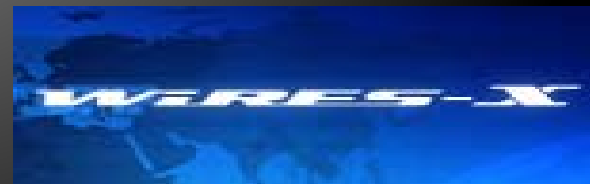


CARA Flea Market

System Fusion – Digital
Communication Solutions



Chris Wilson
NOCSW
National Sales Manager
Yaesu North America

Agenda

- New Products
- DR-1X Repeater Introduction
- Introduction to System Fusion
- Comparison of Technology
- Feature Overview
- WiRES-X Overview
- System Fusion Website / Customer Portal / Support Options
- Q&A Session

Total Length: Approximately 45 Minutes

Q&A: 15 Minutes

YAESU
The radio

System Fusion

System Fusion – Current Product Line

Merging Communication Together

FT1DR/XD



FTM-400DR/XD



FTM-3200DR



DR-1X



FT2DR



FTM-100DR



FT-991



HRI-200



The radio... YAESU

FT2-DR

Dual Band VHF/UHF C4FM Digital Mobile

- High Resolution Dot-matrix display
- Touch Screen
- Dual Vocoder
- Image Display on Screen
- Easy to navigate / Easy to Use
- Full Suite of APRS Features



FTM-100DR

Dual Band VHF/UHF C4FM Digital Mobile

- 50 Watts both VHF and UHF
- Single Receiver
- 160x40 Dot Matrix Display
- Advanced LED Status Indicators Easily Indicate which mode the radio is in



FT-991

All Mode / All Band C4FM & FM Capable Transceiver “Ham Shack in a Box”

- Built in Sound Card Interface
- Internal Antenna Tuner
- Color Touch screen Display
- C4FM Digital & Standard FM Analog
- 100W HF / 50W FM VHF & UHF
- 160m – 70cm



FTM-3200DR

Single Band VHF C4FM Digital Mobile

- Vibrant Multi-Colored Status Indicator
- 65 Watts of VHF Power
- C4FM Digital Capable
- Data port for firmware updates
- Loud 3 Watt front facing speaker



The DR-1X Repeater

YAESU DR-1 is a Digital/Conventional Analog FM dual mode Repeater that covers VHF & UHF Amateur Radio bands.

Replace your Conventional Analog FM repeater to

- (1) provide continued use of Conventional Analog FM communication*
- (2) while integrating the use of Digital Communication functions*



New Features firmware v1.0m/t

- *Adjustable Squelch Tail*
- *CW/Voice ID With no Tones*
- *Squelch Hysteresis*
- *Narrow Band Operation*



The Fusion of Analog and Digital Communications

The new YAESU System Fusion is the future of Ham Radio Digital Systems; it provides total integration and compatibility of both Digital & Conventional Analog FM communications.

By using the revolutionary System Fusion, the user no longer needs to choose between Digital or Analog FM; instead we can:

- *Use whichever system is best suited for the situation*
- *Communicate freely between Digital and Conventional FM stations*

Why System Fusion for Amateur Radio?

Focused on Digital

- Independent Digital System – Requires no internet connectivity, additional hardware or software to enjoy all of the benefits of System Fusion’s rich digital features.
- Firmware upgradable – Experience new features, enhancements and bug fixes.
- Cost – System Fusion is considerably cheaper to integrate than any other digital solution available, while not compromising quality.
- Resource Management – Telemetry, Text messaging, picture messaging, digital group monitor and high quality digital voice enable a single operator or group of operators to manage communications in the most effective manner currently available to amateur radio.

The Choice of C4FM Digital

Compared to other Digital modulations within FDMA, C4FM has excellent communication quality (BER: Bit Error Rate characteristics).

Presently, C4FM is the standard method for professional communication devices in FDMA, and is therefore expected to continue to be the main stream Digital Communication in the future.



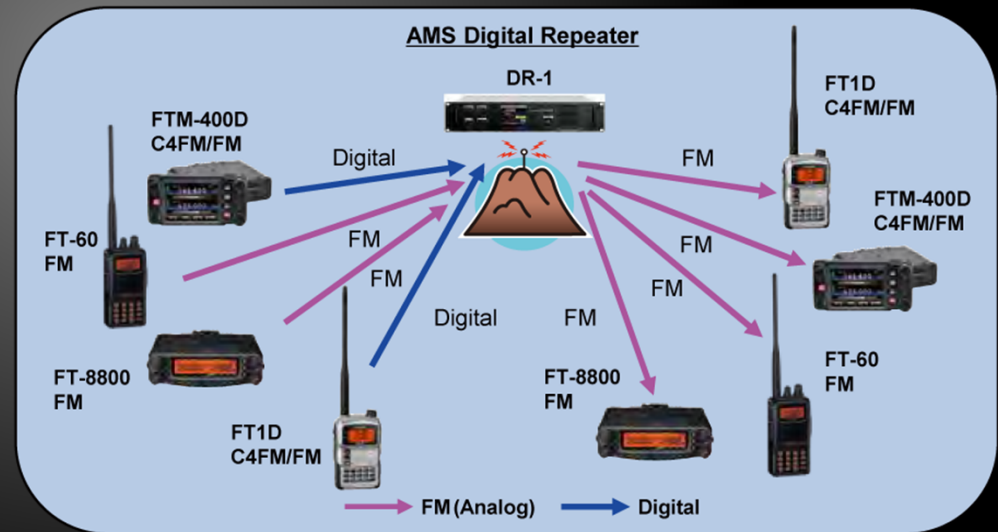
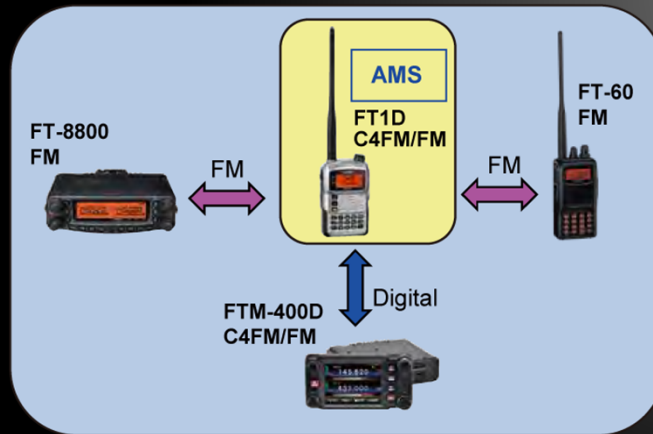
The Heart of System Fusion – Automatic Mode Select

AMS (Automatic Mode Select)

FM Friendly Digital

Easy Migration

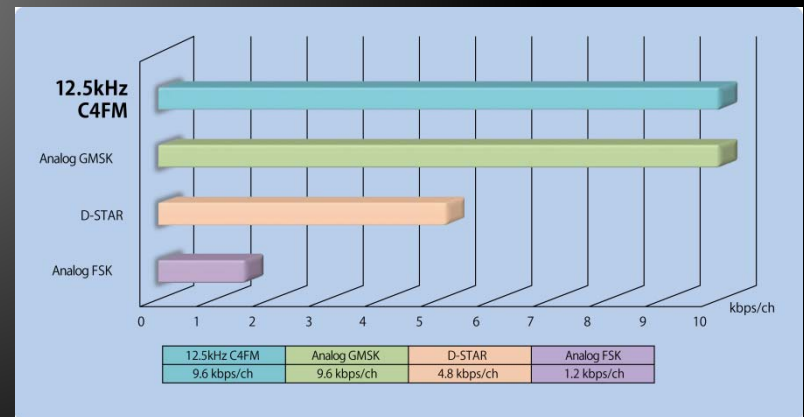
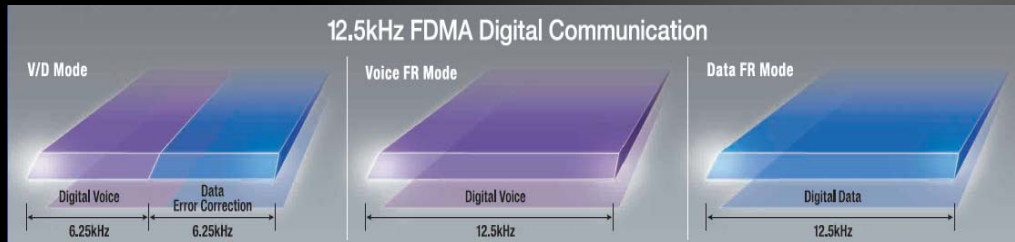
Co-existence



Multiple Modes of Communication

Is Digital Always Superior? The Fusion Advantage

- V/D mode - Voice/Data simultaneous communication mode*
- Voice FR Mode - Voice Full Rate Mode*
- Data FR mode - High Speed 9600 bits per second data transfer*
- Analog FM mode - For Conventional Communication*



A comparison of Features - System Fusion vs D-STAR

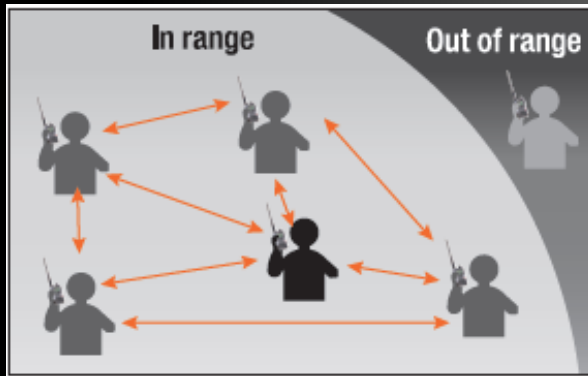
Detail	System Fusion	D-Star
Bitrate	9600bps (3600bps FEC)	4800bps (1200bps FEC)
Vocoder	AMBE+2	AMBE 2020
Built-in GPS	FTM-400XDR, FTM-100, FT2DR, FT1XDR	ID-5100A/ID-51A/ID-31A
APRS	Yes	No
Additional Boards/Accessories required for Digital operation?	No	Yes (In Most cases, but requirement is diminishing)
Bandwidth	12.5khz	6.25khz
Analog FM co-existence?	Yes	No
Available and Usable data speed	4800bps	950bps
Modulation	4FSK	GMSK

Comparison of Technology - Continued

Detail	System Fusion	D-Star
Internet required at tower site?	No (remote link available)	Yes
Built-in camera?	Yes (MH-85A11U Microphone)	No
Text via Keypad	Yes	No
Touchscreen capabilities	Yes (FT2DR, FT991)	Yes (ID5100/7100)
Full color LCD?	Yes (FTM-400, FT-991)	No

Digital Group Monitor – (GM)

Automatically checks whether members registered to a group are within communications range of your transceiver. The group mode screen then displays information such as the Distance and Heading for each station registered to the group.



Smart Navigation Function – Find others quickly and easily

Telemetry in Real-Time

In digital V/D mode, information such as position and call sign data are transmitted together with voice signals so the distance and direction to the other stations can be displayed in real-time while communicating with them.



Backtrack Function – Find your way home

Backtrack Enables navigation to a stored location at the touch of a button. Whether you are hiking, camping, or running emergency operations simply register your starting point or campsite before departure. The distance and orientation from the current location is displayed on the screen.



Full Suite of APRS Features

The FTM-100, 400 and FT1DR and FT2DR Include a full set of APRS Features including Internal GPS

- Position Reporting
- Text Messaging
- Smart Beacons
- APRS Data Output from TNC via supplied serial cable
- Station List Memory (Last Heard)
- Quick access to pre-stored messages
- Beacon Status

HRI-200

VoIP Wireless Internet Linking

Advanced VoIP wireless WIRES-X

WIRES-X

AMATEUR RADIO INTERNET LINKING KIT

HRI-200



WiRES-X

DR-1X Internet Linking

Wires-X connection Type	AMS through Wires-X	External Controller	Your DR-X version	
			DR-1X V1.00	DR-1X V1.10
<p>1</p> <p>WIREs-X connection through RF remote</p>	N/A	Connectable	OK	OK
<p>2</p> <p>WIREs-X connection through DR-1X with HRI-200</p>	N/A	N/A	Requires Service Center Modification	OK

We recommend the (1) remote node operation because...

- (2) requires the high speed internet access at the repeater site.
- (2) requires the PC needs to be powered on all the time at the repeater site.
- (2) cannot operate with external controller when in WiRES-X mode.
- AMS is not available in either scenario
- If a user with a version prior to V1.10 would like the update it does requires special tools or updates performed by our Service Center.

System Fusion Web Portal

<http://systemfusion.yaesu.com>

Customer Community Under Development

- User Forums
- FAQ / Self Help System
- Interactive Customer Installation program form
- Product Pages / Technical Specifications
- Web Presentations
- Social Networking / Media interaction

Technical Q&A

Ask us your Questions / Get your Answers

- System Fusion
- WiRES-X
- VHF/UHF
- HF
- Various Programs

Comments and Suggestions are welcomed and greatly appreciated!

YAESU
The radio

System Fusion

Thank you and Best Wishes from

All of us At Yaesu USA

Leading Amateur Communications Into the Future

The radio... YAESU