

Digital Voice Communications



Via Wires-X

Wide-Internet coverage repeater
enhancement System

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Introduction



- This will be a non-technical introduction
- Raise hands if you are currently using digital voice communications
- Another tool in the HAM toolbox

Terms



- P25 – Project 25
- DMR – Digital Mobile Radio
- C4FM - Continuous 4 level FM
- Code plug- Software Programing
- DN – Digital Narrow
- VW – Voice Wide
- AMS – Automatic Mode Select

Digital Modes



In digital voice these are three popular modes:

- P25
- DMR
- C4FM (System Fusion, YSF)

VOIP



- Yes, digital radio is VOIP
- Voice Over Internet Protocol
 - Telephone
 - Skype
 - Zoom
 - Go to meeting



- Great for first responders
- Great trucker radio
- Business groups

DMR



- European standard
- Chinese made
- Low cost
- Moto radio compatible

D-STAR



- D-Star:
- Developed by the Japanese Amateur Radio League in 2005
- Simple -no programming
- Links in to repeaters
- Clear t/r
- FM or Dongle
- 30 C most popular

SYSTEM FUSION



- Easy to setup
- Inexpensive
- Worldwide communication
- Very clear t/r
- No code plug needed

WHAT IS BEST



- All 3 modes are viable
- They work
- Each one requires a registration
- Who is using one of these?
- It depends who you ask: What is the best?

Why Digital Anyway



Fun to listen in

No antenna (HOA)

Alternative to HF poor conditions - 2025

Conversations with DX stations

Getting younger people interested

Low cost startup

FUSION



- Tonight I will focus on YRS – Yaesu System Fusion
-
- Yaesu Says they made Dstar better
-
- Since 1990 as WIRES then WIRES-II
-
- Fusion was made for the amateur radio community

DN



- 12.5 KHz split between voice/data
- Forward error correction (Dstar doesn't)
- GPS

WV



- 12.5 KHz voice
- Better voice quality
- No forward error correction

Bad Habits



- Speaking directly into the mic
- The problem with quick clicking
- How to properly do this
 - Wait about 3 seconds (before)
 - Wait about 2 seconds (after)

Wires-X



- **Setting up a room**
 - Advantages
 - Special Interest groups
 - Hold a net
 - It's cool
 - Disadvantages
 - HRI-200
 - Dedicated radio
 - Active radio
 - Cost

Getting Started



1. Radio

- **Yaesu made it a lot easier**
- **No longer need HRT 200 on certain radios**
 - ▢ FT2D
 - ▢ FT3DFT1D
 - ▢ FTM-400XD
 - ▢ FTM400D
 - ▢ FTM 100D
 - ▢ FTM100DR

2. Registration

D... l... W... X... G...

Fusion Communication Modes



- Digital
- Analog
- Mixed Mode – digital and analog
- AMS

Wires-X Help



- Yaesu Website
 - Registration
 - Wires-X manual
- Hamoperator.com
 - Wires-X Bible
 - Monday night net
- Fusion Rooms
- Fusion Nets
- Fusion Rooms/Links
- Youtube

Demo



- MIFI (hotspot)
- Radio - FT2D with SCU -19 cable (not provided)
- SCU=20 for FTM-400 & FTM-100 (provided)
- Dummy load
- Hand mic – Speaker – headset
- Computer



- Thank you for listening
- Questions?