

REMOTE CONTROLLED

AMATEUR RADIO

(Internet Remote Base)

Topics

- Types of Internet Remote available
- What Is A Internet Remote Base
- How Are Hams Using Remote Bases
- Who Is The Control Operator
- Who Can Use A Internet Remote Base
- Current Remote Bases Open To Hams
- How Do You Operate A IRB
- What Equipment Do You Need
- LIVE DEMONSTRATION

Types of Internet Remote operation

- **Echolink** – able to connect to any one else in the World directly computer to computer or via a radio circuit
- **Local Remote** – Control your radio from a computer
- **Private Remote** – Using TRX manager control your home station over the internet
- **Public remote** – Access another Hams remote station

Echolink

EchoLink - G4ACU

File Edit Station Tools View Help



2,876 stations on nawest.echolink.org (15% are busy)

- Locations
 - Africa (5)
 - Asia (256)
 - Europe (637)
 - North America (1,683)
 - Aruba (2)
 - Bahamas (1)
 - Barbados (1)
 - Canada (220)
 - Dom. Republic (1)
 - Mexico (19)
 - Neth. Antilles (1)
 - United States (1,438)
 - All Areas (1,438)
 - Area 0 (129)
 - Area 1 (111)
 - Area 2 (136)
 - Area 3 (76)
 - Area 4 (229)
 - Area 5 (156)
 - Area 6 (211)
 - Area 7 (144)
 - Area 8 (123)
 - Area 9 (123)
 - Oceania (79)
 - South America (98)
- Node Types
 - Alarms
 - New
 - Favourites

Station	Location/Description
KH6JPL-R	Ewa Beach, Hawaii
KH6N-R	Shroyer
KJ6ZD-L	Vista, CA, [0/4]
KK6BS-L	In Conference KB5MKP
KK6KD-R	San Diego, Ca. *español*
KM6KW-R	www.Tagpuan.org
KN6OG-L	In Conference PP2CER-R
KO6I-R	Sequim (1)
KO6SY-L	Yucaipa -rx 147.645
KQ6YG-R	san lorenzo,ca. (1)
KU6V-R	San Francisco Bay Are [0/4]
N6BHU	Testing echoLinux
N6CPU-L	VenturaCA 145.755/127.3
N6CR-L	Alpharetta, No Georgia
N6DCR-R	Palm Springs, CA (1)
N6GMS	Anaheim
N6GMS-R	In Conference *CNARN*
N6HQ5	Ogden , Ut. Welcome (1)
N6ICW-R	Sacramento
N6JNB	Granada Hills
N6KMR-L	Alturas Ca. 146.52 open
N6KYD-L	Wrightwood Ca.
N6KYD-R	Simi Valley Ca.
N6LEX-L	central ca
N6MON-L	San Lorenzo,CA
N6OBY-R	In Conference *CARE_HUB*
N6OEI-R	San Diego County system
N6ODY-R	Norcal connects= (1)

Index View Explorer View

[Not in QSO]
Last connection:

Send

Ready

start

Presentation1

Phoenixremotbase

EchoLink - G4ACU

2:22 PM

File Edit Tools Display Windows Transceiver Parameters External ?

Monitoring

S-Meter

123456789 +20 +40 +60

326 µV S0 ALC

Receive / Transmit

1 4.2 1 2.0 0 14.212.00

AUTO USB 2.60 K 0.00 USB

TX VFO B HAM - 00:14

AT T

Att Pre

Ⓜ 📄

VFO

Split XFC QSX Disp

A 18.080.00 A=B

B 14.212.00 V>M

C 14.187.00 0

Dial

Fast

Dial

Esc

Mode

LSB PKT

USB FSK

CW WFM

AM REV

FM AUT

Filter

am

s_w

s_n

c_w

c_n

AF

KEY

Band

160 80

40 30

20 17

15 12

10a 10b

6 2

Ent MHz

Tuning

14.000 14.100 14.200 14.300 14.400 14.500

INC 500

DXCC [8R]

Guyana

Guyana [SA]

CallSign: 8R

Grid:

108° (307)

3924Mi GJ04

Short Long

STOP ?

Score

	160	80	40	30	20	17	15	12	10	6	2	70
P												
C												
D												
G												

Unworked Worked Confirmed

TS-2000

Forward: 52 W

Reflected: 0 W

VSWR: 1.12:1

SG-500

Forward: 427 W

Reflected: 35 W

VSWR: 1.58:1

Call with...

w7kw_host

Call Duration 19:31

What is an Internet Remote Base?

- Operate From Anywhere You Have Internet Access
 - All you need is a computer and a microphone
- Fully Operational Stations
..... Not Just Repeater Access
 - SSB, AM, FM, PSK 31, CW
 - 160M thru 23 cm
 - Enjoy RagChews, Nets, Contests, Chasing DX
- Provides the “Look and Feel” of Your Local Station
 - Control of Radio, Antenna Selection, Rotator Control, Amplifiers



IRBs around the world

- W7DXX - Keith



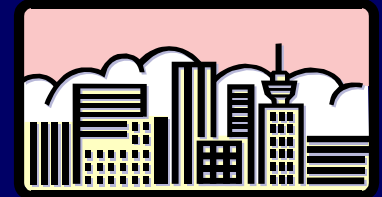
- W4MQ-Stan

Joint recipients of the ARRL Technical Innovation Award

How Are Hams Using the Internet Remote Bases?

- Overcoming a Restricted Location

- Condo, Apartment, Hotel, Assisted Living



- Overcoming Equipment Problems

- Continue Net Ops After Storm Damages Antenna
- Continue Scheduled Ops During House Move

- Optimizing Propagation

- Continue Skeds After Moving Across Country
- Work Europeans on 75 meters from the West Coast
- Foreign Hams Enjoying North America QSOs *Anytime*



Who Is the Control Operator?

- Each User Is Assigned A Unique Login And Password
- The Remote User Is The “Control Operator”
 - Has Full Control Over Transmissions – Freq, Mode, Power, Duration
 - The Internet Acts As a “Long Microphone Cord” Between The Control Operator and The Station
- The Remote Users Sign Their Own Callsigns
 - They Must Indicate That The Transmissions Are Actually Via The Internet Remote Base Stations
 - They Must Abide By The Callsign Requirements in the Reciprocal Agreements

Who Can Use an Internet Remote Base?

- Based on FCC Regulations
 - Any Licensed U.S. Ham
 - Limited to the Privileges of Their Own License
 - Any Foreign Amateur From a Country Having a Reciprocal Operating Agreement With the US
 - Limited to the Privileges of their Own License and the Reciprocal Agreement
- The Station Owner May Impose Other Restrictions
 - Limit Users Based On Station Objectives, e.g. Club
 - Station Unique Operational Guidelines

How Do You Operate an Internet Remote Base?

Station Control Interface

The screenshot shows the 'W4MQ - TS2000 Internet Remote Control' application window. The title bar includes the time '22:30 UTC' and the version '(Version 4.405a)'. The interface is divided into several sections:

- Frequency (kHz):** 7,264.700 (highlighted in yellow)
- LSB:** 3.0kHz
- Dipole:** 100W
- Signal:** A bar graph and 'S-8' indicator.
- Status:** Atten OFF, PreAmp ON, 7264.700 TX. A red message reads 'ROTOR IS WORKING AGAIN' and 'TURN MARQUEE OFF'.
- IF Band Pass:** 0.05kHz -- 3.00kHz
- Band:** 40m
- Controls:** ANT Tuner, Amp Avail, Tx Equ Off, Split Rx<->Tx, Monitor Off, CW Speed 20, Mic Gain 50, and a red 'Push to Talk' button.
- AGC:** Med-Slow
- Noise Red:** Off
- Notch:** Off
- Rx Equ:** H-Boost
- RIT:** Off
- RF Gain:** 100
- AF Gain:** 5
- Copyright:** 1999-2003 Stan Schretter, W4MQ, www.w4mq.com
- Session time remaining:** 977 minutes
- Bottom Bar:** 'In Use by W4MQ (Rx/Tx)', LOGOFF, ReStart Radio, START AUDIO, CLEAR NETMEETING DELAY.
- Footer:** Select Remote: W4MQ, Callsign: w4mq, Password: []

WebXCVR Windows Application
"Free" – Software Download

Audio Interface

The screenshot shows the 'NetMeeting - 1 Connection' window. The title bar includes the time '22:30 UTC' and the version '(Version 4.405a)'. The interface includes:

- Menu:** Call, View, Tools, Help.
- Call List:** A dropdown menu and a 'Call' button.
- Windows NetMeeting Logo:** A large logo in the center.
- Call Controls:** A 'Call' button, a 'Mute' button, and a 'Volume' slider.
- Name List:** A list of participants: Stan W4MQ and W4MQ RemoteBase.
- Bottom Bar:** 'In a call' status and a 'Call' button.

Microsoft NetMeeting
Skype
Echolink

How Do You Operate an Internet Remote Base?

Station Control Interface

S-Meter, Forward Power, SWR Updated Continuously

Mouse and/or Keyboard Commanding

Push-to-Talk Control

Standard "Radio" Interface for all Stations

Multiple Remote Bases Available

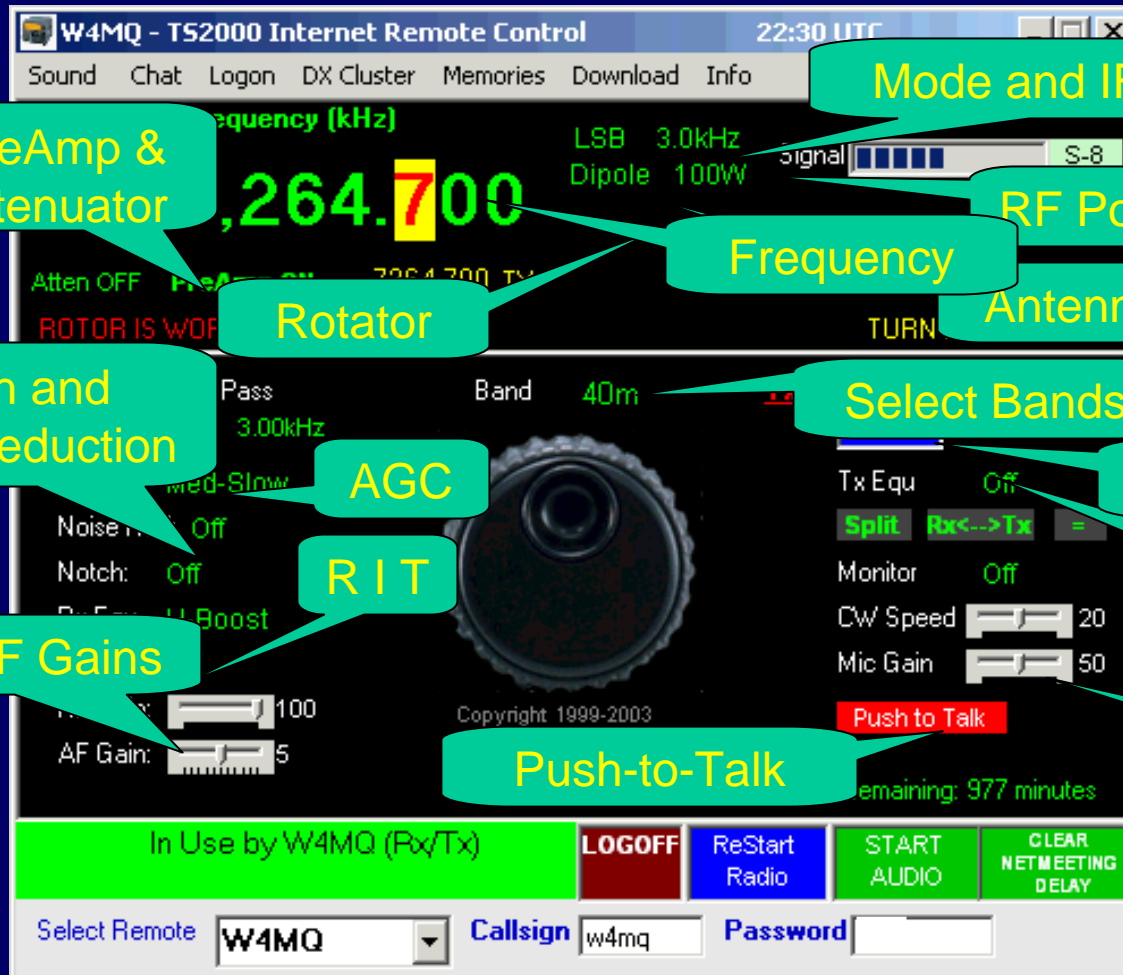
Unique User Login ID and Password

Audio Interface

Level Control for Rx and Tx Audio



What Can You Actually Control?



Mode and IF Filters

PreAmp & Attenuator

RF Power

Frequency

Antenna

Rotator

Select Bands

Notch and Noise Reduction

AGC

Antenna Tuner

Tx / Rx Equalization

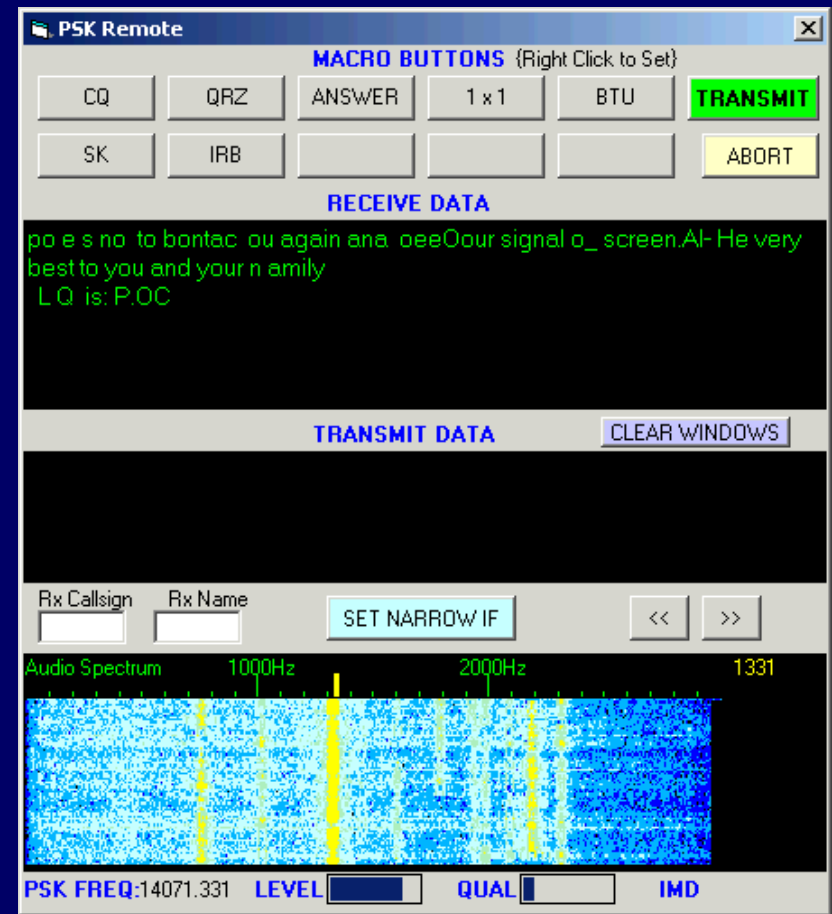
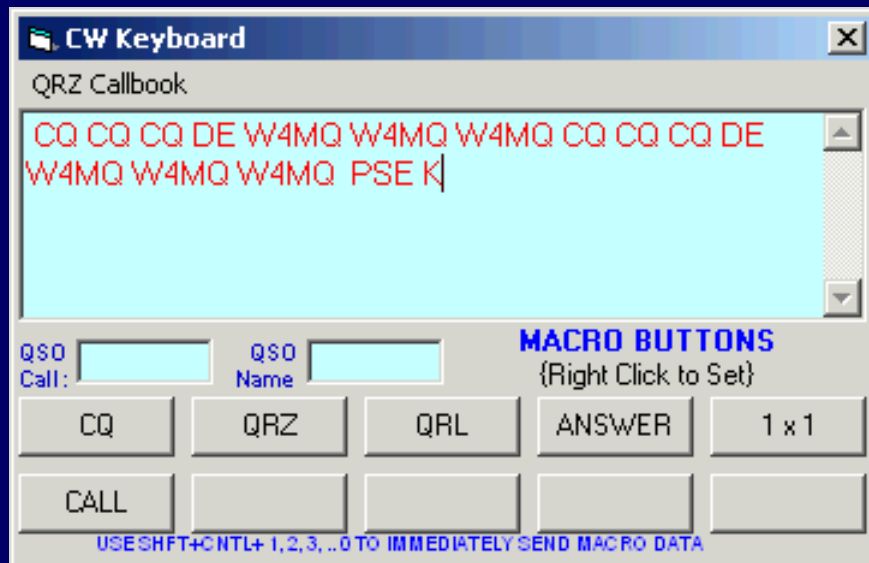
RIT

AF and RF Gains

Push-to-Talk

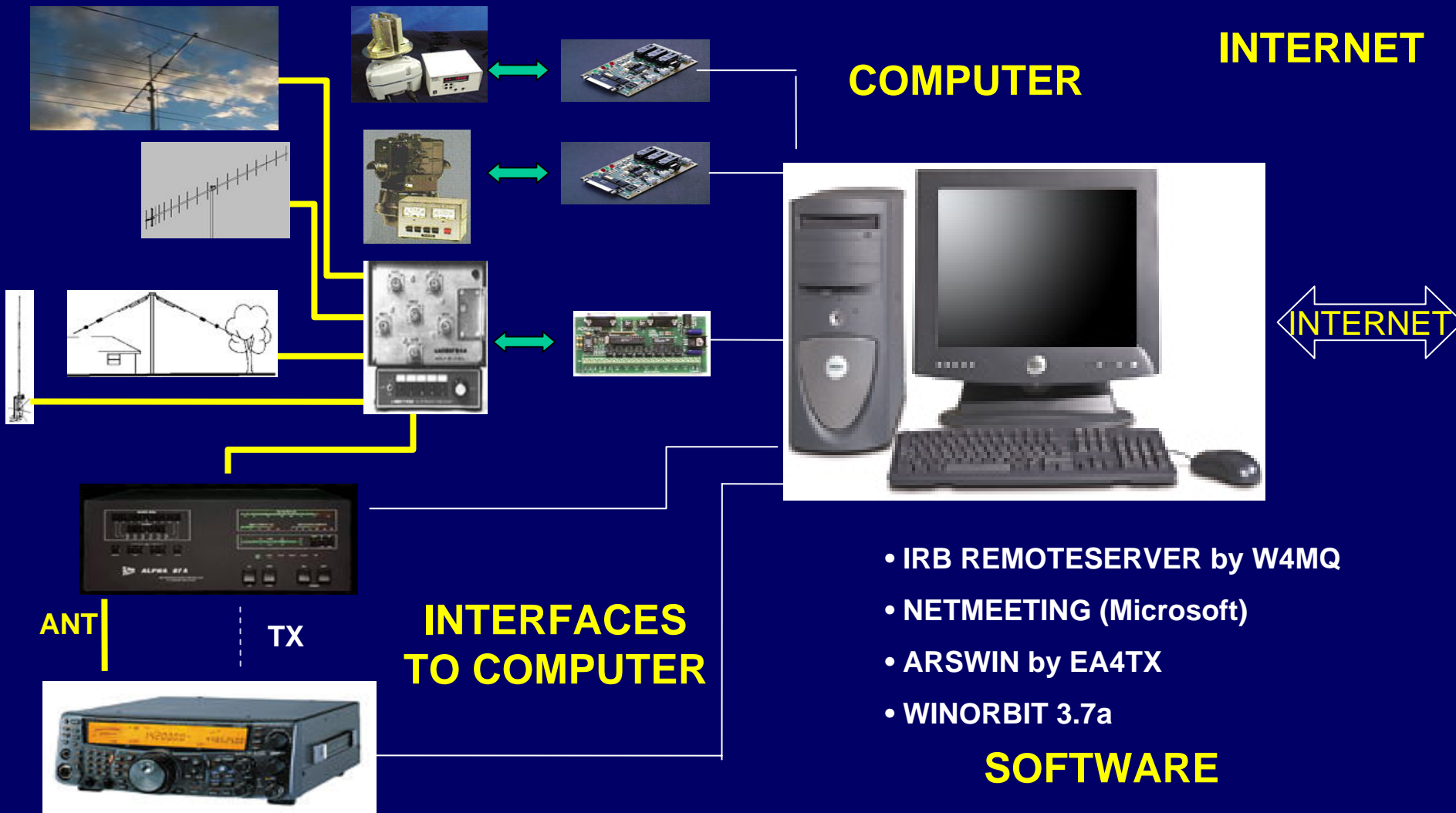
Mic Gain

In Addition to SSB/AM/FM the IRB supports CW and PSK31

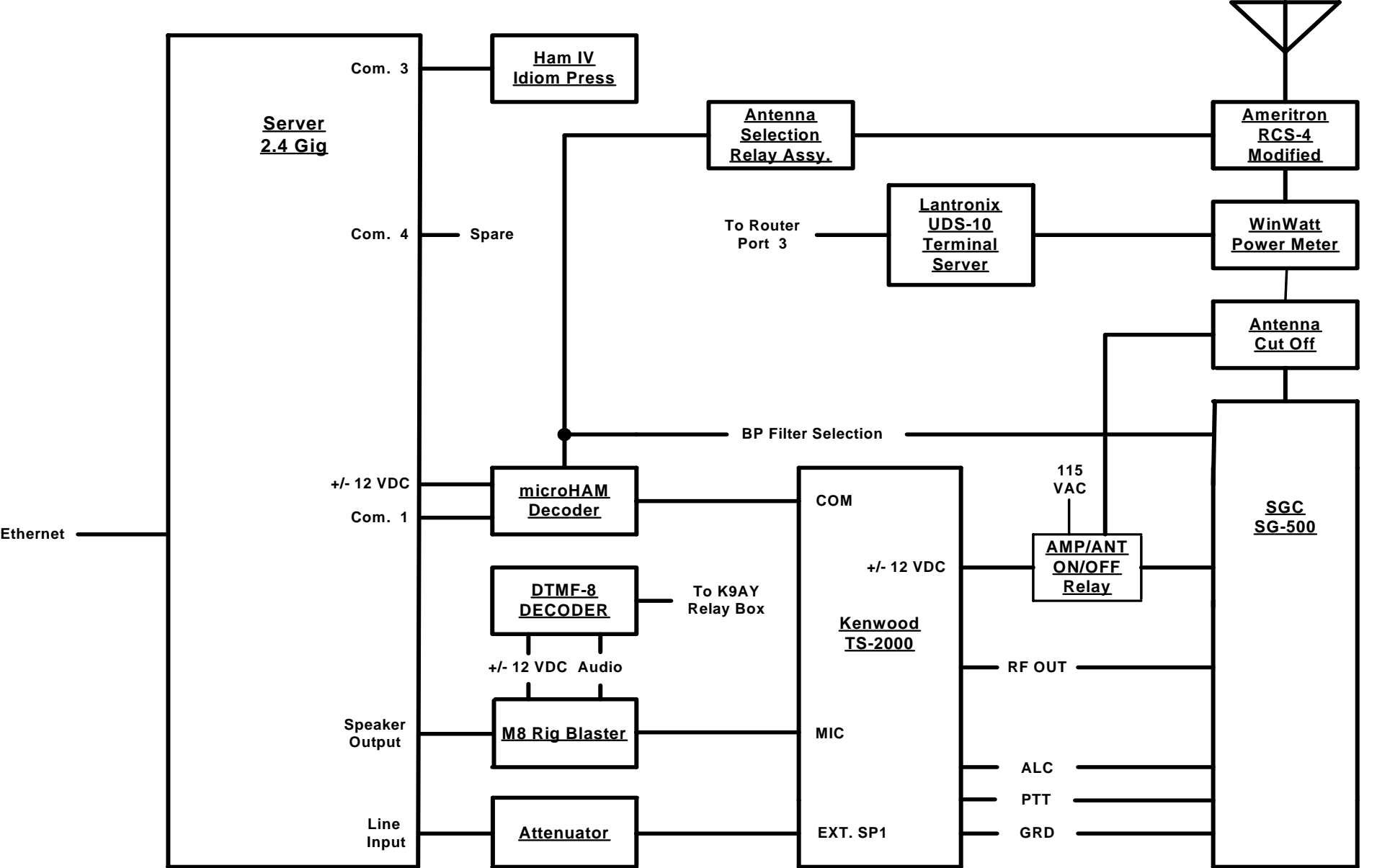


Recipe for the Remote Base

AN OPERATIONAL HAM STATION



And now for the
Tech Stuff



W7KW Remote Control Station Block Diagram - Host

For more Information

www.w4mq.com
Remoter Server Program

<http://www.trx-manager.com/>
TRX -Manager

Terry

W6KW@arrl.net

Terry

W6WTG@arrl.net

Stan

W4MQ@verizon.net