In Search of the Ultimate Portable HF Rig

Challenge: Monitor and send digital message traffic within the local area using NVIS technique (80m, 60M, 40m… 160?) in support of Alachua County emergency response operations with no external support up to 48 hours.

Why: Alachua County may need us to provide comms when internet and cell are not functioning. We are currently prepared to provide voice comms using VHF from designated shelter locations. This capability will allow us to assist in a more robust manner with less infrastructure from any location determined by the EOC at the time of the emergency. Having a small package allows the EMCOMM Operator to carry other necessary supplies such as food, water, and bedding.

Where to Begin?

Start big and work down?

Pros:
- EMP proof
- Works on most bands
- Lower cost

Cons:
- Huge power requirement
- Needs Soundcard and tuner
- Won't fit in my backpack

Where to Begin?

Start small and work up?

Pros:
- Portable
- Low power consumption
- Fits in my backpack

Cons:
- A bit on the pricy side
- Low watt output

Let's Unpack That Bag

Chameleon Antenna CHA HYBRID MICRO 60FT

In-Stock | Free Shipping!

Emergency Communications Portable 1.8-54 MHz Antenna Base with 60 Feet of Wire 100 Watts

HRO Discount Price: $249.95*

🛒 Buy It

*After Coupons & Promotions.

🐦 Tweet | f Share | 📌 Save | 🎁 Add To Wish List

Yaesu 818: Discontinued
Approx: $800, 6 Watts

PowerTraveller Mini G
Approx: $100, 12V, 44WH

Raspberry Pi
Approx: $100 & up
Hard to find, needs power converter

Digirig Mobile
★★★★★ (14 customer reviews)

$49.97

Digital modes interface for amateur r... interface and PTT control.

CAT Config | Logic Leve...

Default configuration – select for Yae... support

1 ∧∨ | Add to cart

SKU: DRMOB Category: Digirig

Tablet
Approx: $100 & up

Icom AH-705 Compact Antenna Tuners AH-705

Antenna Tuner, Automatic, Compact, 1.8-50 MHz, for Icom IC-705, Incl. 6.6 ft. Coaxial and Control Cables, DC Plug and Mounting Hdwr., Each

$379.99

Part Number: ICO-AH-705

★★★★★ (11)

1 ∧∨

In Stock (more than 10 available)

Estimated Ship Date: Today

📄 Documentation | 🖼 Multiple Images | 360° View

= approx. $1800

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Icom AH-705 Compact Antenna Tuners AH-705

Antenna Tuner, Automatic, Compact, 1.8-50 MHz, for Icom IC-705, Incl. 6.6 ft. Coaxial and Control Cables, DC Plug and Mounting Hdwr., Each
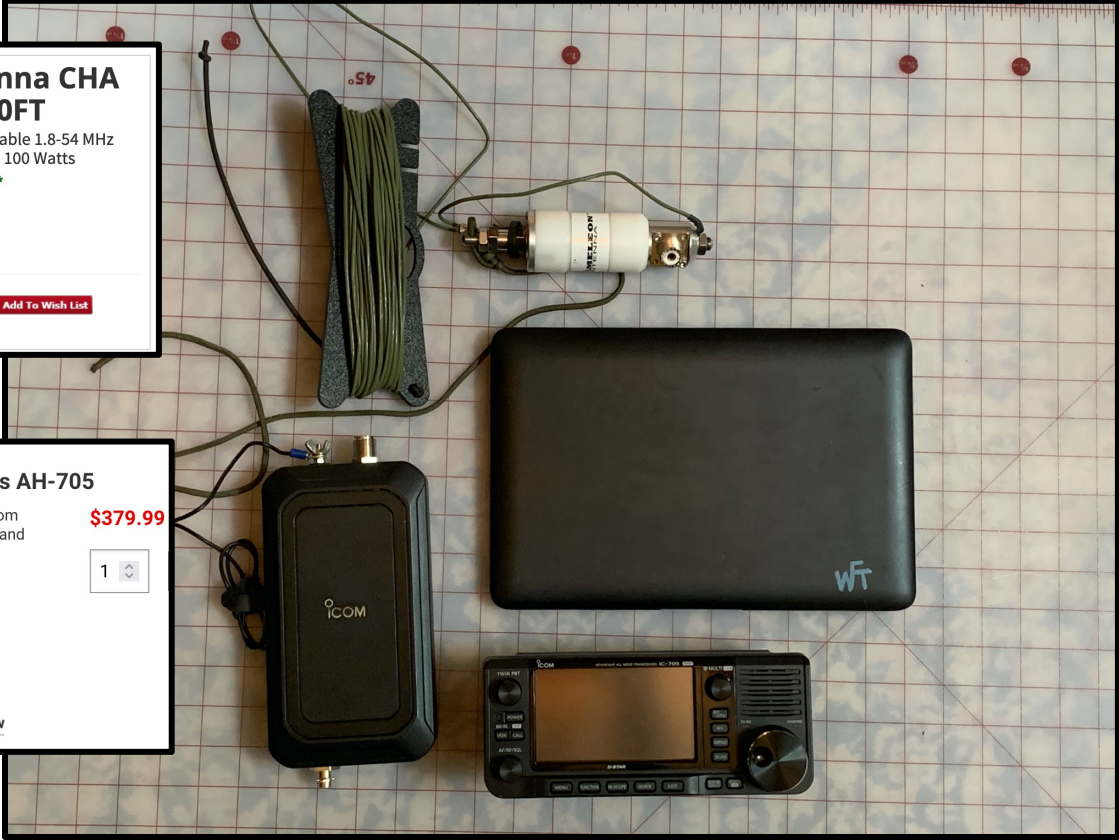
$379.99

Part Number: ICO-AH-705

★★★★★ (11)

In Stock (more than 10 available)

Estimated Ship Date: Today

📄 Documentation   🖼 Multiple Images   360° View

Evolve Computer:
Approx: $120

ICOM IC-705 HF/50/144/430 MHz All Mode Portable Transceiver IC-705

Transceiver, Portable, HF/50/144/430 MHz, All Mode, D-STAR DV, 4.3 in. Color Touch Screen, Bluetooth® and Wireless LAN, Each

$1,349.95

Part Number: ICO-IC-705

1   **Add To Cart**

= Approx $2000

Need Watts Out?

Now we have to ask why we didn't just buy an Icom 7200 (or Yaesu FT-991A)

Answer: Power consumption

= Approx $1040

RM ITALY MLA100 HF Amplifiers MLA100

Amplifier, 1.8-54 MHz, HF & 6m, 100W Output on HF Bands, 80W Output on 6m, Each

$759.99

Part Numb

★★★

LDG Electronics AT-100ProII Automatic Antenna Tuners AT-100PROII

Antenna Tuner, Automatic, Desktop, 160-6 meters, 1 to125W SSB/CW, 30W Digital, Two-Position Ant. Switch, 11-16 Vdc, 500 mA, Each

$279.99

Part Number: LDG-AT-100PROII

Is There A Homebrew Answer?

uBitx

https://www.hfsignals.com/index.php/ubitx-v6/

Approx: $200

Homebrew Guts
Homemade enclosure
Amp: 40W Goal
Tuner
Soundcard
https://qsl.net/nf4rc/2019/SmallBoxSoundCardInterfaceManual2.2.pdf
Polarity Protector
https://qsl.net/nf4rc/2021/ConstructionManual.pdf
Approx: $100

Tablet
Approx: $100 & up

Homebrew EFHW
Approx: $50

For approximately $500 we can build an HF radio w/ antenna that will put out 40W on the freqs we need for EMCOMM.

Way Ahead

We need a team!

This isn't going to be a class, it's figuring it out as we go. This project is beyond my technical capabilities. Gordon has graciously agreed to help with the technical design.

I have 2x uBitx and two tablets to donate to the project. I'll buy the electronic components; wire, toroids, resistors, etc.

I'm looking for a few folks who will work with me on this over the next few months to get a prototype together. Once we get it together, we can then have a Lunch-n-Lab to make enough for our VHF Go-boxes.

Email me at NH2KW@gmx.com