



# INDIANA DMR

NETWORKS, REPEATERS, TALK GROUPS, AND CODEPLUGS

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[w9lw.farlowconsulting.com](http://w9lw.farlowconsulting.com)

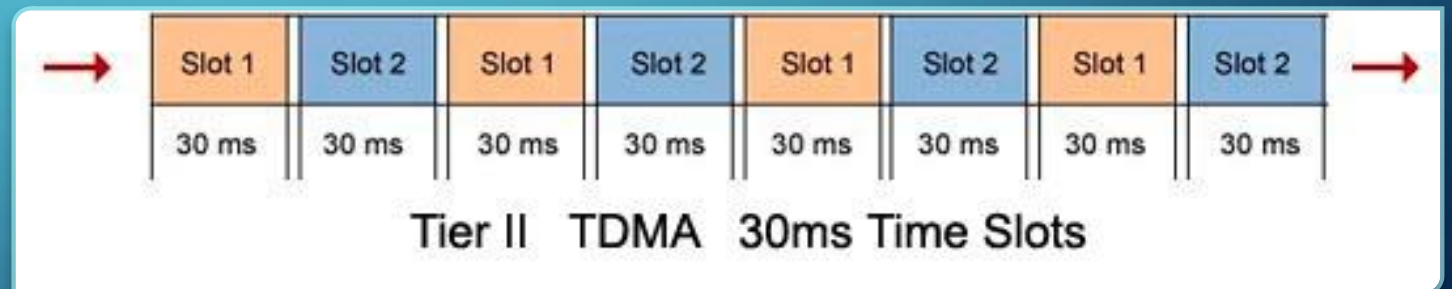


# INTRODUCTION TO DMR

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# DIGITAL MOBILE RADIO

- Digital audio (as are D-Star and Yaesu Fusion)
- Commercial roots
- Internet connections
- Radio ID numbers issued via [www.radioid.net](http://www.radioid.net)
- Time-division multiple access: Two 30ms time slots per radio frequency



# TALK GROUPS

- Virtual channels
- Identified by numbers (3118 = Indiana Statewide)
- Dedicated to geographic areas or purposes (Military Vets, 98008)
- Static vs. dynamic
- “Private” vs. Group

# NETWORKS

- Multiple networks available, not fully interconnected
  - Brandmeister
  - c-Bridge (Crossroads, Chicagoland)
  - DMR Plus (Tri-State)
  - TGIF (No Indiana Repeaters, few, if any, connections to other networks)

# C-BRIDGE NETWORKS (CROSSROADS, CHICAGOLAND)



- Networking device
- Original Indiana DMR networks
- Repeater owners choose talk groups to carry
- Repeater owners specify time slots for each talk group
- Mostly use talk groups from the DMR-MARC list
- “Parrot” is a **group** call to 9998
- Crossroads website: [www.idhr.info](http://www.idhr.info)
- Chicagoland website: [chicagoland-cc.org/](http://chicagoland-cc.org/)



# BRANDMEISTER



- Any talk group on Brandmeister list (1,500 choices)
- Any Brandmeister talk group on any time slot
- Some talk groups bridge to other networks.
  - Indiana statewide (3118) linked with Crossroads (3118) and Tri-State (Ref. 4607)
  - Tactical talk groups (e.g., 310, 311) linked with Crossroads and Tri-State (same numbers)
  - “Crossroads” talk group (31189) linked with Crossroads (8710)
  - “Midwest” 3169 linked with Crossroads (3169) and Tri-State (Ref. 4640)
  - “North America” (93) and “Worldwide” (91) **not** cross linked.
- “Parrot” is a **private** call to 9990 (either time slot)



# DMR PLUS (TRI-STATE)



- Crown Point, LaPorte, Valparaiso
- DMR-MARC talk groups (time slot 1) plus D-Star-style reflectors (time slot 2)
- “Parrot” is **group** call to 9990 on time slot 1
- Tri-State website: [www.tristatedmr.org](http://www.tristatedmr.org)

## Connecting to Reflectors on DMRPlus is Easy

Step 1: Check status of repeater

TS2 TG5000  
“Status”

Step 2: Connect to a reflector

TS2 TG 4xxx  
“Connect to Reflector”

Step 3:  
Begin your QSO

TS2 TG9  
“Talk”

Step 4: Unlink reflector at end of QSO

TS2 TG4000  
“Unlink”

# TGIF

- Younger network
- No Indiana repeaters (yet)
- Mostly used by individuals on DMR hotspots
- Few (if any) cross-links to other networks
- “Parrot” is a group or private call to 9990 or 31000
- TGIF website: [tgif.network](http://tgif.network)

# INDIANA DMR NETS

- Crossroads Net, Mondays, 8 p.m. ET, Crossroads 8710 or Brandmeister 31189.
- Indiana DMR Net, Tuesdays, 8 p.m. ET, 3118 or DMR Plus reflector 4607.
- Grant County Amateur Radio Club Net, Sundays, 8:30 p.m. ET, 31181.

# PREPARING TO PROGRAM A DMR RADIO

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# OBTAIN A DMR ID NUMBER

- Every user must have DMR ID number
  1. Obtain actual copy of license (FCC ULS), not “reference copy”
  2. Go to [www.radioid.net](http://www.radioid.net)
  3. Sign up for account, follow instructions to get DMR ID.
  4. Most users need only one ID, even with multiple radios.

# OBTAIN REPEATER INFO

- For each repeater you intend to access, you need repeater's:
  - Frequency
  - “Color” code
  - Network
  - Static & dynamic talk groups per time slot



DMR Base Stations & Repeaters | DMR Tier 2 compatible repeaters | QT/DQT/Colour Code signalling



# INDIANA DMR REPEATER MATRIX

- Popular online references (RepeaterBook, RFinder) unreliable
- Indiana Digital Ham Radio website: [idhr.info](http://idhr.info)



## Indiana Digital Ham Radio

It's all 1's and 0's....

### Menu

- About Us
- DMR**

## Indiana DMR Repeater List (All Networks)

### Important information

Static talk groups are always on. Dynamic talk groups are activated on demand when a local user transmits on that talk group. Dynamic talk groups automatically deactivate after a certain time without local activity (typically 15 minutes).

Repeaters on the Brandmeister network support each of the more than 1,500 Brandmeister talk groups on either time slot. The Brandmeister repeater entries below therefore list individually only the talk groups that are static on those repeaters. Users should avoid dynamically activating a static talk group on the opposite time slot. For example, if Indiana statewide (3118) is static on time slot one, users should not activate that talk group on time slot 2. On all Brandmeister



# INDIANA DMR REPEATER LIST

## Fort Wayne K9MMQ

**Status:** On Air

**Frequency:** 443.10000 +5 MHz

**Color code:** 1

**Network:** Crossroads

**Mode:** DMR only

**DMR ID:** 311803

Talk Group Name (Number)	Time Slot 1	Time Slot 2
US Nationwide (1776)	Static	
Midwest Region (3169)	Static	
Local 1 (3181)	Static	
North America (3)	Dynamic	
Michigan (3126)	Dynamic	
Ohio (3139)	Dynamic	
Audio Parrot (9998)	Dynamic	
EchoLink-IRLP (63951)	Dynamic	
Indiana (3118)		Static
Local 2 (3166)		Static
Crossroads (8710)		Static
Worldwide (1)		Dynamic
WW English (13)		Dynamic

# INDIANA DMR REPEATER LIST

## Fort Wayne N9MTF

**Status:** On Air

**Frequency:** 442.63750 +5 MHz

**Color code:** 1

**Network:** Brandmeister

**Mode:** DMR only

**DMR ID:** 311841

Talk Group Name (Number)	Time Slot 1	Time Slot 2
Local (2)	Static	Static
IN WX Ops (31183)	Static	
R5AUXCOMM (31673)	Static	
Indiana (3118)		Static
All other Brandmeister groups	Dynamic	Dynamic

# CONFIGURING A DMR RADIO

WRITING A WORKING “CODEPLUG”

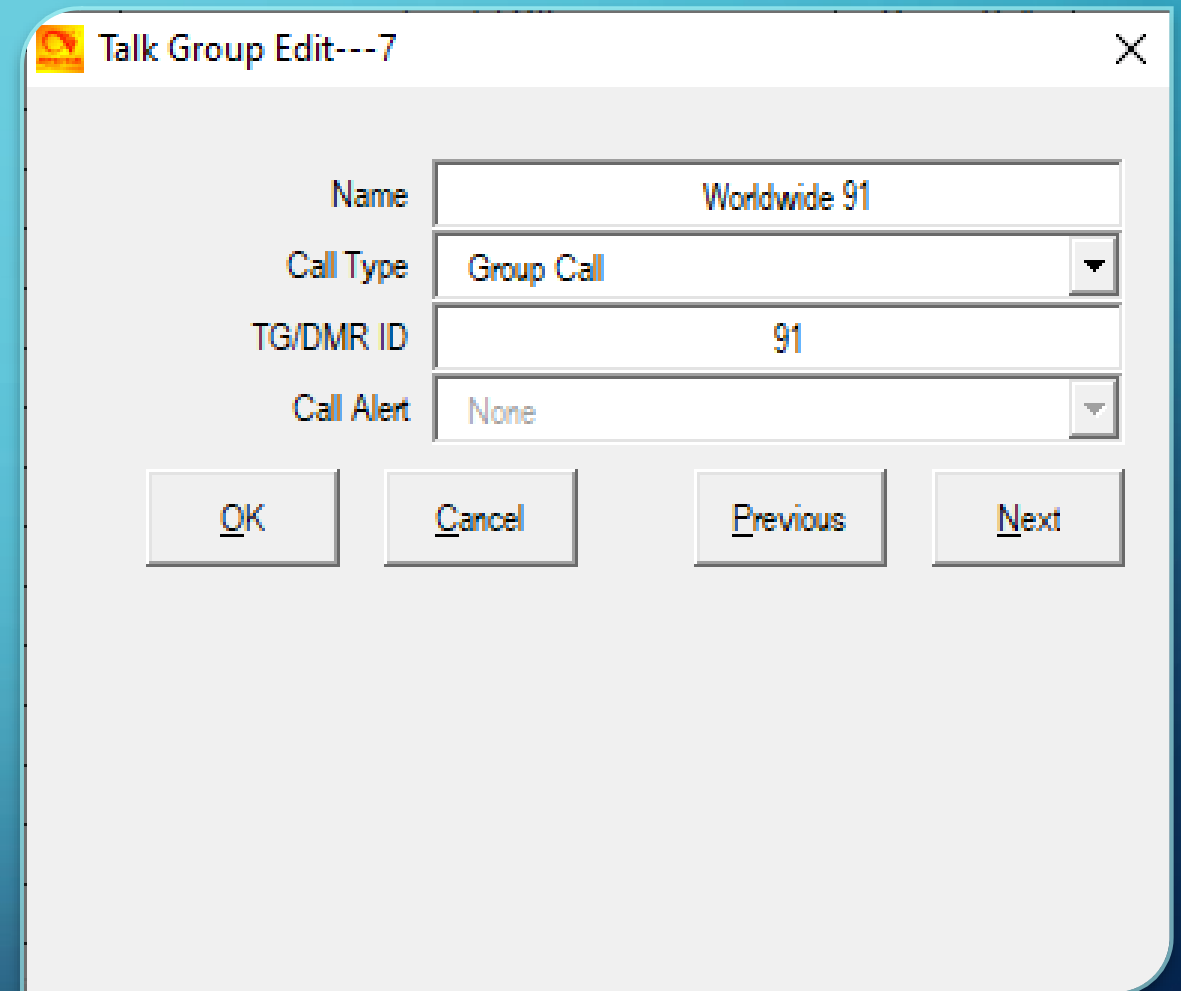
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# BACKGROUND AND TIPS

- Use customer programming software (CPS) created for that radio.  
(Can't use CHIRP)
- Match CPS and firmware version
- Resulting file is called “codeplug”
- “Save as” to new name before any change  
E.g., W9LW-ATD878UV-2022-11-19-1230.rdt

# CODEPLUG WRITING PROCESS

1. Enter personal DMR ID
2. Enter talk group names & numbers  
Tip: Include talk group number in name field.



Talk Group Edit---7

Name	Worldwide 91
Call Type	Group Call
TG/DMR ID	91
Call Alert	None

OK Cancel Previous Next



# SOME TALK GROUP SUGGESTIONS

- Brandmeister

- Local 2 (TS 1 and 2)
- Indiana Statewide 3118
- Crossroads 31189
- Indiana Link 31181
- Midwest 3169
- U.S. 3100
- North America 93
- Worldwide 91

- Crossroads

- Local-1 3181 (TS 1)
- Local-2 3166 (TS 2)
- Indiana Statewide 3118
- Crossroads 8710
- Midwest 3169
- North America 3
- Worldwide 1

# CODEPLUG WRITING PROCESS

3. Create one channel per talk group per repeater.

Tip: Identify the repeater & talk group in the channel name.

The screenshot shows the 'Channel Information Edit' window for a channel named 'Galvstn WW'. The window is divided into several sections for configuring channel parameters.

**Channel Name:** Galvstn WW

**Frequency Settings:**

- Receive Frequency: 441.85000
- Transmit Frequency: 446.85000
- Correct Frequency[Hz]: 0

**Channel Configuration:**

- Channel Type: D-Digital
- Transmit Power: High
- Band Width: 12.5K
- TX Permit: Different Color Code
- Scan List: None
- APRS Report Type: Off
- Analog APRS PTT Mode: Off
- Digital APRS PTT Mode: Off
- Digital APRS Report Channel: 1
- Exclude channel from roaming: off
- DMR MODE: Repeater

**Advanced Settings (Checkboxes):**

- ☐ PTT Prohibit
- ☐ Talk Around(Simplex)
- ☐ APRS RX
- ☐ Work Alone
- ☐ DataACK Disable
- ☐ Auto Scan
- ☐ Ana Aprs Mute

**Digital Section:**

- Contact: Worldwide 91
- Radio ID: W9LW Jay
- Color Code: 1
- Slot: Slot1
- Receive Group List: Hoosier DMR
- Digital Encryption: Off

**Encryption and Security:**

- AES Digital Encryption: Off
- Multiple Key: Off
- Random Key: Off
- SMS Forbid: Off

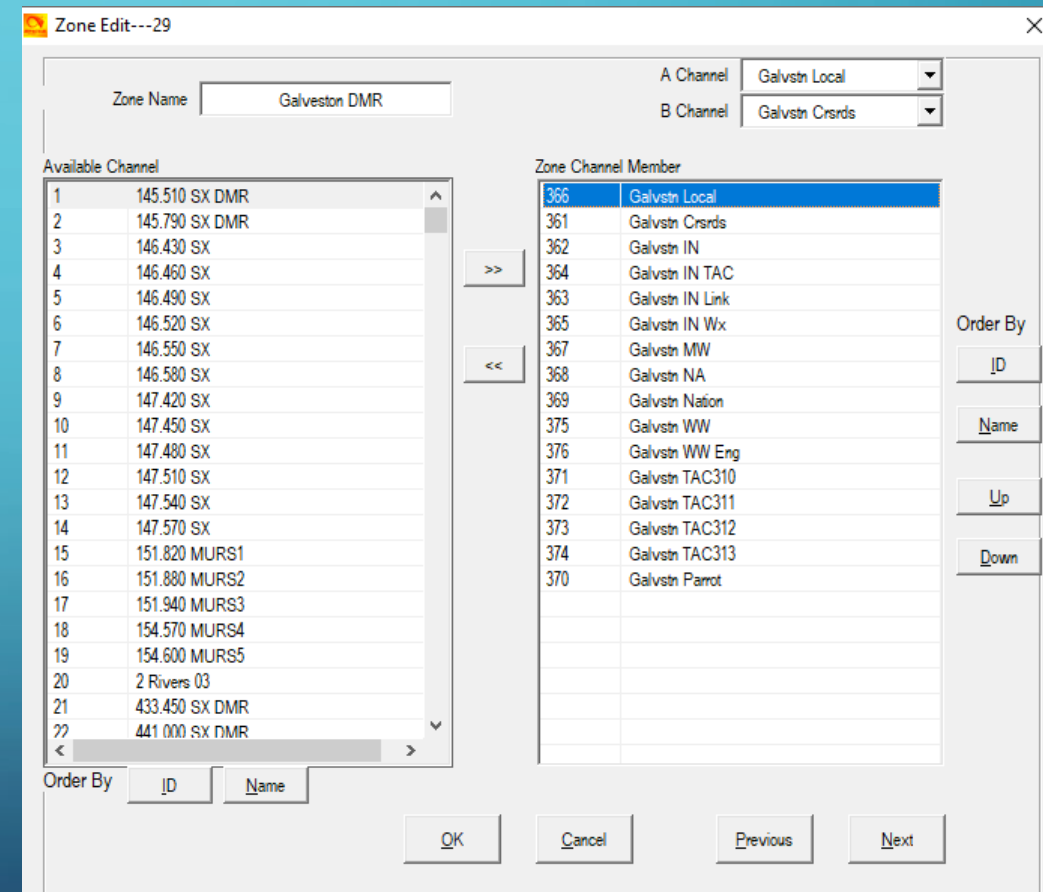
**Additional Options (Checkboxes):**

- ☐ Call Confirmation
- ☐ Ranging
- ☐ Slot Suit
- ☐ SMS Confirmation



# CODEPLUG WRITING PROCESS

4. Create at least one zone  
(Tip: One zone for each DMR repeater, identify repeater in zone name)
5. Save codeplug to computer
6. Write codeplug to radio



# OPERATING DMR

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# TEST YOUR CODEPLUG

- Select desired zone.
- Select desired channel. (Start with parrot.)
- Make a test transmission. Listen for echo.
- Pause between PTT and speaking.
- If channel's TG is static on repeater, monitor for activity.
- If channel's TG is dynamic, "kerchunk," then monitor for activity.

# DMR OPERATING BEST PRACTICES

- Before transmitting, listen to the **time slot**, not just a single talk group
- Use the talk group carried by fewest number of repeaters
- Avoid rag chewing on wide-area talk groups. QSY to a TAC group
- Brandmeister: Don't dynamically activate a TG on time slot 2 if it's static on time slot 1

# W9LW CODEPLUG-WRITING GUIDES

- [w9lw.farlowconsulting.com](http://w9lw.farlowconsulting.com)
- Radioditty RD-5R / Baofeng DM-5R
- TYT MD-380
- Anytone AT-D878UV

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