

## 10 Metres

(1) . . . Tune to 28.6MHz (or wherever in the 10m band peak performance is required), and tune pre-selector for maximum on receive. (2) . . . Switch to transmit and with a small amount of carrier inserted, tune PA and load and *retune* pre-selector for maximum RF power output, noting as to whether it is necessary to tune pre-selector HF or LF. (3) . . . Set pre-selector half-way between points of peak performance on receive and transmit, and trim grid capacitor TC5 for maximum RF output, reducing drive if PA current exceeds 100ma. Repeat 1-3 a few times until points of peak performance in transmit and receive coincide. Compromise for MAX TX drive if necessary. **Note.** Some makes of 12BY7A will make Tx & Rx peaks differ.

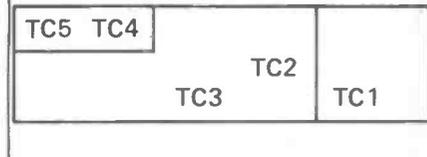
If desired, the aerial trimmer capacitors can be set on signal for maximum receive strength, but this is seldom needed, likewise, rarely will it be necessary to interfere with the coil settings.

**Local Oscillator Trimmers** If set sud-

denly goes dead on one band (usually 15 metres), slightly adjust oscillator trimmer until unit comes to life. Set trimmers for maximum Rx gain, but not too near point where oscillation ceases.

**Band Pass Filter Adjustment — All Modes** It is important that the band pass filter be correctly aligned. If it has been altered or if new boards have been fitted, it is important that filter be checked. Proceed as follows: Set transmitter for output on 14MHz into a 50 ohm dummy load. In TUNE position at 14000 KHz adjust PRE-SELECTOR, PLATE and LOADING for maximum power output. *Do NOT exceed IC reading of 200mA.* Adjust carrier control for 200mA. Use transmit mode for minimum time necessary to adjust controls (five seconds at intervals of 10-15 secs). Do not touch CARRIER control after setting. Adjust PRE-SELECTOR PLATE and LOADING for maximum output at 14250 KHz, note IC meter reading. Repeat at 14500 KHz. If readings are much different at these frequencies, 14000, 14250, and 14500 KHz, then alignment of band-pass is required.

TOP VIEW  
2nd MIXER BOX BACK



In TUNE position at 14000 KHz adjust PRE-SELECTOR, PLATE and LOADING for maximum output with IC reading of 100mA. Adjust TC3 for maximum. Repeat at 14500 KHz, but adjust TC1 for maximum output. Repeat both at 14000 and 14500 KHz as adjustments will interact. Now check that maximum output at 14000 KHz and 14500 KHz are the same, If not, adjust TC2 as follows: If output is lower at 14500 KHz, increase TC2, if lower at 14000 KHz decrease TC2. After adjustment of TC2 repeat adjustments of TC1 and TC3, then re-check output.

**Receive Band Pass Filter.** Peak TC5 and TC4 for best signal using internal crystal calibrator of FT101.

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20 FARNHAM AVENUE HASSOCKS

WEST SUSSEX BN6 8NS

# WPO COMMUNICATIONS

Again a full resume of our products — full catalogue on receipt of 50p in stamps, or shortform catalogue for s.a.e. Try one of our kits this Winter — the very best detailed instructions from an award winning design source.

**NEW!! 2 METRE FM TRANSCEIVER** — The February issue of this magazine contains an article on the 6 channel receiver. Full kit of parts (less channel crystals) priced at £39.50. The 6 Channel Transmitter (1 watt) appears next month at £32.90 (ex crystals). PCB's for either @ £3.80. TX available next month — both units £68 Inc.

**CAPACITY-ADD-ON UNIT** — What's this? A clever design which enables a Digital Frequency Meter to turn into a Digital Capacitance Meter. Measures from 1pF to lots of uF's. Only two connections needed to your DFM. Complete kit with case & pcb only £18.20. Works off +5 to +15v supply.

**VHF PRESCALER** — enhance your counter for £8.50! Divide by 10 prescaler which will raise the upper limit of your counter to 150MHz plus (typically 200MHz). Small, and comes with case.

**ANTENNA MATCHING UNIT** — the only kit on the market. Suitable for SWL's or QRP (up to 5/10 watts). Covers 1.5 - 30MHz, and intended for end-fed antennas or G5RV types. Match your aerial to your Rx and get more signals through. Easy to build and complete with case. £28.50

**SIX METER CONVERTER** — join in the 50MHz fun and listen with our 28MHz i.f. converter. It is very sensitive, 20dB gain (variable so as not to overload your Rx) and easy to align. +12v needed. All coils prewound. PCB and components mounted on it are £14.00, or complete with diecast box and BNC connectors £19.00

**LOW COST TRANSCEIVERS — OUR MOST POPULAR kits with hundreds sold.** Two versions — the DSB80 for 3.5 - 3.8MHz, and the DSB160 for 1.8-2.0MHz. Superb receiver (lots of people have been very complimentary about it) with on-board audio amplifier (1 watt). Double sideband (DSB) transmitter and CW with 3 watts or more output. VFO controlled and +12v operation. All built on one pcb and the kit is complete with slow motion drive, but no speaker or mic. Price for either kit is £37.45. We also have a punched case for the rig @ £23.35 including hardware, and if you want to go all the way, a Digital Readout (ready built and which will fit the case) @ £24.10 including mounting bezel. All three items for £79.00. **IDEAL FOR BEGINNERS or QRP enthusiasts or as relief from your Black Box.** Comprehensive instructions are included. DISCOUNTS for Club purchases of 5 or more. These rigs are easily capable of working Eu Dx as many people have proved.

**NEW THIS MONTH — OMEGA BROADBAND HF PREAMP.** High dynamic range and will suit any Rx lacking sensitivity. PIN Diode switched (not suitable RF Tx power) +15dB gain. +12v operation. Complete kit with diecast box £17.50.

**GET ON TO HF WITH OUR TRANSVERTERS** — if you have a 2 metre multimode transceiver, then you can use all its facilities (memories, scan etc) on the HF bands BOTH TRANSMIT AND RECEIVE. We have two versions, one for 160/80 & 40 metres, and the other for 20, 15 & 10 metres. Either version just plugs in to the VHF rig, and the unit converts to 2 metres on receive, and down to HF on transmit. Rf sensing for changeover avoids any mods to your rig. Very sensitive when used with any 2M rig and offers 2 watts minimum on Transmit — usually 3 watts (any mode your 2M rig has). Compact unit built on 2 printed circuit boards. It also offers direct frequency translation from your VHF rig dial i.e. 14.213 = 144.213MHz. Kits come complete with the 3 crystals required. Priced at £81.00 for either version (pcb pair only for either @ £8.50). A good example of saving money by building it yourself.

**PROJECT OMEGA** — we have had an overwhelming response to these kits for a HIGH PERFORMANCE HF TRANSCEIVER, as being described in this magazine, and over 150 people are well into constructing it with lots of complimentary reports on the receiver. Its a bit too complex to describe in full, but offers all HF bands in 1MHz segments, and most of the facilities found on far more expensive rigs. Intended for full break-in CW, but SSB also part of the design. If you would rather know what goes on in a Black Box, then try building it though! It is not cheap, but you should be proud of the result. Briefly, kits available so far are: Central IF Processing Unit (74.50), Preselector (14.85), Notch Filter (12.50), Active Filter (16.65), Synthesised VFO (109.00 inc crystals), Frequency Display (33.00), QRP PA (21.80), Logic/Antenna Switch (solid state 100W — 17.65) and Low Pass Filters (33.00), TX/RX SSB Adaptor/VOX (59.50), HF Preamp (13.50), 100W PA, FM and AM units, VHF transverter, In-Line SWR bridge, and a ready punched and screened case (Feb/Mar about £25). Diecast boxes for modules are supplied separately. PCB's can also be bought alone if wanted. Full instructions and corrections included. We have a MAILING LIST/NEWSLETTER for this project — ask to be put on it if you are interested in building it.

**70CM PREAMP** — a low noise, very small preamp which could be built into most rigs if needed. Either built @ £8.50 or a kit @ £6.50

**2 METRE PREAMP** — again, very small and low noise. Kits at £5.00 or ready built for £7.00. Ideal for Phase III satellite reception.

All prices include VAT. Post free over £10, otherwise +60p. Allow 1-4 weeks for delivery if not ex-stock. All kits are complete with components (including bolts etc), pcb's (drilled and tinned), wire and comprehensive instructions. Alignment/debug service available. EXPORT — please write for prices. **CASH WITH ORDER — MAIL ORDER ONLY. TELEPHONE MON - FRI 10am - 4pm.**

**COMING SOON** — More single band TRANSCEIVERS 160-10M. Watch this space for details.