



**Co-Mo**  
CONNECT

**Internet • TV • Phone**  
**FOR YOUR LIFE**

## **Getting To Know Fiber**

Tips & Tricks

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## **Getting to Know Fiber**

<i>How does fiber work?.....</i>	<i>Page 4</i>
<i>Fiber Damage Prevention.....</i>	<i>Page 5</i>
<i>Installed Equipment.....</i>	<i>Page 6</i>
<i>Equipment Glossary.....</i>	<i>Page 7</i>

## **Co-Mo Connect Wireless**

<i>What is Wi-Fi?.....</i>	<i>Page 8</i>
<i>Common Questions.....</i>	<i>Page 9</i>

## **Internet Security**

<i>Tips and Recommendations.....</i>	<i>Page 10</i>
--------------------------------------	----------------

## **Tips for Television**

<i>Understanding Remote Buttons.....</i>	<i>Page 12</i>
<i>Programming a New Remote.....</i>	<i>Page 14</i>
<i>Television Trouble Solutions.....</i>	<i>Page 15</i>

## **WatchTVEverywhere**

<i>Available Features.....</i>	<i>Page 16</i>
<i>Available Networks.....</i>	<i>Page 17</i>

## **Co-Mo Connect Phone**

<i>Free Features.....</i>	<i>Page 18</i>
<i>NoMoRobo.....</i>	<i>Page 19</i>



# Getting to Know Fiber

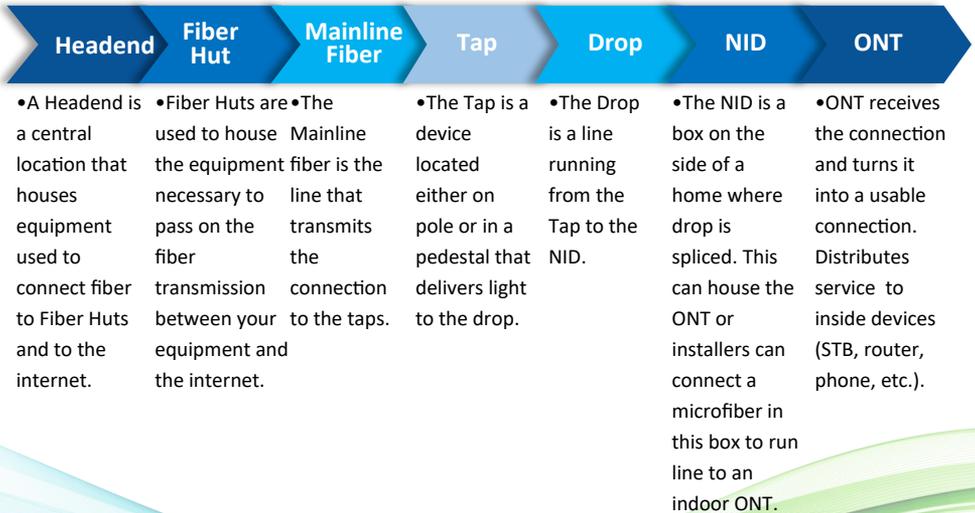
## How Does Fiber Work?

Fiber Optics is the answer to high-speed internet in rural America and the world! Fiber Optic internet replaces traditional wires with a fiber optic cable that emits billions of bits of data per second through glass using the pulse of a laser. The pulses of light can transport electronic data at extremely fast rates.

Because of its high speed, fiber optics is the best option for digital TV and phone services, in addition to internet.

### So how does it work?

Data is sent and received in our modern society in what is known as binary numbers, essentially 1's and 0's. Think of it as a light switch with two settings, either On (1) or Off (0). If you turn the light on and off at the switch with a specific pattern it can be used to form somewhat complex messages.



# Getting to Know Fiber

## Fiber Damage Prevention

A Fiber Optic is a cable made up of a thin strand of glass which carries digital information over long distances using light. While our mainline fiber is less susceptible to damage, the smaller drop fiber and microfiber can be damaged more easily if the proper caution is not used, causing an interruption in your services.

### Common Causes for Fiber Issues

- Digging
- Weedeaters and Mowers
- Rodents
- Insects
- Tree Limbs
- Shooting towards fiber and electric lines

### Ways to Prevent Fiber Damage

- Be Informed - Know where your fiber line is. Always call Missouri One-Call before digging!
- Keep the trees around your lines trimmed.
- Make sure that your fiber is in a location that cannot be easily damaged by animals.
- If you have an upcoming renovation or landscaping project planned, and you have concerns about the placement of your fiber, please contact our offices at 660-433-6100 during normal business hours.



**Call Before You Dig**

Always call Missouri One-Call before digging. It's easy and free. Call 800-344-7483 or visit [mo1call.com](http://mo1call.com).

# Getting to Know Fiber

## Installed Equipment



844 ONT



Battery Backup for Indoor ONT



Outdoor ONT and NID



836 ONT



Wireless Extender



Battery Backup for Outdoor ONT



Switch

Ethernet Cable



Component Cable



Power Cord



HDMI Cable



Composite/RCA Cable



Bridge



SDHC Card



Microfiber



Set Top Boxes

# Getting to Know Fiber

## Equipment Glossary

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**ONT** – (Optical Network Terminal) The ONT is the device that takes the signal from the fiber and makes it usable in your home. The ONT can be indoors or outdoors depending on the model.

**Battery Backup** – The battery backup is installed in locations that subscribe to telephone service. This device keeps the phone service working for corded phones for up to 8 hours in the event of a power outage.

**Wireless Extender** - A wireless extender is a device that is used to extend the range of the wireless signal.

**Microfiber** – A microfiber is used to take the fiber from the outside fiber line to the inside of your home to an indoor ONT.

**Switch** – A switch is a networking device that is used to add additional ports for internet or TV service.

**Ethernet Cable** – An ethernet cable is a networking cable used to hardwire the ONT to connect devices such as a computer, set top box, switch, etc.

**Set Top Box** – A set top box is a required device at each TV where the service will be utilized that takes the encrypted signal and allows the television service to be viewed.

**Bridge** – A bridge is a device that is used to convert ethernet cable to coax cable in the instance where new cables cannot be ran and coax is already in place. In order to use this device, the existing coax must meet certain standards.

**HDMI Cable** – An HDMI cable is used to connect the set top box to the TV as an High Definition connection. Most HDMI cables are rated for up to 1080i signals.

**Component Cable** – Component cables use 6 individual colored connections to connect the set top box to the TV when HDMI is not available. Most component cables are capable of up to a 1080p signal.

**Composite Cable** – Composite Cables are used to connect the set top box to the TV when HDMI and Component connections are not available. They consist of a red, yellow, and white connection that connect to the same color port on the TV.

**SDHC Card** – This card is used on Entone non-DVR set top boxes to control play, pause and rewind functions on live TV.

# Co-Mo Connect Wireless

## What is Wi-Fi and how does it work?



Wi-Fi is the ability to connect to the internet wirelessly. This technology allows your PC, laptop, cell phone, tablet, etc. to connect to high speed internet without the need for a physical wired connection.

### Managed Wireless Router Service

Let us make your life even easier by managing your wireless network with our Managed Wireless Router Service. With secured network options, parental controls and carrier class Wi-Fi, why not let us do the work for you.

**Just \$4.95 a month!**

Subscribing to this service also allows tech support to do in-depth troubleshooting any time you encounter an issue.

### So how does it work?

To use Wi-Fi, you must first have a wireless transmitter, like a router. The router creates a network around itself using radio waves much like a cell phone tower. The difference between the two are that Wi-Fi operates on a much higher frequency (2.4GHz or 5GHz), as opposed to a cell phone network that is typically below the 1GHz level. The higher the frequency, the higher the amount of data that can be transferred.

You also need a compatible device. For a device, such as a phone or computer to be able to pick up Wi-Fi signals, it needs to have the appropriate technology. Many devices, such as smartphones and tablets, come ready to accept Wi-Fi signals straight out of the box, while others, such as some desktop PCs, will require buying a separate wireless card or adapter.

### Why are there so many types of routers?

Each type of router works in different ways. Each are compatible with different types of devices.

**802.11a** - Operates in the 5 GHz band, Speeds up to 54 Mbps, poor range.

**802.11b** - Operates in the 2.4 GHz band, Speeds up to 11 Mbps, good range.

**802.11g** - Operates in the 2.4 GHz band, Speeds up to 54 Mbps, fair range, backwards compatible with 802.11b. When you can no longer pick up the 802.11g signal, you could pick up 802.11b.

**802.11n** - Operates in both 2.4 GHz and 5 GHz band, Speeds anywhere from 54 Mbps up to 600 Mbps, good range, uses MIMO (multiple-input multiple-output) which helps increase the range by using multiple antennas in a coordinated fashion.

**802.11ac** - Operates in the 5 GHz range using wider channels, speeds up to 1300 Mbps, uses MU-MIMO (multi-user MIMO), which builds on MIMO by using more antennas to boost the wireless signal, improved performance for multiple devices, good range.

**802.11ax** - Operates in 2.4 GHz and 5 GHz bands, Speeds up to 14 Gbps (14,000 Mbps), good range. Devices are expected to be available sometime in 2019.

# Co-Mo Connect Wireless

## Common Questions

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### Why do I see my network and one that says 5G?

The Co-Mo Connect Managed Wireless Service, as well as many of the newer routers, offer a dual band broadcast. Since the 2.4 GHz frequency is often crowded with the number of devices that use it, these routers also broadcast a 5GHz frequency. The primary differences between 2.4 GHz and 5 GHz frequencies are range and bandwidth. 5 GHz provides faster speeds at a shorter distance. 2.4 GHz covers farther distances, but performs at slower speeds. Many older devices don't have the technology to utilize or even see a 5GHz connection.

### How far should my wireless reach?

The reach of your wireless network is going to be dependent upon the router specifications as well as the composition of your home. Physical obstructions in homes such as brick walls and metal frames or siding reduce the range of a Wi-Fi network by 25% or more. A typical mid-range router should reach up to 150ft on a 2.4GHz network.

### What can cause interference in my Wi-Fi?

Things that can interfere with your wireless network can include microwaves, baby monitors, life alert systems, cordless phones, nearby wireless networks, older Bluetooth devices, etc. Here are some tips for improving your wireless connection:

- Place your router in a central location that is not surrounded by brick, concrete, or metal.
- If there are wireless networks close, you can update the channel to lessen the impact of that network against yours.
- Make sure your interfering devices that are listed above aren't positioned between your router and device.

### Why is there a difference in speed between my devices that are connected to Wi-Fi vs. my hardwired devices?

While Wi-Fi is obviously more convenient than wired Ethernet cables, a hardwired connection offers many benefits, such as: faster speeds, lower latency, and no wireless interference issues. Typically, a newer router can offer speeds wirelessly of up to 150mbps. This is a maximum speed for all the devices on your connected network to share. Your router is only going to broadcast speeds that handled by your slowest connected device. So, if you have a tablet that is only capable of 72mbps, your router is only going to put out up to 72mbps to share over all your devices, that doesn't take into consideration the composition of the building or any interference that might be present. If you have specific questions about your connection, please contact our technical support department at 888-256-9575.

# Internet Security

## Tips and Recommendations

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While the internet can be a great tool for communicating with others, researching various topics, streaming movies and music, and video chatting, it can also be dangerous if you aren't protecting your computer and data. Here are a few tips and recommendations that will help to reduce the risk of a virus, malware, or other unwanted programs on your computer:

**Frequently delete your browsing history.** For some, they may never delete their browsing history. This not only can eat up gigabytes of storage on your computer, but it could also contain unwanted programs that may slow down your computer's performance. Most web browsers have an option to delete the browsing history upon exit, while having the option to save form data, passwords, and bookmarks.

**Install an ad blocking utility.** Most people do not like seeing advertisements all over webpages. Not only does it use additional resources on your computer, but it also opens up another connection to third-party websites that could put tracking cookies or other unnecessary files on your computer. A free utility for your web browser that blocks ads and other third-party plug-ins is Ghostery. You can download it for free at <https://www.ghostery.com/products/>.

**Be Careful With Your Information.** Scamming calls and phishing websites and emails are becoming more and more common. These scams are a world-wide issue where scammers can use scare tactics to trick you into providing your personal information or providing them access to your personal devices.

One of the most common scams we are hearing about is subscribers receiving a call from someone claiming to be Microsoft advising there is an issue with your computer. They even have technology to make it show Microsoft or Tech Support on the Caller ID. This is a scam. The real Microsoft will never call you to tell you there is an issue with your computer.

Things to keep in mind:

- Use strong passwords and don't share them with anyone.
  - A strong password is suggested to have a combination of numbers, letters, and special characters or even a combination of several random words. Using personal information like your children or pet's names can often be found online and aren't considered secure.
- Do not open emails from senders you do not recognize.
  - If you think an email could be fraudulent, do not click on any links or attachments as they can use these to gain access to your device.
- Beware of anyone that asks for personal information.

# Internet Security

## Tips and Recommendations

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**Install an anti-malware program.** Malware is so prevalent on the internet today, and leaving yourself unprotected means you could be unknowingly setting yourself up for data corruption, identity theft, or other problems. For example, a key logger is a malicious program that runs in the background that collects every key you type on your keyboard. It will then send these details back to its owner. These details could include login information for e-mail accounts, banking accounts, or other sensitive information. It is in your best interest to try to stay out in front of these threats instead of being reactionary when it may be too late. Malwarebytes Anti-malware is a great free utility for detecting and removing malware from your computer. If you wish to have active, continuous scanning for threats on your computer, Malwarebytes offers a paid subscription for this service. To download the free utility or the pay utility, visit <http://www.malwarebytes.org/>.

**Install an antivirus program.** While this recommendation may seem like a given, as of late 2012 approximately 24% of the world's Windows computers were not protected by an up-to-date anti-virus program (26% in the United States). Virus creators are always improving their code to make them more destructive; however, they do not make them just to cause problems for you. They use viruses to steal your information so that they can make money off of you and your information. They can make money by stealing your contact list and selling bulk e-mail addresses on the black market, stealing your identity and opening accounts in your name, or holding your computer and data hostage. A relatively new type of virus is called ransomware. This program effectively disables your computer while a message displays on the screen demanding payment in some form to release the computer back to you. There are numerous anti-virus programs, so it usually comes down to personal preference.

Links to free antivirus programs:

**Avast Free Antivirus** <https://www.avast.com/en-us/index>

**AVG Antivirus Free** <https://www.avg.com/en-us/free-antivirus-download>

**Bitdefender Antivirus Free Edition** <https://www.bitdefender.com/solutions/free.html>

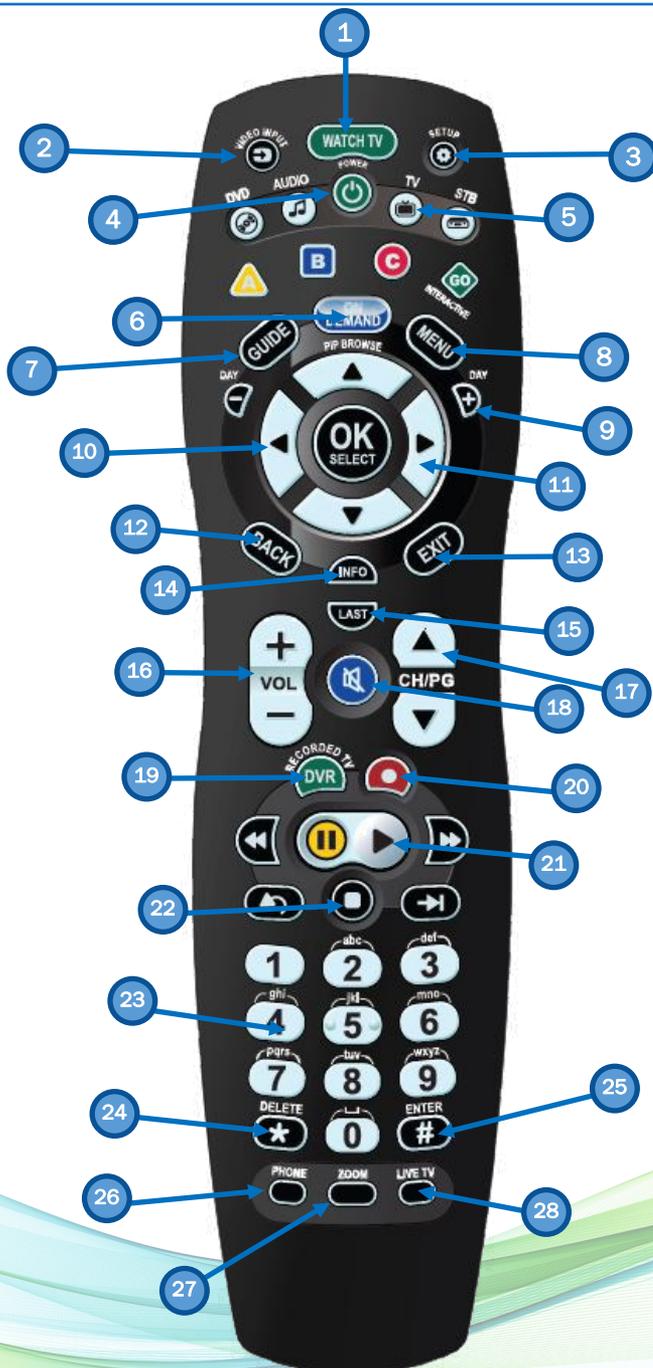
This PC Magazine article goes over the best pay antivirus programs for 2018. It offers information about each program and links to the best deals.

<http://www.pcmag.com/article2/0,2817,2388652,00.asp>

**Utilize OpenDNS.** OpenDNS provides an additional layer of security by helping you to filter out unwanted content by website address. You can utilize parental controls to block material you may find objectionable. OpenDNS can also help to block known malicious website addresses. You can learn more by visiting <https://www.opendns.com/>.

# Tips for Television

## Using Your Remote



# Tips for Television

## Using Your Remote

1	POWER	Switches the power on/off for TV and Set Top Box
2	INPUT	Changes the current A/V input of the selected device
3	SETUP	Setup remote (see reverse side of remote)
4	POWER	Turn selected device on or off
5	DEVICE CONTROL	Send commands to DVD, Audio, TV or Set top box
6	ON DEMAND	Opens the OnDemand menu
7	GUIDE	Displays the on-screen program guide
8	MENU	Displays on-screen menu
9	DAY - / DAY +	These two buttons are currently unavailable. You can move forward or backwards a day in the guide using the REW and FF buttons
10	ARROW KEYS	Navigates up, down, left and right within the on-screen guide or menus
11	OK	Enter a choice you have made
12	BACK	Goes back to the previous screen
13	EXIT	Exits the current menu item
14	INFO	Displays on-screen information about the current TV / DVR program.
15	LAST	Changes channel to the most recently viewed channel
16	VOL +/-	Increases or decreases volume of the currently selected device
17	CH/PG	Changes channel up/down or goes page up/down on-screen program guide
18	MUTE	Turns the volume of the currently selected device on/off
19	DVR	Opens DVR recordings screen
20	RECORD	Starts recording current program
21	PLAYBACK CONTROL BUTTONS	Controls video for LIVE TV/ DVR REPLAY: Plays back a few seconds REW: Rewinds video FF: Fast forwards video SKIP: Skips ahead in 30 second increments PAUSE: Pauses video PLAY: Plays video or resumes from pause STOP: Stops playback of video
22	STOP	This will stop a recording or close the emergency test sequence.
23	NUMBER KEYS	Allows direct access to specific channels and menu items
24	DELETE / *	For future use. Currently unassigned
25	ENTER / #	For future use. Currently unassigned
26	PHONE	For future use. Currently unassigned
27	ZOOM	Currently unassigned
28	LIVE TV	Returns programming to Live TV

# Tips for Television

## Programming Your New Remote

Does your set top box look like one of these?

The remote should be preprogrammed to control your set top box. However, if you are unable to control your set top box after inserting the batteries in your new remote, follow the instructions below.

Press and hold the Setup Button and the Yellow A button at the same time until the STB button blinks twice. Your remote is now ready to control your set top box.



ArrisVIP5662W or VIP5602W  
Pace IPW8000 or IPH8010



A & B  
Buttons

STB  
Button

Setup  
Button



Kamai 450 or 500  
Amulet 455, 455m, or 505

Does your set top box look like one of these?

After inserting batteries in your remote, press and hold the Setup Button and the Blue B button at the same time until the STB button blinks twice. Your remote is now ready to control your set top box.

For information on programming your remote to additional devices visit [urcsupport.com](http://urcsupport.com).

# Tips for Television

## Television Trouble Solutions

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### No Picture?

- > Make sure your set top box is turned on and is getting power.
- > Make sure the cables are secure in the back of the set top box and the television.
- > Press VIDEO INPUT button to cycle through each input option until the picture returns. Typically, most subscribers with a HD television will find video on HDMI1.

### Can't see all your channels?

- > It sounds like you have filtered your guide. Press the Right Arrow button on your remote. Make sure that you have not selected a Live TV Filter and you don't have a Favorites list selected. If you have done this, you also need to check the Parental Controls to make sure that you have not removed the channel from your guide.

### Remote not controlling your set top box?

- > If you are pressing buttons on your remote, but it will not allow you to control your set top box, your remote could be on the incorrect mode. Before you press your next command button, press the STB button located towards the top of your Co-Mo Connect remote.

### Remote not controlling your TV?

- > If your volume and power buttons are not controlling your TV, you may need to program your remote. You can find instruction for programming your remote to your TV on the back side of the remote or online by visiting [www.urcsupport.com](http://www.urcsupport.com) and selecting your remote style 2025G Eclipse.

### Did You Know?

#### An easy solution for most problems is to reset your Set Top Box.

All Set Top Boxes can be reset by simply unplugging the power cord on the back of the box, make sure the light on the front goes off and plug the cord back in.

For any additional questions, please contact our 24/7 Technical Support at:

**(888)256-9575**

# Co-Mo Connect WatchTVEverywhere

## Frequently Asked Questions

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### WatchTVEverywhere.com

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WatchTVEverywhere streams some of your favorite channels and subscribed programming to your tablet, smartphones, laptop, smart TVs, and other streaming devices from anywhere you can receive an Internet signal: inside your house, at the office, hotel, airport, vacation home and everywhere.

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#### **What is WatchTVEverywhere?**

WatchTVEverywhere has a lot of different definitions. For us, it is TV programs that are available on something other than a TV set. That means your PC, laptop, iPad, iPhone or Android.

#### **How is WatchTVEverywhere different from something like Hulu or Netflix?**

There are several differences. WatchTVEverywhere:

- Is FREE. There is no extra charge to use it. You only need to have a subscription to the network you want to watch.
- Includes live TV. For example, WatchTVEverywhere includes live game coverage on NFL Network or WatchESPN. Hulu and Netflix only provide previously recorded shows.
- Has full episodes of current TV shows within days of their premiere. You can also catch up on the entire season or previous seasons of your favorite shows depending upon the availability from the networks.

#### **How much does it cost?**

Nothing. At this time, there is no extra cost for WatchTVEverywhere so feel free to explore. You only need to be a subscriber to the TV network you would like to access. This may change over time depending on the requirements made by the individual TV networks.

#### **What programs are available?**

Different networks make different programs available at different times. Each TV network makes their own decision about what to make available on WatchTVEverywhere. For example, the live feed of CNN is available. However, the live feed of Nickelodeon is not. Instead, Nickelodeon offers full episodes of their popular programs. A TV network doesn't necessarily own all of the rights to all of the programs they transmit. A TV network may have the right to transmit a movie, but only to TV sets, not on WatchTVEverywhere. So, once again, it depends on the TV network.

#### **Will other networks become available?**

Yes. We are working with many different program providers to expand the number of networks and the number of programs available on WatchTVEverywhere. Registered users are presented with a complete list of all the networks available to them. You will see them automatically when they are added.

#### **How do I register for WatchTVEverywhere?**

Go to [www.WatchTVEverywhere.com](http://www.WatchTVEverywhere.com) and select Co-Mo Connect from the provider drop down menu and click on Submit. Click on "Register". You will need two pieces of information to register: Your WatchTVEverywhere Registration number and the correct spelling of the last name on the account. You will be asked to provide an email address and a password, select a password reset question, and supply the answer to the password reset question.

Click on Register and then Create Account. Now, check the email address you just provided. You will find an email message with your WatchTVEverywhere activation link. Click on the link to complete the registration process.

# Co-Mo Connect WatchTVEverywhere

Available Networks



# Co-Mo Connect Phone

## Free Features

Co-Mo Connect is excited to let you know about some great new **FREE** phone features!

- Caller ID Name
- Unpublished Listings
- Remote Access to Call Forwarding
- Sim Ring
- Call Return
- Caller ID Name/Number Blocking
- Call Blocking
- Anonymous Call Reject



Co-Mo Connect, in partnership with Alianza, is now offering a new and enhanced User Portal! This portal will allow subscribers to see call records, as well as make changes to many features with your phone service.

To register for the phone user portal, visit:

 [co-mo.user.alianza.com](http://co-mo.user.alianza.com)

Your user name will be the 10-digit phone number you are trying to work with and the password will be a lowercase “c” followed by your 7-digit account number. For example, for my phone number (555)555-6134, with an account number of 5555501, my login would be:

Username: 5555556134

Password: c5555501

ALIANZA

Username  Username/Email address  
Username is required

Password

Remember Username

Sign In

If you have any trouble accessing your account, please contact Co-Mo Connect Technical Support at:

 [support@co-mo.net](mailto:support@co-mo.net)

 (844)99-FIBER

# Co-Mo Connect Phone

## NoMoRobo

NoMoRobo is a complimentary feature that Co-Mo Connect is pleased to offer our phone service subscribers. NoMoRobo screens incoming calls to your landline phone. If a call is legitimate, it goes through to your number. If the call is an illegal robo-caller, NoMoRobo intercepts the call and hangs up for you. Your phone will ring once letting you know that the robocall has been answered and stopped. NoMoRobo differentiates between hecklesome calls & helpful automated school-closing & prescription-refill reminder calls. Those calls will ring through normally.

To sign up for NoMoRobo, visit their website at: <https://www.nomorobo.com/> and click "Get Started Now" on the home page:



Once you've enabled and verified Nomorobo on your phone, just use your phone like usual, only be sure to wait for the second ring to answer the phone (NoMoRobo needs the first ring to detect robo-callers). If you only hear one ring and then it stops, you know a robo-caller was just blocked. If the phone continues ringing, you can answer it.

For additional instructions, please contact Co-Mo Connect Technical Support at:

 support@co-mo.net

 (844)99-FIBER

## Need Additional Information?

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Co-Mo Connect comes with free technical support 24 hours a day, 365 days a year.

Call us at:

# 888-256-9575

### Watch your favorites with **Video On Demand and Pay-Per-View**

With your Co-Mo Connect TV Service you can enjoy the newest hit movies with Co-Mo Connect Video On Demand and most anticipated events by purchasing titles through Pay-Per-View.

