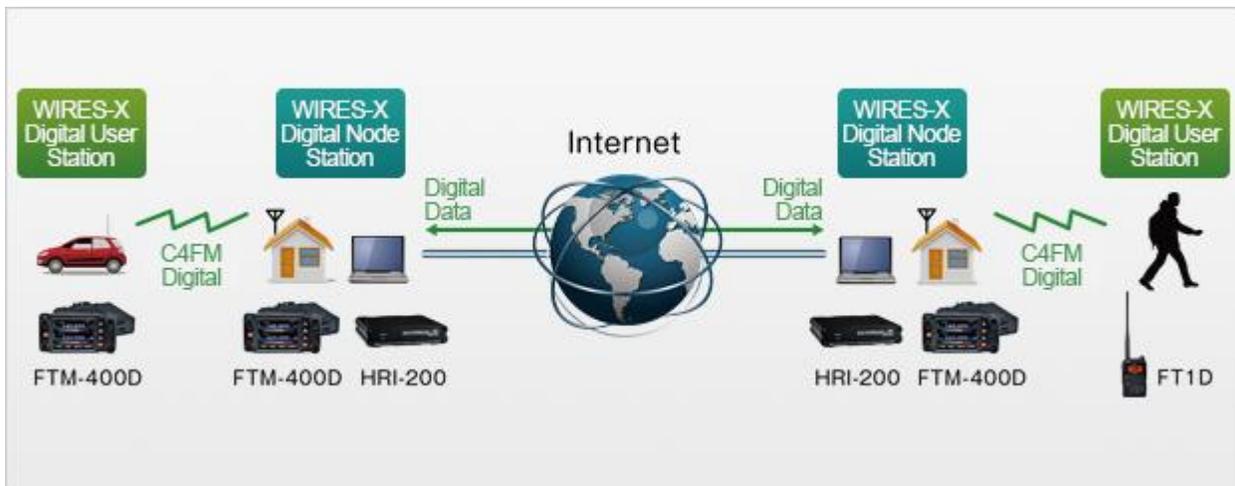


## An Introduction to Wires-X

### What is Wires-X

WIRES (Wide-coverage Internet Repeater Enhancement System) is an Internet communication system which expands the range of amateur radio communication. For WIRES-X, an amateur node station connecting to the Internet is used as the access point and connects the wireless communication to the Internet. Users' stations can communicate with other amateur stations all over the world using a node within the radio wave range.



### Wires-X Terminology (as defined by Yaesu)

There are a few terms that must be clarified in order to understand WIRES X.

- Node - Radio repeater connected to the Internet via a PC, which repeats communications of a conventional amateur radio as an access point. An example would be the KARS 444.900 repeater which is connected to Wires-X
- Local Node - This is a Node within the radio communication range of a conventional amateur radio station. An example would be a radio that can reach our 444.900 repeater.
- Analog Node - A Node that is a transceiver or repeater using a conventional FM format and can only repeat DTMF (Dual Tone Multi Frequencies) codes and analog audio transmission/receptions.
- Digital Node - This is a Node which is a transceiver or repeater compatible with digital communications in C4FM (Continuous 4 Level FM) format. With this type of Node you can not only relay voice communications, but also text and image data transmissions. One can also repeat DMTF codes and audio transmissions/Receptions.
- Conventional Amateur Station - This is a normal Amateur Radio station either an individual on a handheld radio, a mobile radio and a base station.

- Room - This is a WIRES X Network community space to which multiple Nodes can connect simultaneously, like the conference call. This is a place where all amateur station can link to each other via local Node and communicate with each other. In addition to voice communication, one can chat with text messages on the PC use for the local Node.
- WIRES X user ID (node) - YAESU provide identification name with the WIRES X node. Each node is assigned a DTMP ID (5-digit number, e.g. 11916) and user ID (alphanumeric e.g. WB7OEV) up to 10 digits in length provided. Wires-X user ids are assigned by Yaesu when you register equipment to run a Wires-X node.
- ID List Nodes and room which currently operating WIRES are listed and published on the Yaesu website ([https://www.yaesu.com/jp/en/wires-x/id/id\\_usa.php](https://www.yaesu.com/jp/en/wires-x/id/id_usa.php)). Scott Simpson (KE5EO) has a nicer interface at <http://fusion.ke5eo.com/> Both websites shows information such as IDs, the call sign and the operating frequency of the node.

Enough already how do I connect!

Most repeaters have a default room. The default room of the KARS 444.900 repeater, is the San Antonio Digital Radio Club (SADRC). Check them out at <http://www.sadrc.net/> Connecting is a simple as switching to C4FM mode (AMS off) and contacting the 444.900 repeater using our current settings: *UHF: 444.9 (+) pl tone of 88.5* If you don't hear anything, give your call sign. While someone from anywhere in the world might respond, you'll normally get a call back from someone between Corpus and Dallas. If you hear people you know, give your call sign, and they'll let you in. While it appears you are speaking to someone in Texas, be aware that people around the world could be listening. As always, FCC rules apply!

And that's all there is to a simple QSO.

Of course if you want to complicate things, we can do that as well. Since I don't have every Yaesu radio capable of C4FM (but I'm working on it!), I can't give details on every radio. Not to worry though, Yaesu has documentation specifically on Wires-X operation for every specific radio on their web site. Go to the Yaesu digital products web site

<http://www.yaesu.com/?cmd=DisplayProducts&DivisionID=65&ProdCatID=249>

Select your radio from the product pictures, then click on the Files Tab. For example, the FTM-100 page looks like this.



Home Products Owner's Corner Contact Us Find a Dealer Search Repair Status



Use the left and right arrows to scroll through all models. [General Digitals](#)

### FTM-100DR

Description	Files	
Amateur Radio \ Manuals \ Digital		
<a href="#">FTM-100DR/DE WIRES-X Node Operation Instruction Sheet (12/21/17)</a>	( 453.17 KB )	
<a href="#">FTM-100DR/DE Instruction Manual (APRS Edition) 1803-E</a>	( 33.26 MB )	
<a href="#">FTM-100DR/DE Instruction Manual (WIRES-X Edition) 12/20/17</a>	( 9.10 MB )	
<a href="#">FTM-100DR/DE Instruction Manual (GM Edition) 9/26/17</a>	( 5.25 MB )	
<a href="#">Amateur Radio Digital Standards</a>		( 997.05 KB )
Amateur Radio \ Manuals \ VHF/UHF Mobile Transceivers		
<a href="#">FTM-100DR/DE Advance Manual</a>	( 31.04 MB )	
<a href="#">FTM-100DR/DE Operating Manual</a>	( 17.74 MB )	
<a href="#">WIRES-X Connection Kit HRI-200 Instruction Manual</a>	( 6.48 MB )	
<a href="#">FTM-100DR/DE Quick Manual</a>	( 2.61 MB )	
<a href="#">FTM-100DR Instruction Manual (GM Edition)</a>	( 4.75 MB )	

The first entry is: [FTM-100DR/DE WIRES-X Node Operation Instruction Sheet \(12/21/17\)](#) ( 453.17 KB )

Click/Download the documentation for the exact steps to find rooms and switch to them. Some radios will allow you to save a favorites list. As you start to build up a set of favorite rooms, note their room id. You can also go directly to a room by entering it into your radio. The process varies, so check the documentation.

You can all check YouTube for a number of tutorials on Wires-X with different radios.

### Things to remember

1. Due to the internet latency of Voice Over IP (VOIP), key down for half a second before you start talking, and keep the key down for a half second after you stop talking. This keeps you message from getting cut at the start or end.
2. Also due to latency, it's a good idea to wait 3-4 seconds between transmissions.
3. Above all, have fun. You can't screw anything up. You can't break Wires-X (although I did manage to block the Texas-Nexus room when I was setting up. My squelch setting was too low and I was constantly breaking in!). The settings are now correct, and so the honor is totally mine and mine alone!

4. **One last thing. Nets on Wires-X are amazing. Rather than a local net, you will find heavy participation. The SADRC net (Wednesday @ 7pm CST), had over thirty check ins, including people from all over the US and Trinidad. The Zombie Alert Net room, also has lively discussion. The Zombie Alert net is carried on SADRC Thursday nights at 6pm CST. On Monday night, there is a very good technical net. MNWis Tech Net 7:30 PM on Wires-X room #21493**

See you on the nets,

73

Don KI5AIU