MATRIX

TECHNOLOGY FACILITY PREP GUIDELINES

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Power Requirements

Power Requirements for Matrix Fitness Equipment

All Matrix Fitness Treadmills, Climbmills and Steppers require power. All other cardio platforms may be self-powered when using an LED console (LED, Group Training LED, Premium LED).

Power Supplies for Matrix Fitness Equipment
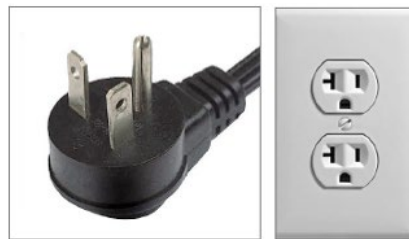
Treadmills

- All treadmills require a dedicated 120V/20A circuit with a non-looped (isolated) ground.
  - o A dedicated circuit means that each outlet you plug into should not have anything else running on that same circuit.
  - o Non-looped (isolated) grounding means that each circuit must have an individual neutral/ground connection coming from it and terminating at an approved earth ground.
- Please refer to NEC Article 210-21 ad 210-23 for additional information.
- The power cord on the treadmills use a NEMA 5-20P plug.
- The treadmill receptacle must be a NEMA 5-20R receptacle.

Non-Treadmill Cardio

- All non-treadmill cardio equipment uses a NEMA 5-15P plug.
- The equipment requires a 120V/15A circuit. Multiple units may be daisy-chained together, up to four units per 15A circuit.
  - o The non-treadmill cardio receptacle must use a NEMA 5-15R receptacle, or a NEMA 5-20R T-Slot receptacle.
- Bikes, Ellipticals, and Steppers can daisy chain up to 4 units on a 20A circuit.
- Ascent Trainers and Climbmills can daisy chain up to 3 units on a 20A circuit.

INTERNATIONAL POWER REQUIREMENTS			
LOCATION	**VOLTAGE**	**HZ**	**Amp**
US & Canada	120	60	20
Germany	230	50	10
France	230	50	10
Latin America	220	60	10
Spain	230	50	10
Japan	200 100	50 or 60 50 or 60	10 20
Australia	240	50	10
United Kingdom	230	50	10

TV Requirements

TV Cabling Requirements for Matrix Fitness Equipment

For live TV on Matrix Fitness equipment, coax cable or ethernet cabling must be run to the machine. All cabling internal to the Matrix Fitness equipment will be supplied by Matrix Fitness. All other cabling used to run from the content source to the Matrix product must be provided by the facility.

TV Setup

- Matrix Fitness TVs can support unencrypted ATSC, NTSC and QAM signal.
- Matrix Fitness TVs can also support Pro:Idiom content, both from a coax source and with IPTV.

IMPORTANT: When determining your content source (Coax vs. IPTV, Pro:Idiom vs. clear) be sure to communicate your configuration to Matrix, as this will affect which console setup is required at install.

TV Cabling Requirements

- Coaxial cable must be a quad-shielded RG6 cable with an F-Type compression fitting.
- Signal strength delivered to the equipment must be +2dbmv ±2.5dbmv.
- Splitters or taps are acceptable for signal distribution, provided the signal delivered is properly balanced and signal strength is in our required range.
- Confirm the signal strength at each Matrix cardio machine meets our listed requirements with your TV content provider.

IPTV Cabling (Touch and Touch XL)

For IPTV installations, a Cat5e or better cable with an RJ45 connector must be present at every machine and run back to the IPTV headend system. Signal may either be delivered in the clear or with Pro:Idiom encryption.

NOTE: Pro:Idiom IPTV requires a separate component, and MUST be specified prior to placing the order.

TV REQUIREMENTS	
Input	RJ45 connector, CAT5e or above
Video Decoding	MPEG-2, MPEG-4, H.264
Resolution	1080p
Bit Rate	15 Mbps
Frame Rate	30FPS for 1080p, up to 50FPS for 720p

TV Solutions

TV Solution Options for Matrix Fitness Equipment

There are multiple options for presenting TV signal with Matrix Fitness equipment. To help provide the easiest TV solution possible for your equipment, we have developed multiple configurations on our consoles to accommodate the TV technologies available in the market. Here are some options available to your facility.

Set-Top Boxes

One set top box (STB) must be installed for each individual piece of Matrix cardio equipment. Your cable company would provide the STB. The TV tuner on the Matrix equipment is set to Channel 3 permanently. The user would change channels via the remote control, which must be kept near the unit. You can also use a console adapter component to manage the channel changing. A console adapter component redirects TV commands from a Matrix Fitness console to a set-top box without using a remote control. A separate component is installed into the Matrix Fitness console. When a user presses a channel command on the console, the device sends that command directly to the STB. Users on the Matrix Fitness equipment will use the channel buttons on the consoles as normal to select their channel. Common console adapters include the CAB, by Broadcastvision and the CableSAT Commander, by MYE. Set Top boxes may be Pro:Idiom encrypted or unencrypted.

Head-end System

A head-end system works with a rack installed in a separate closet, not on the fitness floor. A selection of STBs is placed on the rack with each box set to a specific channel. The encrypted signal is decrypted and set to the selected channel by each STB . This can be digital or analog, depending on the set-top box used. A modulator device takes the signal from the boxes and combines it into one stream, allowing you to send it out to every screen in the facility. A head-end unit in a facility would service not only the fitness equipment, but any other TVs in the location. Head-end systems can be configured with both coax cable or IPTV, and may use Pro:Idiom encryption or be unencrypted.

IPTV (Touch and Touch XL)

IPTV is an available option for any Touch or Touch XL console. As noted above in the head-end system, this requires your facility to have an IP head-end system in place. TV signal is then distributed to each machine via a Cat5e or better ethernet cable instead of the standard coaxial cable. Unencrypted IPTV is available on our standard console offering. IPTV channels can be set up at the time of installation, or a channel list may be provided to Matrix in advance to help streamline the setup process. Pro:Idiom encrypted IPTV is available on the Pro:Idiom IPTV console variant.

TV Solutions

Wireless Audio 900MHz (North America) and 863MHz (International)

Wireless audio is a solution that does not require a screen to be connected to the Matrix Fitness cardio product. Multiple TVs can be mounted on a wall near the equipment with a transmitter connected to each. Receivers are installed on the Matrix equipment, and the user is then able to use headphones on the equipment to listen to any of the TVs that are mounted on the wall.

A wireless audio qualifier sheet must be completed and submitted to Matrix Fitness to ensure proper setup of this equipment to ensure the devices can be properly configured for your setup.

Choosing the Right Console

With all the various options that facilities have for their TV's, it is very important for Matrix to understand what your TV solution will be to ensure that the equipment we deliver to you meets your needs. Our technology and site readiness forms make this simple by asking just two questions:
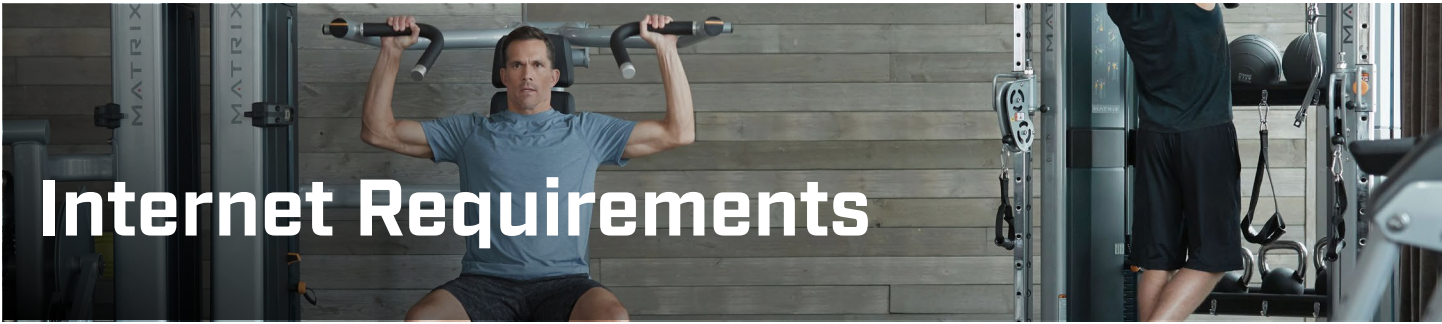
1. Is your system going to use coax cable or IPTV?
2. Will your system be Pro:Idiom encrypted or not?

Ensuring these answers will help make your install much smoother.

NOTE: Our standard console supports connections with Set Top Boxes, unencrypted headend systems, and unencrypted IPTV.
For Pro:Idiom set top boxes and Pro:Idiom headend systems using coax, the Pro:Idiom Coax Console (US5)is required.
For Pro:Idiom IPTV setups, the Pro:IPTV (US7) console is required.

Internet Requirements

All Matrix Fitness consoles support internet connectivity. While internet connectivity is standard on Touch, Touch XL, and Premium LED consoles, it is an optional feature on the LED and Group Training LED consoles. See the options below to understand the facility internet requirements based on the connectivity options that you have selected.

Wireless Internet – Basic Function

LED, Group Training LED, Premium LED – All Units
Touch consoles without streaming apps enabled
- Connects to your facility's Wi-Fi network
- At least 3 Mbps available bandwidth is required for basic console functions, such as Asset Management, Workout Tracking, Personal Trainer Portal, and Basic Console Applications
- Additionally, 500 Kbps is required per machine.
- While not required, we recommend a separate SSID and VLAN be created within your facility's wireless infrastructure to support connected cardio equipment. Matrix equipment has no need to touch any other aspect of your facility's network. It requires only internet access.

Wireless Internet – Streaming Functions

Touch and Touch XL consoles with streaming apps enabled
- Connects to your facility's wireless network
- For HD streaming activities, 5 Mbps download speed is recommended for each unit. Lower bandwidths may result in reduced resolution while streaming video.
  - o Minimum – 3 Mbps download
  - o Example: For 16 units, 8 Mbps download is required for basic function. 80 Mbps is recommended to support all units streaming HD content simultaneously at maximum settings.
- A minimum 512 Kbps upload speed is required for the equipment regardless of the number of consoles.

BANDWIDTH REQUIREMENTS		
No of Units	Basic Bandwidth	Streaming Bandwidth
10	5 Mbps	50 Mbps
20	10 Mbps	100 Mbps
40	20 Mbps	200 Mbps

Wired Internet – Basic Function

Premium LED, Touch, and Touch XL without streaming apps enabled
- Wired connections require a CAT5e or better cable with RJ45 fittings.
- At least 3 Mbps download speed is required for basic console functions, such as Asset Management, Workout Tracking, Personal Trainer Portal and Basic Console Applications.
- Additionally, 500 Kbps is required per machine for basic functions.

Internet Requirements

Wired Internet – Streaming Function

Touch and Touch XL with streaming apps enabled

- For HD streaming activities, 5 Mbps download speed is recommended for each unit. Lower bandwidths may result in reduced resolution while streaming video.
  - o   Minimum – 3 Mbps download
  - o   Example: For 16 units, 8 Mbps download is required for basic function. 80 Mbps is recommended to support all units streaming HD content simultaneously at maximum settings.
- A minimum 512 Kbps upload speed is required for the equipment regardless of the number of consoles.