

# ALL MODE TRANSCEIVER

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In the beginning . . .

This magazine was launched some seven months ago with a series of three articles entitled *A synthesised general coverage HF transceiver*. The idea of a home made box which offered a comparable performance in its basic facilities to the off-the-shelf product created a substantial amount of interest. However, there were a number of shortcomings in that original series of articles which made duplication of the project rather difficult.

I designed the original transceiver some three years before this magazine came into existence purely for my own amusement. Some people do crosswords, I make radio equipment. As a result, the documentation was never intended for passing on to third parties. In particular it lacked the detailed artwork necessary for PCB manufacture. Although some errors occurred in the published circuits a number of sets were made which continue to perform satisfactorily. However it became clear that the majority of interest in the project was in adapting bits of the circuit to people's own requirements.

The result of all the lessons learnt from the earlier project is Omega. This brand new design has virtually nothing in common with the original project. It uses different circuit technology, a completely new design approach, offers substantially improved performance parameters, it can be user customised but — most important of all — the whole project can be constructed on ready made PCBs with easily available components, guaranteeing the reproducibility that is lacking in most published designs.

## PROJECT



**Project Omega is to be more than just an all mode, all band HF transceiver system. The modular concept behind the design means that it can be built to any user defined specification without spending time and money on facilities which aren't required. Omega covers every need from a single band SSB receiver to an all mode, all band transceiver featuring the essential bells and whistles of £1000+ Japanese boxes. Furthermore, you will be able to build from readily available kits and update as you go along.**

## A new concept

The *Project Omega* HF transceiver system is modular. This means that any *Omega* module can be assembled and tested as a complete unit before progressing to the construction of other modules in the system. It also enables particular aspects of *Omega* to be adapted to other uses. For instance, the FM board could be used with a number of commercial transceivers as an extra facility. Or the IF central processing system could be used as the heart of a high quality 2m or 70cm transceiver. It is possible that a VHF/UHF customising pack will be available in the future. However, the initial scope of the project will encompass all the amateur bands 160 through to 10 metres.

Every module is rigorously troubleshooted and thoroughly tested before publication in these pages. We aim to build three prototypes of everything which appears in print to ensure that you don't have problems when you come to build yours. To give some idea of the amount of work which is going and has gone into the project, the IF central processing system published in this issue has occupied some 450 man hours of work.

## Omega modules

The following is a list of present or planned modules:

**Central IF processing module:** comprises Schottky ring mixer, noise blanker, static crash remover, BFO, product detector, CW carrier oscillator, AGC system, AF amplifier

**Notch filter:** 50dB phasing crystal notch filter

**CW filter:** active variable bandwidth CW filter equivalent to at least

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