



# 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.

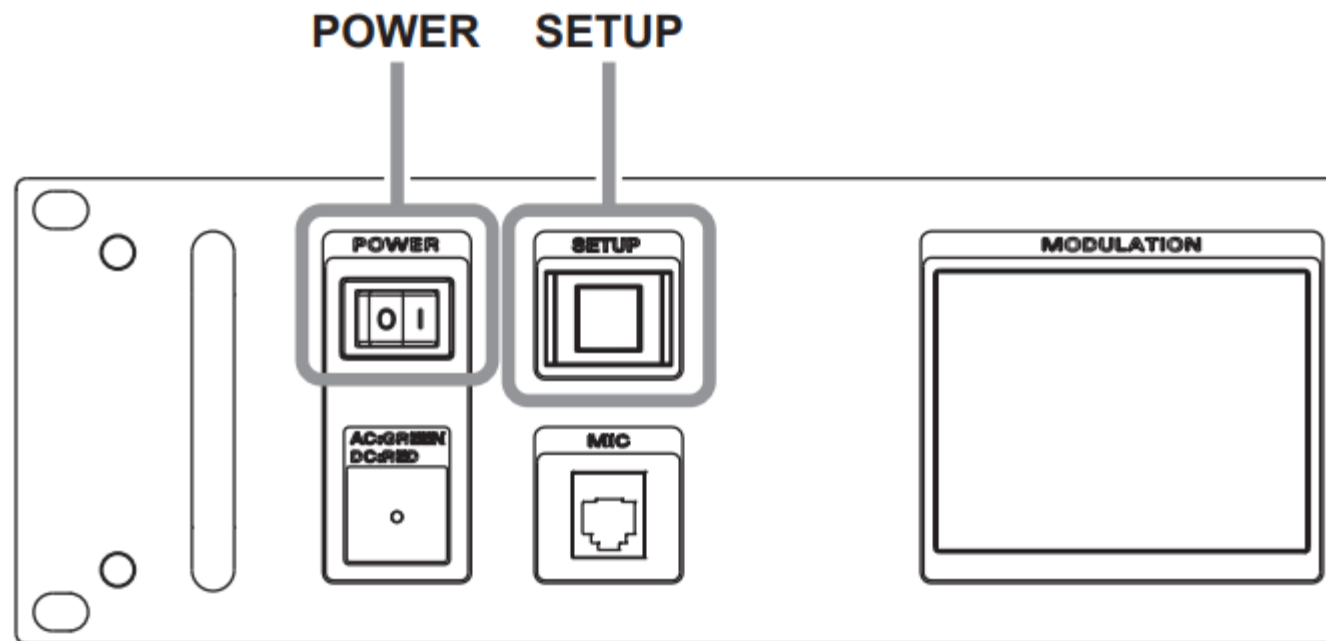
An example of a HRI-200 connected to a DR-2X repeater



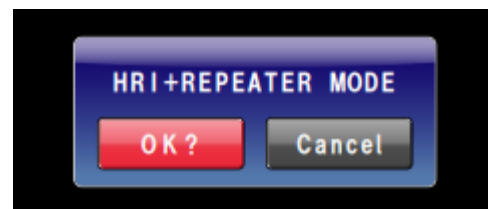
# Switching the repeater into HRI mode:

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

The screenshot shows the radio's menu screen with the following settings:

- Station A (Blue bar):**
  - RX:** AUTO (highlighted), FIX, 12.5kHz DIGITAL, DIGITAL (highlighted), VOICE WIDE, DATA, FM (highlighted).
  - TX:** AUTO (highlighted), FIX, 12.5kHz DIGITAL, DIGITAL (highlighted), VOICE WIDE, DATA, FM (highlighted).
- Station B (Pink bar):**
  - CNTL:** AUTO (highlighted), FIX, 12.5kHz DIGITAL, DIGITAL (highlighted), VOICE WIDE, DATA, FM (highlighted).
  - RX:** AUTO (highlighted), FIX, 12.5kHz DIGITAL, DIGITAL (highlighted), VOICE WIDE, DATA, FM (highlighted).
- Bottom Bar:**
  - REMOTE:** Indicated by a red 'X' over a green remote icon.
  - A SETUP:** Button for station A settings.
  - B SETUP:** Button for station B settings.



## 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.



- 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.

A screenshot of the 'WIRES ID Activation' dialog box. The dialog has a title bar and several input fields. A pink box labeled ① highlights the 'Serial No.' field. Another pink box labeled ② highlights the 'DTMF ID' section, which contains 'Node' and 'Room' sub-fields. A third pink box labeled ③ highlights the 'ID Entry' button. Other fields include 'User ID', 'CallSign', 'City', 'State', and 'Country'. At the bottom, there are buttons for 'Port check', 'ID Entry', 'Cancel', and 'Help'. A text instruction reads: 'Input DTMF-ID and press [ID Entry] button.'

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.

ol(T) Help(H)

+DTMF Settings

21493  
28439  
65857

Settings

- [-] Personal settings
  - WIRES ID information**
  - Location settings
  - Round QSO room settings
- [-] Property
  - HRI-200 setup
  - Call settings
  - General settings
  - Sound settings
  - Make list file
  - Log file settings

City: St Louis Park State: Minnesota Country: USA

Serial No.: 5M240657 DTMF ID: 55857 CallSign: W0EF User ID: W0EF-ND User ID change

Comment: 444.1 Yaesu DR-2X repeater

☐ Confidential ID

☐ QSL exchange (SIZE QVGA 320x240bmp)

Get info. text (MAX.200 characters)

www.tcfmc.org

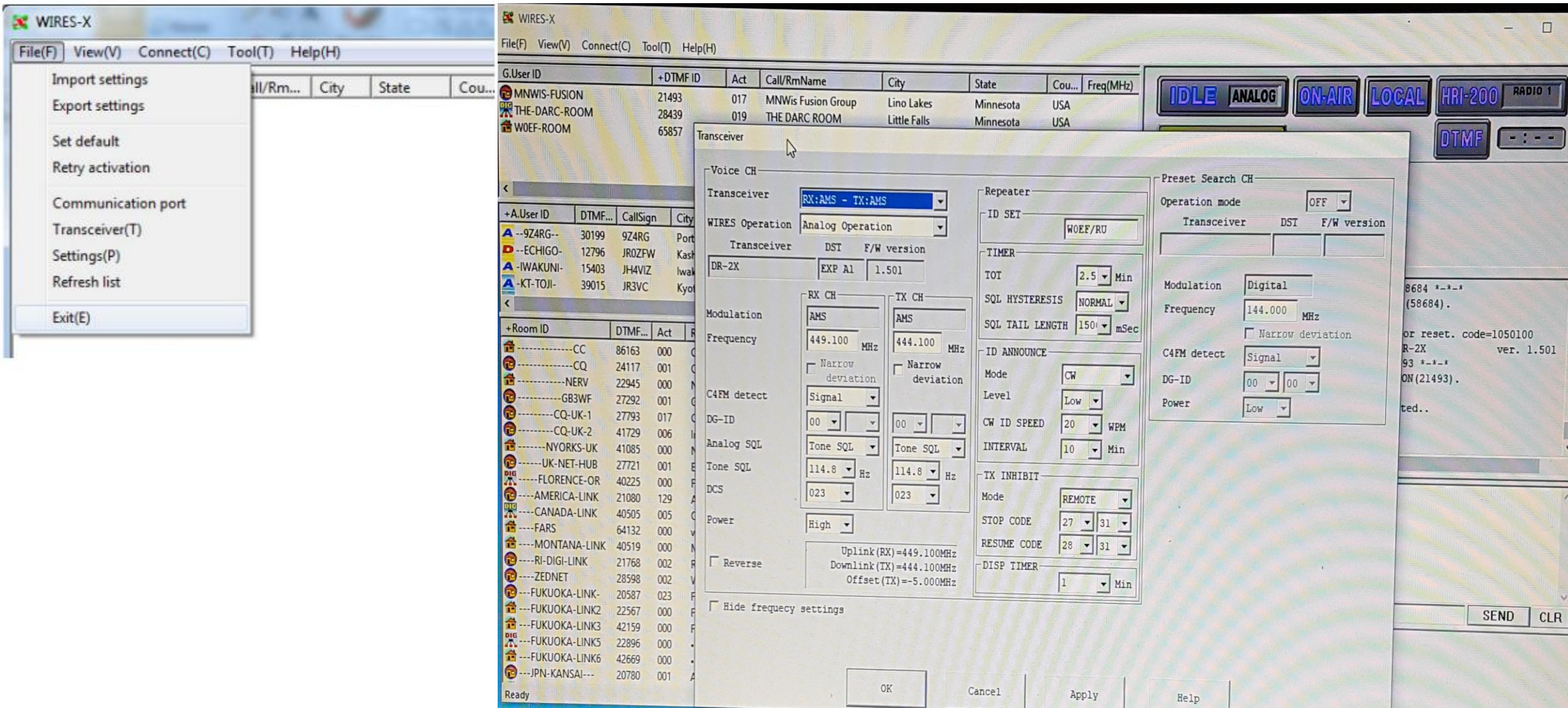
OK Cancel Help

Act: 000 001 000 001 017 006 000 001 000 130 005 000 000 002 002 023 000 000 000 000 000 001

ALL KANSAI CQ RO... Kato-city Hyogo Jap...



# 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.

The screenshot shows the WIRES-X software interface. On the left, there are two tables: 'Active node window' and 'Active room window'. On the right, there are three panels: 'Status indicators', 'Log window', and 'Function window'. The 'Status indicators' panel shows 'IDLE', 'DIGITAL', 'ON-AIR', 'LOCAL', 'FT2D', and 'RADIO 1'. The 'Log window' shows a list of log entries. The 'Function window' shows 'SEND' and 'CLR' buttons. The 'Status bar' at the bottom shows 'Ready' and 'ONLINE'.

**Menu bar**

**Status indicators**

**User monitoring window**

**Log window**

**Chat window**

**Function window**

**Active node window**

**Active room window**

**Status bar**

G.User ID	+DT...	Act	Call/Rm...	City	State	Cou...	Freq(MHz)	SQL	Lat	Lon	Comment
1	1	J	Kakogawa-city	Hyogo	Japan	430.820M...	TSQ: 88.5Hz	N:3...	E:134...		
1	1	J	Kashiwazaki-city	Niigata	Japan	430.800M...	DG-ID:36	N:3...	E:138...		
1	1	J	Takasaki-city	Gunma	Japan	144.550M...	TSQ: 77.0Hz	N:3...	E:135...		
1	1	J	Kashiwara-city	Osaka	Japan	430.780M...	DG-ID:78	N:4...	E:142...		
1	1	J	Kamikawa-gun	Hokkaido	Japan	430.820M...	DG-ID:32	N:3...	E:135...		
1	1	J	Kyoto-city	Kyoto	Japan	430.940M...	DG-ID:05	N:4...	E:141...		
1	1	J	Sapporo-city	Hokkaido	Japan	144.560M...	TSQ:123.0...	N:3...	E:134...		
2	3	2	Fleetwood	Lancashi...	UK	433.675M...	DG-ID:00	N:5...	W:00...		
2	3	2	Liverpool	Merseysi...	UK	144.0MHz	DG-ID:00	N:5...	W:00...		
2	2	2	Arisaig	Highland	UK	144.8375...	DG-ID:00	N:5...	W:00...		
4	1	4	Mandaue City	Cebu	Phil...	437.775M...	DG-ID:00	N:1...	E:123...		
5	1	5	Larnaca	Larnaca	Cyp...	145.625M...	TSQ: 88.5Hz	N:3...	E:033...		
5	3	5	Nicosia	Nicosia	Cyp...	145.725M...	DG-ID:00	N:3...	E:033...		
7	1	7	Taito-ku	Tokyo	Japan			N:3...	E:139...		
7	1	7	Kawauchi-city	Saitama	Japan			N:3...	E:139...		

+Room ID	DTM...	Act	Room name	City	State	Cou...	Comment
2	003	W	Baldwin	Wisconsin	USA		
2	001	K	Kakogawa-city	Hyogo	Japan		
4	000	C	Kilrea	County ...	UK		
2	000	T	Surbiton	Surrey	UK		
2	000	E	Kamikawa-gun	Hokkaido	Japan		
2	000	I	Takasaki-city	Gunma	Japan		
2	003	E	Middlesbrough	North Y...	UK		
N	000	N	Yarm	North Y...	UK		
AN	070	A	Beaumont	Texas	USA		
BR	000	S	SALVADOR	Bahia	Brazil		
CA	005	O	Ottawa	Ontario	Can...		
M	000	M	Great Falls	Montana	USA		
OK	000	F	Fukuoka-city	Fukuoka	Japan		
ZE	002	W	Morrisville	Pennsyl...	USA		

2017/11/22 16:29:00 Transceiver Mode:Digital/Digital  
2017/11/22 16:29:00 Number of sound devices = 3  
2017/11/22 16:29:00 Set Voice Mixer Device : Input=2 Output=1  
2017/11/22 16:29:00 Mixer input device=Microphone (HRI-200 A(CH1)  
USB Audio codec  
2017/11/22 16:29:00 Mixer output device=Speakers (HRI-200 A(CH1) USB  
Audio codec  
2017/11/22 16:29:00 HRI-200 Audio device detected.

SEND CLR









News GM

Ver-1.0 ONLINE

**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
		Digital Node Station
		Analog Node Station
		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
		Open room (Only the Digital Nodes may be connected)
		Open room
		Closed room
		GM room

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

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



Not transmitting



Transmitting



Prohibit transmission

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



Not receiving



Receiving an analog signal, or digital signal whose DG-ID number does not match (not relaying)



Receiving a digital signal whose DG-ID number matches (not relaying)



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

WIRES-X

File(F) View(V) Connect(C) Tool(T) Help(H)

G.User ID	+DTMF...	Act	Call/RmName	City	State	C...	Freq(MHz)	SQL
----AMERICA-LINK	21080	133	America Link Netw...	Beaumont	Texas	USA		
HANDIHAM	21165	000	HANDIHAM	Hopkins	Minnesota	USA		
MNWIS-FUSION	21493	016	MNWis Fusion Group	Lino Lakes	Minnesota	USA		
THE-DARC-ROOM	28439	020	THE DARC ROOM	Little Falls	Minnesota	USA		
W0EF-ROOM	65857	001	W0EF Twin City FM	St Louis Park	Minnesota	USA		

NET DIGITAL ON-AIR LOCAL FTM-4000 RADIO 1

W0EF-ROOM

Room W0EF-ROOM(65857) member 1 node Refresh Close

NOPVC-ND

+A.User ID	DTM...	CallSign	City	State	Room	Frequency	SQL	Loc	Com
--9Z4RG--	30199	9Z4RG	Port-of-Spain	Trinidad	Trin...	147.850M...	TSQ:131.8...	N:1...	W:06..
--ECHIGO--	12796	JR0ZFW	Kashiwazaki-city	Niigata	Japan	430.920M...	DG-ID:00-00		
--IWAKUNI--	15403	JH4VIZ	Iwakuni-city	Yamagu...	Japan	144.560M...	TSQ:118.8...		

+Room ID	DTMF ID	Act	Room name	City	State	Country	Com
-----A0	27472	000	Bedfordshire Gateway	Dunton	Bedfordshire	UK	Cover
-----CQ	24117	001	CQ-VK	Laidley Heights	Queensland	Austra...	VK lin
-----NERV	22945	000	NERV-"-Zi-B"	Nagoya-city	Aichi	Japan	U.N.M
-----GB3WF	27292	001	GB3WF-West Yorkshi...	Leeds	West Yorks...	UK	Pleas
-----CQ-UK-1	27793	016	CQ-UK Wires-X Room	Pudsey	West Yorks...	UK	GB C
-----CQ-UK-2	41729	005	Irish Scottish Room	Aberdeen	Aberdeensh...	UK	GB C
-----NYORKS-UK	41085	000	North Yorkshire UK	Yarm	North Yorks...	UK	All W
-----UK-NET-HUB	27721	001	English Speaking UK	Middlesbrough	North Yorks...	UK	UK W
-----FLORENCE-OR	40225	000	Florence Chat	Florence	Oregon	USA	Our l
-----AMERICA-LINK	21080	133	America Link Network	Beaumont	Texas	USA	Amer
-----BIBLE-LINK	64830	000	W9JFK BIBLE-LINK	Platteville	Wisconsin	USA	Hoste
-----CANADA-LINK	40505	005	OTTAWA VE3ORF G...	Ottawa	Ontario	Canada	VE3O
-----FARS	64132	000	www.FARS.ca	Calgary	Alberta	Canada	Footh
-----MONTANA-LINK	40519	000	MONTANA-LINK	Great Falls	Montana	USA	Mont
-----RI-DIGI-LINK	21768	002	R.I. DIGITAL LINK	Warwick	Rhode Island	USA	RI DIC
-----ZEDNET	28598	002	WDTPRS Cafe: ZedNet	Morrisville	Pennsylvania	USA	Cross
-----FUKUOKA-LINK-	20587	025	FUKUOKA-LINK	Fukuoka-city	Fukuoka	Japan	Fuku
-----FUKUOKA-LINK2	22567	000	FUKUOKA-LINK SUB...	Fukuoka-city	Fukuoka	Japan	
-----FUKUOKA-LINK3	42159	000	FUKUOKA-LINK Back...	Chikushino-city	Fukuoka	Japan	•Y%...

2020/11/12 19:53:12 Transceiver Mode:Digital/Digital  
2020/11/12 20:05:23 \*-\*-\* Call Start No.65857 \*-\*-\*  
2020/11/12 20:05:24 Connected to W0EF-ROOM(65857).  
2020/11/12 20:05:24 Member not in Room.

View QSL de NOPVC (ID:NOPVC-ND)

**WIRES-X**

Linking the World via VoIP

**WIRES-X**

DTMF ID: 65857 2020/11/12 20:05:24

W0EF Twin City FM

< W0EF-ROOM #65857 >

W0EF Twin City FM Club - www.tcfmc.org

Ready

- 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.

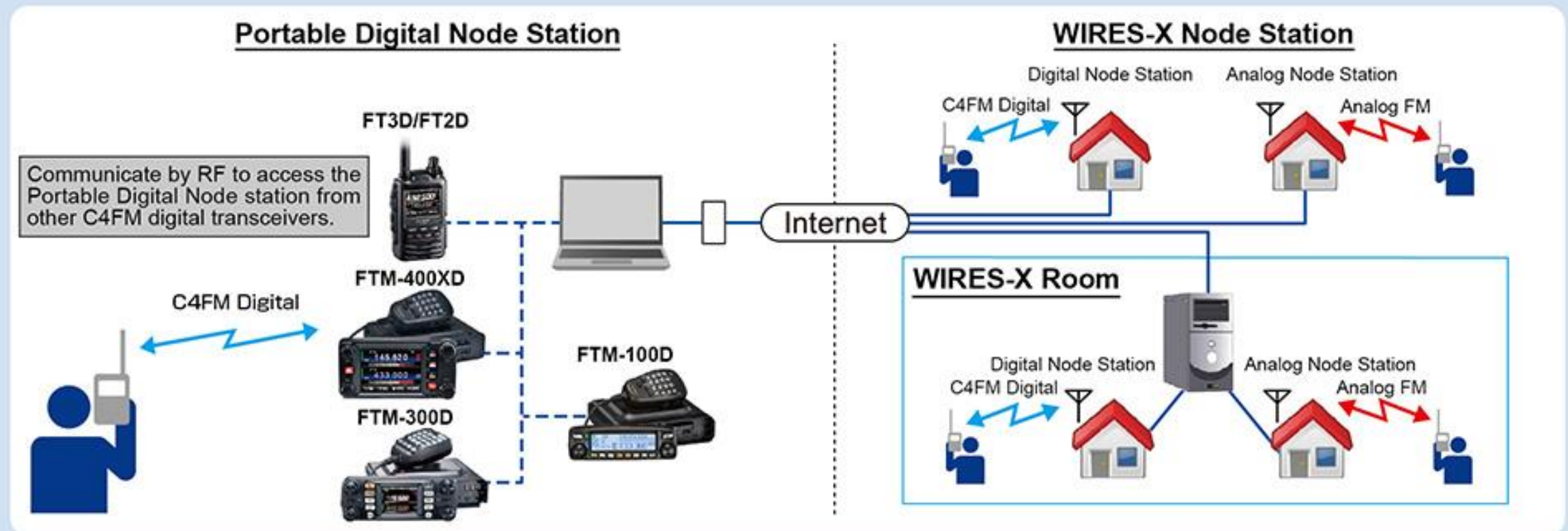


In "**Direct Operation**" mode, WIRES-X C4FM communications are made directly by using the USB connected Portable Digital Transceiver Node Station. The microphone signal is sent only to the PC and the Internet. The Internet signals are heard only in the Portable Digital Node Station speaker. In this 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





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

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

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