2020 New Mexico TechFest

Welcome.
Wireless Internet

• Connect to “NVVM”
We Thank our Prize Donors!

- American Radio Relay League (ARRL) – Gift certificates
- Anonymous – SMD solder hot air rework station
- ARRL Section Manager Bill Mader K8TE – ARRL books
- Easy Way Ham Books – Books
- Ed James KA8JMW – NanoVNA, Intel Gallileo single board computers
- John Klem AA5PR – USB GPIO device
- Larry Goga AE5CZ – NanoVNA calibration boards
- Mark Lewis N0IO – 2.4 GHz microwave transverter kit
- MFJ Enterprises – Antennas, etc.
- Tuscon Amateur Packet Radio (TAPR) – 30 meter WSPR transmitter
Prize Drawing Policy

- At least one drawing after each presentation
- Regular prizes: BLUE ticket goes into common bucket
- Major prize: YELLOW ticket can be placed into a bucket of the prize you are most interested in; will be drawn at end of TechFest
- Must be present at time of drawing to win its prize
- Winning tickets not returned to hoppers
Snacks
Cell Phones

• Please silence yours
• Please exit the room to take or make phone calls
TechFest Post-Its
Agenda Overview

• 9:00-9:50am
  Basic PC Interfaces for Homebrew Projects – John Klem AA5PR of Albuquerque, NM

• 10:00-10:50am
  Skytracker: Send a Party Balloon Around the World and Track It – Bill Brown WB8ELK of Madison, AL

• 11:00-11:50am
  Exploring the Millimeter Wave Bands: Design and Construction of 78 and 122 GHz Transverters – Mark Lewis N0IO of Grand Junction, CO
Agenda Overview (cont’d)

• 11:50-12:50pm
  Lunch and Technical demonstrations/posterboard presentations

• 1:00-1:50pm
  A Review of the NanoVNA – Larry Goga AE5CZ of Albuquerque, NM

• 2:00-2:50pm
  QMesh: A long-range, low-cost wireless mesh network for digital voice communications – Dan Fay KG5VBY of Albuquerque, NM

• 3:00-3:50pm
  3D Printing for Amateur Radio Applications – Jerry Boyd WB8WFK of Albuquerque, NM
Agenda Overview (cont’d)

• 3:50-4:15pm
  Final prize drawings, closing comments

• 4:15-5:00pm
  Technical demonstrations/posterboard presentations and Cleanup
Posterboard/Demonstration Introductions

• **Basic PC Interfaces for Homebrew Projects** – John Klem AA5PR of Albuquerque, NM

• **Implementing CaveNet, a Wireless Data Network for Cave Communications** – John T. M. Lyles K5PRO of Los Alamos, NM

• **Slotted Plane Antennas for Mobile Application** – Chris Hamilton AE5IT of Denver, Colorado
About Rocky Mountain Ham Radio (RMHR-NM)
RMHR-NM Background

We are...

- focused on novel and unique projects that benefit the amateur radio community
- 100% activity-based organization
- an ARRL-affiliated amateur radio club
- a registered New Mexico volunteer non-profit corporation
- a 501(c)(3) tax exempt public charity (EIN# 47-2014845)
- a dues-free organization
Recent Projects & Impact

- RMHAM Microwave Network
  - Sandia Crest → Cheyenne, Wyoming
- Partnered with Santa Fe ARES to establish microwave IP connectivity
- Albuquerque/Santa Fe area’s first amateur radio DMR repeater
  - Sandia Crest, 442.90 MHz, inked into RMHR’s multi-state DMR network
- Trailer-mounted Will-Burt 50-foot pneumatic locking mast
- Organizer of the annual New Mexico TechFest
- Host/sponsor of recent national events in Albuquerque: 2017 Central States VHF Society Conference and 2018 TAPR Digital Communications Conference
- D-STAR repeater administration and technical support to various clubs
- Fun on the air (ARRL Field Day, Sweepstakes, etc.)
RMHR Microwave Network

- Cheyenne, Wyoming ➔ Albuquerque, New Mexico
- Built on reliable 5-GHz COTS networking and microwave equipment
- Functions independently from the internet
- Facilitates repeater linking and any IP-based applications that are Part 97 compliant
- An infrastructure that helps partnering organizations create or expand capabilities
- Secure and monitored with network diagnostic tools 24x7x365
Recent Projects & Impact

RMHR Sponsored Microwave Wireless IP Class

Installation of Microwave link near Taos, NM
Recent Projects & Impact

RMHR sponsored New Mexico TechFest symposium

ARRL Field Day
Recent Projects & Impact

RMHR donation of Repeater to student members of TARA

Prep for June VHF Contest in southern Colorado
Want to Get Involved?

*Let’s chat.*
Nearby Lunch Choices

- Along Gibson Blvd to west
  - Starbucks
  - Twisters
  - Sonic
  - Blakes Lotaburger

- Along Louisiana Blvd to north
  - Coda Bakery (Vietnamese sub sandwiches)
  - Church’s Chicken
Afternoon Agenda

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Final Remarks

• Online evaluations will be emailed shortly

• Collaborate!

Want to get involved in Rocky Mountain Ham Radio? Let’s chat.