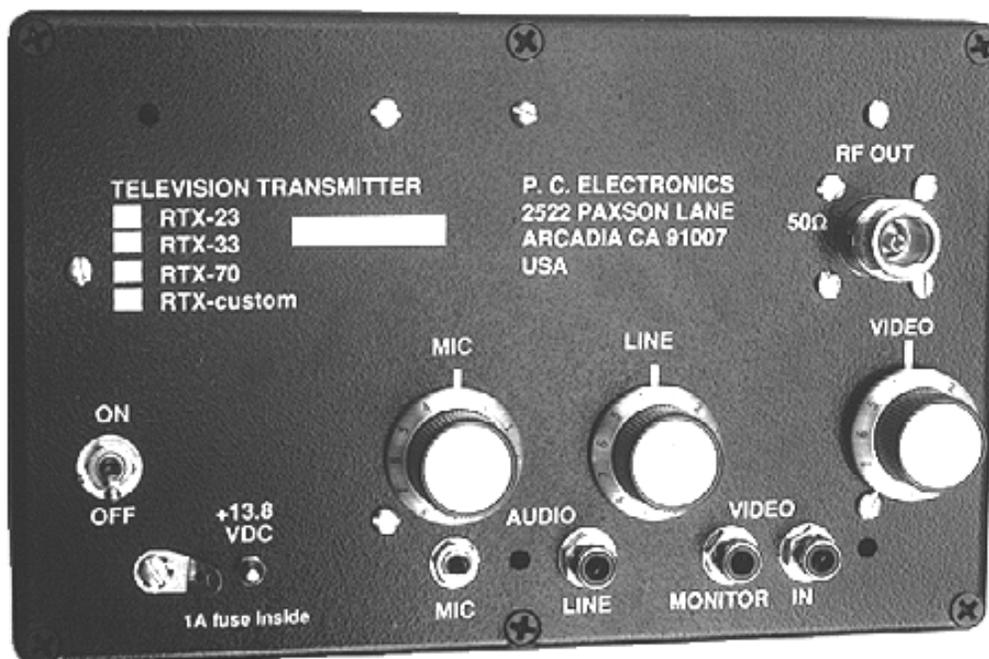




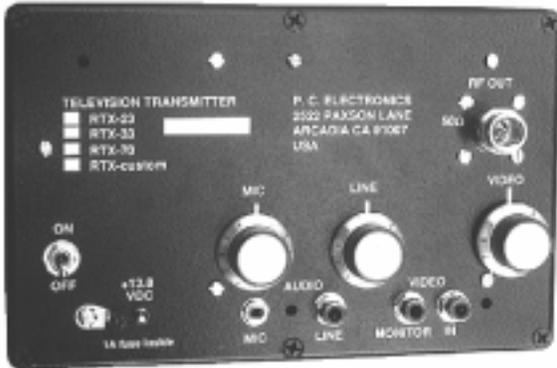
# RTX23-.1 23CM ATV TRANSMITTER

## USERS MANUAL



The RTX23 transmitter is designed to provide 50 to 100 mW p.e.p. (sync tip) of video modulated RF in the 23CM (1240-1300 MHz) amateur band. Any licensed Novice class or higher Radio Amateur may operate this transmitter in accordance with part 97 of the FCC Rules and Regulations. The RTX23 accepts U.S.A. standard composite video (1 volt pk-pk) from any source such as our ATVR series receivers, OSD-ID or Elkronics VDG-1 identifiers, color or black and white TV cameras or camcorders, VCRs, or computers for transmission. Audio from these sources or a low impedance dynamic mic is also transmitted on the 4.5 MHz sound subcarrier.

**PLEASE** read through this manual before plugging in an cables and attempting operation. Each connector and control is described here to enable your proper hookup and operation. Also the unique video practices associated with ATV and the 23 CM band are described.



**+13.8 Vdc INPUT FEED-THROUGH.** The adjacent solder lug is for the negative power supply return lead. The two wires or coax should go directly back to the power supply terminals, not to a common power strip. Power ground loops and video noise could result if the chassis connection to a panel or other equipment is used for ground instead of a wire, or if the + lead goes to a common terminal with other equipment not at the regulated power supply. The transmitter requires a regulated +12.0 to 14.0 Vdc at up to 250 MA. RG58 coax is suggested in high RF environments or repeater applications.

**TRANSMIT POWER SWITCH.** In the off position, the connected voltage powers the video monitor circuit to enable seeing the applied video before transmission. In the on position, the connected voltage goes to the transmitter. There is a 1 Amp fuse and a 16V protection zener inside.

**MIC INPUT.** The minijack accepts any low Z dynamic or low Z amplified electret mic in the range of 100 to 600 Ohms. Use only well shielded cable to prevent RF pickup hum and buzz. The Mic audio gain pot is just above the jack. Mic audio is active at all times and mixes with the line level audio to enable voice over or mixing with another source such as a two meter receiver on the local ATV coordination channel. Normal setup for 2 meter audio is 6 dB down from ATV line audio. A resistive divider may have to be made to drop the 2 meter level to the mic input level.

**LINE AUDIO INPUT.** The RCA phone jack accepts high level audio from the ATVR receiver, VCR, or other sources. Input impedance is 10K Ohms. Minimum input level is .1 V pk-pk. Use only well shielded cable. The line audio gain control is just above and to the right of the jack. This should be set for 25 kHz deviation with normal input level with maximum peaks at 40 kHz. This level set is independent from the mic gain control.

**MONITOR OUTPUT.** This model does not have a video monitor output and therefore the hole is plugged up.

**VIDEO IN.** This RCA phone jack accepts the nominal 1 V pk-pk negative going sync NTSC video into 75 Ohms. Video from an ATVR receiver, VCR, Eltronics VDG-1 video identifier, computer or camcorder can be used. Use a well shielded cable. The video gain control is above and to the right of the video in jack. To set the proper video gain level, watch the transmit video from the monitor jack on a video monitor or oscilloscope. With a good video signal plugged in that has large areas of black and white, slowly increase the video gain until the white areas seem to smear in the monitor, or limit on a scope. Then back the gain down a little so that the setting is just below the smear or limiting point.

**RF OUT.** The type N jack should be connected to a resistive 50 Ohm load, filter or antenna at the transmitters frequency. Use good quality 100% shielded cable such as Belden 9913 or hardline. Take great care with preparing connectors and cable. On initial turn on, do not transmit more than 10 seconds if the reflected power is more than 10% or 2:1 VSWR. You could damage the final or modulator transistor.

**IF YOU BELIEVE THE RTX23-.1 ISN'T WORKING,** check all cables, connections, power supply, internal fuse, test point DC voltages and VSWR. If you can't determine the trouble, call us and describe the problem or ask any questions you might have. It will save us both time if we suggest some things to try that may have been over-looked, or for us to better evaluate the problem. The RTX23-.1 can be repaired by us for \$75 plus parts cost in a few days if we believe the problem is customer caused, or only your shipping cost to us if we determine that it was due to our workmanship and materials within a reasonable time and given circumstances. Include with the unit your name, call, street address - no PO box, and a description of the problem. It will be sent back UPS COD if we determine the problem was customer induced or no charge if our fault. There is no other warranty expressed or implied. See our latest catalogue for our service and return policies.