

JT20 Multimedia Player



Specifications

Change History

| Document Version | Release Date | Description |
|------------------|--------------|--|
| V1.0.2 | 2023-06-14 | <ul style="list-style-type: none"> Updated the packing information. Added the gross weight of the product. |
| V1.0.0 | 2021-07-05 | First release |

Introduction

The JT20, launched by NovaStar, is a multimedia player that integrates sending and receiving capabilities. This multimedia player is designed for the traffic field. It can easily enable cross-region clustered management of screens by working with PC or various third-party client platforms.

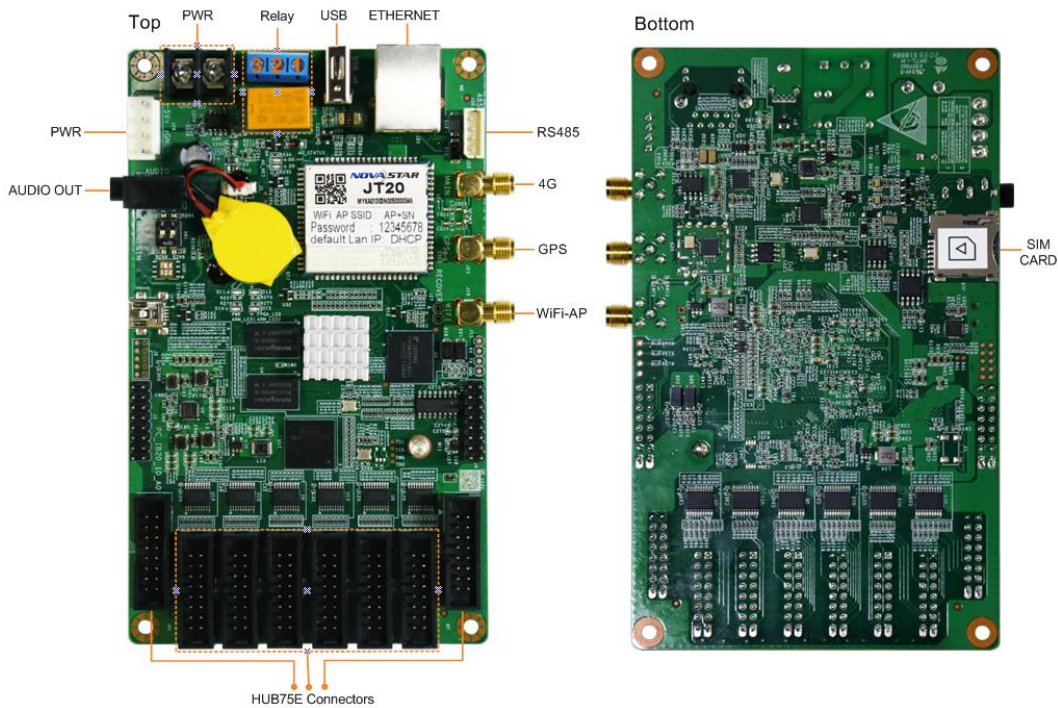
The JT20 comes with eight standard HUB75E connectors for communication and supports up to 16 groups of parallel RGB data. On-site setup, operation and maintenance are all taken into account when the hardware and software of the JT20 were designed, allowing for an easier setup, more stable operation and more efficient maintenance.

Thanks to its stable and secure integrated design, the JT20 saves space, simplifies cabling, and is ideal for the applications requiring small loading capacity, such as digital signage in cities and expressways, intelligent parking systems, and queue management systems.

Features

- Loading capacity of a single card up to 512×384 pixels
 - Maximum pixel width: 1280 (1280×128)
 - Maximum pixel height: 512 (384×512)
- 1x Stereo audio output
- 1x USB 2.0 port
Allows for USB playback.
- 1x RS485 connector
Connects to a sensor such as light sensor, or connects to a module to implement corresponding functions.
- Powerful processing capability
 - 4 core 1.2 GHz processor
 - Hardware decoding of 1080p videos
 - 1 GB of RAM
 - 8 GB of internal storage (4 GB available)
- Various control schemes
 - Solution publishing and screen control via PC or various third-party client platforms.
 - Clustered remote solution publishing and screen control
 - Clustered remote screen status monitoring
- Built-in Wi-Fi AP
User terminal devices can connect to the built-in Wi-Fi AP of the JT20. The default SSID is "AP+*Last 8 digits of SN*" and the default password is "12345678".
- Ships with a 4G module
Currently, the 4G network can be accessed in China only.
- Support for GPS
- Support for relays (maximum DC 30 V 3 A)

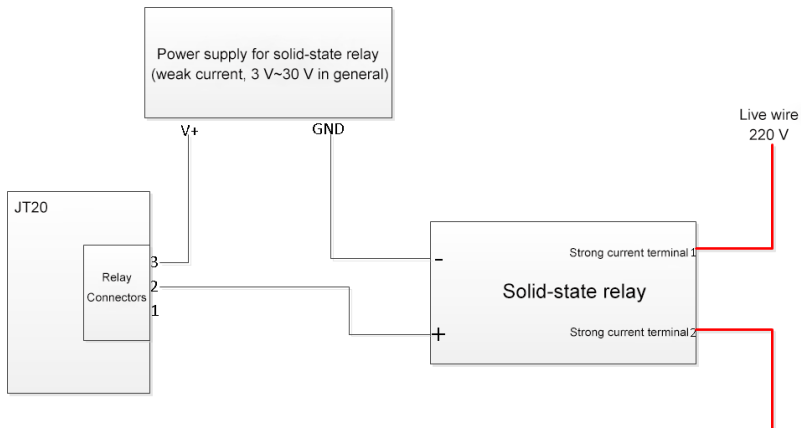
Appearance



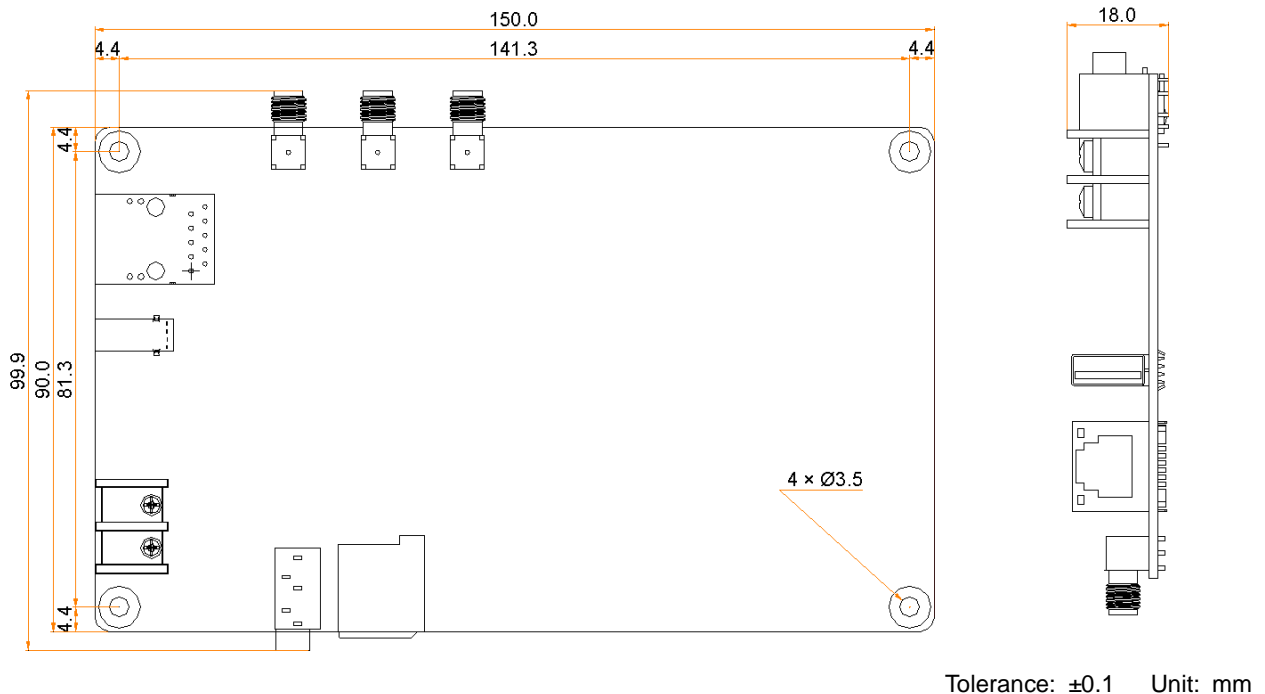
All product pictures shown in this document are for illustration purpose only. Actual product may vary.

Table 1-1 Connectors and buttons

| Name | Description |
|-------------------|--|
| ETHERNET | Connects to a network or the control PC. |
| USB | 1x USB 2.0 port Support for USB playback Only the FAT32 file system is supported and the maximum size of a single file is 4 GB. |
| PWR | Power input connector |
| AUDIO OUT | Audio output connector |
| HUB75E connectors | Connects to a screen. |
| SIM CARD | SIM card slot |
| WiFi-AP | Wi-Fi antenna connector |
| GPS | GPS antenna connector |
| 4G | 4G antenna connector |
| RS485 | Connects to a sensor such as light sensor, or connects to a module to implement corresponding functions. |
| Relay | 3-pin relay control switch DC: Maximum voltage and current: 30 V, 3 A AC: Maximum voltage and current: 250 V, 3 A Two connection methods: |

| Name | Description |
|------|--|
| | <p>Common switch: The connection method of pins 2 and 3 is not fixed. Pin 1 is not connected to the wire. On the power control page of ViPlex Express, turn on the circuit to connect pin 2 to pin 3, and turn off the circuit to disconnect pin 2 from pin 3.</p> <p>Single pole double throw switch: The connection method is fixed. Connect pin 2 to the pole. Connect pin 1 to the turn-off wire and pin 3 to turn-on wire. On the power control page of ViPlex Express, turn on the circuit to connect pin 2 to pin 3 and disconnect pin 1 from pin 2, or turn off the circuit to disconnect pin 3 from pin 2 and connect pin 2 to pin 1.</p> <p>Note: The JT20 uses DC power supply. Using the relay to directly control AC is not recommended. If it is required to control AC, the following connection method is recommended.</p>  |

Dimensions



Note:

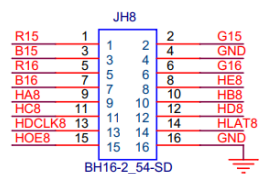
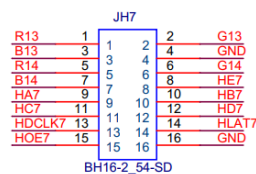
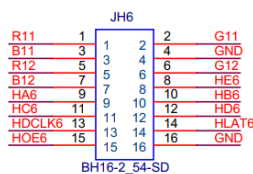
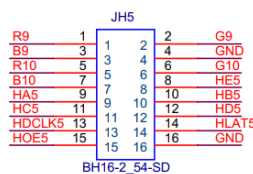
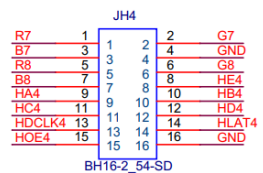
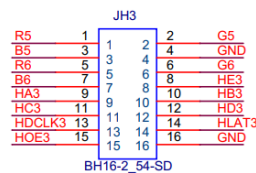
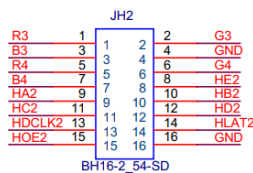
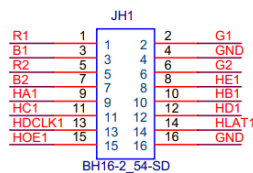
The product dimension drawings cannot be used as references to make molds or trepan mounting holes. Please ask the business personnel of NovaStar for the structural drawings if needed.

Specifications

| | | |
|---------------------------------|--|---|
| Maximum Loading Capacity | 512x384 pixels | |
| Electrical Parameters | Input voltage | DC 4.5 V~5.5 V |
| | Maximum power consumption | 10 W |
| Storage Space | RAM | 1 GB |
| | Internal storage | 8 GB (4 GB available) |
| Storage Environment | Temperature | -40°C to +80°C |
| | Humidity | 0% RH to 80% RH, non-condensing |
| Operating Environment | Temperature | -20°C to +60°C |
| | Humidity | 0% RH to 80% RH, non-condensing |
| Packing Information | Dimensions (LxWxH) | 278 mm x 218 mm x 63 mm |
| | List | <ul style="list-style-type: none"> • 1x JT20 • 1x Omnidirectional Wi-Fi antenna • 1x 4G antenna • 1x Quick Start Guide • 1x Packing List |
| Physical Specifications | Dimensions (LxWxH) | 150.0 mm x 99.9 mm x 18.0 mm |
| | Net weight | 121.3 g |
| | Gross weight | 300.0 g |
| System Software | <ul style="list-style-type: none"> • Android operating system software • Android terminal application software • FPGA program | |

The amount of power consumption may vary depending on various factors such as product settings, usage, and environment.

Pin Definition



| JH1–JH8 | | | | | |
|----------------------|-------|----|----|------|----------------------|
| / | R | 1 | 2 | G | / |
| / | B | 3 | 4 | GND | Ground |
| / | R | 5 | 6 | G | / |
| / | B | 7 | 8 | HE | Line decoding signal |
| Line decoding signal | HA | 9 | 10 | HB | |
| | HC | 11 | 12 | HD | |
| Shift clock | HDCLK | 13 | 14 | HLAT | Latch signal |
| Display enable | HOE | 15 | 16 | GND | Ground |

Audio and Video Decoder Specifications

Image

| Item | Codec | Supported Image Size | Container | Remarks |
|------|-----------------------|-------------------------------|-----------|---|
| JPEG | JFIF file format 1.02 | 48x48 pixels~8176x8176 pixels | JPG, JPEG | No support for non-interlaced scan Support for SRGB JPEG Support for Adobe RGB JPEG |
| BMP | BMP | No restriction | BMP | N/A |
| GIF | GIF | No restriction | GIF | N/A |
| PNG | PNG | No restriction | PNG | N/A |
| WEBP | WEBP | No restriction | WEBP | N/A |

Audio

| Item | Codec | Channel | Bit Rate | Sampling Rate | File Format | Remarks |
|---------------------|---------------------------------|---------|-----------------------------|---------------|---------------|--|
| MPEG | MPEG1/2/2.5 Audio Layer1/2/3 | 2 | 8kbps~320K bps, CBR and VBR | 8kHz~48kHz | MP1, MP2, MP3 | N/A |
| Windows Media Audio | WMA Version 4/4.1/7/8/9, wmapro | 2 | 8kbps~320K bps | 8kHz~48kHz | WMA | No support for WMA Pro, lossless codec and MBR |
| WAV | MS-ADPCM, IMA-ADPCM, PCM | 2 | N/A | 8kHz~48kHz | WAV | Support for 4bit MS-ADPCM and IMA-ADPCM |
| OGG | Q1~Q10 | 2 | N/A | 8kHz~48kHz | OGG, OGA | N/A |
| FLAC | Compress Level 0~8 | 2 | N/A | 8kHz~48kHz | FLAC | N/A |
| AAC | ADIF, ATDS Header | 5.1 | N/A | 8kHz~48kHz | AAC, M4A | N/A |

| Item | Codec | Channel | Bit Rate | Sampling Rate | File Format | Remarks |
|------|---|---------|--|---------------|---------------------------------|---------|
| | AAC-LC and AAC-HE, AAC-ELD | | | | | |
| AMR | AMR-NB, AMR-WB | 1 | AMR-NB 4.75~12.2Kbps@8kHz AMR-WB 6.60~23.85Kbps@16kHz | 8kHz, 16kHz | 3GP | N/A |
| MIDI | MIDI Type 0/1, DLS version 1/2, XMF and Mobile XMF, RTTTL/RTX, OTA, iMelody | 2 | N/A | N/A | XMF, MXMF, RTTTL, RTX, OTA, IMY | N/A |

Video

| Type | Codec | Resolution | Maximum Frame Rate | Maximum Bit Rate (Under Ideal Conditions) | Type | Codec |
|------------|------------|---|--------------------|---|----------------------------------|---|
| MPEG-1/2 | MPEG-1/2 | 48x48 pixels ~ 1920x1080 pixels | 30fps | 80Mbps | DAT, MPG, VOB, TS | Support for Field Coding |
| MPEG-4 | MPEG4 | 48x48 pixels ~ 1920x1080 pixels | 30fps | 38.4Mbps | AVI, MKV, MP4, MOV, 3GP | No support for MS MPEG4 v1/v2/v3, GMC, DivX3/4/5/6/7 .../10 |
| H.264/AVC | H.264 | 48x48 pixels ~ 1920x1080 pixels | 1080P@60fps | 57.2Mbps | AVI, MKV, MP4, MOV, 3GP, TS, FLV | Support for Field Coding, MBAFF |
| MVC | H.264 MVC | 48x48 pixels ~ 1920x1080 pixels | 60fps | 38.4Mbps | MKV, TS | Support for Stereo High Profile only |
| H.265/HEVC | H.265/HEVC | 64x64 pixels ~ 1920x1080 pixels | 1080P@60fps | 57.2Mbps | MKV, MP4, MOV, TS | Support for Main Profile, Tile & Slice |
| GOOGLE VP8 | VP8 | 48x48 pixels ~ 1920x1080 pixels | 30fps | 38.4 Mbps | WEBM, MKV | N/A |
| H.263 | H.263 | SQCIF (128x96), QCIF (176x144), CIF (352x288), 4CIF (704x576) | 30fps | 38.4Mbps | 3GP, MOV, MP4 | No support for H.263+ |
| VC-1 | VC-1 | 48x48 pixels ~ 1920x1080 | 30fps | 45Mbps | WMV, ASF, TS, | N/A |

| Type | Codec | Resolution | Maximum Frame Rate | Maximum Bit Rate (Under Ideal Conditions) | Type | Codec |
|-------------|-------|------------------------------------|--------------------|---|----------|-------|
| | | pixels | | | MKV, AVI | |
| MOTION JPEG | MJPEG | 48x48 pixels ~ 1920x1080 pixels | 30fps | 38.4Mbps | AVI | N/A |

Note: The output data format is YUV420 semi-planar, and YUV400 (monochrome) is also supported by H.264.

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