

AccessionIndex: TCD-SCSS-T.20121208.086

Accession Date: 8-Dec-2012

Accession By: Prof.Foster

Object name: Prof.Foster's Radio Rig

Vintage: c.199x

Synopsis: Kenwood TS-790A tri-band transmitter/receiver and Astron RS-20A power supply. TS-790A S/N: 30300023, RS-20A S/N: 91091384.

Description:

The TS-790 tri-band transceiver was a very well regarded transmitter/receiver made from 1997 onwards by Kenwood Corporation for use on the 144MHz (2m), 430MHz (70cm) and 1330MHz (2cm) [with UT-10 option] amateur radio bands, i.e. it could combine three transceivers in one unit. The TS-790A is the American version, with a slightly higher specification than the TS-790E version for the EU. It was considered ideal for satellite, moon-bounce or grid-square operation, and was also able to be customised for use with packet (digital) radio using the AX.25 protocol, a variant of X25. Uplink and downlink frequencies could be shifted simultaneously to compensate for Doppler-shift en-route. The 1.2GHz UT-10 option is not fitted to this unit.

The unit was very digital, with dual digital variable-frequency oscillators (VFO) for each band, dual digital frequency displays, an intermediate-frequency (IF) shift processor, a speech processor, a convenient keypad for entering frequencies, plus memory for 59 entries. It could be used in USB, LSB, CW and FM operating modes, with rated transmitter power output was 45W FM or 35W SSB at 144MHz, 40W FM or 30W SSB at 430MHz. It needed a 12V/15A external power supply (the RS-20A in this case).

The Astron RS-20A was a popular linear power supply developed in the late 1980s for amateur radio high frequency (HF) transmitters, made by Astron Corp, Irvine, California. The generic model was known as RS/VS 20, RS-20A.

It was rated at 13.8VDC 16A continuous, 20A ICS-50%, but its 16A continuous rating was considered suspect (more like 10A). Electronic regulation kept ripple to less than 5mV peak-to-peak at full load. There was fold-back current limiting (as well as a chassis-mounted fuse) to protect the power supply from excessive current or a shorted output, and crowbar over-voltage protection. Overall it occupied 9 x 5 x 10.5 inches, including its heavy-duty heatsink.

The rig in this collection was owned by Prof.Foster, Dept.Statistics, Trinity College Dublin. Its usage has yet to be ascertained.

Accession Index	Object with Identification
TCD-SCSS-T.20121208.086.01	Kenwood TS-790A Tri-Band Transceiver. S/N: 30300023
TCD-SCSS-T.20121208.086.02	Astron RS-20A Power Supply. S/N: 91091384

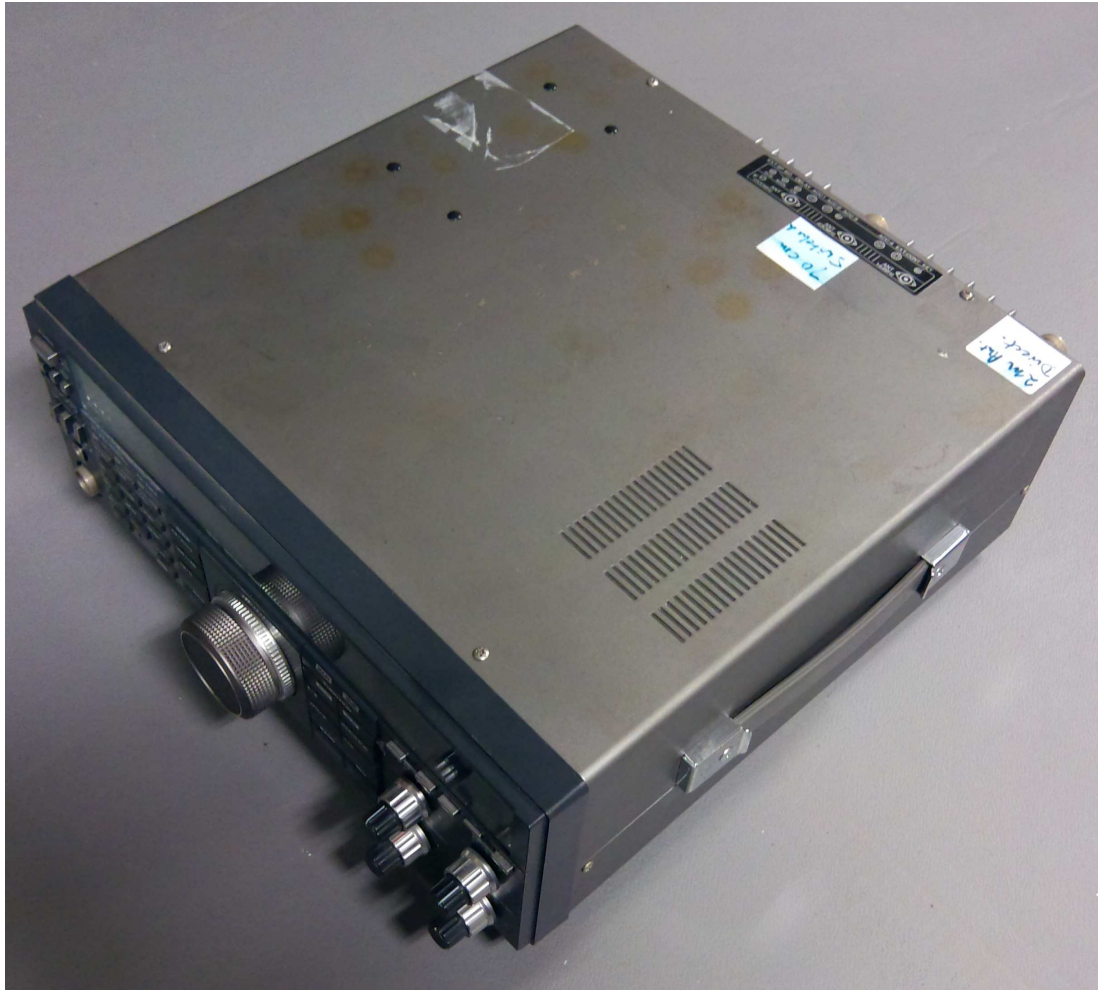


Figure 1: Kenwood TS-790A three-quarter view



Figure 2: Kenwood TS-790A top-front view



Figure 3: Kenwood TS-790A front view



Figure 4: Kenwood TS-790A left front closeup



Figure 5: Kenwood TS-790A right front closeup



Figure 6: Kenwood TS-790A rear view



Figure 7: Kenwood TS-790A left rear closeup



Figure 8: Kenwood TS-790A manufacturing label

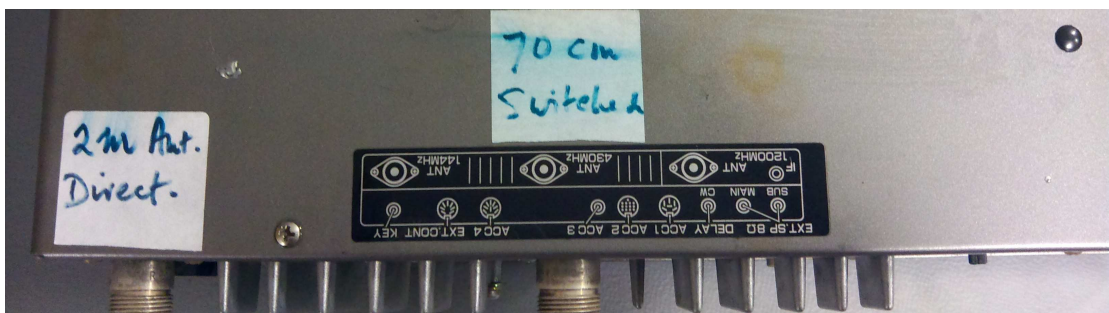


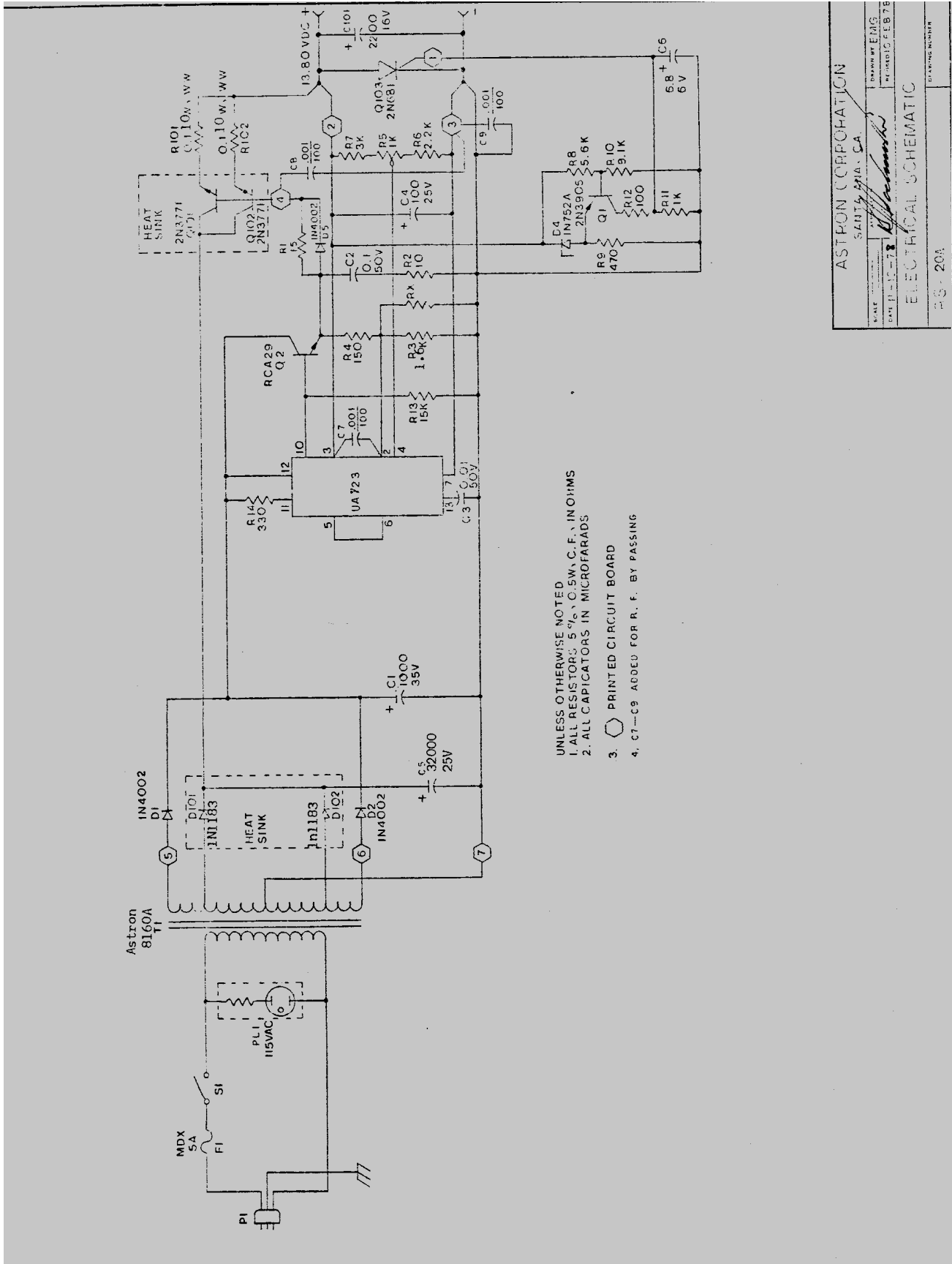
Figure 9: Kenwood TS-790A rear view



Figure 10: Astron RS-20A three-quarter view



Figure 11: Astron RS-20A rear view



ASTRON CORPORATION
 SANTA ANA, CA.

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 REVISION: FEB 78

ELECTRICAL SCHEMATIC
 RS-20A

Figure 12: Astron RS-20A schematic c.1978

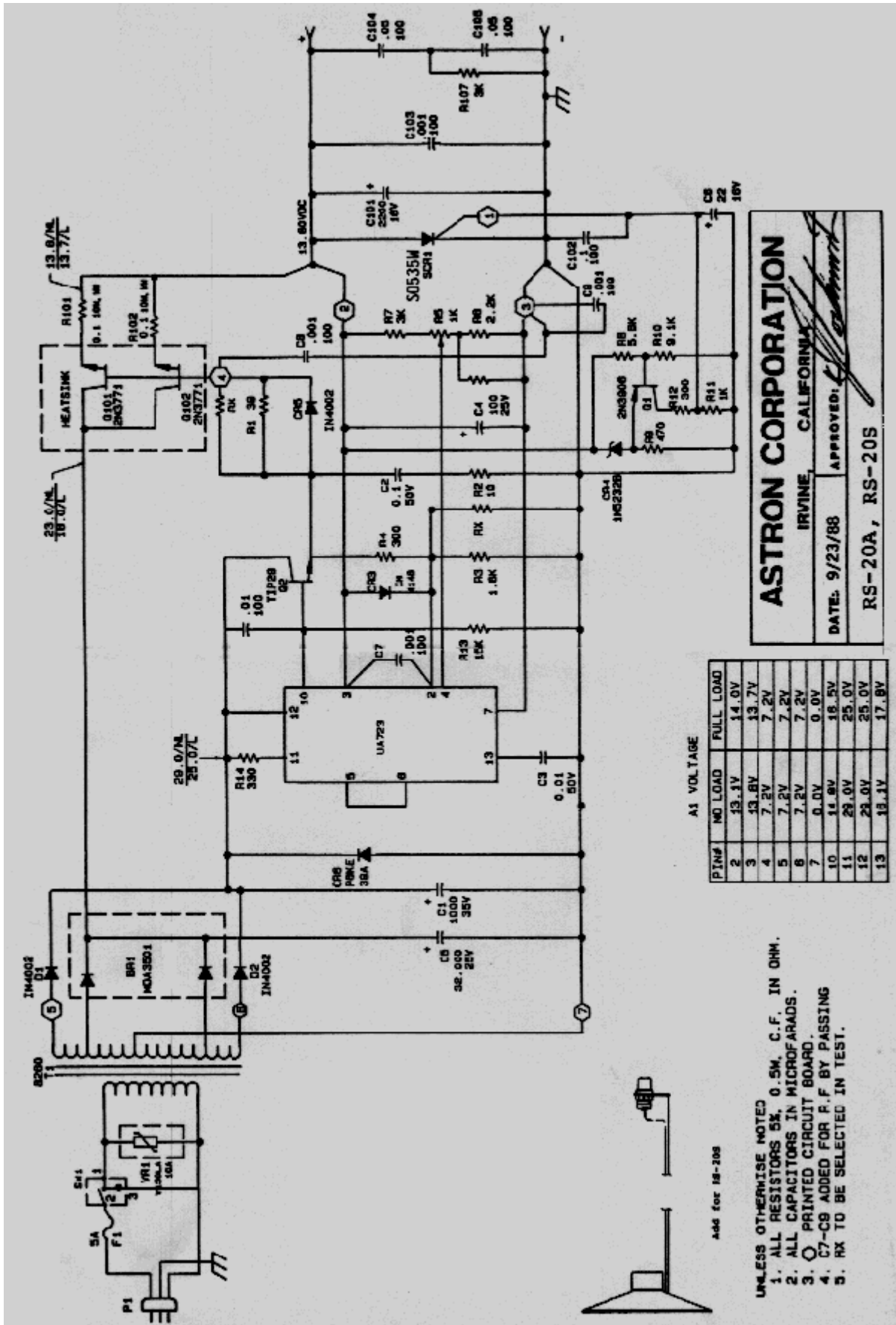


Figure 13: Astron RS-20A schematic c.1988