

# IQ Hub User Manual



**Qolsys, Inc.**

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## Revision History

| No. | Version | Description             | Date       |
|-----|---------|-------------------------|------------|
| 1   | v1.0    | First release           | 2019/03/08 |
| 2   | V1.1    | 2 <sup>nd</sup> edition | 2019/12/05 |
|     |         |                         |            |
|     |         |                         |            |
|     |         |                         |            |
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|     |         |                         |            |
|     |         |                         |            |
|     |         |                         |            |

# 1 Foreword

## 1.1 Copyright Notice

While all information contained herein have been carefully checked to assure its accuracy in technical details and printing, Qolsys, Inc. assumes no responsibility resulting from any error or features of this manual, or from improper uses of this manual or the software. Please contact our technical department for relevant operation solutions if there is any problem that cannot be solved according to this manual.

Qolsys, Inc. reserves all rights of this manual, including the right to change the content, form, product features, and specifications contained herein at any time without prior notice.

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Qolsys, Inc. reserves the right of all publicly-released copies of this manual.

## 1.2 Notes

Applicable notes are listed in the following table:

| Sign                                                                                | Notice Type | Description                                              |
|-------------------------------------------------------------------------------------|-------------|----------------------------------------------------------|
|  | Notice      | Important information and regulations                    |
|  | Caution     | Caution for latent damage to system or harm to personnel |

## **1.3 Statement**

It is recommended to read and comply with this manual before operating IQ Hub which provides important guidance and helps decreasing the danger of injury, electric shock, fire, or any damage to the device.

## **1.4 Disclaimer**

Qolsys, Inc. assumes no legal liability of accidents resulting from failure of conforming to the safety instructions.

## **1.5 Limitation of Liability/Non-warranty**

For direct or indirect damage to this device or other devices of Qolsys, Inc. caused by failure of conforming to this manual or the safety instructions on device label, Qolsys, Inc. assumes neither warranty nor legal liability even if the device is still under warranty.

## **1.6 Safety Instructions**

Keep and comply with all operation instructions, warnings, and information. Pay attention to warnings on this device. Please read the following precautions so as to decrease the danger of injury, electric shock, fire, or any damage to the device.

## 1.7 Precautions

Pay attention to the product labels/safety instructions printed on silk screens. Do not try repairing this product unless declared in this manual. Keep away from heat source, such as heater, heat dissipater, or engine casing. Do not insert other items into the slot (if any) of this device. Keep the ventilation slot ventilated for cooling. System fault may arise if other items are inserted into this device. Installation: ensure correct installation according to instructions from the manufacturer with recommended installation tools.

Ensure ventilation and smoothness according to relevant ventilation standard.

## 1.8 Safety Instructions for Power Cables and Accessories



Proper power source only

Start only with power source that satisfies voltage label and the voltage necessary according to this manual. Please contact technical support personnel of Qolsys, Inc. for any uncertainty about the requirements of necessary power source.

### **Power adapter Spec.**

Model: SW-120100

INPUT: 100-240V~50/60Hz 0.68A Max

OUTPUT: DC12.0V, 1000mA

MADE IN CHINA BY SURE-POWER



CAUTION

RISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT TYPE

DISPOSE OF USED BATTERIES ACCORDING TO THE INSTRUCTIONS

MAKE SURE THE MACHINE IS POWER-OFF BEFORE TAKE OUT BATTERIES



Place cables properly:

Do not place cables at any place with extrusion danger.



Cleaning Instructions

Please power off before cleaning the device.

Do not use spray detergent.

Clean with a damp cloth.

Do not try cleaning exposed electronic components unless with a dust collector.

Support for special fault: Power off and contact technical support personnel of Vantron in case of the following faults:

- ✧ The device is damaged.
- ✧ The temperature is excessively high.



✧ Fault is still not solved after the operation according to the manual.

## 1.9 Warnings, Cautions and Notes

**Warning!** Warnings indicate conditions, which if not observed, can cause personal injury!



**Caution!** Cautions are included to help you avoid damaging hardware or losing data. e.g. There is a danger of a new battery exploding if it is incorrectly installed. Do not attempt to recharge, force open, or heat the battery. Replace the battery only with the same or equivalent type recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions.



**Note!** Notes provide optional additional information.

### 1.10 Product Usage Environment

The usage is attached on the wall

When attached on the wall.

First, Screw the wall bracket on the wall.



Wall bracket

Second. Slide the device onto the wall bracket



device attached on the wall

## 2 Overview

### 2.1 Introduction

Thank you for choosing Qolsys, Inc.. It is our commitment to provide our valued customers with the embedded devices equipped with the state-of-the-art technology and the best product services.

IQ Hub enables the interaction between operators/users and applications, connecting industrial control products such as wireless, transducer, battery inside, storage, etc. IQ Hub adopts a display for displaying and input units such as touch screen, keyboard, audio, kind of sensors etc. for writing working parameters or inputting operation commands. As a digital device for realizing information interaction between human and machine, IQ Hub is composed of hardware and software. Based on its ample function interfaces and powerful user operational interface, it is very suitable for control units such as medical device, intelligent transportation, industrial field, etc.

Qolsys, Inc. products are based on the most advanced ARM, Rockchip processors and have low-power consumption and high integration. The products are designed for applications such as industrials, medicals, and transportations etc.

## 2.2 Ordering Information

|              |                                                                                                                                                                                                                                                                       |
|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CPA-G1A-UNA4 | <ul style="list-style-type: none"><li>✧ 7' TFT LCD</li><li>✧ 1024*600</li><li>✧ RK-3368H, Octa-core 1.5GHz</li><li>✧ Speaker and MIC</li><li>✧ 3.7V/2600mAh battery</li><li>✧ WIFI/BT</li><li>✧ Z-wave</li><li>✧ LTE-1</li><li>✧ PowerG</li><li>✧ 5M Camera</li></ul> |
|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## 3 IQ Hub Hardware Instructions

### 3.1 Product Appearance



Front View



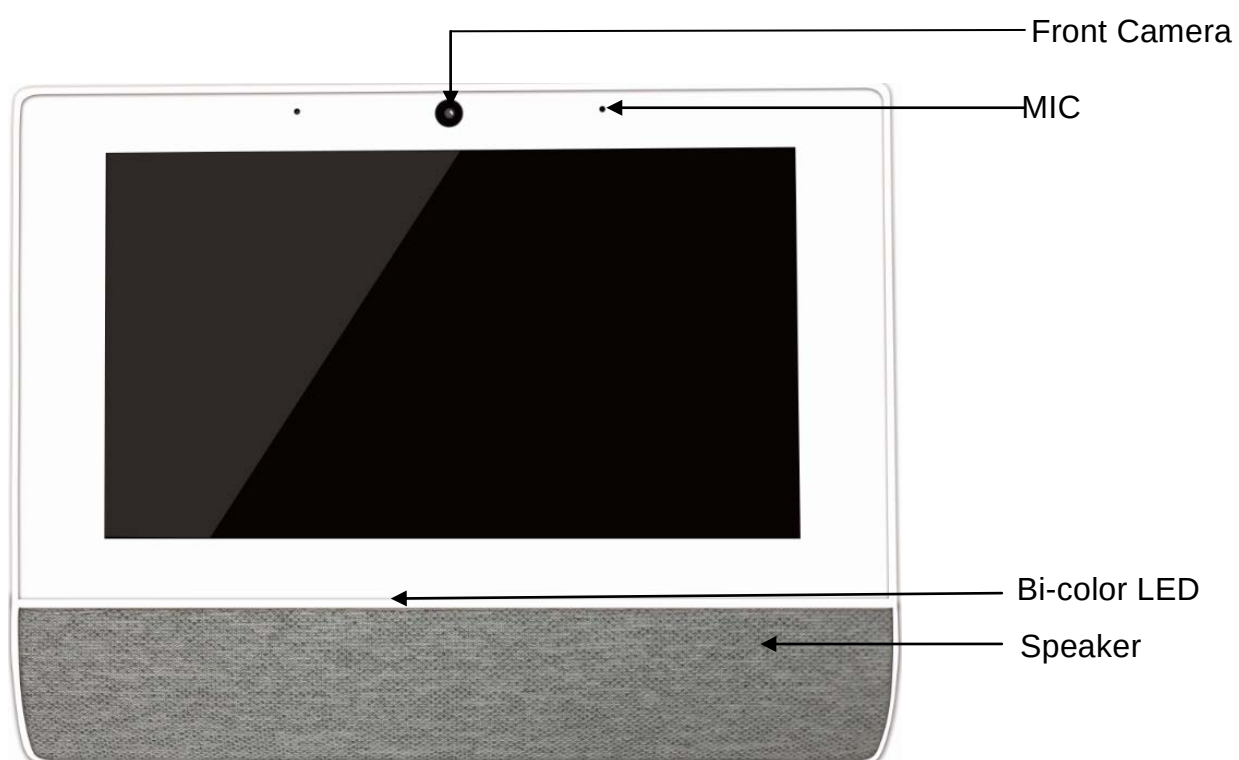
Back View

### 3.2 Specifications

|                         |                                                          |                                                                                                                              |
|-------------------------|----------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|
| <b>CPU</b>              | Processor                                                | RK-3368H , ARM Octa-core Cortex-A53,<br>Quad Core CPU,1.5GHz                                                                 |
| <b>Memory</b>           | RAM                                                      | 2GB LPDDR3                                                                                                                   |
|                         | Flash                                                    | 16GB EMMC Flash                                                                                                              |
| <b>Display</b>          | LCD                                                      | 7" TFT LCD                                                                                                                   |
|                         | Resolution                                               | 1024*600 24bit Color                                                                                                         |
|                         | Display Colors                                           | 16.7M                                                                                                                        |
|                         | Brightness                                               | 300cd/m <sup>2</sup>                                                                                                         |
|                         | View Angle                                               | 85U/85D, 85L/85R                                                                                                             |
|                         | Touch Screen                                             | Cap-touch, multi-point                                                                                                       |
| <b>Supported format</b> | Audio                                                    | MP3, 3GPP, WAV                                                                                                               |
|                         | Video                                                    | MP4, 3GPP                                                                                                                    |
|                         | Picture                                                  | BMP, GIF, JPEG, PNG                                                                                                          |
| <b>Interface</b>        | Wireless                                                 | ✧ 1xwifi 802.11a/b/g/n/ac,<br>1xBluetooth4.2<br>✧ 1x Z-wave<br>✧ 1x LTE<br>✧ 1x PowerG<br>(above all with inner FPC antenna) |
|                         | Internal Audio                                           | Internal Speaker, Buzzer                                                                                                     |
|                         |                                                          | Internal MIC                                                                                                                 |
|                         | RTC                                                      | Supported                                                                                                                    |
|                         | 10-85%RH<br>(Non-Condensation),<br>operating and storage | Supported                                                                                                                    |
|                         | 2G, 9-26Hz (10 times<br>in X,Y,Z directions)             | 1x5M Front Camera(Fixed Focus)                                                                                               |
|                         | LED                                                      | Bi-color LED (Green and Red)                                                                                                 |
| <b>Software</b>         | OS                                                       | Android 7.1+                                                                                                                 |
| <b>Power</b>            | Battery                                                  | 3.7V, 2600mAh                                                                                                                |

|                              |                 |                                                   |
|------------------------------|-----------------|---------------------------------------------------|
|                              | DC Power Supply | 12V,1.0A                                          |
| <b>Mechanical</b>            | Dimensions      | 196.4x155x25.6mm                                  |
|                              | Weight          | 0.65 Kg                                           |
| <b>Environment Condition</b> | Temperature     | Operating Temperature: 0°C ~ +40°C                |
|                              |                 | Storage:-30°C ~ +70°C                             |
|                              | Humidity        | 10-85%RH(Non-Condensation), operating and storage |

### 3.3 Interface Instructions



Front View



### 3.4 Dimension

Whole device Size: 196.4x155x25.6mm

### 3.5 Power/Sleep/Wake Button

#### Power/Sleep/Wake Button

When you are not using the panel, you can turn off the display by press button

#### Lock IQ Hub

Press the Power/Sleep/Wake button

#### Unlock IQ Hub

Press the Power/Sleep/Wake button to wake from sleep, then drag the slider.

#### Turn IQ Hub on from power-off

Press and hold the Power/Sleep/Wake button until logo appears.



**Never apply excessive pressure to a button, because this may cause unexpected damage that is not covered under the warranty**



**IQ Hub cannot be turned off by pressing the button**



## 3.6 Interface Description

### 3.6.1 MIC

Internal MIC with outstanding sensitivity and high SNR makes it very suitable for recording while suppressing the environment noise.

### 3.6.2 WIFI and BT

The IQ Hub supports 802.11 a/b/g/n/ac WiFi and BT 4.2. With a good performance internal antenna, both WIFI and BT can achieve better connectivity.

### 3.6.3 Z-wave

The IQ Hub has the function of Z-wave (Frequency: 908.4MHz-916MHz) connectivity so we can use it in a lot of aspects such as access control, appliance control, AV control, building automation, energy management, lighting, security, and sensor networks for the “Internet of Things”.

### 3.6.4 LTE (FCC ID: XMR201807EG91NA IC:10224A-2018EG91NA)

The IQ Hub supports LTE Cat 1 function, delivering M2M-optimized speeds of 10Mbps downlink and 5Mbps uplink. And it features ultra-low power consumption which can extend the battery lifecycle without DC adapter plugging in.

### 3.6.5 PowerG (FCC ID: WP3PGMODEMLP IC:1467C-PGMODEMLP)

RF Card, 912.75 - 919.106MHz, 56mm x 24.6mm

### 3.6.6 Speaker

IQ Hub has an internal 1 watt speaker

### 3.6.7 Buzzer

There is a high SPL buzzer in IQ Hub. It features high sound when turned on

### 3.6.8 Gas Gauge

A gas gauge is used to monitor the capacity of the li-polymer battery so we can figure out the status of it precisely and immediately

### 3.6.9 Front Camera

IQ Hub has the ability to take beautiful photo and record the high resolution video.

### 3.6.10 RTC

IQ Hub has internal RTC so the system time can keep a long time if we didn't turn it on.

### 3.7 Packing List

| No | Part Description | Quantity | Remark                                                                                       |
|----|------------------|----------|----------------------------------------------------------------------------------------------|
| 1  | CPA-G1A-UNA4     | 1 PCS    | <ul style="list-style-type: none"><li>• Power adapter</li><li>• Wall mount bracket</li></ul> |

## 4 Software Instructions

### 4.1 Brief Introduction

IQ Hub has been pre-loaded with Android image, so that the system can run Androidtool to flash the system image

## 5 Safety Instruction

This section provides warnings that precede potentially dangerous procedures throughout this manual. Instructions contained in the warnings must be followed during all phases of operation, service, and repair of this equipment. You should also employ all other safety precautions necessary for the operation of the equipment in your operating environment. If you are not sure about the precautions applicable to your operating environment, please contact your company's safety administrator. For basic information you may also refer to the safety precautions per IEC704-1 listed below although Qolsys, Inc. disclaims all responsibility for the accuracy of any statements contained therein and its applicability for your specific environment. Failure to comply with these precautions or with specific warnings elsewhere in this manual could result in personal injury or damage to the equipment.

Qolsys, Inc. intends to provide all necessary information to install and handle the IQ Hub in this manual. Because of the complexity of this product and its various uses, we do not guarantee that the given information is complete. If you need additional information, contact your Qolsys, Inc. representative.

The product has been designed to meet the standard industrial safety requirements. It must not be used except in its specific area as specified in product specification.

Only personnel trained by Qolsys, Inc. or persons qualified in electronics or electrical engineering is authorized to install service or maintain the product. The information given in this manual is meant to complete the knowledge of a specialist and must not be used as replacement for qualified personnel. Operating personnel must not remove equipment covers. Only factory authorized service personnel or other qualified service personnel may remove equipment covers for internal subassembly or component replacement or any internal adjustment.

Do not install substitute parts or perform any unauthorized modification of the equipment or the warranty may be voided. Contact your local Qolsys, Inc. representative for service and repair to make sure that all safety features are maintained.

### **Safety Precautions per IEC704-1**

1. Read these safety instructions carefully.
2. Keep this User Manual for later reference.
3. Disconnect this equipment from any AC outlet before cleaning. Use a damp cloth. Do not use liquid or spray detergents for cleaning.
4. For plug-in equipment, the power outlet socket must be located near the equipment and must be easily accessible.

5. Keep this equipment away from humidity.
6. Put this equipment on a reliable surface during installation. Dropping it or letting it fall may cause damage.
7. The openings on the enclosure are for air convection. Protect the equipment from overheating. **DO NOT COVER THE OPENINGS.**
8. Make sure the voltage of the power source is correct before connecting the equipment to the power outlet.
9. Position the power cord so that people cannot step on it. Do not place anything over the power cord.
10. All cautions and warnings on the equipment should be noted.
11. If the equipment is not used for a long time, disconnect it from the power source to avoid damage by transient overvoltage.
12. Never pour any liquid into an opening. This may cause fire or electrical shock.
13. Never open the equipment. For safety reasons, the equipment should be opened only by qualified service personnel.
14. If one of the following situations arises, get the equipment checked by service personnel:
  - ☐ \*The power cord or plug is damaged.
  - ☐ \*Liquid has penetrated into the equipment.
  - ☐ \*The equipment has been exposed to moisture.
  - ☐ \*The equipment does not work well, or you cannot get it to work according to the user's manual.
  - ☐ \*The equipment has been dropped and damaged.
  - ☐ \*The equipment has obvious signs of breakage.
15. **DO NOT LEAVE THIS EQUIPMENT IN AN ENVIRONMENT WHERE THE STORAGE TEMPERATURE MAY GO BELOW -20° C (-4° F) OR ABOVE 60° C (140° F). THIS COULD DAMAGE THE EQUIPMENT. THE EQUIPMENT SHOULD BE IN A CONTROLLED ENVIRONMENT.**
16. **CAUTION: DANGER OF EXPLOSION IF BATTERY IS INCORRECTLY REPLACED. REPLACE ONLY WITH THE SAME OR EQUIVALENT TYPE RECOMMENDED BY THE MANUFACTURER, DISCARD USED BATTERIES ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS.**  
The sound pressure level at the operator's position according to IEC 704-1:1982 is no more than 70 dB (A).

DISCLAIMER: This set of instructions is given according to IEC 704-1. Advantech disclaims all responsibility for the accuracy of any statements contained herein.

### **Safety Precautions - Static Electricity**

Follow instructions below to protect yourself from harm and the products from damage:

1. Being sure you are at an ESD workstation, or grounded with an ESD strap before opening the top cover or installing/removing any unit accessible from the out- side. Doing so will discharge any static electricity that might have built up in your body.
2. Don't touch any components inside the system while the system is on.

3. Disconnect power before making any configuration changes. The sudden rush of power as you connect a jumper or install a card may damage sensitive electronic components.
4. When unpacking a static-sensitive component from its shipping carton, do not remove the component's antistatic packing material until you are ready to install the component in the unit.
5. When transporting any electrical component, first place it in an antistatic container or packaging.



#### Waste Disposal

It is recommended to disassemble the device before abandoning it in conformity with local regulations. Please ensure that the abandoned batteries are disposed according to local regulations on waste disposal. Do not throw batteries into fire (explosive) or put in common waste canister. Products or product packages with the sign of “explosive” should not be disposed like household waste but delivered to specialized electrical & electronic waste recycling/disposal center. Proper disposal of this sort of waste helps avoiding harm and adverse effect upon surroundings and people’s health. Please contact local organizations or recycling/disposal center for more recycling/disposal methods of related products.

Comply with the following safety tips:



Do not use in combustible and explosive environment

Keep away from combustible and explosive environment for fear of danger.



Keep away from all energized circuits.

Operators should not remove enclosure from the device. Only the group or person with factory certification is permitted to open the enclosure to adjust and replace the structure and components of the device. Do not change components unless the power cord is removed. In some cases, the device may still have residual voltage even if the power cord is removed. Therefore, it is a must to remove and fully discharge the device before contact so as to avoid injury.



Unauthorized changes to this product or its components are prohibited.

In the aim of avoiding accidents as far as possible, it is not allowed to replace the system or change components unless with permission and certification. Please contact the technical department of Qolsys, Inc. or local branches for help.



Pay attention to caution signs.

Caution signs in this manual remind of possible danger. Please comply with relevant safety tips below each sign. Meanwhile, you should strictly conform to all safety tips for operation environment.



#### Notice

Considering that reasonable efforts have been made to assure accuracy of this manual, Qolsys, Inc.

assumes no responsibility of possible missing contents and information, errors in contents, citations, examples, and source programs.

Qolsys, Inc. reserves the right to make necessary changes to this manual without prior notice. No part of this manual may be reprinted or publicly released in forms of photocopy, tape, broadcast, e-document, etc.



#### FCC Warning

Note: 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.

#### FCC Caution

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.

The user manual or instruction manual for an intentional or unintentional radiator shall caution the user that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. In cases where the manual is provided only in a form other than paper, such as on a computer disk or over the Internet, the information required by this section may be included in the manual in that alternative form, provided the user can reasonably be expected to have the capability to access information in that form.

#### RF Exposure Statement

This equipment must be installed and operated in accordance with provide instructions and the antenna used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operation in conjunction with any other antenna or transmitter. End-users and installers must be provided with antenna installation instructions and transmitter operating conditions for satisfying RF exposure compliance.



#### ISED statement

This device complies with Innovation, Science and Economic Development Canada license-exempt RSS standard(s). Operation is subject to the following two conditions:

(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.

Le présent appareil est conforme aux CNR d' Innovation, science et développement économique au 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.



#### RF Exposure Statement

This equipment must be installed and operated in accordance with provide instructions and the antenna used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operation in conjunction with any other antenna or transmitter. End-users and installers must be provided with antenna installation instructions and transmitter operating conditions for satisfying RF exposure compliance.

ce matériel doit être installé et exploité conformément à des instructions et l'antenne utilisée pour cet émetteur doit être installé pour fournir une distance d'au moins 20 cm de toutes les personnes et ne doit pas être installé ou opération conjointement avec toute autre antenne ou transmitter.les utilisateurs finals et les installateurs doivent fournir des instructions d'installation et d'antennes - conditions relatives à l'exposition aux champs rf de conformité.





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