




*System Fusion*

**Introducing**



The New  
Dubois County 444.675 MHz  
**System Fusion Repeater**

Originally Installed in 1998

WB9LIB  N9MZF

Amateur Radio  
Repeater System  
Agreement

*Serve as backup to our  
147.195 MHz repeater for  
LOCAL Skywarn &  
Emergency/Disaster  
Communications*

*At all other times available for day-to-day use*



**YAESU**  
*Choice of the World's top DX'ers*

*System Fusion*

## The Newest Amateur Radio Digital Mode

- High Quality Digital Audio
- Easy to Use
- Excellent Performance

**How Easy is It?**

# AMS

■ Digital

■ Analog FM

Rx **AUTO**

Tx **AUTO**



Our 444.675 MHz Fusion  
**AMS**  
Repeater will ALWAYS be  
(Automatic Mode Select)  
in AMS Mode

*System Fusion*  
**YAESU**

# With Individual Radios in AMS Mode

AMS   ■ Digital   ■ Analog FM

Rx   ■ AUTO

Tx   ■ AUTO



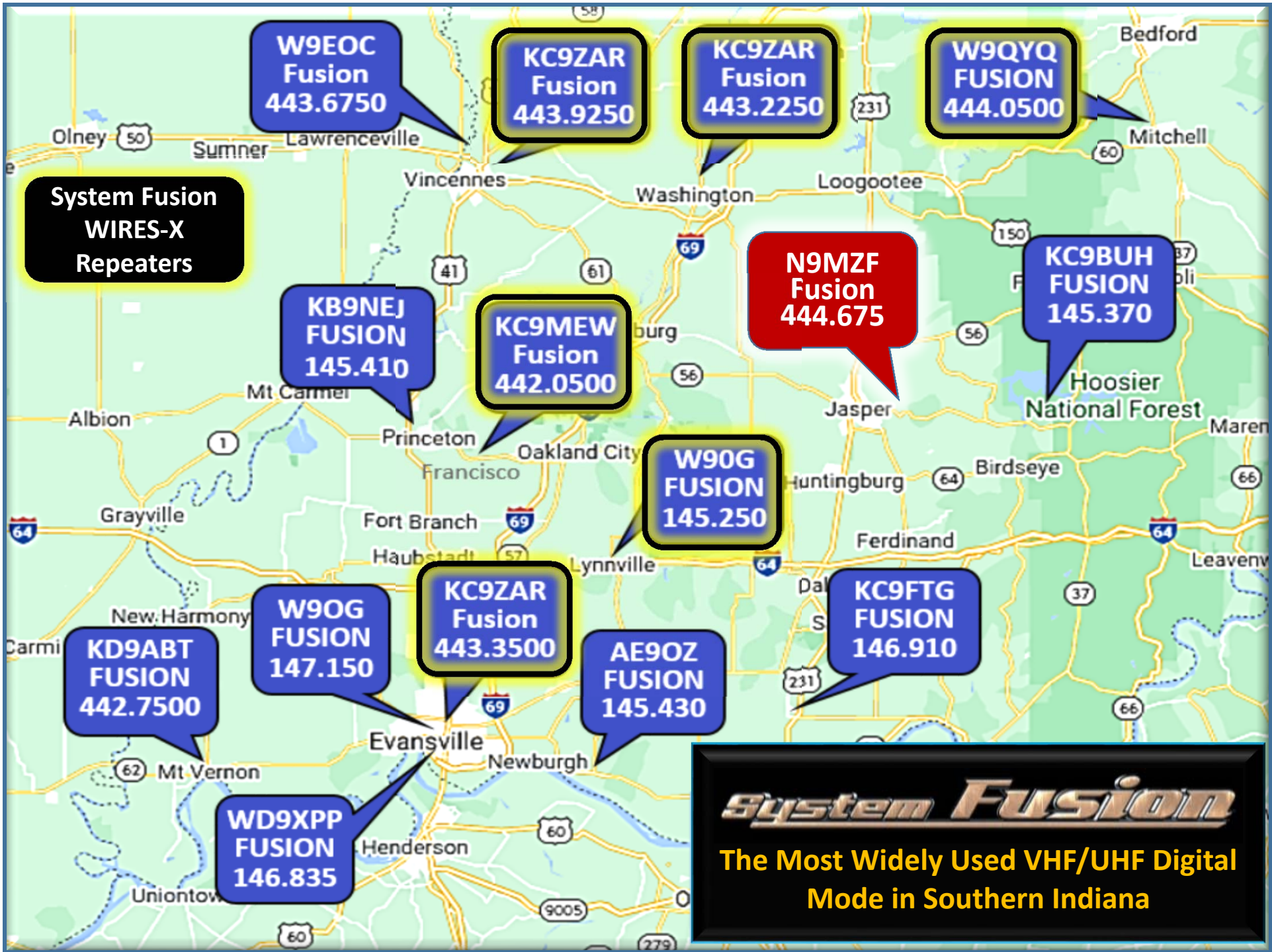
If ONE person keys up in ANALOG ALL radios switch to ANALOG

If ONE person keys up in DIGITAL ALL radios switch to DIGITAL

## What is Yaesu System Fusion C4FM Technology

- C4FM Stands for Continuous Four Frequency Modulation using FSK
- It Uses FDMA (Same as P25)
- C4FM & P25 Are **WIDELY** used by **Public Safety**

**Our New Repeater Provides Public  
Safety Grade Performance**





# REGISTERED REPEATERS (USA)



**2,069**

**YAESU**



**1,190**

**ICOM**



**1,971**

**MOTOROLA  
HYTERA  
BAOFENG  
TYT  
OTHERS**

# Analog FM



## ADVANTAGES

# Superb Quality Audio!

- ✓ *Quality Signal Across Entire Range*
- ✓ *No Noise*
- ✓ *Resistance to Interference*

**DIGITAL IS ALL OR NONE**  
**Crystal Clear Audio**

**THERE IS NO NOISY IN BETWEEN!**

*System Fusion*  
**YAESU**

# ANALOG VS DIGITAL: DEMO #1



**Digital Mode**

**System Fusion**  
**YAESU**

# ANALOG VS DIGITAL: DEMO #2



**Digital Mode**

*System Fusion*  
**YAESU**

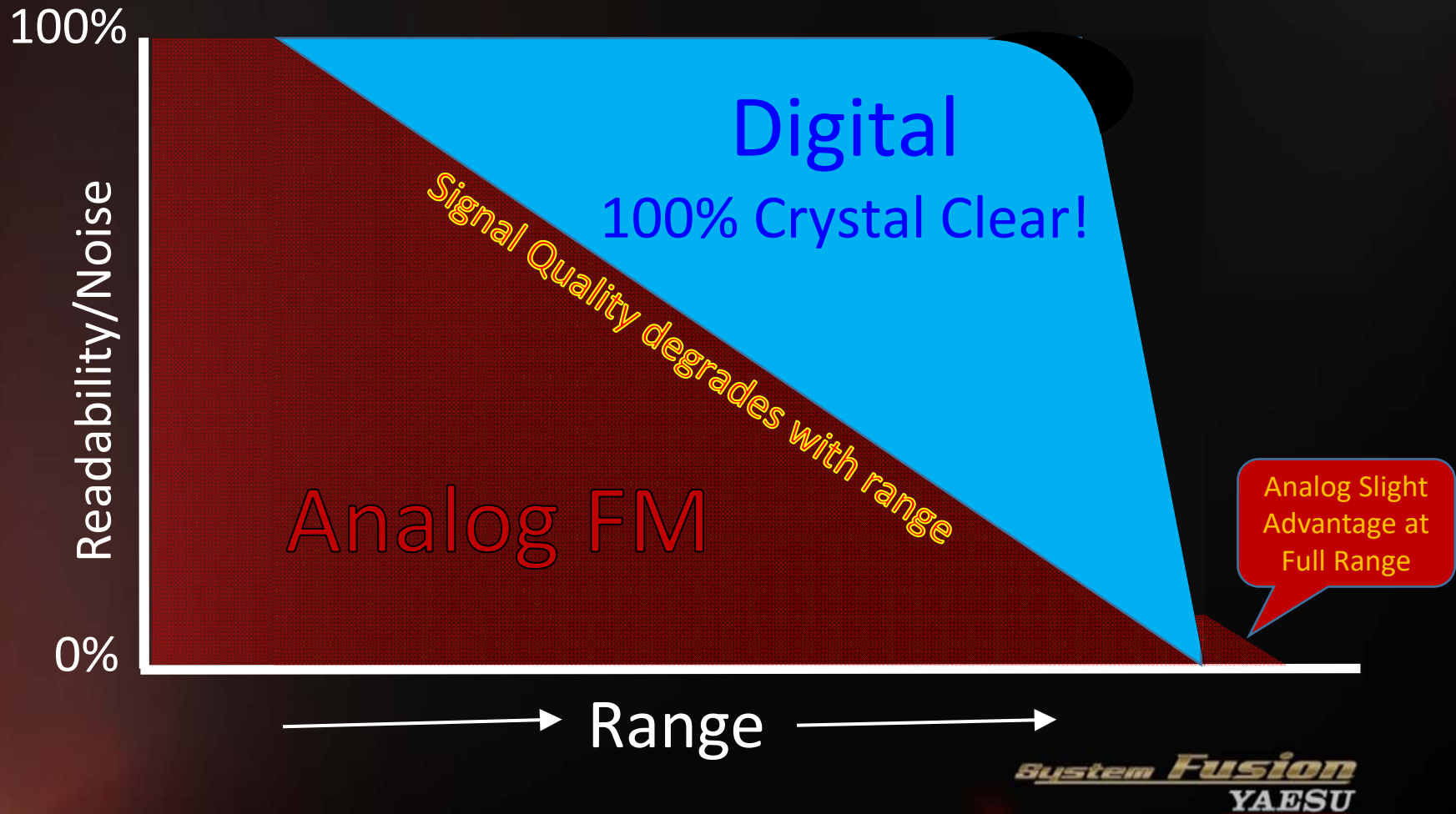
# ANALOG VS DIGITAL SIMPLEX: DEMO #3



**Digital Mode**

*System Fusion*  
**YAESU**

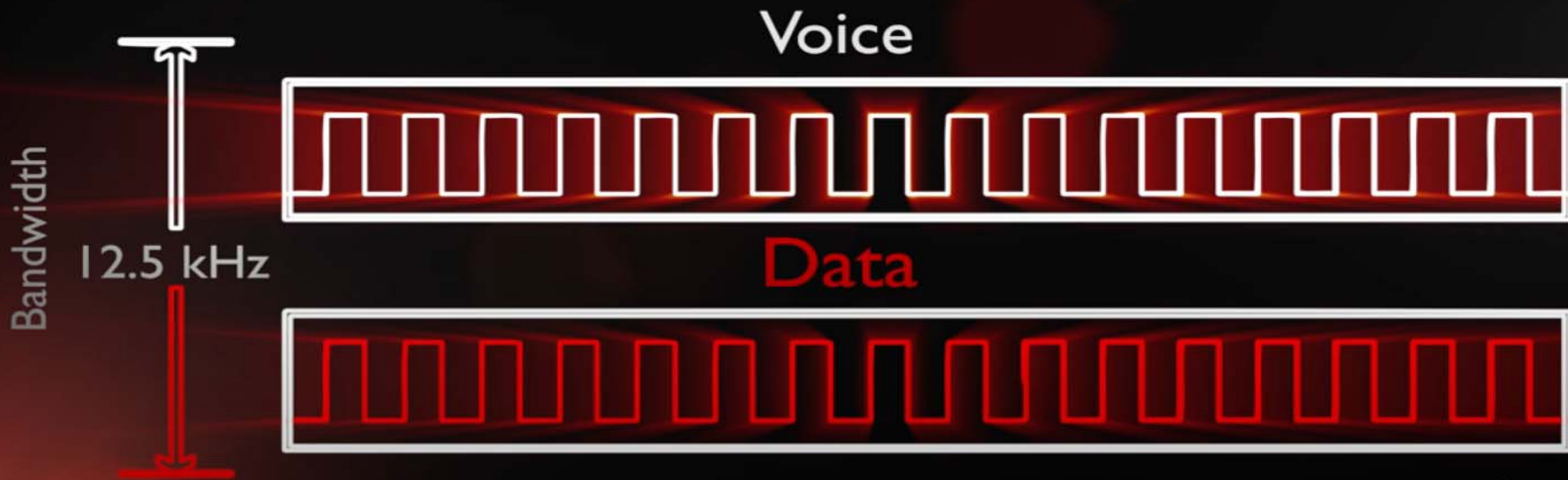
# Digital vs Analog Range Characteristics



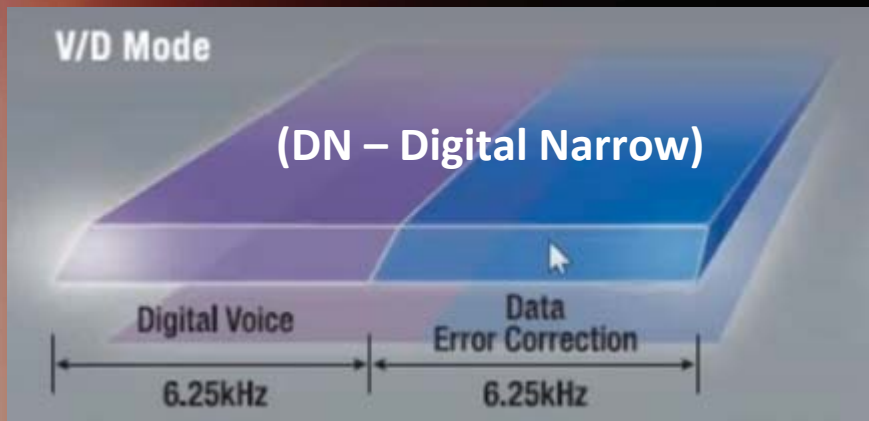




# Voice / **Data** Mode (V/D Mode)



*System Fusion*  
**YAESU**



**DN – Digital Narrow Mode**  
provides forward error correction  
with OPTIMUM range  
*similar to Analog FM*

# Compatible Yaesu Radios

**YAESU**  
The radio

C4FM/FM 144/430MHz DUAL BAND  
DIGITAL TRANSCEIVER

# FT-70D

(FT-70DR: US, Asia and Australia FT-70DE: Europe)

## The Perfect Choice Sophisticated Dual Band Digital Transceiver

*Built to Commercial Grade Specifications*



Advanced C4FM Digital

System Fusion Compatible

Combines FM and Digital Communications  
with AMS (Automatic Mode Select)

Coordinated Group Operation  
with Digital Group ID

700 mW of Loud, Clear Voice, Audio Output

5 Watts of Reliable RF Power  
from a Compact Handheld Unit

Wide Band Receive Coverage 108 - 579.995 MHz

Rugged Construction  
Meets IP54 (Dust & Water protection)

Large Multi-Color Operating Mode Indicator

Huge 1,105 Channel Memory

(Actual Size)



**C4FM**  
DIGITAL COMMUNICATIONS  
Clear and Crisp Voice Technology

# Entry Level Handheld

- Commercial Grade
- Dual Band
- AMS
- 8 Hour Battery Life
- 5W Transmit
- 108 MHz to 579.995 MHz Receive

## \$174.99

## Ham Radio Outlet

# Setting Up a Fusion Radio

Station Call Sign Automatically  
Displayed on Screen



**To Change Modes**

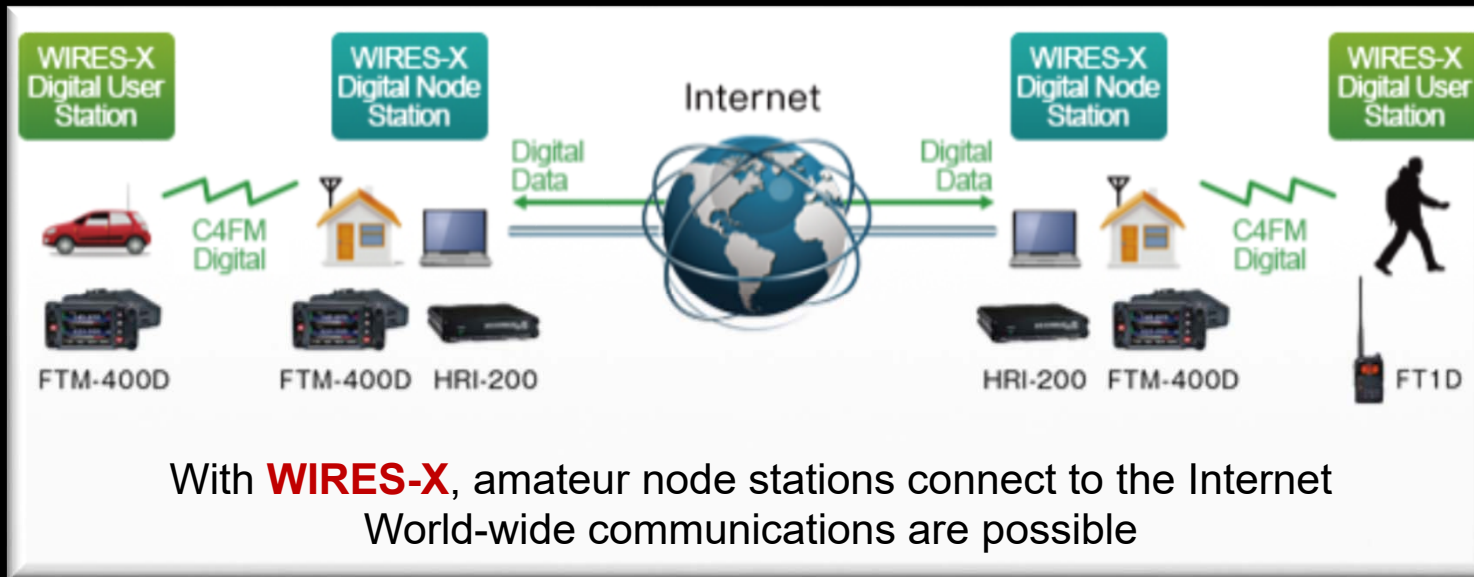


***YAESU***

***WIRES-X***

*Wide-Coverage Internet Repeater Enhancement System*





- **Many Yaesu System Fusion radios** can directly connect to WIREX-X via laptop (with interface cable)
  - Includes FT2D, FT3D, FT5D, FTM-100D, FTM-300D, FTM-400XD, and FTM-400D (with firmware update)
  - **Wireless hotspots** are available allowing wireless access at home from your HT or base station
  - **Several WIREX-X Repeaters** are available in Southwest Indiana

# WB9LIB DIRECT CONNECT TO THE INTERNET

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

Room DETROIT-METRO(43274) member 12 nodes
Refresh Close

W8CSX-RPTR W8CSX
Send Node : W8CSX-RPTR ( 33148 ) / Mobile : W8CSX

NET
DIGITAL
ON-AIR
LOCAL
FTM-300D
RADIO 1

WBOTC/R
WBTRU-RPT
WBGM-RPT
KC1LVB-RPT
KF8ZO-ND
WBMC-ND
NBSA-ND
W5TH-RPT
K8VSV-ND2
WB9LIB-ND

DETROIT-METRO

2:59

+A>User ID	DT...	CallSign	City	State	Co...	Freq(M...	SQL	Lat	Lon	Comment
AA0KM-...	33496	AA0KM	Marshall	Missouri	USA	146.460...	DG-ID:0...	N...	W:0...	
AA0KM-...	55640	AA0KM	Marshall	Missouri	USA	446.100...	DG-ID:0...	N...	W:0...	
AA0RW-...	58370	AA0RW	Red Wing	Minne...	USA	442.250...	DG-ID:0...	N...	W:0...	HVARC Repeater
AA4FB-G...	18070	AA4FB	Englewood	Florida	USA					
AA4JS-ND	11521	AA4JS	Fort Myers	Florida	USA	444.675...	DG-ID:0...	N...	W:0...	Please connect to room ...
AA5KG-N...	30528	AA5KG	Pueblo West	Colora...	USA					
AB24-ND	12116	J3YQM	Kashiba-city	Nara	Jap...	430.990...	DG-ID:0...	N...	E:13...	Ÿ.ñ.Ě.ĀŠy.μ.—V.Ń.Ů.μ.ā.ř
AB2HM-...	11011	AB2HM	Woodbury ...	New J...	USA					
AB2HS-N...	53766	AB2HS	johnson city	New Y...	USA					
AB4AZ-N...	18213	AB4AZ	Vero Beach	Florida	USA	145.130...	DG-ID:0...			
AB4D-ND	33528	AB4D	Sunset Beach	North ...	USA	441.150...	DG-ID:0...	N...	W:0...	Sunset Beach Fusion
AB4NP-G...	11485	AG0X	Naples	Florida	USA	444.487...	DG-ID:0...	N...	W:0...	Feed for AB4NP
AB5C-ND	30332	AF5XC	Owasso	Oklah...	USA	449.900...	DG-ID:0...	N...	E:09...	
AB6MV-R...	55111	AB6MV	Moreno Vall...	Califor...	USA	146.655...	DG-ID:0...	N...	W:1...	Moreno Valley ARA Clu...

```

User = W8CSX > ***** (DN:FT-991)
Uplink = W8CSX (33148)
Downlink = WB9LIB (73485)
Room = (43274)
Position = N:44 07' 16" / W:084 25' 18"

2021/10/05 15:28:00 Connected to BOSTON-MASS(63826).
2021/10/05 15:28:00 Member not in Room.
2021/10/05 15:28:12 *-*-* Call Start No.40867 *-*-*
2021/10/05 15:28:12 Connected to CINCINNATI-LNK(40867).
2021/10/05 15:28:13 Member not in Room.
2021/10/05 15:28:23 *-*-* Call Start No.43489 *-*-*
2021/10/05 15:28:24 Connected to COLORADO-RIVER(43489).
2021/10/05 15:28:24 Room Member 2 Nodes.
2021/10/05 15:29:23 *-*-* Call Start No.21003 *-*-*
2021/10/05 15:29:24 Connected to CQ-AMERICA-DIGI(21003).
2021/10/05 15:29:24 Room Member 4 Nodes.
                
```

Internet

**FTM-300DR**

**Dave Merkley (N9UIE)**  
**Presenting:**  
**Using A Hot Spot**

444.675 MHz



Welcome to the New  
Dubois County System  
Fusion Repeater