Pakistan Amateur Radio Society
AGM 2013

PARS VHF/ UHF Experimental Repeaters

AP2AUM

Major activities carried out during 2012

AGM 2013

- VHF/UHF repeater expansion
- Echo Link establishment and Utilization
- DXpedition (HF operation)
- Lahore Chapter
- PARS training session 2012

AP2AUM

Basics Of a Repeater

- Receives a signal and re-transmits it, usually with higher power and from a better location, to provide a greater communications range.
- Located atop a tall building or high mountain, VHF and UHF repeaters greatly extend the operating range of amateurs using mobile and hand-held transceivers.
- If a repeater serves an area, it's not necessary for everyone to live on a hilltop. You only have to be able to hear the repeater's transmitter and reach the repeater's receiver with your transmitted signal.

Kabul
Malakand R3
Murree R1
Islamabad
Salt range R2
Lahore R4
Lahore
Punjab
Pakistan
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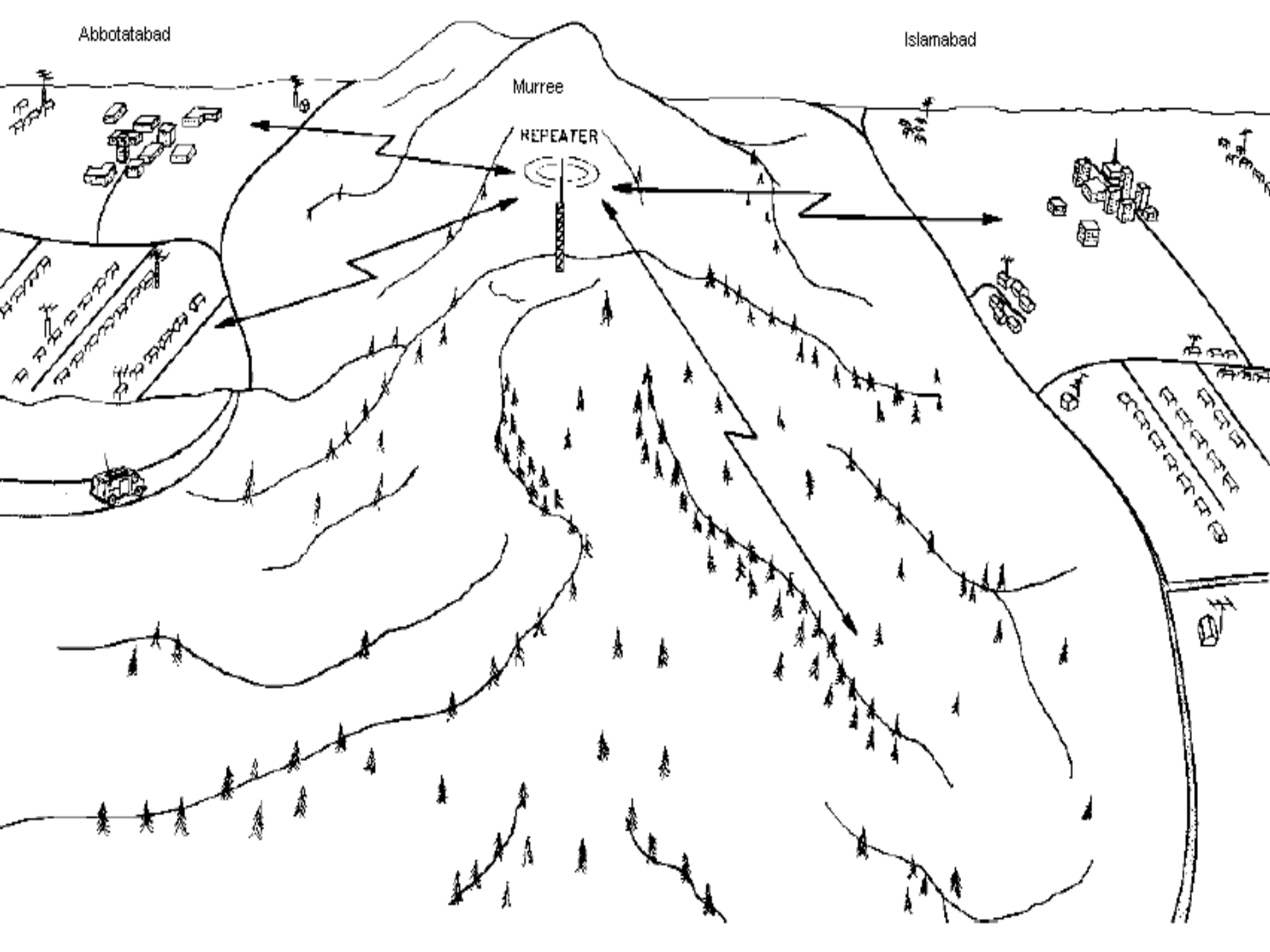
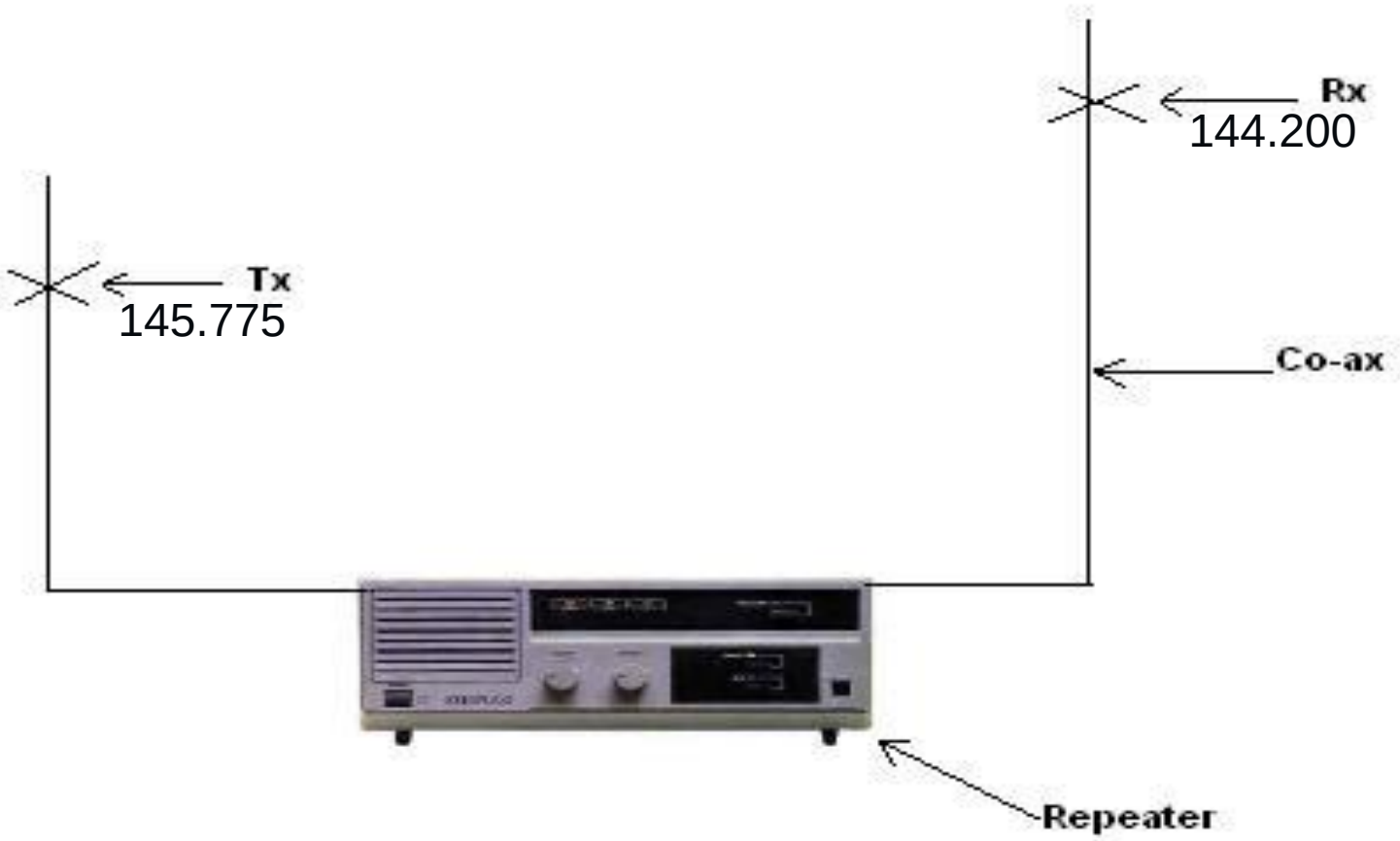
Murree Experimental Repeater (R1)


Abbotatabad
Islamabad
Murree
REPEATER

Composition Of a Repeater



Khyber Pakhtunkhwa
N95
N90
ABT
N45
N15
Peshawar
Murree R1
Islamabad
Islamabad Capital Territory
N50
Sargodha
M-2
Gujranwala
N55
M-3
Faisalabad
Lahore
Punjab
© 2013 Google
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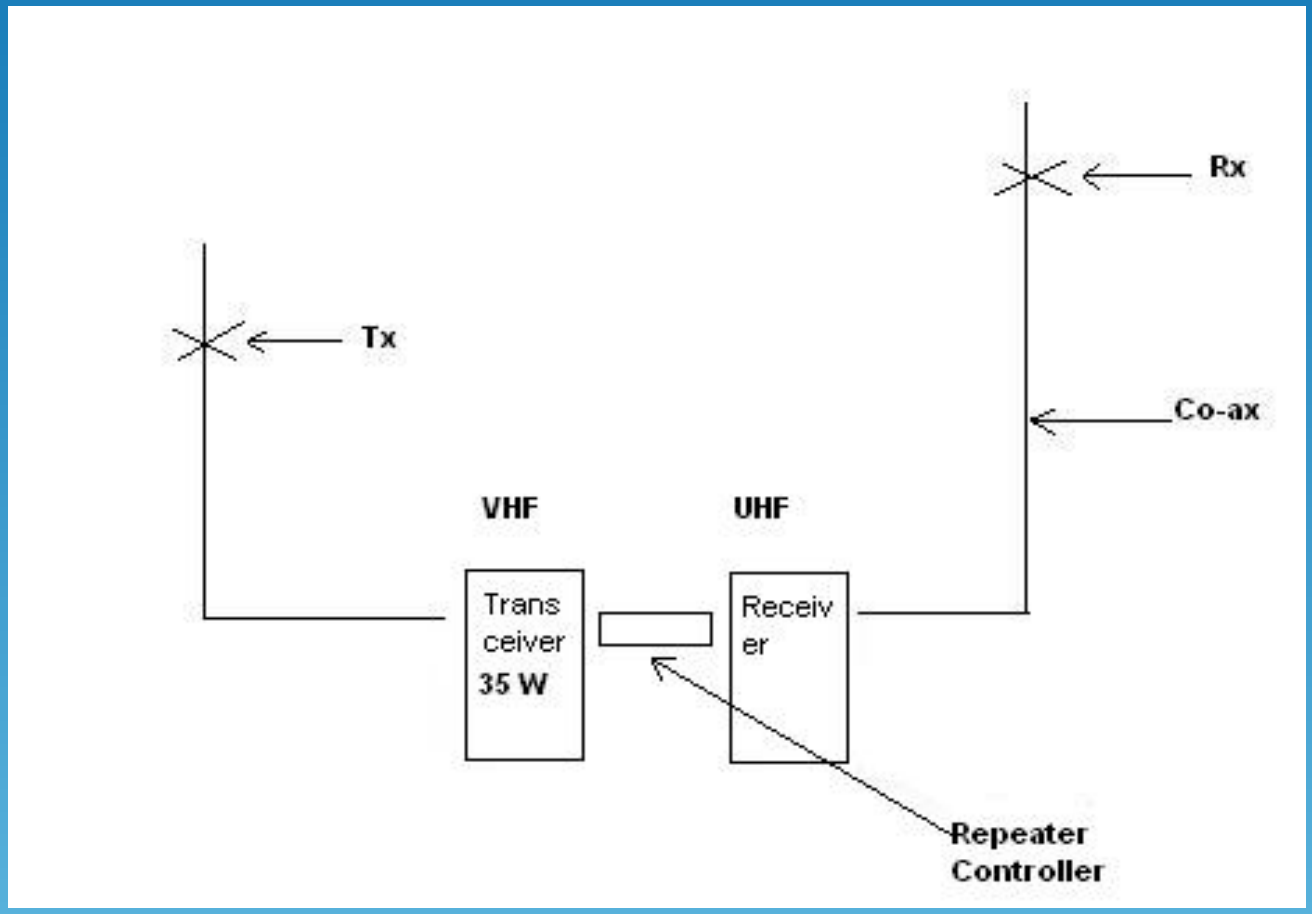
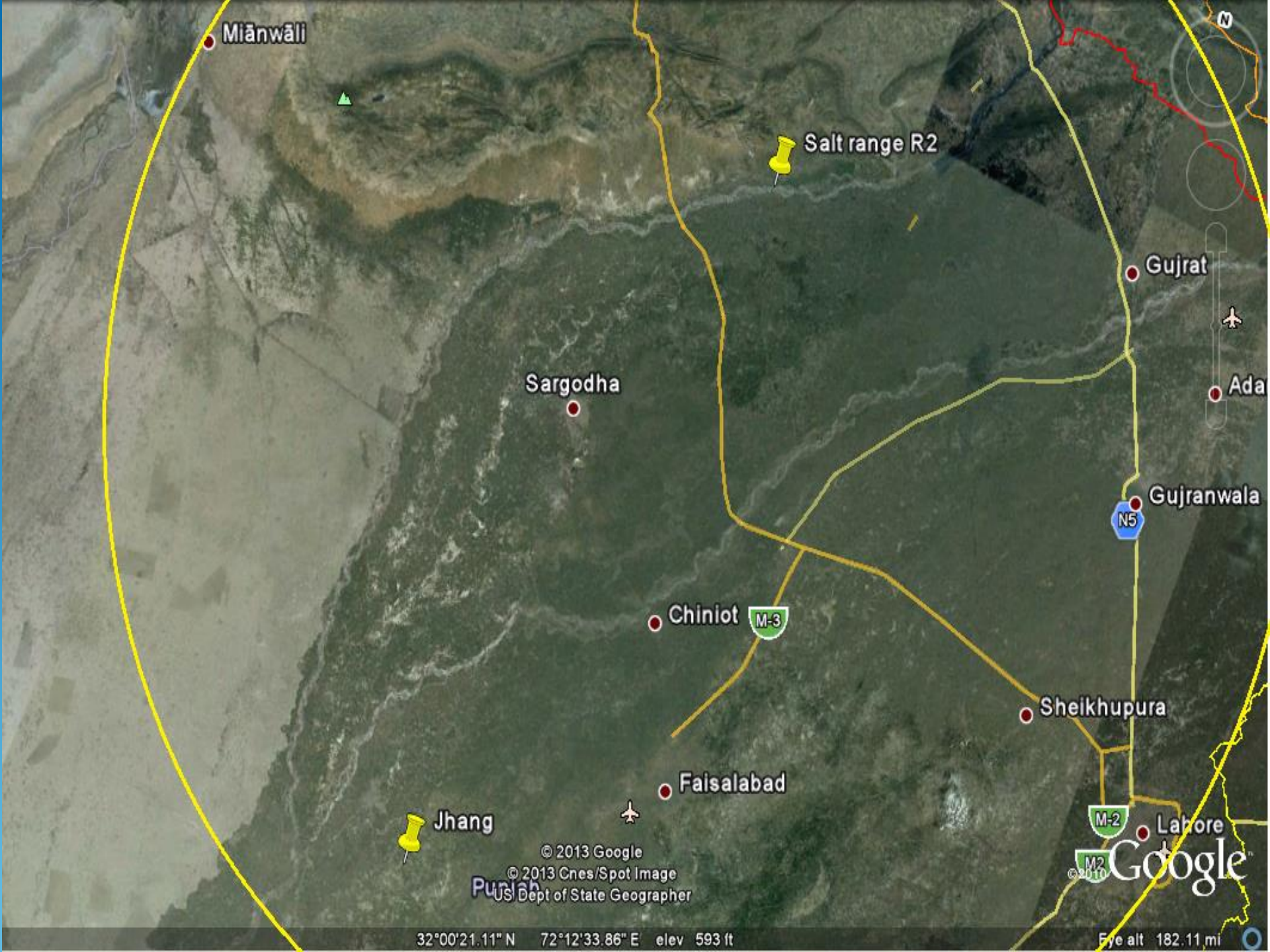
©2010 Google
34°27'39.96" N 72°17'43.73" E elev 2598 ft
Eye alt 395.63 mi

Salt Range Experimental V/U Repeater (R2)

R2 Repeater Layout

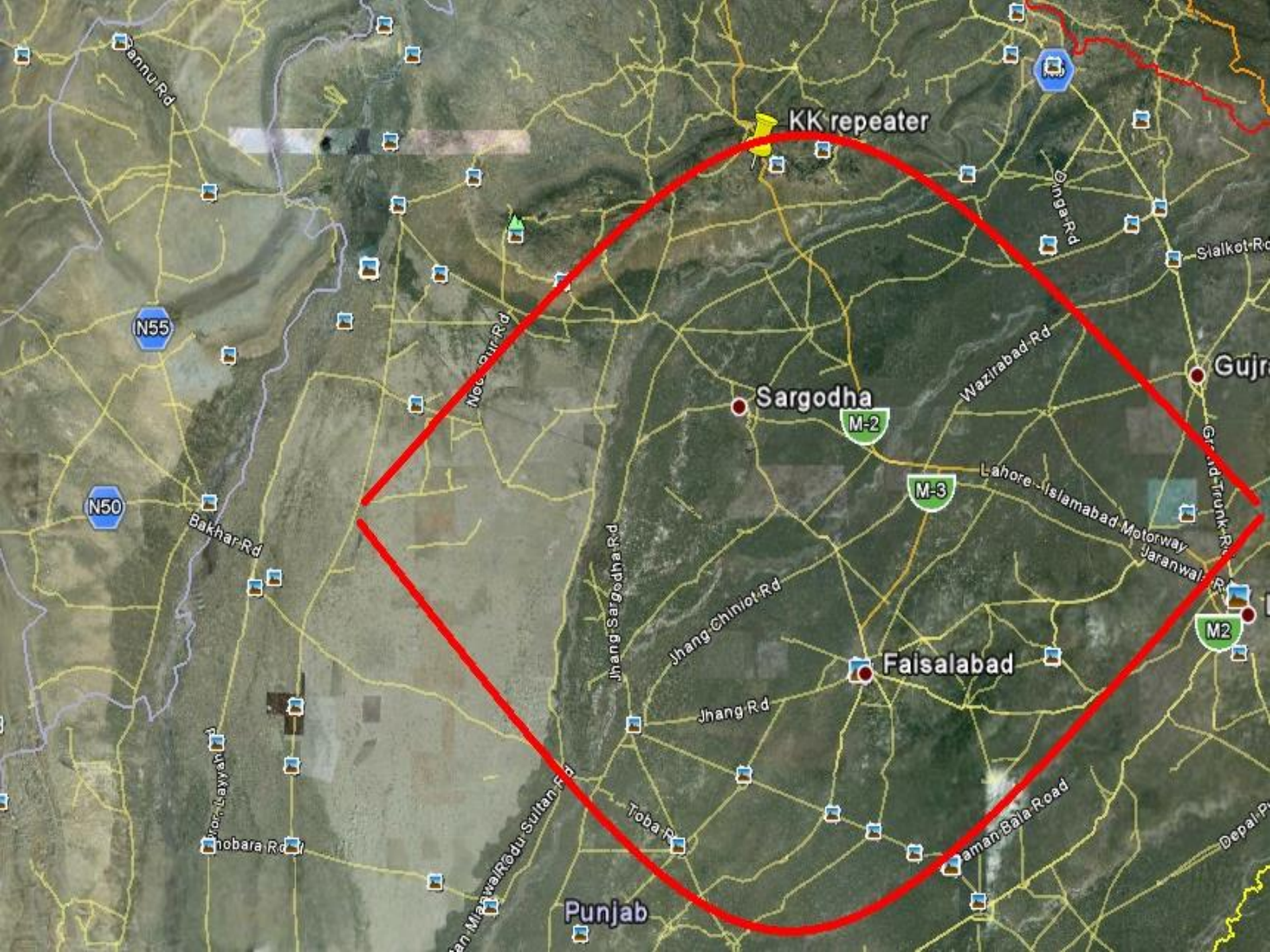


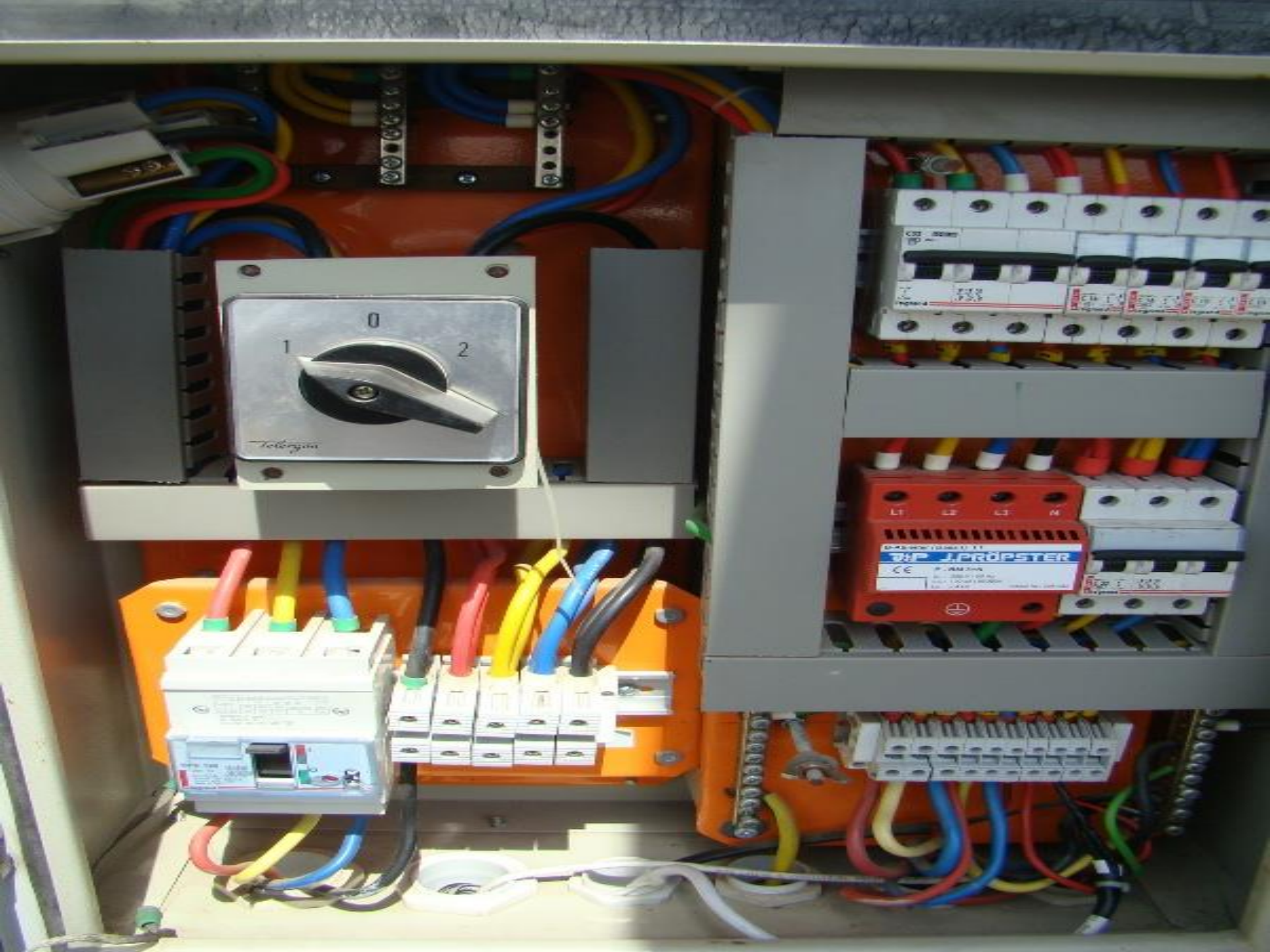

Miānwāli
Salt range R2
Gujrat
Sargodha
Ada
Gujranwala
N5
Chiniot
M-3
Sheikhupura
Faisalabad
Jhang
M-2
Lahore
M2
© 2013 Google
© 2013 Cnes/Spot Image
US Dept of State Geographer
Punjab
Google
32°00'21.11" N 72°12'33.86" E elev 593 ft
Eye alt 182.11 mi

ALINCO
DM-330MVE

PARS

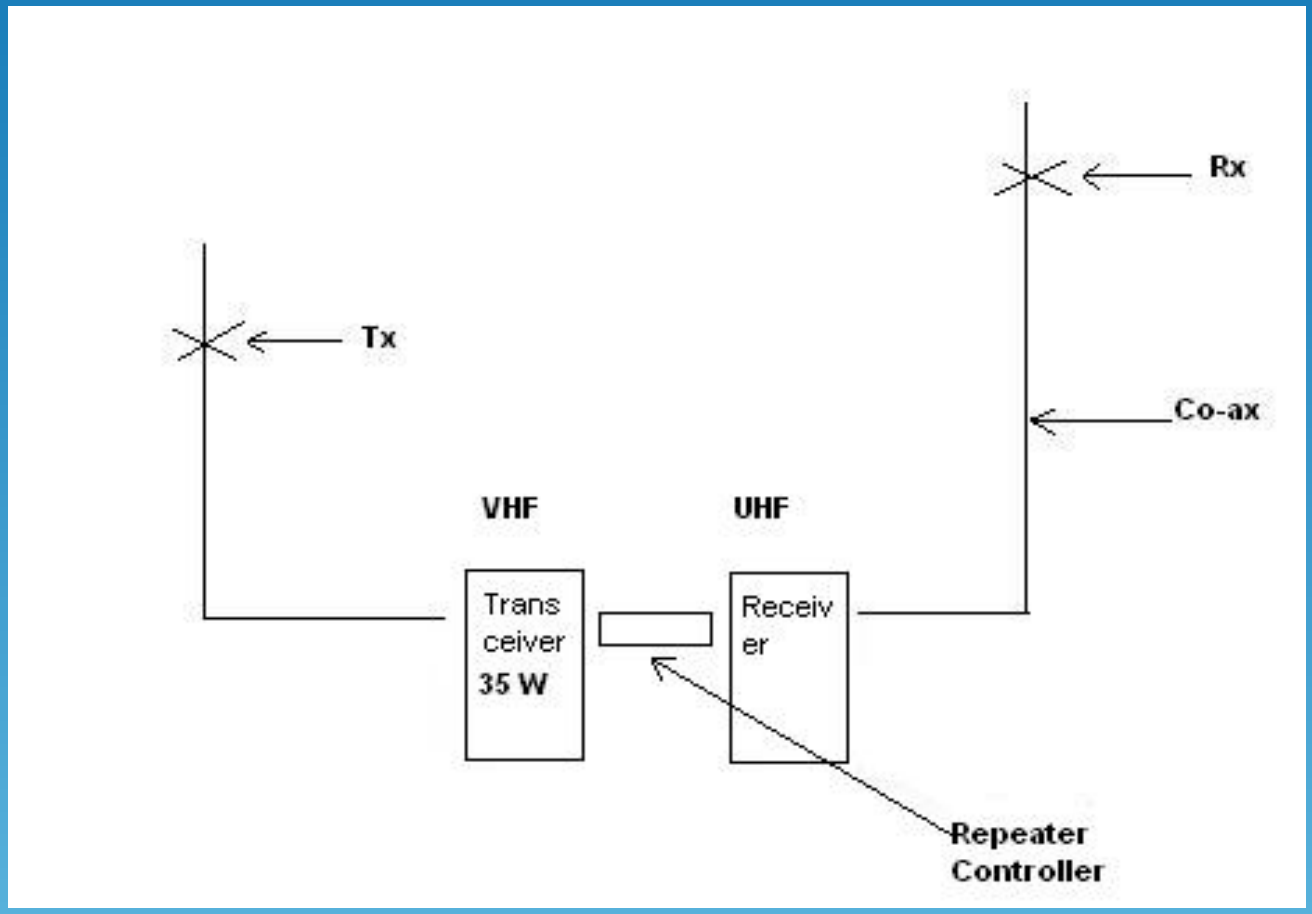
Sox


KK repeater
Sargodha
Faisalabad
Punjab
Gujr
M-2
M-3
M2
N55
N50
Bakhar Rd
Wazirabad Rd
Lahore - Islamabad Motorway
Jhang Chiniot Rd
Jhang Sargodha Rd
Jhang Rd
Toba Rd
Sialkot Rd
Dinga Rd
Bannu Rd
Depal Pu


0
1
2
L1
L2
L3
N
PROPSTER

Malakand Experimental V/U Repeater (R3) ECOM

R3 Repeater Layout



Khyber Pakhtunkhwa
Mingora
N90
Allai
N95
Malakand R3
N15
Mardan
Peshawar
M-1
N5
N45
N55
Abbottābad
Attock
Harīpur
N75
N80
Islamabad Capital Territory
Azad Jammu and Kashmir
© 2013 Google
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US Dept of State Geographer
©2010 Google
34°31'27.97" N 73°38'25.92" E elev 6414 ft
Eye alt 158.54 mi

12.5
UBAT
IPV
ILOAD
NMU
NAPS

KENWOOD

victron energy
phoenix
charger 12/30

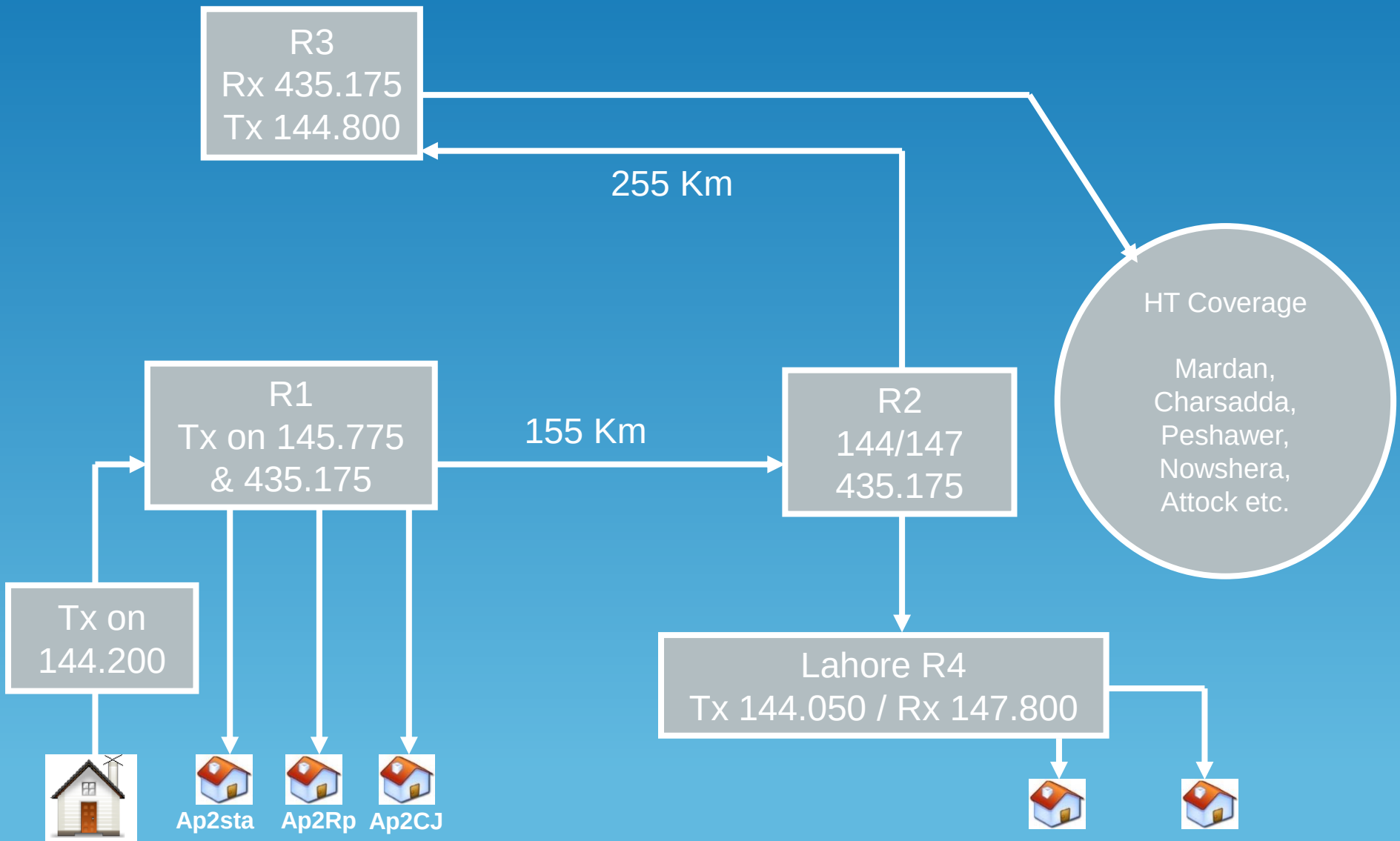
MOTOROLA
Radius GR500

KENWOOD

SX-600

Lahore Experimental Repeater (R4)

Linking Repeaters



Pakistan Amateur Radio Society
AGM 2013

THE CONDOR CONNECTION

Echolink Node AP2CJ-R

AP2CJ

General Topics

- What is EchoLink?
- Various Modes
- EchoLink Software
- Physical Radio Interfacing
- Is it really Amateur Radio?

What is EchoLink?

- EchoLink uses VoIP (Voice Over Internet Protocol) to allow licensed Amateur Radio Operators to communicate with other Amateurs via the Internet.
- It is primarily a Windows based application and is offered free of charge at http://www.echolink.org.
- There is also a new EchoLinux and EchoMac available.
- It was developed by Jonathan Taylor (K1RFD) in 2002 (*He received Hamvention 2003 Special Achievement Award*).

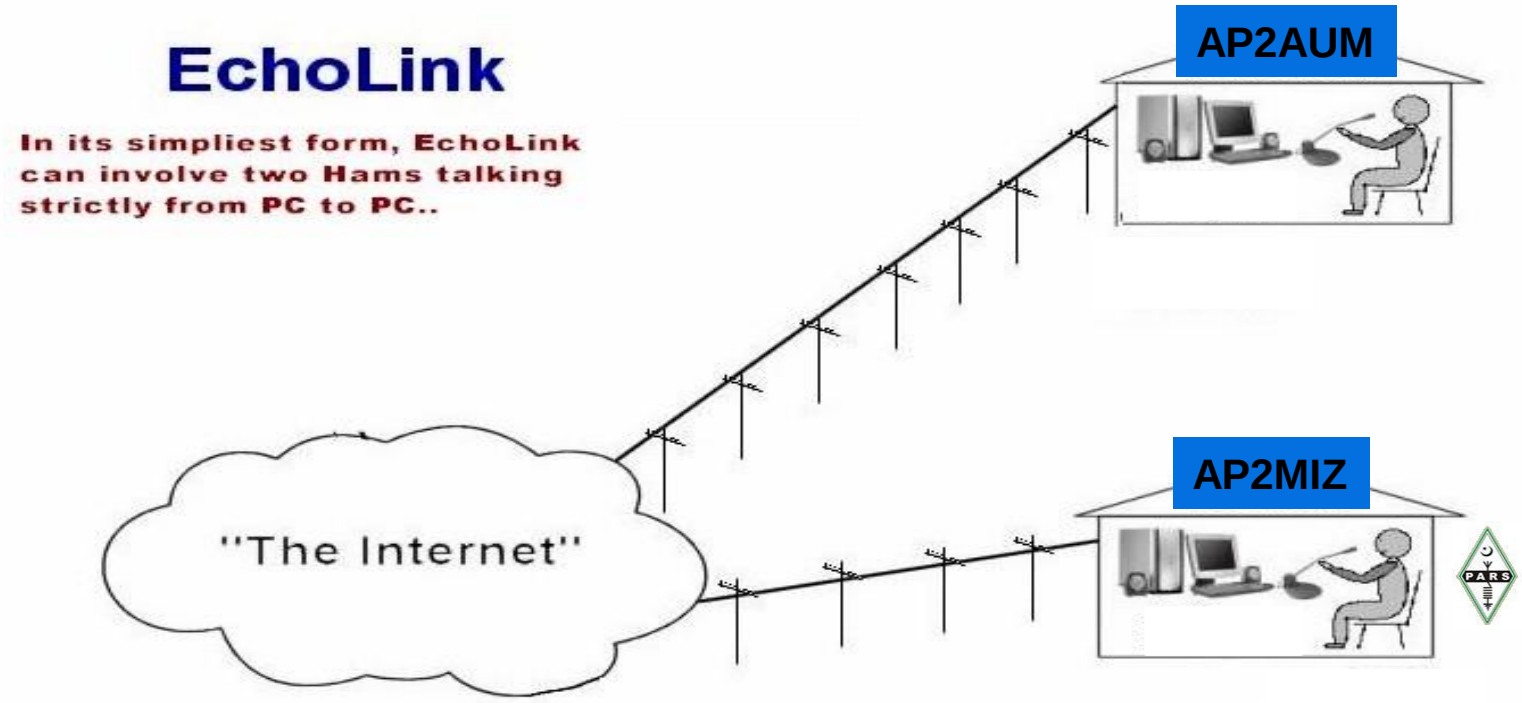
Validation

- Each new user of EchoLink must provide proof of license before access is granted. This is to ensure that only licensed Amateurs have access to the system, and to ensure that each user is using a valid callsign that he or she is authorized to use.

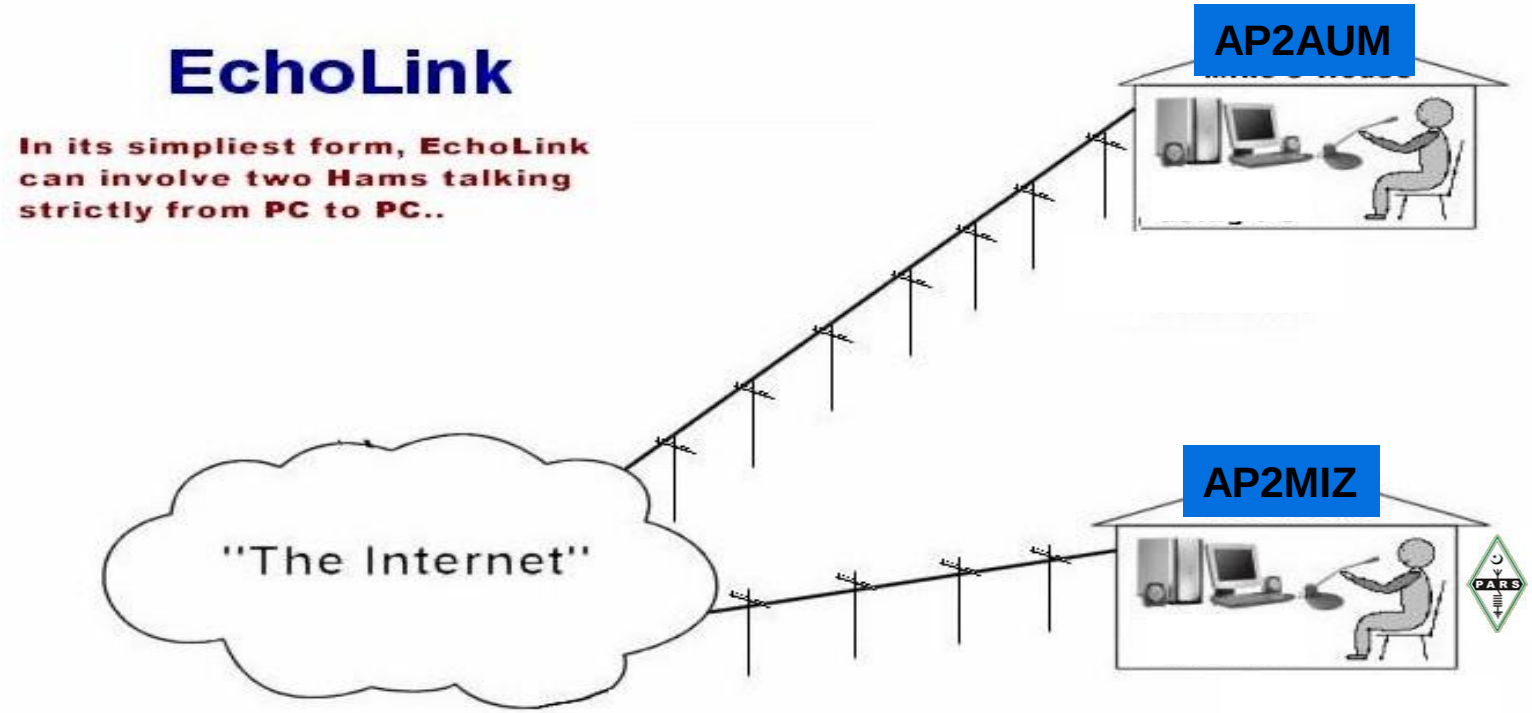
What Modes are Available?

- UserMode : EchoLink can be operated strictly between two computers connected to the Internet using the PC soundcard with Speakers and a Microphone.
- Link Mode : EchoLink can be interfaced to a standard FM transceiver as a “simplex link” from your home QTH.
- Repeater Mode : EchoLink can be interfaced to a VHF or UHF repeater for more coverage.

EchoLink “User Mode”



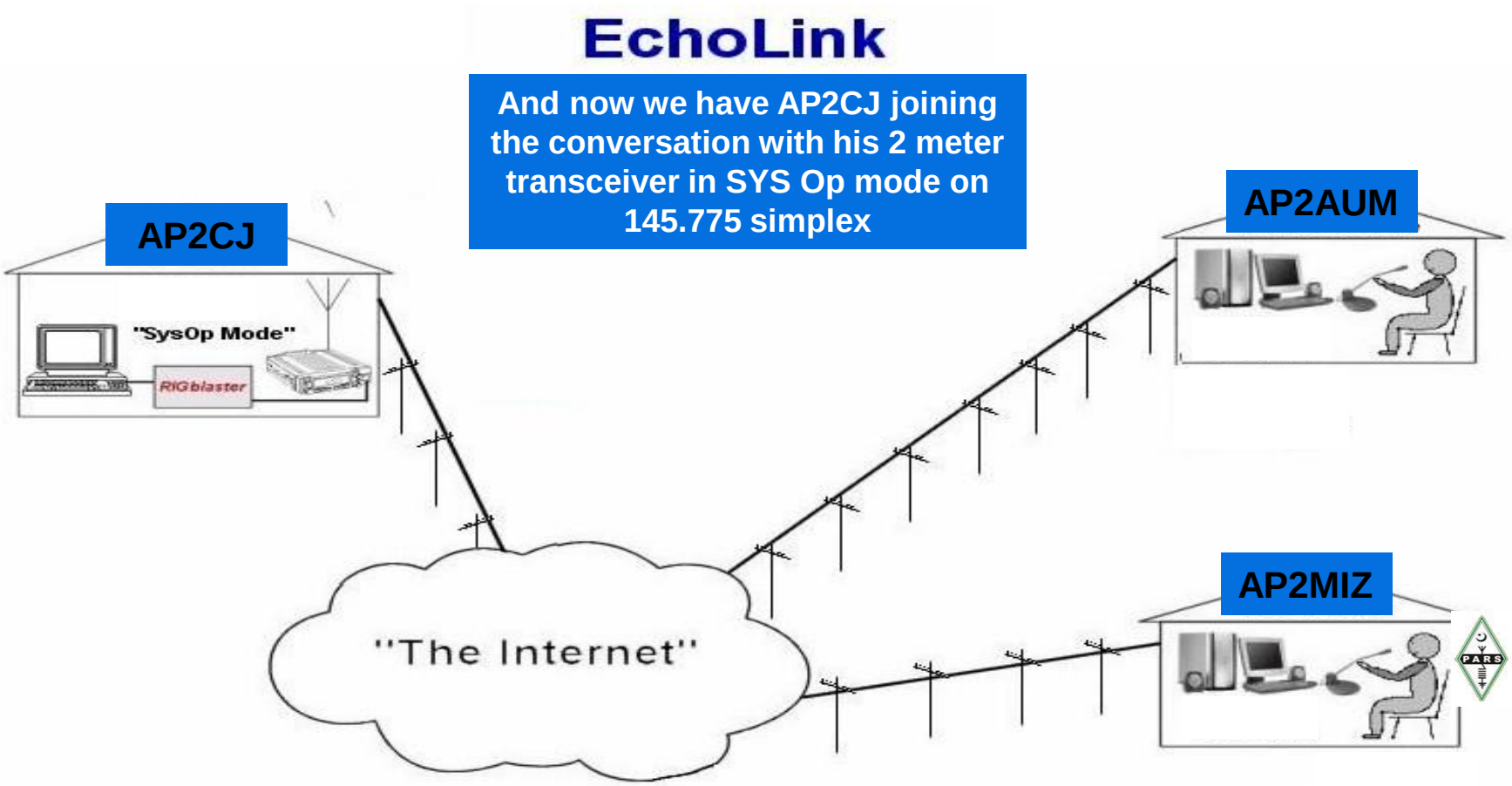
Is this really Ham Radio?



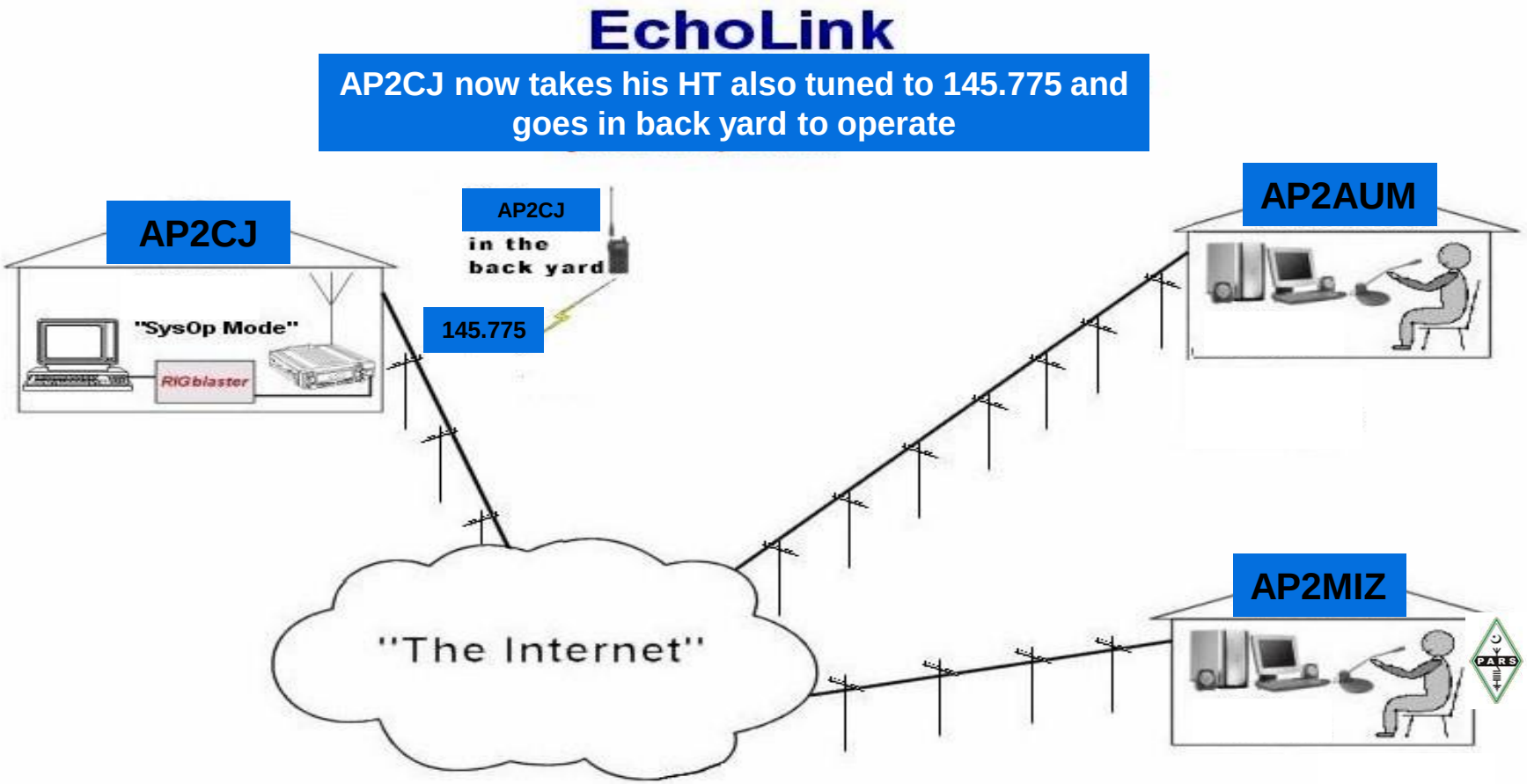
It Depends upon how you "use" it!!

- Single User PC to PC involves no RF
  - It is just another Internet "Chat Room"
- A Simplex-Link or Repeater connection now makes it a "new" Amateur Radio Mode.

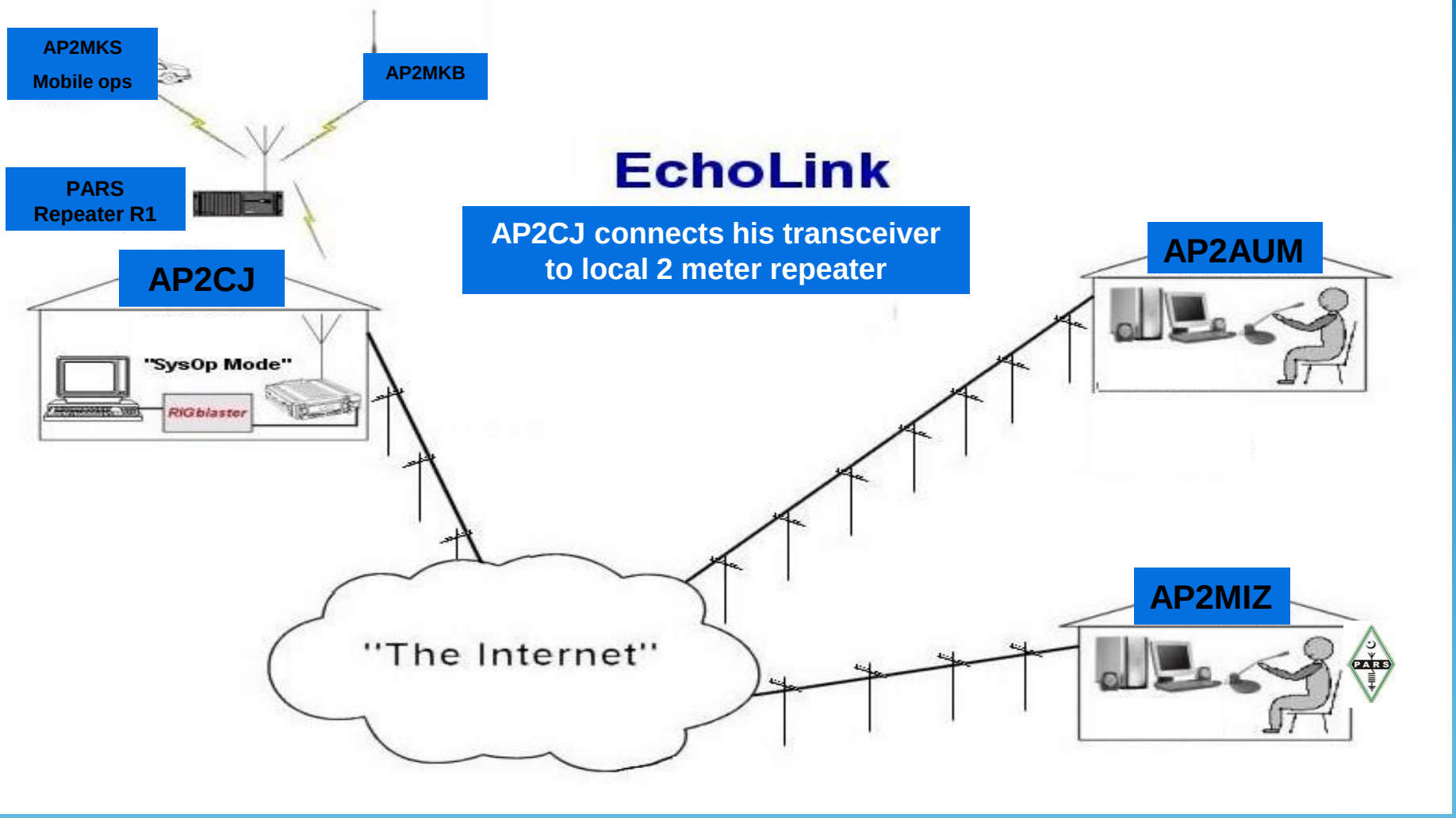
Adding a “Simplex-Link”



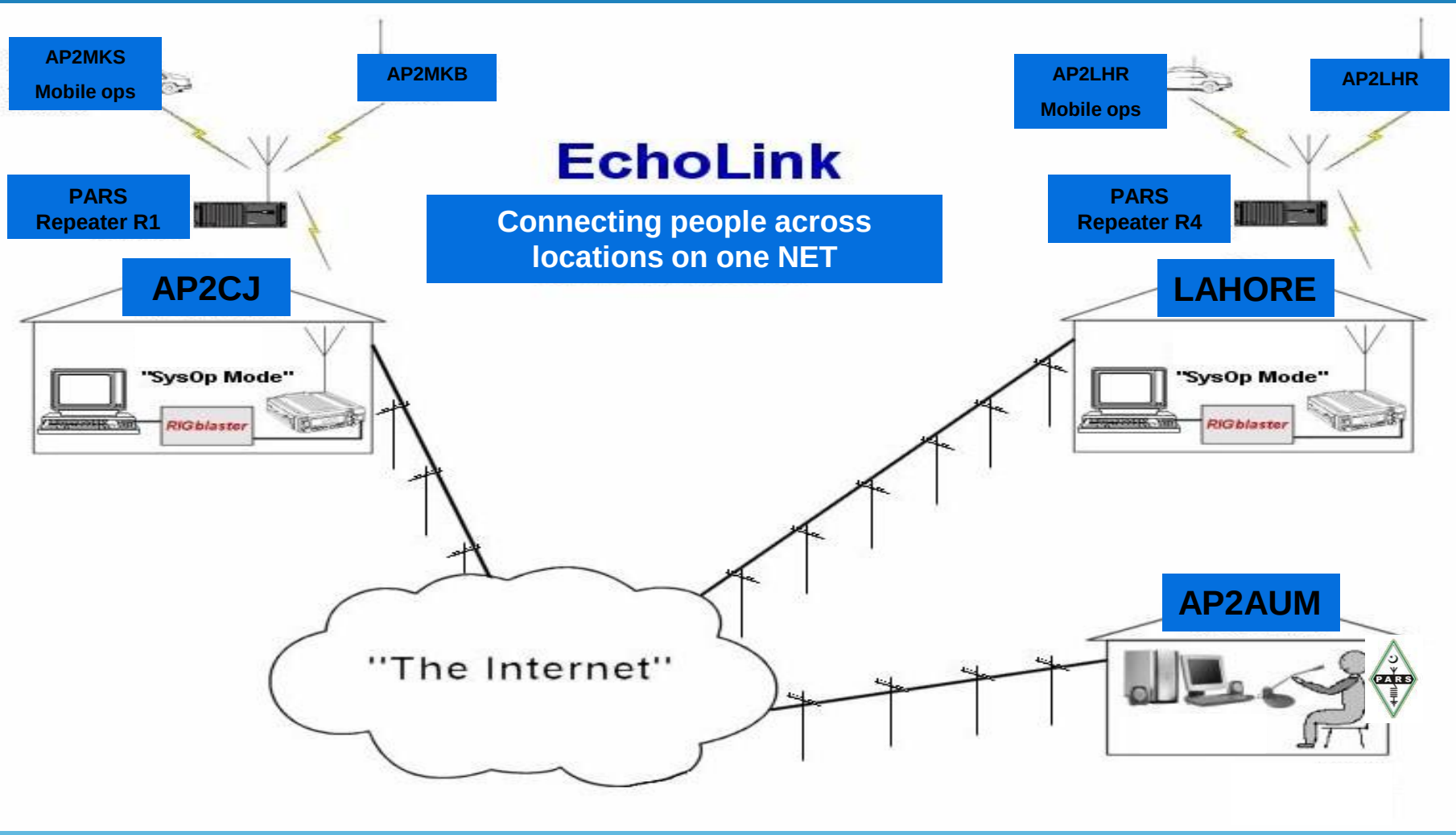
Expanding the “Link”



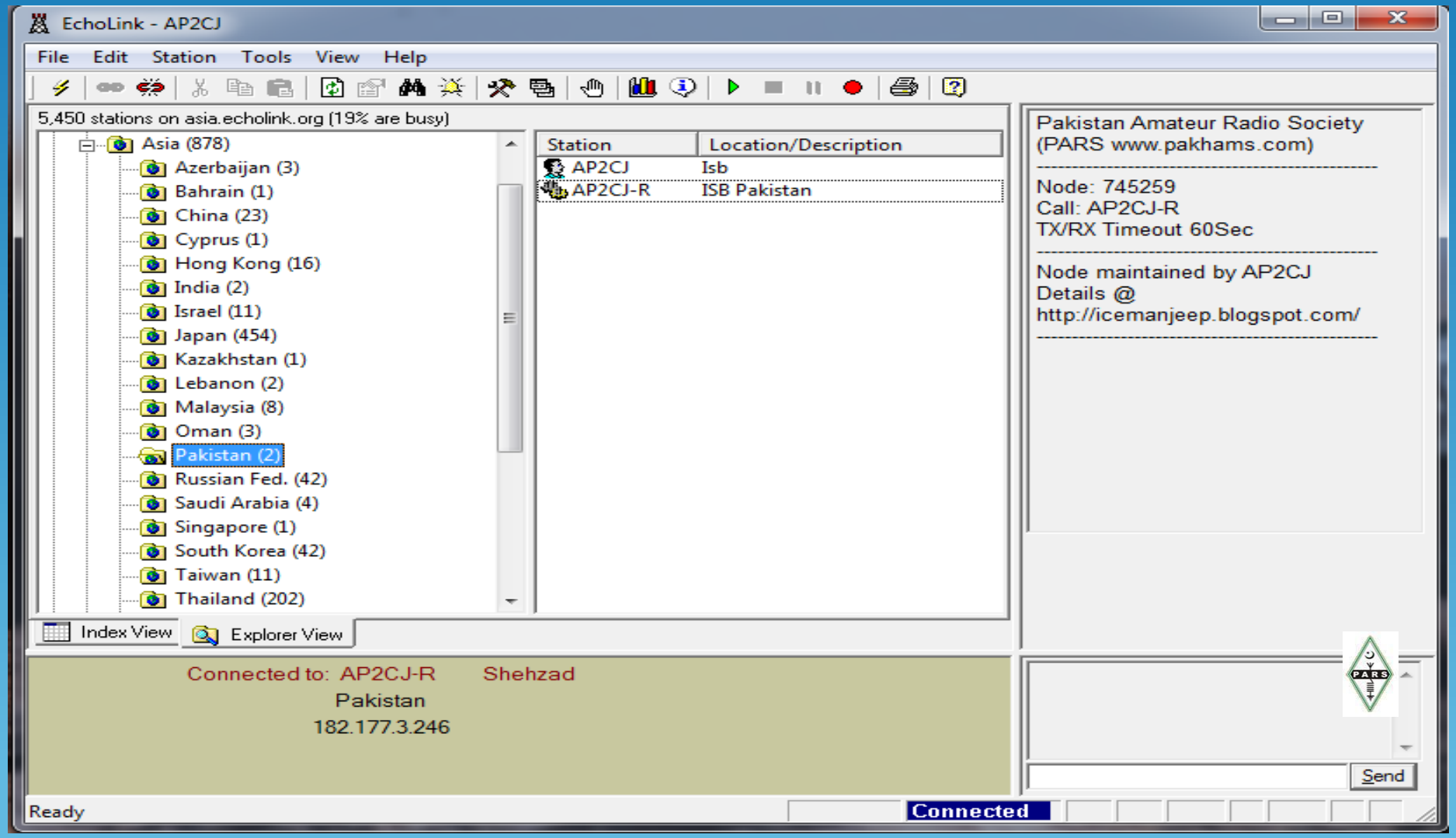
Adding a Repeater



Bringing it all Together



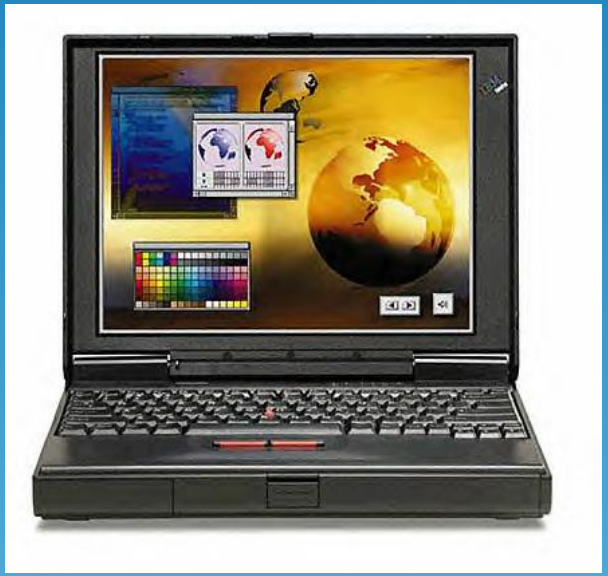
And now -- The Software…



What's Needed

Transceiver

Computer and Software



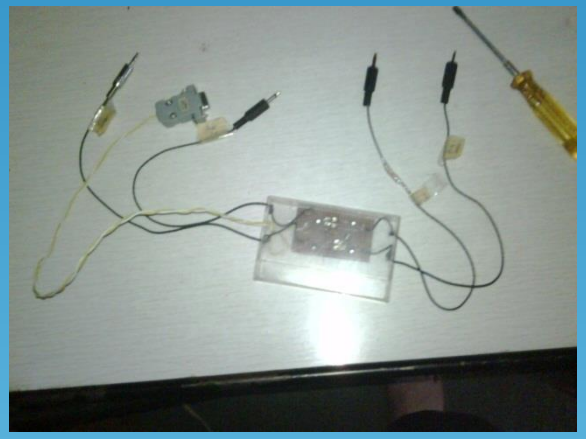
Interface

How we built it

- Old PIII running windows XP

- IC-H16 HT

- WiFi internet 2mbp/s



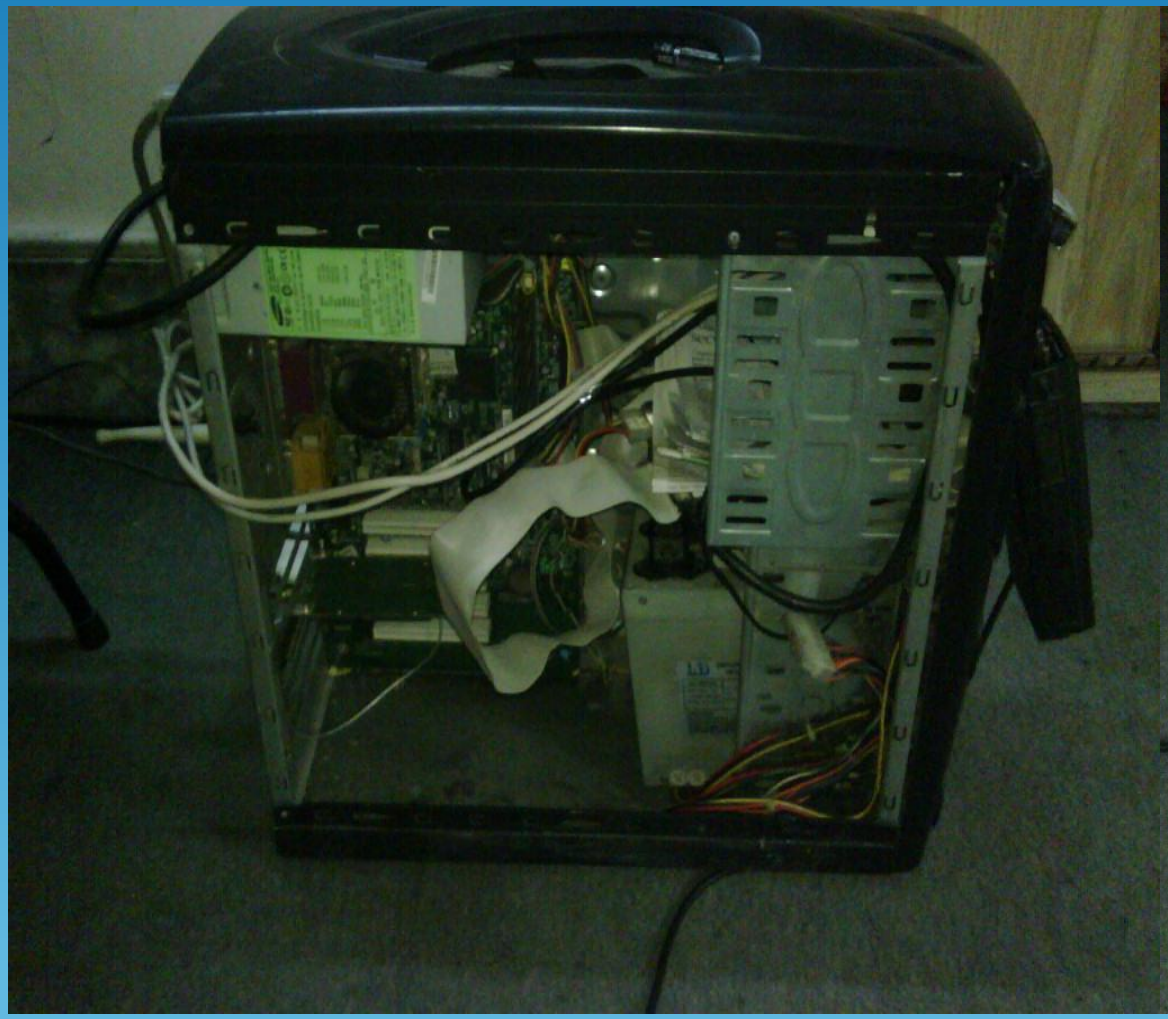
- DB9/RS232 Interface

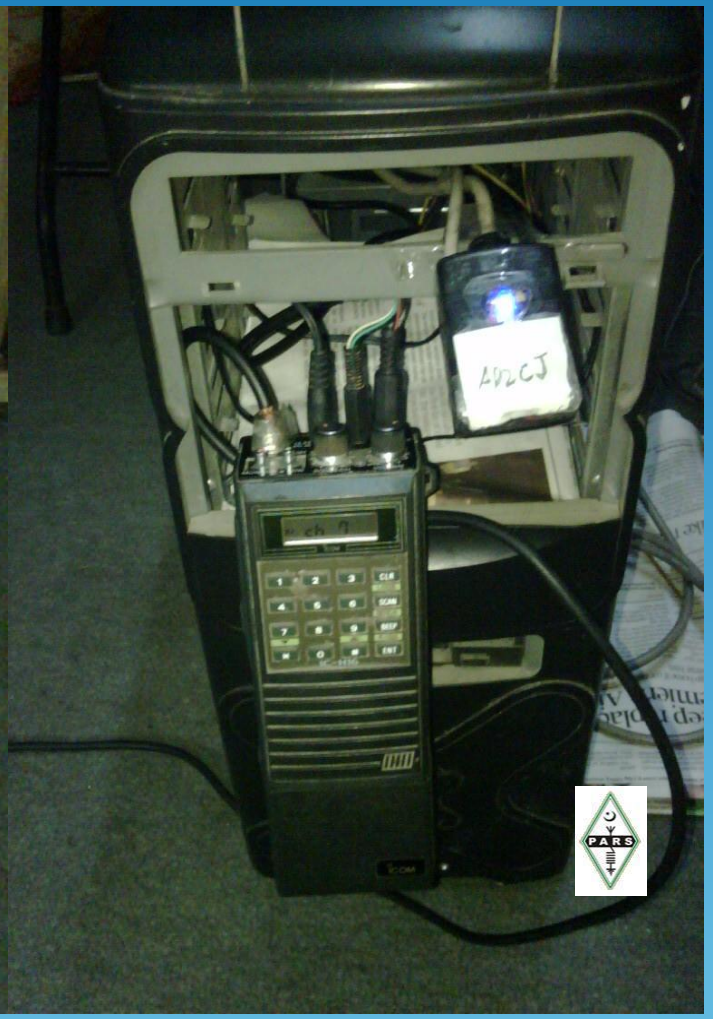
Special thanks to AP2AUM and AP2MIZ

The Node Setup

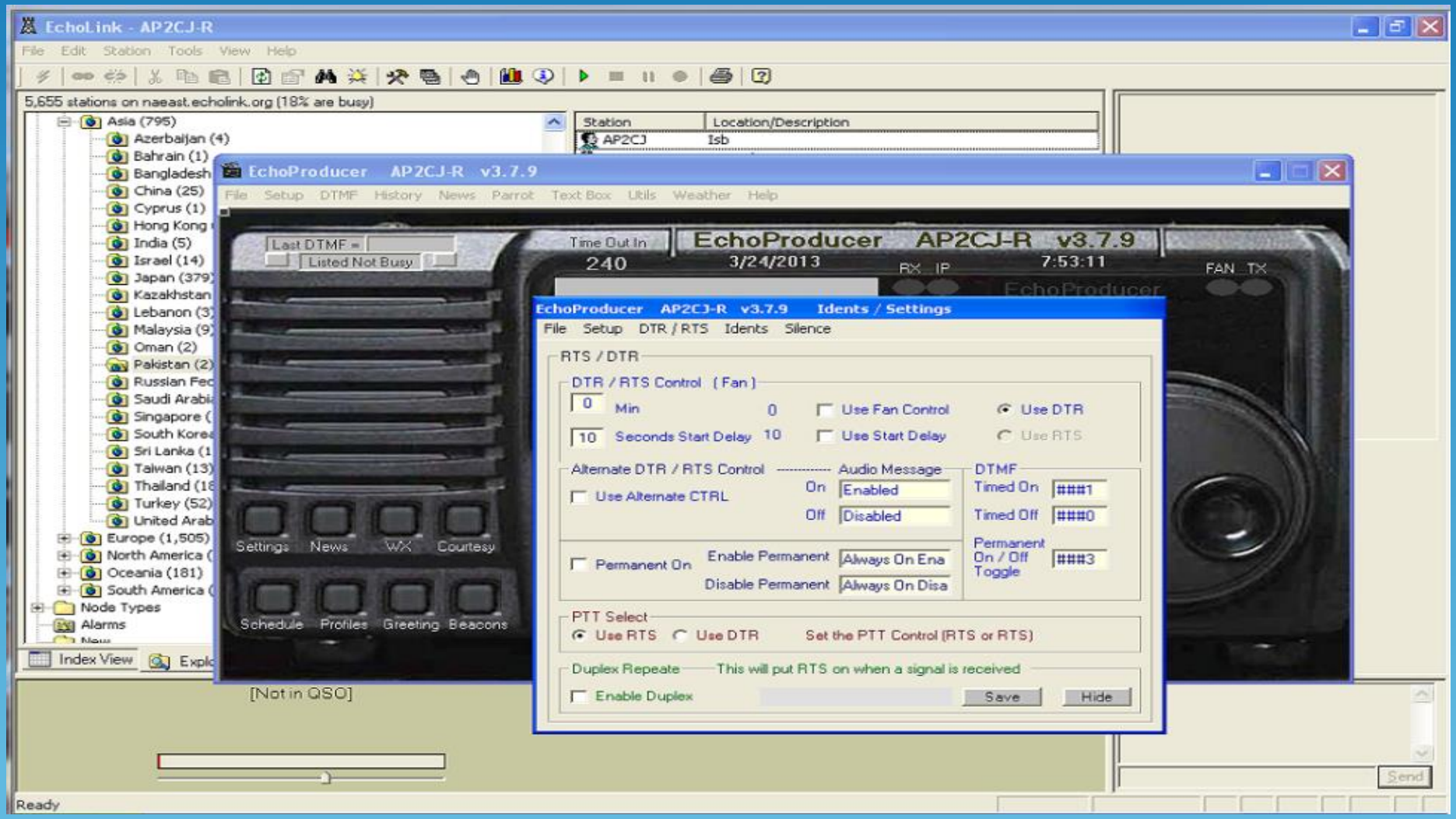
AP2CJ-R

The Node Setup

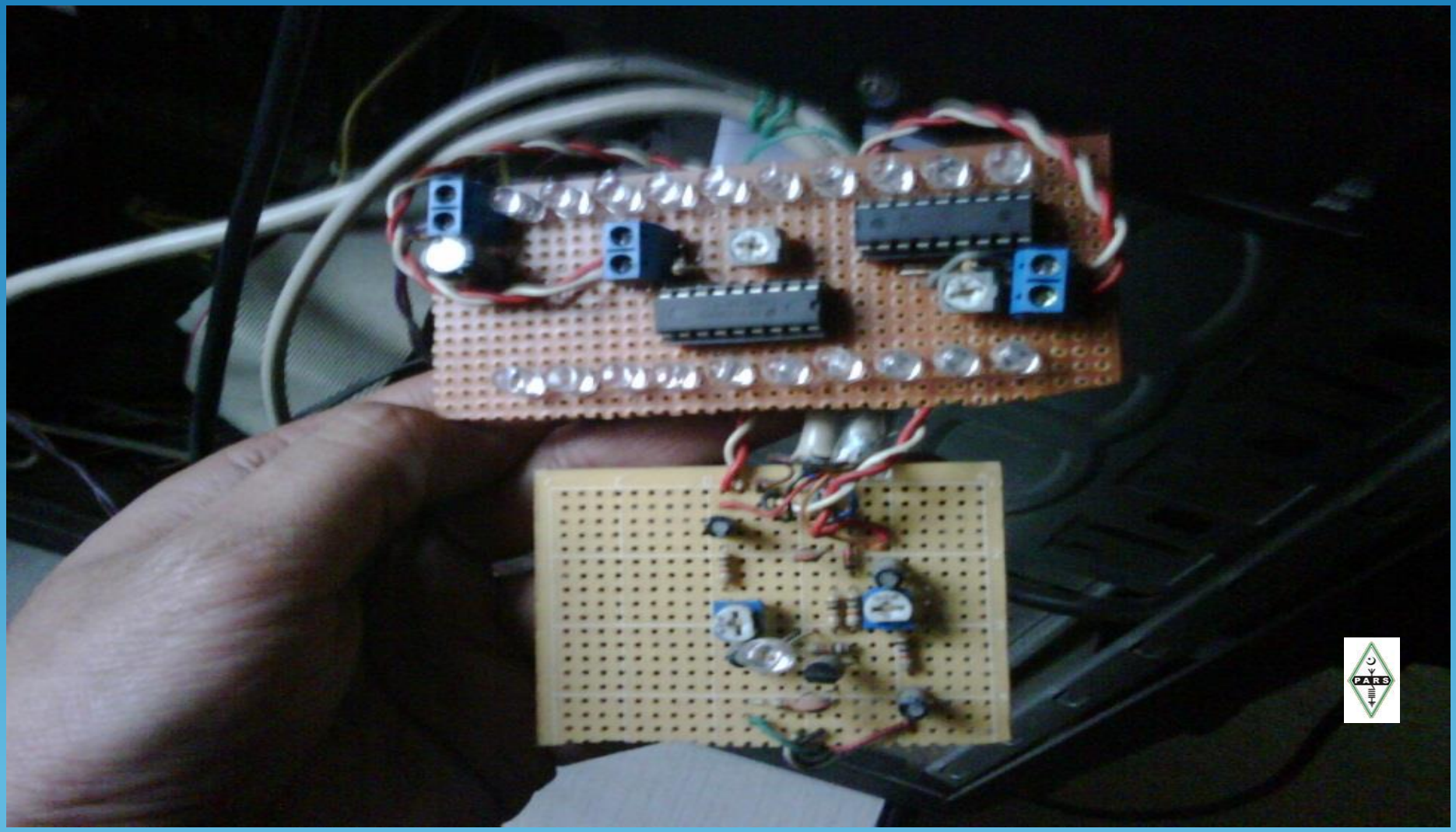




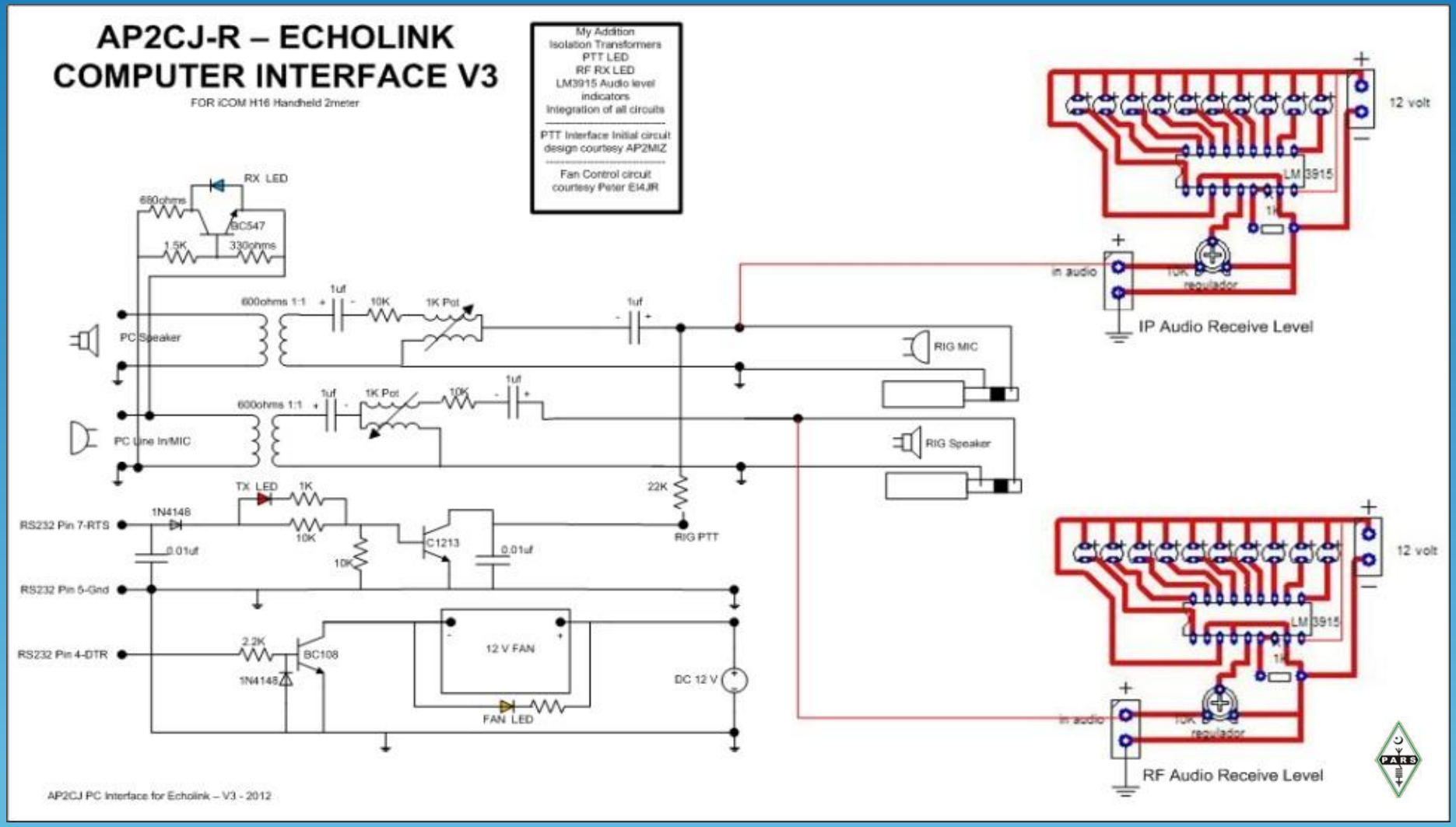
The Node Software Setup



Current Interface



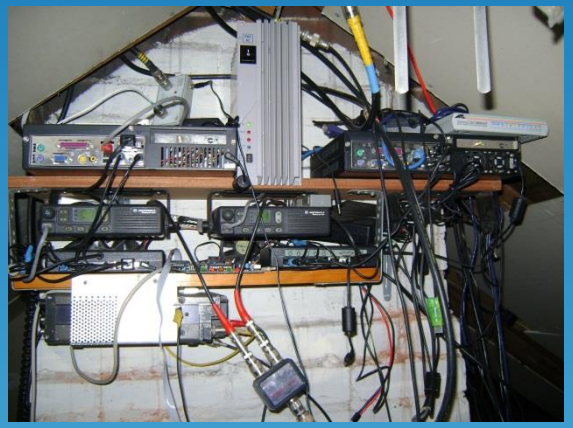
Current Interface

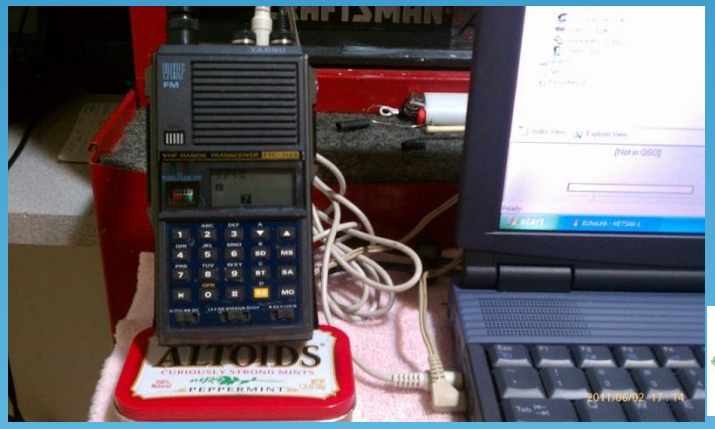


Some Soundcard Interfaces

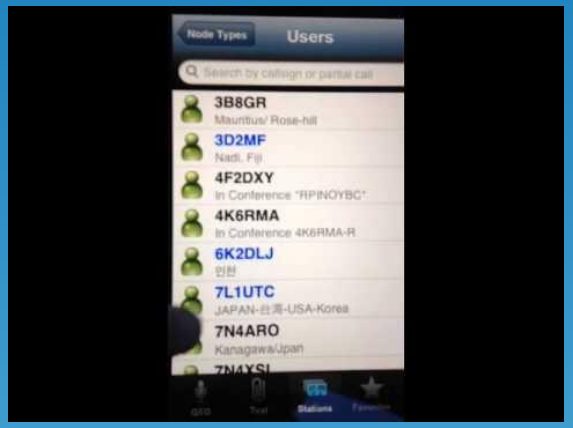
The RIGblaster is the more common interface, with jumpers to configure any brand of microphone and rig.

Some Setups





EchoLink Clients



- Iphone / ipads
- Android phones / tabs

But Again – *"Is it Ham Radio?"*

- As long as there is a Simplex or Repeater Link involved it is a new "mode" – It is that simple!
- Worldwide Regulatory agencies like the FCC, ART, IBPT, OFCOM, SRR, etc. have recognized it as another Ham "tool" like SSTV or PSK31.
- Using these "links" you must still ID and follow all regulations, including International rules and Third party agreements.
- If we don't keep using our Radios in as many modes as we can, we are going to lose some of the band allocations we have worked so hard for.

Some Comments

Although Amateur Radio has grown to embrace new technologies and has now become more than just “Radio” , it is really “*nothing*” without “Radio”….

Web presence @

http://www.pakhams.com

http://icemanjeep.blogspot.com

Pakistan Amateur Radio Society
AGM 2013

DXpedition (HF operation)
Kalam – Summer DXpedition

AP2MF

The Destination

- Mahodand Lake - Kalam -
- Date: July 14-15th

Published Dx- Calendar

- – 15/7 PAKISTAN; AP2ARS

by AP2AUM, AP2MF and AP2MKS from **Swat District** (Grid Locater:MM65HH) between 1300z July 14th and 1900z July 15th. They will operate from an elevation of 2300m ASL using frequencies 7050 and 14150 kHz, and the satellites. Power output will be 150 watts to an Inverted V dipole for HF and an egg beater for the satellite communications). QSL via: PARS AP2ARS, P.O.BOX 1450, Islamabad,44000, Pakistan.

Hams

- Following HAMS actively participated and made contacts in the activity.

  ap2mks
  ap2sta
  ap2mf
  ap2aum
  ap2cj
  Yasir Khan

SWLs – the learners

- Few more SWLs witnessed the activity and helped in setting up the camps & antennas

  Nadeem Naeem
  Nauman
  Shabab Haider
  Zohaib Jadoon
  Hassan Rana

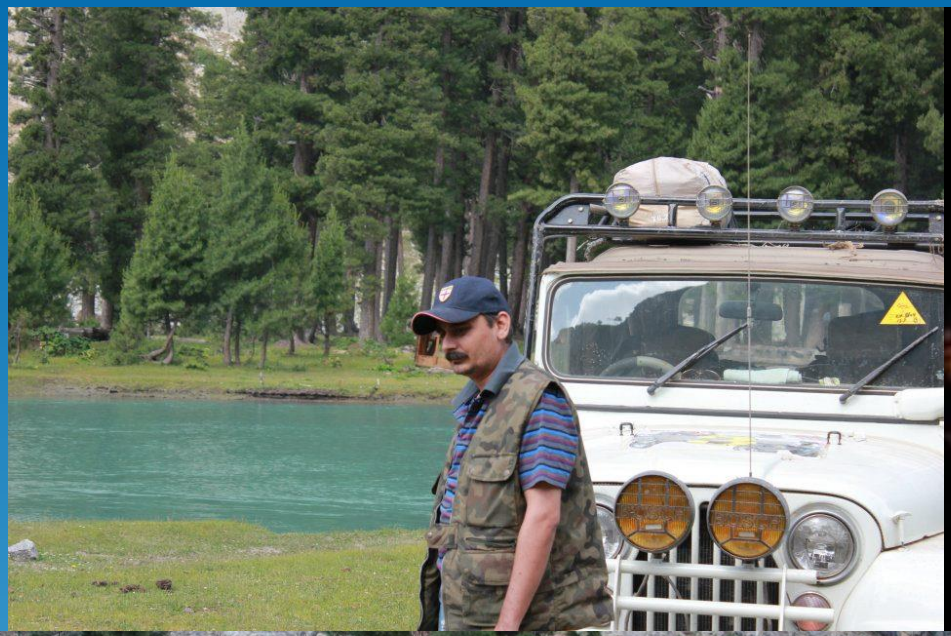
Working conditions

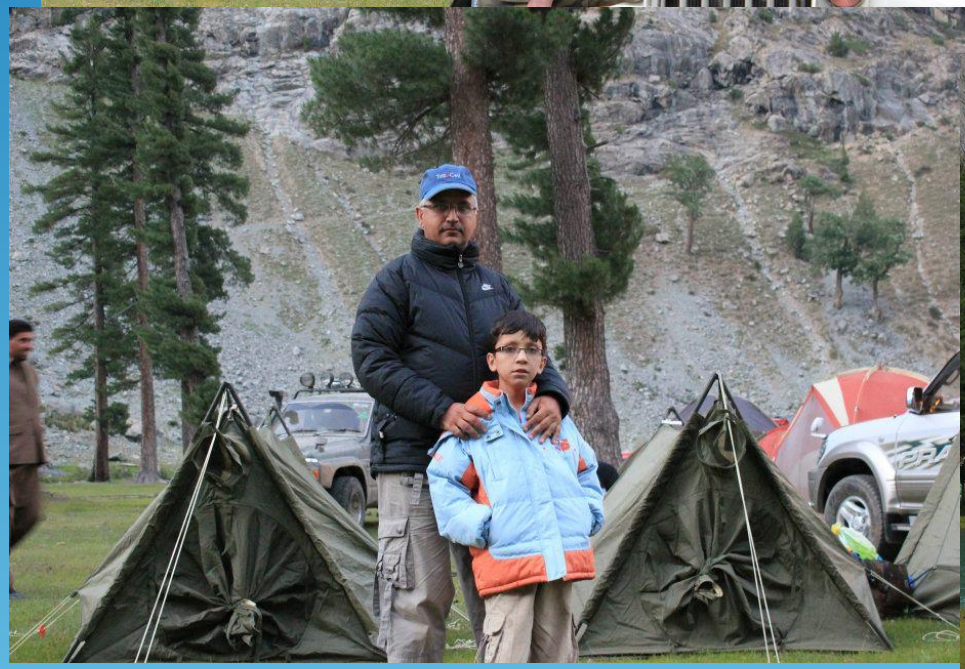
- Yasue FT857D – with Watson multiband HF antenna
- Icom IC7000 – with 20m inverted V Dipole
- Kenwood TS50 – with 40m inverted V

- Freezing Temperature and winds ☺

The Activity

- The WX was nice and cold however since there were lofty mountains (15000 feet) on 3 sides of the DX location, as well as paucity of time hence fewer contacts were achieved.
- We had 2 HF radios with Dipoles working on 20 and 40 meter and one Mobile setup working 4 bands.
- The receive signals were amazingly loud and clear.
- Most of our reports from Europe, Indonesia, Malaysia and Russia were 5.9. The call used was AP2ARS
- Nevertheless it turned out to be an excellent event.





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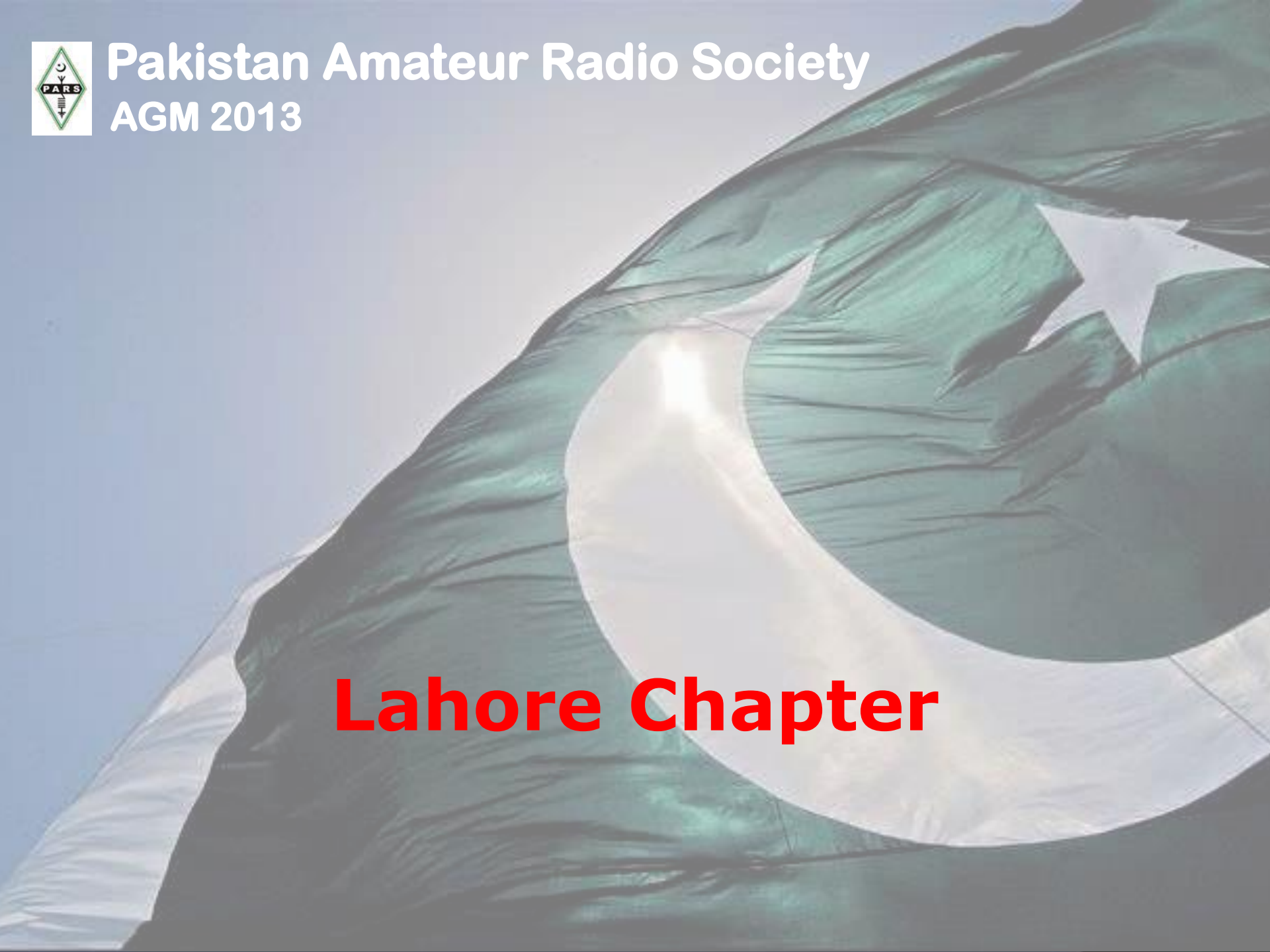
Pakistan Amateur Radio Society

AGM 2013

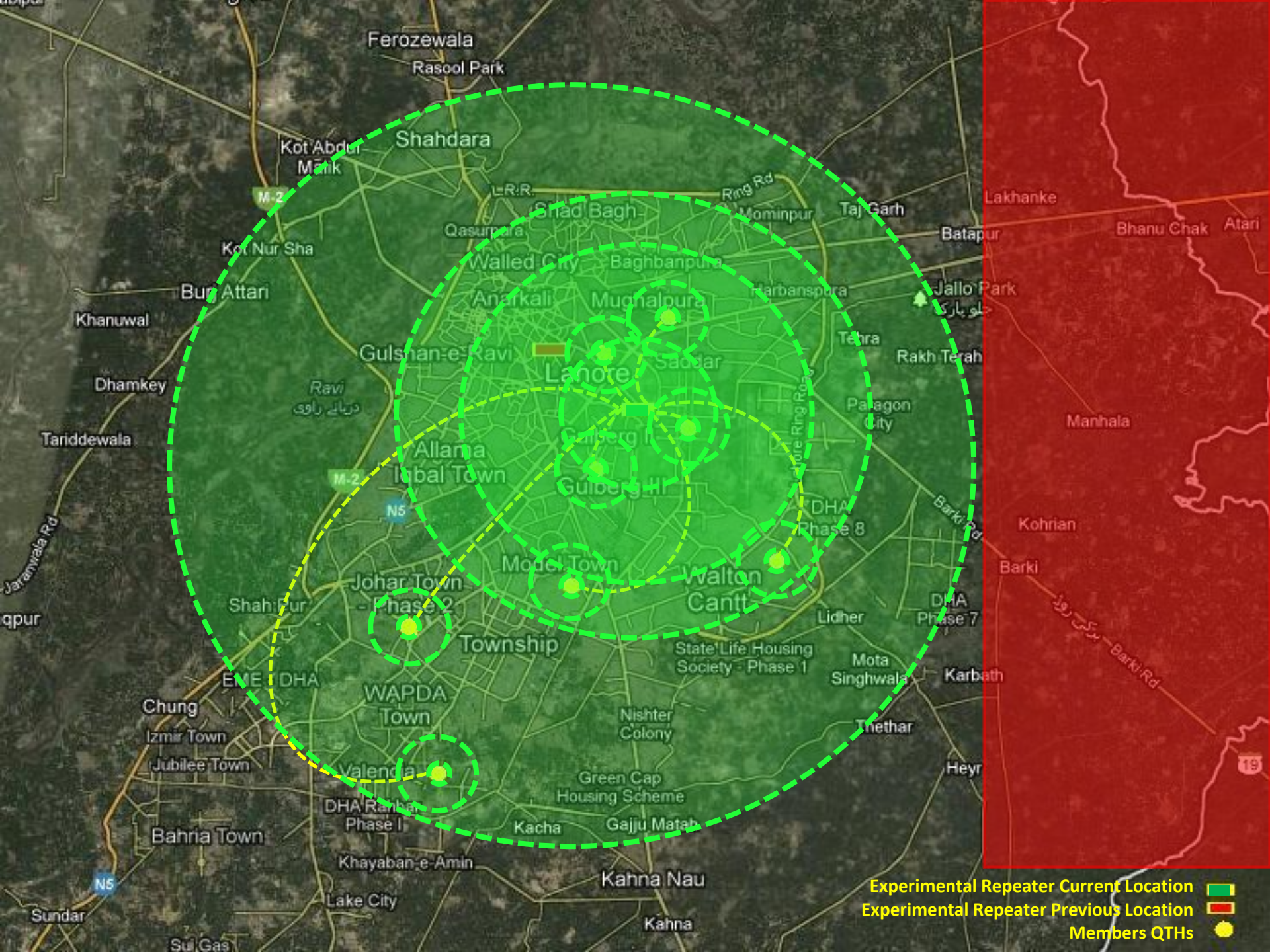


Lahore Chapter

PAKISTAN AMATUER RADIO SOCIETY – LAHORE CHAPTER

ACHIEVEMENTS AND UPDATES

Annual General Meeting 31st March 2013 – Islamabad


Ferozewala
Rasool Park
Kot Abdul Malik
Shahdara
M-2
L.R.R.
Ring Rd
Shad Bagh
Mominpur
Taj Garh
Lakhanke
Batapur
Bhanu Chak
Atari
Qasurpura
Kot Nur Sha
Walled City
Baghbanpura
Anarkali
Mughalpura
Harbanspura
Jallo Park
Bur Attari
Khanuwal
Gulshan-e-Ravi
Lahore
Sadar
Tehra
Rakh Terah
Dhamkey
Ravi
Paragon City
Manhala
Taridewala
Allama Iqbal Town
Gulberg III
DHA Phase 8
N5
Barki Rd
Kohrian
Jaranwala Rd
Model Town
Walton Cantt
Barki
Johar Town - Phase 2
Shah Pur
DHA Phase 7
Lidher
Township
State Life Housing Society - Phase 1
Mota Singhwala
Karbath
WAPDA Town
Chung
Nishter Colony
Thethar
Izmir Town
Jubilee Town
Green Cap Housing Scheme
Heyr
DHA Rahbar Phase 1
Kacha
Gajju Matab
Bahria Town
Khayaban-e-Amin
Kahna Nau
Lake City
Sundar
Kahna
Experimental Repeater Current Location
Experimental Repeater Previous Location
Members QTHs

BACKGROUND

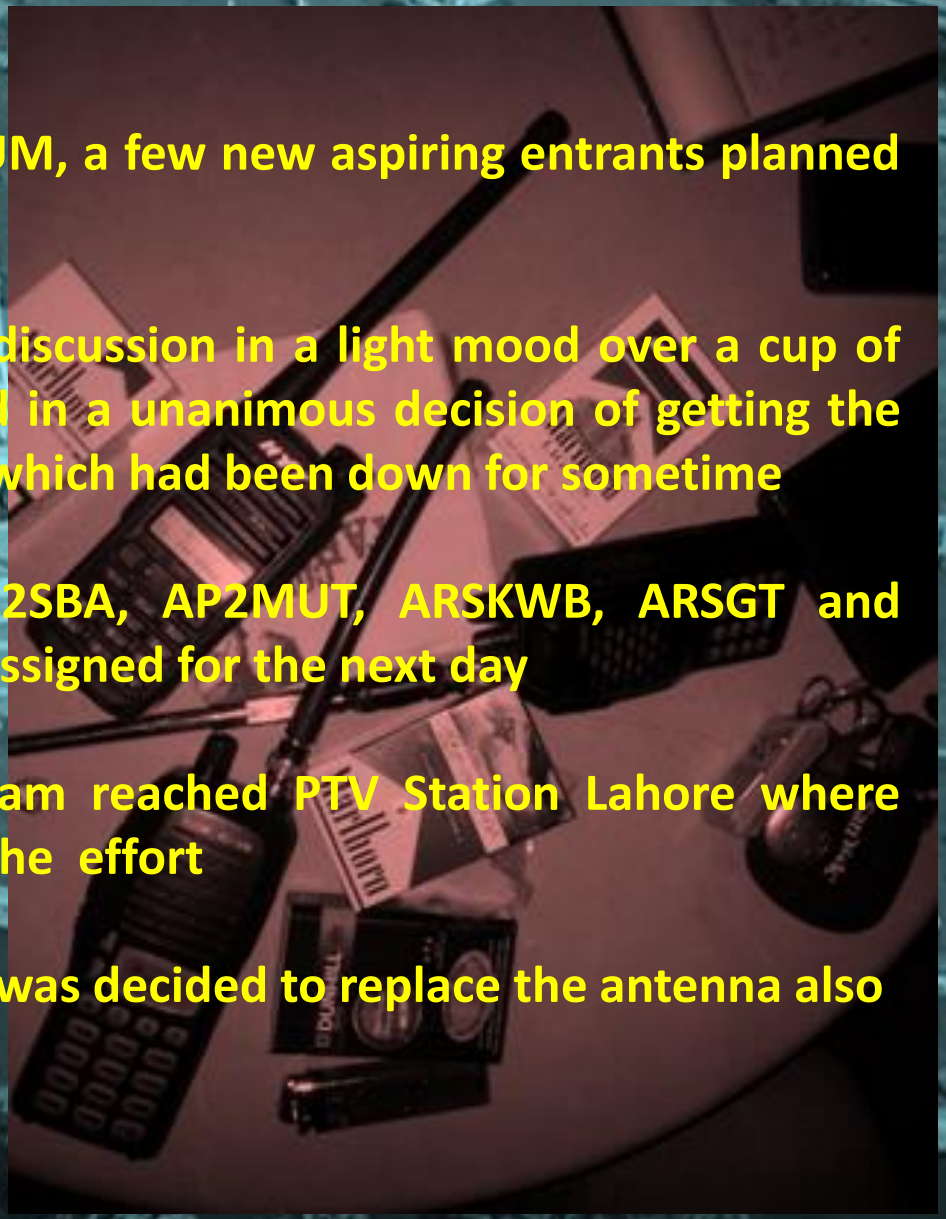
- Lima experimental repeater placed at PTV Station Lahore and antennas mounted on 350 ft high tower

- AP2UK looking after the upkeep of Lima experimental repeater

- Senior hams practicing this hobby but either most of them were dormant or were using HF and hence were not very much inter connected and hence the Lahore experimental repeater upkeep was not at desired levels merely because of the fact that not many were dependent on it

NEW ENTRANTS GET TOGETHER – INSTANT ACTION

- On the encouragement of AP2AUM, a few new aspiring entrants planned a meet with AP2SBA and AP2MUT
- First meeting resulted in a long discussion in a light mood over a cup of coffee on 2nd Nov 2012 and ended in a unanimous decision of getting the Lahore experimental repeater up; which had been down for sometime
- Action team comprising of AP2SBA, AP2MUT, ARSKWB, ARSGT and ARSDD was made and tasks were assigned for the next day
- On 3rd Nov 2012, the action team reached PTV Station Lahore where AP2UK was present to coordinate the effort
- ARSGT had arranged riggers as it was decided to replace the antenna also



NEW ENTRANTS GET TOGETHER – INSTANT ACTION

- Cable was soldered to the new antenna which was procured by pooling in of funds and AP2MUT took the lead and started ascending the 350 ft tower along with one rigger
- New antenna was attached at the desired location on the tower
- AP2UK set on his speciality and after much required work, finally the experimental repeater was back on line

EVOLUTION OF YAGI

- With in a month the repeater went down and the enthusiastic newbies were impatient enough to think like a true ham
- Seniors were consulted and AP2AUM recommended to try a home made antenna
- On 2nd Dec 2012, ARSDD, ARSKWB and ARSGT got together to make a YAGI
- ARSDD had already sourced all the material and tools required for this experiment
- ARSDD very skillfully turned PVC and copper pipe into a 7db gain antenna – and Lima's beloved "EMP Canon" came into being
- First test was so encouraging that from ARSDD's QTH (approx. 17 aerial KMs away from experimental repeater's QTH at PTV Station) QSO was as crisp as can be

NPA
31

YAGI AND BEYOND

- So Rs400 worth of antenna gave further flame of inspiration to the whole group
- As soon as this successful attempt was shared with AP2AUM, encouragement poured in for replicating the same and installing YAGI at couple more SWLs' locations and try to get Murree experimental repeater
- Meanwhile, Lahore experimental repeater went down again

VOX REPEATER EXPERIMENT

- AP2SBA, ARSDD and ARSAB met up to try and set a repeater with the help of two handy sets and a headset (which was loaned by AP2AUM for this experiment)

- It proved to be a successful one

NEW LIMA EXPERIMENTAL REPEATER

- After exhaustion of various options, it was decided to go for the self help option again and to source a new repeater by way of arranging funds via voluntary member donations
- After lot of deliberations and research, ICOM IC-FR 5000 VHF was finalized
- Funds were pooled in and ARSGT and ARSMUT negotiated a good deal
- Most important was the location and security of the newly bought asset and also a continuos source of power to it
- Qurban line was an ideal solution to this dilemma, its free of cost and secure location
- Tx antenna was set at 60 feet and Rx set at 110 feet

ICOM

12x1000g

FUTURE PLANS AND SUGGESTIONS

- Height of antennas attached with the new Lime Experimental Repeater to be increased; Rx to be increased from 110 to 115 feet and Tx from 60 to 85 feet
- To deploy helix cable on Tx of Lima Experimental Repeater
- For un interrupted power supply, plan is to use solar power panels as lima weather supports it
- IDAS digital capability to be added in Lima Experimental Repeater
- PARS to facilitate time lag reduction for new hams to get PTA license
- Training workshops to be made a regular feature
- Training workshop to be conducted in Lahore also

Pakistan Amateur Radio Society
AGM 2013
PARS training session 2012
AP2AUM

PARS Trainings

Training session was carried out for SWL's and new HAM's by PARS training
wing in summer of 2012.

A total of 22 members participated from throughout Pakistan's major cities.

The course covered

- **Basics of Ham Radio**
- **What is VHF, UHF and HF**
- **Propagation**
- **Repeaters**
- **Amateur Satellites**

Thank You