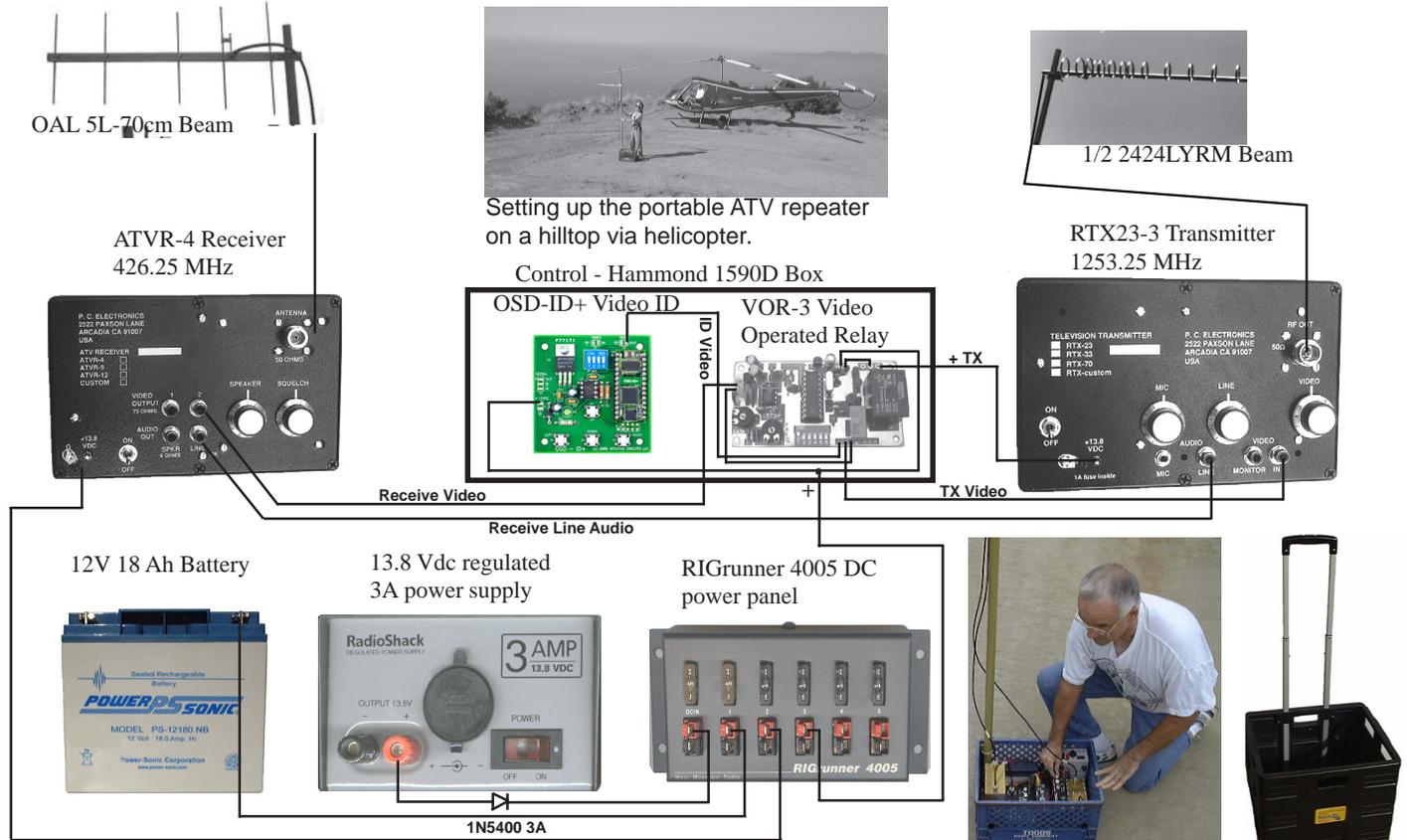


ATV In Public Service Portable ATV Repeater Block Diagram

Note that since this was first designed, some modules are no longer manufactured. Check eBay for used gear or substitute similar new items. For example, the TVC-4S and Rch3 for the receiver and OSD-ID+ w/c for the OSD-PC board.



Original portable ATV repeater was built in a milk crate and used bandpass filters which are only necessary if used near a comm site.



Grand Pack-N-Roll cart.

Sources:

P. C. Electronics: ATVR-4 Receiver, RTX23-3 Transmitter, 2424LYRM Antenna, 5L-70cm Antenna, OSD-PC Video ID board, VOR-3 Video Operated Relay, 2 feedthru capacitors. Check page 4 of our web site for current products and prices.

Radio Shack: 22-504 Power supply, 3 15-862 5 ft TV mast sections, 2 15-826 mast clamps, 276-1141 1N5400 3A diode, Misc., RCA phono jacks and A/V cables, 5A & 2A blade fuses.

Mouser Electronics: 547-PS-12180 Power Sonic 12V 18A battery, 546-1590D-BK Hammond box.

West Mountain Radio: RIGrunner 4005 DC power panel and Power Pole connectors.

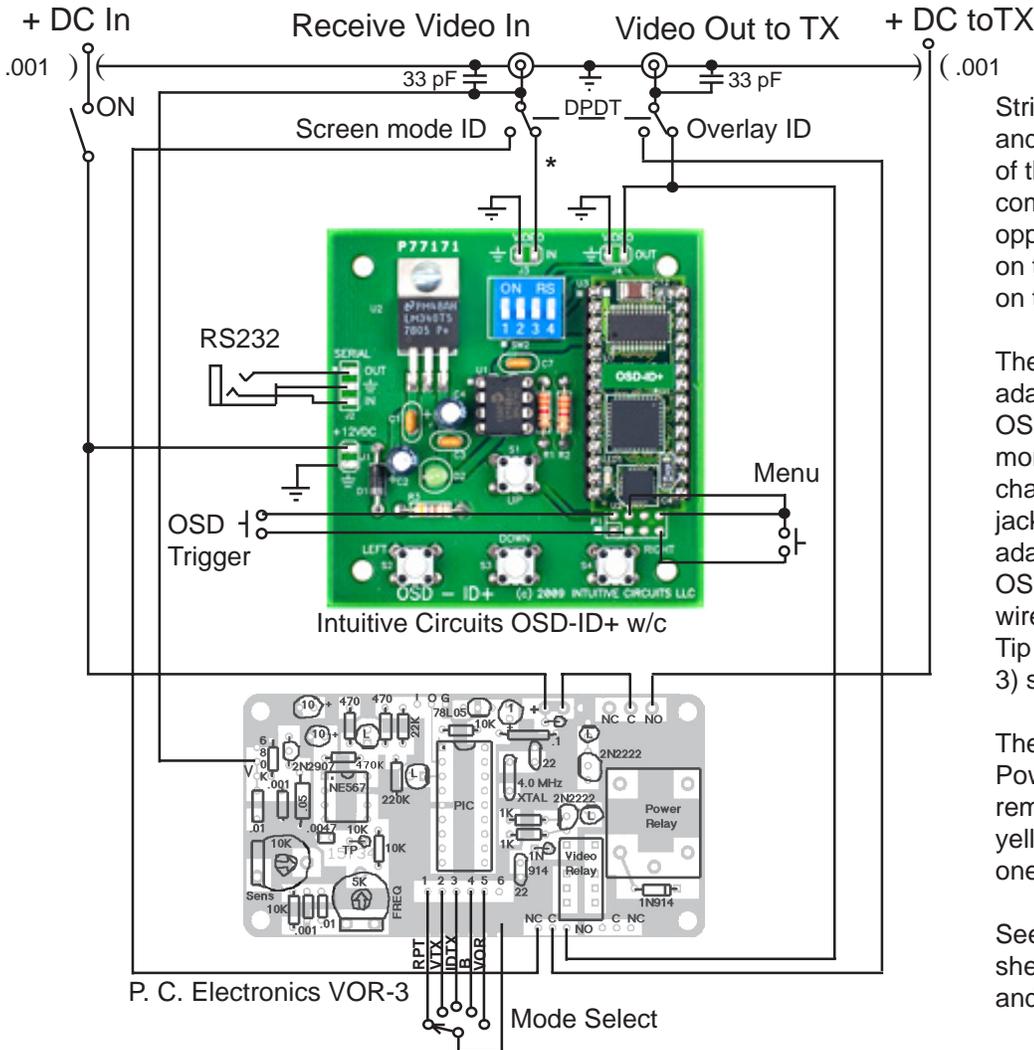
Misc.: hardware, Grand Pack-N-Roll cart or milk crate.

Other combinations of input and output bands can be used, but 70cm in and 23cm out allows the greatest number of available users over the farthest distance to get into the repeater, plus the 23cm band did not require additional filtering of transmit harmonics and has the least probability of interference from other services. The Pack-N-Roll cart or a milk crate makes a great portable case for the repeater for ease in transport and operation. The antenna mast can be clamped to the case. The repeater can operate on AC or up to 12 hours on battery power depending on transmit time. In addition, a camera can be plugged in place of the 70cm receiver for a second simultaneous camera position if in line of sight to the EOC.



ATV In Public Service continued.

Portable ATV Repeater Control Wiring



Strip #22 connecting wires 1/4 inch and enter solder pad on the bottom of the OSD board - solder on the component side. Do just the opposite on the VOR board - enter on the component side and solder on the bottom side.

The supplied RS 232 jack on the adaptor cable that comes with the OSD board is a bit large to fit and more work to drill and file out the chassis. So I used a stereo mini jack instead. Cut the RS232 adaptor cable 2 inches from the OSD board plug end. Connect wires to stereo mini jack and plug - Tip = TX(DB9-2), ring = RX (DB9-3) sleeve = ground (DB9-5).

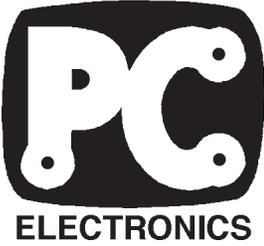
The VOR-3 Sync, Video Relay and Power Relay LED's can be removed and replaced with green, yellow and red panel mounted ones for easy status indication.

See the OSD-ID+ and VOR-3 data sheets for programming, operation and additional wiring information.



Screen mode ID generated in the OSD-ID+ board - Blue background & white lettering.

For repeater, test (ID TX mode) and beacon applications, the full Screen mode ID is best generated from the OSD board.
 * Optionally you could insert a switch at the OSD board Video input to select a local camera video in the ID Overlay mode instead of the Receivervideo like some tower cams do.
 Applications when only one video source input is being transmitted for long periods of time and interruption every 10 minutes by a full screen ID is not desired, you can switch to the overlay ID mode and program the OSD board to Overlay ID every 10 minutes. However, at the end of the transmission, if you dont want to wait for the next 10 minute ID period, you will need to push the OSD ID Trigger button to stay legal.



ATV In Public Service continued.

Portable ATV Repeater Control Box

Cut out the Hammond 1590D cover drill drawing below on the heavy black line and place over the top of the cover. Center punch the indicated holes through the paper and then drill each to the respective diameter shown.

Parts List:

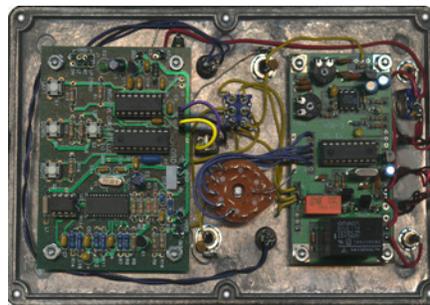
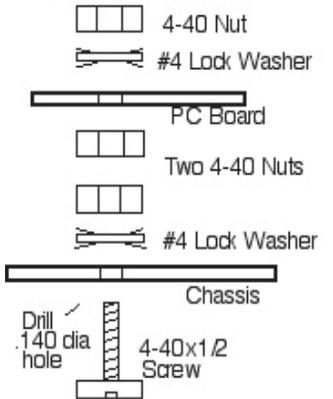
From P. C. Electronics: VOR-3 board, OSD-ID+ w/c board, 2 .001 mF feed thru capacitors.

From Mouser: 546-1590D-BK box, 108-MS550H DPDT toggle switch, 108-MS550K SPST toggle switch, 161-1052 RCA jacks, 161-3502 1/8" stereo jack, 171-3311 stereo plug, 645-558-0101-007 red led, 645-558-0201-007 green led, 645-558-0301-007 yellow led, ME450-2040 knob, 2 104-0012-evx push button, 2 140-50N5-330J 33pF disc cap.

Misc.: 4-40x1/2" screws, nuts, internal lock washers, #22 hook up wire,

Mount in a shielded box.

Board Mounting Detail



W6ORG (c) 2012

