen, HMI Enter the password to enter the system setup interface box, the password input box will countdown 20 Seconds, the countdown 20 Within seconds, if not click the password box, will automatically enter the calibration procedure, or directly enter a password system settings, system settings pop-up menu, click the "Touch calibration" option.

2) Calibration of the touch specific operation:

- After entering the calibration mode, the screen will be a "+" (FIG. 7 Shown).
- The middle finger or the stylus touch "+" after a successful touch "+" move (light and accurately illustrated in the direction of the arrow "+" cursor about the center point, when the target moves on the screen when the operation is repeated.).
- Upon completion of the above five point touch calibration point, "+" cursor disappears, then tap the screen to exit the space; if the calibration fails cursor will return to the center of the screen, repeat the above 5 Point calibration can be.



Map 8 A schematic view of a calibration operation



Warranty Agreement

1 This product is the battery warranty 1 In order to subject the battery of the factory; shelf life of other components 18

Months, subject to the bar code machine. Warranty period in accordance with the instructions for use under normal use, the product fails or is damaged, the company responsible for free repair .

2 Warranty period, due to the following causes damage, the repair costs will be charged:

- Due to an error and self disassemble, repair, or alter the damage resulting from the use of the machine;
- Machine due to fire, flood, abnormal voltage, and other secondary disasters caused by natural disasters damage;
- After the purchase and transportation of hardware dropped due to human caused damage;
- I do not follow the user's manual provided by the Division to operate the machine caused damage;
- Impediment (e.g., factors external device) other than the result of machine failure and damage.

3 When the product fails or is damaged, please correct and detailed fill out the "Warranty Card"

The content.

4 , Maintenance costs of collection, all in accordance with our latest adjustment "Maintenance Price List" shall prevail.

5 This warranty card will not be reissued in general, invite you to keep the card, and when the warranty

Shows to maintenance personnel.

6 In the course of serving any questions, please contact with our dealer or contact me.

7 , Customers purchase the product, it agreed to explain this warranty agreement. This agreement shall be interpreted Kymmene technology.



Warranty Card

client information	Address:	
	company name:	Contact:
	Postal Code:	contact number:
product information	Product number:	
	Barcode body (paste here):	
	Agent name:	
malfunction information	(Maintenance time and content):	
	Repair man:	

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