



Application Note

AN-78

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DVB-T

Transmitters & Receivers

(70 cm - 3 cm)

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The purpose of this application note is to demonstrate practical means of assembling both transmitters and receivers for ATV on the UHF and microwave bands. It covers DVB-T digital ATV for all the amateur bands of 70 cm through 3 cm (430 MHz - 10 GHz). These are all operational rigs which I have assembled and used on the air here in Boulder, Colorado. Having put them on the air and made two way QSO contacts with other local ATV hams, I can now claim "Worked All Bands" for DVB-T.

Block diagrams are found on the following pages for each rig. They are followed with a collection of photos showing the rigs and some of the various antennas used with them.

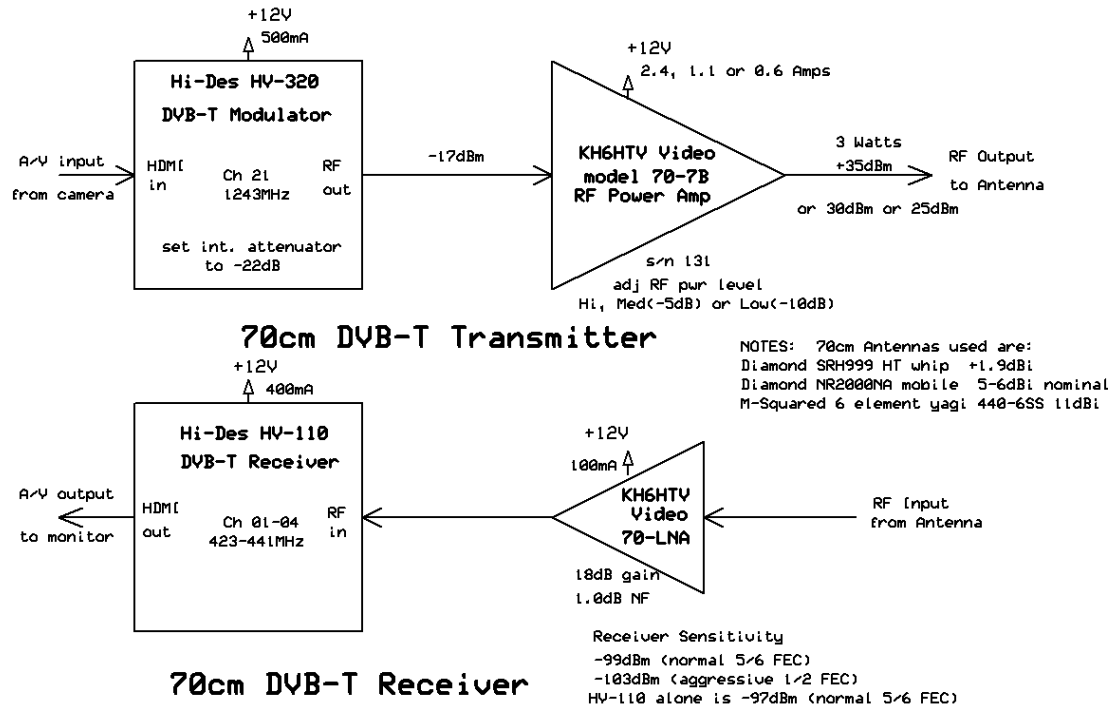


Fig. 1 KH6HTV's mobile/portable, 70 cm, DVB-T Transmitter & Receiver

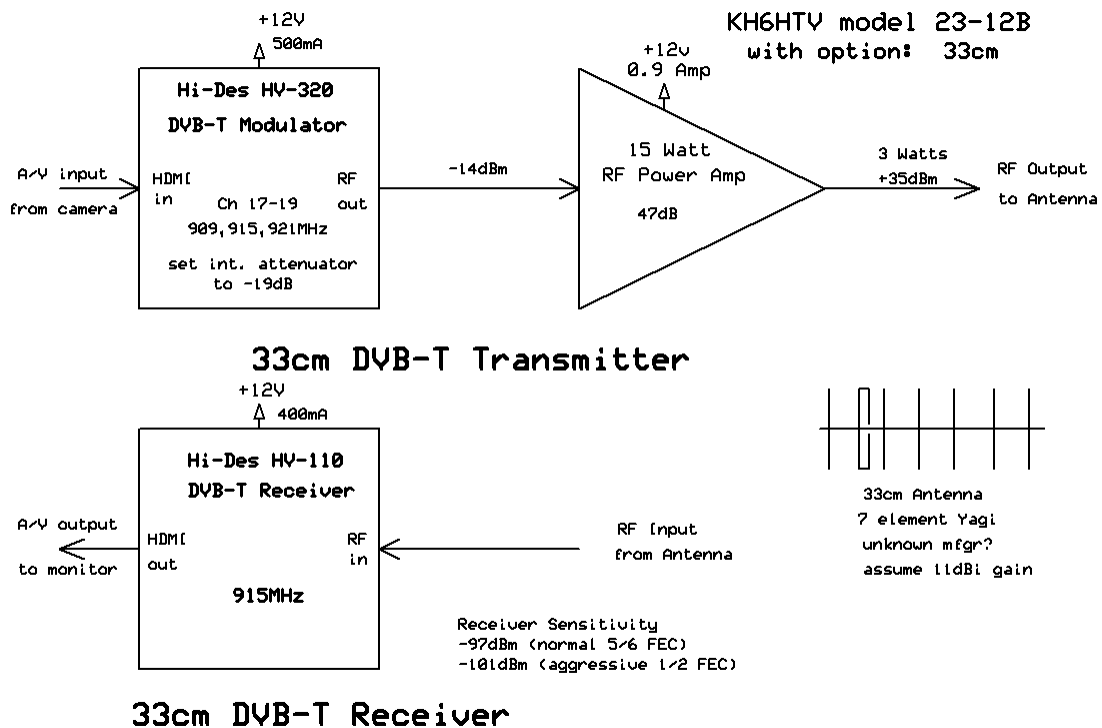


Fig. 2 KH6HTV's mobile/portable, 33 cm, DVB-T Transmitter & Receiver

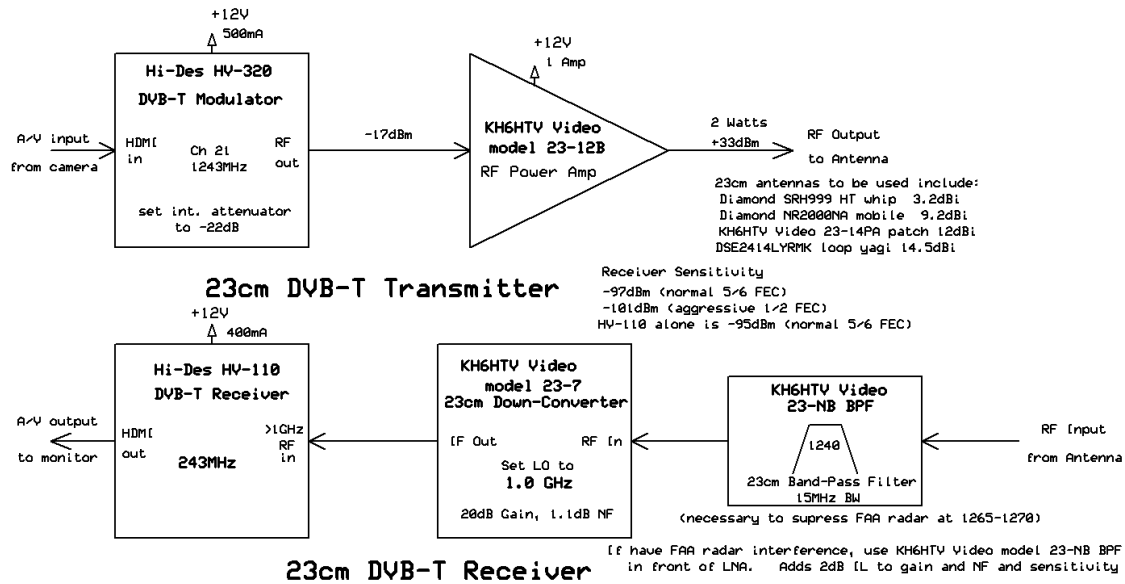


Fig. 3 KH6HTV's mobile/portable, 23 cm, DVB-T Transmitter & Receiver

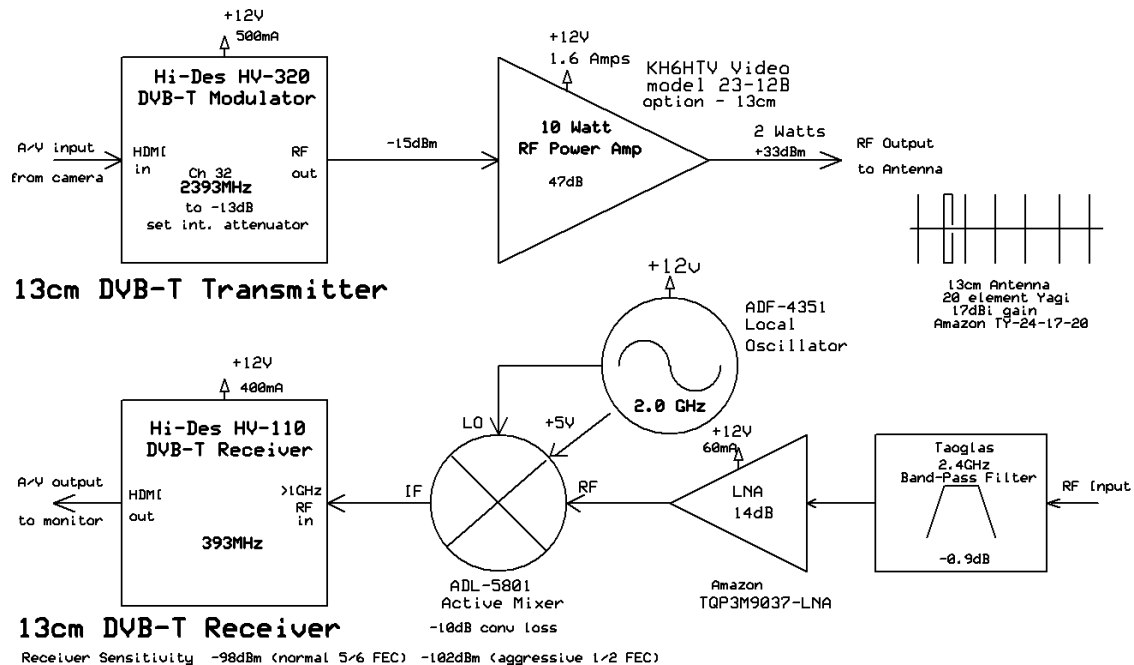


Fig. 4 KH6HTV's mobile/portable, 13 cm, DVB-T Transmitter & Receiver

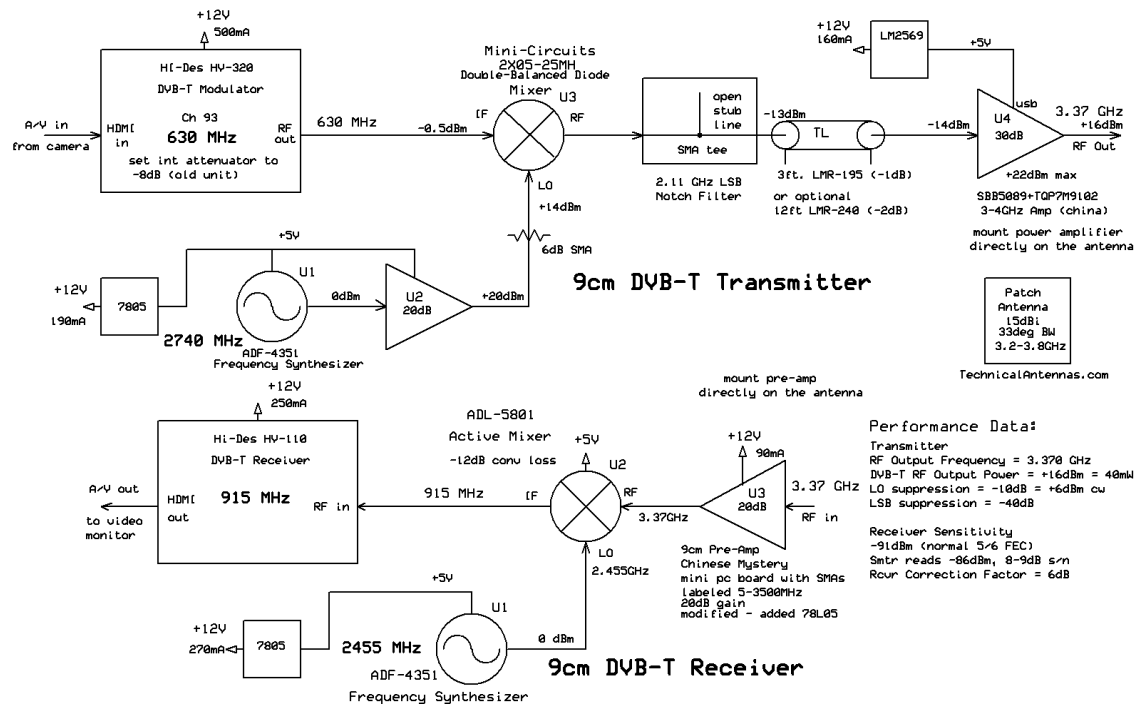


Fig. 5 KH6HTV's mobile/portable, 9 cm, DVB-T Transmitter & Receiver

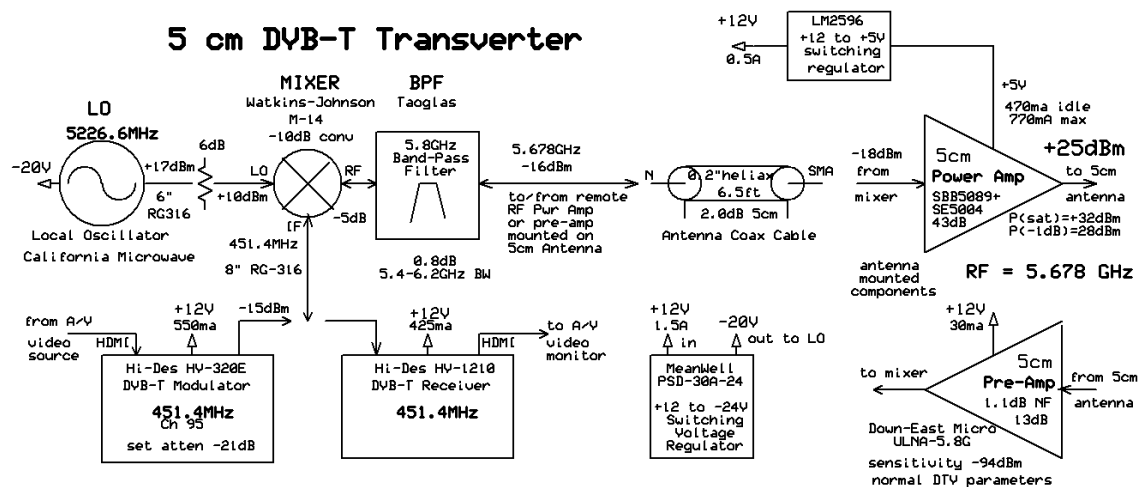


Fig. 6 KH6HTV's mobile/portable, 5 cm, DVB-T Transverter

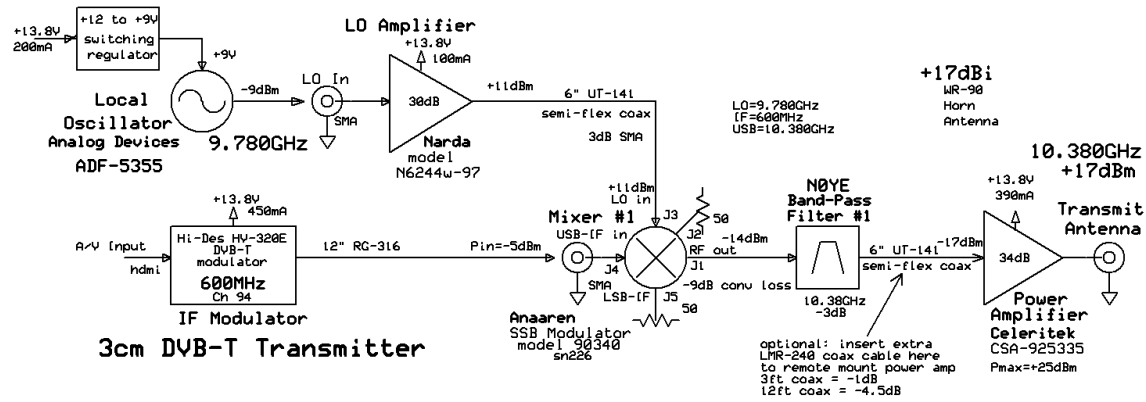


Fig. 7 KH6HTV's mobile/portable, 3 cm, DVB-T Transmitter

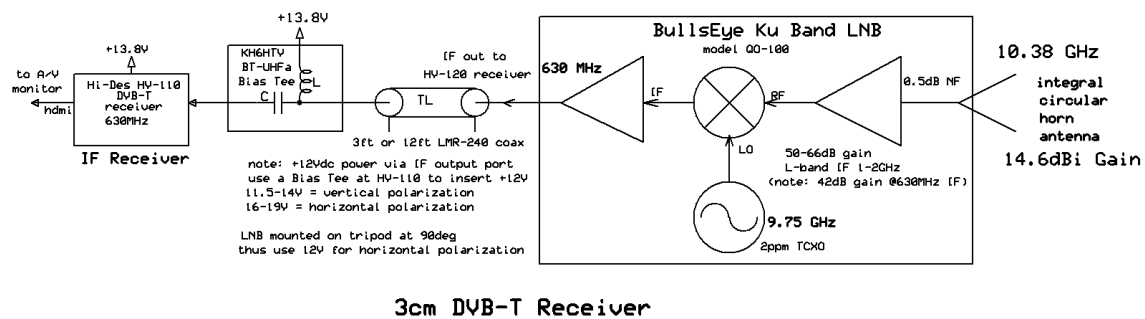


Fig. 8 KH6HTV's mobile/portable, 3 cm, DVB-T Receiver



Fig. 9 KH6HTV's mobile/portable 70 cm, DVB-T equipment

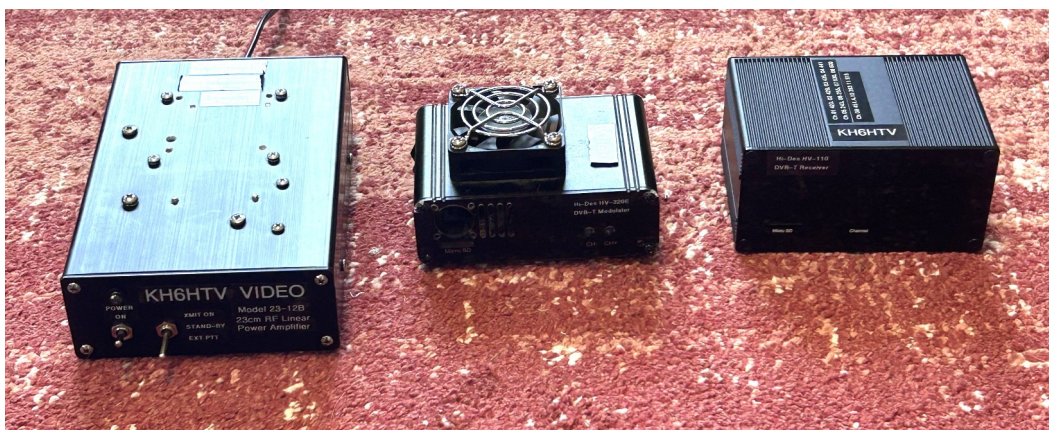


Fig. 10 KH6HTV's mobile/portable 33 cm, DVB-T equipment



Fig. 11 KH6HTV's mobile/portable 23 cm, DVB-T equipment

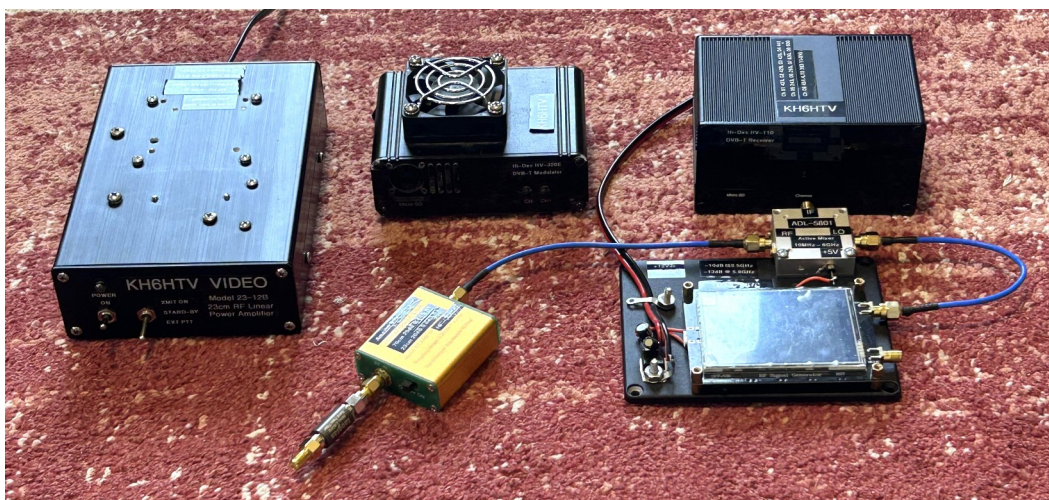


Fig. 12 KH6HTV's mobile/portable 13 cm, DVB-T equipment



Fig. 13 KH6HTV's mobile/portable 9 cm, DVB-T equipment

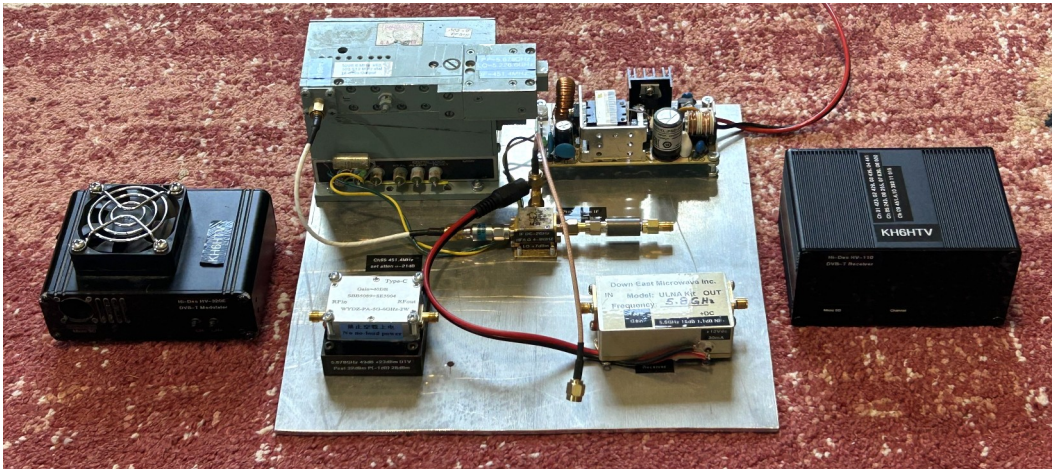


Fig. 14 KH6HTV's mobile/portable 5 cm, DVB-T equipment

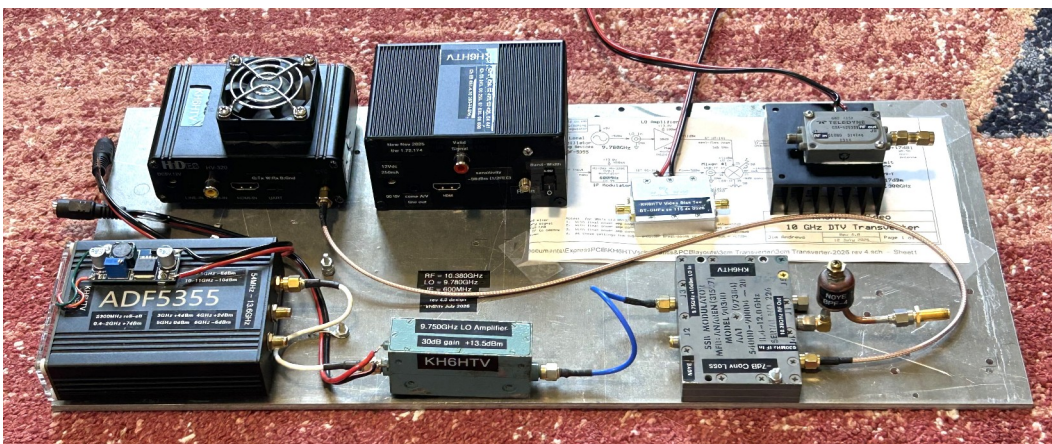


Fig. 15 KH6HTV's mobile/portable 3 cm, DVB-T equipment



Fig. 16 Batteries used with KH6HTV portable DVB-T rigs

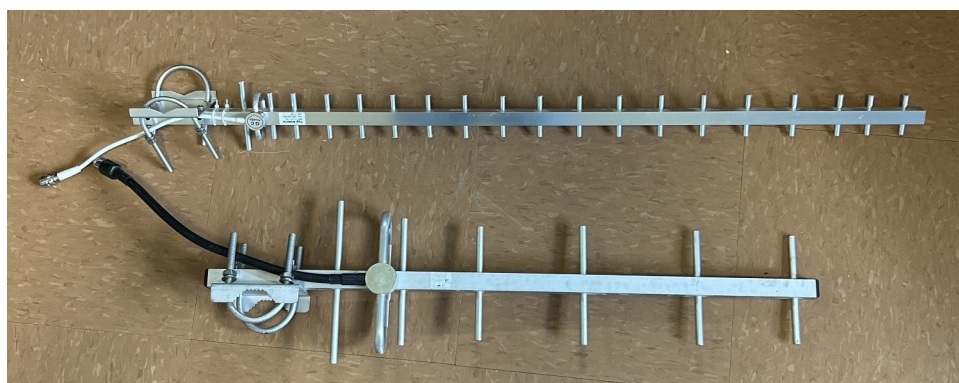


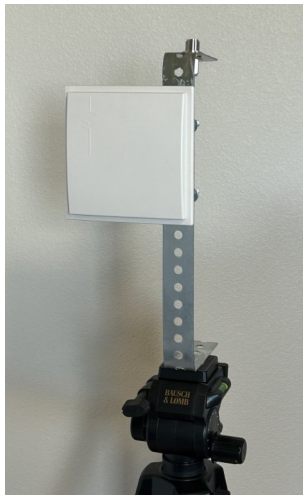
Fig. 17 900 MHz, 11dBi Yagi & 2.4 GHz, 17 dBi Yagi Antennas



Fig. 18 X-band, 3 cm Waveguide horn antenna (17dBi) used for transmit and BullsEye LNB (14.6dBi) used for receive



23 cm



9 cm



5 cm

Fig. 19 23 cm, 14 dBi patch antenna --- 9 cm, 15 dBi patch antenna,
& 5 cm, 22 dBi BBQ grill dish antenna



Fig. 20 70 cm & 23 cm flexible whip HT antenna. Diamond SRH-999
1.7 dBi on 70 cm & 3.2 dBi on 23 cm bands
mounted on camera tripod along with Canon camcorder