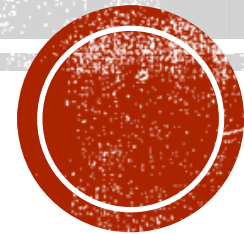


# HOW ABOUT A SMARC DIGITAL REPEATER?



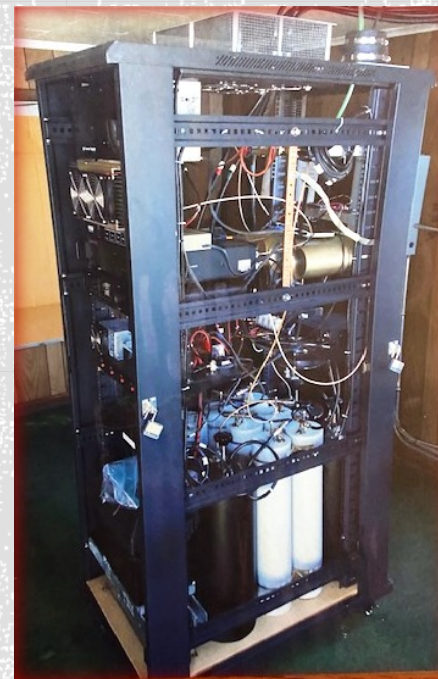
**YAESU SYSTEM FUSION**

# Smoky Mountain Amateur Radio Club

SMARC today supports a VHF analog repeater (W4OLB) located at Alcoa Reservoir Hill

- **Up-to-date**
- **Professionally built**
- **Back-up power (Batt. & Genr.)**
- **Back-up antenna system**
- **Excellent coverage**
- **No on-going monthly cost**
- **Routine maintenance as req'd**
- **Total investment: ~\$15,000**

**Repeaters  
make for  
Strong  
Amateur  
Radio Clubs**



# Club members come together to do a repeater building exterior update in 2020



Before



After

# SMARC MEMBER SUPPORT APPLAUDED

The Work Crew



Great  
Leadership



# **Bob Wilson had a Dream: KK4XA DMR Repeater is a Reality**

**A UHF analog/digital DMR repeater**

- **Privately Owned** (Minimum club support)
- **Co-located** with the W4OLB repeater
- **Powered:** Same DC system as W4OLB w/generator
- **Linked:** KK4XA and W4OLB repeaters
- **Linked** to the internet via Brandmeister
- **Latest:** Updated antenna for better in-building penetration paid for by some SMARC members via a special donation fund.
- **System Cost:** Primarily gifted by two club benefactors.
- **Total investment:** ~\$12,000

**KK4XA DMR  
CONNECTED W4OLB  
REPEATER TO THE  
WORLD**

- **Brandmeister**
- **TG 314742**
- **Via Hot Spots**
- **DMR Repeaters**



# So, why would we want to have another repeater?

## Technology Experimentation

### >> THE FUN IS TRYING NEW THINGS <<

- **Yaesu Fusion Repeater to Support Automatic Mode Selection (AMS), offering:**
  - Analog (FM)
  - C4FM Fusion Wideband Digital Voice
  - C4FM Fusion Narrowband Digital Voice
  - Fusion Video
  - GPS Location
- **Special “cross-mode” capability built in**
  - Fusion Digital <> Analog FM
- **Demand Link w/W4OLB VHF and KK4XA DMR?**

## **PHASED SETUP W/IMPROVEMENTS PHASED**

**Phase 1:** Initial testing and setup

**Phase 2:**  
Find/Move to better/final site

**Future:** To be determined based on member desires



# The Questions:

**Where to locate? Who would use it?**

**What would this cost?**

- **Co-locating with the W4OLB repeater not feasible?**
  - > Possible locations have been identified
  - > A free site with no monthly cost would be best
  - > Initially, possibly at someone's home
- **Why UHF?**
  - > No VHF availability
  - > UHF Provides best in-building coverage
- **Stand-alone Yaesu Fusion/analog repeater**
  - > AMS Mode: Analog and Fusion digital (narrow & wide)
  - > As noted, lots of unique capabilities
- **Total anticipated investment: ~\$11,000 - \$12,000**

**WHERE COULD WE GO FROM HERE?**

1<sup>st</sup>: Is there interest?

2<sup>nd</sup>: How do we pay for it?

3<sup>rd</sup>: How quickly?

4<sup>th</sup>: What's next?



# Yaesu has a special going for their Fusion Repeater, Saving \$900

**Must move quick & apply by May 30<sup>th</sup>**

- **Yaesu Direct Purchase**, a DR-2X by the Club
  - > Special Deal Cost: \$700 vs. \$1600 if purchased per terms
  - > Need a frequency pair assigned and be ready to move
  - > Temporary site until a final site can be found
  - > Repeater must be operational for at least a year
- **Phase 1** - Stand-alone UHF digital/analog repeater
  - >>> **Get FUSION repeater on the air! \$4,000**<<<
  - > Phase 1: Benefactors' matching fund
  - > Club funding needs a vote to approve (TBD)
  - > Location: Someone's home temporarily
  - > Gateway radio to W4OLB/KK4XA repeaters
- **Phase 2** – Move repeater to final site (TBD)
  - > Final new antenna system and filtering improvements
  - > May already have an antenna (would reduce estimate)
  - > Estimated Ph. 2 Cost: \$7,000 - \$8,500 (Features TBD)
  - > Fund raising will be required to make this happen

## HOW QUICK CAN IT HAPPEN?

Two Phases with  
Phase 1 estimate:  
**\$4,000**

More Planning for  
Phase 2  
(to determine cost)



# The Big Question:

**Does SMARC  
want to support  
a Yaesu Fusion  
digital repeater?**

Thank you,

- Dave, N9KMY
- Bob, KK4XA
- Bob, K9JU
- Ed, K4EDD
- Kurt, KC4NX

## **IF YES, NEXT STEPS**

- 1. Motion to move forward, 2<sup>nd</sup>, discussion and if majority vote yes, we move forward.**
- 2. Benefactors have offered SEED MONEY**
- 3. Possible funding from club treasury TBD - Need a Motion!**
- 4. Place request/order by May 30th.**
- 5. Temporary first location for repeater.**
- 6. Find a final location and determine costs.**
- 7. As funds allow, move to final location for better coverage.**

