SPRAT

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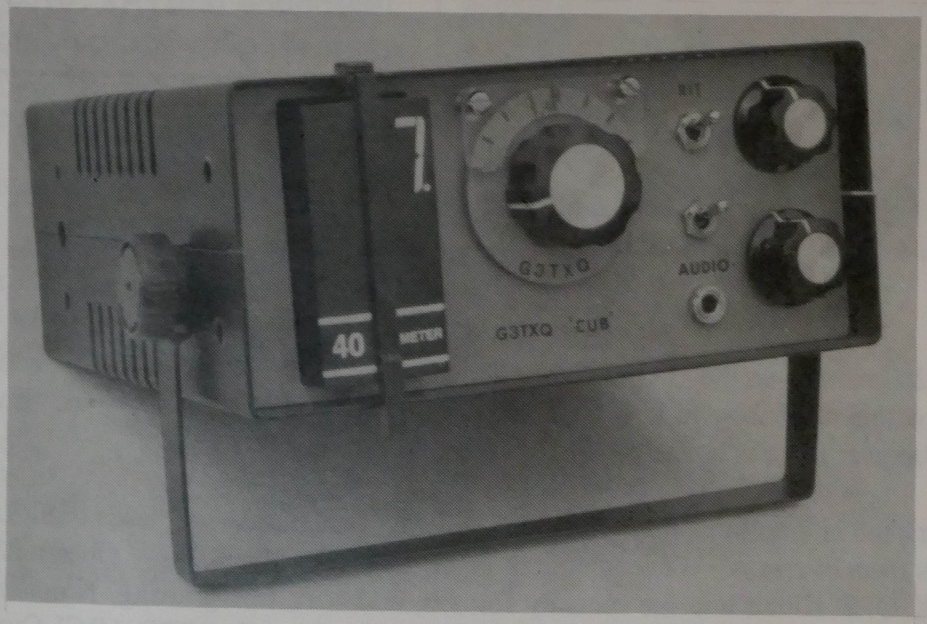

THE G3TXQ CUB - WHAT A GOOD IDEA

The CUB is a Multiband CW Transceiver Designed and Built by Steve Hunt, G3TXQ, using the plug-in modules from the Ten Tec Scout to cover 160 - 10m including superhet receiver switchable 2.4/1KHz bandwidths, AGC, RIT, ring mixer front end

INTERNATIONAL SPECIAL

NORCAL-40 TRANSCEIVER - MINICOM SUPERHET - OK2SBJ TRANSCEIVER
THE THREEFER - VALVE TRANSMITTER & RECEIVER - GOSLING ANTENNA
SUNNY TRANSMITTER - AUDIO S METER - NICAD CHARGE CONTROLLER
LM386 ANTI-HISS - QRP NEWS - ANTENNAS•ANECDOTES•AWARDS
COMMUNICATIONS FORUM - NOVICE NEWS - VHF REPORT
MEMBERS NEWS - MINI-CONVENTION - YEOVIL REPORT

THE CUB MULTIBAND CW TRANSCEIVER MKII

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The Cub appeared in the front cover of the last issue of SPRAT. Several readers have asked for details of the circuit - Here it is !

I have owned a Ten Tec Scout for a number of months and am well pleased with its performance. However, it is rather large and power hungry for portable QRP use, and so I decided to design my own Tx/Rx which would make use of the Scout plug-in modules. It was christened the "Cub" for obvious reasons.

The receiver front end, IF strip and AGC circuit are very similar to those in the Atlas 180. The switchable IF filter provides bandwidths of 2.4KHz and 1KHz with the values shown. The transmitter features semi-break-in, sidetone, and a "spot" facility to allow accurate netting.

The VFO covers about 2.2Mhz to 2.37MHz. This 170KHz swing gives good CW coverage of all bands from 3.5MHz upwards, but with the mixing arangement used by TenTec does not allow coverage of 1.8MHz. If you wish to listen to SSB signals in addition to CW at the bottom end of each band it is essential that you position the BFO on the low side of the IF filter; the VXO circuit values shown will allow this.

With a 13 Volt supply, power output is as follows:-

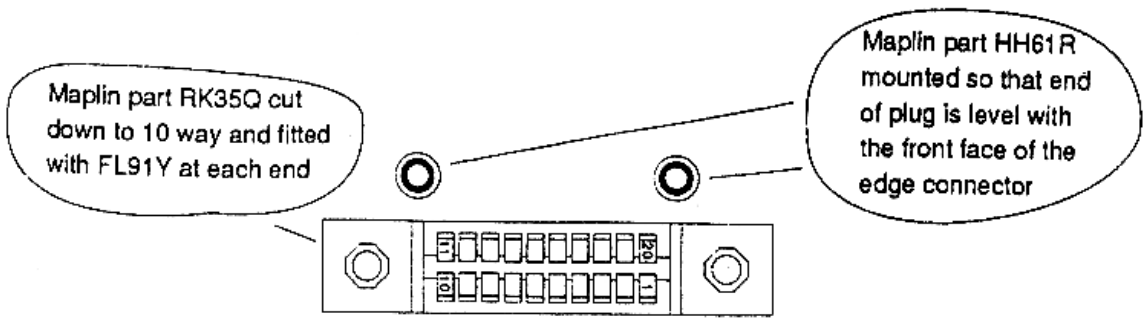
3.560 MHz	9W
7.030 MHz	7.5W
10.110 MHz	9W
14.060 MHz	5.3W
18.100 MHz	4W

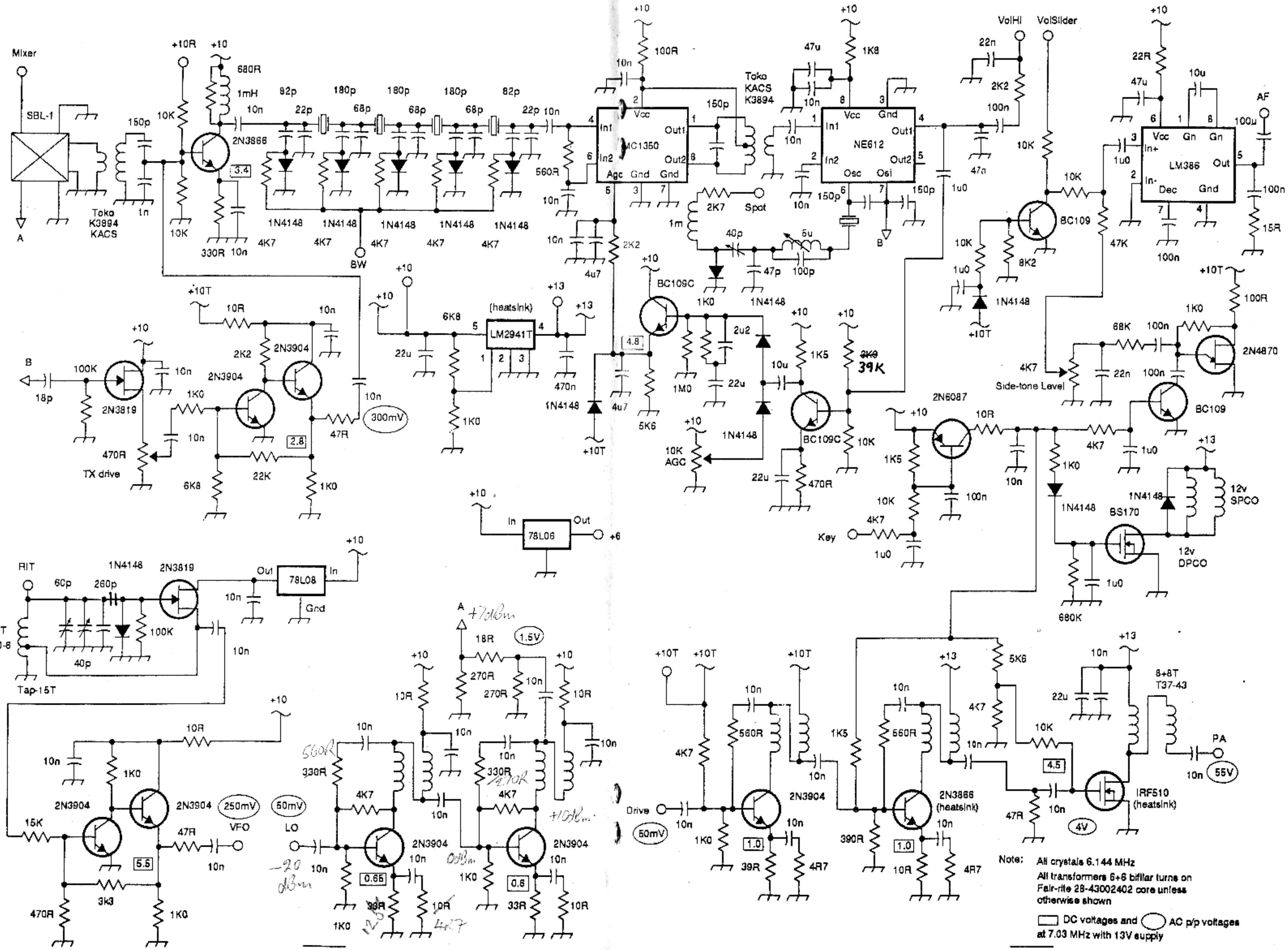
I do not have modules for other bands, so I don't know how the MOSFET PA will perform at higher frequencies. It might be advisable to add an external drive level control if the power drops significantly.

Current consumption is about 100mA in Rx mode, increasing to 300mA in Tx mode and about 1.5A under key-down conditions. I deliberately powered the plug-in modules from a 6Volt supply in order to reduce the current consumption (TenTec power them from 10Volts and waste a lot of current in a zener stabiliser).

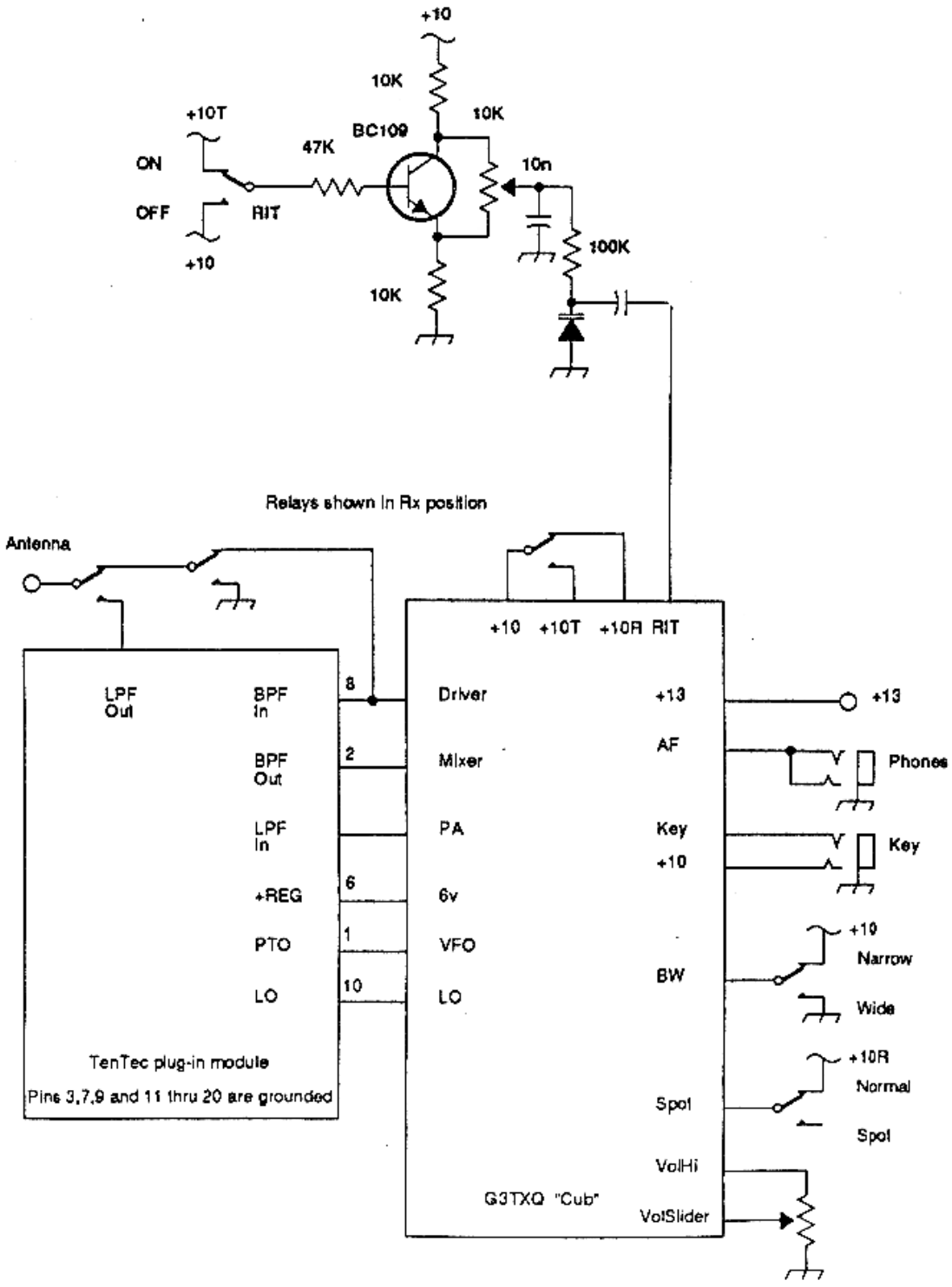
I constructed the Cub "ugly style" in a Maplin instrument case type YZ02C whose dimensions are 5.5" x 2.4" x 6". The most difficult part of the construction was providing mating connectors for the plug-in modules; the accompanying interconnection details show the parts I used to achieve this.

As always I would be pleased to assist members with queries, but do please enclose a s.a.e.





Note: All crystals 6.144 MHz
All transformers 6+6 bifilar turns on Fair-rite 28-43002402 core unless otherwise shown
DC voltages and AC p/p voltages at 7.03 MHz with 13V supply



Interconnection details