



## Matrix Fitness 7xi – Setup and Network Connection guide

Introduction: Please note that this guide is meant to provide an overview on the configuration and setup steps that are unique to the 7xi product. The equipment itself is assembled and installed almost identically to the Matrix Fitness 7xe product line. What sets the Matrix Fitness 7xi equipment apart is our new 'app' interface, personalized logins for each user, social media access, on demand content, and network connectivity. This guide will cover the initial setup of the 7xi console by Matrix Fitness.

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## 7xi Product Workflow

Here is a list of steps that must be completed for all Matrix Fitness / Johnson Fitness 7xi Cardio Installation.

1. Sales order is placed for 7xi product.
2. Johnson Fitness Creates an Asset Management Facility ID for the customer.
3. If Necessary, Johnson Fitness creates a user ID for the customer to access the Asset Management site.
4. An order is placed with Accucode for all necessary components.
  - a. All 7xi installations require a media Gateway. Depending on Wired v Wireless, the remaining components will vary.
5. A site survey is performed to determine how many Access Points are required to provide adequate wireless coverage in the facility. Access points are ordered based on the result of this survey.
  - a. For Wireless setups only.
6. Network access components are installed in the facility and connected to the facility's internet line.
  - a. NOTE – It is highly recommended that the customer install a dedicated internet line for 7xi product to allow for necessary bandwidth.
7. New equipment is installed.
8. Consoles are set up to connect to the Access Point.
9. Customer can now view equipment online in the Asset Management website.
  - a. Note – A workout must be completed before the Equipment will report data to the website. It is recommended that a brief workout is performed directly after turning on Asset Management.

NOTE: Steps 6-8 can be performed in any order. The order provided is the most streamlined process.  
All 3 of these steps can be performed at the time of install.

## Ordering Components for Wired and Wireless for 7xi

When ordering 7xi equipment, the customer has two options for connecting the equipment to the media gateway: Wired and Wireless. Use the reference sheet to determine the necessary components for each 7xi order and be sure to include the correct parts when quoting the customer.

Once the sales order is completed, a third party order must be placed with Accucode for the Media Gateway and any additional components required for the specific install. Orders are placed via <http://orders.accucode.com>

 needed  not needed

	High Speed Internet FACILITY PROVIDED	Low Powered AP MATRIX PROVIDED	High Powered AP MATRIX PROVIDED	Media Gateway – (1 Switch INCL.) MATRIX PROVIDED	Ethernet Cabling (Cat5e or Cat6) FACILITY PROVIDED	Additional Switches MATRIX PROVIDED
Asset Management Only (5x, 7xe)	needed	needed	not needed	not needed	not needed	not needed
Asset Management w/ PCTV – Wireless Only (5X)	needed	not needed	needed	needed	not needed	not needed
PCTV – Wireless (3x, 5x)	needed	not needed	needed	needed	not needed	not needed
PCTV – Wired (3x, 5x)	needed	not needed	not needed	needed	needed	needed
7xi – Wireless	needed	not needed	needed	needed	not needed	not needed
7xi – Wired	needed	not needed	not needed	needed	needed	needed

## Matrix Fitness 7xi and Asset Management

Introduction: Every order for Matrix Fitness 7xi product includes access to the Matrix Fitness Asset Management Website. At the time the sales order is placed, a new facility ID is created and assigned to the facility. Each facility requires only one Facility ID, any future orders for the same location will use the same Facility ID. This step is to be performed by Matrix Fitness.

To Create a facility ID:

1. Log in to the Matrix Fitness Asset Management site: <http://am.matrixfitness.com>
2. Select the Organization that pertains to the facility. If a new organization is required, select 'Add Organization' from the CTS dropdown menu at the top of the Screen.
  - a. The Organization name is typically the name of the Franchise for a facility. If a facility is a standalone business, University, or commercial property, it should have its own Organization, which is named the same as the Facility.
3. Once an organization has been selected, select 'Add Facility' from the Organization Management dropdown.
4. Fill out all necessary information and select 'Add.' A new facility ID will be provided for the facility.

To create a new user in Asset Management:

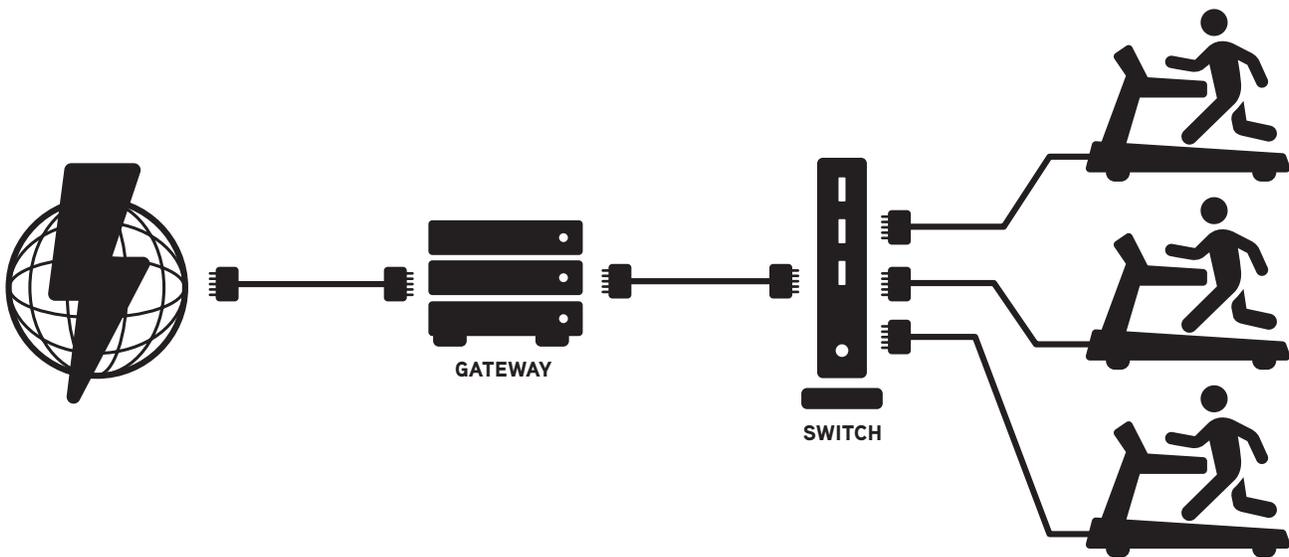
1. Log in to the Matrix Fitness Asset Management site: <http://am.matrixfitness.com>
2. Select 'Add Users' from the CTS dropdown menu at the top of the screen.
3. Fill out the necessary information. Username is typically presented as firstname.lastname.
4. Select the 'Standard' Role, and select the organization that the new user is to be affiliated with.
5. Save.
6. Select 'Users List' from the CTS dropdown menu and select the user that was just created.
7. Select the 'Set Permissions' option from the Edit User page.
8. Use the dropdown menus to select the correct Organization and Facility for the user and click 'Assign Tag.'

For more in-depth instruction on the Matrix Fitness Asset Management website, consult the Matrix Fitness Asset Management Service Manual.

## Setting up Wired and Wireless Connections in a Facility

Each facility has two options for the network setup on their Matrix Fitness 7xi product:

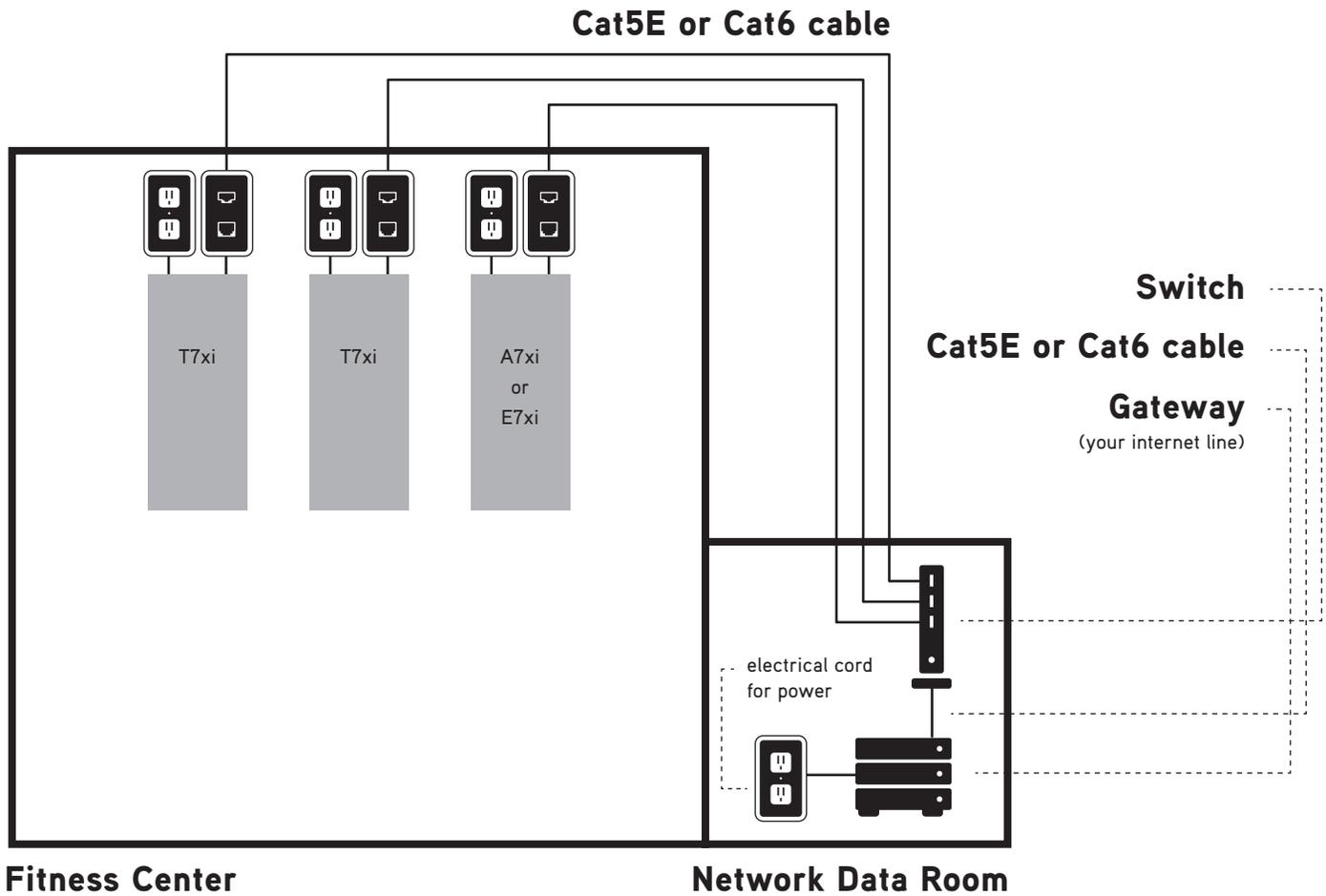
Option 1 - A wired solution – The media Gateway is connected to a local internet source, and Ethernet cabling is run to each machine individually, using a switch to source all of the connections.



### Wired Installation Steps:

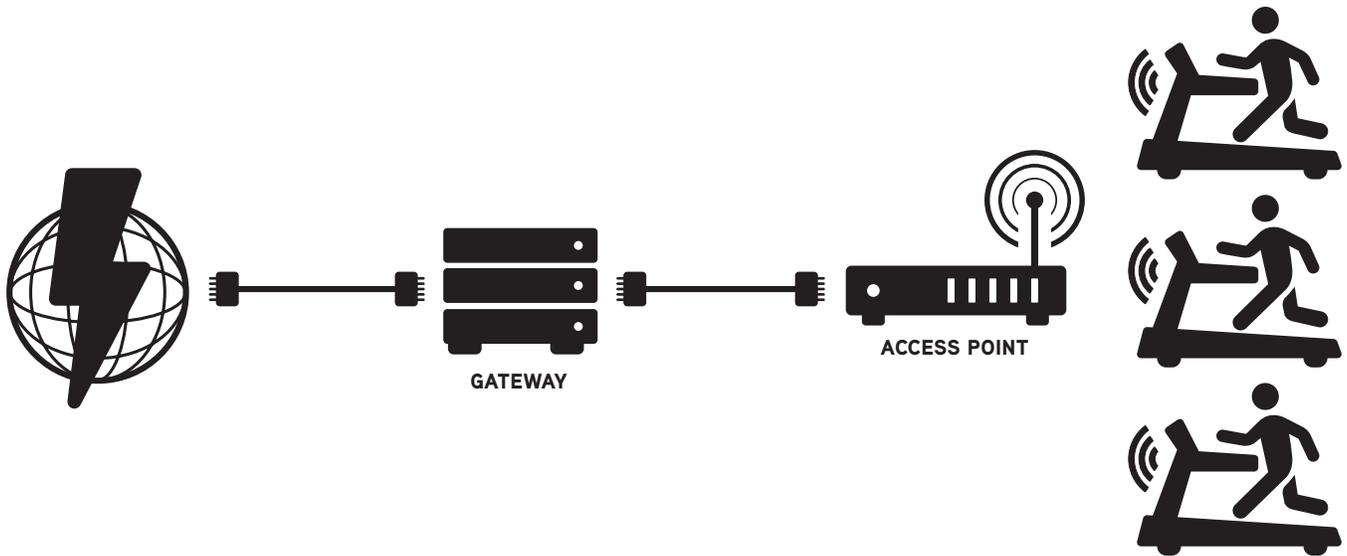
1. Prepare site for local server and internet connection
  - a. Find a secure location (like an AV closet or a server room) for the gateway and related network equipment.
  - b. Make sure the location has power and internet access, as well as a rack or 19" shelf for the gateway.
  - c. Contract an ISP (Internet Service Provider) to bring internet connectivity to the closet.
  - d. Make sure that the internet has sufficient bandwidth for the Gateway.
    - i. The minimum bandwidth is 3Mbps down.
    - ii. Recommended is a bandwidth of 1Mbps down for every 4 Touchscreens.
  
2. Install gateway server and switch
  - a. Connect the modem to the Gateway with a patch cable.
  - b. Connect the Gateway to the Switch with a patch cable.
  - c. Connect the modem, switch, and Gateway to a power source
  - d. Plug patch cables from the switch to the patch panel
  - e. Label the jacks on the patch panel and the corresponding jacks on the fitness floor as well.

## Hard wired data Gateway setup for 7xi



3. Wire club with Ethernet
4. Connect 7xi Units to gateway server via Ethernet cables.

Option 2 - A wireless solution – The media Gateway is connected to a local internet source. The Gateway is the connected to one or more Meraki MR24 Wireless Access Points. Each AP can support up to 20 pieces of 7xi cardio equipment. Please see notes below regarding how to determine the number of Access Points are necessary at a given install.



Wireless Installation Steps:

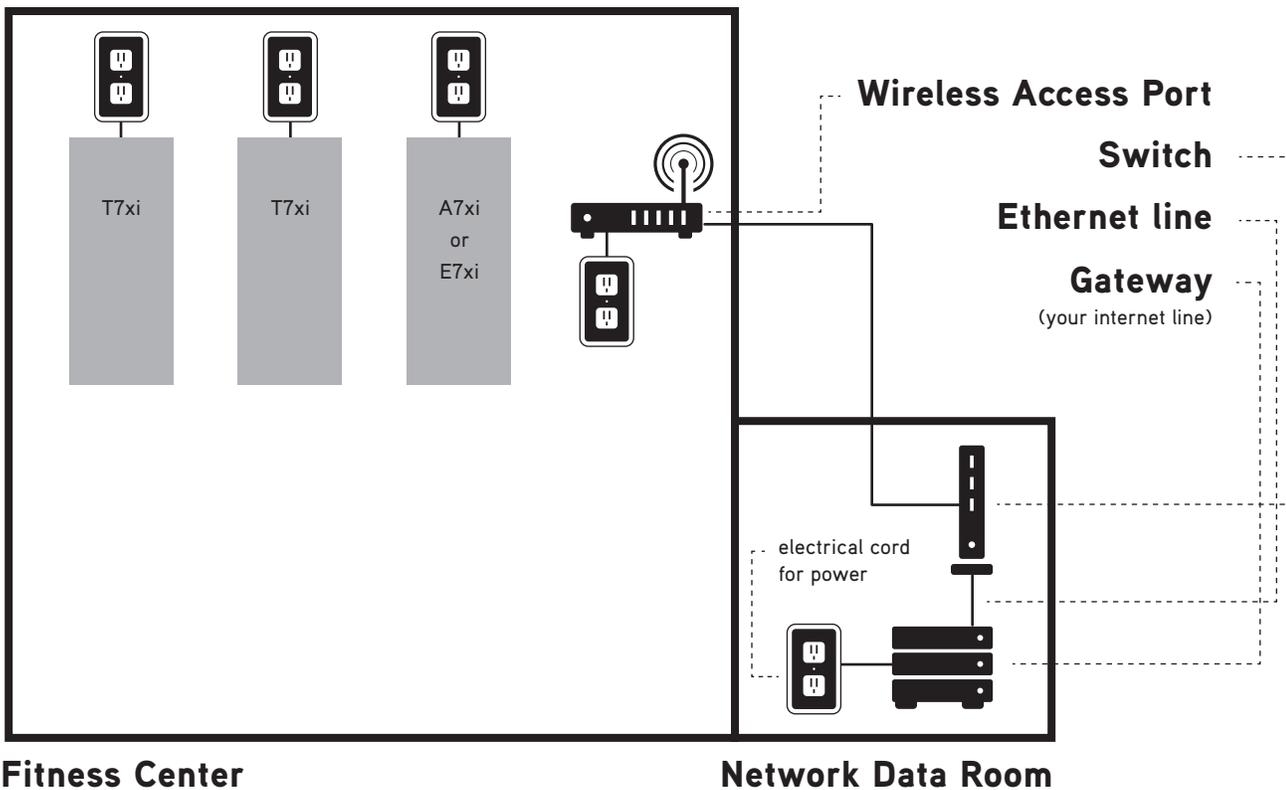
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  - i. The minimum bandwidth is 3Mbps down.
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BANDWIDTH REQUIREMENTS CHART		
1-20 UNITS	1 WAP	3-5 Mbps
21-40 UNITS	2 WAP	5.25-10 Mbps
41-60 UNITS	3 WAP	10.25-15 Mbps
61-80 UNITS	4 WAP	15.25-20 Mbps
81-100 UNITS	5 WAP	20.25-25 Mbps
101-120 UNITS	6 WAP	25.25-30 Mbps
121-140 UNITS	7 WAP	30.25-35 Mbps
141-160 UNITS	8 WAP	35.25-37.5 Mbps

2. Perform a Site Survey to determine the Access Point Needs of the facility.
  - a. There are four basic steps to design a wireless network.
    - i. Identifying areas that need coverage and estimating the number of APs needed.
    - ii. Running cable from the communications closet to the APs mounting locations.
    - iii. Mounting the APs.
    - iv. Coverage Check

## Wireless Gateway setup for 7xi



Step 1 - Identifying areas that need coverage and estimating the number of APs needed:

Wireless coverage only needs to be provided in areas where cardio machines need to have a wireless connection. If there are spaces in the facility that don't have cardio machines, there is no need to install access points in that area.

Once the areas that need coverage have been identified, calculate the minimum number of access points (APs) needed to support your machines. One Meraki MR24 access point can support up to twenty (20) 7xi Machines. Calculate the number of 7xi Machines will be installed, divide this number by 20, and the result is the minimum number of APs you will need to install to support the equipment. This number is only a starting point; additional access points will be required depending on the physical distribution of the clients and the RF challenges presented by the facility's environment.

The next step in designing the wireless network is to determine the distance from the AP that each machine will be placed. Machines cannot be placed further than 50 feet away from any given access point. This limitation is a best case scenario and only applies to machines that have direct line of sight to the access point. If there are walls, floors, lighting fixtures, windows, or other obstructions that block the line of sight to the access point, the maximum distance the machine can be from the access point is reduced significantly and will need to be determined with empirical testing. For each group of 20 machines, stand in the center of the group and measure the distance to the furthest machine. If this distance is greater than 50 feet, an additional AP will be needed to cover this group of machines. If machines are installed on different floors, use additional APs to cover the floors separately.

Understand and plan around interference. There are two main types of interference to be aware of. The first is physical interference. Physical objects that block line of sight to the access point will interfere with the signal. This includes walls, windows, pillars, shelving, lighting, air ducting, etc. Choose mounting locations that allow for clear line of sight to the clients. It may be necessary to use a drop pole to lower the AP below these types of obstructions.

The second type of interference is electrical and magnetic interference. This includes other wireless and radio frequency devices, such as neighboring access points, cordless phones, baby monitors, and two-way radios. It also includes other devices that emit EMI (electromagnetic interference), such as microwaves, high voltage power lines, electrical distribution boxes, fluorescent lighting ballasts, generators, and any other electrical devices that turns currents on and off at high speeds. Avoid running network cable and mounting APs near these sources of interference.

Once all of the above factors are taken into consideration, should be able to identify the number of access points needed, as well as the locations that they will be mounted.

Step 2 – Once it is determined where the APs will be located, plan out your cable runs.

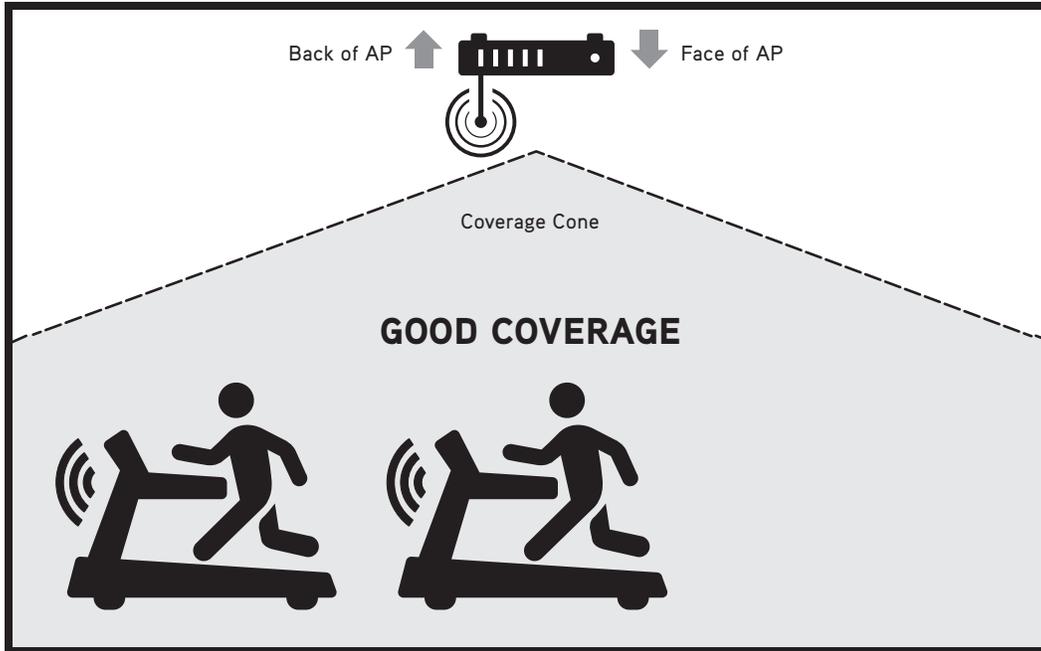
Each AP will need a “home run” back to this secure closet housing all the network equipment. Network cables cannot be split or tapped; each run must connect only to a single AP. Measure the distance from the communications closet to each access point mounting location. This distance cannot be longer than 90 meters (300’). If the distance exceeds this limit, install an IDF (intermediary distribution frame) which houses an additional network switch to act as a repeater for the signal. Once you have planned out all your runs, pull, terminate, and test all cable runs to the AP mounting locations.

Step 3 – Mounting APs

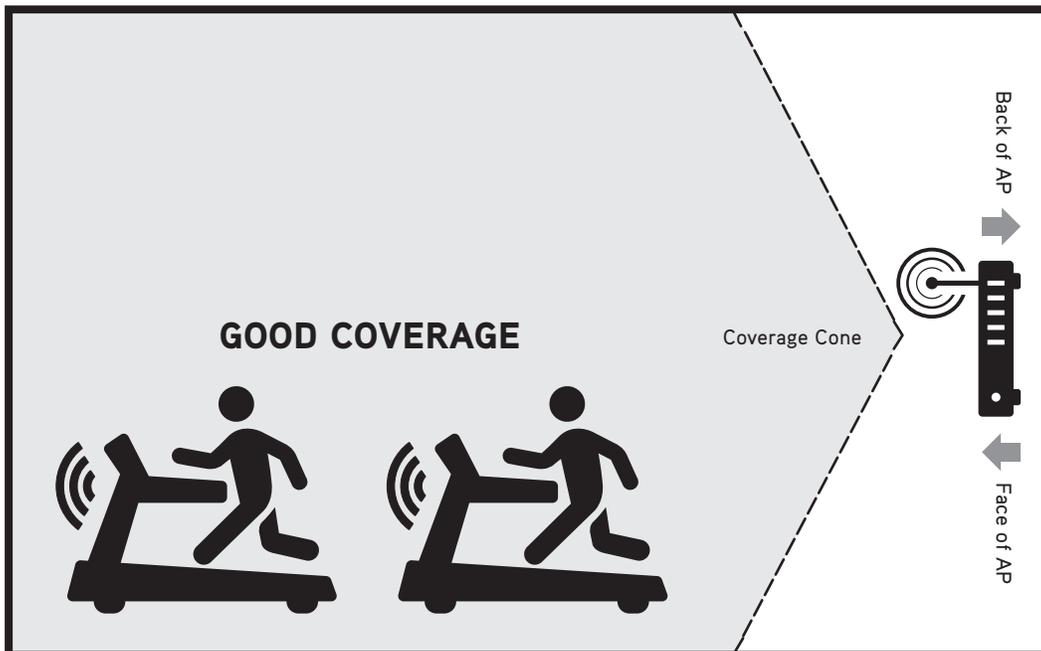
Once cable has been pulled, mount the access points. The following section covers the propagation patterns of the APs and the appropriate ways to mount them.

Both the MR12 and the MR24 have virtually identical coverage patterns. The coverage patterns are shown below. Both the 2.4GHz and 5 GHz patterns are fairly symmetric in the azimuthal plane (XY), so it makes little to no difference how the AP is rotated about the Z-axis when mounting. The patterns are asymmetrical in the elevation plane (XZ), with significantly more antenna gain in the area directly above the plane formed by the access point (Z+). This results in a coverage pattern that resembles an inverted cone whose axis of symmetry is normal to the plane of the AP. See the diagram below for a side view of the green coverage zone.

Examples of GOOD AP coverage

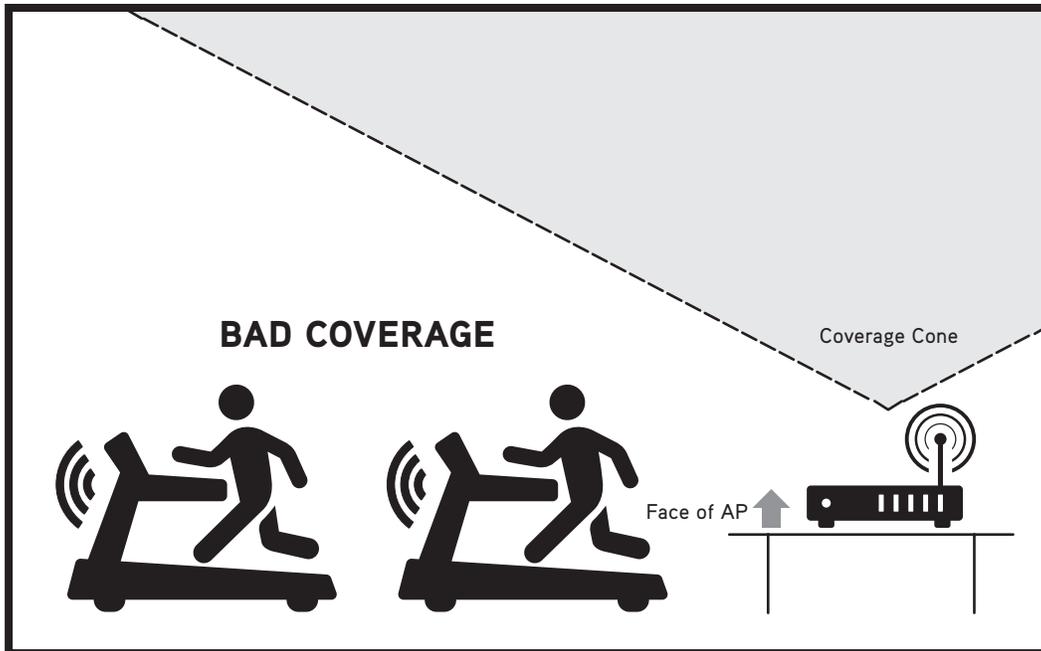


Example 1 – Ceiling Installation



Example 2 – Wall Installation

## Examples of BAD AP coverage



### Example 3 – Improper Installation

With this type of coverage pattern it is very important to mount the AP so that the base of the coverage cone covers the desired wireless clients. This can be accomplished by mounting the AP to the ceiling above the clients with the face of the AP (the side with the LED lights) pointed down toward the floor. Alternatively, the AP can be mounted on a wall at the approximate height of the client antennas with the face of the AP (the side with the LED lights) pointed at the clients. Do not mount the AP level with the clients and the face pointed up at the ceiling as this will not achieve the desired coverage pattern. See diagrams below. Examples 1 and 2 show proper mounting placements. Example 3 illustrates a situation to avoid.

Please see the Meraki MR installation guide (Section 4) for additional details on mounting the access point to different fixtures. [http://docs.meraki.com/download/attachments/8519767/meraki\\_setup\\_MR24.pdf?version=1&modificationDate=1349988446756](http://docs.meraki.com/download/attachments/8519767/meraki_setup_MR24.pdf?version=1&modificationDate=1349988446756)

Step 4 - After all the APs are up and running, perform a post installation coverage check. There are many free tools that can be loaded onto a laptop that will allow you to check your RSSI (received signal strength intensity) values. InSSIDer is one such program, available on Metageek. With this program, or another similar program installed on a laptop or smartphone, check the RSSI values around the fitness equipment. Look for values that are greater than -70 dBm. If the signal strength is significantly lower than this value (-75 dBm or less), consider installing additional access points.

## Post-installation console setup

Upon completing the install of the Matrix Fitness 7xi cardio equipment, it will be necessary to connect the consoles to the media gateway that is included with the 7xi equipment.

For Wired Solutions, once the Ethernet cabling that has been installed in the facility, the console should automatically recognize and connect to the network via the Ethernet Cable.

For Wireless Solutions, the console must be connected to the network via the wireless module built into the console.

From the main screen on the console, Press ENTER,2001,ENTER to obtain a list of the available networks for the 7xi console.

Select 'Network' from the left side panel on the screen.

Select 'Site Survey' to see all available networks.

Select the SSID 'npwireless' from the list.

If the facility is using a different SSID, select the correct SSID.

Touch the window provided for entering the pass phrase. A keyboard will pop up.

Enter the password provided by Matrix Fitness for the npwireless SSID.

Press Connect.

Once the Unit is connected to the network, configure the console information in the Service Mode

Press ENTER,3,0,0,1, ENTER on the keypad to Access the Service Mode.

In the GENERAL Tab:

Enter the Console and Frame Serial numbers by pressing 'EDIT' by each option and input the correct serial numbers from the machines.

Press the ► button in the bottom right to access the Date and Time menus. Set the date and time accordingly on the unit.

Enter the Facility ID under the Asset Management Menu on the left hand panel.

Select the Weather option on the left side column. Set the default city for the Weather Application. This will confirm that the console is online and complete the console set up.

## OVERVIEW

FEATURES	INTERNET CONNETED	NOT INTERNET CONNETED
Touchscreen Size	19" Treadmills, 16" non-Tread	19" Treadmills, 16" non-Tread
Multimedia Playback via USB port		
Apple iPhone / iPod compatibility		
Interactive Virtual Active Workout Experience		
On Demand TV and Music Videos		
Matrix Fitness Asset Management		
Facility Calendar to keep customers updated		
Workout Tracking, user individualization		

## FAQ's

### 1. What is the Matrix Fitness 7xi?

The 7xi console by Matrix Fitness, with its new app-based interface and social networking connectivity, introduces an all new workout experience to the fitness industry. The system allows users to create a secure, individualized login that personalizes their custom display. They can setup their favorite On Demand playlist, automatically login to their Facebook, Twitter, and/or MyFitnessPal account, and explore locations from all over the world using the interactive Virtual Active system. Matrix Fitness uses this straightforward, single login approach to create synergies and simplify the startup process.

### 2. How does the App interface work?

The 7xi app interface provides a familiar experience for smart phone and tablet users. The apps range from On Demand TV and music videos to social networking, workout screens, YouTube, Weather, and even a club calendar for a facility to keep their members informed of the latest news and events.

### 3. How does the On Demand Content work?

Prior to installing Matrix 7xi consoles, a media gateway will be installed on site. The media gateway houses the On Demand content and also connects the 7xi equipment to the internet. Only one media gateway is required for most facilities.

### 4. Are there any recurring fees associated with the Matrix 7xi consoles?

No. All On Demand and app content is free, as well as the Asset Management system on the 7xi consoles.

## FAQ's

### 5. How do I connect the 7xi to the Internet?

The 7xi equipment connects to the Internet via the media gateway. The gateway will be housed in a network room with a connection to the Internet, and the console will connect to the gateway either via Ethernet cabling or WiFi connection.

### 6. If I'm using Ethernet Cabling, what type of cable can I use?

We recommend using Cat6 cabling as it will better accommodate any new technology released, however either Cat5e or Cat6 cable will work. In either situation it is necessary to use shielded cabling to ensure the highest performance.

### 7. If I have WiFi already, can I use that existing WiFi to connect to the media gateway?

No. The 7xi will need to be connected through the commercial grade WiFi access points that will be supplied by Matrix Fitness.

### 8. How do the media gateway and access points get installed into the facility?

In North America and UK, the gateway and access points will be installed by Accucode, a partner of Matrix Fitness. In all other areas, Matrix Fitness will install and set up the gateway and access point.

### 9. In addition to all of the On Demand Content, can I still watch live TV?

Absolutely. Matrix 7xi equipment is capable of viewing live TV in addition to On Demand content. All you need is a coax cable running to the equipment from your local TV source.

### 10. Can I update the software on the 7xi via the Internet?

Yes. You can adjust the setting in the console to automatically check for available updates on a set schedule. Otherwise you can manually check for updates at any time.

### 11. How does the Asset Management system work with the 7xi?

Asset Management serves as a helpful tool for tracking maintenance, errors, and service issues. Additionally, you can customize the logo and front page on your 7xi units to help promote your facility. Additionally you can use Asset Management to add events to the calendar app on the 7xi console to keep your members informed of upcoming events.

## Technical Requirement FAQ – 7xi

### 1. Power requirements for 7xi equipment:

All 7xi units must be plugged in. The power requirements on all 7xi units are the same as other Matrix models regarding dedicated circuits for treadmills and how many units you can connect on a single circuit for other models.

### 2. Ethernet Cabling:

In all situations where Ethernet Cable is needed, either Cat5e or Cat6 cable can be used. We recommend using Cat6 cable, as the flexibility for new technology. We recommend using shielded cabling, as it will prevent any interference that may occur on the lines.

## FAQ's

### 3. Coaxial Cable:

To watch live TV, coaxial cable needs to be connected to the equipment. We recommend using quad-shielded RG-6 cable with an F-Type connector and compression fitting. TV signal must be delivered to the equipment unencrypted. The TV signal can be split as long as the signal at the TV is +7 dBmV,  $\pm 5$ dBmV.

### 4. Internet questions:

- a. Do I need to have a dedicated Internet line installed? It is not required, but we do recommend a separate Internet line to help prevent the equipment from slowing down computers and mobile devices on the existing network and vice versa.
- b. Do I need to set a Static IP for the media gateway or access points? No. The Gateway works with a DHCP and will assign Dynamic IP Addresses to all machines that connect through the gateway.
- c. Is On Demand Content available for all 7xi units? Within the United States, both the On Demand TV and music videos are available. Outside of the United States, only the On Demand music videos are available.