



SUR-600E/T600E CONSOLES

EP723, TM743



TROUBLESHOOTING GUIDE

ISSUED 9/15/2021

JOHNSON HEALTH TECH – TCMT

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TABLE OF CONTENTS

INTRODUCTION	5
USING THE TROUBLESHOOTING GUIDE	5
PRODUCT INFORMATION.....	6
SERIAL NUMBER LOCATION	7
SERIAL NUMBER BREAKDOWN	8
CONSOLE SERVICE.....	8
ACRONYMS	9
UPDATE CENTER.....	12
KNOWN ISSUES	12
SOFTWARE HISTORY.....	12
FAQs	12
ASSEMBLY ISSUES	13
CONSOLE OVERLAY & WORKOUT DESCRIPTION	14
CONSOLE DESCRIPTION.....	14
<i>SUR-600E Console</i>	14
<i>T600E Console</i>	14
CONSOLE OPERATION.....	16
<i>First Time Setup</i>	16
<i>Getting Started</i>	16
<i>Program Help</i>	17
<i>Home Screen</i>	18
<i>Apps and Entertainment</i>	18
USER CONNECTIVITY FEATURES	20
<i>Bluetooth FTMS</i>	20
<i>USB Audio/Video</i>	21
<i>Audio In/Out</i>	22
TARGET HEART RATE.....	22
<i>Using the Heart Rate Function</i>	22
SERVICE AND SPECIAL FUNCTIONS	23
MACHINE SELECTION	23
RESTORE FACTORY DEFAULTS	23
PRODUCT DASHBOARD	25
MACHINE SETTINGS	26

TABLE OF CONTENTS

INTERNET SETUP.....	27
<i>To connect to a Wi-Fi network:</i>	27
<i>To forget a Wi-Fi SSID:</i>	27
<i>Reset Wi-Fi Connection</i>	29
PREPARING A USB DRIVE.....	30
SOFTWARE UPDATES.....	30
<i>Internet/RSCU Update</i>	31
<i>USB Update</i>	32
MARATHON MODE.....	33
DEMO MODE.....	33
ENERGY SAVER MODE (ERP)	33
RUN MACHINE MODE	33
KEY TEST.....	35
ADD OR REMOVE APPS.....	36
CONNECTION SPEED (BANDWIDTH) TEST	37
CONSOLE RECOVERY	37
SCREENSHOT & LOG FILE COLLECTION.....	37
<i>To capture logs to a USB drive:</i>	37
<i>To capture a screenshot and collect logs to USB automatically:</i>	38
ASSEMBLY INFORMATION.....	39
SUR-600E.....	39
<i>Electrical Diagrams</i>	39
<i>Key Components</i>	42
<i>Entertainment Connections</i>	43
T600E	44
<i>Electrical Diagrams</i>	44
<i>Key Components</i>	47
<i>Entertainment Connections</i>	48
TROUBLESHOOTING	49
GENERAL TROUBLESHOOTING	49
SOFTWARE UPDATES & USB	50
POWER ISSUES	51
FREEZING/STALLING ISSUES	52
DISPLAY ISSUES	53
TOUCH RESPONSE ISSUES.....	54

TABLE OF CONTENTS

WORKOUT ISSUES.....	55
GENERAL APP & PROGRAM ISSUES	56
HULU ISSUES.....	57
MY MEDIA ISSUES	57
NETFLIX ISSUES	58
ERRORS (OTHER THAN ECL ERRORS)	59
ENERGY SAVER ISSUES (SLEEP MODE)	59
INTERNET CONNECTION ISSUES	60
GENERAL BLUETOOTH ISSUES.....	61
BLUETOOTH HEADPHONE ISSUES	62
ENTERTAINMENT/AUDIO ISSUES.....	63
HEART RATE ISSUES	64
OTHER ISSUES	65
PARTS REPLACEMENT & INFORMATION	66
WORKING ENVIRONMENT FOR PARTS REPLACEMENT	66
<i>Back Cover</i>	67
<i>Console Rack</i>	70
<i>C-Safe Exchange Board</i>	71
<i>TV Tuner Installation</i>	72
<i>USB Board</i>	80
<i>Exchange Board</i>	82
<i>Heart Rate Board</i>	83
<i>Wi-Fi Board</i>	85
<i>Entertainment Board</i>	86
<i>TFT Module</i>	87
CHANGE LOG	88

INTRODUCTION

This Troubleshooting Guide will be updated periodically with new, emerging, and resolved issues. New and updated information will funnel through the [Update Center](#). See the [Change Log](#) for revision information.

Using the Troubleshooting Guide

1. Locate the serial number on both the frame and (if applicable) console.
2. Reference the appropriate guide depending on serial number prefix, or product code.

Within this guide, you will be directed to external documents that can be found on the Johnson Customer Service Portal, or “CS Web” – http://service.johnsonfitness.com/cs_new/login.asp

The documents you may need to reference include the following:

- Vision Cardio Touch Consoles Owner’s Guide (under Owner’s Manuals)
- Using Your Multi-Meter (NB-2108005)
- Master Error Code List (NB-1903010)

Note: For JHTNA, the documents above are also available in Online Remedy.

Please direct any questions not addressed in this guide to your Customer Tech Support team.

Product Information

The Vision Entertainment Series includes two touchscreen consoles. The T600E treadmill console has a 22" class capacitive touchscreen. The SUR-600E console (compatible with the frames S600E/EP725, R600E/RB211, U600E/CB209, and S700E/EP726) has a 16" class capacitive touchscreen.

Both consoles include Wi-Fi capability. The consoles also have an HDMI port that can be used to mirror the user's smart device. An optional TV tuner is available for purchase.

Units with Entertainment Series consoles cannot be self-powered. The frame must be plugged into an external power source (wall/floor outlet) when in use.



Serial Number Location

SUR-600E: The console serial number sticker is located on the back of the console. A separate frame serial number is located on the front of the base frame. (The image below shows the Suspension Elliptical frame, EP725. The sticker is in a similar location on all compatible frames.)



T600E: The console and frame have one serial number. The serial number sticker is located on the front of the base frame.



Serial Number Breakdown

The drawing number (which is included in the serial number) can be used to identify the console model. See [Serial Number Location](#).

Note: The serial number shown by default within the console is derived from the drawing number and the MAC address and will not match the serial number shown in the sticker on the frame. This is done so that our cloud infrastructure has a unique identifier for each machine. If users opt to edit this, be sure to verify the number they edit it to matches exactly the serial number shown on the frame sticker to avoid data corruption.

Console Name	Drawing Number
SUR-600E	EP723
T600E	TM743B (one serial number for frame and console)

Example *Default* serial number within the console: CEP723102C6B93686

C	EP723	102C6B93686
Console	Drawing Number	MAC Address

Example serial number sticker: CEP7232103K00001

C	EP723	2103	K	00001
Console	Drawing Number	Year/Month (YYMM)	Production Line	Production Number

Console Service

ESD (electrostatic discharge) damage can occur to console electronics when static buildup on people or work surfaces discharges through circuit boards or wires. For this reason, anyone handling circuit boards or working inside a console **must** wear a properly grounded ESD wrist strap and work upon properly grounded ESD mats. Please see the link below for an example of suitable ESD equipment for these tasks.

https://www.amazon.com/iFixit-145202-4-Portable-Anti-Static-Mat/dp/B01BLPBOS4/ref=sr_1_8?dchild=1&keywords=ESD+Mat&qid=1600353374&sr=8-8

Acronyms

The acronym list below details common terms used in Matrix and Vision troubleshooting guides. Some terms may not apply to non-commercial consoles.

Acronym	Stands for	Meaning
Related to Programs/Apps		
AM	Asset Management	website designed by Matrix for asset (equipment) monitoring
PTP	Personal Trainer Portal	Web based program created by Matrix Technology Team which helps trainers engage with members, represents your unique brand and helps you tap unexplored revenue streams.
VA	Virtual Active	Workouts are recorded HD videos of locations all over the world with built in terrain motion meaning when you hit a hill, the machine resistance/incline kicks in automatically. Virtual Coaching is a feature of Virtual Active which shows a trainer on the screen giving the user encouragement and tips
WTN	Workout Tracking Network	Web based program created by Matrix Technology Team that allows facility staff to manage guest passes, push notifications, class schedules, facility calendars, member challenges and more
ITC	Intelligent Training Console	Designed solely for Ultra strength, this removes some of the mechanical pieces and replaces with a console and RFID technology.
-	xID	a universal sign-in for Netpulse connected fitness equipment, mobile apps, and websites that utilizes a numeric ID and passcode
-	Netpulse	a cloud base service that enables you to save your workout results in your xID account and access and track your profile by different devices
-	Club ID/Facility ID	a unique number assigned to a facility when Asset Management is purchased
Related to Internet		
AP	Access Point	wireless access point (WAP), or more generally just access point (AP), is a networking hardware device that allows other Wi-Fi devices to connect to a wired network
DAPI	Decentralized Application Programming Interface	Also known as the cloud
SSID	Service Set Identifier	unique ID (network name) to help identify what Internet connection is being used
DNS	Domain Name System	translates human readable domain names (for example, www.matrixfitness.com) to machine readable IP addresses
HTTP	Hyper-text Transfer Protocol	an application protocol for distributed, collaborative, hypermedia information systems that allows users to communicate data on the World Wide Web
IP	Internet Protocol	a digital media transport system that runs over standard IP network
LAN	Local Area Network	a group of computers and other devices that are connected

		together, over a network and are all in the same location—typically within a single building like an office or home
WAN	Wide Area Network	a computer network designed to connect multiple smaller Local Area Networks (LANs). Your home network is your LAN, and it is connected to your neighbors over a WAN, often managed by your Internet Service Provider. You could think of the internet itself as one gigantic WAN
PoE	Power over Ethernet	a way to power the AP without an AC power supply
URL	Uniform Resource Locator	colloquially termed a web address; is a reference to a web resource that specifies its location on a computer network and a mechanism for retrieving it
UTC	Coordinated Universal Time	formerly Greenwich Mean Time (GMT) is a coordinated time scale, maintained by the Bureau International des Poids et Mesures (BIPM)
RTC	Real-Time Clock	an electronic device that measures the passage of time (consoles)
IANA	Internet Assigned Numbers Authority	a standards organization that oversees global IP address allocation, autonomous system number allocation, root zone management in the Domain Name System (DNS), media types, and other Internet Protocol-related symbols and Internet numbers
IPTV	Internet Protocol Television	the delivery of television content over Internet Protocol (IP) networks
Related to Hardware / Software		
RFID	Radio Frequency Identification	uses electromagnetic fields to automatically identify and track tags attached to objects (touchless login for xID)
LVDS	Low-voltage Differential Signal	is a technical standard that specifies electrical characteristics of a differential, serial signaling standard. LVDS operates at low power and can run at very high speeds using inexpensive twisted-pair copper cables (used on Touch consoles for screen color)
LED	Light Emitting Diode	a semiconductor light source that emits light when current flows through it. LED consoles use this technology
RSCU	Remote Software Console Update	Cloud based server housing software specifically for consoles
MCB	Motor Control Board	Found in a treadmill frame, this electronic board controls frame components when commanded by the UCB/PCB
LCB	Lower Control Board	Found in non-treadmill cardio frames, this electronic board controls frame components when commanded by the UCB/PCB
UCB	Upper Control Board	Found in every console, controls console functions
PCB	Printed Control Board	Same as above. PCB is used concurrently with UCB
SOM	System on Module	added board to UCB that stores system data including serial numbers on Touch & Touch XL UCB)
SOC	System on Chip	integrated circuit board added to UCB for PLED console
I/O	Input/Output	the communication between an information processing system, such as a computer, and the outside world, possibly a human or another information processing system
GUI	Graphical User	a form of user interface that allows users to interact with

	Interface	electronic devices through graphical icons and audio indicator such as primary notation, instead of text-based user interfaces, typed command labels or text navigation
AC Voltage	Alternating Current	voltage or current that changes polarity or direction, respectively, over time (voltage coming into the machine is AC)
DC Voltage	Direct Current	one directional or unidirectional flow electric charge (the MCB/LCB converts the voltage from AC to DC)
ESD	Electrostatic discharge	the sudden flow of electricity between two electrically charged objects caused by contact, an electrical short, or dielectric breakdown
LCD	Liquid Crystal Display	method of displaying readings continuously, as on digital watches, portable computers, and calculators, using a liquid crystal film, sealed between glass plates, that changes its optical properties when a voltage is applied
USB	Universal Serial Bus	an external serial bus interface standard for connecting peripheral devices to a computer, as in a USB port or USB cable.

UPDATE CENTER

Known Issues

- Broken Console Standoffs. (NB-2108013)
- Due to a defective HDMI board, TV cannot be displayed (treadmill consoles only).
- TreadSense is not disabled in Demo Mode. This issue will be fixed in upcoming software.
- If the customer notices a brief hesitation or scrambled area on the screen that occurs at the same point on the Virtual Active workout video every time the video plays, replace the microSD card.
- When power is abruptly cut on a 220V treadmill that was manufactured before March 17, 2021, the 02BB error may occur. Replace the MCB and update console software to fix this issue. (NB-2203002)
- To avoid cracking the lower plastic components, it is important not to overextend the S600E Suspension Elliptical left and right link arms to the sides during the assembly process. See the service bulletin Elliptical Assembly Reminder (NB-2312002) for more information.

Software History

- Version 1.1.0.3 adds CAB compatibility and fixes bugs related to the IQIYI, Youku, and WeChat apps.
- Version 1.0.3.18 updates the Netflix app, disables Hulu (due to Hulu version compatibility issue), fixes a Sprint 8 bug, and fixes a bug that occurred with some Virtual Active courses. The new software also makes treadmills compatible with the Lite-On VAVE MCB. (NB-2111011 and NB-2111012)
- Version 1.1.1.1 adds Bluetooth FTMS protocol compatibility and Marathon mode.

FAQs

- **How long does it take for a T600E treadmill to go from 3 mph to 10 mph?**

It takes approximately 20 seconds to go from 3.0 mph to 10.0 mph on the T600/T600E treadmill. It takes approximately 30 seconds to accelerate from 0.5 mph to 12.0 mph.

Note: The user cannot press and hold the up button to go from 3 to 10 mph—the console will only increase 1 mph when the speed up button is pressed and held. The user must press the up button repeatedly to increase to a high speed.

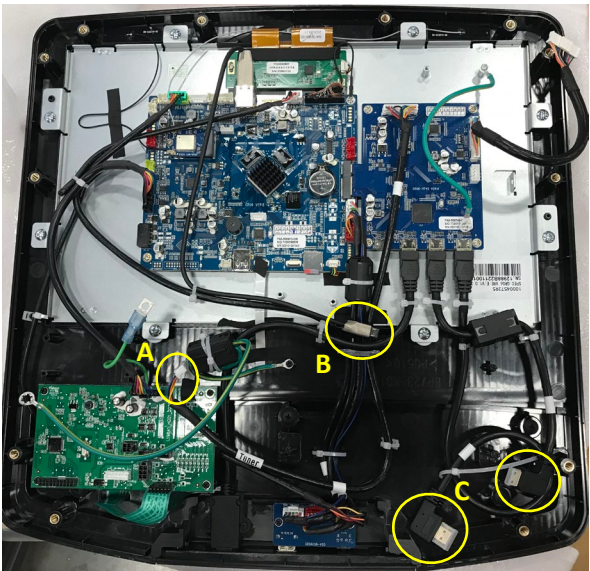
ASSEMBLY ISSUES

Follow the assembly instructions as directed in the Owner’s Guide. Issues that you may encounter during assembly are listed below.

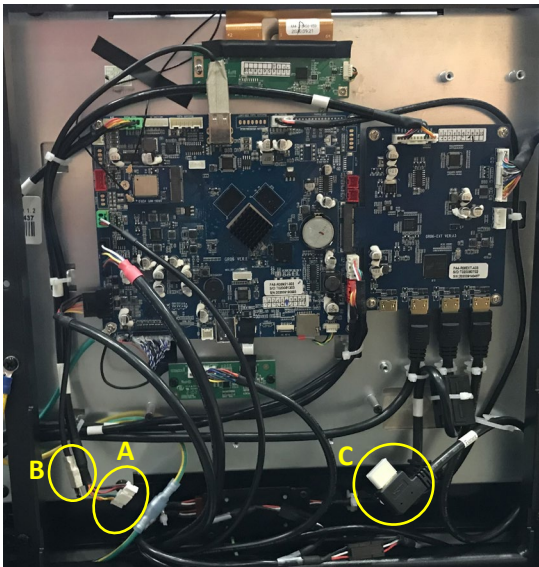
- All consoles include components for installing an optional TV tuner. If a facility does not add a TV tuner, the wires can remain unconnected in the console; it is not necessary to remove the unused wires.

Reference Number	Part Description
A	TV signal cable
B	Tuner Micro-USB cable
C	HDMI and Mini-HDMI cables*
D	Coax TV exchange connector

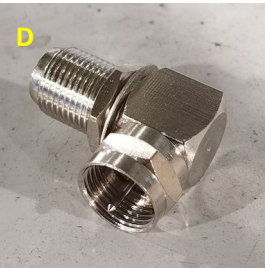
* The HDMI cable is used with the US5, US6, or BR2 tuner. The Mini-HDMI tuner other is used with the KM4 tuner. See [TV Tuner Installation](#) for more information.



SUR-600E



T600E



- S600E Suspension Elliptical: To avoid cracking the lower plastic components, it is important not to overextend the left and right link arms to the sides during the assembly process. See the service bulletin Elliptical Assembly Reminder (NB-2312002) for more information.

CONSOLE OVERLAY & WORKOUT DESCRIPTION

Console Description

The machine is inspected before it is packaged. Carefully unpack the unit and dispose of the box material. Note: There is a thin protective sheet of clear plastic on the overlay of the console that should be removed before use.

The console has a fully integrated touch screen display. All information required for workouts is explained on-screen. Exploration of the interface is highly encouraged. The information explaining how to program for various workouts will give an explanation about the contents of each screen on the console.

SUR-600E Console

A. GO: One Touch Start.

B. **— +** SPEED/LEVEL: Adjust speed and make program selections.

C. **🏠** Return to the home screen whenever you're using an app

D. **🔊** ADJUST VOLUME

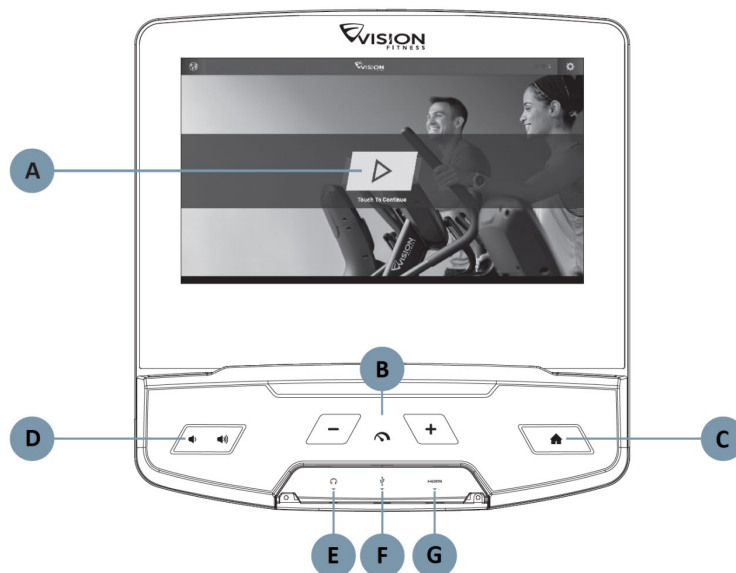
E. **🎧** HEADPHONE JACK: Outputs audio from console to connected 3.5mm headphones.

F. **🔌** USB 2.0 PORT: Device charging (output rating 5V /2A), device media, and software updates.

G. **HDMI** HDMI IN PORT: screen cast of smart devices which supports HDMI out to console *

* Cables and smart devices NOT included in our package.

The term HDMI and the HDMI Logo are trademarks or registered trademarks of HDMI Licensing Administrator, Inc.



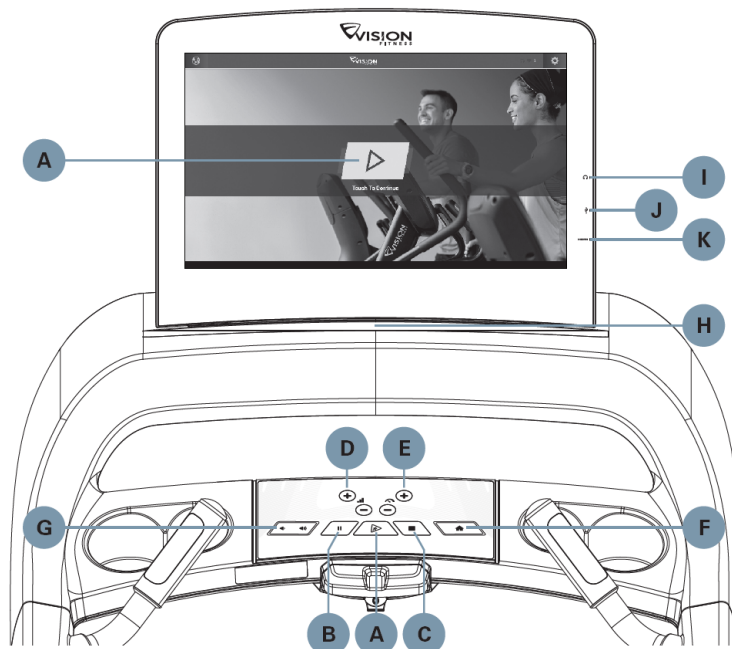
T600E Console

A. GO: One Touch Start.

B. **||** PAUSE: Displayed on-screen during workout. Pauses workout. Pause duration can be set in Machine Settings. Press stop to end workout and show workout summary data.

- C. ■ STOP: Ends workout and shows workout summary data.
 - D. —+ INCLINE/LEVEL: Adjust incline and make program selections
 - E. —+ SPEED/LEVEL: Adjust speed and make program selections.
 - F. 🏠 Return to the home screen whenever you're using an app
 - G. 🔊 ADJUST VOLUME
 - H. READING RACK: Holds reading material or electronic device.
 - I. 🎧 HEADPHONE JACK: Outputs audio from console to connected 3.5mm headphones.
 - J. 🖱️ USB 2.0 PORT: Device charging (output rating 5V /2A), device media, and software updates.
 - K. HDMI HDMI IN PORT: screen cast of smart devices which supports HDMI out to console *
- * Cables and smart devices NOT included in our package.

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Console Operation

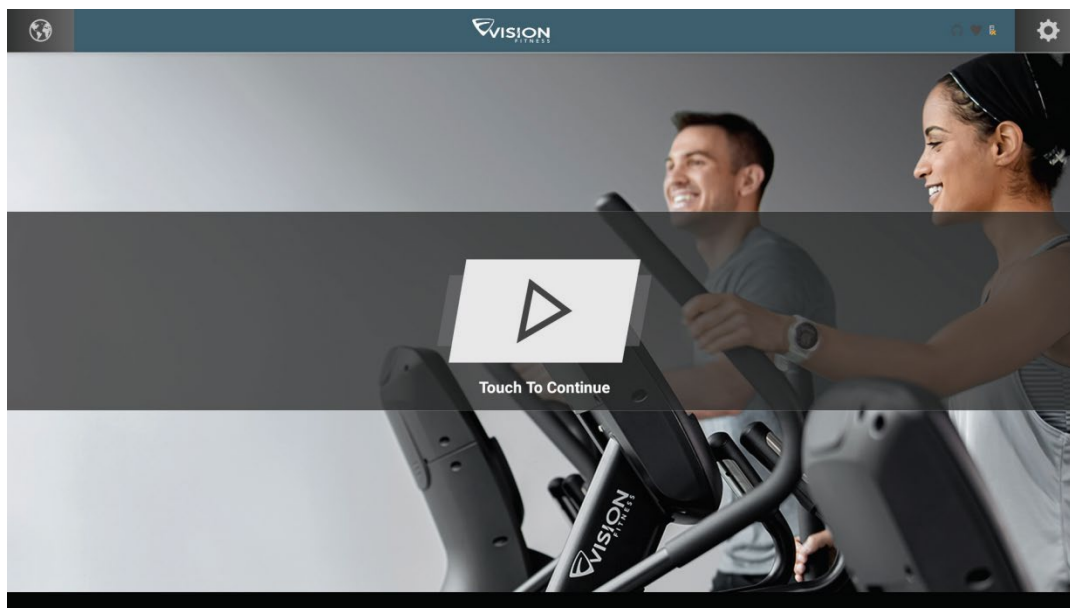
First Time Setup

First time setup occurs automatically the first time the console is powered on. To re-initiate First Time Setup, press and hold the Vision logo at the top of the screen to open the Product Dashboard, touch Machine Settings, and then touch “3-0-0-2 Enter (check mark)” on the keypad.

Step 1	Language	Select Language, Time Zone, Date Format, and Units of Measure (Metric or Imperial)
Step 2	Network Setup	Select Wi-Fi network (optional)
Step 3	Model Selection	<u>SUR-600E only:</u> Select your frame type. <u>T600E only:</u> Select the correct voltage for your frame: • AC 100/120V 50-60Hz • AC 220/240V 50-60Hz (To find this information, check the sticker near the power switch on the frame.)

Getting Started

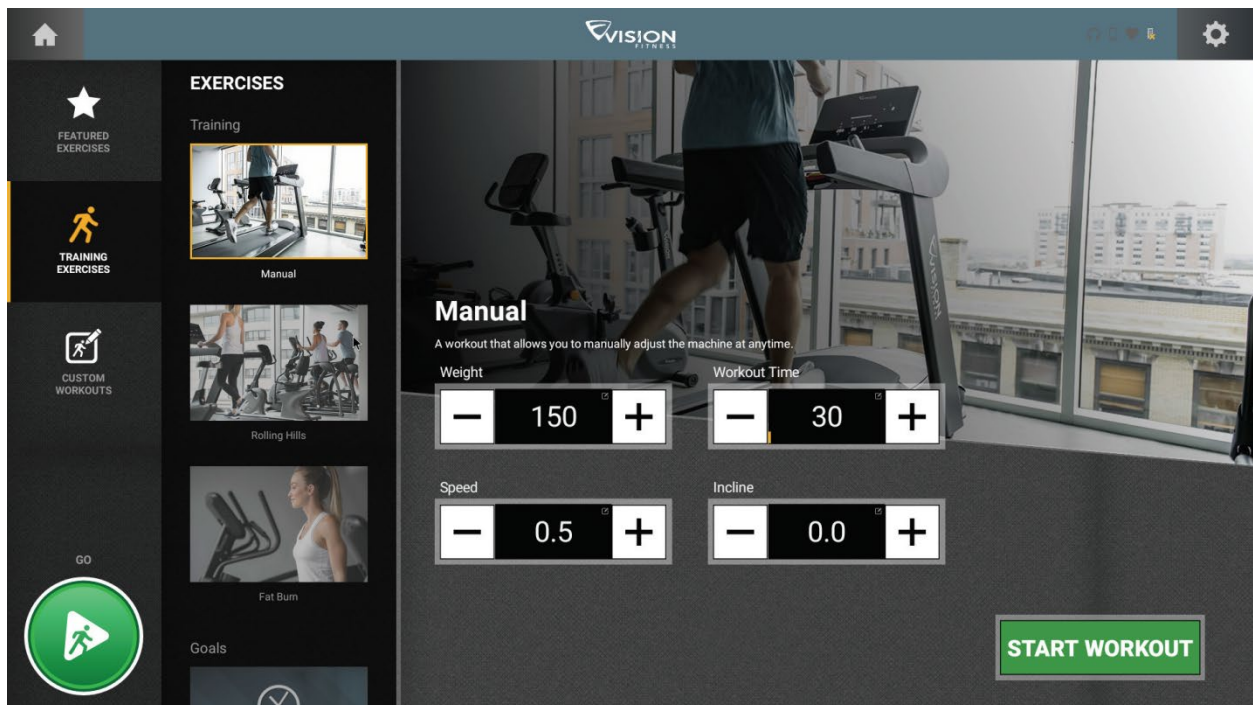
- To change language, touch .
- Touch  to begin workout out immediately.
- Touch  to set up Wi-Fi.



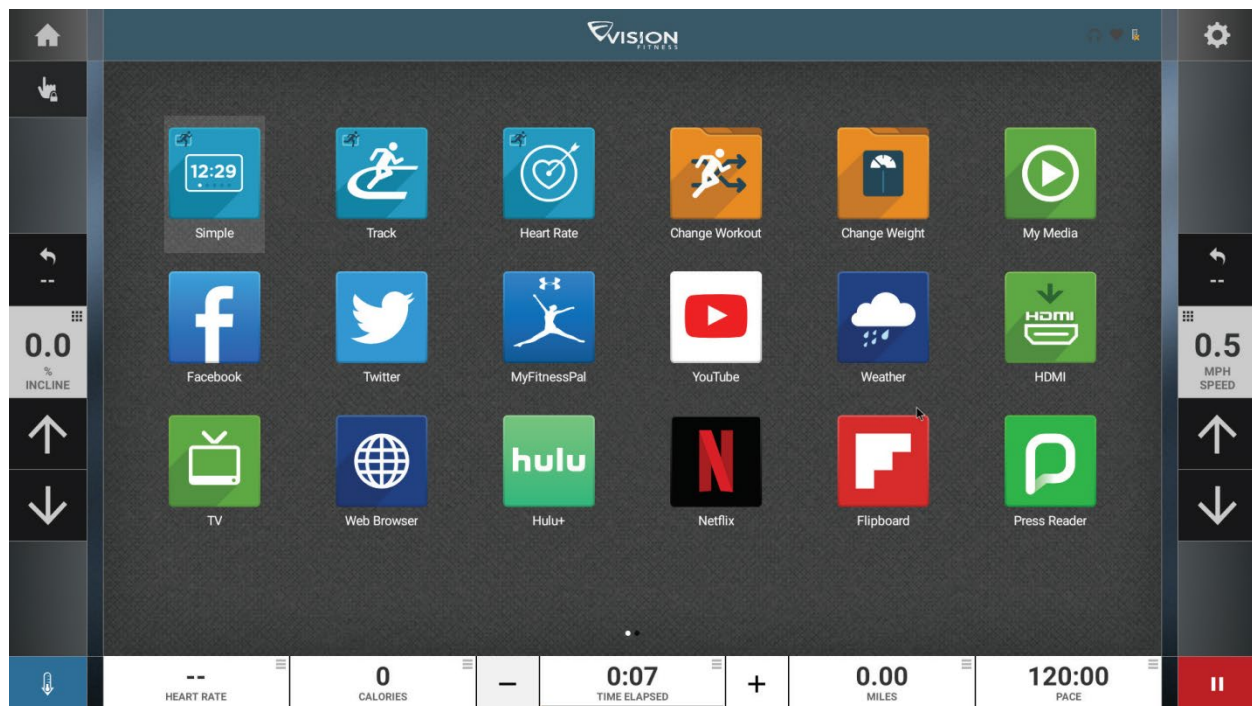
Program Help

1. After selecting a **WORKOUT**, adjust the program settings appropriately and/or begin your exercise using the default program settings.
2. Adjust your program settings.
3. Press **START WORKOUT** to begin your workout.

Note: Workouts and features vary based on model type, console configuration, and software versions.



Home Screen



	Change WORKOUT STATISTICS displayed at the bottom of the screen
	Return to the home screen whenever you're using an app
	Adjust VOLUME and pair a BLUETOOTH device
	Increase or decrease the intensity level, speed or incline
	Use the keypad to set intensity level, speed or incline. Press to confirm change
	Change intensity level, speed or incline back to previous setting
	Pause your workout. Touch to resume. After resuming, speed, incline and intensity levels will be reset. While paused, touch to end workout
	Increase or decrease the duration of your workout
	Enter cool down mode. Cool down lasts for a few minutes while reducing the workout intensity, allowing your body to recover from your workout
	Lock the screen in order to prevent accidental screen touches from being implemented. Touch it again to unlock the screen and allow screen touches

Apps and Entertainment

Consult the Vision Cardio Touch Consoles Owner's Guide. Workouts and app availability vary by model and software configuration. For the most up-to-date information, please visit world.visionfitness.com

NOTE:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

FCC RF Radiation Exposure Statement:

1. This Transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.
2. This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body.

Please visit Vision website for further console information: www.world.visionfitness.com

User Connectivity Features

Note: Vision Entertainment Series consoles are **not** intended to be compatible with Passport Media Player or Passport Player 2.0.

Bluetooth FTMS

Bluetooth FTMS (Fitness Machine Service protocol) is the latest Bluetooth protocol for fitness equipment. With the growing popularity of FTMS-enabled fitness applications, the Console is now capable of pairing with popular Bluetooth FTMS devices and apps. Once the console is paired with devices, it can stream the live data from the machine to the training app. The app determines what readouts will adopt console data directly and what readouts will use the app's own algorithm.

Take Zwift as an example:

- For treadmill mode, they only receive our speed and calculate all other parameters on their own.
- For bike mode, they receive our watts and RPM and calculate the test on their own.

Some apps can control the console, like Kinomap. It controls the incline via its program once the user enables the start/go button on our console.

Note: The console can only initiate start/go via the console buttons. An app that initiates start/go will not be supported by the console to avoid risk of injury if the app initiates start/go by accident. For example, @Zone is not supported.

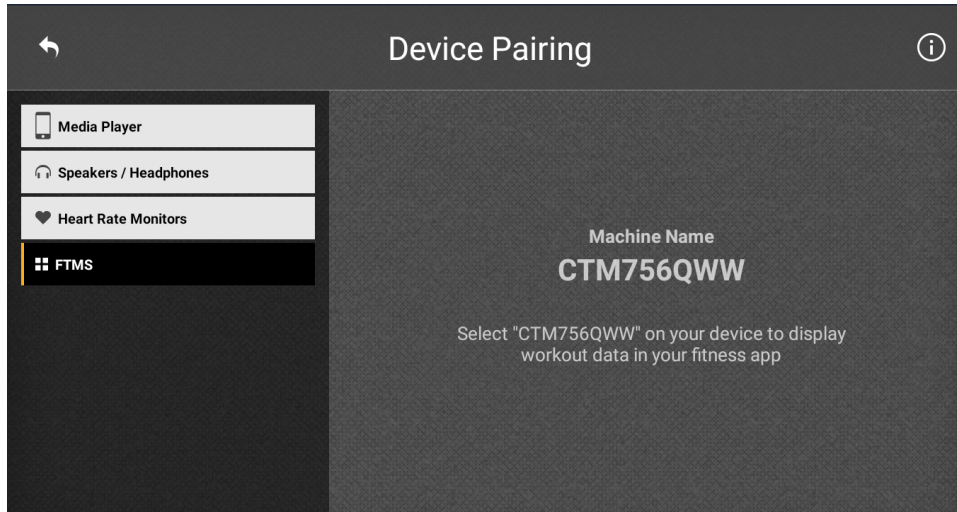
We strive as a company to make our consoles compatible with as many major devices as possible. The following devices have been tested by a third party and are known to work with our products.

BlueTooth Headset (3)

No.	Brand Name	Model Name	OS Version	DUT HW Version	DUT FW Version
1	Apple	Apple AirPods	N/A	version F	v1.1.0.18
2	SONY	WH-H900N	N/A	version F	v1.1.0.18
3	Samsung	Galaxy Buds	N/A	version F	v1.1.0.18

TO CONNECT YOUR COMPATIBLE DEVICE:

1. Make sure Bluetooth is turned on in your device running the app.
2. In the console, go to settings (from "GO" screen or during a workout), tap 'device pairing' and select FTMS to broadcast machine name.



3. In the app device, pair with machine name via Bluetooth per app instruction.
4. In the app device, select program after app pairing is successful per app instruction.
5. In the console, tap the back button and then select 'Go' to start workout.

Note: FTMS, HR and headphones can be used at the same time.

USB Audio/Video

The console can stream media in the “My Media App” via USB. Supported devices include USB flash drives, Windows phones/tablets, and Android phones/tablets. (Apple phones/tablets are not supported; see [My Media Issues](#) for alternative options.)

The following media types are supported:

Audio

- AAC (.3GP, .MP4, .M4A, .AAC)
- MP3 (.MP3)
- Wave (.WAV)

Video

- H.263 (.3GP, .MP4)
- H.264 (.MP4, .MOV)

TO PLAY MEDIA DURING YOUR WORKOUT:

1. Unlock and connect your device to the USB port  located beneath the display.
2. Open the “My Media App” and select the USB device name from the Media Source list.

Select the Audio or Video tab at the top to access your files and play your media.

Audio In/Out

You can play audio through the console speakers by connecting a device to the audio in jack  located beneath the display. Plug your headphones into the audio out jack  to use them instead of the console speakers.

Target Heart Rate

All consoles use Bluetooth for heart rate. Most Bluetooth devices must be manually paired to the console on first use.

ANT+ devices are **not** compatible with the console.

Using the Heart Rate Function

The heart rate function on this product is not a medical device. While heart rate grips can provide a relative estimation of your actual heart rate, they should not be relied on when accurate readings are necessary. Some people, including those in a cardiac rehab program, may benefit from using an alternate heart rate monitoring system like a chest or wrist strap. Various factors, including movement of the user, may affect the accuracy of your heart rate reading. The heart rate reading is intended only as an exercise aid in determining heart rate trends in general. Please consult your physician.

Place the palm of your hands directly on the grip pulse handlebars. Both hands must grip the bars for your heart rate to register. It takes 5 consecutive heart beats (15-20 seconds) for your heart rate to register. When gripping the pulse handlebars, do not grip tightly. Holding the grips tightly may elevate your blood pressure. Keep a loose, cupping hold.

You may experience an erratic readout if consistently holding the grip pulse handlebars. Make sure to clean the pulse sensors to ensure proper contact can be maintained.

WARNING!

Heart rate monitoring systems may be inaccurate. Over exercising may result in serious injury or death. If you feel faint, stop exercising immediately.

SERVICE AND SPECIAL FUNCTIONS

Machine Selection

Machine Selection tells the console what frame modality it's installed on, ensuring proper communication and workout function. Some settings are restored to factory defaults and re-configured during setup. Completing Machine Selection is also necessary when the console is installed on a different frame. Machine Selection occurs during initial setup. The console will return to the initial setup menu when Restore Defaults or Factory Reset is performed.

Restore Factory Defaults

Restoring defaults on the console ensures that all important settings are defaulted to their factory settings, serving as a troubleshooting step to set the console to a known state. All settings, frame selection, Wi-Fi networks, etc., are forgotten.

The following settings are returned to their noted default values:

Option	Value (Vision)
Frame	Treadmill
Console	600E 15" (until resolution detection for 15"/22")
Frame ID	-----
Console ID	-----
Machine UUID	00000000-0000-0000-0000-000000000000
Time Zone	(GMT-06:00) Central Time (US and Canada)
Lube Miles	0 (Only used for certain retail products)
Automatic Update	Machine Settings Mode Default (1:00am)
Facility ID	0
Language	English - United States
Reboot Inactive Time (Hours)	Machine Settings Mode Default (6)
Screen Timeout	Machine Settings Mode Default (30 sec)
Screen Brightness	Machine Settings Mode Default (100)
Custom Logo	Resets to Factory Logo (Vision)
Custom Workout Background	Resets to Factory Background (Vision)
Custom Welcome Background	Resets to Factory Background (Vision)
Custom Background Color	Resets to Factory Color (Vision)
Show Custom Logo	Check (true)
Show Custom Workout Background	Check (true)
Show Custom Welcome Background	Check (true)
Show Custom Background Color	Check (true)
Show Setup Wizard	No Check (false)
Tread Sense	Enabled
Maximum Workout Time	Machine Settings Mode Default (120 min)
Maximum Workout Calories	Machine Settings Mode Default (1000)
Maximum Workout Distance	Machine Settings Mode Default (31.1mi/50km)
Maximum Level	Machine Settings Mode Default (20)

Default values continued:

Pause Time	Machine Settings Mode Default (5 min)
Maximum Speed	Machine Settings Mode Default (12mph/19.3kph)
Start Speed	Machine Minimum
Maximum Incline	Machine Settings Mode Default (15%)
Elevation	Machine Settings Mode Default (Below 5000)
Cool Down Time	Machine Settings Mode Default (5 min)
Maximum Cool Down Adjustment Time	Machine Settings Mode Default (5 min)
Level	Machine Settings Mode Default (1)
Age	Machine Settings Mode Default (30)
Weight	Machine Settings Mode Default (150lbs)
Height	Machine Settings Mode Default (70in)
Gender	Machine Settings Mode Default (Male)
Default Workout Time	Machine Settings Mode Default (30 min)
Default Workout Calories	Machine Settings Mode Default (300)
Default Workout Distance	Machine Settings Mode Default (3.0mi/4.8km)
Default Web Page	Machine Settings Mode Default (http://world.visionfitness.com)
TV Channel List	Delete List

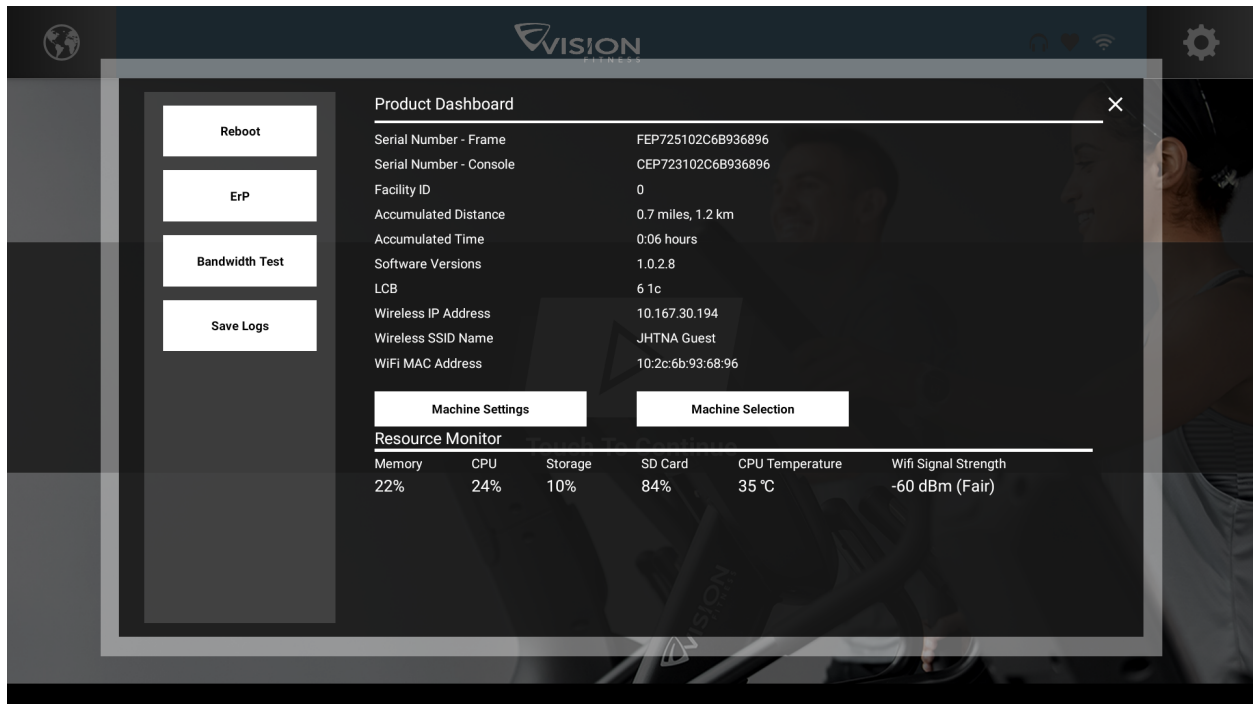
To Restore Factory Defaults:

1. Press and hold the Vision logo at the top of the screen for 5 seconds.
2. Press “Machine Settings” and then type 3001 on the keypad. Press the check mark button.
3. Press “General”.
4. Press “Restore Defaults”.
5. Set up the console as though it is brand new.

Product Dashboard

The Product Dashboard provides quick access to accumulated time and distance, as well as some troubleshooting tools: Reboot, ErP (turns Energy Saver mode on/off), Bandwidth Test (test internet bandwidth speed), and the “Save Logs” command.

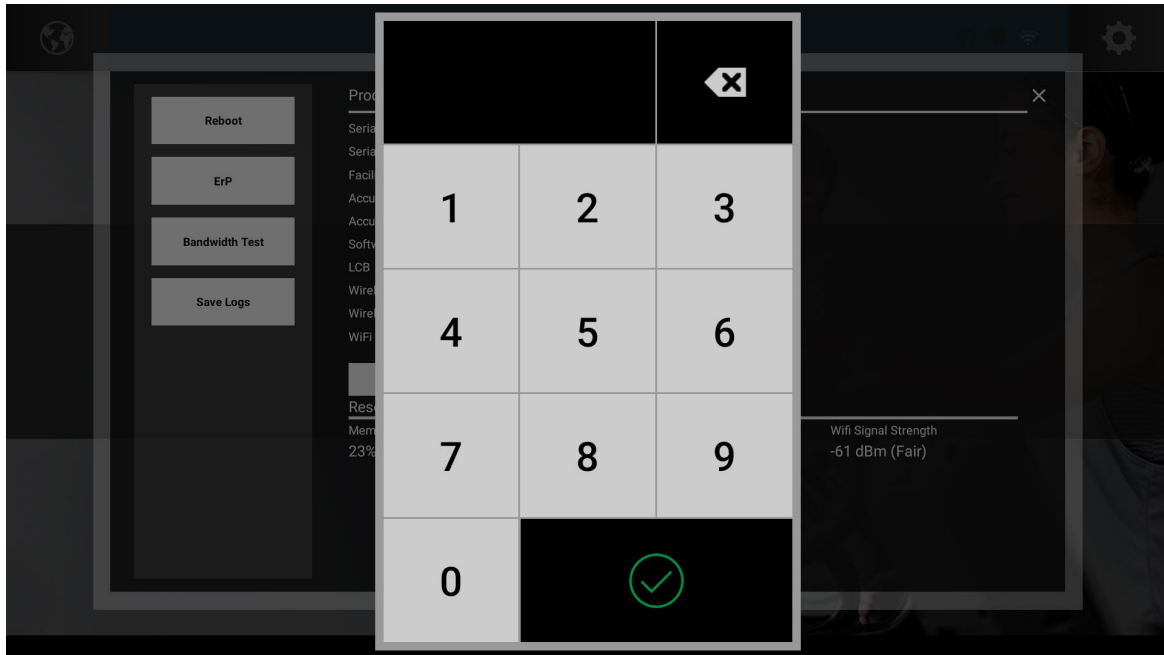
From the Welcome Screen, press and hold the banner at the top center of the screen for 5-7 seconds until the Product Dashboard displays.



Machine Settings

Machine Settings can be used to manage which apps show on the console and to perform additional troubleshooting tests. Follow these steps to enter Machine Settings:

1. From the Welcome Screen, press and hold the banner at the top center of the screen for 5-7 seconds until the Product Dashboard displays.
2. Press “Machine Settings”.
3. A keypad appears on the screen. Press 3001 Enter.



Internet Setup

Consoles can be used without an internet connection, but to get the best use of the included features and receive important software updates, Vision recommends connecting the console to the internet.

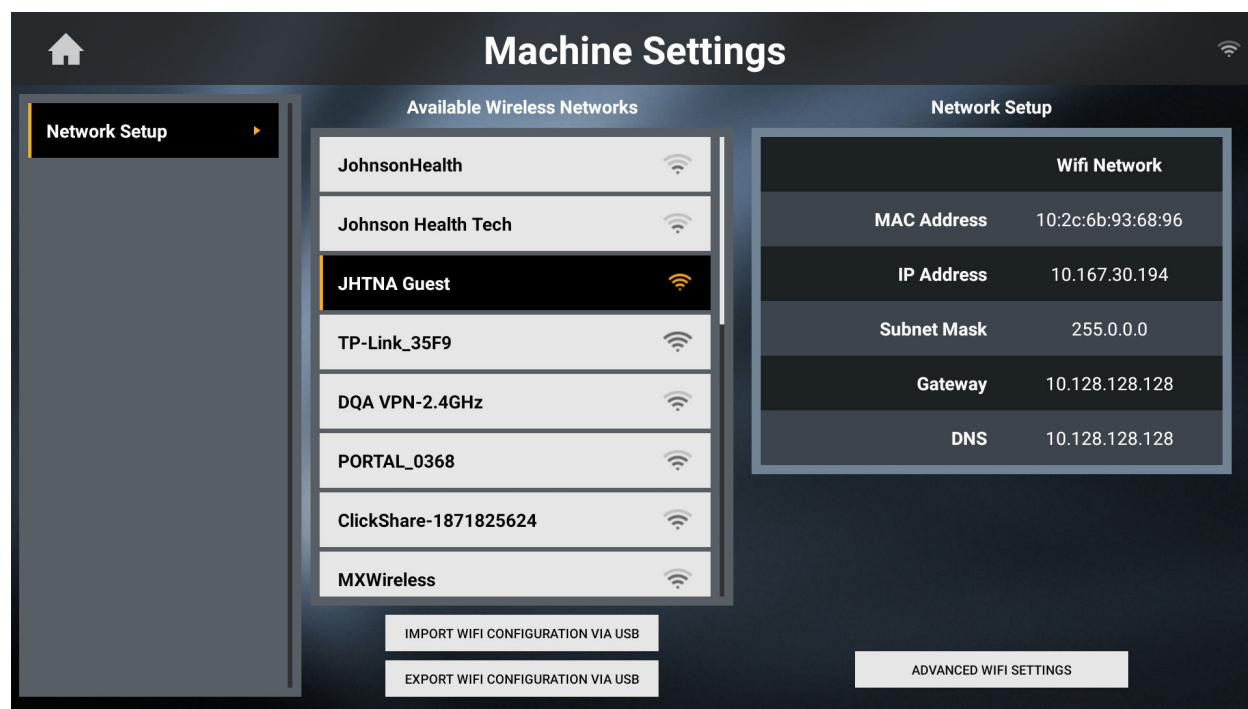
Wi-Fi connectivity is standard on Vision Entertainment Series consoles. They can communicate on both the 2.4 GHz and 5 GHz bands. These models do not have an Ethernet input.

Internet connections are typically established during initial console setup, but if the network changes or the console becomes disconnected, it can be reconnected.

Available download speed can be checked by using the [Connection Speed \(Bandwidth\) Test](#).

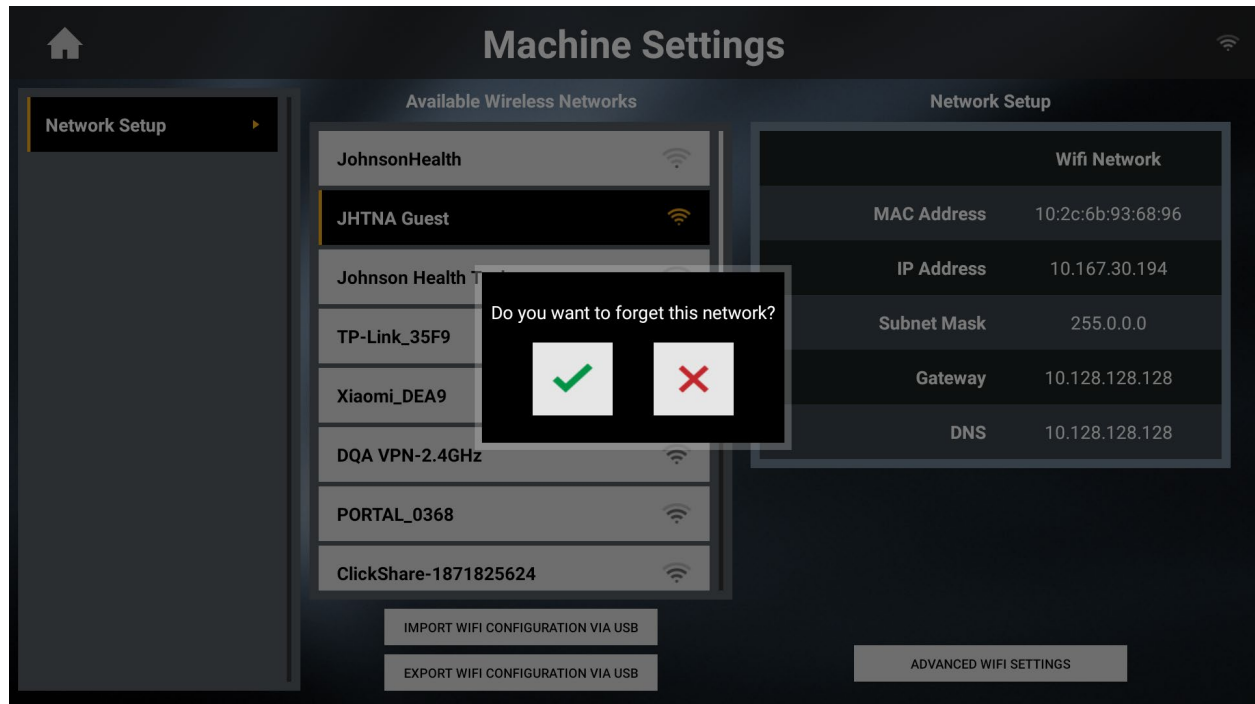
To connect to a Wi-Fi network:

1. Press the gear icon in the top right corner of the screen.
2. Select “Wi-Fi Setup”.
3. Locate and touch the correct SSID in the Available Networks table.
4. Enter the Wi-Fi password.
5. IP Address, Subnet Mask, and Gateway fields will populate, indicating the internet connection is complete.



To forget a Wi-Fi SSID:

1. Press the gear icon in the top right corner of the screen.
2. Select “Wi-Fi Setup”.
3. Touch the SSID on the presented list.
4. After releasing touch, choose the check mark on the dialog that appears.



Reference for Wi-Fi connection signal strength icons:

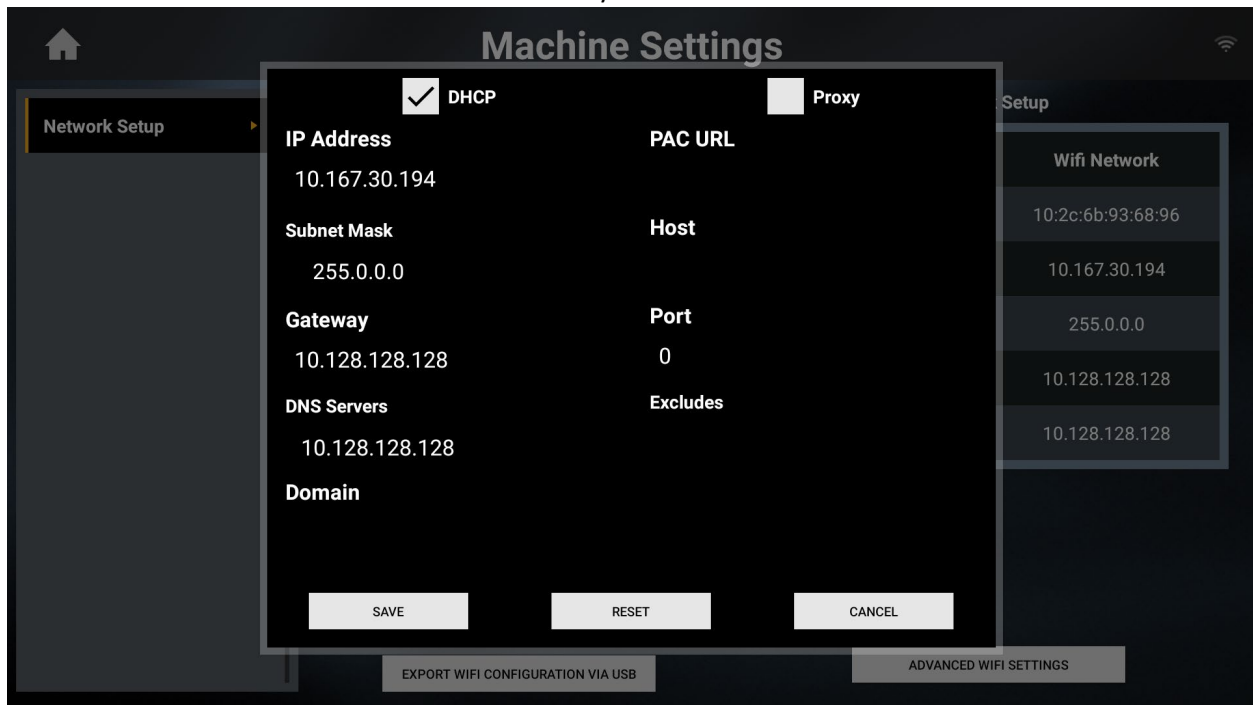
Symbol	Meaning
	No internet connection
	Wifi connected: 25% connection strength
	Wifi connected: 50% connection strength
	Wifi connected: 75% connection strength
	Wifi connected: 100% connection strength

Reset Wi-Fi Connection

Some Wi-Fi connection issues can be resolved by resetting the connection.

1. Press the gear icon in the top right corner of the screen.
2. Select “Wi-Fi Setup”.
3. Press “Advanced WIFI Settings”.
4. Press “Reset” and then “Save”.

The console will disconnect from and immediately reconnect to the same Wi-Fi network.



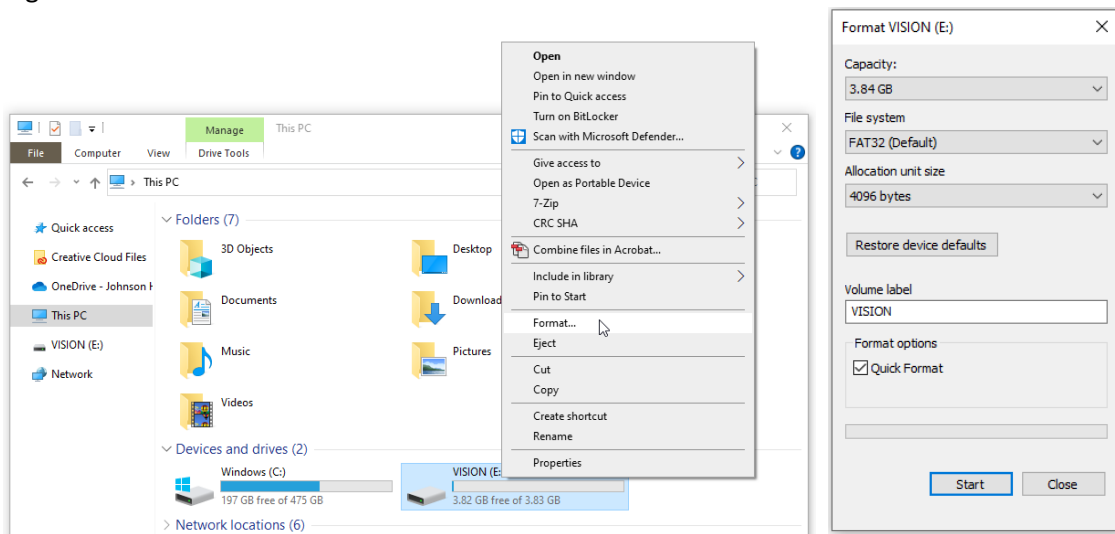
Preparing a USB Drive

In order to prepare a USB drive for use with Vision equipment, you must first ‘format’ it. This operation configures the drive filesystem and clears all data, ensuring there is adequate space for console files.

WARNING – Formatting permanently removes all data and files currently stored on the USB drive. Ensure existing data and files are saved to another storage device before formatting.

To format a USB drive on a Windows 10 PC:

1. Insert the USB drive into an available USB port on the computer.
2. Open a File Explorer window and navigate to “This PC”.
3. Right click on the USB drive and click “Format”.



4. Ensure the “File system” is set to **FAT32**.
5. Check that the capacity is **2-128 GB**—smaller can’t fit Vision console software files; larger isn’t recognized by the console.
6. The USB name (Volume label) can be set to whatever desired; Vision recommends naming it the product and version of software saved to it for reference.
7. Click “Start” and the computer will format the drive; it is normal for it to take up to a minute to complete formatting large drives.

The USB drive is now formatted and prepared for use. Load the appropriate software files or settings as needed.

Software Updates

Software updates are an important part of maintenance of the console. The console software controls all console functions and frame communication, and the software should always be updated to the most current software release. The console, by default, will only upgrade to a higher software revision. If circumstances require a software downgrade to a lower revision number contact Customer Technical Service.

Internet/RSCU Update

Available Software

The console settings determine what software packages are available to the console via RSCU. If the appropriate software version doesn't appear to be available via internet updates, confirm that the DAPI Environment is properly configured. Consoles set to the default DAPI Environment ("Production") will receive all regular software updates. Changing this setting is appropriate to access proprietary software via RSCU—consult with local Customer Tech Support before making changes.

Internet/RSCU update

Vision cardio equipment can communicate with a central server known as "Remote Software Console Update", or RSCU. When properly configured, consoles can download software from this server to update. You can set up the console to automatically check for updates daily, or check for updates on command, when needed.

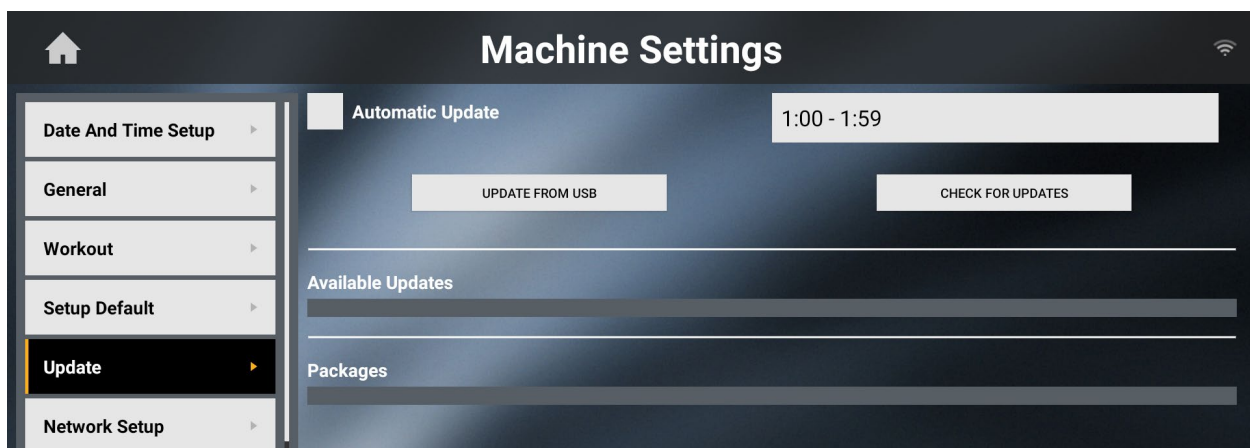
To set consoles to automatically check for updates daily:

1. Press and hold the Vision logo at the top of the screen for 5 seconds.
2. Press "Machine Settings" and then type 3001 on the keypad. Press the check mark button.
3. Press "Update".
4. Check the box next to "Automatic Update".

Consoles configured this way will automatically check daily for updates and install them when available.

To manually check for updates:

1. Press and hold the Vision logo at the top of the screen for 5 seconds.
2. Press "Machine Settings" and then type 3001 on the keypad. Press the check mark button.
3. Press "Update".
4. Press "Check for Updates". A list of the software update packages will appear if available.
5. Click "Install" and the software update will begin.

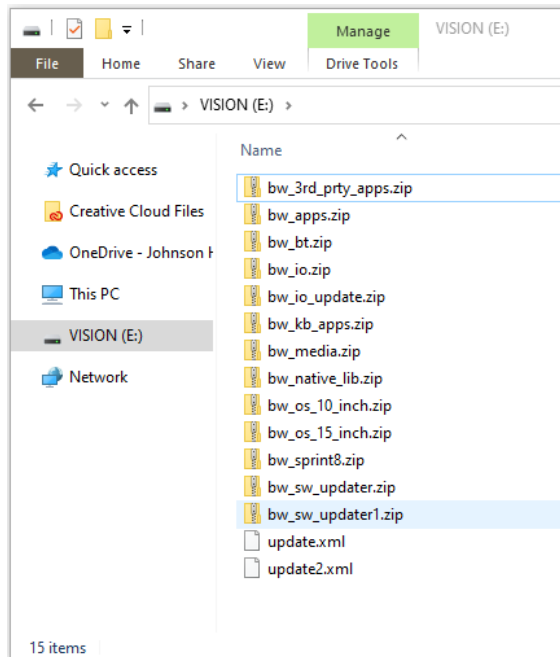


USB Update

Software updates via USB drive are available when the console is not connected to the internet, the internet connection speed is very slow, or a software version different than the current version is needed. At this time, there is no way to update console software to an older (numerically lower) version.

To update console software via USB:

1. Go to [Vision Fitness – Software Updates](#) and download the software package onto a personal computer.
2. [Prepare a USB drive.](#)
3. Unzip and open the downloaded folder and copy files onto the USB drive root directory.



4. Remove the USB drive from the computer and insert it into the console USB port.
5. Press and hold the Vision logo at the top of the screen for 5 seconds.
6. Press "Machine Settings" and then type 3001 on the keypad. Press the check mark button.
7. Press "Update".
8. The console will scan the USB drive for available update files; the files available to be updated will display on the console screen.
9. Touch "Update" to begin the console software update; it is not uncommon for updates to take 30 minutes to complete.

The console will update all software packages available.

The console may reboot multiple times while installing updates—power cycling manually during this time should be avoided.

When the updates are complete, the console will return to the home screen.

Marathon Mode

If enabled, the “Marathon” workout will display in the program list. This is a special workout for when a user requires use of the product over the standard limits and is used for special events, like community challenges and fundraisers.

To enable/disable Marathon Mode:

1. On the console, press and hold the top-center of the touchscreen for 5 seconds until the ‘Product Dashboard’ appears.
2. Touch ‘Machine Settings’ and enter ‘3 0 0 1’ to access ‘Service Mode’.
3. Touch the ‘Workout’ button on the left navigation menu, and then check the box of Marathon to enable; uncheck to disable.
4. Press the ‘home’ icon in the upper-left to save changes.

Demo Mode

Demo Mode enables a console to operate without a functioning/attached frame. It can be used to troubleshoot possible MCB/LCB faults or communication errors.

To enable/disable Demo Mode:

1. Press and hold the Vision logo at the top of the screen for 5 seconds.
2. Press “Machine Settings” and then type 3001 on the keypad. Press the check mark button.
3. Press “General”.
4. Press the “Demo Mode” box to enable or disable this option.

With Demo Mode enabled, the console emulates any signals to or from the MCB/LCB and ignores any errors. Response to speed, resistance, and incline commands within the console will register as expected, but will not be acted on by the frame in Demo Mode.

Energy Saver Mode (ErP)

When Energy Saver mode is activated, the display will automatically enter standby mode (Energy Saver mode) after a specified period of inactivity. Follow these steps to turn on or adjust Energy Save mode:

1. Press and hold the Vision logo at the top of the screen for 5 seconds.
2. Press “Machine Settings” and then type 3001 on the keypad. Press the check mark button.
3. Press the Hardware tab.
4. Toggle the ErP dropdown to “On” and adjust the time and timeout settings.
5. Touch “Home”  in the upper left corner to exit Machine Settings

Run Machine Mode

Run Machine mode is used to test the product during the manufacturing process. When Run Machine mode is initiated on the frame, the console will start the frame as though it is in a manual workout with minimum settings and no time limit. Speed, incline, resistance, HR response, frame hardware button response, and other settings can be controlled directly: Tread Sense, user detection, and minimum RPM requirements are disabled to allow hardware testing and adjustment. Follow these steps to enable Run Machine Mode:

1. Press and hold the Vision logo at the top of the screen for 5 seconds.

2. Press “Machine Settings” and then type 3001 on the keypad. Press the check mark button.
3. Press “Calibration”, and then press the “Run Machine” tab that appears.
4. Adjust available parameters as needed and press the “Run Machine” button.
5. Press Stop Machine once the test is complete.

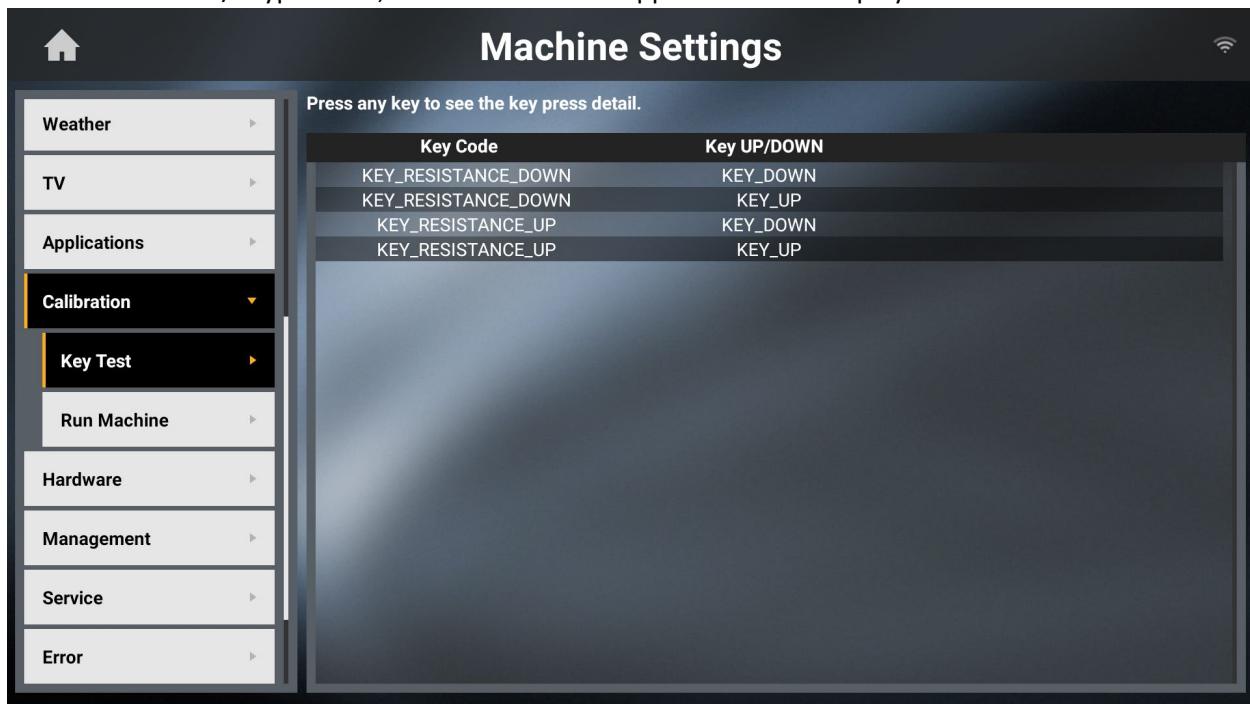
Key Test

To test frame button function and what the console is interpreting those buttons as, complete a Key Test.

1. Press and hold the Vision logo at the top of the screen for 5 seconds.
2. Press “Machine Settings” and then type 3001 on the keypad. Press the check mark button.
3. Press “Calibration” and then press “Key Test” from the menu that drops down.

Each button should register with its function when pressed and released.

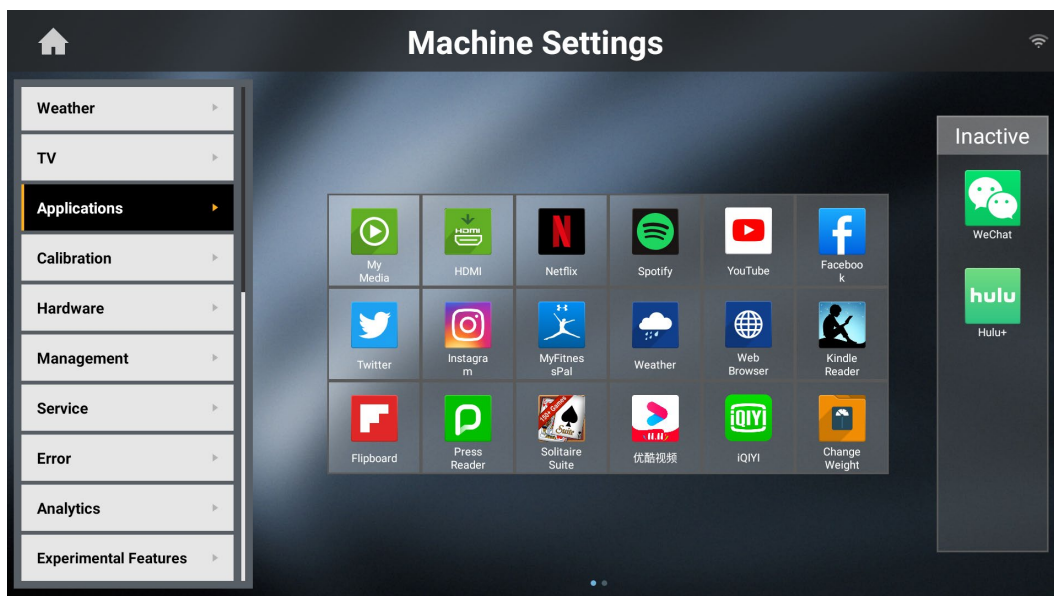
To exit the Button/Keypad Test, touch Home in the upper left of the display.



Add or Remove Apps

Apps may be made Inactive and hidden if preferred or if an app is experiencing a problem and awaiting an update or fix. To rearrange app locations or remove apps:

1. Press and hold the Vision logo at the top of the screen for 5 seconds.
2. Press “Machine Settings” and then type 3001 on the keypad. Press the check mark button.
3. Press “Applications”.
4. Press and hold the app icon.
5. Drag the icon to the desired location and release. If an app is moved to the **Inactive** column, it will not appear on the workout screen.



Connection Speed (Bandwidth) Test

If internet and streaming apps are performing poorly, check the download speed a console has available to ensure it is adequate.

1. From the Welcome Screen, press and hold the banner at the top center of the screen for 5-7 seconds until the Product Dashboard displays.
2. Press “Bandwidth Test”.
3. The test will begin—it is normal for the test to take around 30 seconds to complete.

A completed test will display the console’s available download speed.

Minimum requirements **per console**:

Basic internet functions (Asset Management and software updates): 512 Kbps

Standard definition streaming: 3 Mbps

High definition streaming: 5 Mbps

If the download speed meets minimum requirements and problems continue, consider further troubleshooting:

[App & Program Issues](#)

[Internet Connection Issues](#)

Wi-Fi signal strength is also visible on the Product Dashboard. The following signal strength levels are expected:

Excellent if signal is 0dBm to -35dBm

Good if signal is -36dBm to -55dBm

Okay if signal is -56dBm to -70dBm

Poor if signal is -71dBm to -200dBm

Console Recovery

On the UCB, there is a button marked “Recovery”. **Important:** Do not press this button unless directed to by a Vision Customer Tech Support representative.

Screenshot & Log File Collection

Screenshots and log files can be used in some situations to troubleshoot or verify faults.

Note: If the console doesn’t recognize the USB drive, consider that the [USB port may also be faulty](#), or the console is “[frozen](#)”. Troubleshoot as appropriate.

A user-accessible USB port is available on the front (SUR-600E) or side (T600E) of the console.

To capture logs to a USB drive:

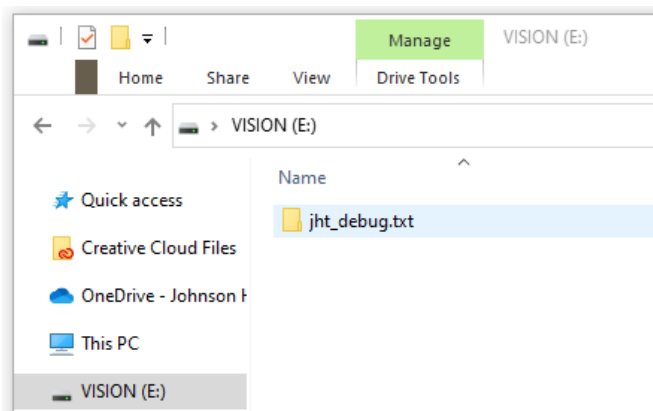
1. [Prepare a USB Drive](#).
2. Insert the USB in the console USB port.
3. From the Welcome Screen, press and hold the banner at the top center of the screen for 5-7 seconds until the Product Dashboard displays.
4. Touch “Save Logs”.
5. After a few seconds, the console may beep to signal transfer is complete.

- If there is an LED on the USB drive, it will blink while data is transferred and either stay lit or turn off when complete.
- Wait 30 seconds before removing USB drive, if there are no lights.

The log files and screenshot will be saved to the USB drive.

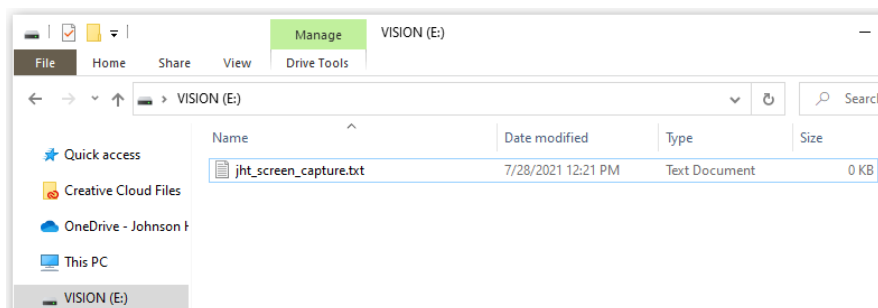
To capture a screenshot and collect logs to USB automatically:

1. [Prepare a USB Drive.](#)
2. Create a blank folder on the root of the USB drive called “jht_debug.txt”.*
 - When the console finds this folder, it will automatically capture the screenshot and log files.



3. On the screen you wish to capture, insert the USB drive into the console USB port.
4. After a few seconds, the console may beep to signal transfer is complete.
 - If there is an LED on the USB drive, it will blink while data is transferred and either stay lit or turn off when complete.
 - Wait 30 seconds before removing USB drive, if there are no lights
5. Remove the USB drive from the console.
 - The log files and screenshot will be saved to the USB drive.
 - If multiple screenshots are required, the same USB drive can be used multiple times. Insert the USB drive to collect the screenshot, navigate to the next screen, and remove and re-insert the USB drive to collect the next screenshot.

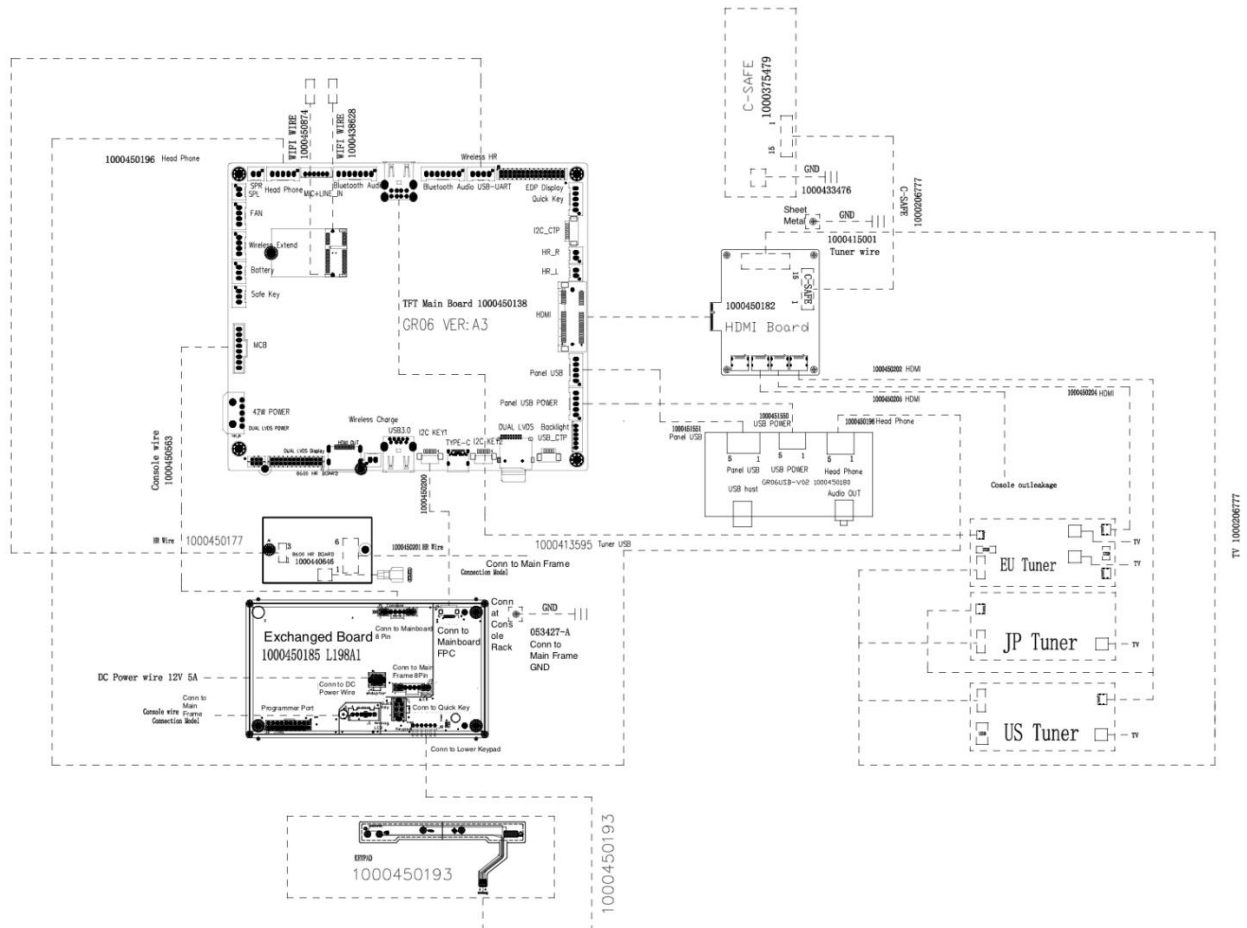
*To collect a screenshot *without logs*, create a text file named “jht_screen_capture.txt” and save it on the root of the USB drive. Then, follow Steps 3 through 5 above.

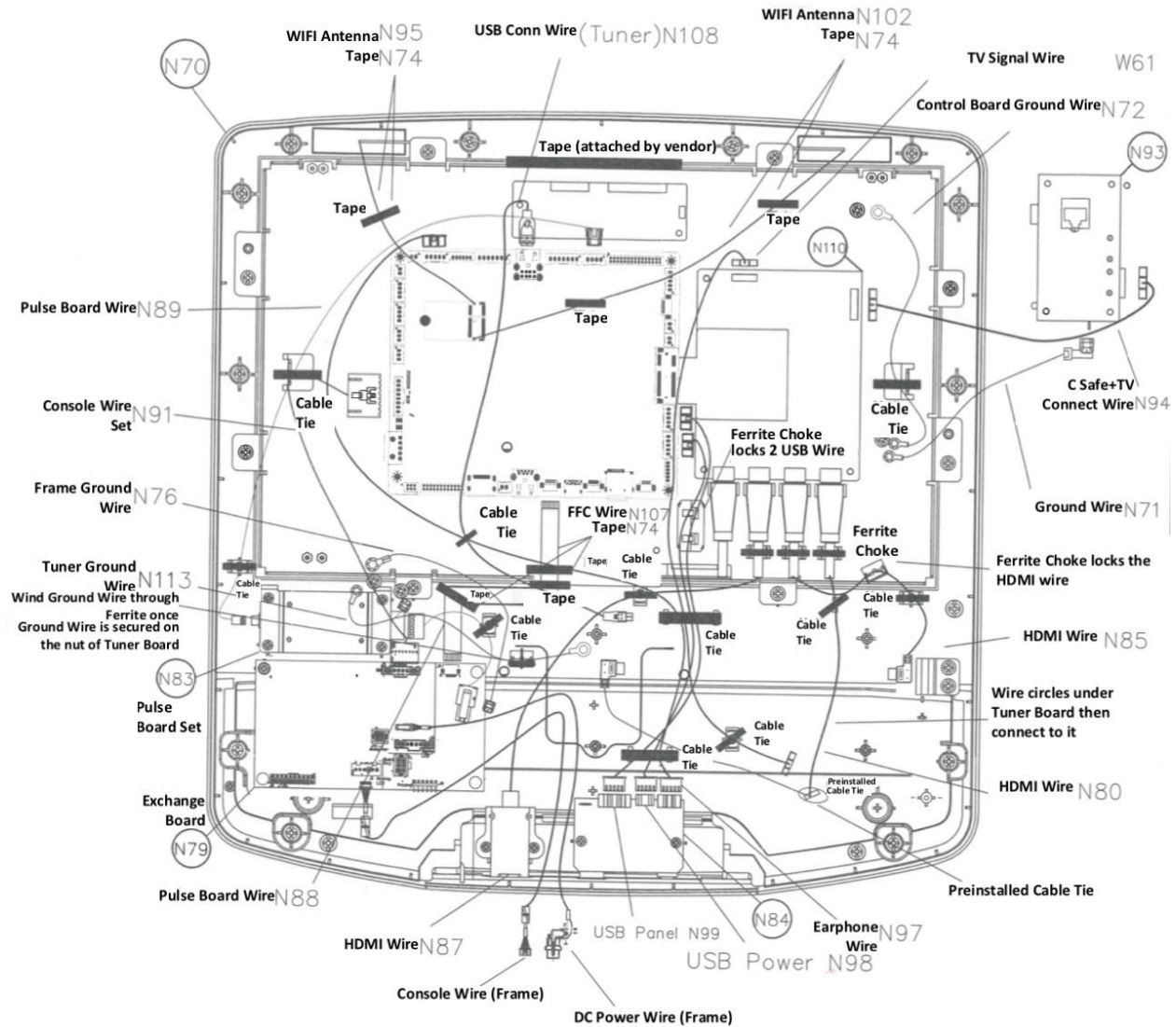


ASSEMBLY INFORMATION

SUR-600E

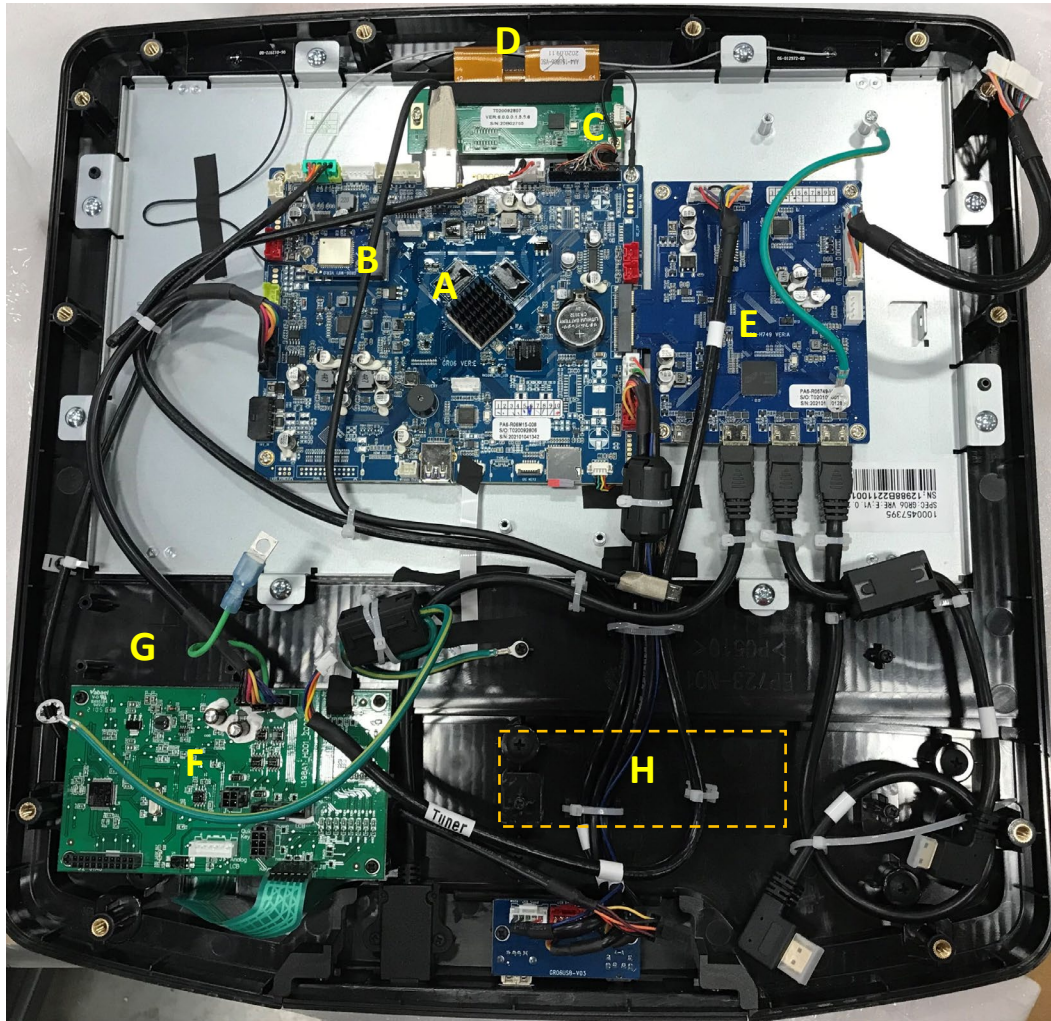
Electrical Diagrams





Location	Description
W61	TV signal wire
N71	Translator board ground wire
N72	Ground wire
N74	Tape
N76	Frame ground wire
N79	Exchange board
N80	HDMI wire
N83	Pulse board set

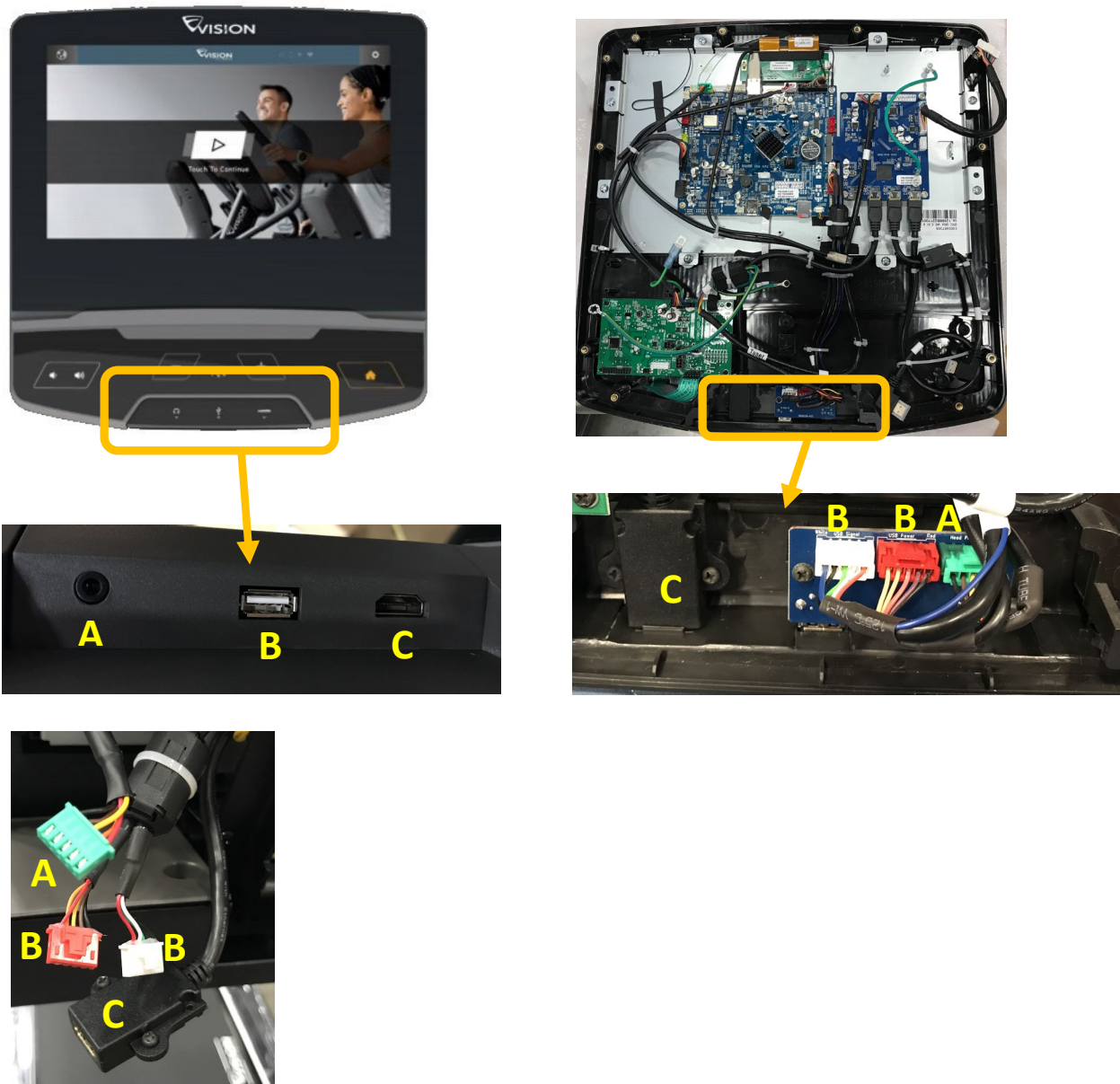
N84	USB power board
N85	HDMI wire
N87	HDMI wire
N88	Pulse board wire
N89	Pulse board wire
N91	Console wire set
N93	C-Safe board
N94	C-Safe and TV connection wire
N95	Wi-Fi antenna
N97	Earphone wire
N98	USB power wire
N99	USB wire
N102	Wi-Fi antenna
N107	FFC wire
N108	Micro USB cable
N110	HDMI patch board
N113	Tuner ground wire

Key Components

Location	Description
A	TFT module (UCB)
B	Wi-Fi board
C	Touch panel board
D	Touch panel ribbon cable
E	Entertainment board
F	Exchange board
G	Heart rate board
H	TV tuner <i>(not shown as it is optional)</i>

Entertainment Connections

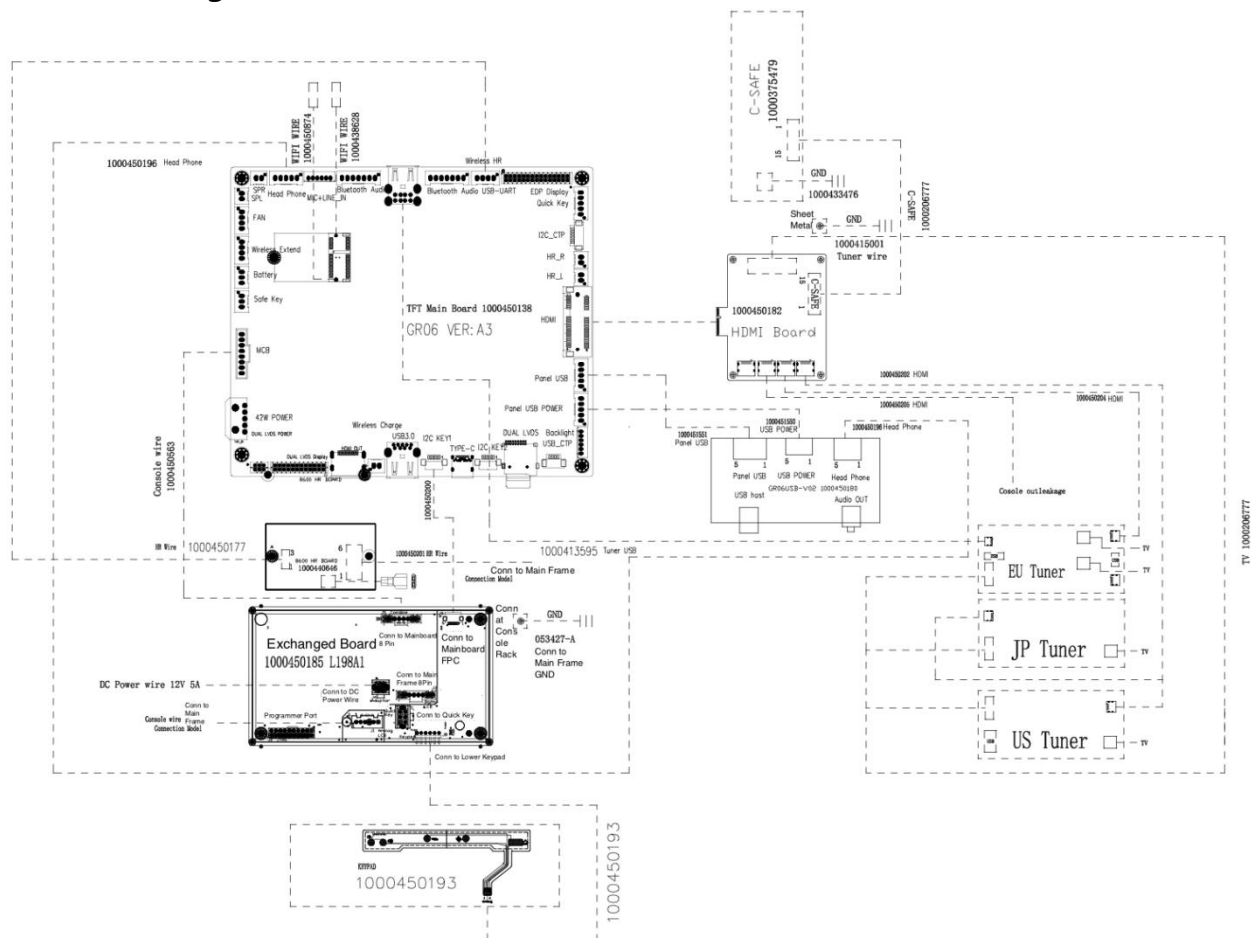
At the bottom of the console, you will find the entertainment connections.

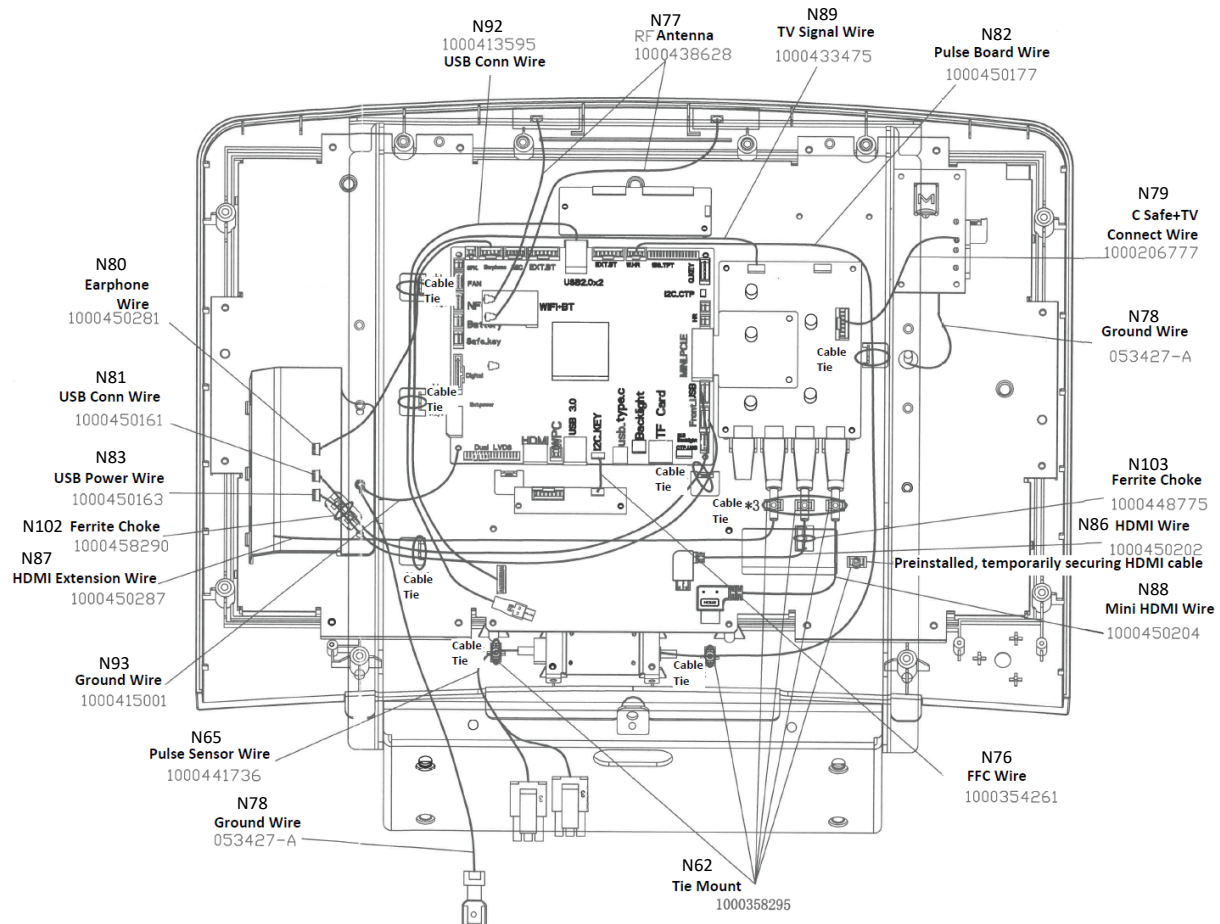


Location	Description
A	Headphone
B	USB
C	HDMI

T600E

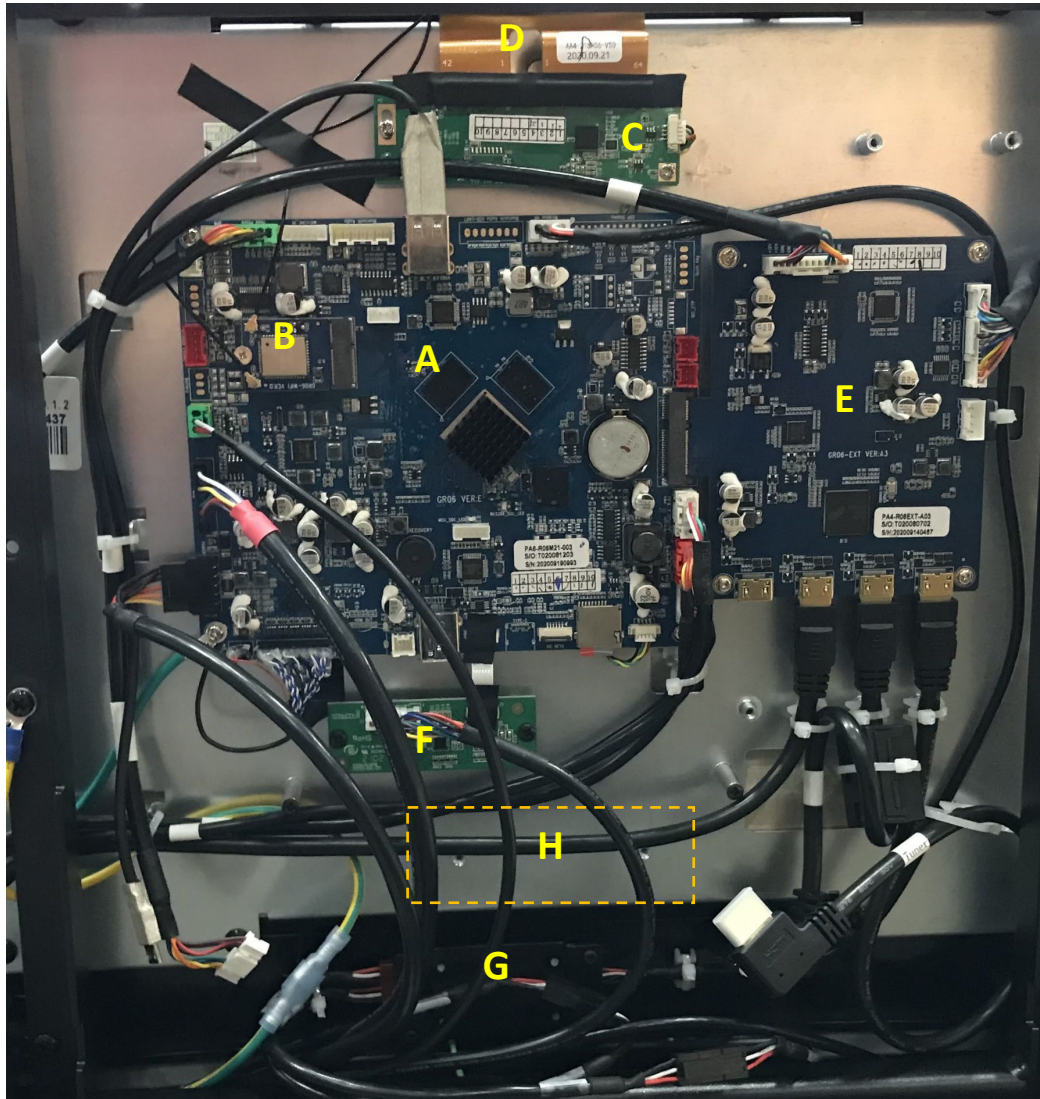
Electrical Diagrams





Location	Description
N62	Tie mount
N65	Pulse sensor wire
N76	FFC wire
N77	RF antenna
N78	Ground wire
N79	C-Safe and TV connection wire
N80	Earphone wire
N81	USB connection wire
N82	Pulse board wire
N83	USB power wire
N86	HDMI wire
N87	HDMI extension wire
N88	Mini HDMI cable

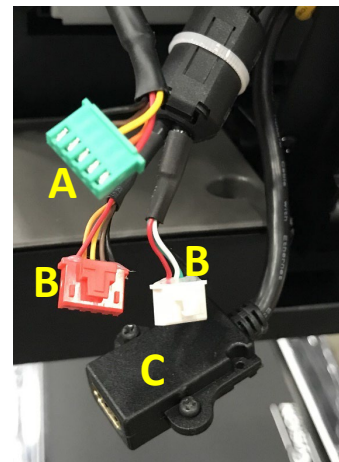
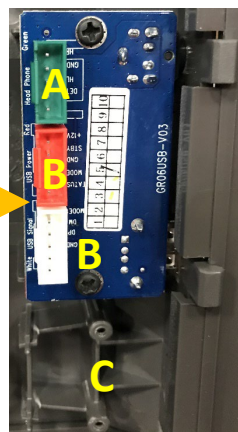
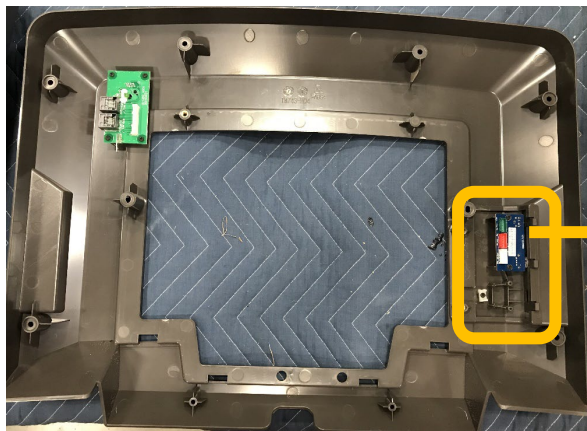
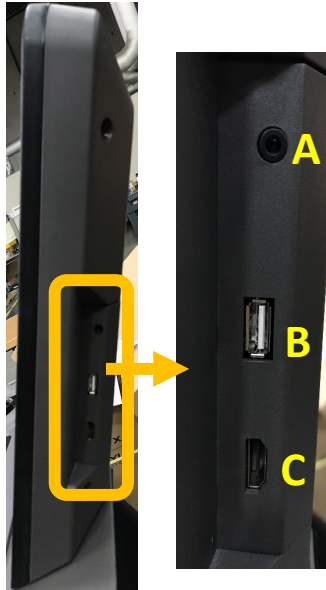
N89	TV Signal Wire
N92	Micro USB cable
N93	Ground wire
N102	Ferrite Choke
N103	Ferrite Choke

Key Components

Location	Description
A	TFT module (UCB)
B	Wi-Fi board
C	Touch panel board
D	Touch panel ribbon cable
E	Entertainment board
F	Exchange board
G	Heart rate board
H	TV tuner (<i>not shown as it is optional</i>)

Entertainment Connections

On the user right side of the console, you will find the entertainment connections. The entertainment connection board and HDMI cable connection are both under the back cover.



Location	Description
A	Headphone
B	USB
C	HDMI

TROUBLESHOOTING

This guide is intended to be used alongside the Master Error code List, NB-1903010—if you have an error code, begin there.

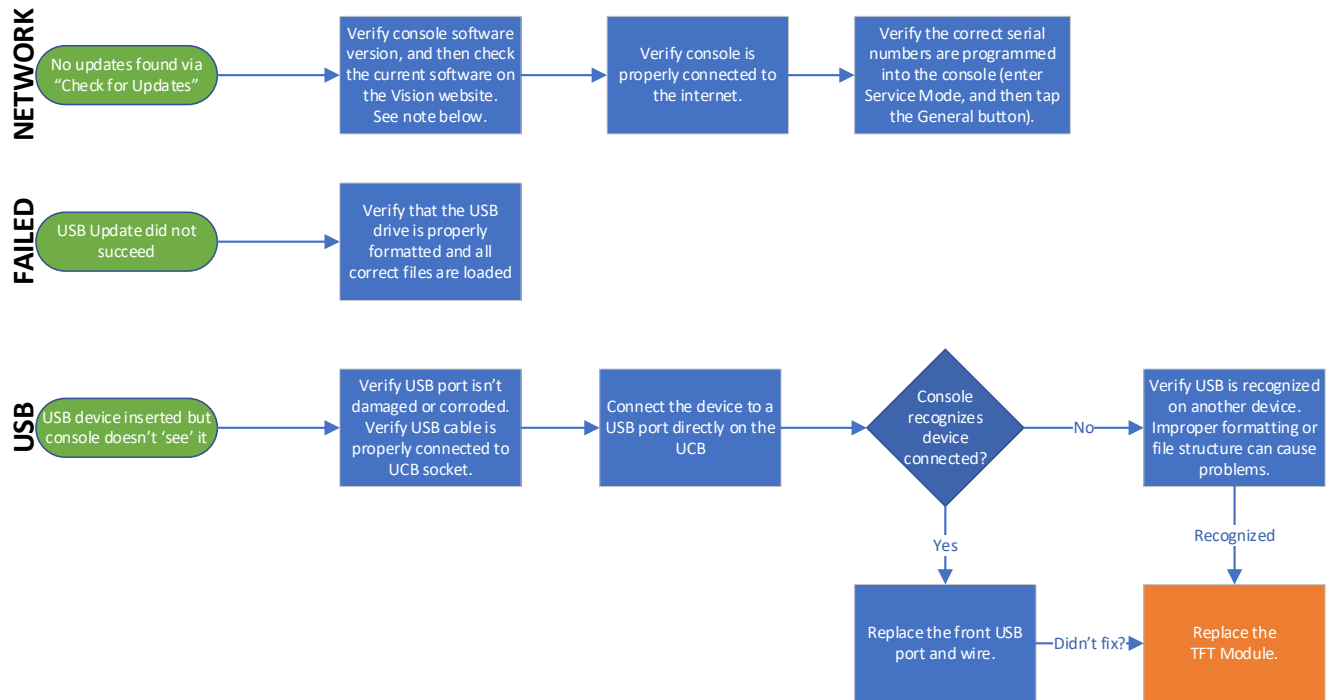
Additional resources are available on the Johnson Customer Service Portal (“CS Web”:
http://service.johnsonfitness.com/cs_new/login.asp) are noted through this guide (CS Web > *index tab*).

General Troubleshooting

- **UPDATE TO THE LATEST SOFTWARE VERSION, if possible.**
 - Reference the [Software Update](#) topic if anything unexpected happens.
- Cycling power is recommended as the first attempt to fix most failures, and after major repairs are implemented.
- Before replacing any major part, inspect the cables to/from it. Disconnect and inspect the connectors on both ends, as well as the terminals on the boards. If capable, use a multimeter to perform continuity tests to verify that all of the conductors are intact. If no damage/corrosion is noted, carefully reconnect the cables, ensuring proper seating and connection. Request replacement cables if at all suspicious.
- Error Code Log is available in [Machine Settings](#) menus. The log can provide historic hints on intermittent issues. Also refer to the Master Error Code List (NB-1903010) for error detail and troubleshooting.
- After each corrective action is taken, re-evaluate if the failure has been resolved. Some indications have a straightforward order of attempts, and not all steps are always necessary if a lower-level fix resolves the issue.

Software Updates & USB

Keywords: USB, Update, Failed, Detect, Serial, Setup, Initial, First



Additional Information

- Verify the most current software version (and, if updating via USB, download software) from the websites below:
 - North America: <https://www.visionfitness.com/us/eng/support/software-updates>
 - Global: http://service.johnsonfitness.com/cs_new/index.asp
- If unable to navigate into software update menus, consider [Touchscreen](#), [Display](#), [Freezing](#), or [Power](#) failure.

Notes for RSCU Update

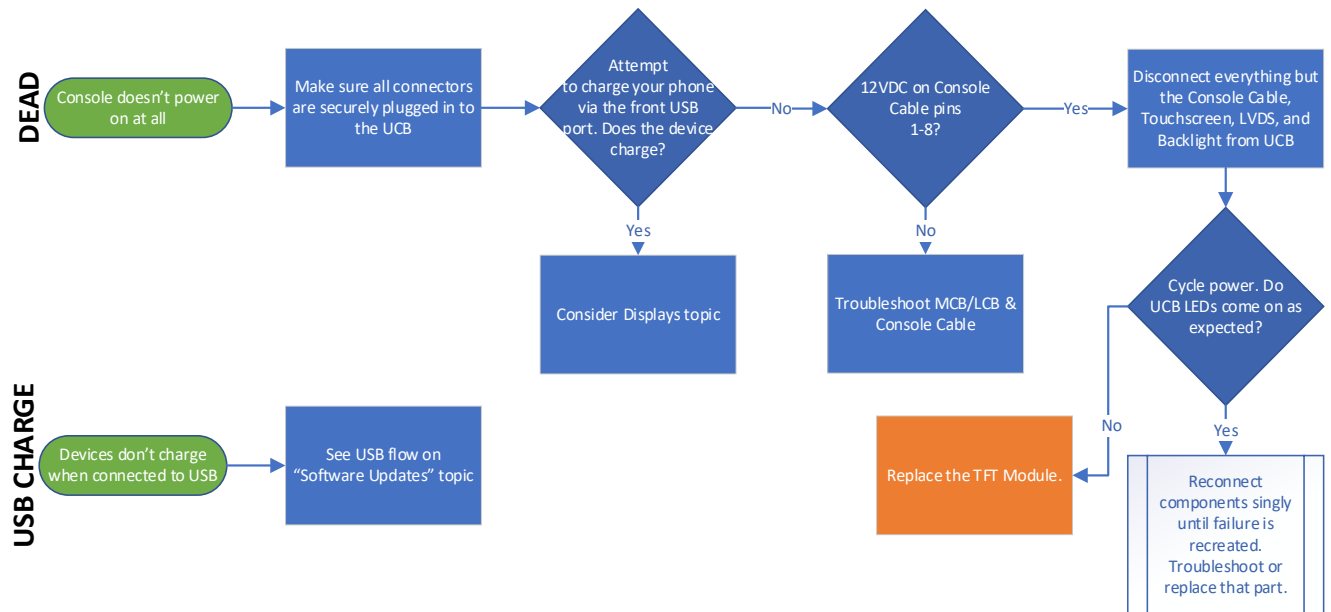
- Updates via internet connection can be started on command. See [Internet/RSCU update](#) for instructions.

Notes for USB Update

- Updates can be done manually via USB. See [USB update](#) for file structure and instructions. USB device must be [formatted FAT32, with a capacity of 2-128 GB](#). Larger sizes may work but are not recommended.

Power Issues

Keywords: Dead, Off, Reset, Charging

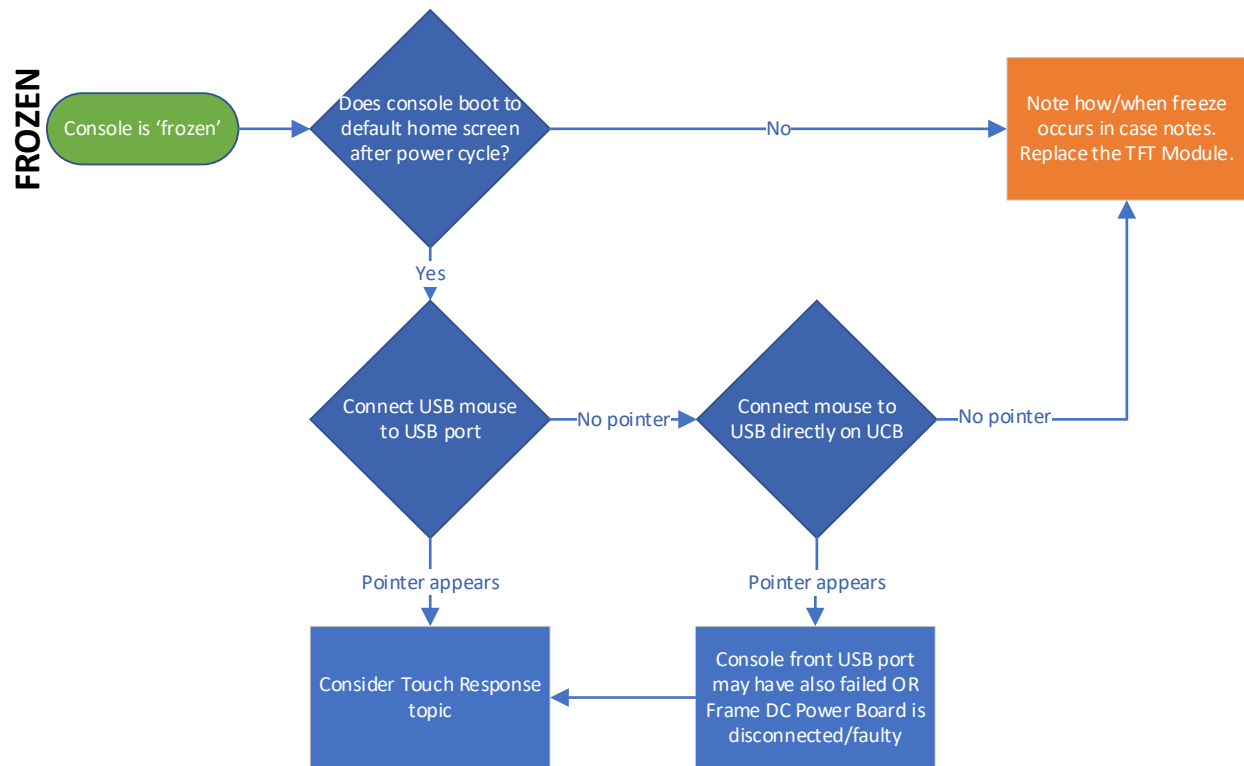


Additional Information

- Reference the diagrams in [Assembly Information](#) to confirm connector/wire locations.
- Units with Entertainment Series consoles cannot be self-powered. The frame must be plugged into an external power source (wall/floor outlet) when in use.
- By disconnecting everything but the console cable, failed components (i.e. stuck keys, shorted LEDs, bad Wi-Fi board, etc.) no longer cause faults. If the console appears to work as expected with nothing else connected, failure is likely with one of the parts connected to it.
- For additional information on USB charging, see [Software Updates & USB](#) topic.

Freezing/Stalling Issues

Keywords: Frozen, Boot, Lock, Crash

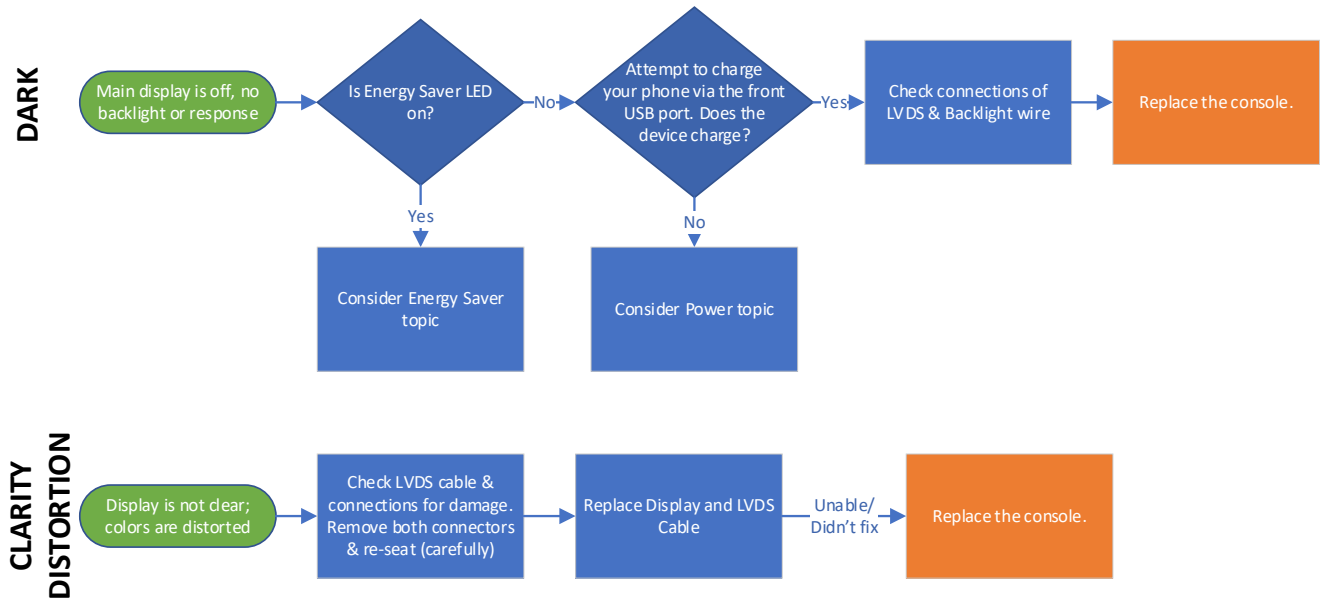


Additional Information

- Touch input failures can be mistakenly reported as freezing or stalling, as there are no physical buttons to interact with the console.
- “Freezing” and “Stalling” (and synonyms) are very general words that mean different things to different people. In this guide, they are taken to mean the console display is on, objects on the screen may or may not be moving, but no touch or button response is recognized. Be mindful that Touchscreen failures may be reported as freezing.

Display Issues

Keywords: Lines, Dim, Off, Dark, Bright, Color

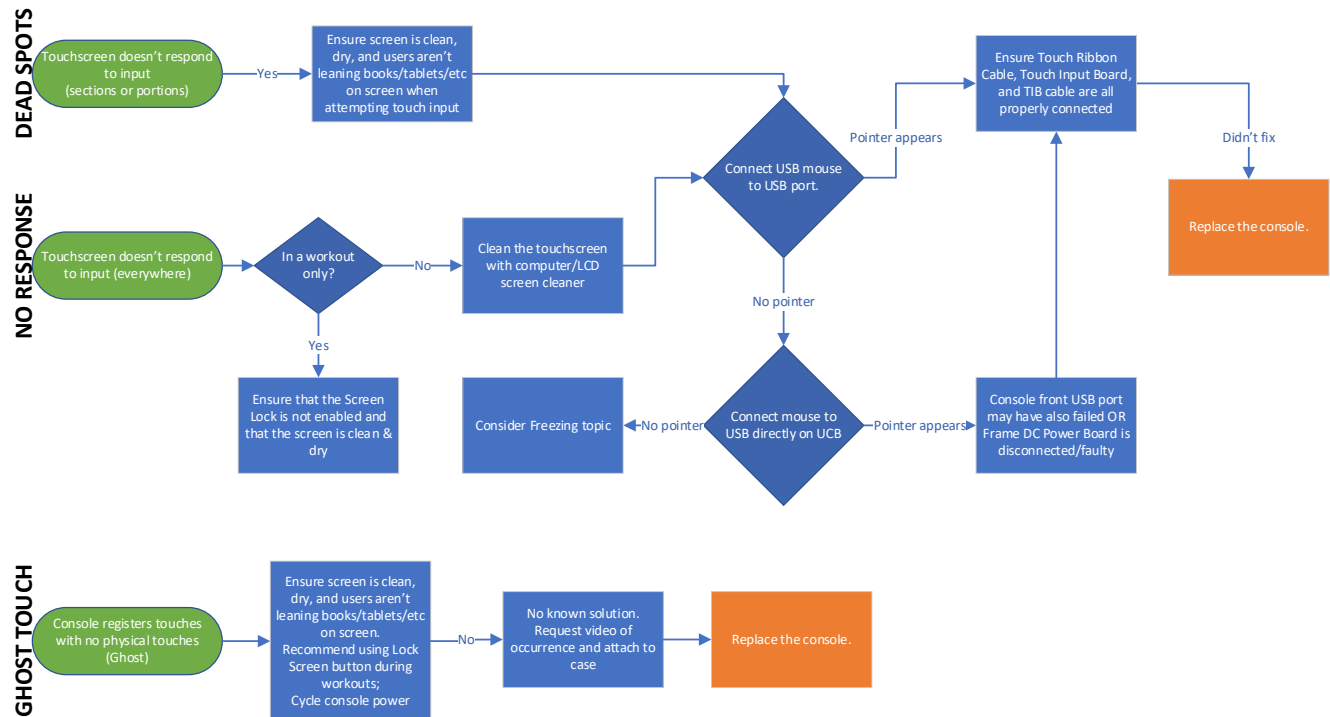


Additional Information

- If possible, check that both ends of the LVDS and backlight cables are secure in their sockets and undamaged.

Touch Response Issues

Keywords: Sensitive, Hard, Press

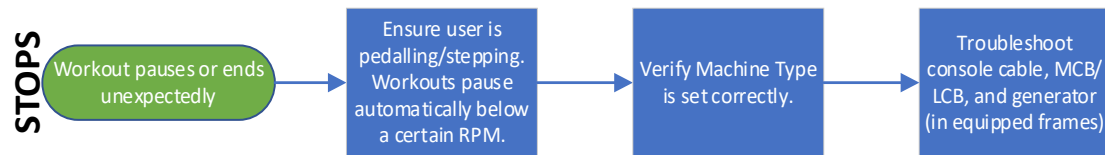


Additional Information

- Sweat, cleaner, water, and other contaminants on the touchscreen frequently cause apparent failures. Properly cleaning the touchscreen is commonly all that's required to resolve.
- Spraying cleaner directly on the screen is not recommended. Spray cleaner on a cloth and wipe the screen with it.
- The TFT-LCD part **does not control** touch response—it is strictly a display. The “touch input” part is permanently affixed to the front plastic shell of the console.

Workout Issues

Keywords: Programs, Training, Exercise, Pause, Virtual Active

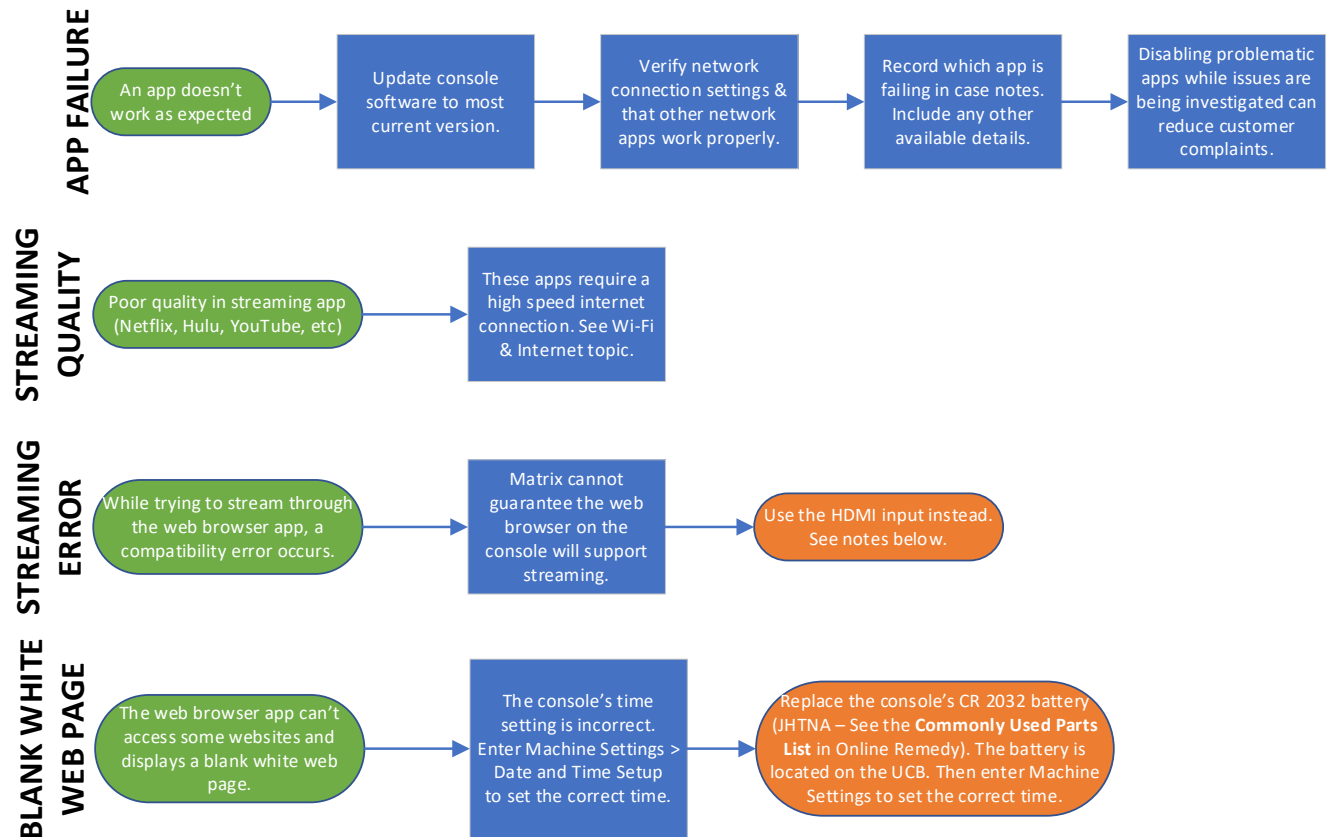


Additional Information

- All workouts are maintained by software. If software updates don't resolve issues, hardware failure is indicated.
- During Virtual Active workouts on the Suspension Elliptical (S700E) frame, incline does not change. This is the intended program behavior.
- Software version 1.0.3.18 fixes an issue in which the SUR-600E console did not play the first two Virtual Active courses for Big Island Bike.

General App & Program Issues

Keywords: Fail, Login, Streaming, Quality, Resolution, Virtual Active



Additional Information

- We have 3 categories of apps
 - Console apps are built and maintained by console software.
 - Web apps open a web browser which displays the Johnson-shimmed website.
 - Vendor apps (a.k.a third-party apps) are from the Google Play store.
- Vendor apps and web apps require high-speed internet to function properly and can appear to fail when the internet connection quality or speed is inadequate. See [Internet Connection & Wi-Fi](#) for additional details, and [Connection Speed Test](#) instructions if needed.
- See [Hulu Issues](#), [My Media Issues](#), and [Netflix Issues](#) for app-specific troubleshooting.
- Streaming:** We can't guarantee the installed web browser on the console will support streaming. The best option is to use the HDMI input with either a digital media player with the streaming app, or to mirror from a device that does support the streaming app. (See [Entertainment/Audio Issues](#).)
- Web apps**
 - White Screen, Black Screen, Loading Circle: These symptoms indicate a network issue or that the console's time setting is incorrect. See case "Blank White Web Page" above.
 - Content loads but is not as expected: Our apps are minimalistic versions of the full website or app you may have on your smartphone.

- *Virtual Active*
 - During workouts on the Suspension Elliptical (S700E) frame, incline does not change. This is the intended program behavior.
 - If the customer notices a brief hesitation or scrambled area on the screen that occurs at the same point on the Virtual Active workout video every time the video plays, replace the microSD card.
 - Software version 1.0.3.18 fixes an issue in which the SUR-600E console did not play the first two Virtual Active courses for Big Island Bike.

Hulu Issues

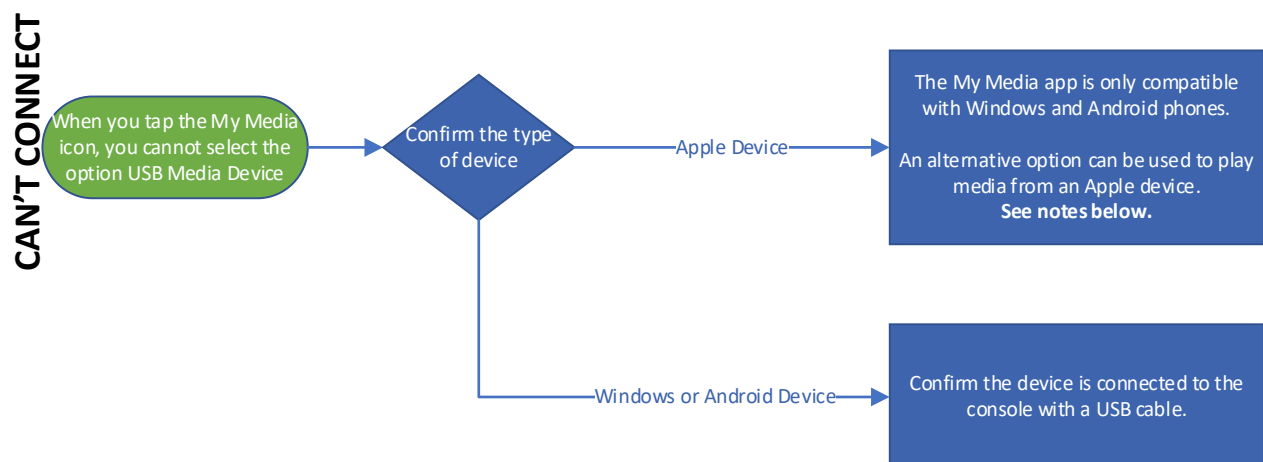
Keywords: Missing, Inactive

Additional Information

- Software version 1.0.3.18 disables the Hulu app on the console due to a Hulu version compatibility issue.

My Media Issues

Keywords: USB cable, Audio, Video

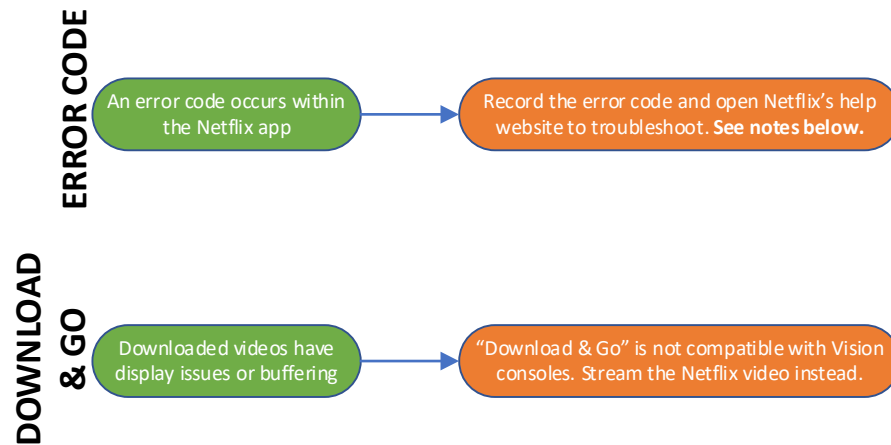


Additional Information

- Supported devices include USB flash drives (up to 16 GB), Windows phones/tablets, and Android phones/tablets.
- The My Media app does not support Apple phones/tablets. An alternative method is available to play video from an iPhone on the console: Mirror the phone using the HDMI app and an Apple-certified adapter. (See [Entertainment/Audio Issues](#) for more information.)

Netflix Issues

Keywords: Error Codes

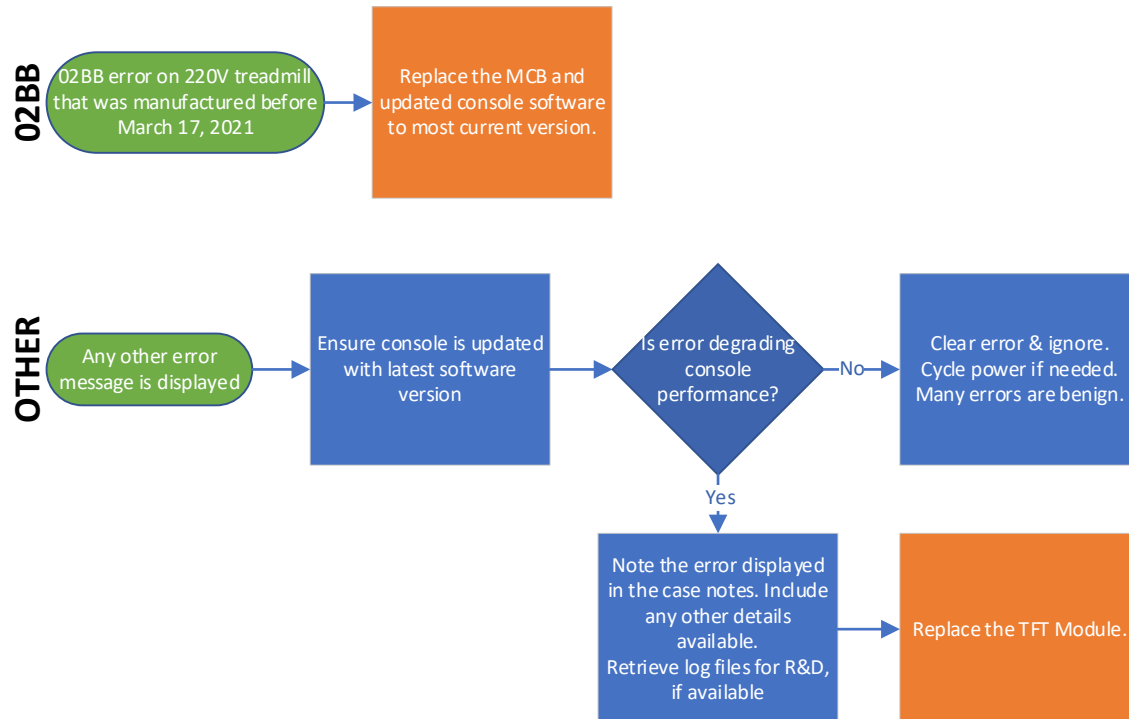


Additional Information

- Also see [General App & Program Issues](#).
- If an error occurs while Netflix is in use, record the error code (ex. "122011"). Go to the website <https://help.netflix.com/en/troubleshooting>, enter in the error code, and follow the steps. If the steps talk about clearing cache, simply power cycle the console. If this still doesn't resolve the issue, and you are using Single Sign-On, try using Guest and signing in from there. If you can sign in, then the issue is most likely with your SSO credentials. Simply sign out of the app, end your workout, restart your workout, and sign back into the app. This should refresh any cache that is causing issues with your SSO account.
- The Netflix app's "Download & Go" feature (shown by this symbol: ) is not compatible with Vision consoles. If content is downloaded instead of streamed, the user may experience reduced performance of the video playback (reduced video quality, fast-paced scenes showing unnatural movement, buffering). Vision recommends always streaming Netflix video rather than downloading to the console.

Errors (other than ECL Errors)

Keywords: Unsupported, Model

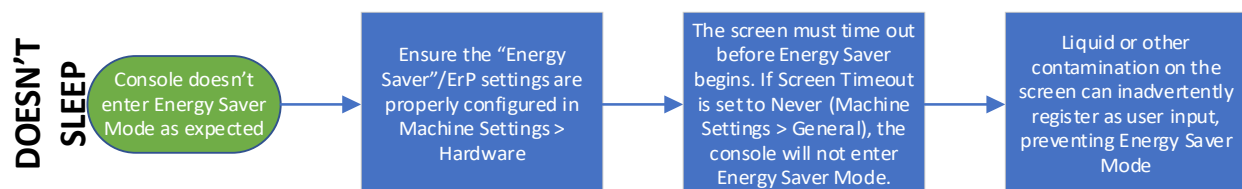


Additional Information

- Error Codes with a standardized 4-character alphanumeric ID are described in the Master Error Code List (NB-1903010) and typically relate to hardware failures. This topic relates to software error messages.
- When power is abruptly cut on a 220V treadmill that was manufactured before March 17, 2021, the 02BB error may occur. Replace the MCB and update console software to fix this issue. (NB-2203002)
- See [Hulu Issues](#) or [Netflix Issues](#) for errors that occur within the specified app.

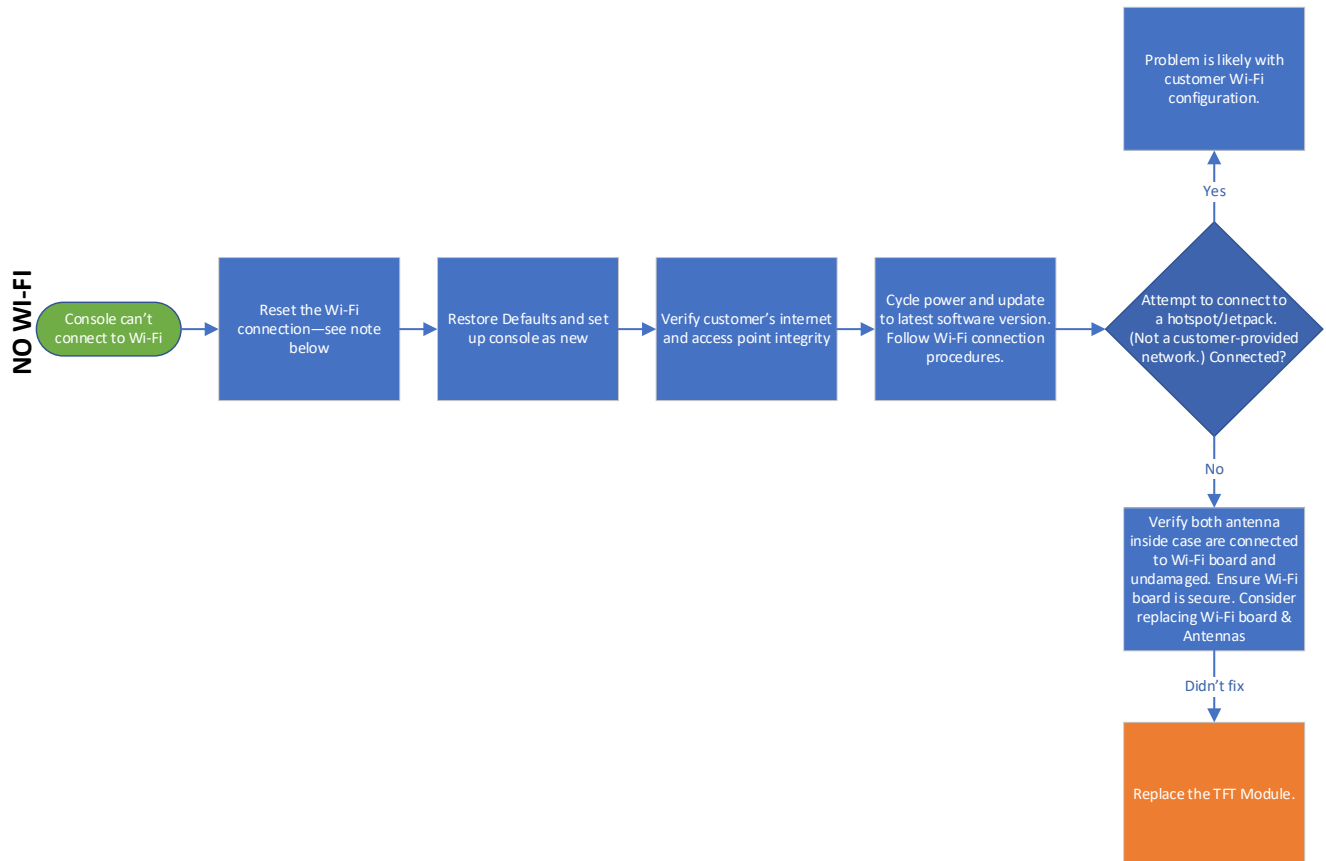
Energy Saver Issues (Sleep Mode)

Keywords: ErP



Internet Connection Issues

Keywords: Wi-Fi, Signal, Network

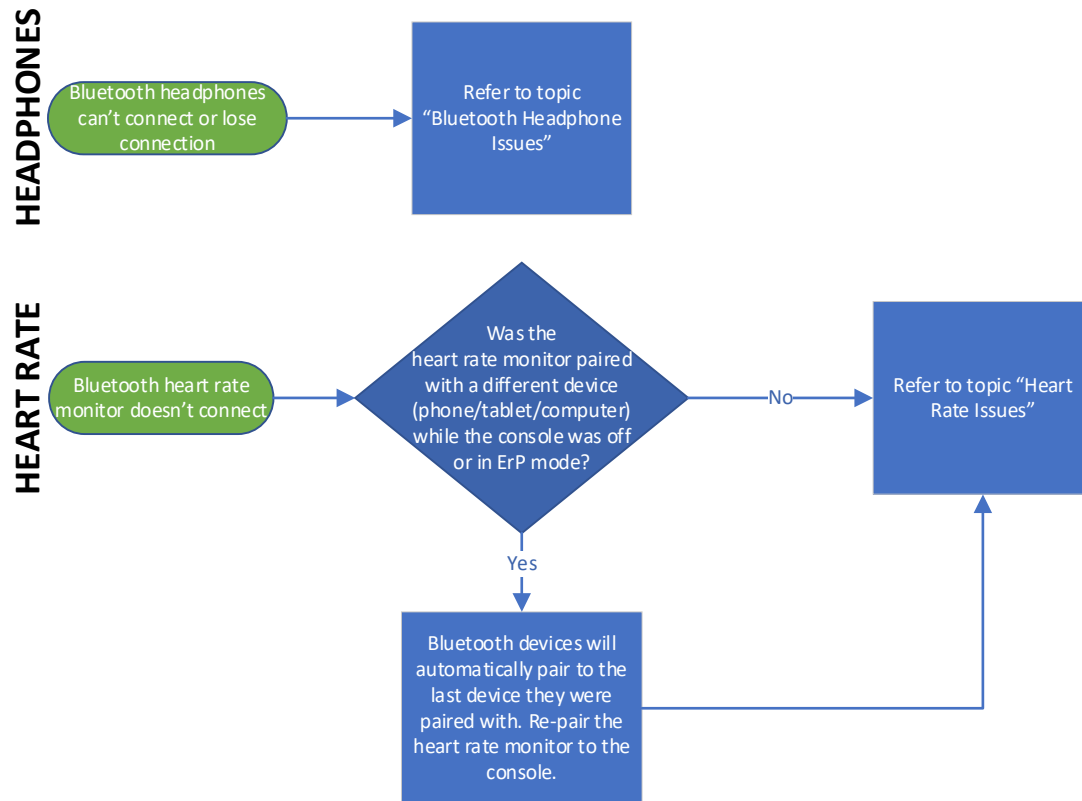


Additional Information

- Wi-Fi connectivity is standard on Vision Entertainment Series consoles. They can communicate on both the 2.4 GHz and 5 GHz bands. These models do **not** have an Ethernet input.
- Internet issues are difficult because we can't be responsible for the internet at customer sites. Failures are frequently with the network, and not related to our equipment.
- Follow notes in [Reset Wi-Fi connection](#) if needed
- See [Restore Defaults](#) for further information on that task.
- Available download speed can be checked by performing a [Connection Speed Test](#).

General Bluetooth Issues

Keywords: BT, Signal, Pair, Sync, Login

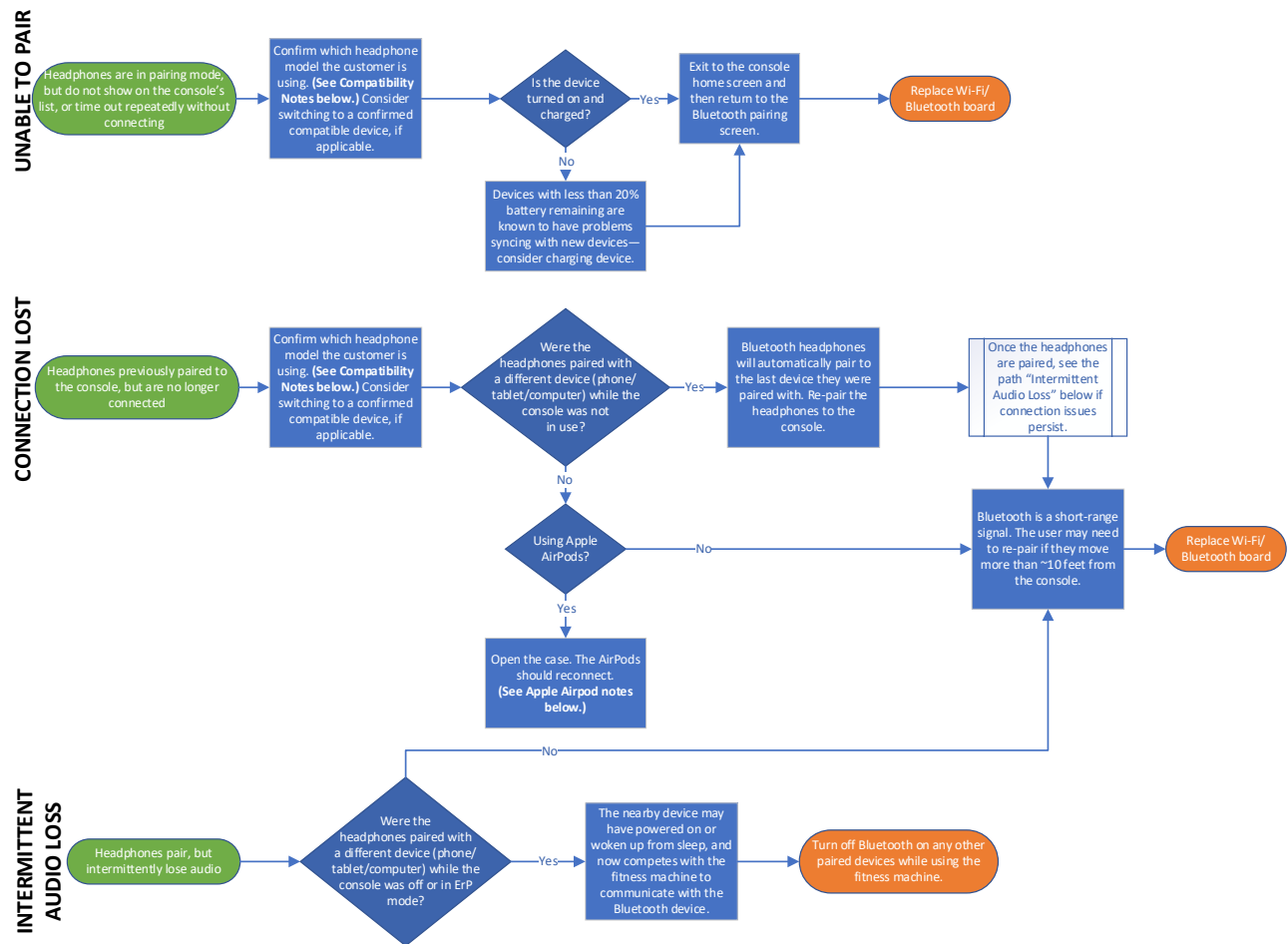


Additional Information:

- The following types of devices/apps can connect to the console through Bluetooth:
 - Speakers/headphones (see [Bluetooth Headphone Issues](#))
 - Heart rate monitors (see [Heart Rate Issues](#))
- The consoles do **not** allow for a media player to connect over Bluetooth. However, Android and Windows devices can connect as media players via USB and play content through the My Media app (see [USB Audio/Video](#)). Alternatively, the user may mirror content through an HDMI connection in the HDMI app. (See [Entertainment/Audio Issues](#) for more information.)

Bluetooth Headphone Issues

Keywords: BT, Signal, Pair, Connect, Sync, Time, Earphone, AirPods



Additional Information:

- **Compatibility Notes:** Vision touchscreen consoles are designed to pair with the most popular headphone brands. The following Bluetooth headphones have been tested by a third party and are known to work with the Vision Entertainment Series consoles:

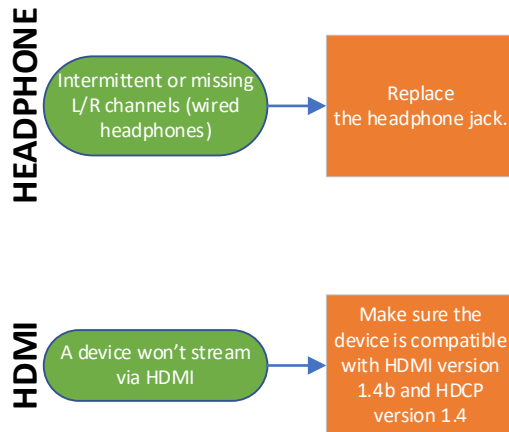
BlueTooth Headset (3)

No.	Brand Name	Model Name	OS Version	DUT HW Version	DUT FW Version
1	Apple	Apple AirPods	N/A	version F	v1.1.0.18
2	SONY	WH-H900N	N/A	version F	v1.1.0.18
3	Samsung	Galaxy Buds	N/A	version F	v1.1.0.18

- If a device that is not listed above fails to connect, try to connect a known compatible device. Consider that failures may be with the other device—not our equipment.
- **Apple AirPod Notes:** If you previously paired your AirPods to the console and didn't pair them with any other device after your workout, simply open the case, and see the top right corner of the console screen. The headphones icon should turn from gray to a lighter gray color. This indicates the headphones have re-established a connection.

Entertainment/Audio Issues

Keywords: Static, Quiet, Sound, Headphone, Mirror, HDMI, Live, Content

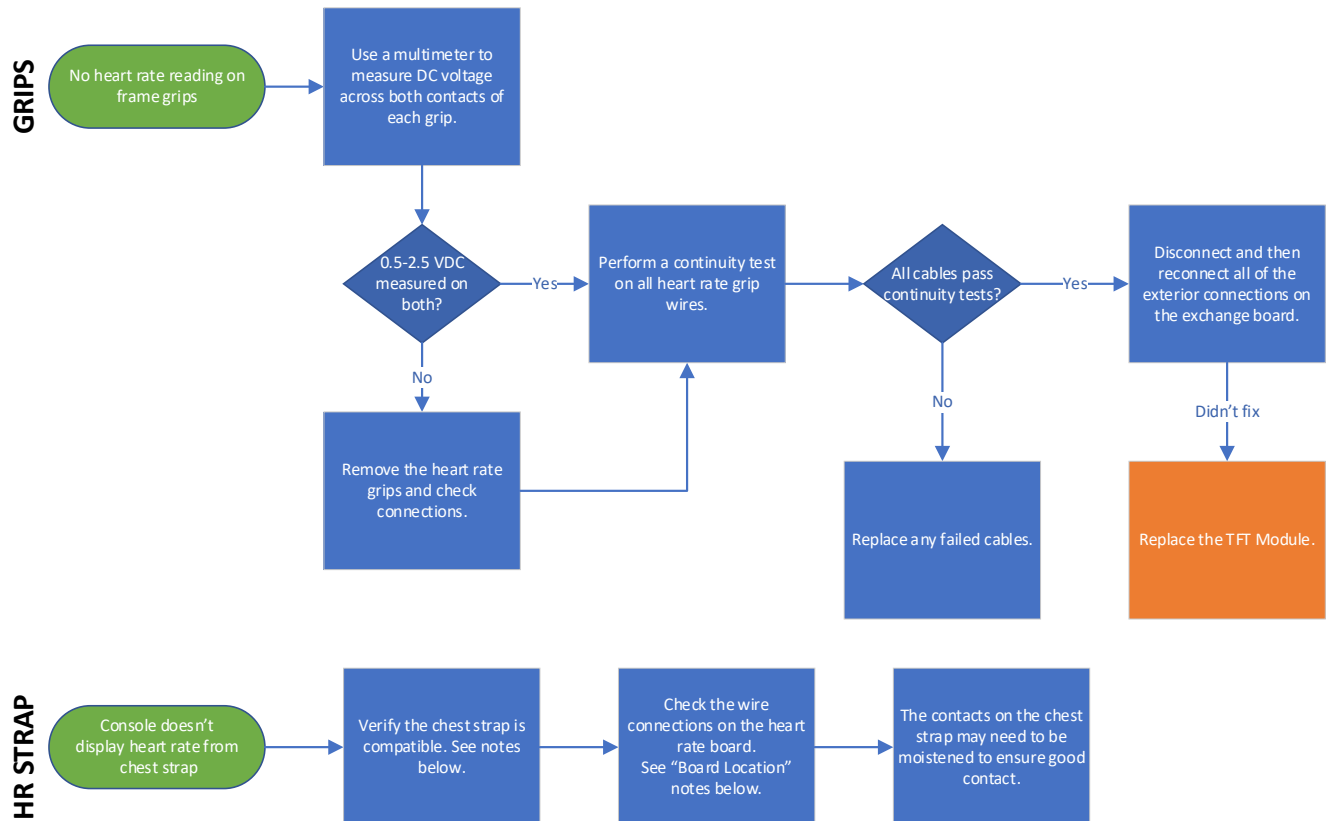


Additional Information

- **HDMI Port:**
 - In order to mirror apps from an iPhone or iPad, the user must connect an Apple-certified USB-C to HDMI adapter. A generic adapter will only allow mirroring of personal photos and videos. **Update 12/19/2022** – Previously, Apple-certified Lightning to HDMI adapters could also be used to mirror apps, however, these adapters no longer work correctly for users who have updated their iOS devices to iOS 16. Lightning to HDMI adapter and iOS 16 compatibility is a known issue by Apple, and a solution is not currently available.
 - The user can also mirror content from a computer or gaming device (PlayStation, Xbox, etc.). However, when used with these devices, video performance may be noticeably reduced or delayed.
 - It is *not* possible to mirror the console to an external source (TV or monitor).
 - The HDMI input supports up to HDMI version 1.4b and HDCP version 1.4.
 - When mirroring a phone in the console HDMI app, some phone apps (like Hulu or cable TV service provider apps) may not mirror live TV content on the console. Do not replace the console or any console components unless you have confirmation that the same device, using the same app along with the same adapter and HDMI cable, can mirror the video to another HDMI display (TV or monitor), but cannot mirror in the console HDMI app.
- Vision Entertainment Series consoles are **not** intended to be compatible with Passport Media Player or Passport Player 2.0.
- For additional information on Bluetooth audio issues, refer to [Bluetooth Headphone Issues](#).

Heart Rate Issues

Keywords: Heart Rate, HR, Pulse, Polar, Grips



Additional Information

- Vision Entertainment Series consoles are compatible with Bluetooth or 5kHz telemetric wireless heart rate devices. ANT+ devices are **not** compatible.
- Board Location:
 - On SUR-600E consoles, the heart rate board is located at the bottom left of the console. It is behind the exchange board.
 - On T600E consoles, the heart rate board is located at the bottom of the console, in the center.
- Cold or dry hands can cause heart rate to read wrong or not at all. Warm and moisten hands.
- Dirty sensors, jewelry, and electrical interference from the environment can cause heart rate measurement errors.

Other Issues

Keywords: Beep, Sound, Press, Not Found

BEEP

Console beeps on workout start or with each key press

This is the intended console behavior. The beep/buzzer cannot be turned off or adjusted by the user.

NOT FOUND

A fix to my failure isn't found in this guide

Include as much detail as possible on attempts to resolve & eventual resolution in case notes

If you cannot find a resolution to your observed or reported failure in this document, you may have discovered a new failure! In your case notes, record as much detail as possible about the problem, any attempts to resolve it, and what eventually succeeded in resolving the failure. Please let us know of any procedure that solved an issue that is not documented in this guide at contentmanagement@johnsonfit.com.

PARTS REPLACEMENT & INFORMATION

Working Environment for Parts Replacement

ESD (electrostatic discharge) damage can occur to console electronics when static buildup on people or work surfaces discharges through circuit boards or wires. For this reason, we recommend wearing a properly grounded ESD wrist strap (Figure 1) and working upon properly grounded ESD mats (Figure 2) whenever you are working on or near a circuit board. Please see the link below for an example of suitable ESD equipment for these tasks.

https://www.amazon.com/iFixit-145202-4-Portable-Anti-Static-Mat/dp/B01BLPBOS4/ref=sr_1_8?dchild=1&keywords=ESD+Mat&qid=1600353374&sr=8-8

If no ESD protection is available, refrain from touching the circuit boards as much as possible when checking connections.

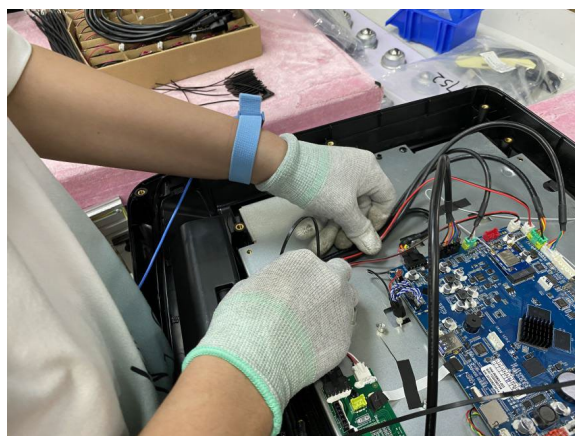


Figure 1

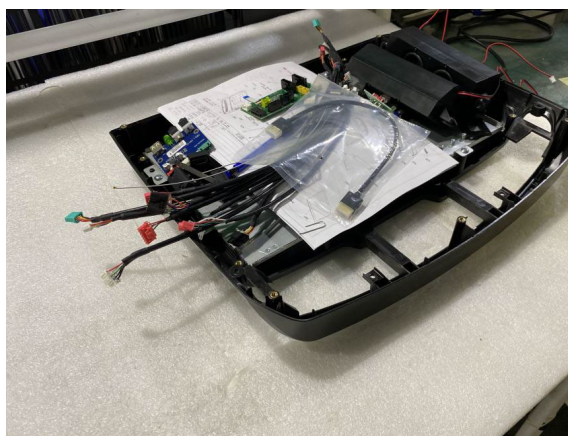


Figure 2

Back Cover

With U600E / R600E / S600E / S700E Frame

1. Use a Phillips screwdriver to remove six screws from the back cover. Remove the console from the main frame (Fig. 1, Fig. 2 orange circle).
2. Use a Phillips screwdriver to remove the last six screws securing the back cover (Fig. 2 blue circle).

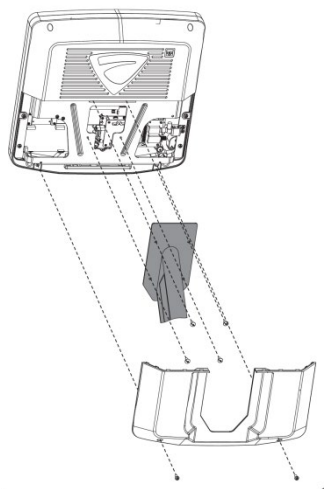


Figure 1



Figure 2

4. Gently lift the back cover and remove the C-Safe connection wire and ground wire that are connected to the back cover (Fig. 3).

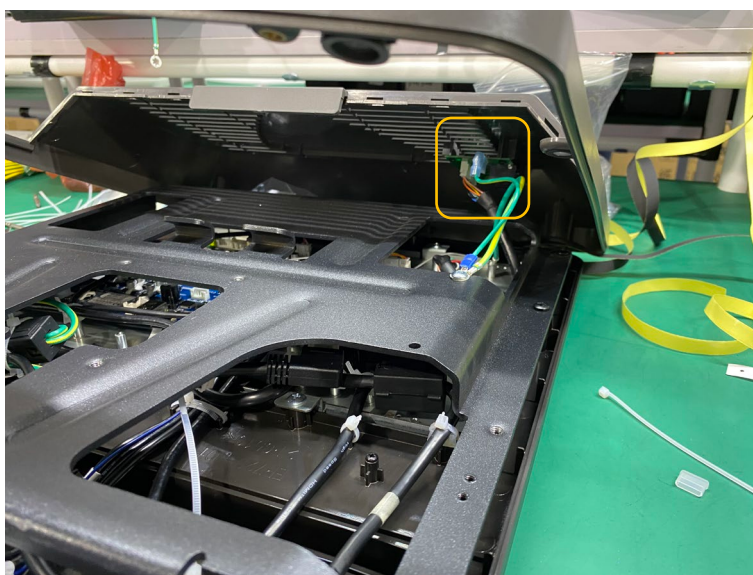


Figure 3

5. Remove the back cover.

6. Use a Phillips screwdriver to remove the C-Safe exchange board (Fig. 4).

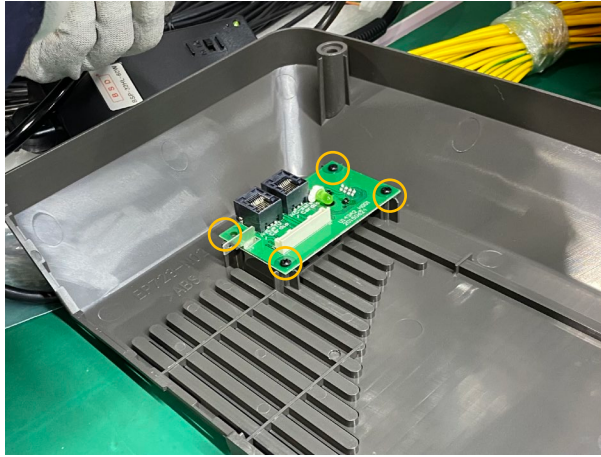


Figure 4

7. Reverse the steps to install a new back cover.

With T600E Frame

1. Use a Phillips screwdriver to remove two screws on the service cover, and then lift the cover up and out to remove it from the console (Fig. 1 yellow circles, and Fig. 2).
2. Use a Phillips screwdriver to remove the outer cover (Fig. 1 blue circles). The dashed circles indicate the screws are under the service cover. Disconnect the C-Safe board wires and entertainment connections to fully remove the cover from the console (Fig. 3).



Figure 1

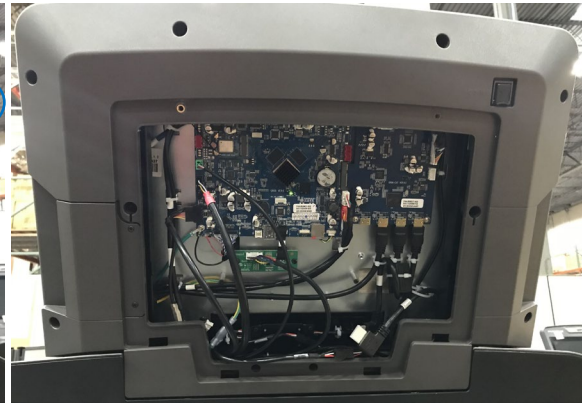


Figure 2

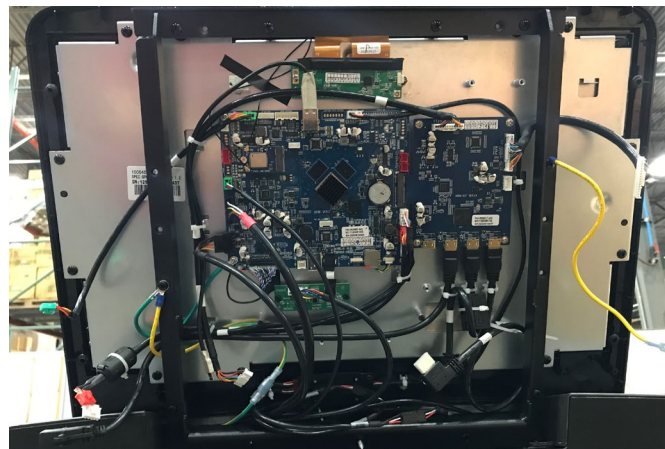


Figure 3

Console Rack

SUR-600E Console

1. Remove the back cover as outlined.
2. Remove the ground wires on the console rack (Fig. 1 yellow circles).
3. Use a Phillips screwdriver to remove eight screws on the console rack (Fig. 1 arrows).



Figure 1

4. Remove the console rack.
5. Reverse the steps to install a new console rack.

C-Safe Exchange Board

The photos in this section show the SUR-600E console. The process is similar on the T600E console.

1. Remove the back cover as outlined.
2. Use a Phillips screwdriver to remove the C-Safe exchange board from the back cover (Fig. 1 and Fig. 2).



Figure 1

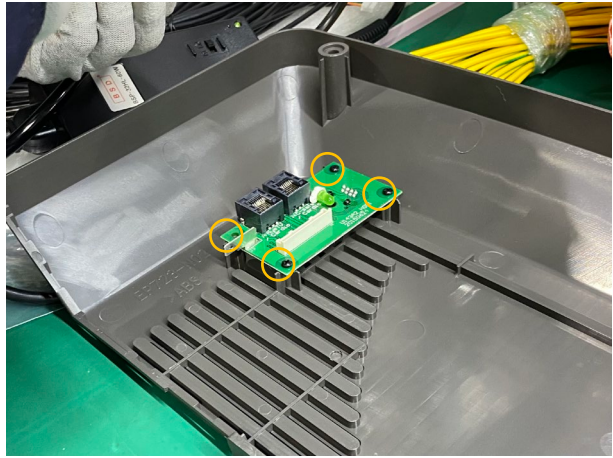


Figure 2

3. Reverse the steps to install a new C-Safe exchange board.

TV Tuner Installation

TV Tuner Options

The TV tuner can be purchased separately as an optional, add-on part for the console. See below for more information about the four available tuners. Please note that part numbers and applicable countries are subject to change.

US5 Overview

This tuner is for encrypted and unencrypted signals.

Part Number: 1000457884

As of May 2022, this is the only tuner sold in North America.

Analog Specifications	Countries	Digital Specifications	Countries
NTSC	Canada, Mexico, United States	ATSC / Cable (QAM) Pro:Idiom (coax)	Canada, Mexico, United States

US6 Overview

This tuner is only for unencrypted signals.

Part Number: 1000457883

As of May 2022, this tuner is no longer sold in North America. Therefore, Canada, Mexico, and the United States have been removed from the charts below.

Analog Specifications	Countries	Digital Specifications	Countries
NTSC	Colombia, Dominican Republic, El Salvador, Philippines, Puerto Rico, South Korea, Taiwan, Virgin Islands	ATSC / Cable (QAM)	South Korea

BR2 Overview

Part Number: 1000457885

Analog Specifications	Countries	Digital Specifications	Countries
PAL/NTSC	Argentina, Brazil, Paraguay, Uruguay	ISDB-Tb	Argentina, Brazil, Paraguay, Uruguay

KM4 Overview

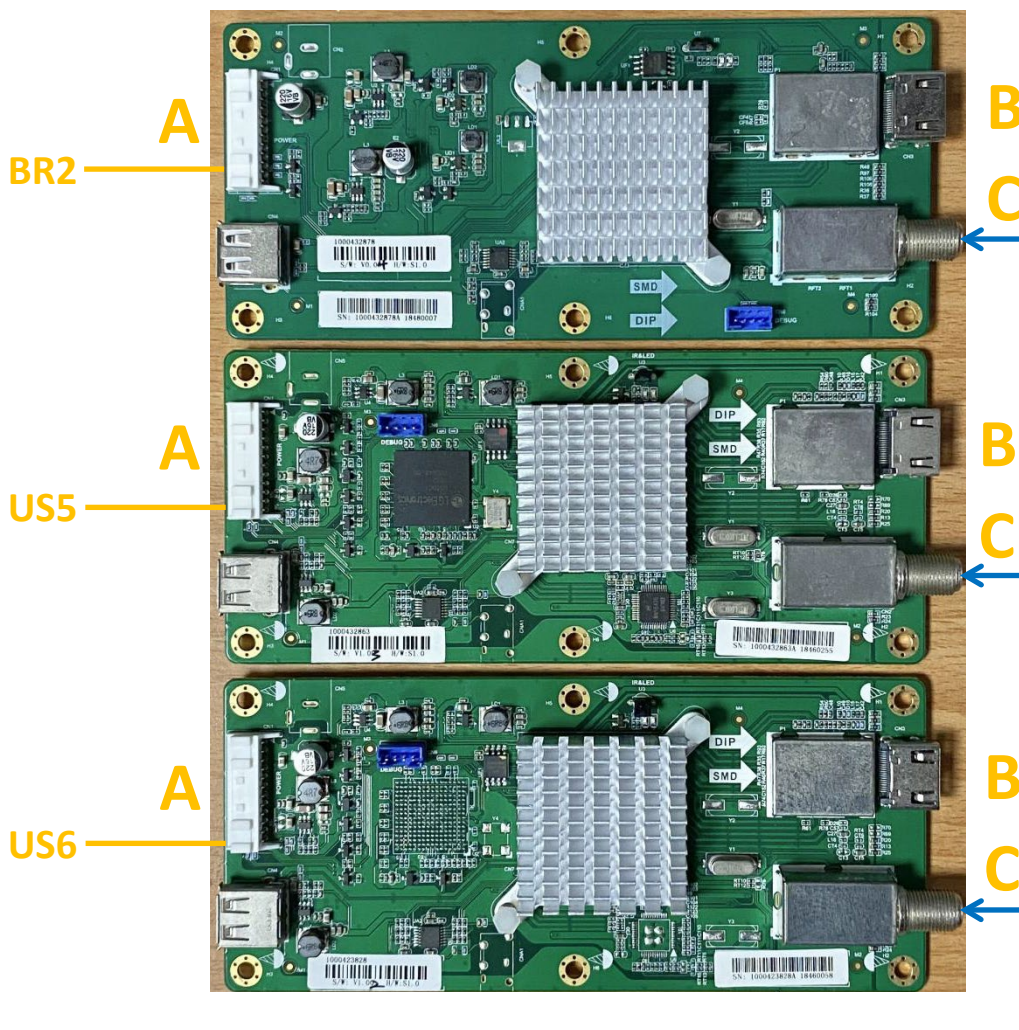
Part Number: 1000458385 (SUR-600E Consoles) or 1000451907 (T600E Consoles)

Analog Specifications	Countries	Digital Specifications	Countries
PAL-All/SECAM	Algeria, Argentina, Austria, Belgium, Brazil, Bulgaria, Cambodia, Croatia, Czech Republic, Denmark, Egypt, Estonia, Finland, France,	ATSC / Cable (QAM)	Algeria, Australia, Austria, Belgium, Bulgaria, China, Croatia, Czech Republic, Denmark, Egypt, Estonia, Finland, France, Germany, Greece, Hungary, Iran,

	Germany, Greece, Hungary, India, Iran, Ireland, Israel, Italy, Luxembourg, Malaysia, Morocco, Nepal, Netherlands, New Zealand, Norway, Panama, Paraguay, Poland, Portugal, Romania, Russia, Serbia, Singapore, Slovakia, Slovenia, South Africa, Spain, Saudi Arabia, Sweden, Switzerland, Thailand, Tunisia, United Arab Emirates (UAE), United Kingdom, Uruguay, Vietnam		Ireland, Israel, Italy, Luxembourg, Morocco, Netherlands, New Zealand, Norway, Poland, Portugal, Romania, Russia, Serbia, Slovakia, Slovenia, South Africa, Spain, Sweden, Switzerland, Tunisia, Turkey, United Arab Emirates (UAE), United Kingdom <u>Software update required:</u> Taiwan and Columbia
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TV tuner installation instructions begin on the next page.

US5 / US6 / BR2 TV Tuner Installation



A	TV signal cable (1000433475) port
B	HDMI cable (1000450202) port
C	TV Coaxial cable port
D	TV exchange connector (065247-A)



1. SUR-600E: Remove the console from the frame (Fig. 1-2) and remove the console rack.
T600E: Remove the panel on the back of the console (Fig. 3).

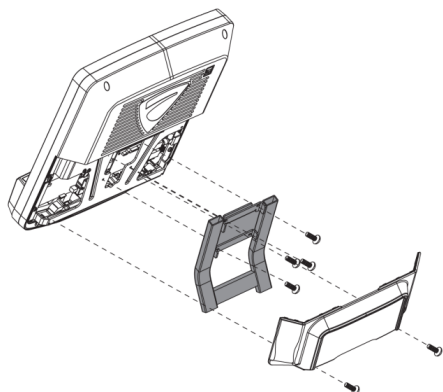


Figure 1

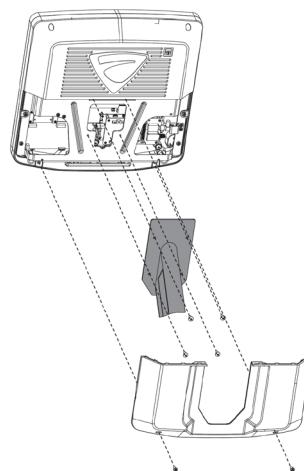


Figure 2



Figure 3

2. The wires for the tuner are preinstalled in the console. Locate the unconnected wires and gently pull them outside of the console cover (Fig. 4). **Note:** The SUR-600E console also has a tuner ground wire which is attached to the top left post for the tuner control board (Fig. 5). The T600E console does not have a tuner ground wire.

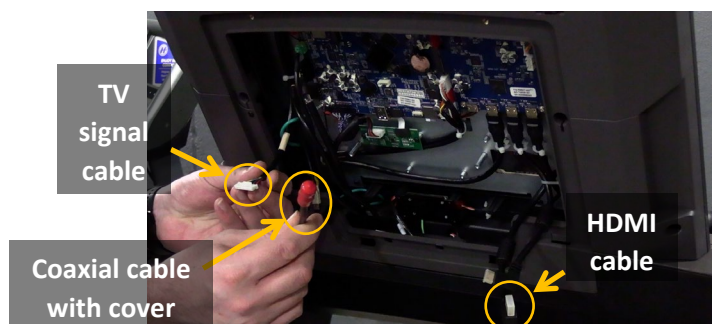


Figure 4

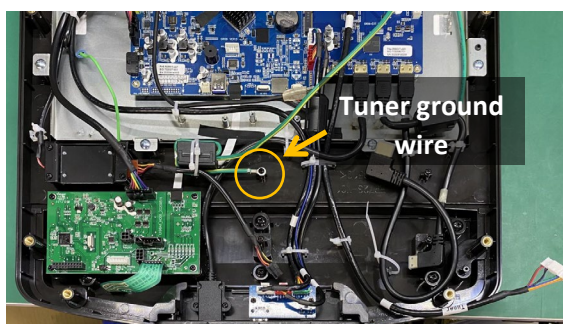


Figure 5

3. Use a Phillips screwdriver and four screws to affix the tuner control board to the console (Fig. 6). When completing this step on a S600E console, make sure to reattach the tuner ground wire.



Figure 6

4. Connect the TV exchange connector (065247-A) to the TV coaxial cable and then attach the other end of the connector to the tuner control board.
5. Plug the HDMI cable into the tuner control board. **Note:** If it is difficult to align the connector in this step, cut the zip tie that secures the HDMI cable to the console frame.
6. Plug the TV signal cable into the tuner control board.
7. Tuck the Mini-HDMI cable and Micro-USB cable into the console—these cables are included for the KM4 TV tuner and will not be used in other configurations.

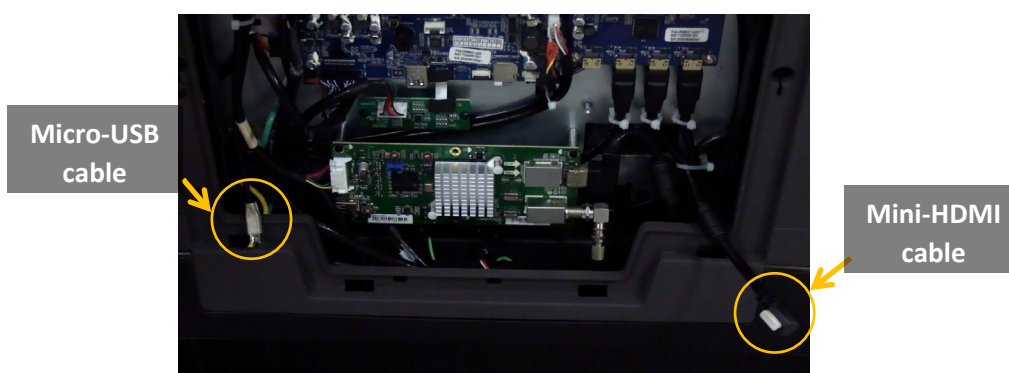
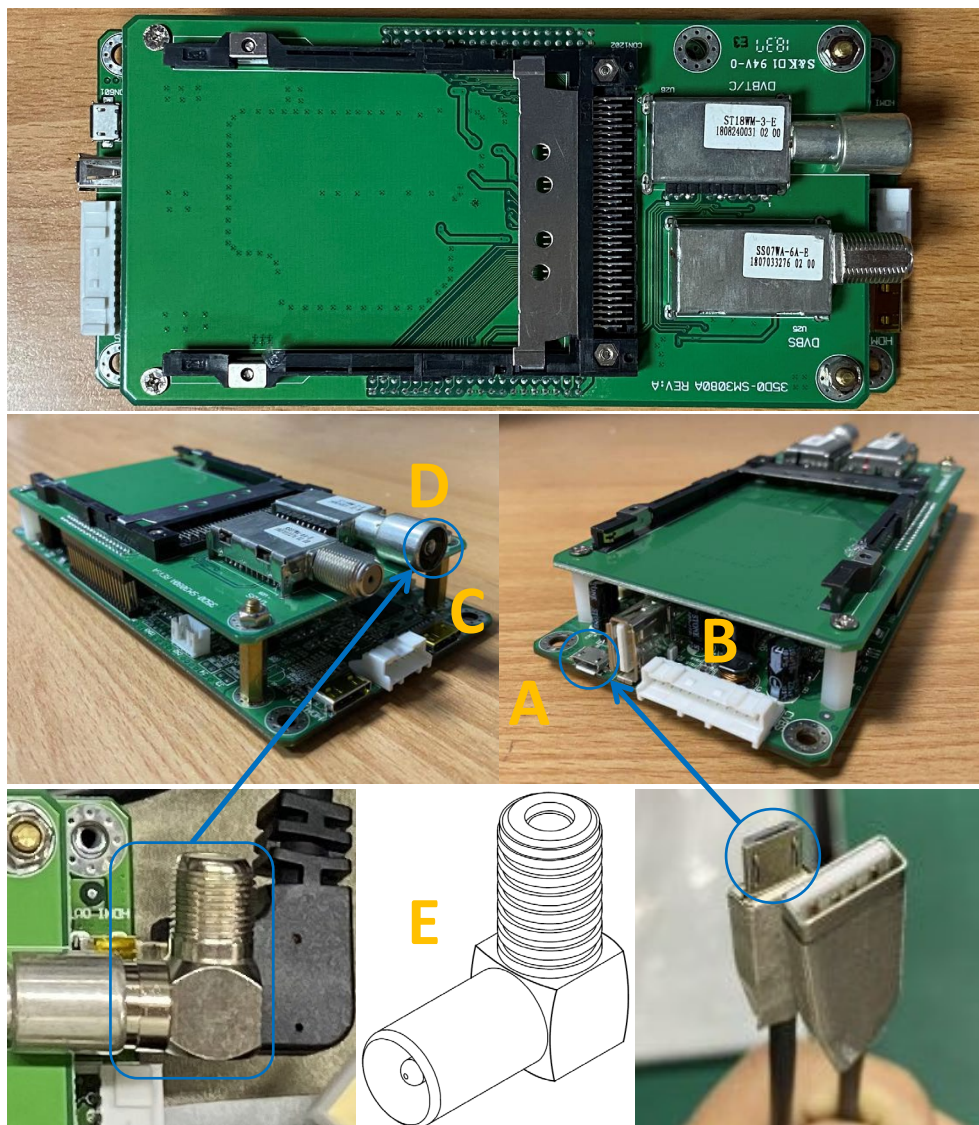


Figure 7

8. Reverse the steps to reassemble the console. **Note:** Don't forget to replace any cable ties that were removed during this installation.

KM4 Tuner Installation



A	Tuner control board wire / Micro USB cable (1000413595) port
B	TV signal cable (1000433475) port
C	HDMI cable (1000450204) port
D	TV coaxial cable port
E	TV exchange connector (1000369229)

1. SUR-600E: Remove the console from the frame (Fig. 1-2) and remove the console rack.
T600E: Remove the panel on the back of the console (Fig. 3).

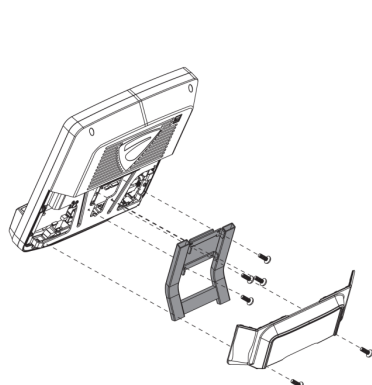


Figure 1

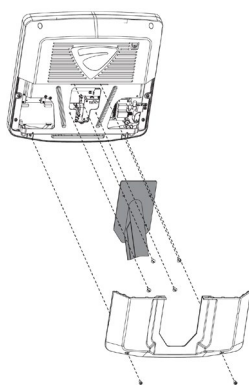


Figure 2



Figure 3

2. The wires for the tuner are preinstalled in the console. Locate the unconnected wires and gently pull them outside of the console cover (Fig. 4). **Note:** The SUR-600E console also has a tuner ground wire which is attached to the top left post for the tuner control board. The T600E console does not have a tuner ground wire.

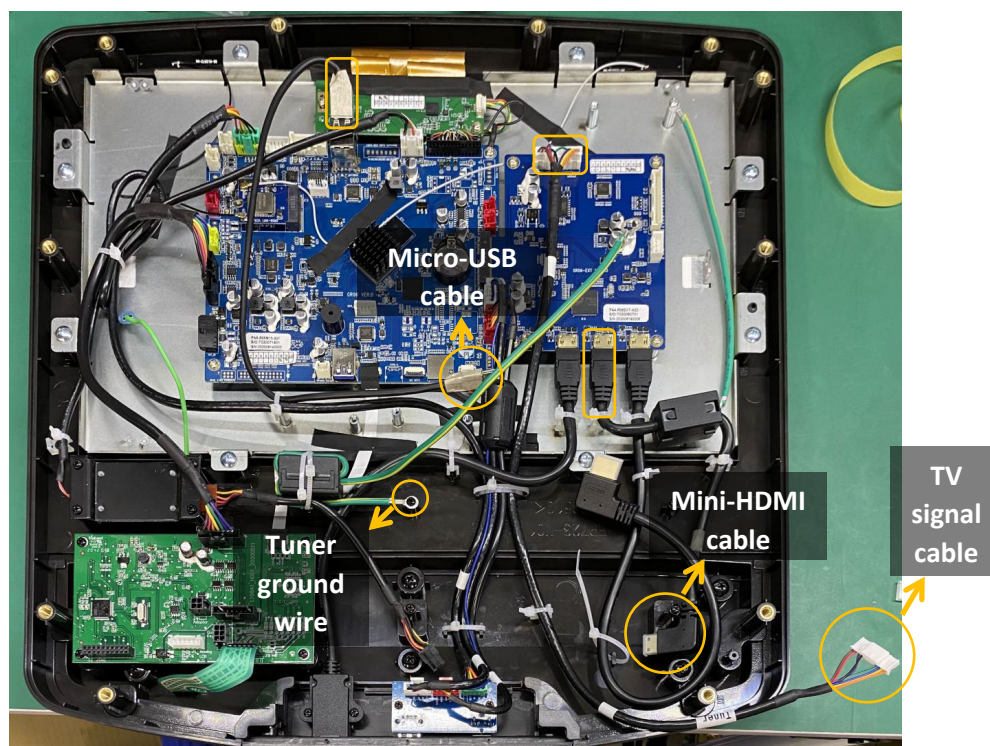


Figure 4

3. Use a Phillips screwdriver and four screws to affix the tuner control board to the console. If you are completing this step on a S600E console, make sure to reattach the tuner ground wire.



Figure 5

4. Connect the TV coaxial cable to the TV exchange connector (1000369229), and then connect the other end of the connector to the tuner control board.
5. Connect the Micro-USB cable and the TV signal cable to the tuner control board.
6. Connect the Mini-HDMI cable to the tuner control board; make sure the connector is aligned with the HDMI cable port.
7. Install the fixing plate (1000450333) on the console rack in order to keep the TV exchange connector in place (Fig. 6-7).

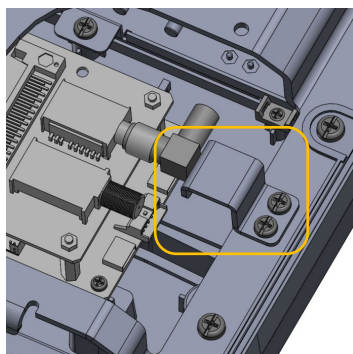


Figure 6



Figure 7

8. Reverse the steps to reassemble the console. **Note:** Don't forget to replace any cable ties that were removed during this installation.

USB Board

SUR-600E Console

1. Remove the back cover and the console rack as outlined.
2. Remove the wires on the USB board.
3. Use a Phillips screwdriver to remove the USB board (Fig. 1).

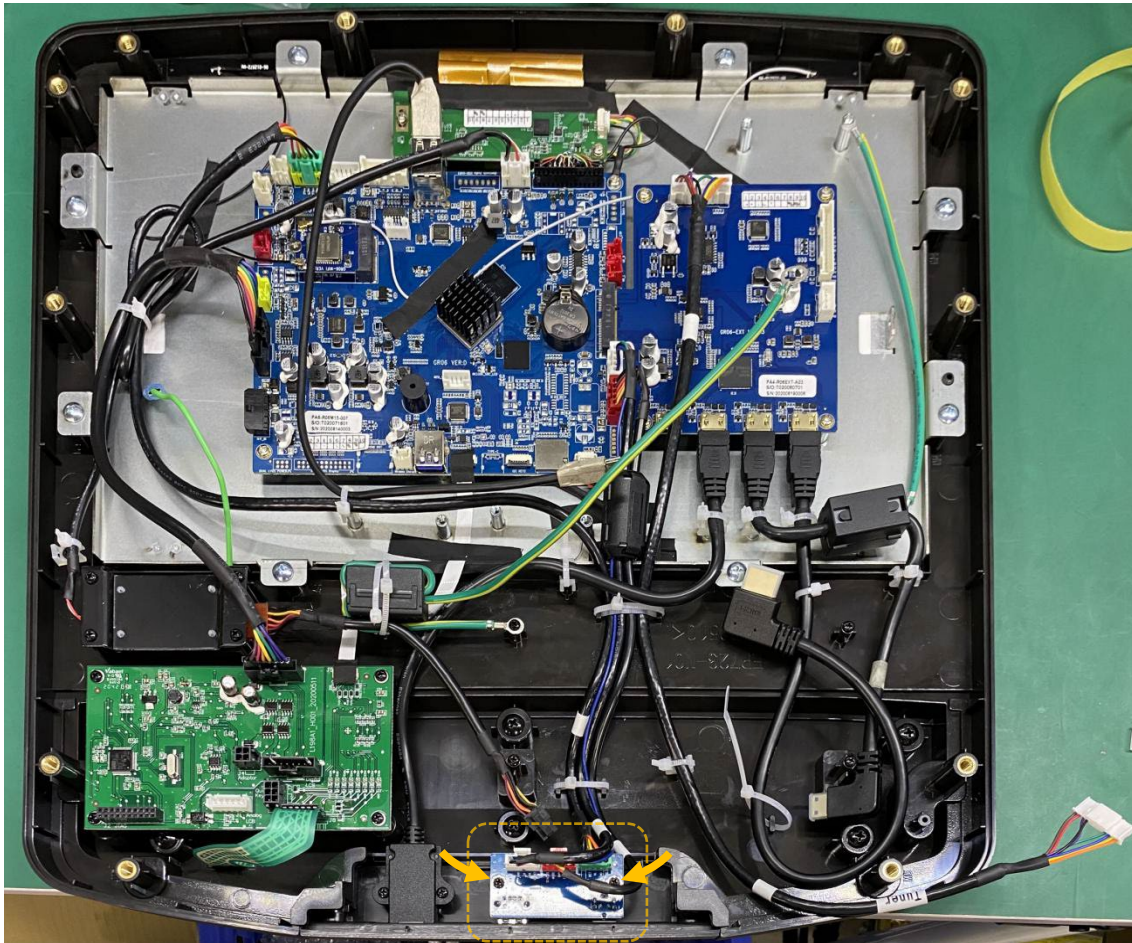


Figure 1

4. Reverse the steps to install a new USB board.

T600E Console (USB & Headphone Board)

1. Remove the back cover as outlined.
2. Use a Phillips screwdriver to remove two screws that secure the USB shroud and headphone board.
3. Gently lift the shroud off the board.



Figure 1



Figure 2

4. Remove all of the cables on the board. **Note:** To remove the HDMI extension cable, a Phillips screwdriver is needed.
5. Use a Phillips screwdriver to remove the USB and headphone board.

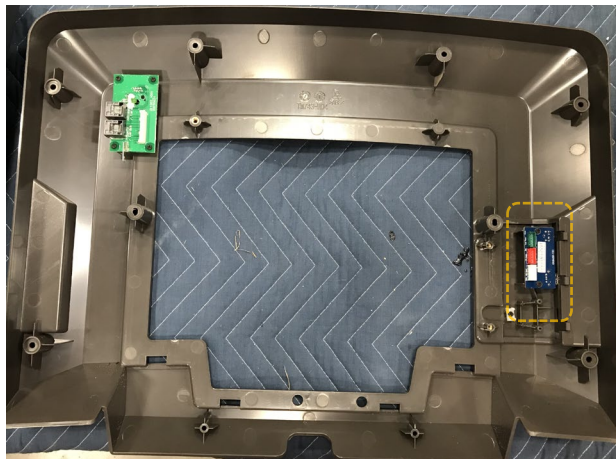


Figure 3



Figure 4

6. Reverse steps to install a new USB and headphone board.

Exchange Board

SUR-600E Console

1. Remove the back cover and the console rack as outlined.
2. Remove the wires on the exchange board. Remove any tape as needed (Fig. 1 blue box).

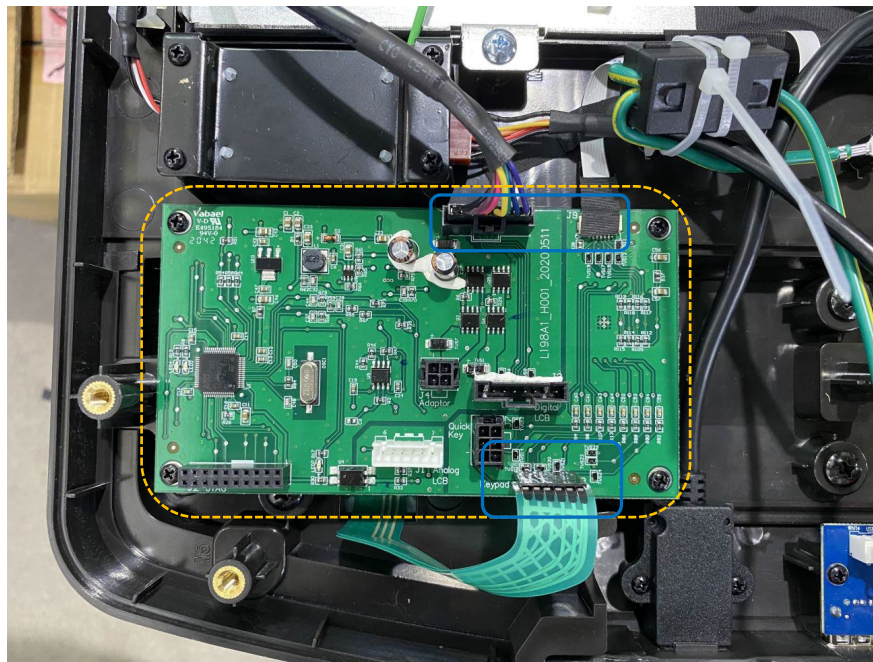


Figure 1

3. Use a Phillips screwdriver to remove the exchange board.
4. Reverse the steps to install a new exchange board.

T600E Console

1. Remove the back cover and the console rack as outlined.
2. Remove the wires on the exchange board. Remove any tape as needed (Fig. 1 blue box).

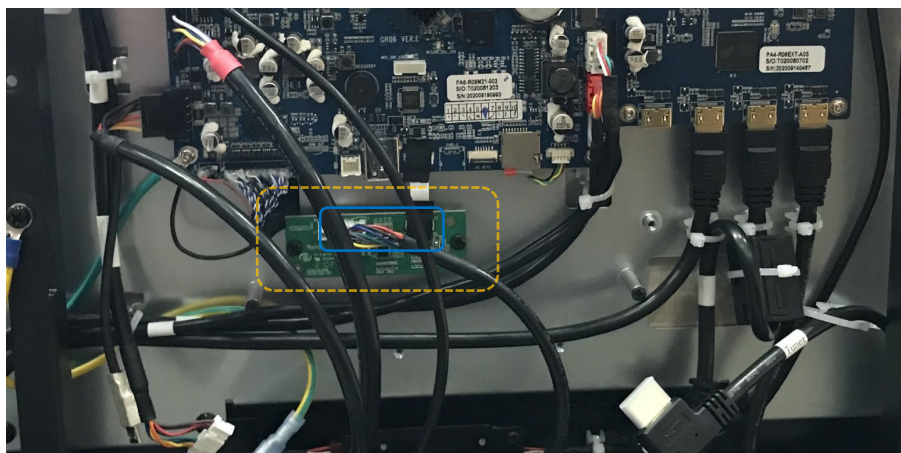


Figure 1

3. Use a Phillips screwdriver to remove the exchange board.
4. Reverse the steps to install a new exchange board.

Heart Rate Board

SUR-600E Console

1. Remove the back cover and the console rack as outlined.
2. Loosen the connectors of the heart rate board from the TFT main board and the main frame (Fig. 1 blue box). Cut any cables tie as needed.

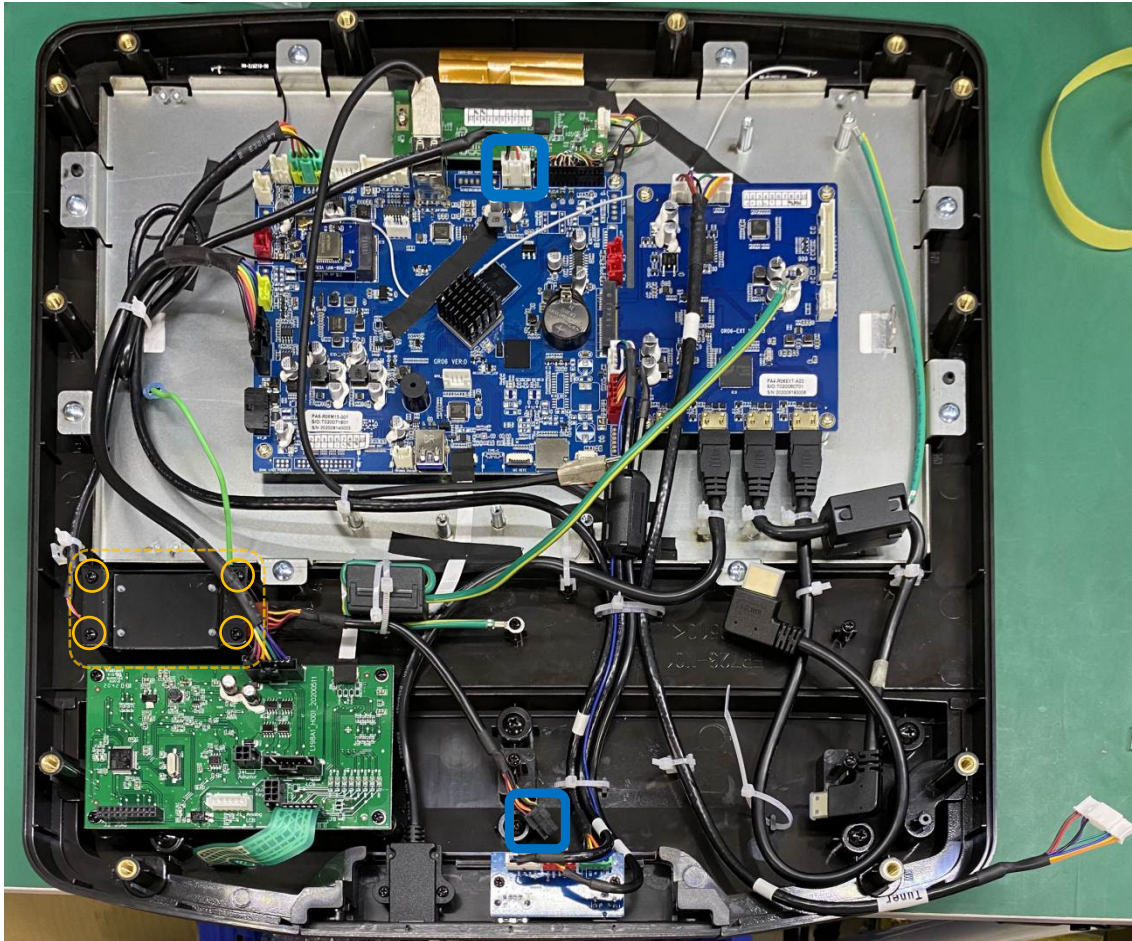


Figure 1

3. Use a Phillips screwdriver to remove the heart rate board.
4. Reverse the steps to install a new heart rate board. **Note:** Don't forget to replace the cable ties.

T600E Console

1. Remove the back cover and the console rack as outlined.
2. Loosen the connectors of the heart rate board from the TFT main board and the main frame (Fig. 1 blue box). Cut any cables tie as needed.

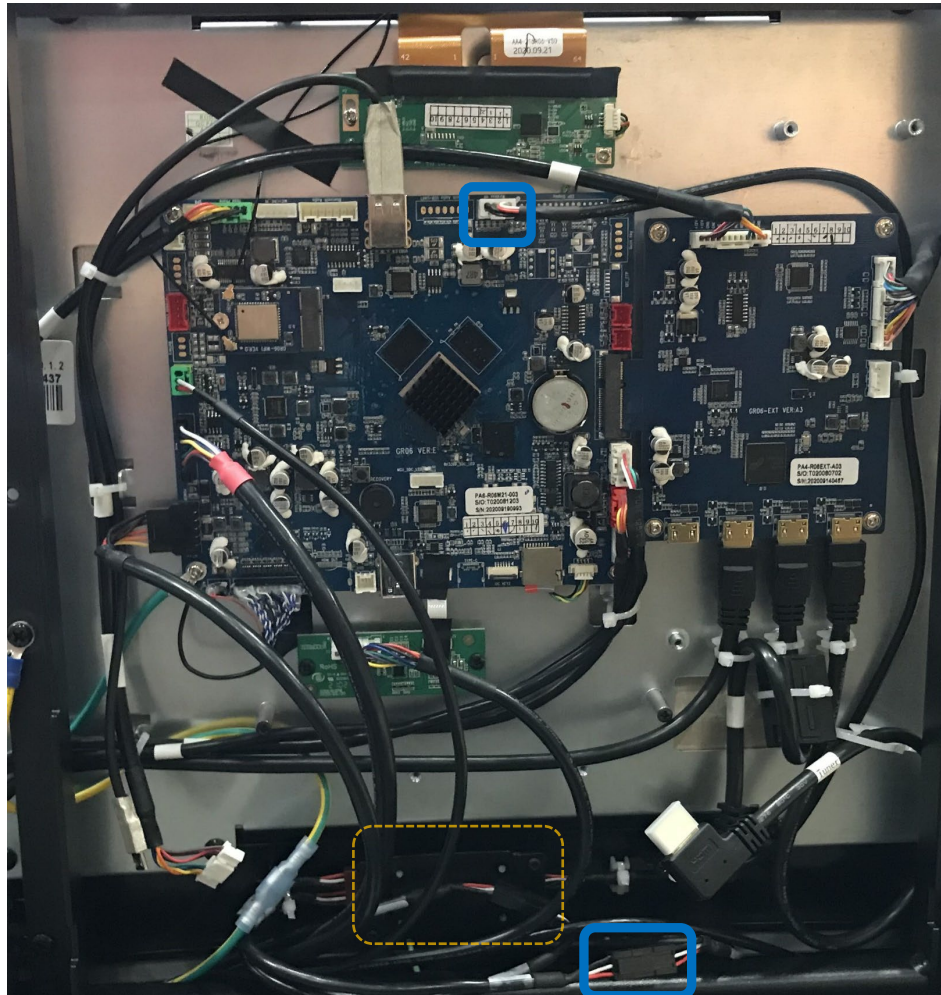


Figure 1

3. Use a Phillips screwdriver to remove the heart rate board.
4. Reverse the steps to install a new heart rate board. **Note:** Don't forget to replace the cable ties.

Wi-Fi Board

Note: When replacing the board, it is not necessary to replace the antennas unless they are damaged.

1. Remove the back cover and the console rack as outlined.
2. Locate the Wi-Fi board on the UCB (Fig. 1).

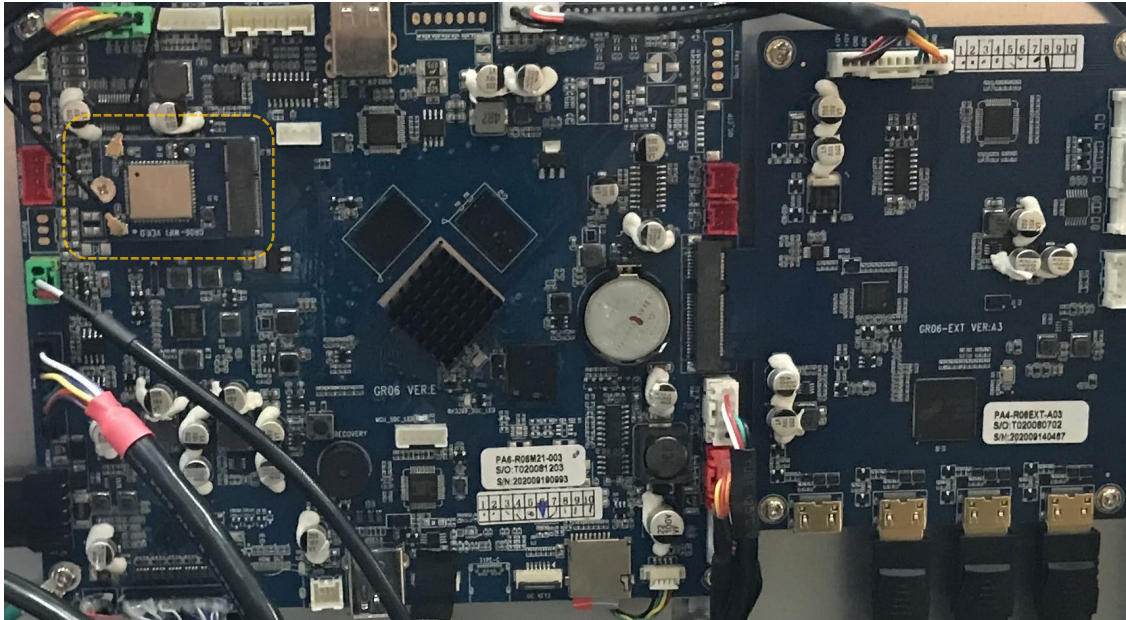


Figure 1

3. Detach the Wi-Fi antenna connectors from the Wi-Fi board (Fig. 2).

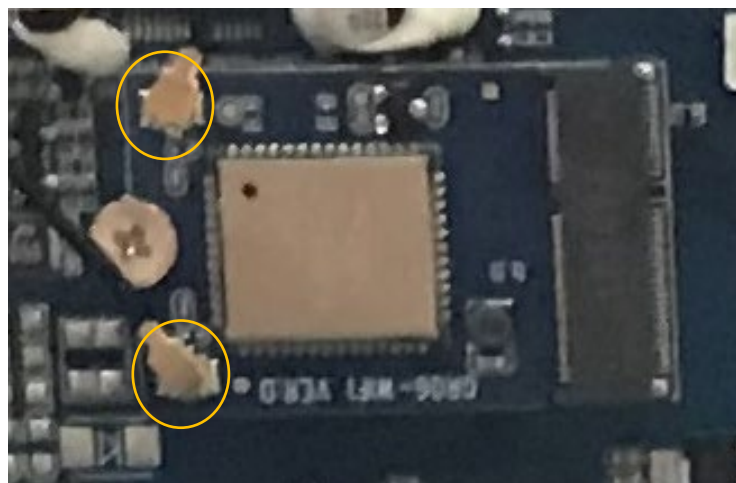


Figure 2

4. Use a Phillips screwdriver to remove the Wi-Fi board.
5. Reverse the steps to install a new Wi-Fi board.

Entertainment Board

1. Remove the back cover and the console rack as outlined.
2. Loosen the connectors of the entertainment board. Cut any cables tie as needed.
3. Use a Phillips screwdriver to remove the entertainment board (Fig. 1).

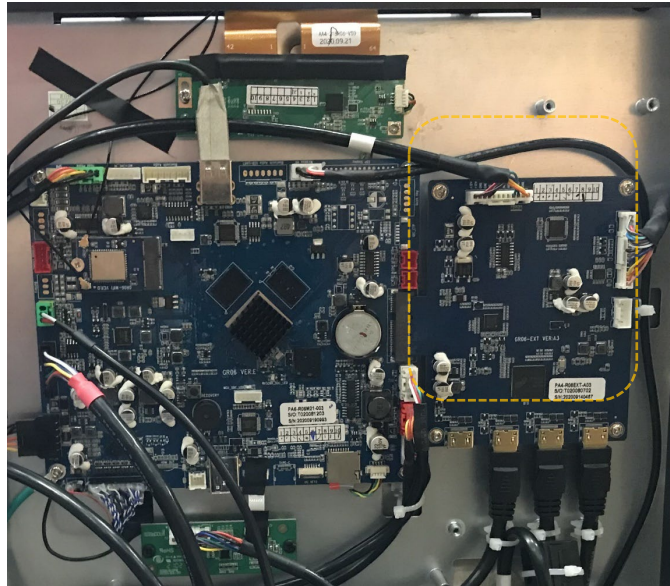


Figure 1

4. Reverse the steps to install a new entertainment board. **Note:** Don't forget to replace the cable ties.

TFT Module

Note: The T600E console's TFT module is affixed to the front cover with glue, and the two parts are difficult to separate. We recommend sending a new front cover (N03) when you replace the T600E TFT module.

1. Remove the back cover and the console rack as outlined.
2. Remove all wires on the TFT module. Cut or remove any cable ties or tape as needed.
3. Use a Phillips screwdriver to remove eight screws (Fig. 1).

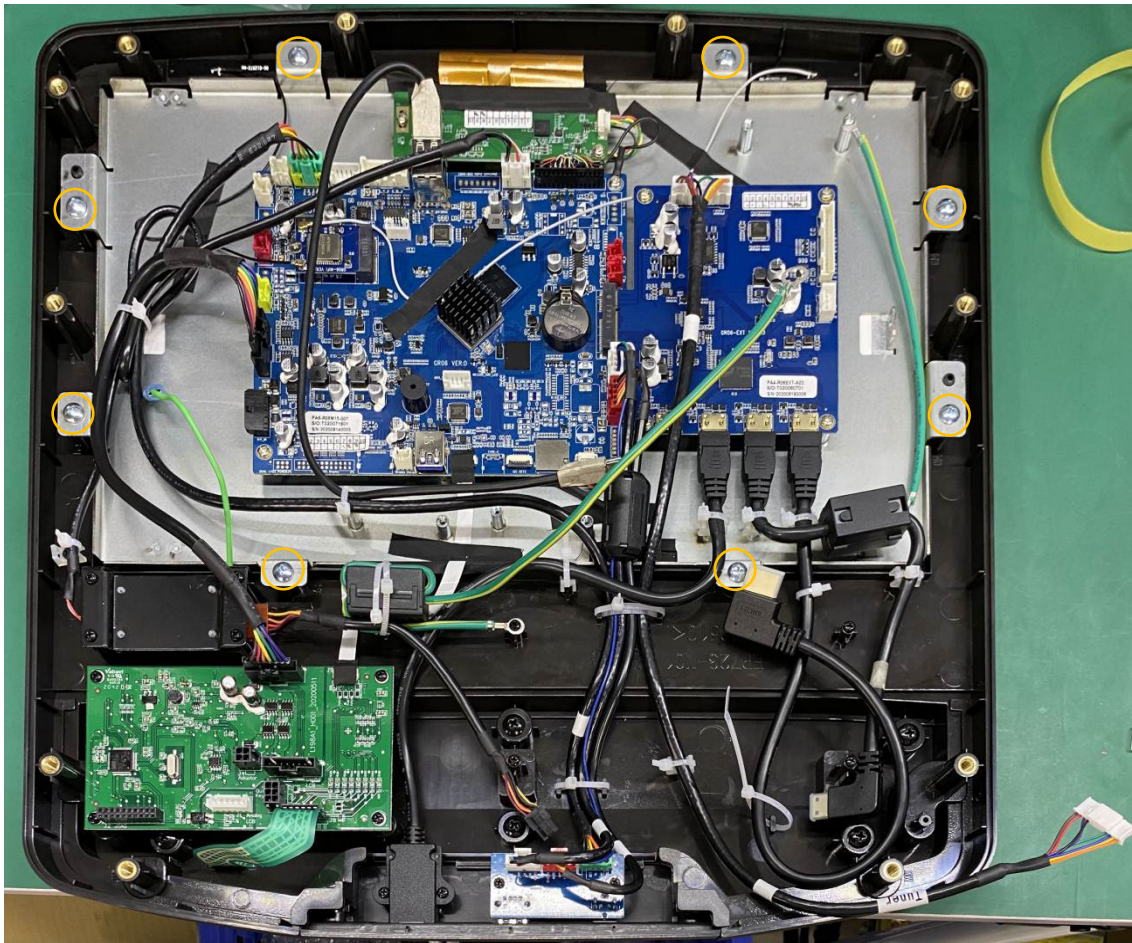


Figure 1

4. Remove the TFT module.
5. Reverse the steps to install a new TFT module.

CHANGE LOG

Version	Date	Details	By
	11/9/2020	Original Version	Lilien Zhang
1	9/15/2021	JHTNA Version	Emilie McWilliams
1.1	9/20/2021	Added tuner specifications.	Emilie McWilliams
1.2	10/15/2021	Added Software History to the Update Center. Updated First Time Setup notes.	Emilie McWilliams
1.3	10/22/2021	Added a note to Assembly Issues.	Emilie McWilliams
1.4	11/5/2021	Added a note about Virtual Active to the Update Center and to the troubleshooting section "General App & Program Issues". Added a note about mirroring in the HDMI app to the troubleshooting section "Entertainment/Audio Issues".	Emilie McWilliams
2	5/23/2022	Added NB-2203002 (error code 02BB) and NB-2111011/NB-2111012 (MCB compatibility) to the Update Center. Updated TV tuner installation instructions in Parts Replacement. Added a note about beeps/sounds to the troubleshooting section "Other Issues".	Emilie McWilliams
3	9/22/2022	Added version 1.1.0.3 to the "Software History" section in the Update Center and corrected a note in General Troubleshooting.	Emilie McWilliams
4	12/19/2022	Added Lightning to HDMI adapter and iOS 16 compatibility issue to the troubleshooting section "Entertainment/Audio Issues".	Emilie McWilliams
5	4/12/2023	Added version 1.1.1.1 to Software History and FAQs subsection and question in Update Center. Changed the link for Vision Fitness Software Updates in USB Update. Added Bluetooth FTMS subsection under User Connectivity Features. Added Marathon Mode subsection under Service and Special Functions.	Regina Templeton
6	7/8/2024	Added case "Blank White Web Page" to the troubleshooting section "General App & Program Issues". Added NB-2312002 (Elliptical Assembly Reminder) to the Update Center and Assembly Issues.	Emilie McWilliams