# KT20 KT40

## 2IN1 Video Processor

## User Manual

Applicable to KT20 KT40

Document version:： V2.0

Hardware Version：KT20（V1.0.1） KT40（V1.01）

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**Safety Instruction**



This symbol reminds the user that there are important operation and maintenance instructions in the user manual of the equipment.



This symbol warns the user that there is dangerous voltage exposed in the casing of the equipment, and there is danger of electric shock.

**Precautions**

Reading Instructions Users must read and understand all safety and use instructions before using the equipment.

Save Instructions Users should save safety instructions for future use.

Obedience warning Users should observe all safety and operating instructions in the product and user's guide.

Avoid appending Do not use tools or appending equipment not recommended by the manufacturer of this product to avoid danger.

**Warning**

**Power supply**

This equipment can only use the power supply indicated on the product. The equipment must be powered by a power supply system with a ground wire. The third line (ground wire) is a safety facility, which cannot be used or skipped.

**Unplug the power supply**

In order to safely unplug the power supply from the equipment, please unplug the power cord of all equipment rear or desktop power supply, or any power cord connected to the mains system.

**The power cord shall be properly wired to avoid being trampled or squeezed by heavy objects.**

**Maintenance**

All repairs must be carried out by certified maintenance personnel. There are no parts in the equipment that can be replaced by users. To avoid the danger of electric shock, don't try to open the cover of the equipment to repair the equipment yourself.

**Vent holes**

Some equipment housings have vent slots or holes, which are used to prevent the sensitive components in the machine from overheating. Don't block the vent with anything.

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# 1 Update Records

| Document version | Hardware version | Release time | Update record |
|---|---|---|---|
| V2.0 | KT40（V1.0.1）<br>KT20（V1.0.1） | August 14(nd), 2025 | First release of document |

# 2 Applicable Model

| The product models applicable to this article are as follows: |
|---|
| KT20 KT40 |

In this paper, KT40 Sending Controller is used to explain:

# 3 Product Characteristics

## 3.1 Improve the display effect

- Multiple input interfaces
  - 2 × HDMI1.3 video signal input
  - 1 x USB 2.0 input
- EDID

  Support custom EDID management
- Output interface
  - 4 gigabit network ports, support up, down, left and right arbitrary splicing
- Audio interface: Support audio input and output

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### 3.2 Diversified Display Function

- Support U disk playback, plug and play
- Support network port loop backup, dual master backup
- Support for configuration parameter readback
- Support Gigabit network error bit rate detection
- Support image scaling

## 4 Product Appearance

Front Panel




*Product images are for reference only. The actual product shall prevail upon purchase.

### 4.1 Data Interface Illustration

| # | Name | Illustration |
|---|---|---|
| 1 | Switch, | Power Switch |
| 4 | INC | INC KEY |
| 3 | USB | USB KEY |
| 2 | HDMI1、HDMI2 | HDMI1、HDMI2 KEY |
| 5 | Control | USB（B Type）for debugging |
| # | Indicator | Illustration |
| 6 | PWR | Power indicator (red) |
| | USB | USB for debugging (green) |

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| | | |
|---|---|---|
| 7 | USB | U disk playback (red) |
| | INC | Inspection indicator light (green) |
| 8 | HDMI 1 | HDMI 1 playback (Red) |
| | HDMI 2 | HDMI 2 playback (green) |

Key Illustration：

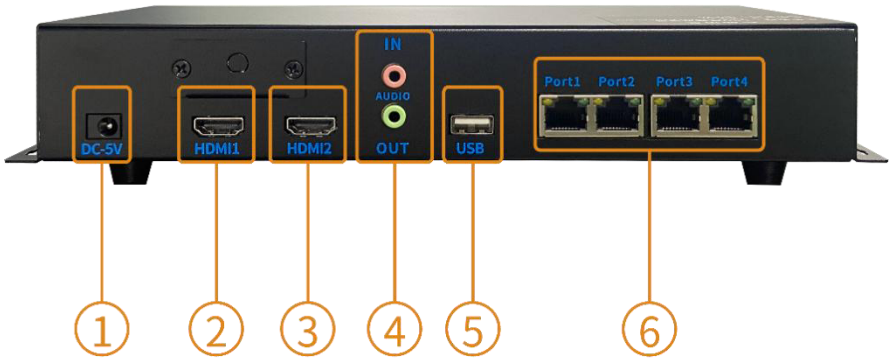
| HDMI | | |
|---|---|---|
| Key | Status | Illustration |
| HDMI | Everlasting | HDMI is not selected. |
| | Always on | HDMI selected, but no input |
| | Flash mob | HDMI is selected, with input and frame synchronization. |
| | Slow flash | HDMI selected, with input and no frame synchronization |
| Short press KEY1 to switch to HDMI1. Short press KEY2 to switch to HDMI2 | | |
| Medium and long press the frame to switch synchronously (the light starts to flash and let go) | | |
| USB | | |
| Key | Status | Illustration |
| USB | Everlasting | USB is not selected. |
| | Always on | USB is selected, but there is no input |
| | Flash mob | Output video mode |
| | Slow flash | Output image mode |
| Press to switch to USB playback | | |
| Medium and long press the input mode to switch (the light starts to flash and let go) | | |
| Long press (let go when the light is always on) | | |
| USB update to V53:<br>V53 indicator stops flashing: update started<br>V53 indicator flashes again: update completed | | |

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| INC (Do not connect USB cables during inspection) | | |
|---|---|---|
| Key | Status | Illustration |
| INC | Light Status | Keys locked or not |
| | Off | No inspection performed |
| | Slow Flash | Quick inspection |
| | On | Inspection with save |
| Short press: Quickly enable or disable inspection | | |
| Medium long press (release when indicator flashes rapidly): Perform inspection without saving | | |
| Long press (release when indicator stays steadily lit): Perform inspection and save (takes longer time) | | |
| Key Lock | | |
| Key | Status | Illustration |
| Key Lock and Inspection Indicator Light | Light ON | Keys Locked |
| | Light OFF | Keys Unlocked |
| Unlock keypad: Long press the INC button for 4-5 seconds until the INC indicator light stops breathing flash and turns off. | | |
| The keypad automatically locks after 2 minutes of device inactivity, indicated by the INC indicator breathing flash (keypad locked). | | |
| The keypad automatically locks upon device power-on. | | |
| Note:<br>To prevent accidental triggering, the device defaults to key lock upon power-on.<br>Keys are unresponsive when locked; key functions take effect only after unlocking. | | |

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Rear Panel




* Product photos are for reference only, please refer to the products actually purchased.

| Illustration | | | |
|---|---|---|---|
| # | Interface | QTY | Illustration |
| 1 | DC-5V | 1 | External adapter power supply |
| 2/3 | HDMI1/2 | 1 | 2 × HDMI1.3 standard video source input, supports up to 1920 × 1080@60Hz resolution |
| 4 | AUDIO IN | 1 | 3.5Mm audio interface input |
| | AUDIO OUT | 1 | 3.5Mm audio interface |
| 4 | USB | 1 | U disk input;<br>1 × USB 2.0 interface, connect U disk, support 1080p@30fps Video file.<br>The U disk file system supports NTFS, FAT32 and FAT16, but not ExFAT (FAT64).<br>Image file formats: jpg, jpeg, png, and bmp.<br>Video encoding: MPEG1/2, MPEG4, Sorenson H.263, H.263, H.264 (AVC1), H.265 (HEVC), RV30/40, Divx, Xvid.<br>Video bit rate: 4000 or less<br>Audio Coding: MPEG1/2 Layer I, MPEG1/2 Layer II, MPEG1/2 Layer III, AAC-LC, VORBIS, PCM and FLAC. |
| 6 | Network Port | 2 | 2 Gigabit network port output, connect the receiving card |

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# 5 System Setting

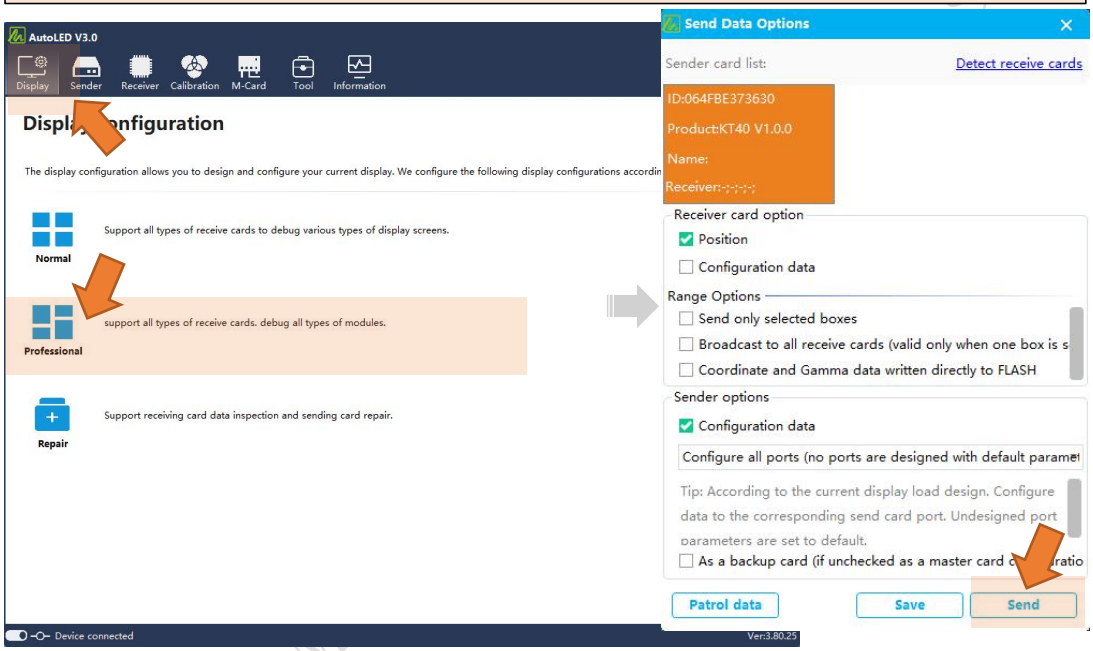
## 5.1 Inspection

Before performing screen inspection, it is necessary to use the upper computer software to set and save the inspection data.

Operation method of setting and saving inspection data by upper computer software;

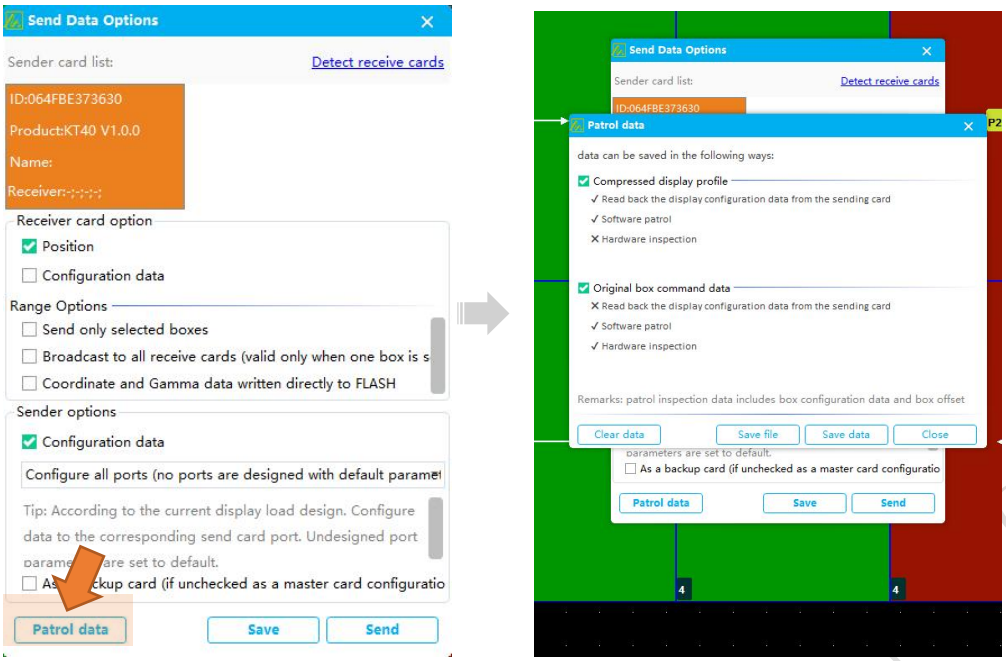
Step 1: Send the display screen connection file in the screen configuration interface of the upper computer software.

Send a screen mapping file




Step 2: Click Patrol Data to save the data.

save the data




The Inspection documents can be backed up and saved to the sending card for the screen patrol function, and the parameter content of the patrol document backup is the patrol content of the "All" patrol type shown in the table below.

✧ Select the inspection type, all, sending card and receiving card;

| **Type** | **Application Scenario** | **Inspection Content** |
|---|---|---|
| All | When replacing the receiving card: the parameters shown on the right will be sent to the sending card and the receiving card again to restore the backup inspection data. | Location parameters of sending card: image interception parameters, network port offset parameters, (excluding scaling parameters) Receiving card: location parameters, configuration data parameters (excluding gamma value) |
| Sending card | Enabled only when the sending card parameters are abnormal: the sending card parameters shown on the right will be re-distributed to the sending card to restore the backup inspection data. | Location parameters: image capture parameters, portal offset parameters, (excluding scaling parameters) |

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| | | |
|---|---|---|
| Receiving card | Enabled only when the location parameters of the receiving card are abnormal: the parameters of the sending card shown on the right will be re-distributed to the sending card to restore the backup inspection data.<br>After the unlimited inspection is started: the automatic updating parameters can be directly changed on the screen with faults, without manual distribution. | One inspection: location parameters of sending card and receiving card.<br>Unlimited inspection: repair the location parameters of the sending card and the receiving card for the first time, and then only repair the location parameters of the receiving card. |

- ✧ Number of inspections: You can select "Once" or "Unlimited" when selecting the inspection of receiving card, and only "Once" is available for other types.
- ✧ Note: USB must be unplugged after the receiving card is turned on. After unplugging USB, the menu cannot be operated. To temporarily turn off the wireless patrol, you can press and hold the button for 10 seconds or plug in USB again to temporarily turn it off. To permanently turn it off, you need to click Turn off the patrol on the menu.
- ✧ Start inspection, and perform patrol according to the selected patrol type and patrol inspection times.
- ✧ Patrol solidification, patrol back to the gamma parameter, and write and save the parameter sent by patrol to the corresponding memory, so that the parameter can be directly loaded when the equipment restarts.
- ✧ Tips

  Inspection must be started before performing inspection solidification.

  The solidified inspection parameters correspond to the inspection type selected during the inspection.

  During solidification, the sending card parameters are saved in the sending card's flash, and the receiving card parameters are saved in the receiving card's flash.
- ✧ Turn off inspection: When the receiving card enables infinite inspection, click to exit the inspection operation.

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## 5.2 Frame Synchronization

In scenarios such as multi-screen tiled displays, complex animation playback, or situations requiring multiple LED display devices to show the same content simultaneously, the frame synchronization function ensures that the images presented by each display unit are completely consistent, avoiding issues like screen tearing, delays, or desynchronization. The frame synchronization feature can be enabled or disabled.

## 5.3 USB Drive Playback and Processor Upgrade

When using a USB drive to play audio or video, first insert the USB drive into the video processor's USB interface, then press the "USB" signal switch key on the front panel to enter the USB signal mode. If the USB drive is inserted but the "USB" signal switch key on the front panel is not pressed, it will not be possible to access and play the content stored on the USB drive.

When upgrading the processor, place the program to be upgraded in the root directory of the USB drive, insert it into the USB port, and press and hold the USB key for 10 seconds. When the USB indicator light remains steadily lit, it indicates that the device is being upgraded. After the USB light returns to a flashing state, it means the device upgrade is complete.

Note: The USB drive file system supports NTFS, FAT32, and FAT16, but does not support exFAT (FAT64).

## 5.4 Key LOCK

The key lock function is enabled to prevent misoperation by locking the front panel keys. By default, it is set to "On" and will automatically lock after 3 minutes of inactivity.

Unlock method: Press and hold the INC key for less than 10 seconds until the INC indicator changes from a breathing light state to off, indicating that the device key lock has been disabled.

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