

Taurus Series Multimedia Player



T50 Specifications

Change History

Document Version	Release Date	Description
V1.0.0	2021-08-10	First release

Introduction

The T50 is the third generation of multimedia player created by NovaStar for full-color LED displays. This multimedia player integrates playback and sending capabilities, allowing users to publish content and control LED displays with a computer, mobile phone, or tablet. Working with our superior cloud-based publishing and monitoring platforms, the T50 enables users to manage LED displays from an Internet-connected device anywhere, anytime.

Support for multi-screen synchronous playback and synchronous and asynchronous modes makes this multimedia player a perfect fit for a wide range of applications.

Thanks to its reliability, ease of use, and intelligent control, the T50 becomes a winning choice for commercial LED displays and smart city applications such as fixed displays, lamp-post displays, chain store displays, advertisement players, mirror displays, retail store displays, door head displays, shelf displays, and much more.

Features

Output

- Loading capacity up to 1,300,000 pixels
Maximum width: 4096 pixels
Maximum height: 4096 pixels
- 2x Gigabit Ethernet ports
These two ports serve as primary by default. Users can also set one as primary and the other as backup.
- 1x Stereo audio connector
The audio sample rate of the internal source is fixed at 48 KHz. The audio sample rate of the external source supports 32 KHz, 44.1 KHz, or 48 KHz. If NovaStar's multifunction card is used for audio output, audio with a sample rate of 48 KHz is required.
- 1x HDMI 1.4 connector
Maximum output: 1080p@60Hz, support for HDMI loop

Input

- 1x HDMI 1.4 connector
In synchronous mode, video sources input from this connector can be scaled to fit the entire screen automatically.
- 2x sensor connectors
Connect to brightness sensors or temperature and humidity sensors.

Control

- 1x USB 3.0 (Type A) port
Allows for playback of content imported from a USB drive and firmware upgrade over USB.

- 1x USB (Type B) port
Reserved
- 1x Gigabit Ethernet port
Connects to a LAN, public network, or computer for content publishing and screen control.

Performance

- Powerful processing capacity
 - Quad-core ARM A55 processor @1.8 GHz
 - Support for H.264/H.265 4K@60Hz video decoding
 - 1 GB of onboard RAM
 - 16 GB of internal storage
- Flawless playback
1x 4K video playback or 2x 1080p video playback

Function

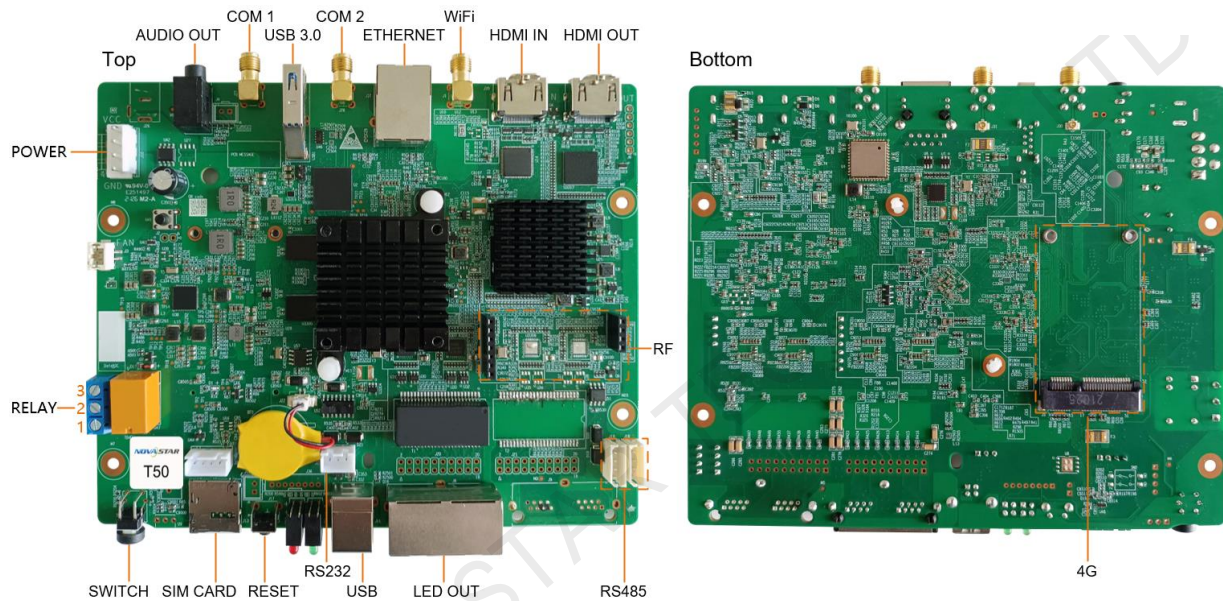
- All-round control plans
 - Enables users to publish content and control screens from a computer, mobile phone, or tablet.
 - Allows users to publish content and control screens from anywhere, anytime.
 - Allows users to monitor screens from anywhere, anytime.
- Switching between Wi-Fi AP and Wi-Fi STA
 - In Wi-Fi AP mode, the user terminal connects to the built-in Wi-Fi hotspot of the T50. The default SSID is "AP+ *Last 8 digits of SN*" and the default password is "12345678".

- In Wi-Fi STA mode, the user terminal and the T50 are connected to the Wi-Fi hotspot of a router.
- Synchronous and asynchronous modes
 - In asynchronous mode, the internal video source works.
 - In synchronous mode, the video source input from the HDMI connector works.
- Synchronous playback across multiple screens
 - NTP time synchronization
- GPS time synchronization (The specified 4G module must be installed.)
- RF time synchronization (The specified RF module must be installed.)
- Support for 4G modules

The T50 ships without a 4G module. Users have to purchase 4G modules separately if needed.

Network connection priority: Wired network > Wi-Fi network > 4G network When multiple types of networks are available, the T50 will choose a signal automatically according to the priority.

Appearance



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

Name	Description
SWITCH	Switches between synchronous and asynchronous modes <ul style="list-style-type: none"> • Staying on: Synchronous mode • Off: Asynchronous mode
SIM CARD	SIM card slot Capable of preventing users from inserting a SIM card in the wrong orientation
RESET	Factory reset button Press and hold this button for 5 seconds to reset the product to its factory settings.
RS232	External expansion connector
USB	Reserved USB (Type B) port
LED OUT	Gigabit Ethernet outputs
RS485	Sensor connectors Connect to light sensors or temperature and humidity sensors.
RF	RF module connector

Name	Description
HDMI OUT	HDMI 1.4 output connector, support for HDMI loop
HDMI IN	<p>HDMI 1.4 input connector, HDMI video input in synchronous mode</p> <p>In synchronous mode, users can enable full-screen scaling to adjust the image to fit the screen automatically.</p> <p>Requirements for full-screen scaling in synchronous mode:</p> <ul style="list-style-type: none"> • 64 pixels ≤ video source width ≤ 2048 pixels • Images can only be scaled down and cannot be scaled up.
WiFi	<p>Wi-Fi antenna connector</p> <p>Support for switching between Wi-Fi AP and Wi-Fi Sta</p>
ETHERNET	<p>Gigabit Ethernet port</p> <p>Capable of connecting to a LAN, public network, or computer for content publishing and screen control</p> <p>Indicator status description:</p> <ul style="list-style-type: none"> • The yellow stays on: The T50 is connected to a fast Ethernet cable and the connection is available. • The green and yellow stay on simultaneously: The T50 is connected to a Gigabit Ethernet cable and the connection is available.
COM 2	GPS antenna connector
USB 3.0	<p>USB 3.0 (Type A) port</p> <p>Allowing for playback of content imported from a USB drive and firmware upgrade over USB</p> <p>The Ext4 and FAT32 file systems are supported. The exFAT and FAT16 file systems are not supported.</p>
COM 1	4G antenna connector
AUDIO OUT	Audio output connector
POWER	Power input connector
RELAY	<p>3-pin relay control switch</p> <ul style="list-style-type: none"> • DC: Maximum voltage and current: 30 V, 3 A • AC: Maximum voltage and current: 250 V, 3 A <p>Two connection methods:</p> <ul style="list-style-type: none"> • 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. • 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>Note: The T50 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>

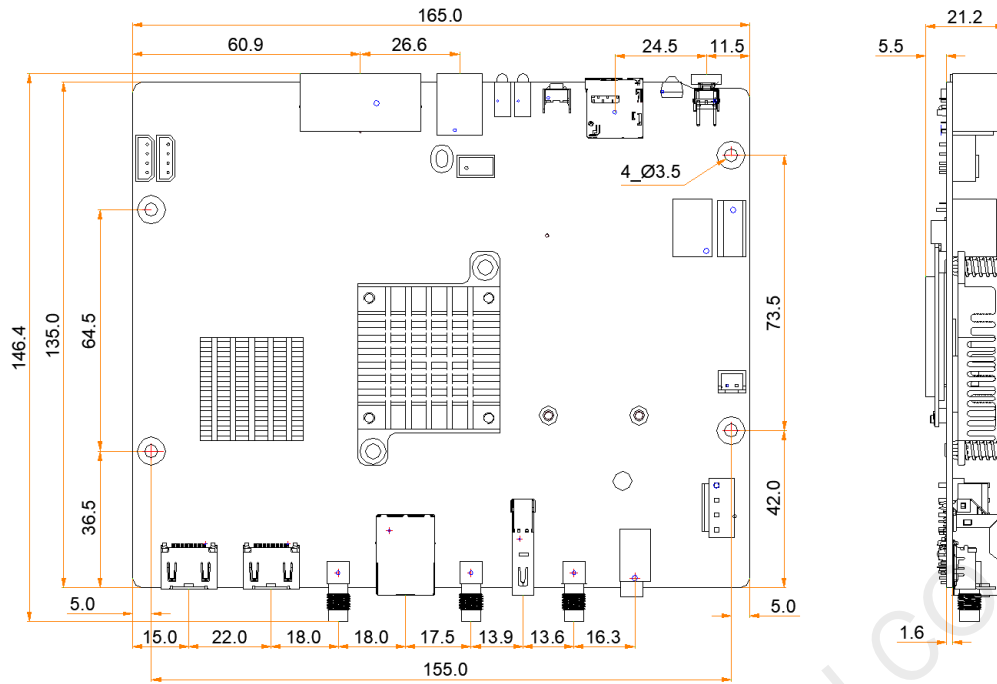
Name	Description
4G	4G module slot

Indicators



Name	Color	Status	Description
PWR	Red	Staying on	The power supply is working properly.
SYS	Green	Flashing once every 2s	The T50 is functioning normally.
		Flashing once every second	The T50 is installing the upgrade package.
		Flashing once every 0.5s	The T50 is downloading data from the Internet or copying the upgrade package.
		Staying on/off	The T50 is abnormal.
CLOUD	Green	Staying on	The T50 is connected to the Internet and the connection is available.
		Flashing once every 2s	The T50 is connected to VNNOX and the connection is available.
RUN	Green	Flashing once every second	No video signal
		Flashing once every 0.5s	The T50 is functioning normally.
		Staying on/off	FPGA loading is abnormal.

Dimensions

Tolerance: ± 0.3 Unit: mm

Specifications

Electrical Parameters	Input voltage	DC 5 V~12 V
	Maximum power consumption	18 W
Storage Capacity	RAM	1 GB
	Internal storage	16 GB
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)	278.0 mm x 63.0 mm x 221.0 mm
	List	<ul style="list-style-type: none"> • 1x T50 • 1x Wi-Fi omnidirectional antenna • 1x Power connector • 2x IPex cables • 1x Quick Start Guide
Dimensions (LxWxH)	165.0 mm x 146.4 mm x 21.2 mm	
System Software	<ul style="list-style-type: none"> • Android 11.0 operating system software • Android terminal application software • FPGA program <p>Note: Third-party applications are not supported.</p>	

Media Decoding Specifications

Image

Category	Codec	Supported Image Size	Container	Remarks
JPEG	JFIF file format 1.02	96x32 pixels to 817x8176 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

Video

Category	Codec	Resolution	Maximum Frame Rate	Maximum Bit Rate (Ideal Case)	File Format	Remarks
MPEG-1/2	MPEG-1/2	48x48 pixels to 1920x1088 pixels	30fps	80Mbps	DAT, MPG, VOB, TS	Support for field coding
MPEG-4	MPEG4	48x48 pixels to 1920x1088 pixels	30fps	38.4Mbps	AVI, MKV, MP4, MOV, 3GP	No support for MS MPEG4 v1/v2/v3, GMC
H.264/AVC	H.264	48x48 pixels to 4096x2304 pixels	2304p@60fps	80Mbps	AVI, MKV, MP4, MOV, 3GP, TS, FLV	Support for field coding and MBAFF
MVC	H.264 MVC	48x48 pixels to 4096x2304 pixels	2304p@60fps	100Mbps	MKV, TS	Support for Stereo High Profile only
H.265/HEVC	H.265/HEVC	64x64 pixels to 4096x2304 pixels	2304p@60fps	100Mbps	MKV, MP4, MOV, TS	Support for Main Profile, Tile & Slice
GOOGLE VP8	VP8	48x48 pixels to 1920x1088 pixels	30fps	38.4Mbps	WEBM, MKV	N/A
GOOGLE VP9	VP9	64x64 pixels to 4096x2304 pixels	60fps	80Mbps	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 to 1920x1088 pixels	30fps	45Mbps	WMV, ASF, TS, MKV, AVI	N/A
MOTION JPEG	MJPEG	48x48 pixels to 1920x1088 pixels	60fps	60Mbps	AVI	N/A

Copyright © 2021 Xi'an NovaStar Tech Co., Ltd. All Rights Reserved.

No part of this document may be copied, reproduced, extracted or transmitted in any form or by any means without the prior written consent of Xi'an NovaStar Tech Co., Ltd.

Trademark

NOVASTAR is a trademark of Xi'an NovaStar Tech Co., Ltd.

Statement

Thank you for choosing NovaStar's product. This document is intended to help you understand and use the product. For accuracy and reliability, NovaStar may make improvements and/or changes to this document at any time and without notice. If you experience any problems in use or have any suggestions, please contact us via the contact information given in this document. We will do our best to solve any issues, as well as evaluate and implement any suggestions.

[Official website](http://www.novastar.tech)
www.novastar.tech

[Technical support](mailto:support@novastar.tech)
support@novastar.tech