

C4FM (Yaesu System Fusion) and WIRES-X



YAESU
The radio

WIRES-X
Multi-Source Power Supply & Standby System

C4FM / Fusion

- Digital voice and data mode using 4 level Frequency Shift Keying (FSK)
- Doesn't require Internet, just >2 C4FM capable transceivers
- 12 kHz bandwidth
- Transmits 9600 bits per second (7200 bps after the protocol overhead)
- Digital Narrow ('DN') 2400 bps voice, 1200 bps for Forward Error Correction (FEC), 3600 bps for data (identity, GPS, additional FEC)
- Voice Wide ('VW') uses entire 7200 bps for voice with some FEC
- DW is Data Wide; uses entire 7200 bps for transmitting data (images/text messages etc.)

C4FM / Fusion - Advantages

- Good audio quality
- Less affected by noise/interference
- Transmits identity (call sign)
- Transmits location information
- Support for text messaging
- Support for picture messaging (requires MH-85A11U speaker microphone)

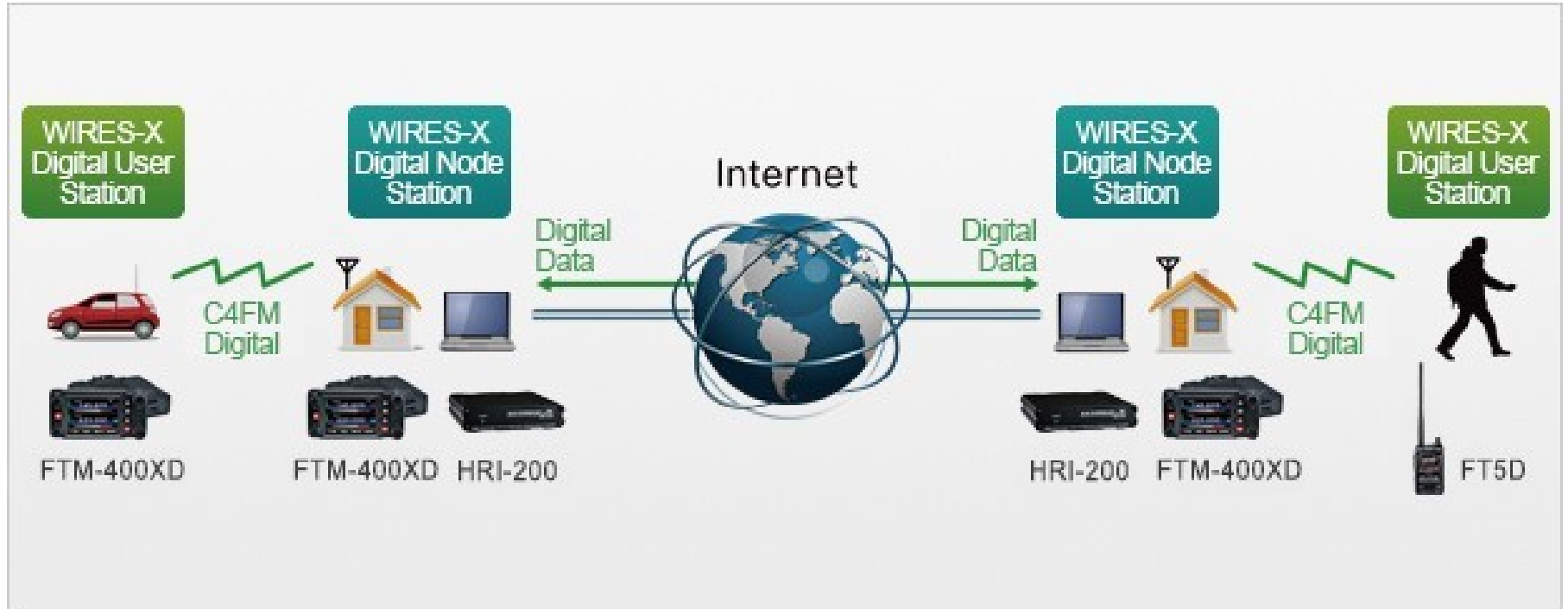
C4FM / Fusion - Disadvantages

- VHF/UHF only (save for 10m 29.00 – 29.51 MHz)
- Proprietary – Requires a Yaesu transceiver with C4FM feature
- Expensive (relative to analogue only equipment)
- No narrow deviation mode (all sub-modes are 12 kHz)

WIRES-X

- Wide-coverage Internet Repeater Enhanced System
- Allows global communication via repeaters, gateways and portable digital nodes (PDNs)
- Works with digital C4FM and analogue FM signals

WIRES-X



WIRES-X Advantages

- Flexible (within reason)
- Lots of WIRES-X enabled repeaters and open gateways
- With an Internet connection, no need for large antennas
- Lots of community support (YouTube/Facebook etc..)
- Reliable (with a stable Internet connection)

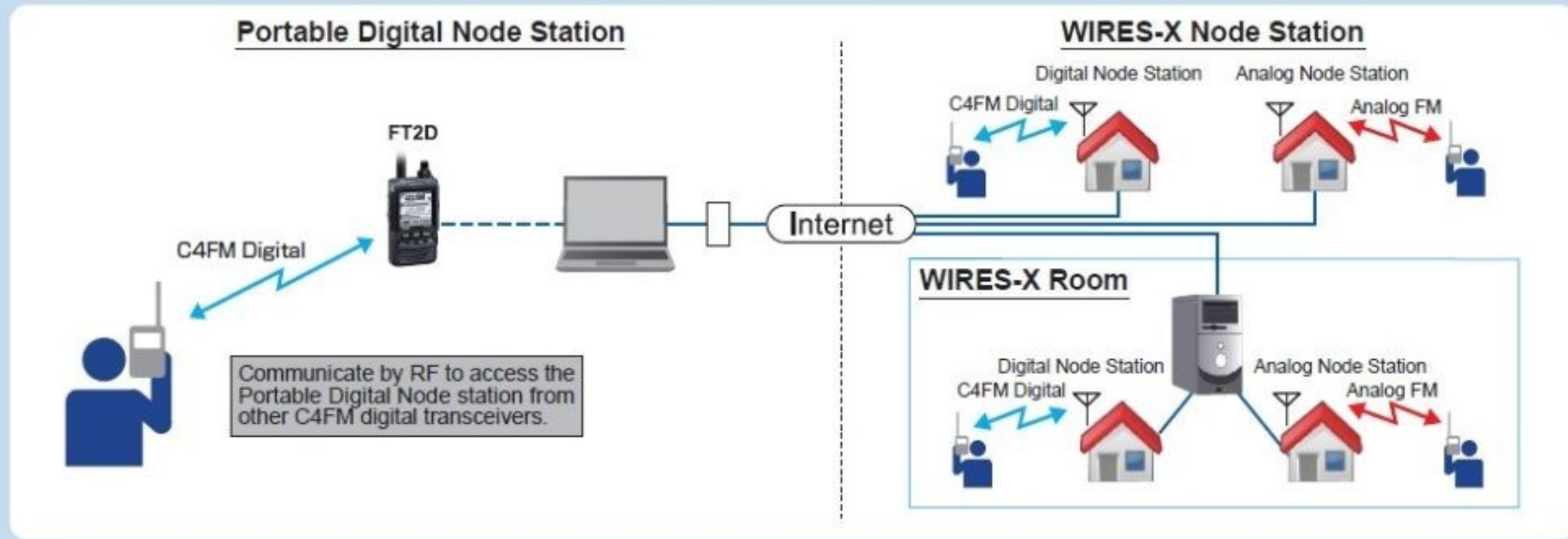
WIRES-X Disadvantages

- Can be complicated to set-up (Yaesu's manuals don't help!)
- The WIRES-X software is Windows only
- Not officially compatible with other systems/networks (BrandMeister, AllStar, EchoLink)

C4FM / WIRES-X Demonstration

WIRES-X Demonstration

Access Point (Portable HRI Mode) Illustration



WIRES-X Demonstration

FT-3DE in Portable HRI Mode
& in Access Mode (RF)
438.800* MHz



*One of the Non-NOV Hotspot frequencies in the 70cm band plan

Local Gateways

- MB6IKS on 431.125 MHz. Located near Heath Hayes
- MB6IML on 431.100 MHz. Located near Matlock
- MB6RU on 144.850 MHz. Located near Hednesford
- MB6SR on 144.8125 MHz. Located near Yarnfield

Staffs Fusion Group

- WIRES-X Room Number 41405
- Regular evening NET @ 8PM
- Search “Staffs Fusion Group” on Facebook
- Website coming soon...

Other Groups

- North West Fusion Group - 41755
- Southern Fusion - 41893
- CQ-UK - 27793
- America Link – 21080
- And **many** more

Questions

Thank You



Stafford and Districts
Amateur Radio Society