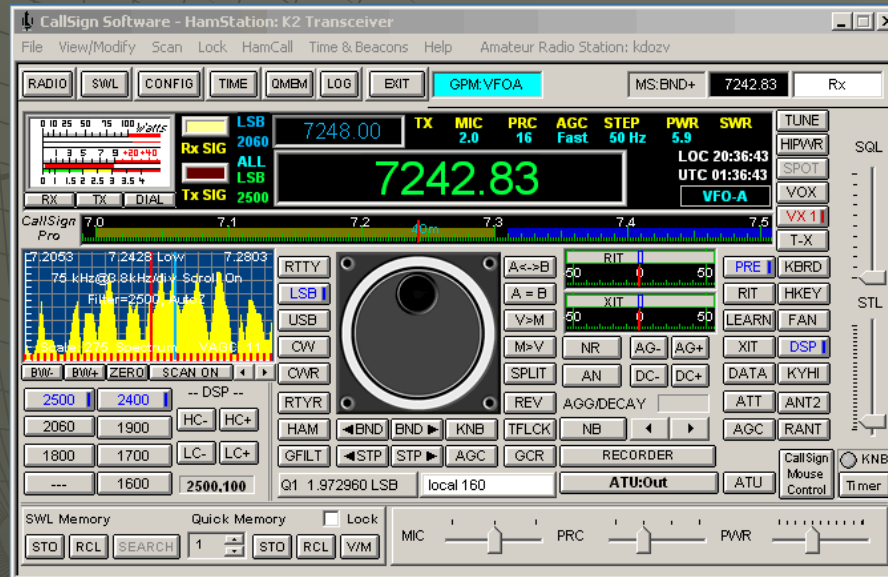


# GET ON THE AIR FROM ANYWHERE!



Jim Stefano – W2COP  
w2cop@arri.net

# How is this done?

## Remote Control Operation

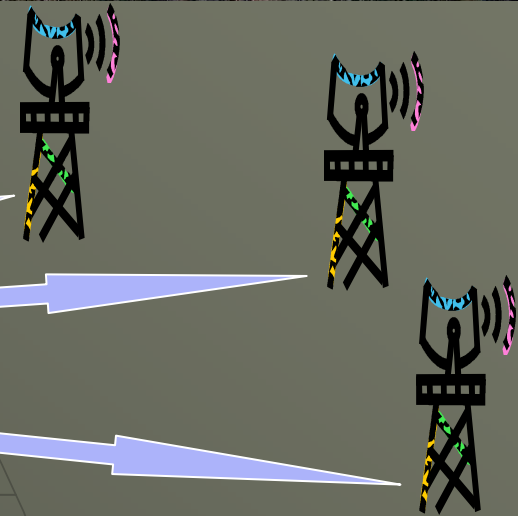
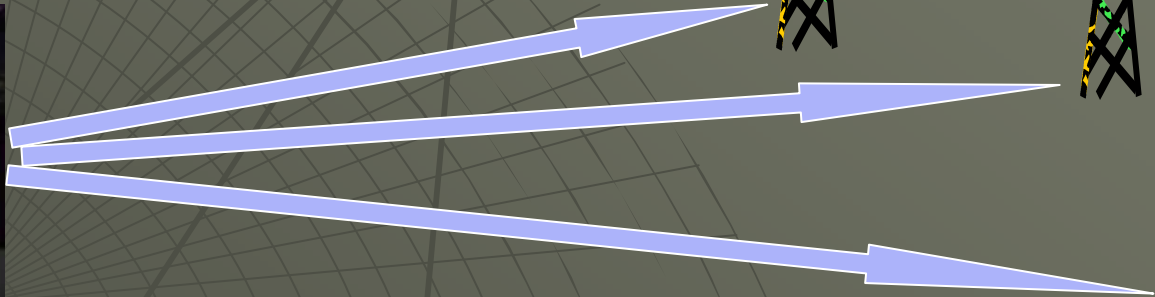
- ◆ *Remote control.* The ability of a control operator (you) to indirectly manipulate the operating adjustments in a station through a control link.
- ◆ Most common types of control links are Wired or Wireless, using
  - RF/Audio (tones or touchtone); or
  - IP/Digital (computer control); or
  - a combination of both.

# Who uses remotes?

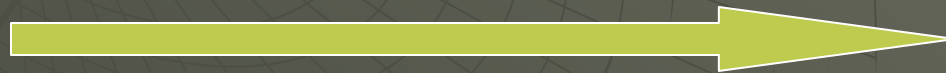
- ◆ Broadcast Stations



- ◆ Commercial/Public Safety



- ◆ Ham Radio Operators



# Why remote operation?

- ◆ Antenna Restrictions
  - Small Lot, Apartment, Condo, Townhouse, Homeowners Assn.
- ◆ Club Station
  - Inaccessible locations
  - No “tinkering” with physical connections
- ◆ Educational Demos
  - Easily move from location-location
  - No antennas on roof



# Why remote operation?

- ◆ Emergency Operations
  - National Hurricane Center relies IRLP and Echolink Vo/IP modes
- ◆ Mobile operations
  - Limited size vehicle
  - Most antennas -6db gain
  - Can't garage vehicle
  - Power usually limited
- ◆ No Radio?
  - Still work all bands
  - Still work all modes



# Where to use Remote Operation?

- ◆ Vacation or seasonal property, condo/apt.



- ◆ Home



- ◆ Portable



- ◆ Mobile

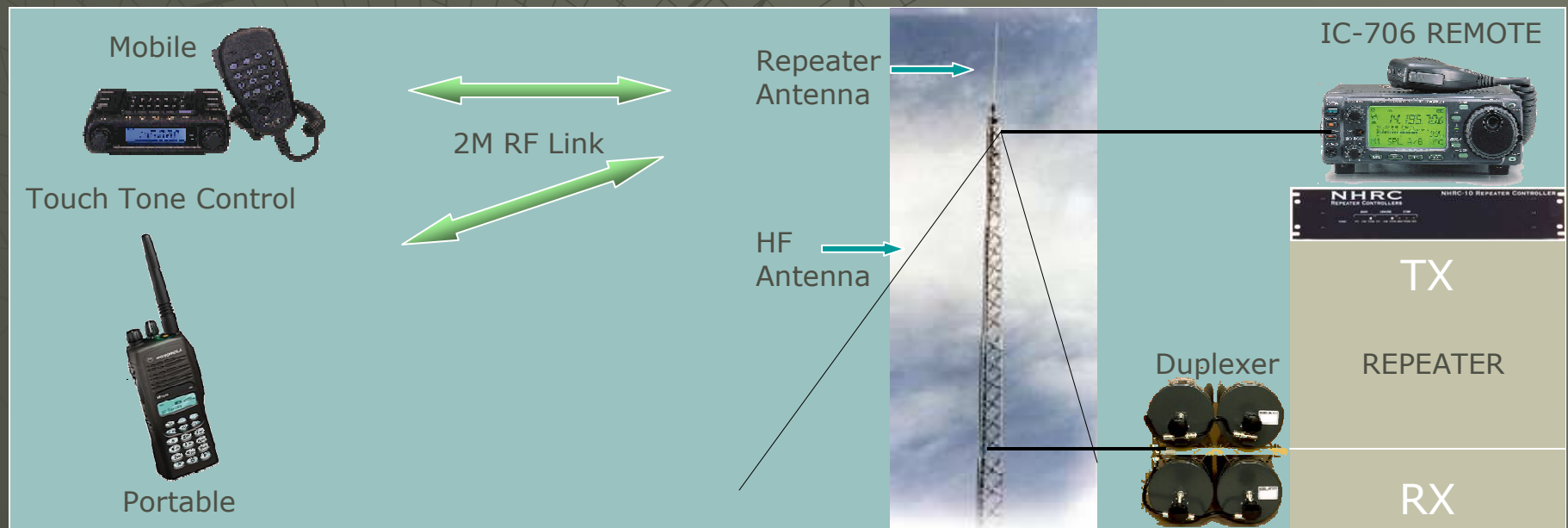


# What are the different method of Remote Operation?

- ◆ RADIO – RADIO via RF
- ◆ RADIO – RADIO via Internet
- ◆ PC – RADIO via Internet

# Radio - Radio via RF

- ◆ Mobile/Portable – Repeater Operation
- NHRC-10 RPTR Controller is Icom CI-V compatible
  - ◆ The 145.21-KB2CHM repeater in Churchville is interfaced to an NHRC-10 and ICOM IC-706MkII Transceiver



- Touch-tone control from any 2 meter radio will activate the IC-706 in Receive/Transceive, mode and freq. control.

# Radio - Radio via RF

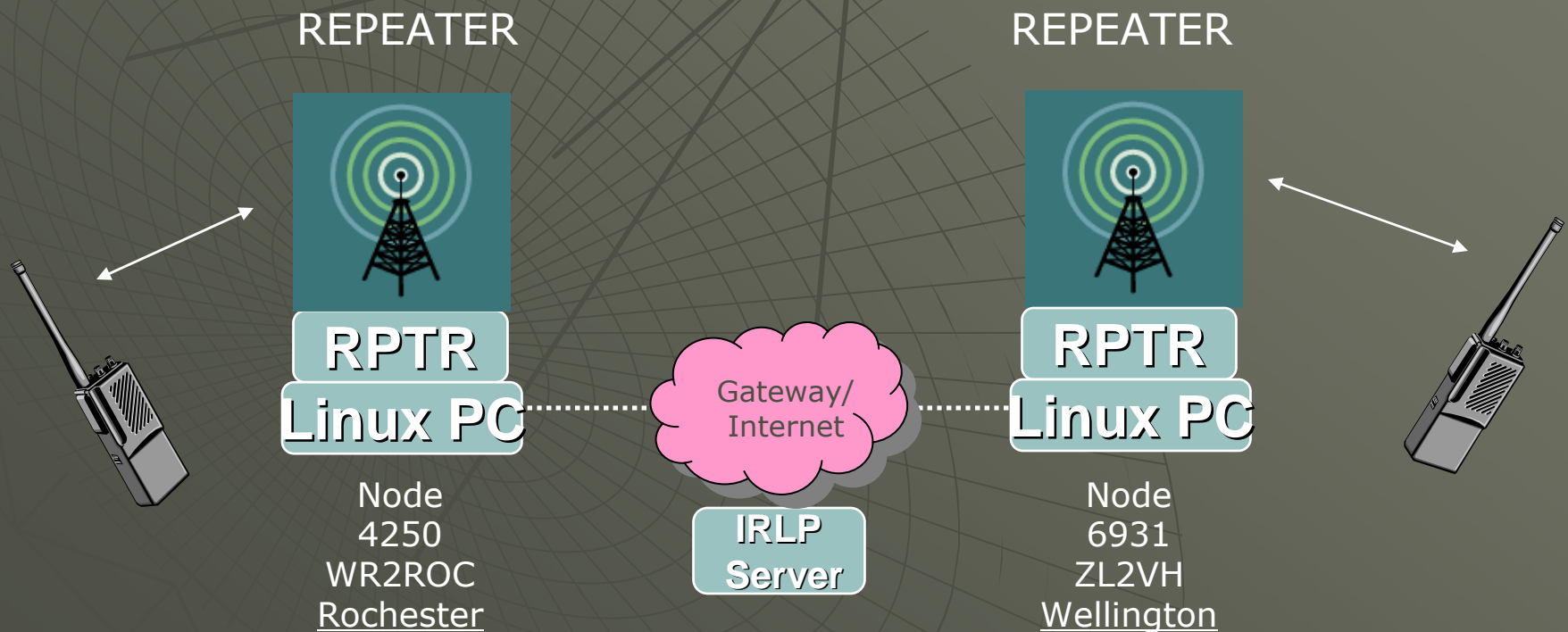
- ◆ Mobile/Portable – Repeater Operation

*Let's go on the AIR!*

# Radio - Radio via Internet

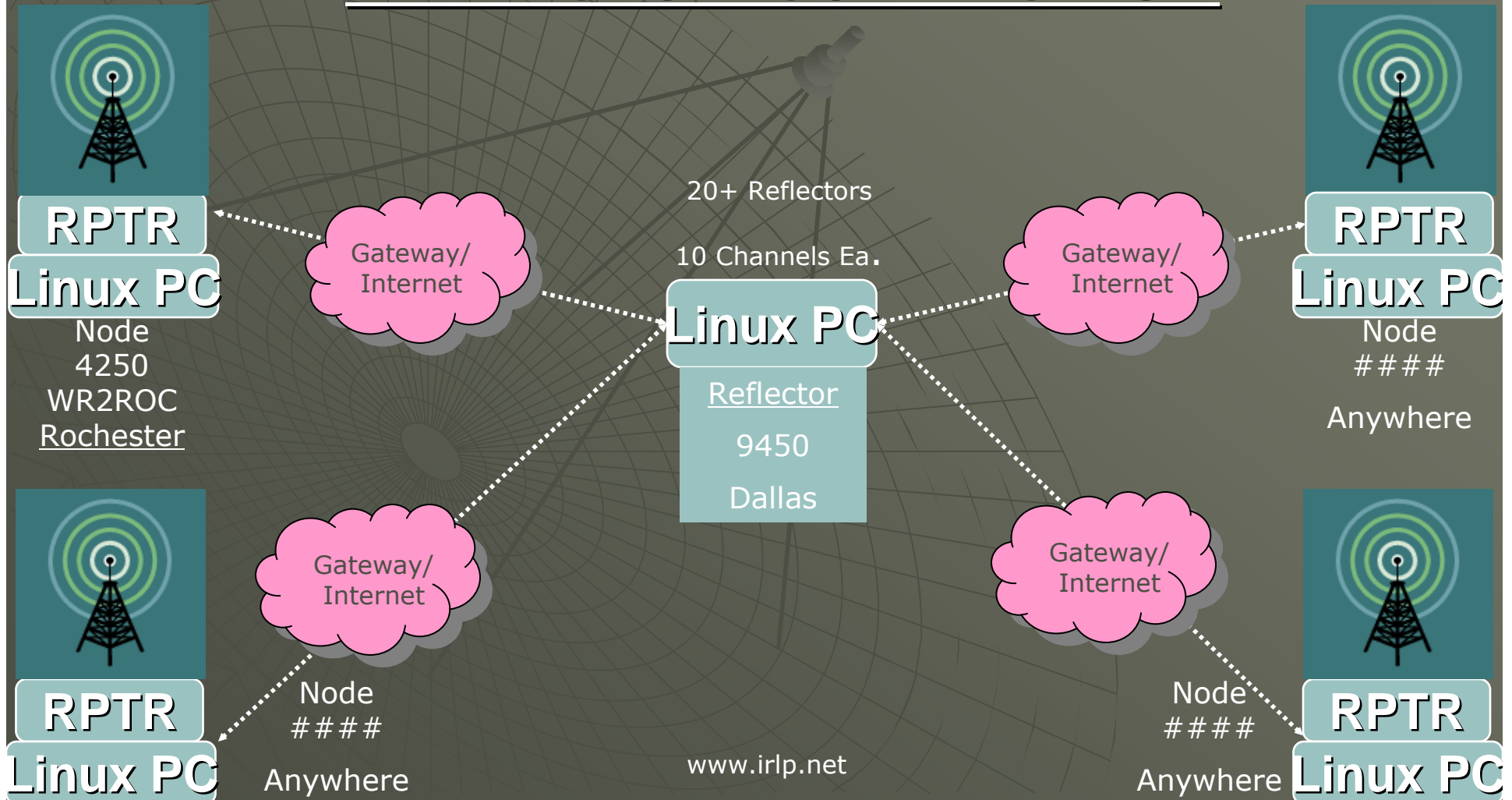
- ◆ IRLP – Internet Radio Linking Project

## DIRECT CONNECTION



# Radio - Radio via Internet

- ◆ IRLP – Internet Radio Linking Project  
REFLECTOR CONNECTION



# Radio - Radio via Internet

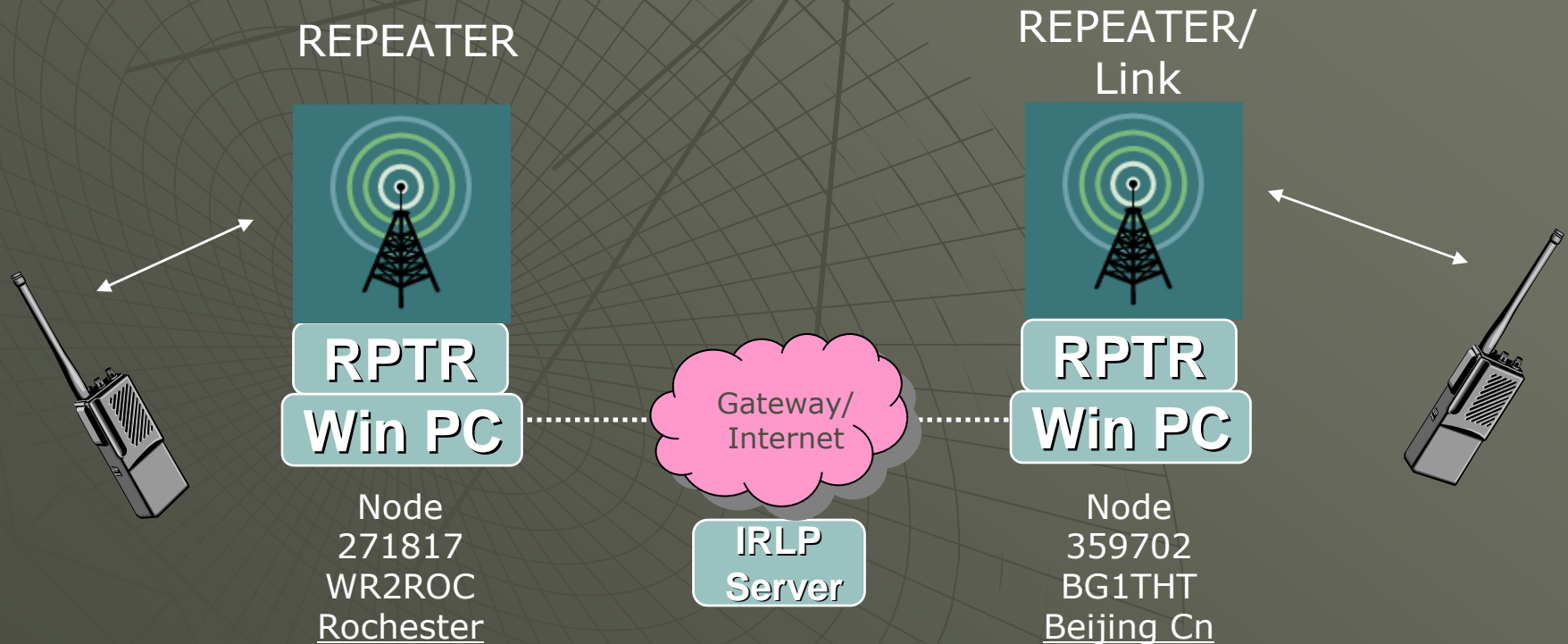
- ◆ IRLP – Internet Radio Linking Project

*Let's go on the AIR!*

# Radio - Radio via Internet

## ◆ ECHOLINK

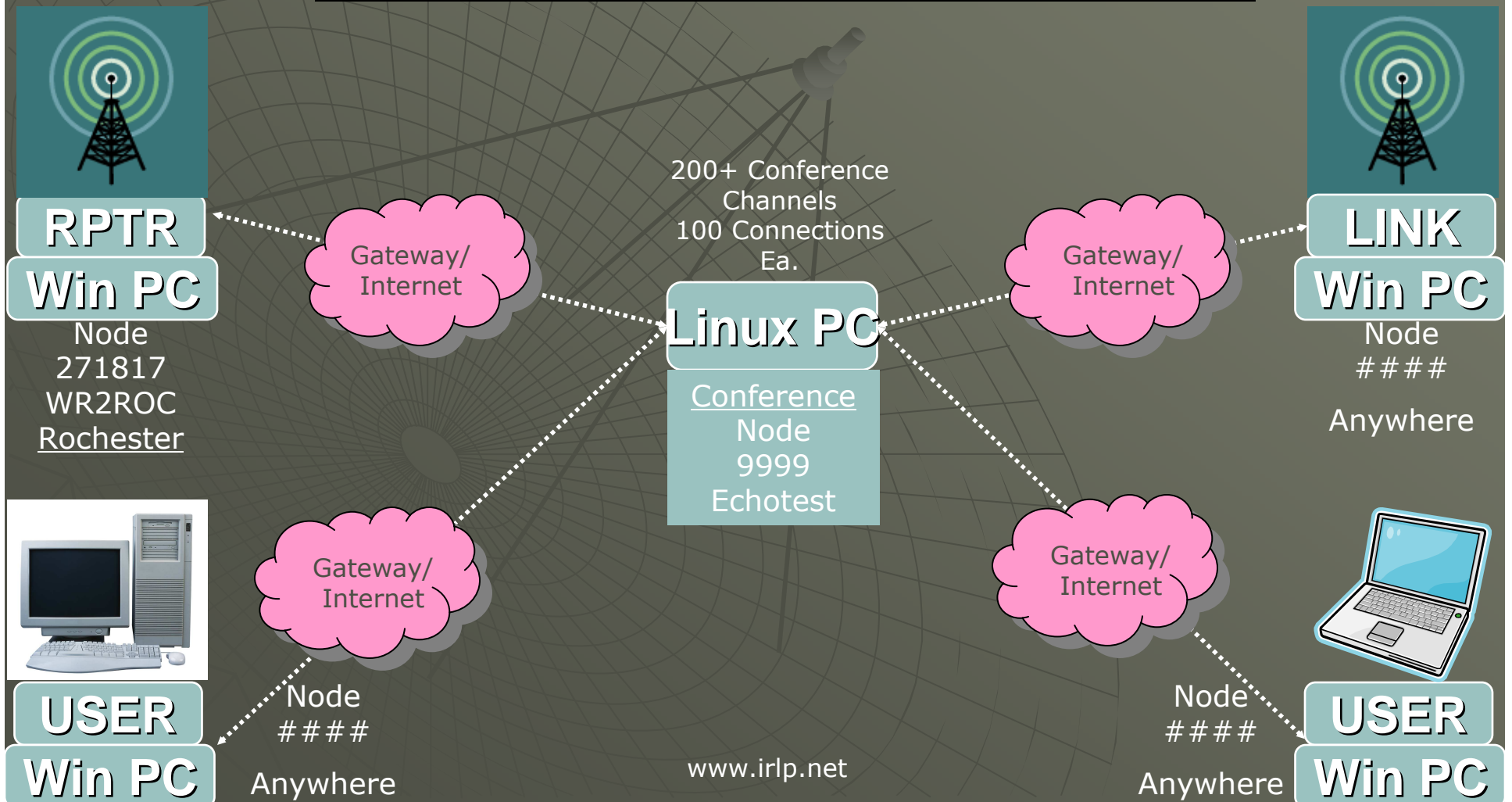
### DIRECT CONNECTION



# Radio - Radio via Internet

## ◆ ECHOLINK

### ◆ CONFERENCE CONNECTION



# Radio - Radio via Internet

- ◆ ECHOLINK

*Let's go on the AIR!*

# PC - Radio via Internet

## ◆ IRB – INTERNET REMOTE BASE

### W4MQ (Free) Remoting Software

#### PRIVATE / LIMITED ACCESS REMOTES

- ANY RADIO WITH A SERIAL CONTROL INTERFACE
- KENWOOD REMOTED FRONT PANELS
- KEY-BASED CW AND SWITCH PTT SUPPORTED
- PASSWORDS ONLY, NO FREQ CHECKING, ETC
- STATION DETAILS VISIBLE TO USERS
- EASY MENU-BASED CONFIGURATION
- COMMON HOST AND CLIENT SOFTWARE

#### PUBLIC REMOTES

- KENWOOD SPECIFIC
- GUARDED, CLOSED CONCEPT
- LOTS OF SECURITY, FREQ CHECKING, ETC
- STATION DETAILS HIDDEN FROM USERS
- FLEXIBLE HOST CONFIGURATION FILE
- DIFFERENT HOST AND CLIENT SOFTWARE

#### TOOLKIT FOR REMOTING ANY STATION VIA THE INTERNET



[DOWNLOAD](#) Beta v0.012

#### DOWNLOAD "WEBXCVR" CLIENT FOR "PUBLIC" STATIONS

(Version 6.000 and BETA 6.002)



REVIEW [TECHNICAL DOCUMENTATION](#)

#### HOST/SERVER SOFTWARE FOR PUBLIC STATIONS

(Version 6.002.005)

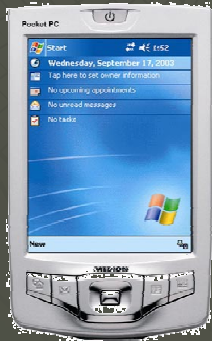
# PC - Radio via Internet

## ◆ IRB - CONFIGURATIONS

### Control OP SW



WEB  
Pocket PC



### VoIP SW



Skype

### Internet

Dial-up  
Cable  
DSL  
Wi-Fi  
Cellular  
(EVDO/HSDPA)



Remote  
Station

# PC - Radio via Internet

## ◆ IRB – WHAT YOU CAN CONTROL?

The screenshot displays the W4MQ - TS2000 Internet Remote Control interface. The window title is "W4MQ - TS2000 Internet Remote Control" and the time is 22:30 EDT. The interface includes a menu bar with "Sound", "Chat", "Logon", "DX Cluster", "Memories", "Download", and "Info". The main display area shows the frequency "264.700" in large green digits, with "LSB 3.0kHz" and "Dipole 100W" below it. A signal strength indicator is visible on the right. The interface is annotated with several callouts in red speech bubbles:

- PreAmp & Attenuator
- Mode and IF Filters
- RF Power
- Frequency
- Antenna
- Rotator
- Select Bands
- Antenna Tuner
- Tx / Rx Equalization
- Notch and Noise Reduction
- AGC
- RIT
- AF and RF Gains
- Push-to-Talk
- Mic Gain

The interface also features a "Push to Talk" button, a "LOGOFF" button, a "ReStart Radio" button, a "START AUDIO" button, and a "CLEAR MEETING DELAY" button. At the bottom, there is a "Select Remote" dropdown menu set to "W4MQ", a "Callsign" field with "w4mq", and a "Password" field.

# PC - Radio via Internet

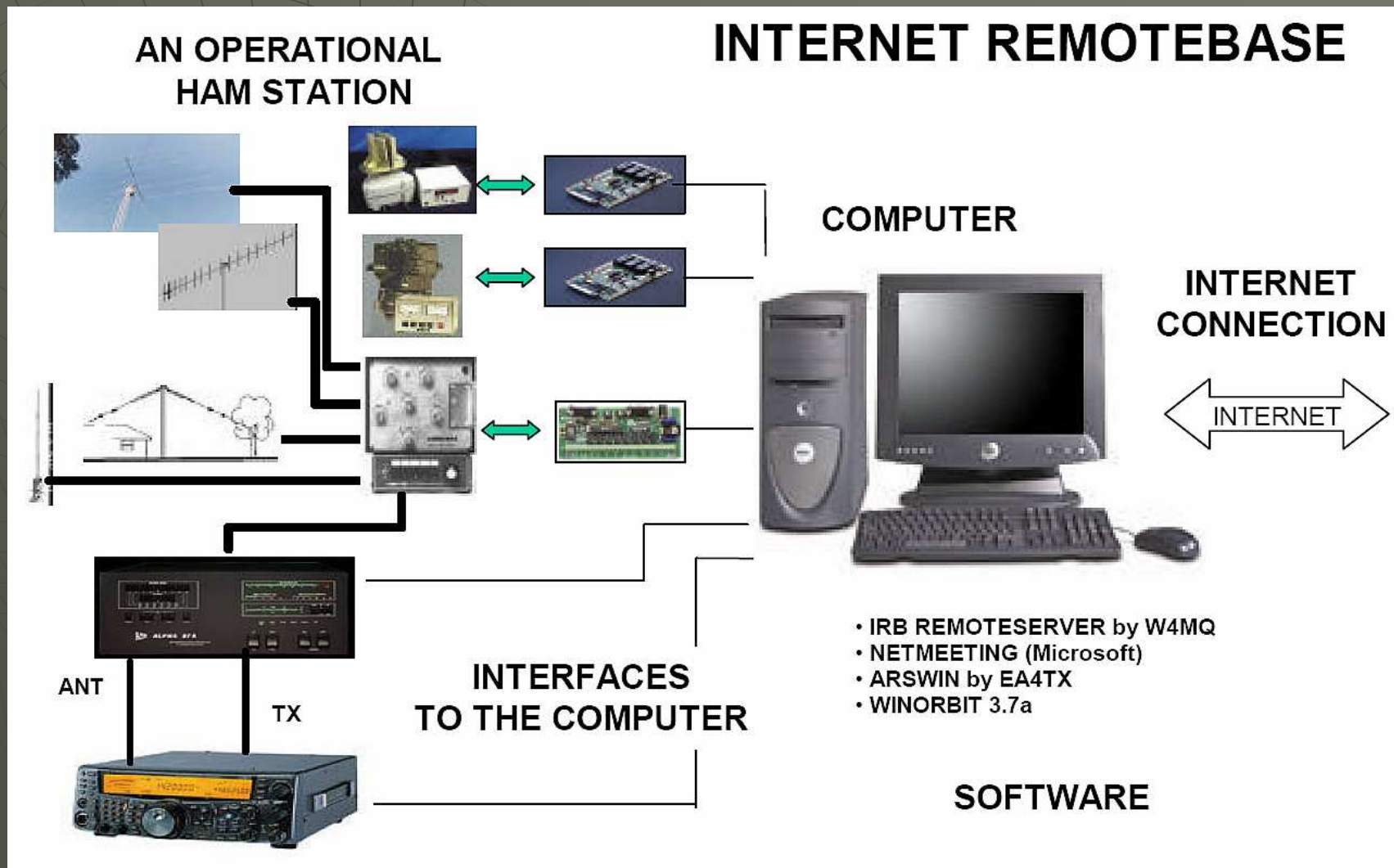
## ◆ IRB - FEATURES

The screenshot displays several software windows for remote radio control:

- CW Keyboard:** A window for sending Morse code characters. It includes a QRZ Callbook search, a list of macro buttons (CQ, QRZ, QRL, ANSWER, CALL), and a section for MyCall sign (W2COP) and Other Call.
- PSK Remote:** A window for PSK31 remote control. It features macro buttons (CQ, Answer CQ, QRZ, Exchange, BTU, TRANSMIT), a RECEIVE DATA section with a log of received messages, and a TRANSMIT DATA section with a log of sent messages. It also includes an audio spectrum display and PSK FREQ: 14071.755.
- W7DXX - TS2000 Internet Remote Control:** The main control interface. It shows the current frequency (3,925.000 kHz) and various control options like ATTN OFF, PREAMP ON, and VOX. It includes a large frequency knob, AGC, Noise Red, Notch, Rx Equ, and RIT sliders. The interface also shows the current band (80m), a TUNER ON button, and a Push to Talk button. The session time remaining is 119 minutes.
- DX Cluster:** A window for monitoring a DX cluster. It shows a list of stations with their call signs, names, and frequencies. The current station is W2COP de W4ML at 03-Jan 0349Z.

# PC - Radio via Internet

## ◆ IRB - HOST STATION



# PC - Radio via Internet

## ◆ IRB – HOST STATION

### • COMPATABLE HOST RADIOS

#### ◆ NATIVE TO IRB SOFTWARE

- Kenwood TS-2000
- Kenwood TS-480
- Kenwood TS-570

#### ◆ THIRD PARTY w/IRB SOFTWARE

- Use DxLab Commander Software Loaded on Host PC (avail. on the W4MQ website), which Supports:
  - ◆ Frequency control incl. Split
  - ◆ Mode (AM, USB, FM, CW)
  - ◆ PTT
  - ◆ S-Meter/RF Power Meter

# PC - Radio via Internet

## ◆ IRB – INTERNET REMOTE BASE

*Let's go on the AIR!*

[EA1URO](#)

[F4JRC](#)

[HB9AZT](#).....W2COP ON 10142 'Radio Hill' - Switzerland →

[HB9BF](#)

[HB9CXZ](#)

[HB9Z](#)

[KA3ODJ](#)

[KB6Q](#)

[KJ6R](#)

[KO6SY](#)

[OE1XHQ](#)

[OH2BYS](#)

[OH5BM](#)

[TI0RC](#)

[VA3RLP](#).....KA6RLP ON 147975

[VE7OGO](#)

[VK3BML](#)

[W4MQ](#).....KE5BWP ON 3913

[W6PJ](#)

[W7DXX](#)



# PC - Radio via Internet

## REFERENCES

- HF/VHF/UHF Remote demo'd on:
  - ◆ 145.210 Repeater N2EPO/KB2CHM Churchville
- IRLP [www.irlp.net](http://www.irlp.net) and Echolink [www.echolink.org](http://www.echolink.org) available on these repeaters:
  - ◆ 444.250/147.345 UofR and 444.550/146.655 Bristol Sites (PL110.9)
    - Note: Pre-access code required for IRLP on above Rptrs.
  - ◆ 146.790 Highland Hosp. and 147.075 RIT (EchoIRLP) (PL110.9)
  - ◆ 442.875 Attica and 443.750 Canadice N2HLT (EchoIRLP) (PL100.0)
  - ◆ 443.100 Churchville and 444.850 Greece (Echolink only) (PL110.9)
  - ◆ 145.290 Xerox, 146.880 and 443.900 RRRRA (Echolink PT) (PL110.9)
- IRB Internet Remote Base [www.w4mq.com](http://www.w4mq.com) Worldwide