



December 2017 Issue

Yaesu Fusion Digital – A Primer

By "Van" VanDaveer, KØHCV
with permission

All Fusion capable radios are just normal ham radios with a couple of extra features.

A Fusion capable radio functions just like any other ham radio you have used. The only difference is that it offers one additional mode. That mode is digital.

A normal analog radio offers just the one mode, analog. With fusion you can select either analog (FM) or digital (DN) or (VW). When you select digital you can select from two different flavors. One mode is Data Narrow (DN) and the other mode is Voice Wide (VW). This selection is made with the mode selection option on your radio. You will see either FM, DN or VW displayed on the screen of your radio. If you see a solid bar either above or immediately to the left of the FM, DN or VW that means you are in Automatic Mode Select or AMS. I will explain that later.

When you select the DN mode you are transmitting in C4FM digital mode but your voice only takes up half of the transmitted bandwidth. The other half contains data. This data contains your GPS coordinates. Using the DN mode any receiving station can see your call sign displayed on their radio along with the distance and direction to your station.

When you select the VW mode you are still transmitting in C4FM but with a much higher fidelity audio signal. This is because your voice takes up the entire transmitted bandwidth. Your call sign is still transmitted however the GPS data is no longer transmitted. The receiving station will still see your call sign but will not know the direction to your station or how far away you are. However your voice will have higher fidelity and sound much more like a broadcast studio.

When you select the FM mode you will be transmitting in analog and it will be just like any other analog radio you have used. While there may be a PL tone used with your analog signal no data is transmitted. One very important point here regarding analog vs. digital. While you may or may not use a PL tone on an analog repeater, **THERE ARE NO PL TONES USED WITH DIGITAL COMMUNICATIONS!** If the repeater is in AMS mode there may be a PL tone associated with the analog side but **THERE ARE NO PL TONES USED WITH DIGITAL COMMUNICATIONS!** If you see a repeater listed somewhere that says it is a Fusion repeater but shows a PL tone, it is either operating in AMS mode or the information is incorrect.

Now to Automatic Mode Select or AMS. AMS was designed by Yaesu to allow their radios to use the new C4FM mode but still allow you to operate in the analog mode on analog repeaters. The idea behind AMS is that your radio will automatically select the proper mode depending on the mode of the signal you are receiving. If your radio is in AMS mode and someone calls you in analog, your radio automatically switches to analog and you can carry on your conversation in analog. If they call you in either DN or VW mode your radio will switch to the proper mode and you can carry on your conversation in digital. Very simple very easy. No operator intervention or code plugs required.

The Yaesu DR-1X Fusion repeater can be configured one of four ways. They can be set up as strictly analog. That is analog in / analog out. They can be set up as strictly digital. That is digital in / digital out. And they can be configured mixed mode. This way they can accept either digital in or analog in and force analog out or mixed mode where whatever mode comes in is the mode that goes out.

When Yaesu started selling their two thousand dollar repeaters for five hundred dollars a lot of clubs and individuals bought them to replace their aging repeaters. These folks set their repeater up to be fixed analog in and fixed analog out. Some clubs, experimenting with C4FM digital, set their repeaters up to be either analog or digital in but fixed analog out. The real daring clubs set their repeaters up to be anything in anything out (AMS mode). Very few set their repeaters up as fixed digital in and fixed digital out. Doing this had the potential to alienate club members which is why most of the digital only repeaters are individually owned or have been assigned new repeater frequencies.

Yaesu realized that allowing the repeater to be set to fixed analog in and fixed analog out was not going to sell many new Fusion radios. So they have made it a little more difficult to do that with the new DR-2X repeater. I won't discuss that any further here.

One final final note. If you have a Fusion radio PLEASE make sure the firmware in your radio is current. Your instruction manual will tell you how to check the firmware level. You can go to Yaesu dot com to see what the current firmware level is for all of their Fusion radios and download the new firmware and instructions there.

One very important point to remember with linked digital systems. Do not tail end the previous transmission. Wait a second or two before you key up and begin to transmit. These repeaters are linked via the internet and there is a certain amount of latency encountered during operation. This applies to both Fusion and DMR.

Links for Kansas Hams!

ARRL	http://www.arrl.org
Kansas Section Pages and KAR's	http://ksarrl.org/
ARRL Midwest Director's Newsletter	http://www.arrlmidwest.org/newsletter/newsletter.pdf
Kansas ARES Pages	http://ksarrl.org/ares
Kansas QSO Party	http://ksqsoparty.org
Newton ARC	http://www.newtonarc.org
Wichita ARC	http://www.warc1.org
Ensor Museum	http://www.ensorparkandmuseum.org/
S. A. T. E. R. N.	http://www.SATERN.salvationarmy.us
ARRL KS Section News Page	http://www.arrl.org/Groups/view/kansas
Wheat State Wireless Association	https://www.facebook.com/groups/WSOWA/
Sand Hills Amateur Radio Club, Inc	http://www.SandhillsARC.com
Jarbalo Amateur Radio Association	http://jara.signaleer.us

Kansas Traffic Net Schedule

UPDATED September 5, 2017 22:37				
Days	Time	Mgr	Freq	Net Name
M, W, F	6:45AM	KB0PPQ	3920 KHz	Kansas Phone Net
Daily	7:00AM	WB0YWZ	3920 KHz	Kansas AM Weather Net
Sat, Sun	8:00AM	KB0PPQ	3920 KHz	Kansas Phone Net
Mon -Fri	12:30PM	KE0DL	7253.5 KHz	Central States Traffic Net
Daily	6:00PM	WB0YWZ	3920 KHz	Kansas Weather Net
Daily	6:30PM	KB0PPQ	3920 KHz	Kansas Sideband Net
Daily	7:00PM	NB0Z	3547 KHz	QKS CW NTS Traffic Net
Mon	7:30PM	WD0ESF	3547 KHz	QKS SS CW Traffic Net
Daily	10:00PM	NB0Z	3547 KHz	QKS CW NTS Traffic Net



S.A.T.E.R.N.

Salvation Army Team Emergency Radio Network

Latest W MO/KS Newsletter

<http://ksarri.org/satern>

Kansas Sideband Net Time Change

Because of poor band conditions the Kansas Sideband Net will temporarily move to 5:30PM Central time starting Wednesday November 15. Frequency is still 3920 kHz.

The Weather Net follows when the Sideband net wraps up.

As soon as things improve we'll go back to the regular time.

73,
Ron Cowan, KB0DTI
kb0dti@arri.org

Kansas Ham Couple Celebrate 50yrs Together

Rod (KØEQH) and Evelyn (WBØQYA) Hogg of Scott City, celebrated their 50th wedding anniversary Dec 10. They were married Dec 10, 1967 in Salina, KS

Following their marriage, the couple moved to Garden City. They purchased the Radio Shack and moved to Scott City in 1990.

ARRL Midwest Director Roderick K. Blocksome KØDAS

The ARRL Midwest Division December 2017 Newsletter is now available on the Division's Web page. Here's the direct link:

<http://www.arrlmidwest.org/newsletter/newsletter.pdf>

This link always takes you to the current month's newsletter. If this month's newsletter doesn't open, try refreshing the page or clearing your browser's cache, in case your browser is loading a copy of a previous newsletter. Previous newsletters are available at:

Highlights this month are:

Amateur Radio Growth

Volunteer Examiners in the Midwest Division

The ARRL International Grid Chase

The Mississippi Valley DX/Contest Club Announces 2018 Officers

Poole, Nebraska: the Midway Amateur Radio Club NE150 Hams Project

Emcom 1 Now Ready for First Event

Davenport, Iowa Hamfest Photo

2017 Frankenstein W00 Funexpedition

St. Louis QRP Society Field Day

Midwest Division Special Event Stations

Midwest Division ARRL Hamfests & Conventions

Thanks and 73's,

Roderick K Blocksome, KØDAS

k0das@arrl.org



Go to >> <http://ksarrl.org/> and click on >>>>>>>>>>

Supporting Our Veterans - Honorably Discharged
*S*M*A*R*T - Special Military Active Recreational Traveling*

KCONDG Sherwin

or SARG; EX-K102 1960 to 1987

or TOP, 1SG ; Army USAR, Retired 1951 to 1987 --- final discharge 1994

God Bless those who have served this great country AMERICA
Proud Military Veteran

SEEING THE COUNTRY WE DEFEND
SHERWIN & DOROTHY STIELOW



ARES – Amateur Radio Emergency Service

Complete list of ECs and a printable State ARES map <http://ksarrl.org/ares/>



<http://ksarrl.org/ares/alphaks.php/>

<http://ksarrl.org/distks.php>

AMATEUR RADIO EMERGENCY SERVICE

MONTHLY EC REPORT

◆ Zone 4A – Brian KCØBS

NOVEMBER 2017 MONTHLY ARES REPORT TO DEC & SEC

Total of ACTIVE ARES members: 150 +0

Local Net Name: Johnson County ARES

Emergency Coordinator = Brian Short KCØBS 913-638-7373

Alternate Emergency Coordinator, Recruiting = Jim Andera KØNK 913-884-6613

Assistant Emergency Coordinators:

Herb Fiddick - ECS Liaison

George McCarville WBØCNK - Training, Drills

Matt May KC4WCG - IDs, MECC

Bill Gery KA2FNK - Recruiting, Technology

Darren Martin NØMZW - Net Manager

Brad Kelsey KUØFAN - Membership

Jesse Gonzalez KEØECS - CERT

Chuck Simpson KCØNUG - Rapid Response

Jim Andera KØNK - KCHEART

NTS liaison is maintained with the KS SSB Net:

Jim Andera KØNK

Terry Reim WAØDTH

George McCarville WBØCNK

Jim Cordill KIØBK

Debbie Britain ABØUY

Rich Britain NØENO

Wretha Galeener KCØHHO

Net Sessions: 41

QNI: 322

QTC: 0

4 nets = 2 Meter Voice

4 nets = 2 Meter SATERN Voice

4 nets = CW

4 nets = 6 Meter

4 nets = 2 Meter Voice Simplex

4 nets = PSK 31 SATERN

4 nets = APRS Packet

4 nets = 70CM

5 nets = 1.25 Meter

4 nets = SATERN 80 meter SSB

Report prepared by:

Darren Martin N0MZW

Johnson County Kansas

◆ **Zone 6E – Rod KØEQH**

Kansas Zones 6A, E & G ARES Net report November 2017

Total Nets.....4

Total QNI.....23

Stations participating: NØOMC, NØKQX, NØOXQ, KGØVA, WBØQYA, KØEQH

The Zone 6A group and Sand Hills ARC will hold their annual Christmas dinner meeting December 16, 6:30PM at Ward's Cafe in Garden City....all are welcome.

Merry Christmas

Rod

KØEQH

NCS

Silent Keys

WAØEAF

Gary E. Mayfield, 86, of Marquette passed away Friday, November the 10th. Gary was born July 3rd, 1931 in Lincoln, NE to Arthur Washington Mayfield and Eva Fern (Beal) Mayfield. He grew up in Tecumseh, NE, where he graduated from High School. He married Mary Jane (Montz) Mayfield on December 26th, 1951. He served in the United States Navy during the Korean War. While Gary served in the Navy, he and Mary Jane had two children Ruth Ann Mayfield and James Arthur Mayfield.

After the war, he and Mary Jane returned to Nebraska where he graduated from Peru State College in Peru, NE. After graduation he embarked on a career of teaching and coaching in Aurora, NE. After teaching in Aurora, he accepted a coaching and teaching position in Derby, KS. In Derby he completed a master's degree in Education and School Administration at Wichita State University and he and Mary Jane had a third child, Gary Joseph Mayfield. His next teaching stop was at Haysville, KS.

His next position was as the K-12 principal at Burr Oak in north central Kansas. Following two years at Burr Oak he moved to another principal position at Hiawatha, KS, adding the responsibilities of schools at Hamlin, Fairview and Reserve Kansas.

After working in the Hiawatha school district Gary and his family moved to Marquette, KS, where he accepted the responsibilities of grade school principal, science teacher, and wrestling coach. Gary retired from USD 400 in 1991. After a year of retirement he returned to teaching for a year at Glasco High School in Glasco, KS.

Gary was a lifelong Scouter serving as a camp staff member at Philmont Scout Ranch in 1949 and attending the National Jamboree in 1950. As an adult he volunteered for duties as a Cub master in Derby, KS, and Scoutmaster at Burr Oak, Hiawatha, and Marquette, KS. He was honored with a Silver Beaver lifetime achievement award by the Quivira Council of the Boy Scouts of America.

He was also an active amateur radio operator, holding an extra class license with the call-sign WA0EAF. As an amateur he assisted in emergency communications events as well as having directed testing sessions for new amateur radio operators.

Gary was a member of the Marquette United Methodist Church and was active in the Marquette American Legion post 253, as well as a past member of the Marquette Lions Club.

Gary was preceded in death by his parents, Arthur and Fern, and beloved wife Mary Jane. He leaves behind Ruth Ann: daughter; James Arthur (Art):son ; Gary Joseph (Joe):son Terri Ann (Chase) Mayfield: daughter-in-law; Karen Renae Mayfield: granddaughter.

Graveside services will be held on November 18th, 2017 at 11:00 a.m. at the Marquette Community Cemetery along highway 4 north of Marquette. Pastor Jeff Graber will be officiating with music by Mr. Sam Piper. A luncheon will follow the service at the Marquette United Methodist Church.

Memorials will be donated to the Marquette High School Alumni Scholarship fund. Memorial contributions may be sent in care of Christians Funeral Home, 103 N. Washington, Lindsborg, KS 67456 <http://christiansfuneralhome.com/tribute/details/808/Gary-Mayfield/obituary.html#tribute-start>

KBØSHB

Stanley D. Weir, age 59, passed away Sunday, December 3, 2017.

Memorial Services, 10am, Friday, December 15, 2017, River of Life Church, Haysville.



Stanley was born on Wednesday, June 25, 1958 in San Jose, CA to his parents, Robert and Doreen (Elrich) Weir.

Preceded by Robert and Doreen (Elrich) Weir. Survivors: children, Eugene Weir, Staci Terry (KD0IUO), all of Haysville, Steven Weir (KB0SZJ) of Wichita; sisters, Leila Weir, Cathie Newell; 2 grandchildren.

Memorial: ALS Association, 3450 N. Rock Rd, Suite 211, Wichita, KS 67226.

Webb-Shinkle Mortuary, Clearwater.

Inurnment: Kansas Veterans Cemetery, Winfield, Kansas
<http://www.wsmortuary.com/obituaries/1-obituaries/622-weir-stanley.html>



Wishing you all a very Merry Christmas and a healthy New Year!

73,
Kent S,
KAR Ed.

KAR

kb0rwi@arrl.net

The **K**ansas **A**mateur **R**adio

kb0rwi@arrl.net

KAR