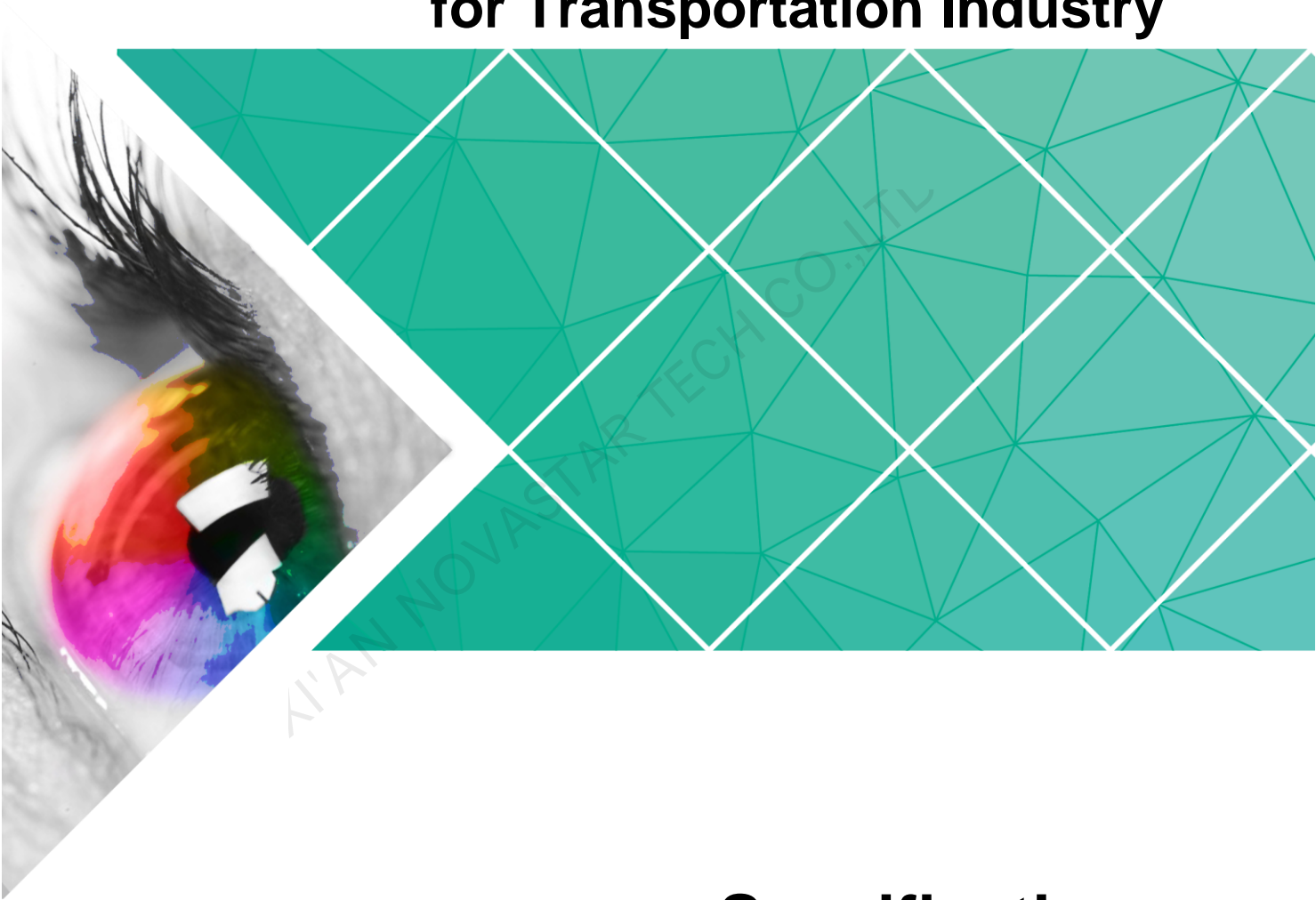


JT100

Multimedia Player for Transportation Industry



Specifications


Product Version: V3.4.1

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1 Overview

1.1 Introduction

The JT100 is a NovaStar multimedia player targeted for small and medium-sized full color LED screens in transportation field.

With the following advantages, the JT100 can better satisfy users' needs.

- Loading capacity up to 650,000 pixels
- Powerful processing capability
- Dual-Wi-Fi mode
- Redundant backup

1.2 Application

The JT100 can be widely used in transportation related LED applications as shown in [Table 1-1](#).

Table 1-1 Application

Application	Screen Type
Expressway	<ul style="list-style-type: none">• Integrated information displaying screen at toll gate• F-shape screen at toll gate• Variable message LED screen• Traffic guiding screen
Urban road	Traffic guiding screen
High-speed railway/subway station	Passenger information system displaying screen
Parking lot	Parking guidance screen

2 Features

2.1 Powerful Processing Capability

The JT100 features powerful hardware processing capability:

- 1.5 GHz eight-core processor
- H.265 4K high-definition video hardware decoding playback
- 1080P video hardware decoding
- 2 GB operating memory
- 8 GB on-board internal storage space with 4 GB available for users

2.2 Dual-Wi-Fi Mode

The JT100 has permanent Wi-Fi AP and supports the Wi-Fi Sta mode, carrying advantages as shown below:

- Completely covers Wi-Fi connection scene. The JT100 can be connected to through self-carried Wi-Fi AP or the external router.
- Completely covers client terminals. Mobile phone, Pad and PC can be used to log in to the JT100 through wireless network.
- Requires no wiring. Display management can be managed at any time, having improvements in efficiency.

JT100's Wi-Fi AP signal strength is related to the transmit distance and environment. Users can change the Wi-Fi antenna as required.

2.2.1 Wi-Fi AP Mode

Users connect the Wi-Fi AP of a JT100 to directly access the JT100. The SSID is "**AP** + **the last 8 digits of the SN**", for example, "**AP10000033**", and the default password is "**12345678**".



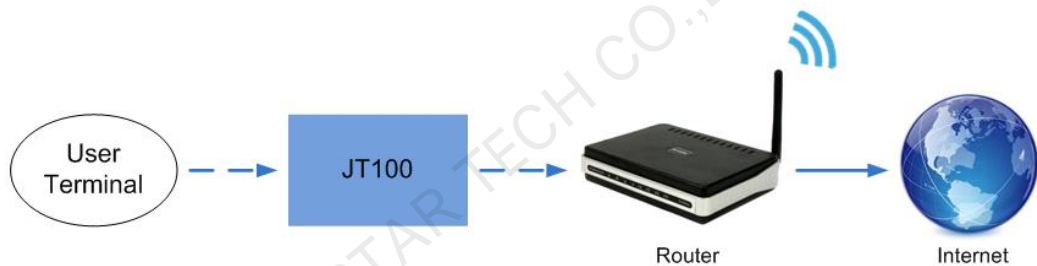
2.2.2 Wi-Fi Sta Mode

Configure an external router for a JT100 and users can access the JT100 by connecting the external router. If an external router is configured for multiple JT100 units, a LAN can be created. Users can access any of the JT100 via the LAN.



2.2.3 Wi-Fi AP+Sta Mode

In Wi-Fi AP+ Sta connection mode, users can either directly access the JT100 or access internet through bridging connection.



2.3 Redundant Backup

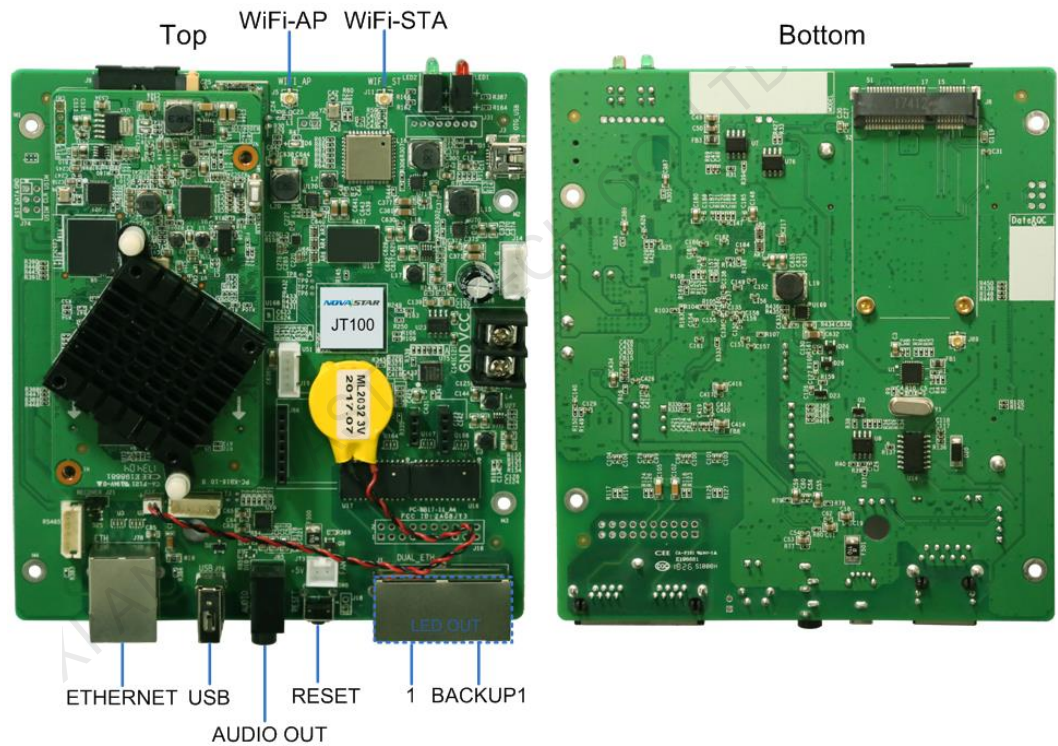
JT100 supports network redundant backup and Ethernet port redundant backup.

- Network redundant backup: The JT100 automatically selects internet connection mode among wired network or Wi-Fi Sta network according to the priority.
- Ethernet port redundant backup: The JT100 enhances connection reliability through active and standby redundant mechanism for the Ethernet port used to connect with the receiving card.

3 Hardware Structure

3.1 Appearance

Figure 3-1 Appearance of JT100



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

Table 3-1 Connectors and buttons of the JT100

Name	Description
WiFi-STA	Wi-Fi Sta antenna port
WiFi-AP	Wi-Fi AP antenna port
ETHERNET	Gigabit Ethernet port Indicator status: <ul style="list-style-type: none"> Yellow indicator always on: The unit is connected to

Name	Description
	100M Ethernet cable and the status is normal. <ul style="list-style-type: none"> Green and yellow indicators always on at the same time: The unit is connected to Gigabit Ethernet cable and the status is normal.
USB	USB 2.0 port
AUDIO OUT	Audio output
RESET	Factory reset button Press and hold the button for 5 seconds to reset the unit to factory settings.
1	Output Ethernet port
BACKUP1	Backup for output Ethernet port



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

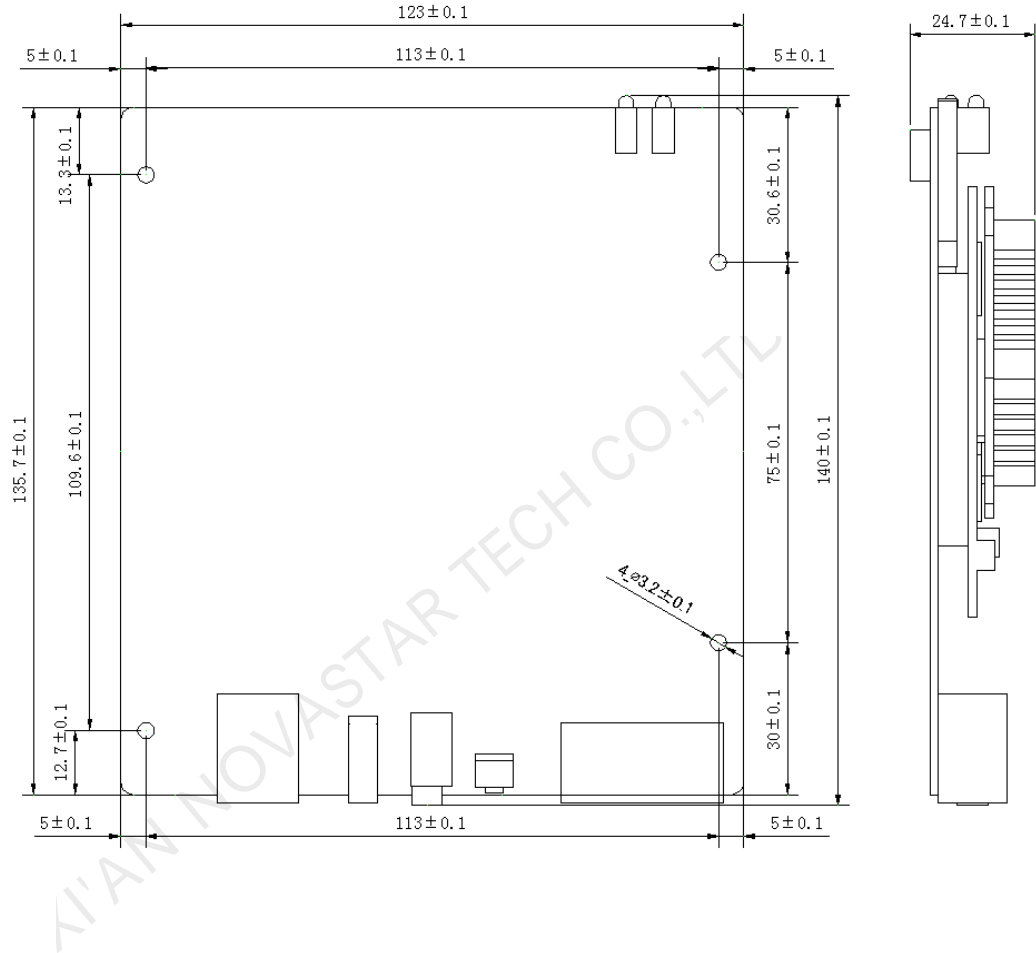
Table 3-2 Indicators of the JT100

Name	Description
PWR	Power status indicator Always on: Power input is normal.
SYS	System status indicator <ul style="list-style-type: none"> Flashing once every 2 seconds: The system is operating normally. Flashing once every 0.5 second: The system is downloading data from the Internet. Always on/off: The system is operating abnormally.
CLOUD	Internet connection status indicator Always on: The unit is connected to the Internet and the connection status is normal.
RUN	FPGA status indicator Same as the signal indicator status of the sending card: FPGA is operating normally.

3.2 Dimensions

The total thickness (board thickness + thickness of the components on the front and back side) is no greater than 25.0mm.

Unit of the dimension chart is "mm". Ground connection is enabled for location hole (GND).



4 Software Structure

4.1 System Software

- Android operating system software
- Android terminal application software
- FPGA program

Note: The third-party applications are not supported.

4.2 Related Configuration Software

Table 4-1 Related configuration software

Software	Description
ViPlex Handy	Client software for mobile device works on both Android and iOS, and is used to enable/disable DHCP and set static IP address for the JT100.
ViPlex Express	Client software for PC works on Windows only, and is used to enable/disable DHCP, set static IP address and update fonts for the JT100.
NovaLCT	Display screen configuration software works on Windows only, and is used to adjust screens to the best display status.

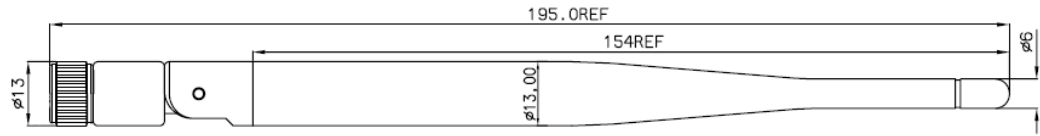
5 Product Specifications

Specifications

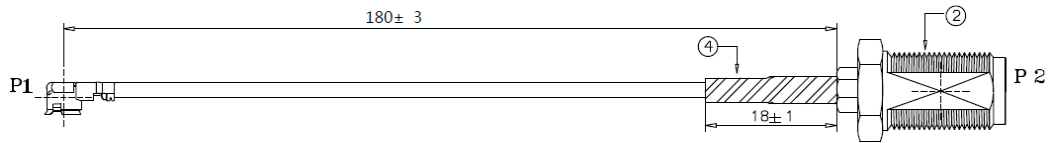
Electrical Parameters	Rated voltage	5 V DC
	Rated current	1.5 A
	Maximum power consumption	15 W
Storage Space	Operating memory	2 GB
	Internal storage space	8 GB on-board with 4 GB available for users
Storage Environment	Temperature	0°C-50°C
	Humidity	0%RH-80%RH
Operating Environment	Temperature	-40°C-80°C
	Humidity	0%RH-80%RH
Packing information	Dimension (HxWxD)	200 mm × 120 mm × 40 mm
	List	<ul style="list-style-type: none"> • One bare card of JT100 LED multimedia player • Two column Wi-Fi omnidirectional antenna • Two IPex convert SMA 18cm extension line
Dimension (HxWxD)	140.0 mm × 123.0 mm × 24.7 mm	
Characteristics	<ul style="list-style-type: none"> • Pixel capacity up to 650,000, with the maximum width of 4096 pixels and maximum height of 1920 pixels. • Supports 1-primary 1-standby Ethernet port redundant mechanism. • Supports dual-Wi-Fi, and features Wi-Fi AP and Wi-Fi Sta functions. • Supports Gigabit wired network. • Supports stereo audio output. • 1 USB port allows for playback of media imported from USB drives. 	

- 1 Onboard brightness sensor port supports automatic and scheduled smart brightness adjustment.

Antenna



Antenna extension mast



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6 Audio and Video Decoder Specifications

6.1 Image

6.1.1 Decoder

Type	Codec	Supported Image Size	Container	Remarks
JPEG	JFIF file format 1.02	48x48 pixels~8176x8176 pixels	JPG, JPEG	Not Support Non-interleaved Scan Software support SRGB JPEG Software support 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

6.1.2 Encoder

Type	Codec	Supported Image Size	Maximum Data Rate	File Format	Remarks
JPEG	JPEG Baseline	96x32 pixels~8176x8176 pixels	90Mpixels/Second	JFIF file format 1.02	N/A

6.2 Audio

6.2.1 Decoder

Type	Codec	Channel	Bit rate	Sampling rate	File Format	Remarks
MPEG	MPEG1/2/2.5 Audio Layer1/2/3	2	8kbps~320Kbps, CBR and VBR	8KHZ~48 KHz	MP1, MP2, MP3	N/A
Windows Media Audio	WMA Version 4, 4.1, 7, 8, 9, wmapro	2	8kbps~320Kbps	8KHZ~48 KHz	WMA	Non-support WMA Pro, lossless and MBR
WAV	MS-ADPCM, IMA-ADPCM, PCM	2	N/A	8KHZ~48 KHz	WAV	Support 4bit MS-ADPCM, IMA-ADPCM
OGG	Q1~Q10	2	N/A	8KHZ~48 KHz	OGG, OGA	N/A
FLAC	Compress Level 0~8	2	N/A	8KHZ~48 KHz	FLAC	N/A
AAC	ADIF, ATDS Header AAC-LC and AAC-HE, AAC-ELD	5.1	N/A	8KHZ~48 KHz	AAC, M4A	N/A
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 and 1, DLS version 1 and 2, XMF and Mobile XMF, RTTTTL/RTX, OTA, iMelody	2	N/A	N/A	XMF, MXMF, RTTTTL, RTX, OTA, IMY	N/A

6.2.2 Encoder

Type	Codec	Channel	Bit rate	Sampling rate	Container	Remarks
AMR	AMR-NB, AMR-WB	2	4.75kbps~12.2Kbps, CBR	8KHZ, 16KHZ	3GPP	N/A
AAC	AAC-ADTS-LC	1	4.75kbps~60Kbps, CBR	8KHZ~44.1KHZ	AAC, 3GPP, Mpeg2TS	N/A

6.3 Video

6.3.1 Decoder

Type	Codec	Supported Image Size	Maximum Frame Rate	Maximum Bit Rate (Ideal Case)	File Format	Remarks
MPEG-1/2	MPEG-1/2	48x48 pixels~1920x1088 pixels	30fps	80Mbps	DAT, MPG, VOB, TS	Support Field Coding
MPEG-4	MPEG-4	48x48 pixels~1920x1088 pixels	30fps	38.4Mbps	AVI, MKV, MP4, MOV, 3GP	Not support MS MPEG4 v1/v2/v3 Not support GMC
H.264/AVC	H.264	T1&T2&TB1&TB2&T1-4G&T2-4G&TB1-4G&TB2-4G: 48x48 pixels~1920x1088 pixels Other models: 48x48 pixels~4096x2304 pixels	T1&T2&TB1&TB2&T1-4G&T2-4G&TB1-4G&TB2-4G: 1080P@60fps Other models: 4K@25fps, 1080P@60fps	T1&T2&TB1&TB2&T1-4G&T2-4G&TB1-4G&TB2-4G: 57.2Mbps Other models: 100Mbps	AVI, MKV, MP4, MOV, 3GP, TS, FLV	Support Field Coding Support MBAFF
MVC	H.264 MVC	48x48 pixels~1920x1088 pixels	60fps	38.4Mbps	MKV, TS	Support Stereo High Profile only
H.265/HEVC	H.265/HEVC	T1&T2&TB1&TB2&T1-4G&T2-4G&TB1-4G&TB2-4G: 64x64 pixels~1920x1088 pixels Other models: 64x64 pixels~4096x2304 pixels	T1&T2&TB1&TB2&T1-4G&T2-4G&TB1-4G&TB2-4G: 1080P@60fps Other models: 4K@60fps, 1080P@60fps	T1&T2&TB1&TB2&T1-4G&T2-4G&TB1-4G&TB2-4G: 57.2Mbps Other models: 100Mbps	MKV, MP4, MOV, TS	Support Main Profile Support Tile & Slice
GOOGLE VP8	VP8	48x48 pixels~1920x1088 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	Not support H.263+
VC-1	VC-1	48x48	30fps	45Mbps	WMV, ASF,	N/A

Type	Codec	Supported Image Size	Maximum Frame Rate	Maximum Bit Rate (Ideal Case)	File Format	Remarks
		pixels~1920x1088 pixels			TS, MKV, AVI	
MOTION JPEG	MJPEG	48x48 pixels~1920x1088 pixels	30fps	38.4Mbps	AVI	N/A

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

6.3.2 Encoder

Type	Codec	Supported Image Size	Maximum Frame Rate	Maximum Bit Rate (Ideal Case)	File Format	Remarks
H.264/AVC	H.264	144x96 pixels~1920x1088 pixels	30fps	20Mbps	MOV, 3GP	Not support MBAFF
Google VP8	VP8	96x96 pixels~1920x1088 pixels	30fps	10Mbps	WEBM	N/A