TWIN CITY FM CLUB

Po box 580555
Minneapolis, MN 55458-0555

Repeaters: 146.76-, 444.1+, 444.125+
Tone 114.8 on all repeaters
Echolink Node 77598 on the .76 repeater

Wires-X

Wide-Coverage Internet Repeater Enhancement System presentation

- Wires-X and how it is connected on the Twin City FM Club 444.100Mhz DR-2X repeater.

  ➢ The Yaesu Wires-X HRI-200 (Wide-coverage Internet Repeater Enhancement System) enables Internet to RF communications that expands the range of amateur radio using internet enabled Voice-over-IP technology. The HRI-200 is connected to the DR-2X with Data Cable Mini-DIN 10p-10p (CT-174).

  ➢ The Wires-X software is installed on a laptop in the repeater cabinet. The laptop is connected to the HRI-200 with a USB cable.

  ➢ The laptop is connected to the network with a ethernet cable.

Registration with the WIRES-X Server (applying to obtain an ID number)

1 Access the WIRES-X website (https://www.yaesu.com/jp/en/wires-x/index.php)
2 Click "New Member Registration"
3 Input your email address and submit it
   You will promptly receive an email with an address for the website to complete your member registration.
4 Visit the website and select "Apply for WIRES-X new ID (membership registration)"
5 Click [I Agree] on the "WIRES END-USER LICENSE AGREEMENT" screen
6 Fill in the essential fields and submit
   Once registration is completed, you will receive an email containing further details about obtaining an ID.
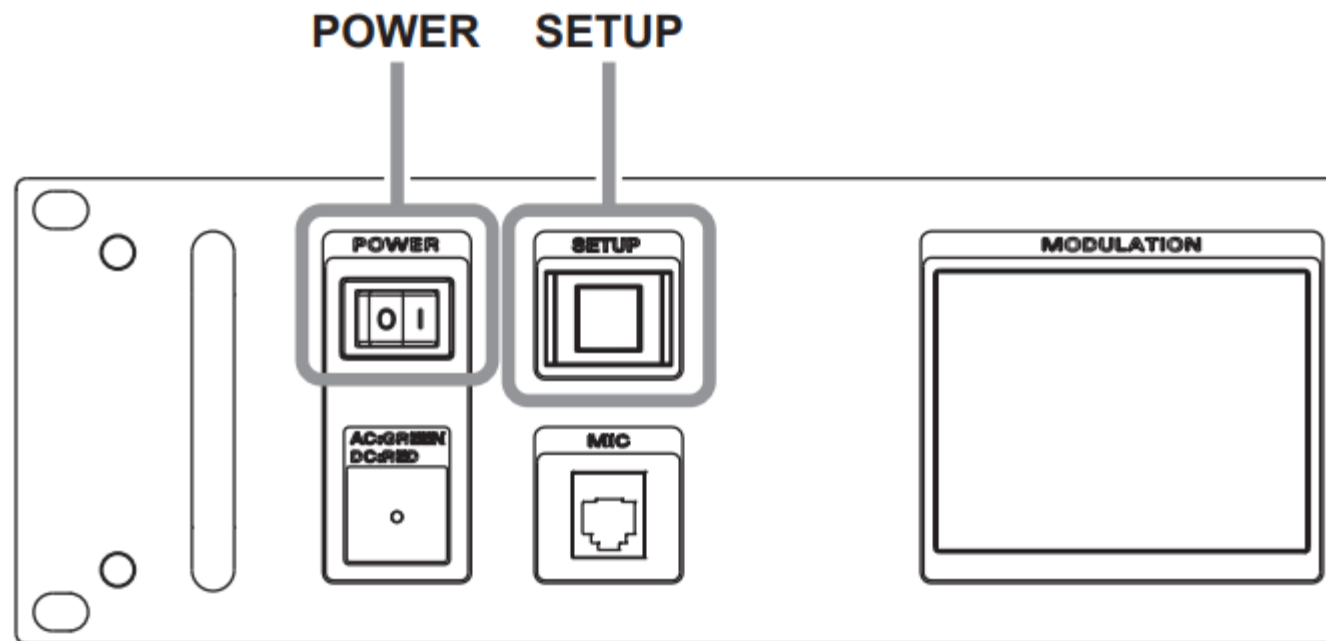   **Tip** It takes 2-3 business days for registration to be processed.

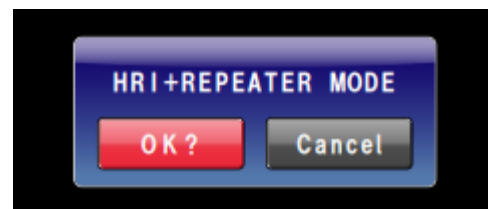An example of a HRI-200 connected to a DR-2X repeater

Switching the repeater into HRI mode:

Turn the DR-2X power off.
While pressing and holding the setup button, press the power switch.

While the Yaesu logo is being displayed release the setup button, tough OK and the HRI mode will be activated.

DISPLAY

A

RX

AUTO	FIX

12.5kHz DIGITAL — FM

DIGITAL	VOICE WIDE	DATA	FM

TX

AUTO	FIX

12.5kHz DIGITAL — FM

DIGITAL	VOICE WIDE	DATA	FM

B

CNTL RX

AUTO	FIX

12.5kHz DIGITAL — FM

DIGITAL	VOICE WIDE	DATA	FM

AUTO	FIX

12.5kHz DIGITAL — FM

DIGITAL	VOICE WIDE	DATA	FM

REMOTE | **A SETUP** | **B SETUP**

Authenticate (activate) the WIRES-X server

If the WIRES-X server authentication (activation) has not been completed on the personal computer to be used, the "WIRES ID Activation" screen opens automatically.

1. Enter the "**Node ID**" and "**Room ID**" (both are 5-digit numbers) ②.

> **ℹ**
> - Be sure to connect the transceiver started in "**Portable digital node mode**" or "**Portable HRI mode**" to a PC. Node ID and Room ID can not be entered when the RADIO ID is not automatically entered in the Serial Number box.
> - "**RADIO ID**" of the transceiver connected to the PC is automatically displayed in the serial number box ①. If "**RADIO ID**" is not displayed, check the connection between the transceiver and the PC again.
> - Remove the HRI-200 interface unit from the PC when using the Portable Digital Node function.
> - The Node ID and the Room ID are described in the e-mail received when the user registration is completed.

2. Click [**ID Entry**] ③.

When activation is completed, information on registration is automatically displayed for "**User ID**", "**Call Sign**", "**City**", "**State**", and "**Country**".

3. Click [**OK**].

The information of the User ID is saved on the computer and "**Settings**" window will appear.

On this screen the settings such as "**Comment**" of your station may be added to display in the ID list.

The Wires ID information is populated with the registered ID's details kept on the Wires server.

The Wires-X Repeater setting screen
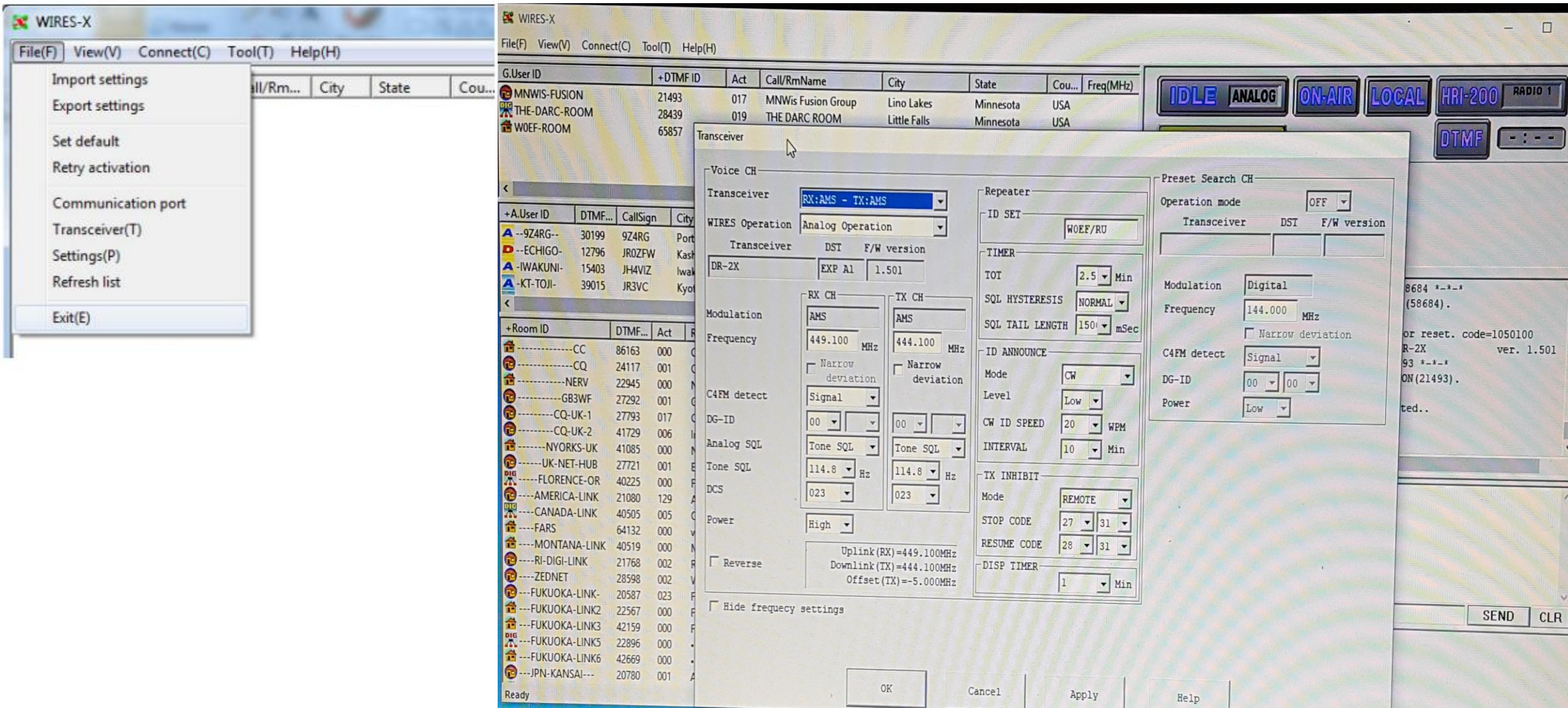
WIRES-X Software Main Screen

On the left side of the main screen, the list of the active node stations and the active rooms is displayed. On the right side, the operational status of the portable node station is displayed.

Active node window: Active WIRES-X nodes are listed. The node station type and connection status are indicated by icons.

· **Node Icons**

Idling	Connecting	Type
📶	📶	Portable Digital Node Station
D	D	Digital Node Station
A	A	Analog Node Station
GM	GM	GM Node Station

Active room window: Active WIRES-X rooms are listed. The room type and connection status are indicated by icons.

· **Room Icons**

Idling	Connecting	Type
DIG	DIG	Open room (Only the Digital Nodes may be connected)
🏠	🏠	Open room
C	C	Closed room
GM	GM	GM room

• **Transmitting status**   Shows whether or not your Node station transmits signals.

Click this icon to toggle between transmit prohibit and release alternately.

ON-AIR	Not transmitting
ON-AIR	Transmitting
ON-AIR LOCK	Prohibit transmission

• **Receiving status**   The signal receiving status of the node and the repeating status of the received signal are shown.

LOCAL	Not receiving
LOCAL	Receiving an analog signal, or digital signal whose DG-ID number does not match (not relaying)
LOCAL	Receiving a digital signal whose DG-ID number matches (not relaying)
INTERNET	It receives reception of a digital signal whose DG-ID number matches and relays it to other node stations or rooms via the Internet.

The Wires-X software connected to the W0EF-ROOM

- Setup/software/equipment needed to operate a Wires-X local node without a repeater.

  - Wires-X Nodes are Amateur Radio Stations that are voluntarily registered with Yaesu. The Amateur Radio Station information such as their location and operating mode is listed in Yaesu Website; https://yaesu.com/jp/en/wires-x/index.php. You can use the Yaesu list to search for nearby local Nodes, and other Nodes on the internet use by Amateurs that you want to communicate with.
  - Wires-X software can be downloaded with a link given after Wires-x ID registration is completed at the website above.
  - PC running Windows 7 or better.
  - An Internet Connection (6 Mbps or better)
  - A HRI-200 Wires-X Interface.
  - A Node Radio that supports C4FM, such as a Yaesu FTM-100DR or the FTM-400DR.

- Equipment needed to use Wires-X.

  - A radio that support the WIRES X protocol which is C4FM. These are: FT1D, FT1XD and FT2D (hand held radios). FTM-100DR, FTM-400DR and FTM-3200DR (mobile radios). And the FT-991 (base radio).
  - In order to listen or to receive a WIRES X signal. One has to find a Local Node or a WIRES X Repeater within the range of your transceiver.

- Equipment needed to use a Wires-X Portable Digital Node Station.

  - Using the WIRES-X Portable Digital Node function, you can operate a WIRES-X digital node station by directly connecting a Portable Digital Node capable C4FM digital transceiver with the PC. This is done with a SCU-20 PC Connection Cable (Supplied with FTM-100D or FTM-400XD/D) The HRI-200 Internet interface kit is not needed, and no fixed or dynamic global IP address is required.)
    * With the WIRES-X Portable Digital Node function, you cannot operate a WIRES-X Room (Including a digital room) or use the remote-control function from another location.
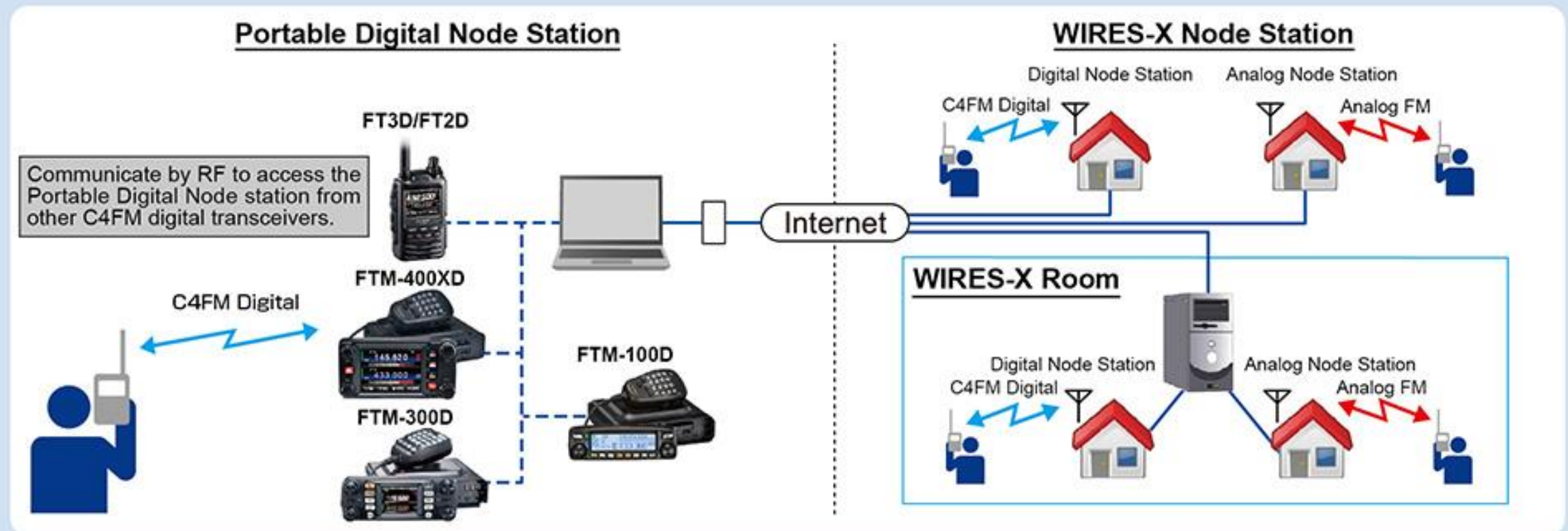
In "**Direct Operation**" mode, WIRES-X C4FM communications are made directly by using the USB connected Portable Digital Transceiver Node Station. The microphone signal is sent only to the PC and the Internet. The Internet signals are heard only in the Portable Digital Node Station speaker.
In this Direct Operation, the Portable Digital Node Station transceiver does not transmit or receive over the air. – Accessed on the FTM-400DR by holding the D/X and GM buttons then powering on the radio.

In "**Access Point Operation**" mode, WIRES-X C4FM and Analog communications are made via another local C4FM transceiver communicating on frequency with the USB connected Portable Digital Node Station. The Portable Digital Node Station transceiver relays the local C4FM and Analog signals to the internet and transmits the internet Node and Room signals to the local stations.

Access Point (Portable HRI Mode) Illustration

Portable Digital Node Station

FT3D/FT2D

Communicate by RF to access the Portable Digital Node station from other C4FM digital transceivers.

C4FM Digital

FTM-400XD

FTM-100D

FTM-300D

Internet

WIRES-X Node Station

Digital Node Station   Analog Node Station

C4FM Digital   Analog FM

WIRES-X Room

Digital Node Station   Analog Node Station
C4FM Digital   Analog FM

Accessed on the FTM-400DR by pressing the VFO B dial.

Connecting to a Wires-X room

- Analog room
  - ➢ Hold the PTT button, using the Dual-tone multi-frequency signaling (DTMF) keys: press the # and the room number
    (example: #65857 the W0EF room)
  - ➢ Hold the PTT button, using the DTMF keys: press the * key to disconnect from a room.

- Digital room
  - ➢ This varies with the model radio. We will use the FTM-400DR with the Wires-X key.
  - ➢ Press and hold the D/X key for over a second.

Links to more information about Wires-X

- WIRES X – The Bible

- Yeasu's Digital products section (Software/firmware files, manuals and specifications)

https://www.yaesu.com/?cmd=DisplayProducts&DivisionID=65&ProdCatID=249