

# JT20A Multimedia Player



**Specifications**

## Change History

Document Version	Release Date	Description
V1.0.2	2023-06-14	Added the gross weight of the product.
V1.0.0	2021-07-05	First release

## Introduction

The JT20A, 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.

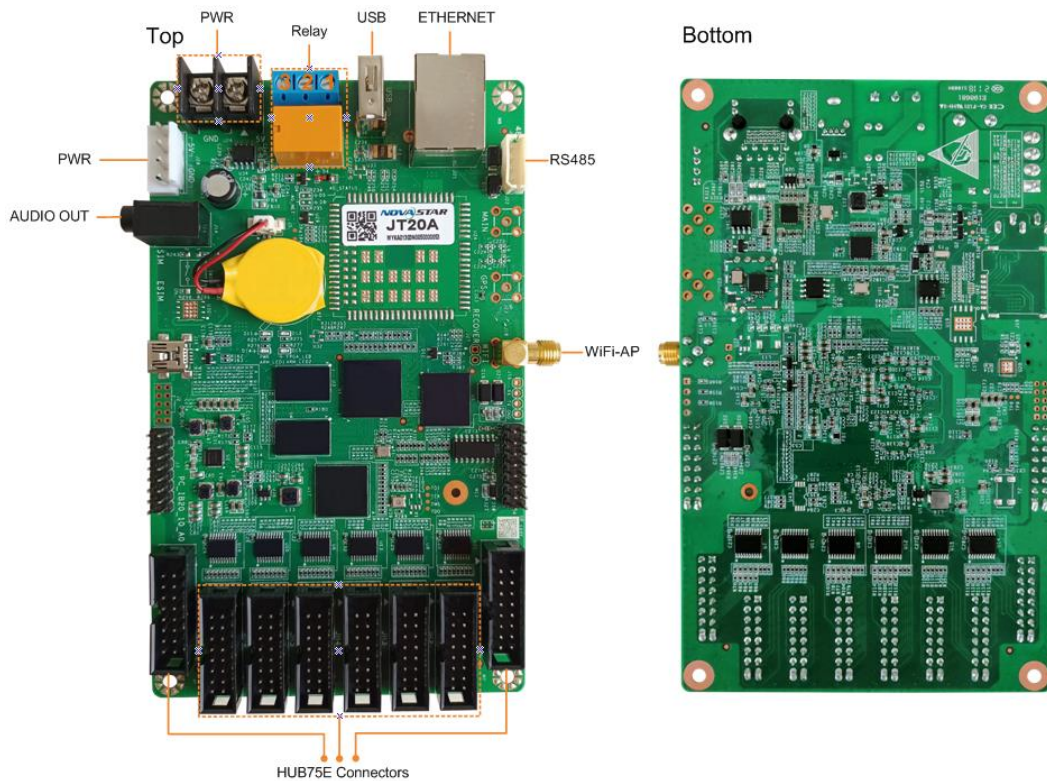
The JT20A comes with eight standard HUB75E connectors for communication and supports up to 16 groups of parallel RGB data. On-site setup, operation and maintenance are all taken into account when the hardware and software of the JT20A were designed, allowing for an easier setup, more stable operation and more efficient maintenance.

Thanks to its stable and secure integrated design, the JT20A saves space, simplifies cabling, and is suitable 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 JT20A. The default SSID is "AP+*Last 8 digits of SN*" and the default password is "12345678".
- Support for relays (maximum DC 30 V 3 A)

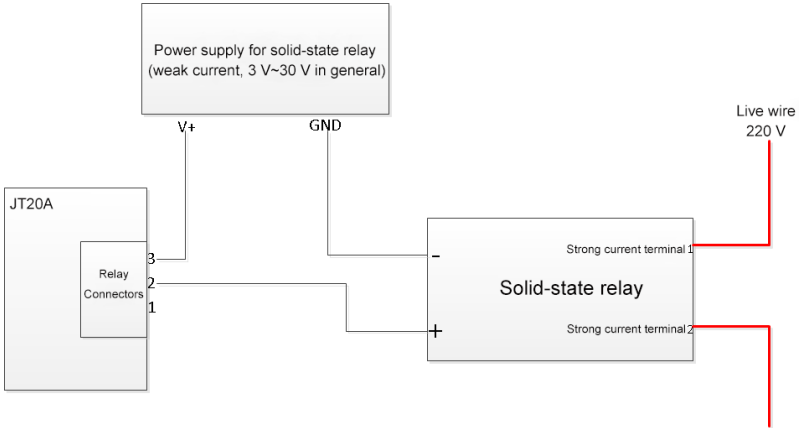
## Appearance



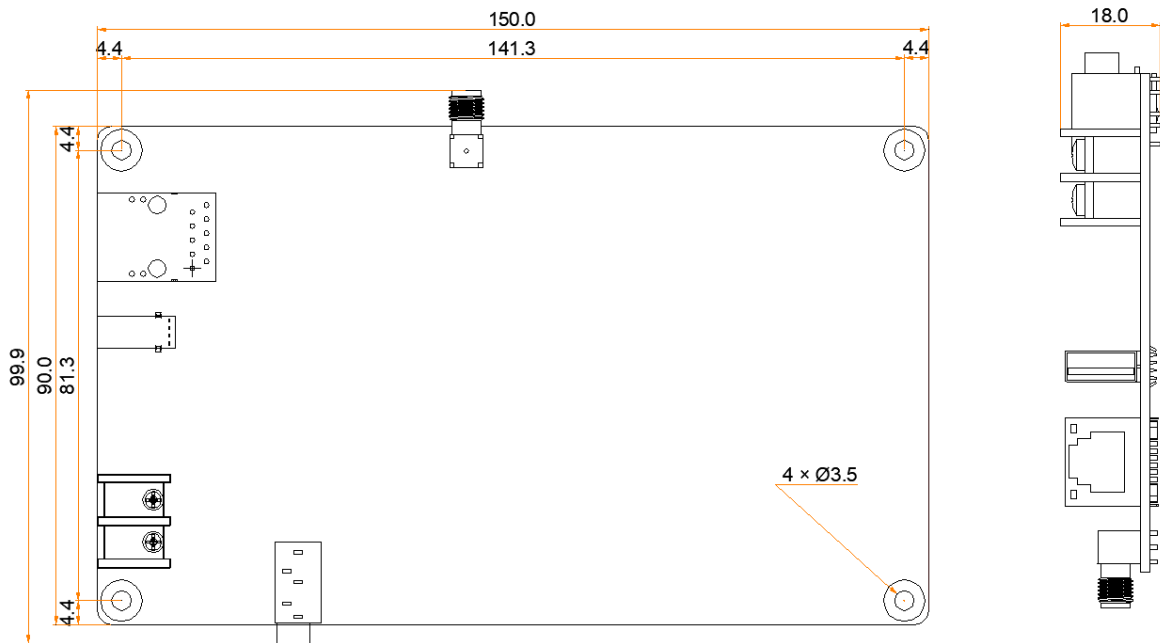
All product pictures shown in this document are for illustration purpose only. Actual product may vary.

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	Connect to a screen.
WiFi-AP	Wi-Fi 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: 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.

Name	Description
	<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 JT20A 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



Tolerance: ±0.1 Unit: mm

**Note:**

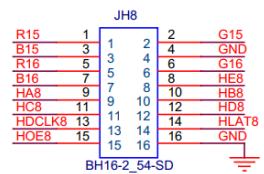
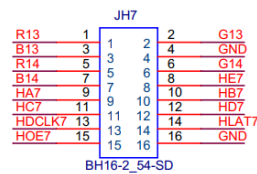
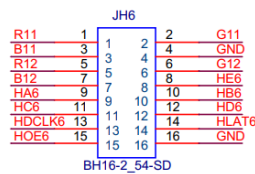
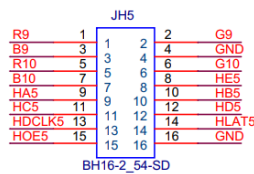
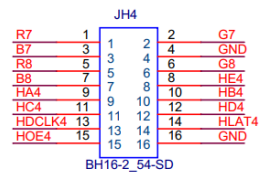
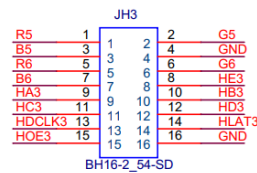
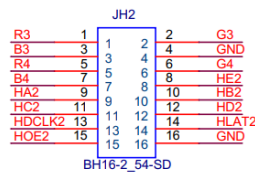
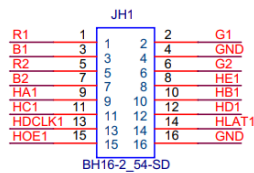
The product dimension drawings cannot be used as references to make molds or trepan mounting holes. Please ask the business personnel of NovaStar for the structural drawings if needed.

## Specifications

<b>Maximum Loading Capacity</b>	512×384 pixels
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<b>Electrical Parameters</b>	Input voltage	DC 4.5 V~5.5 V
	Maximum power consumption	10 W
<b>Storage Space</b>	RAM	1 GB
	Internal storage	8 GB (4 GB available)
<b>Storage Environment</b>	Temperature	-40°C to +80°C
	Humidity	0% RH to 80% RH, non-condensing
<b>Operating Environment</b>	Temperature	-20°C to +60°C
	Humidity	0% RH to 80% RH, non-condensing
<b>Packing Information</b>	Dimensions (LxWxH)	278 mm x 218 mm x 63 mm
	List	<ul style="list-style-type: none"> <li>• 1x JT20A</li> <li>• 1x Omnidirectional Wi-Fi antenna</li> <li>• 1x Quick Start Guide</li> </ul>
<b>Physical Specifications</b>	Dimensions (LxWxH)	150.0 mm x 99.9 mm x 18.0 mm
	Net weight	106.9 g
	Gross weight	285.6 g
<b>System Software</b>	<ul style="list-style-type: none"> <li>• Android operating system software</li> <li>• Android terminal application software</li> <li>• FPGA program</li> </ul>	

## 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 AAC-LC and AAC-HE, AAC-ELD	5.1	N/A	8kHz~48kHz	AAC, M4A	N/A
AMR	AMR-NB, AMR-WB	1	AMR-NB 4.75~12.2Kbps@8kHz AMR-WB 6.60~23.85K	8kHz, 16kHz	3GP	N/A

Item	Codec	Channel	Bit Rate	Sampling Rate	File Format	Remarks
			bps@16kHz			
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 Conditions)	Ideal	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 pixels	30fps	45Mbps		WMV, ASF, TS, MKV, AVI	N/A
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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