



WIRES-X

Setting up a
Wires-X node
station and why
you would want to



WIRES-X

Wide-Coverage Internet Repeater Enhancement System

- Quick review of Yaesu System Fusion – K2AS presentation
- What equipment/software/setup needed to operate Wires-X – (Hint: any Fusion radio)
- What equipment/software/setups needed to operate your own Wires-X node – (Hint: HRI 200 since you already have at least one Fusion radio and probably have a Windows PC. Node radio must have 10 pin-Din connector)

Fusion Radios...

Commercial Grade Specifications

System Fusion II

C4FM Digital
Pursuing Advanced Communications



C4FM/FM 144/430 MHz Dual Band 50 W
Digital Transceiver
FTM-100DR
(Improved 66 ch GPS receiver included)



C4FM/FM 144/430 MHz
Dual Band Dual Receive Digital Repeater
DR-2X



C4FM/FM 144/430 MHz Dual Band 50 W
Digital Transceiver
FTM-400XDR
(Improved 66 ch GPS receiver included)



C4FM/FM 144 MHz 65 W
Digital Transceiver
FTM-3200DR
(Genuine 65 Watts High Power)



CW/SSB/AM/FM/C4FM
HF/50/144/430 MHz Wide-Coverage
100 W All Mode Transceiver (144/430 MHz 50 W)
FT-991A
(Real-Time Spectrum Scope included)



C4FM/FM 430 MHz 55 W
Digital Transceiver
FTM-3207DR
(Heavy Duty 55 Watts High Power)

System Fusion II Supports All C4FM Portables and Mobiles

- Firmware updates will enable System Fusion II compatibility with all existing C4FM products.
- FTM-3207DR: This device has not been approved by the FCC. This device may not be offered for sale or lease or be sold or leased until approval of the FCC has been obtained. The information shown is preliminary and may be subject to change without notice or obligation.



Yaesu FT-70DR ZYS-FT-70DR

\$199.95 from 4 stores

★★★★★ 3 product reviews

The FT-70DR is a compact **System Fusion** transceiver providing both conventional analog FM operation and the advanced C4FM ...

Yaesu · Ham · VHF · UHF · 1.1 mile range



Yaesu FT-2DR 5W C4FM/FM 144/430 MHz Dual Band Digital HT

\$369.95 from 5+ stores

Yaesu FT-2DR qualifies for an Instant Rebate. Add it to your cart for a new low price! Transceiver, HT, 2m/70cm, C4FM System ...

Yaesu · Ham · VHF · UHF · Li-Ion · 66 channel · 1.4 mile range · Water Resistant

FTM-7250DR

Description

Files



Review of System Fusion

YAESU *System Fusion*
The radio

- “**System Fusion** is Yaesu’s implementation of Digital Amateur Radio, utilizing **C4FM / FDMA** 4-level FSK Technology to transmit digital voice and data over the Amateur Radio bands. In 2013, Yaesu introduced “System Fusion”, which quickly became the dominating digital format in Amateur radio because of quality, reliability and enhanced performance in a wide range of environments.” - *Yaesu*

Some Features of System Fusion

YAESU *System Fusion*
The radio

Why choose Fusion?

- Integrates with both Analog and Digital Seamlessly
 - **Automatic Mode Select (AMS)**
- No complex registration required
- User friendly with nearly no learning curve
- Digital transmissions meet FCC ID Requirements
- Integrated telemetry and tracking

More Features

YAESU *System Fusion*

The radio

- What sets this technology apart from **D-STAR** and **DMR (MotoTRBO)**? It is automatically backwards compatible with analog FM.
 - ✓ Every Fusion radio and repeater is aware of the current QSO transmission and its mode.
 - ✓ If a part of a QSO input starts as FM, the repeater “repeats” FM.
 - ✓ If the part of a QSO input starts as C4FM, it “repeats” C4FM.
 - ✓ Each endpoint (HT, mobile, etc.) auto-switches between FM and C4FM. You don’t need to have a QSO with two FM or two C4FM radios. A FM radio can talk to a C4FM digital radio and vice-versa.

What is WIRES-X?

- WIRES 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.
- In Japan WIRES-X is used extensively as there are no repeaters on 2M.

Advantages of Wires-X

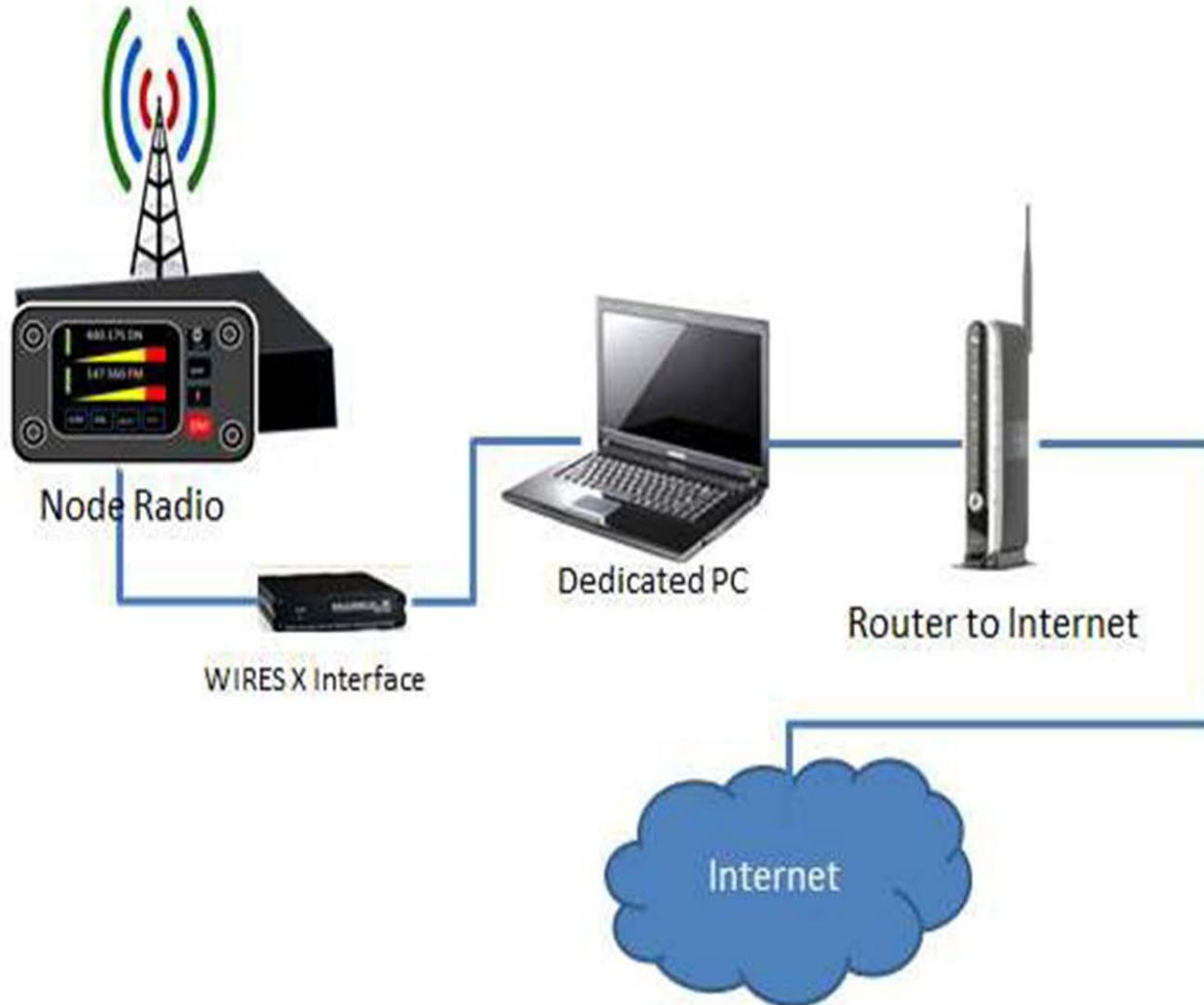
- Supports C4FM digital. Repeating digital data via the Internet, users can enjoy clear voice communications
- Automatically connects to nodes and “rooms”. Call sign, name, distance between stations included in transmission
- Search active nodes and “rooms”
- Similar to Echolink, IRLP, Allstar but with more features
- Does not require repeater controllers
- No repeater needed – can be simplex
- Can also link repeaters
- Range increased when linked to other repeaters and/or nodes
- News bulletins (messages, images, voice memos) can be freely uploaded to nodes and “rooms”
- Also supports traditional FM users and C4FM users can communicate with analog FM stations

What is the Wires-X node

- No Fusion repeater or node near you? Then set up your own node!
- Setup is quick and easy!
- Wires-X node consists of a PC, Wires-X connection kit (VOIP), and a transceiver
- Functions as a repeater station in simplex mode to connect to the Internet and another radio or repeater
- Can also be connected to a repeater for linking
- Wires-X node can open and run a community space or “room” where multiple nodes can connect at the same time.
- Uses Yaesu server based in Japan

Elements of Wires-X

A Typical Local Node



Wires-X connection kit

Advanced VoIP wireless **WIRES-X**
WIRES-X
AMATEUR RADIO INTERNET LINKING KIT
HRI-200



The image displays the Wires-X HRI-200, an Amateur Radio Internet Linking Kit. The main unit is a black, rectangular device with a textured surface. It features a green power LED and a USB port. The text 'WIRES-X' and 'HRI-200' are printed on the front, along with the description 'Wide-Coverage Internet Repeater Enhancement System'. Two inset images show hikers on a mountain peak and a person fishing at sunset. A smaller image shows the rear of the device with ports for MONITOR, RADIO 2, RADIO 1, and USB.

A node radio...such as...

*A Digital Mobile Transceiver for a New Age,
with a Wide Variety of Mobile Operations
Made Possible Through Advanced C4FM Technology*



K4FM
Clear and Crisp Voice Technology

AMS

WIRES-X

C4FM/FM 144/430 MHz
DUAL BAND 50 W DIGITAL TRANSCEIVER

FTM-100DR

American, Asian and Australian versions

FTM-100DE

European version

(DTMF Microphone MH-48A6JA, Mounting Bracket, Bracket for Front panel, Control Cable 10 ft, PC connection Cable SCU-20, Stereo Monaural Plug and DC Power Cable included)

Windows 7 or 10 PC



COOFUN

Z83-W Mini PC, Intel Atom x5-Z8350 Processor (2M Cache, up to 1.92 GHz) 4K/2GB/32GB 1000Mbps LAN 2.4/5.8G Dual Band WiFi BT 4.0 with HDMI and VGA Ports, Fanless Computer Support Windows 10



78 customer reviews

93 answered questions

Price: **\$119.90** ✓prime

Your cost could be \$109.90. Eligible customers get a \$10 bonus when reloading \$100.

FREE Delivery by Thursday

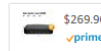
If you order within 10 hrs 21 mins or

Need it faster? Upgrade to faster paid delivery at checkout.

In Stock.

Sold by jack'shop and Fulfilled by Amazon. Gift-wrap available.

Color: **2+32GB / Windows 10 Home / Z8350**



- [Win 10 Support with X5-Z8350 Processor]: Support Windows 10 system, equipped with Intel Atom processor X5-Z8350, higher efficiency, faster decoding data research and development than Z8300.
- [Dual Screen Display]: connect two monitors via VGA port, simplify your work, reduce your waiting time, double efficiency.
- [Large Capacity]: 2GB DDR3L + 32GB ROM + 128GB Max Extended Capacity(SD card is not included), download your favorite movies and TV shows in advance without worrying about the storage.
- [Strong Wireless Supports]: 2.4G+5.8G Dual Band WIFI, 1000MB/s Lan, Bluetooth 4.0 make everything smoother whenever transmission and download.
- [Package Contents]: 1x Z83-W Mini PC; 1x Power Adaptor; 1x HDMI Cable; 1x User Manual. It support Auto Power On after Power Failure.

See more product details

Compare with similar items

Terminology

(info from Wires-X – The Bible)

- **Node**

Radio (repeater or simplex) connected to the Internet via a PC, which repeats communications of a conventional amateur radio as an access point.

- **Local Node**

This is a Node within the radio communication range of a conventional amateur radio station.

- **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.

Terminology (cont'd)

- **Conventional Amateur Station**

This is a normal Amateur Radio station, an individual on either a hand held radio, a mobile radio or a base station radio.

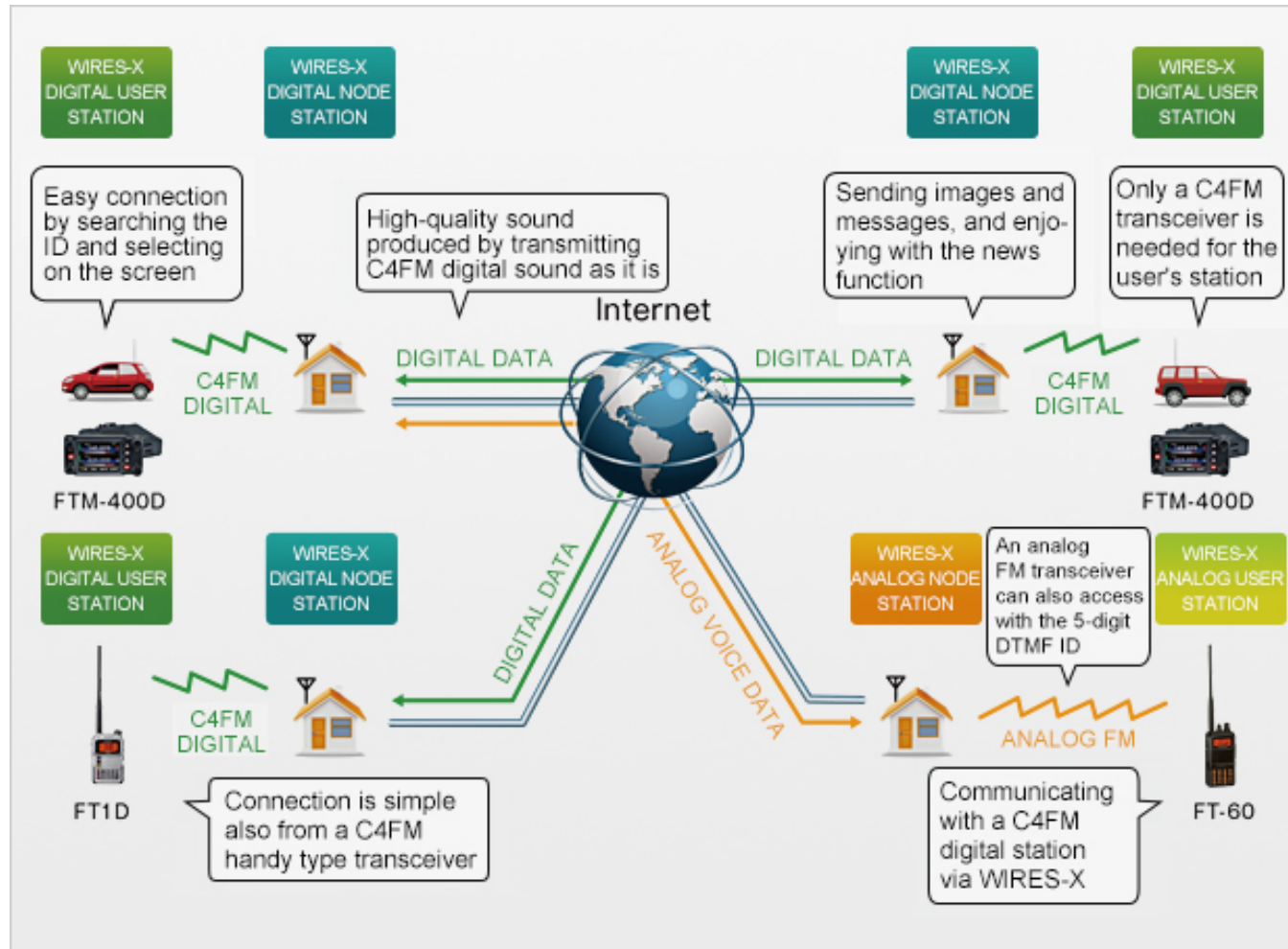
- **Room**

This is a WIRES-X Network community space to which multiple Nodes can connect simultaneously, like the old telco party line. This is a place where all amateur stations can link to each other via a local Node and communicate with each other. In addition to voice communication, one can chat with text messages on the PC used for the local Node.

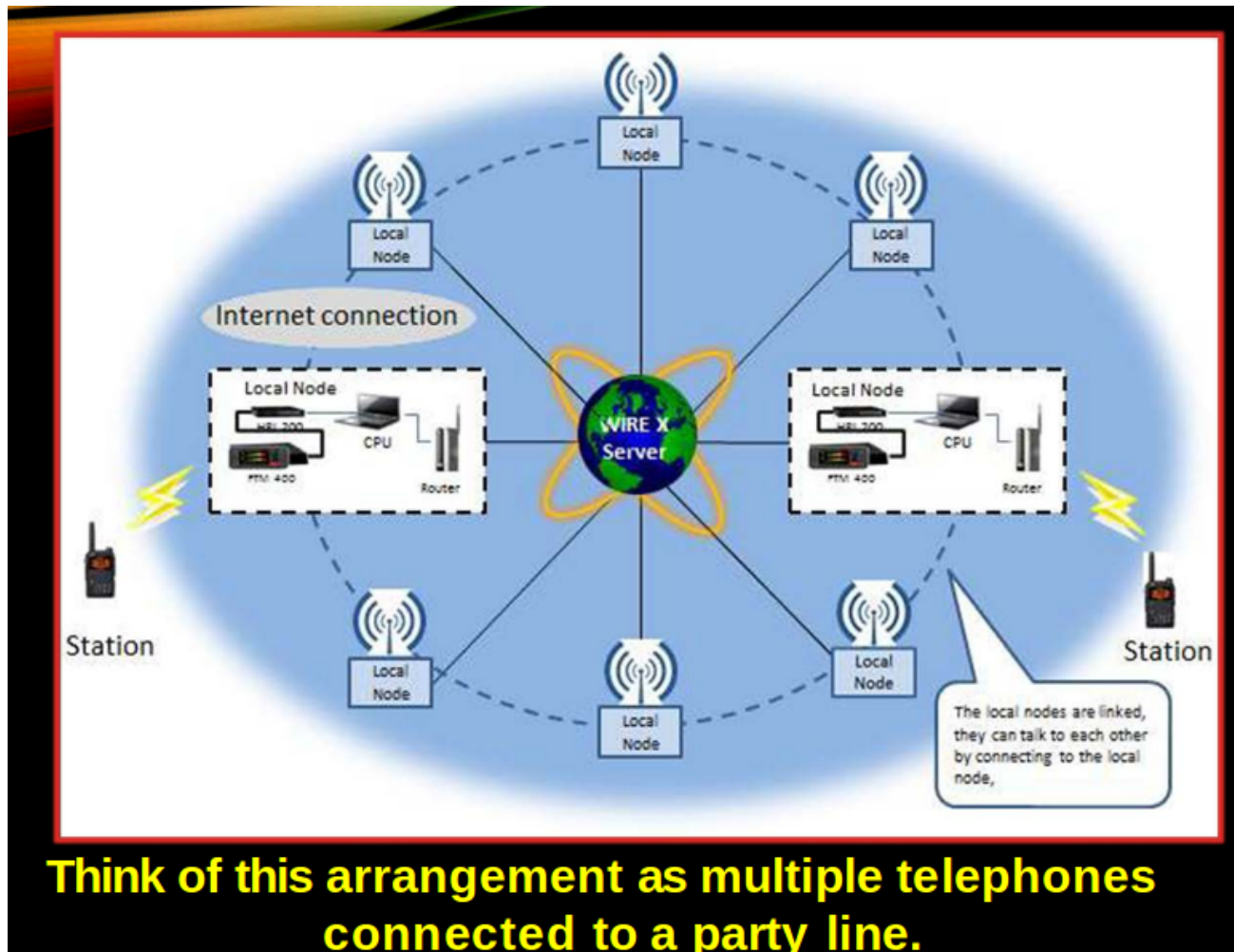
- **WIRES-X user ID (node)**

YAESU provides an identification name with the WIRES-X node. Each node is assigned a DTMF ID (5-digit number, e.g. 11916) and user ID (alphanumeric e.g. WB7OEV) up to 10 digits in length. Knowing the ID of the node to connect to, you can transmit the DTMF ID code from the transceiver, specifying the node to connect to by searching by characters.

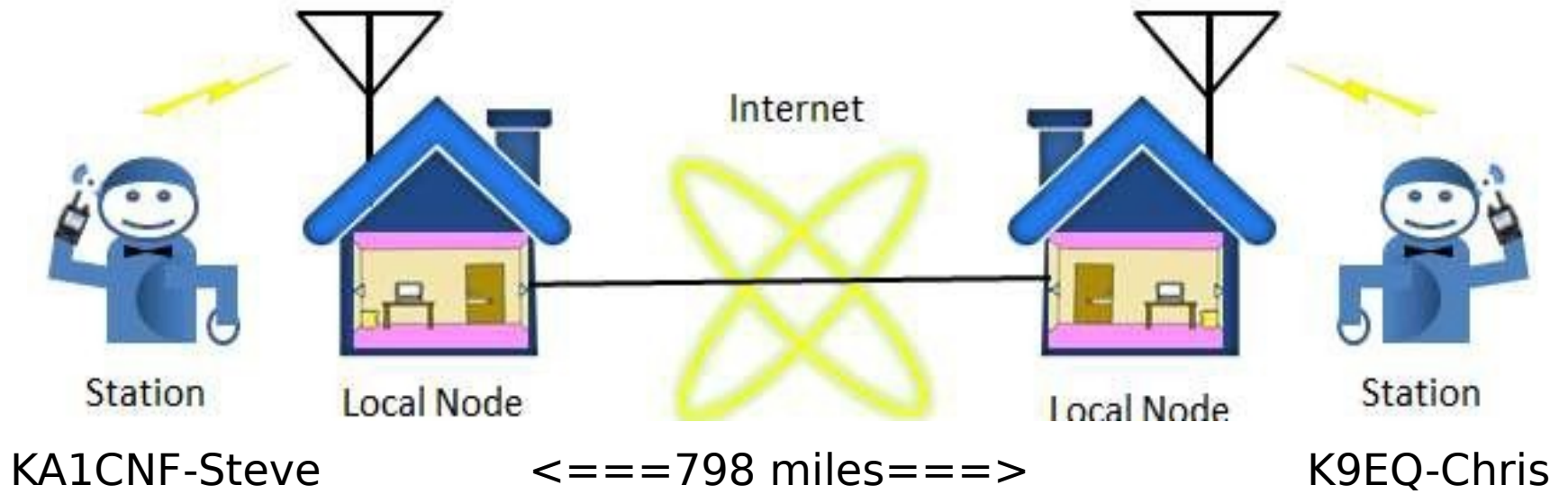
Wires-X Communication from Yaesu site -complicated!



Wires-X and node connections

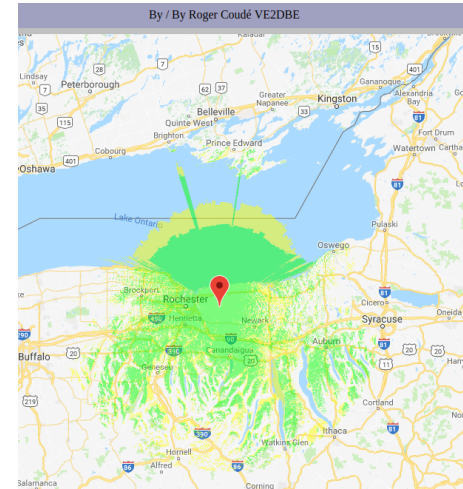


Simplified!



My Node

- FTM-100DR for node radio
- Location – West Walworth, NY
- 20 watts output on 147.525 Mhz w/ fan cooling
- In operation since Dec 2016, 24/7/365
- Good coverage for my mobile travels
- Usually connected to MNWis room #21493
- Software updated for Fusion II – backward compatible with Fusion I



KA1CNF-ND	30128	KA1CNF	Digital	Macedon	New York	USA	147.525MHz	DSQ:OFF	N:43 09' 16"	W:077 21' 17"	West Walworth, NY
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Wires-X Software not connected

192.168.1.217 (steve-asus-e45m (192.168.1.217) - service mode) - VNC Viewer

WIRES-X

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

G.User ID	+DT...	Act	Call/Rm...	City	State	Cou...	Freq(MHz)
WN8Z-RPT	11199		WN8Z	Fulton	New York	USA	147.390M...
----AMERICA---	21080	098	America ...	Beau...	Texas	USA	
MNWIS-FUSION	21493	025	MNWis ...	Lino ...	Minneso...	USA	
TEXAS-NEXUS	21636	011	TEXAS---	Austin	Texas	USA	
WNY-HUB	21704	000	WNY-Hub	Onta...	New York	USA	
WA2EMO-ROO...	21777	000	WA2EMO	Lyons	New York	USA	
ALABAMA-LINK	28933	007	Alabama...	Troy	Alabama	USA	

+A.User ID	DTM...	CallSign	City	State	Cou...	Freq(MHz)
---JA3LBJ-	19639	JA3LBJ	Kakogawa-city	Hyogo	Japan	430.82MH
--924RG--	30199	924RG	Port-of-Spain	Trinidad	Trin...	147.850M.
--ECHIGO-	12796	JR0ZFW	Kashiwazaki-city	Niigata	Japan	430.920M.
--JE1UDL--	16671	JE1UDL	Takasaki-city	Gunma	Japan	
--JF6BWD--	19656	JF6BWD	Fukuoka-city	Fukuoka	Japan	438.220M.
--IWAKUNI-	15403	JH4VIZ	Iwakuni-city	Yamagu...	Japan	144.560M.
--JMBUGH-50	32173	JM3UGH	Kashiwara-city	Osaka	Japan	52.060MH
--JP3DDI-ND	19645	JP3DDI	Kashiwara-city	Osaka	Japan	144.550M.
--KT-T0J1-	39015	JR3VC	Kyoto-city	Kyoto	Japan	439.66MH
--KYOTO-	19414	JL3ZGV	Kyoto-city	Kyoto	Japan	430.820M.
--1ST-RIG-ND	12556	JH8IKV	Sapporo-city	Hokkaido	Japan	430.940M.

+Room ID	DTM...	Act	Room name	City	St...
-----C4FM	24423	001	C4FM.xyz	Any city	-
-----LADO	40937	001	-----LADO--	San Antonio	Te
-----UKHUB	41491	001	UKHUB Cross-links	BELFAST	Cc
-----ARUFON	40254	000	ARUFON	Maplewood	M
-----HUBNET	41461	008	HUBNet	Portsmouth	Ha
-----WI-LINK	21667	004	WI-LINK USA	Baldwin	W
-----KAKOGAWA	29639	000	KAKOGAWA	Kakogawa-city	Hy
-----CQ-IRL	41411	002	CQ-IRL	Kilrea	Cc

User = KD9AGS-KIM > ***** (DN-Direct)
 Uplink = K0ZZX (11798)
 Downlink = KA1CNFR (30128)
 Room = (21493)

2018/04/26 19:51:14 K7CMB-ND(11599) OUT. 28 Nodes.
 2018/04/26 19:52:56 924JC-ND(33211) OUT. 27 Nodes.
 2018/04/26 19:53:24 924JC-ND(33211) IN. 28 Nodes.
 2018/04/26 19:53:35 924JC-ND(33211) OUT. 27 Nodes.
 2018/04/26 19:58:35 End-key(#99999/*) detected.
 2018/04/26 19:58:35 * Disconnected *

2018/04/23 20:26:35 K9GJN-GREG > MNWIS-FUSION : It does sound better! :)
 2018/04/23 20:48:09 KB0IOA-RPT > MNWIS-FUSION : Rever Bend Wireless Mechani
 2018/04/23 20:48:23 W0MDT-DAY > MNWIS-FUSION : thanks Jason. Nice to hear
 2018/04/23 21:05:04 W4IOD-RPT > MNWIS-FUSION : de W4IOD Please check in N4H
 2018/04/23 21:08:27 W4IOD-RPT > MNWIS-FUSION : de W4IOD Correction K4ATR is
 2018/04/23 21:41:14 KC2RC-RPT > MNWIS-FUSION : AC2AE - checking-in - Graves
 2018/04/23 21:59:14 K9NKS-ND > MNWIS-FUSION : K9NKS, Ben in Houston, no tra
 2018/04/23 22:11:48 KF5F-TX > MNWIS-FUSION : KG5TUP, Jeremy, Kyle TX.
 2018/04/23 22:12:39 W8QJ-RPT > MNWIS-FUSION : W8QJ, Dan, Florida, no traffi

ONLINE NUM

Ready

20:17
26/04/2018

Wires-X Software – connected to MNWis Room

192.168.1.217 (steve-asus-e45m (192.168.1.217) - service mode) - VNC Viewer

WIRES-X

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

G.User ID	+DT...	Act	Call/Rm...	City	State	Cou...	Freq(MHz)
WN8Z-RPT	11199		WN8Z	Fulton	New York	USA	147.390M...
----AMERICA...	21080	097	America ...	Beau...	Texas	USA	
MNWIS-FUSION	21493	025	MNWis ...	Lino ...	Minneso...	USA	
TEXAS-NEXUS	21636	011	TEXAS-...	Austin	Texas	USA	
WNY-HUB	21704	000	WNY-Hub	Onta...	New York	USA	
WAZEMO-ROO...	21777	000	WAZEMO	Lyons	New York	USA	
ALABAMA-LINK	28933	007	Alabama...	Troy	Alabama	USA	

NET DIGITAL ON-AIR LOCAL HRI-200 RADIO 1

MNWIS-FUSION

User = KD9AGS-KIM > ***** (DN-Direct)
 Uplink = KOZZX (11798)
 Downlink = KA1CNFR (30128)
 Room = (21493)

2018/04/26 19:53:35 9Z4JC-ND(33211) OUT. 27 Nodes.
 2018/04/26 19:58:35 End-key(#99999/*) detected.
 2018/04/26 19:58:35 * Disconnected *
 2018/04/26 20:18:30 *** Call Start No.21493 ***
 2018/04/26 20:18:31 Connected to MNWIS-FUSION(21493).
 2018/04/26 20:18:31 Room Member 25 Nodes.

View QSL de KA1CNF (ID:KA1CNF-ND)

WIRES-X

DTMF ID: 21493 2018/04/26 20:18:31

MNWis Fusion Network

< MNWIS-FUSION #21493 >
 Intended for linking in the upper midwest
 and MNWis repeaters.
 For extended out of area QSO, consider
 QSYing

HardCopy Save Close

2018/04/28 20:26:35 K9GJN-GREG > MNWIS-FUSION : It does sound better! :)
 2018/04/28 20:48:09 KB0IOA-RPT > MNWIS-FUSION : Rever Bend Wireless Mechani
 2018/04/28 20:48:23 W0MDT-DAY > MNWIS-FUSION : thanks Jason. Nice to hear
 2018/04/28 21:05:04 W4IOD-RPT > MNWIS-FUSION : de W4IOD Please check in NAH
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 2018/04/28 22:11:46 KF6F-TX > MNWIS-FUSION : KG5TUP, Jeremy, Kyle TX.
 2018/04/28 22:12:39 W80J-RPT > MNWIS-FUSION : W80J, Dan, Florida, no traffi

Room MNWIS-FUSION(21493) member 26 nodes Refresh Close

WROP-ND	WA1UTQ-RPT	NW8J-RPT	NS9RC-RPT	KB9UUU/RPT	NOAN-ND	WORRC-RPT	W9QCR-RPT	NOBJN-ND	K5STAR-RPT
N7YO-ND	NOJOL-ND	W0BU-RPT	W0MDT-MV	K3UCB-ND	K9EQ-RPT	W9LY-RPT	W0MDT-DAY	W0GAU-ND	W0MDT-PC
N1JUX-ND	W0MDT-RF	KB0IOA-RPT	KC9TVN-OZ	WN8Z-RPT	KA1CNF-ND				

Ready

ONLINE NUM

20:18
26/04/2018

WA2EMO Node from Yaesu webpage

WA2EMO-ND	11777	WA2EMO	Digital	Lyons	New York	USA	444.750MHz+5.000MHz	DSQ:OFF		Drumlins Amateur Radio Club
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Summary: To put up your own digital node

- Node Radio – Any C4FM digital transceiver with a 10 pin mini -DIN jack such as an FTM-100 - \$309 at HRO
- VOIP Wires-X connection kit: HRI 200 - \$125 at HRO. Use ferrites on BOTH ends of the USB cable!
- Dedicated Windows PC 7/8.1/10 – varies from approx \$199 and up – Consult the Wires-X Bible for optimization
- Wires-X software: free from Yaesu; only runs on Windows machines
- Internet connection: ADSL 8 Mbps or more, global IP address. Must also set up port forwarding on router
- Then register your node with Yaesu – see website at end of presentation

Considerations...

- Communication over the Internet can have delays, packet loss, interruptions
- Setup and maintaining Windows PCs can be frustrating. Follow advice in Wires-X Bible, hamoperator.com website and consider a dedicated PC
- Watch out for “desense”
- Most radios have a separate Wires-X manual you can download from Yaesu in the files section
- Duty cycle of your node station may be high. Watch out for heating issues!

Hotspots

- Lots of options: DVAP, zumspot, jumbospot, dv4mini, openspot, mmdvm, blue dv, DVMega, Nanospot
- Digital modes other than YSF are available: DMR, D-Star, P25, NXDN
- Low power 440 Mhz transceivers - up to 12 mW limited coverage unless mmdvm is used with a higher power radio
- Hotspots were not developed to replace repeaters but rather to supplement them.
- In areas where there is NO repeater, a hotspot allows the user to connect directly to a digital network via the Internet
- Costs vary- approx. \$65 - \$255 for hotspots
- Network is based off DMR (Brandmeister), XLX reflectors and YSF reflectors
- Gateways and bridges are setup and different modes can talk to each other (i.e. openspot DMR<=>C4FM)
- **Pi-Star** software on Raspberry Pi is very popular and will work with most hotspots
- Hotspot can be controlled with the Wires-X function on Yaesu digital radios
- [Wires-X nodes](#) and [“rooms”](#) are **NOT** the same as what is available with hotspots

Hotspots vs. Wires-X

- Wires-X node software allows operator to set many parameters
 - Access (open, closed, DP-ID, DG-ID, GM-group mode)
 - Analog or digital modes
 - VHF/UHF frequencies
 - Simplex or connected to a repeater
 - Power output – variable up to 50 watts
 - ID/Timers – individual setup
 - News, messages, pictures, info on other stations, who is connected and log history
 - Connect and disconnect options, restrict access. Return to “room”
 - All YSF radios allow for control of Wires-X but how this is done varies from radio to radio
 - Can add a second radio to HRI 200 for preset search function just press the WIRES-X button to find nodes
 - Simple and easy to use once you have it set up

N2MKT Repeater Dashboard

Hostname: pi-star

Pi-Star 3.4.5 / Dashboard: 20180511

Pi-Star Digital Voice Dashboard for N2MKT

Dashboard | Admin | Configuration

Modes Enabled

D-Star	DMR
YSF	P25
YSF XMode	NXDN

Network Status

D-Star Net	DMR Net
YSF Net	P25 Net
YSF2DMR	NXDN Net
YSF2NXDN	YSF2P25

Radio Info

Trx	Listening YSF
Tx	443.250000 MHz
Rx	448.250000 MHz
FW	MMDVM:20170501

D-Star Repeater

RPT1	N2MKT B
RPT2	N2MKT G

D-Star Network

APRS	newengland.aprs2
IRC	group2-irc.ircdd not linked

DMR Repeater

DMR ID	313684
DMR CC	1
TS1	enabled
not linked/not linked	
TS2	enabled
TG 6/not linked	

DMR Master

XLX950 E
BM United States 3101
DMR+ 773RADIOGROUP ..

YSF Network

Linked to: not linked

Gateway Activity

Time (EDT)	Mode	Callsign	Target	Src	Dur(s)	Loss	BER
08:33:07 May 15th	YSF	KA1CNF	ALL	RF	0.4	0%	1.8%
08:00:00 May 15th	D-Star	N2MKT/TIME	CQCQCQ	Net	3.9	0%	0.0%
05:39:59 May 15th	DMR Slot 2	G4PAP	TG 6	Net	0.5	12%	0.0%
03:57:40 May 15th	DMR Slot 2	ZL3DMH	TG 6	Net	2.9	0%	0.0%
03:46:50 May 15th	DMR Slot 2	313684	TG 6	Net	2.7	0%	0.0%
03:46:28 May 15th	D-Star	N2MKT/INFO	CQCQCQ	Net	2.5	0%	0.0%
02:50:51 May 15th	DMR Slot 2	M30HN	TG 6	Net	3.4	42%	0.0%
20:23:51 May 14th	DMR Slot 2	KC2VER	TG 31092	RF	1.1	0%	0.0%
20:21:09 May 14th	DMR Slot 2	9990	KC2VER	Net	0.5	0%	0.0%
14:46:36 May 14th	DMR Slot 2	SQ9DDL	TG 6	Net	1.5	0%	0.0%

Local RF Activity

Time (EDT)	Mode	Callsign	Target	Src	Dur(s)	BER	RSSI
08:33:07 May 15th	YSF	KA1CNF	ALL	RF	0.4	1.8%	
20:23:51 May 14th	DMR Slot 2	KC2VER	TG 31092	RF	1.1	0.0%	

KA1CNF Dashboard

Hostname: pi-star03

Pi-Star 3.4.11 / Dashboard: 20180508

Pi-Star Digital Voice Dashboard for KA1CNF

Dashboard | Admin | Configuration

Modes Enabled

D-Star	DMR
YSF	P25
YSF XMode	NXDN

Network Status

D-Star Net	DMR Net
YSF Net	P25 Net
YSF2DMR	NXDN Net
YSF2NXDN	YSF2P25

Radio Info

Trx	Listening
Tx	433.900000 MHz
Rx	433.900000 MHz
FW	HS_Hat:v1.3.3

YSF Network

Room: US Texas-Nexus

Gateway Activity

Time (EDT)	Mode	Callsign	Target	Src	Dur(s)	Loss	BER
13:17:48 May 8th	YSF	N5VLV	ALL at N3FE-7	Net	0.9	0%	0.0%
13:00:53 May 8th	YSF	KG4SBG-DEN	21636F5M6S at TNEXUS	Net	1.6	0%	0.0%
12:34:18 May 8th	YSF	KB5ZCS-ND	ALL at TNEXUS	Net	2.6	0%	0.0%
12:27:18 May 8th	YSF	G60HM	*****F5nPM at TNEXUS	Net	14.2	0%	0.3%
11:45:38 May 8th	YSF	KG5UFR	*****H5FOK at TNEXUS	Net	6.1	0%	0.0%
10:55:43 May 8th	YSF	KI7HBH	21636E5jFX at TNEXUS	Net	6.3	0%	0.0%
10:55:17 May 8th	YSF	K5K0Y-K0Y	*****E540p at TNEXUS	Net	22.0	0%	0.0%
10:53:12 May 8th	YSF	WD9ARWRICH	21636F0LYv at TNEXUS	Net	45.0	0%	0.0%
10:37:14 May 8th	YSF	KC5AFM	ALL at N3FE-7	Net	0.9	0%	0.0%
10:30:51 May 8th	YSF	K5IMO	*****F07dK at TNEXUS	Net	148.0	0%	0.0%
09:29:12 May 8th	YSF	KB5DMT	ALL at N3FE-7	Net	2.3	0%	0.0%
09:07:42 May 8th	YSF	KC5WLF-JIM	*****F00TN at TNEXUS	Net	3.2	0%	0.0%
09:04:41 May 8th	YSF	KF5WTB	*****H5NKK at KF5WTB	Net	0.6	0%	0.0%
08:46:15 May 8th	YSF	N5VGQ	ALL at TNEXUS	Net	4.1	0%	0.0%
08:13:42 May 8th	YSF	AI5AI-DON	ALL at TNEXUS	Net	4.2	0%	0.0%
07:52:38 May 8th	YSF	XE20R	ALL at TNEXUS	Net	9.1	0%	0.0%
07:08:02 May 8th	YSF	WD9HNB	*****E520K at TNEXUS	Net	0.2	0%	0.0%
05:53:33 May 8th	YSF	HB9EMQ	ALL at N3FE-7	Net	1.6	0%	0.0%
23:17:57 May 7th	YSF	N2MAC	ALL at N3FE-7	Net	1.6	0%	0.0%
23:07:59 May 7th	YSF	K0DZX-DAVE	21636F5I1N at TNEXUS	Net	6.9	0%	0.0%

Local RF Activity

Time (EDT)	Mode	Callsign	Target	Src	Dur(s)	BER	RSSI
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Pi-Star / Pi-Star Dashboard, © Andy Taylor (MW0MWZ) 2014-2018.

ircDDBGateway Dashboard by Hans-J. Barthen (DL5DI),

MMDVMDash developed by Kim Huebel (DG9VH),

Need help? Click here for the Facebook Group

or Click here to join the Support Forum

Get your copy of Pi-Star from here.

Demonstrations

(hopefully!)

- MNWis room – Monday night net
- Digital message display
- Connection to WA2AAC Repeater, 444.750 or Youtube videos:
<https://www.youtube.com/watch?v=CKBU0vtL0tI> and
<https://www.youtube.com/watch?v=r6DqoaQRQTY>
https://www.youtube.com/watch?v=e9eaf_5d190
<https://www.youtube.com/watch?v=QIK-1lYMJhw>
<https://www.youtube.com/watch?v=BYfqy86CL5E>
- Connection to Pi-Star Zumspot hotspot

WIRES-X Tips

- Leave pauses between transmissions (2-3 seconds)
- Listen before you talk
- ID with your call sign every 10 minutes
- Don't kerchunk the repeater, your call sign will be displayed!
- Just say your call sign
- Roundtable rules
- Nets and Emergency Nets
- Be mindful that you are representing all hams and that you might be heard across the county or the world
- Do not monopolize the repeater
- Switching rooms/nodes: If you are not the repeater or node owner, please call on the radio and ask for permission before changing the node or room linking. You might not receive an answer.
- Then return it to the original node or room when you are done

Web Links

- Fusion Help : http://www.hamoperator.com/Hamoperator/Fusion_Help.html
- Comparison of Hotspots:
<https://toshen.com/ke0fhs/hotspots.htm>
- Yaesu Wires-X Info:
<http://systemfusion.yaesu.com/wires-x/>
- Wires-X ID List - https://www.yaesu.com/jp/en/wires-x/id/id_usa.php
- Wires-X Yahooogroups:
<https://groups.yahoo.com/neo/groups/wires-x/info>
- Getting started with Wires-X:
<https://www.yaesu.com/jp/en/wires-x/node/index.php>
- Wires-X Facebook page:
<https://www.facebook.com/groups/wiresx.fusion/>
- Repeaters/Nodes:
https://www.repeaterbook.com/repeaters/feature_search.php?type=YSF&state_id=%25&band=%25
- Map of active nodes:
<http://wires-x.xyz/wires-x-map.php>
- Coverage Map:
<http://www.ve2dbe.com/rmonline.html>

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Brian Donovan, K2AS

For his previous presentation on
Yaesu System Fusion and
suggestions on this presentation

Holding Fusion Nets on the

XARC repeater, 145.29 Mhz

- Questions?
- Comments?
- Suggestions?