

Amateur TV (ATV)

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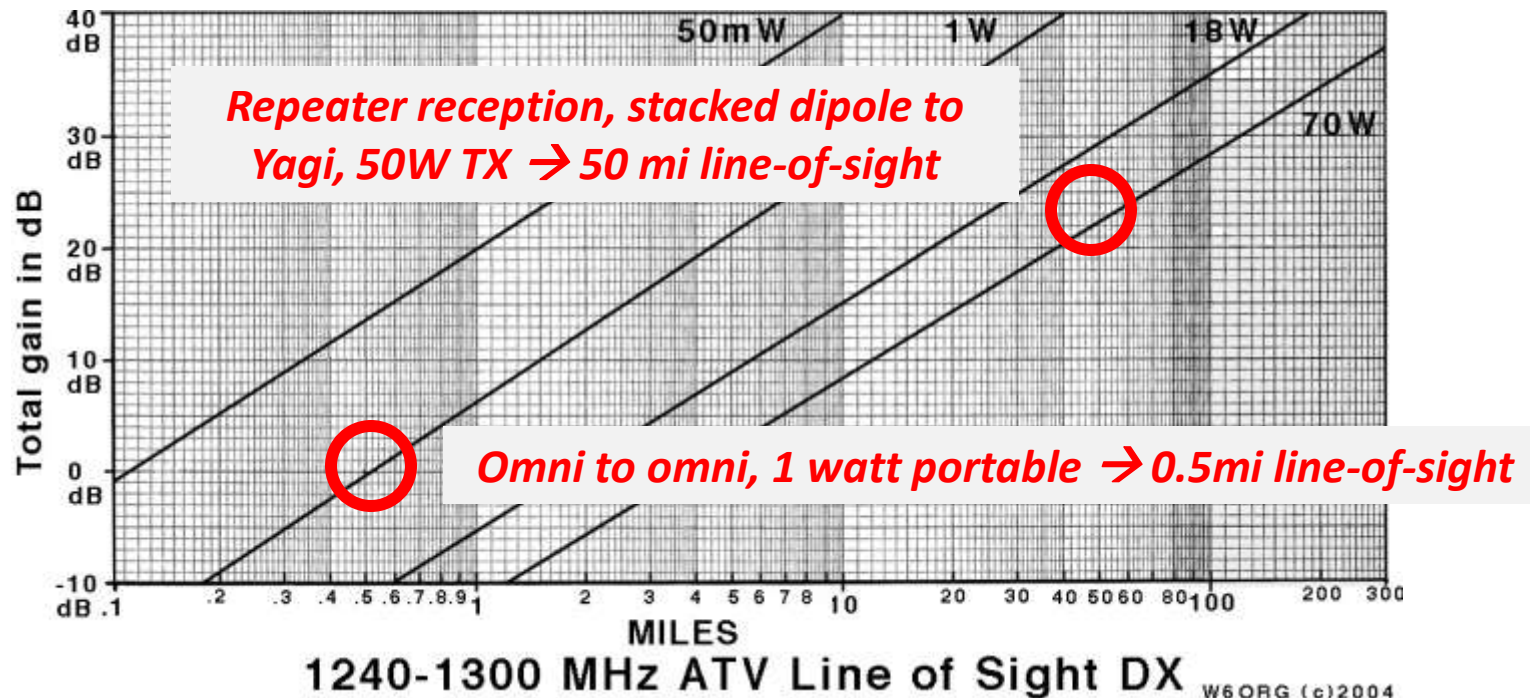
What is ATV?

- ATV has traditionally referred to “fast scan” good old analog TV signals
 - 4.5 MHz bandwidth, AM signal, vestigial sideband
 - Same format as over-the-air TV used to be
- Full motion color video
- AM and FM carrier modes
- 440 MHz band and above

Key ATV technical points

- ATV is a wideband signal and it needs more received power than audio signals for satisfactory picture (rating P5-P0)
- Usually achieved via higher antenna gain and line of sight transmission path

Total gain in dB = sum of Transmitter antenna gain in dBd (gain over a dipole) plus Receiver antenna dBd gain minus transmitter and receiver coax losses



Local Resources in Los Angeles

- Amateur Television Network (ATN)
 - <http://atn-tv.org/ATN.php>
- PC Electronics <http://www.hamtv.com/>

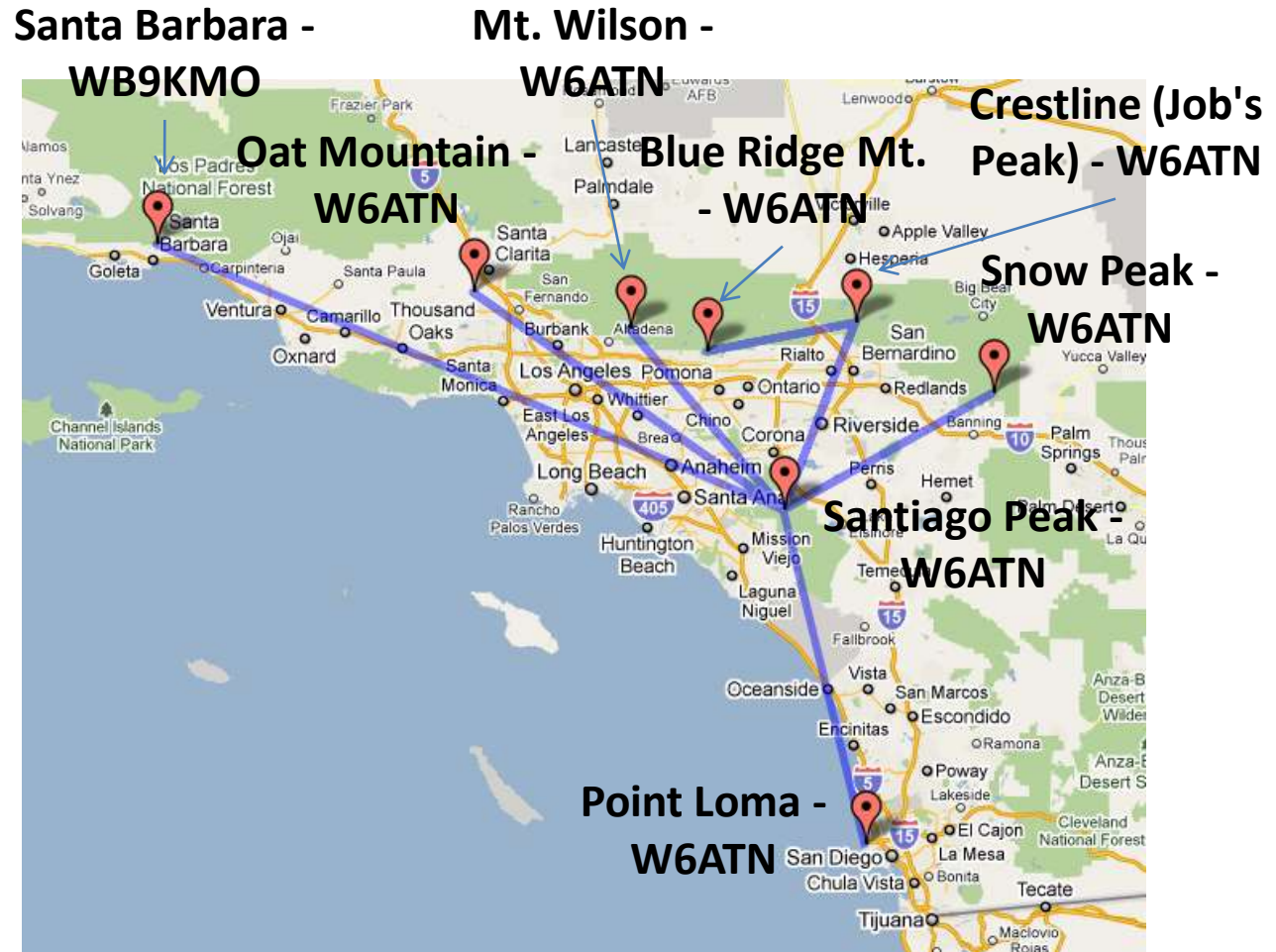
ATN Repeater Map

Typical Repeater
Frequencies:

Repeater outputs:
1277, 1253, 1241, 919
MHz AM VSB

Repeater inputs:
434 MHz AM, 2441
MHz FM

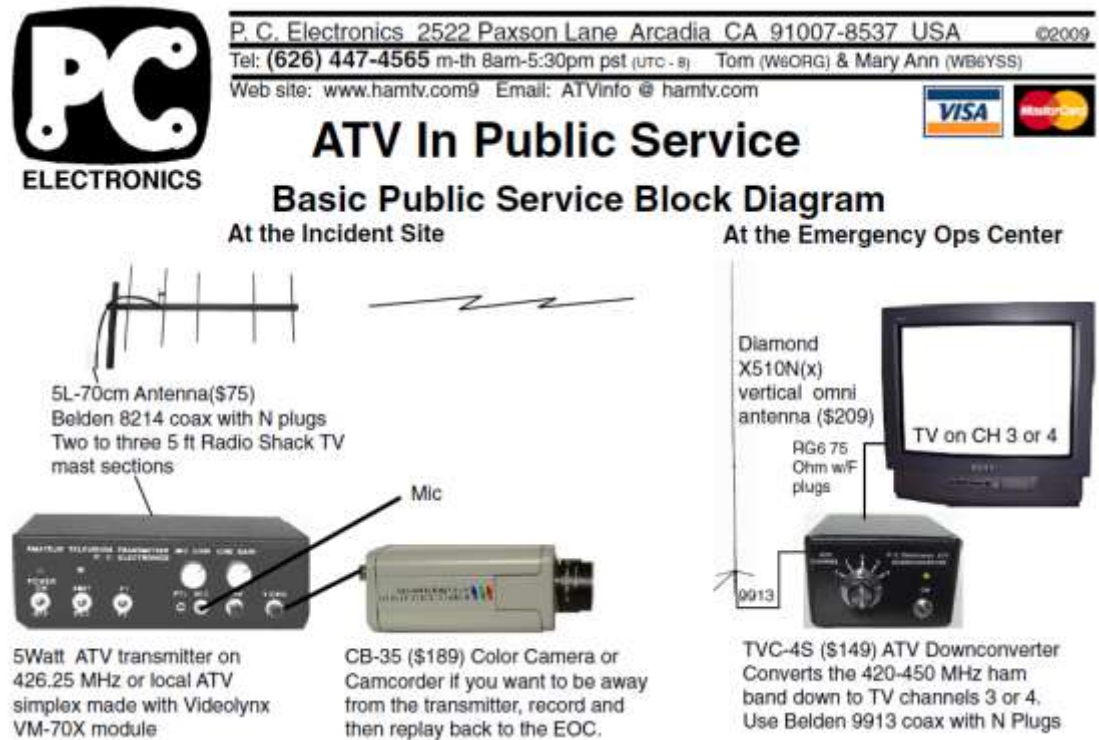
2 meter voice
coordination:
146.430MHz (100.0PL)



- <http://atn-tv.org/gmap/ATN.php?width=1230&height=924>

ATV Equipment for Emergency Teams

- Cameras
 - Battery power, 12V
- Portable transmitters – select a frequency band
 - 440 MHz, 900 MHz, 1.2 GHz, 2.4 GHz, 5.8 GHz
- Receiver is usually a downconverter plus an analog TV
- Receiving tower(s) and relays
- <http://www.hamtv.com/pdffiles/Pubsvc.pdf>



PC Electronics – Local LA source

- Transmitters, receivers, downconverters, equipment converters, portable, repeaters, base stations
- <http://www.hamtv.com/>
- Tom (W6ORG) & Mary Ann (WB6YSS)
- Email: ATVinfo@hamtv.com
- Tel: (626) 447-4565 m-th 8am-5:30pm PST
- 2522 Paxson Lane Arcadia CA 91007-8537 USA
- The Leaders in Amateur Television Equipment Since 1965

Sources of cameras - many

- Supercircuits <http://www.supercircuits.com/>
- Closed Circuit TV Products
<http://www.cctvproducts.com/>
- Many local security and electronics stores
 - Fry's Electronics
 - Signal Electronics

Future ATV

- The era of analog TV is waning
- Hams will continue to use legacy equipment for a long time
- Receivers and monitors will become harder to find
- Analog TV is robust, understandable, troubleshoot-able in emergency and field operations
 - Vertical sync and horizontal sync
- Digital modes are coming <http://www.d-atv.nl/future.php> & <http://www.baycom.org/~tom/ham/dcc2001/datv.pdf>
 - DVB-S (Digital Video Broadcasting Satellite)
 - ATSC (Advanced Television Systems Committee)
 - Again follows commercial TV standards

D-ATV Equipment

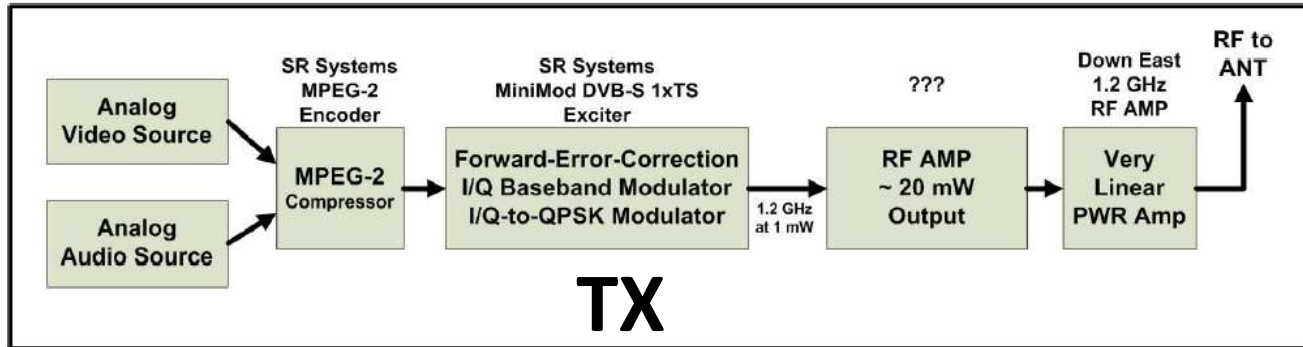


Fig 1 - Block Diagram of DVB-S Transmitter for D-ATV

TX



RX

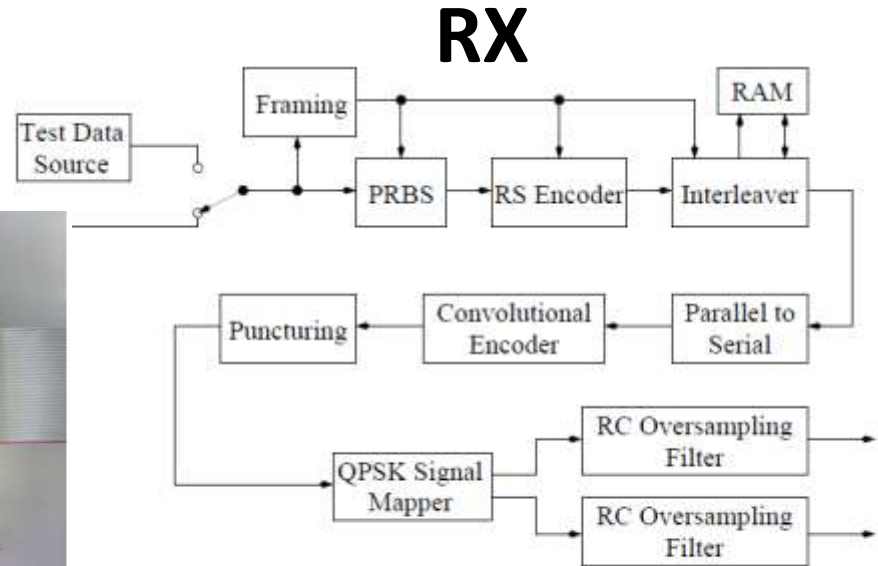


Figure 4: The DVB-S Baseband Processor

Figure 2: The Fujitsu MPEG2 Encoder Evaluation Board

Figure 3: The Base Band Processor FPGA Board with D/A Converter Daughter Board