Cost:	£179 & £8 P&P
Company:	The Shortwave Shop
Contact:	Sales
Tel:	(01202) 490099
Website:	www.shortwave.co.uk

The Albrecht AE 485 S 28MHz Single Band Multi-mode Transceiver

Rob Mannion G3XFD tries the Albrecht AE 485 S 28MHz Single Band Multi-mode Transceiver

Now that the law has changed regarding the import of 28MHz single band transceivers Rob Mannion G3XFD has tried a 'budget priced' transceiver. Read on to see what he discovered...

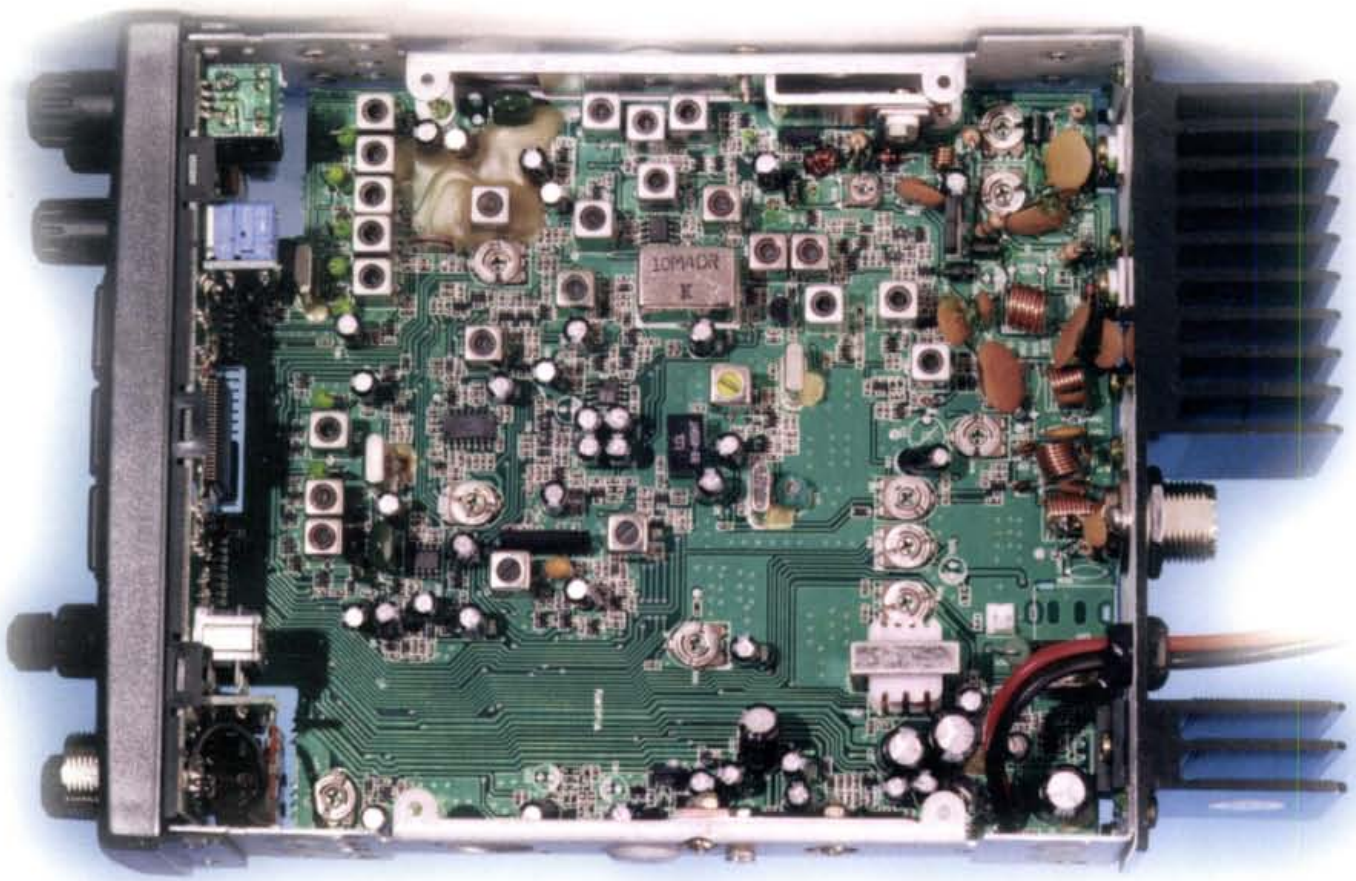
Personally speaking I'm delighted that the 'powers that be' have at last seen sense regarding the importing and use of single band 28MHz by removing the restrictions. In my opinion, the arguments that such transceivers (readily available to illegal operators) could be easily modified for use on 27MHz was fatuous indeed!

Any transceiver can be easily modified for use on 27MHz, although equipment already on nearby frequencies is of course easier to modify. But when I'm often told that illegal operators often boast of using 'top brand' 100W Amateur Radio transceivers **off the Amateur bands** - why do they need to bother to convert a low power transceiver?

Additionally, there's enough multi-mode 27MHz equipment in circulation to provide what the illegal operator requires! However, whatever the reasons for the change of Government Departmental minds - I'm pleased they've done so.

On an even more controversial note - perhaps we can now look forward to getting the opportunity of legally buying and owning 27MHz multi-mode transceivers once again so we can convert them for 28MHz. In that way we can assist in taking them off the 'black market' which continues to thrive. (**Radiocommunications Agency please note - I won't give**

Rob Mannion G3XFD has been the Editor of PW for nearly 11 years. He's a keen 'portable' operator on both the c.w. and v.h.f. bands



● Fig. 1: Internal view of the AE 485 S, showing the neat and well constructed main p.c.b. (see text).

Ten metre mobile operation on a budget - the Abrecht AE 484 S transceiver.

up on this matter!).

Campaigning over now! Back to the matter in hand - trying out the Albrecht AE 485 S.

Originally Aimed At CB

Since the regulations were changed here in the UK, 'multi-mode' CB equipment originally aimed at the 27MHz operator has suddenly found a new lease of life. I don't know how many nations within the European Union (EU) allow amplitude modulation (a.m.) and single sideband (s.s.b.) equipment, but judging by the speed at which multi-mode transceivers were made available - the stock together with the facility to change frequency (on a mass production scale) were ready and waiting!

Of course, one look at the Albrecht 485 S immediately lets you know that **it is a CB transceiver** modified to work on the Amateur Radio 28 to 29.7MHz band. And, providing as it does, a.m., s.s.b. and narrow band frequency modulation (n.b.f.m.) one of these transceivers could prove very useful as a budget 'starter' rig and even as a driver for a transverter for other bands including 70MHz (one job I've got in mind).

Although no circuit is provided with the very simple manual - the transceiver appears to be a double conversion phase locked loop step tuned (note it's **step tuned**) design with ceramic filters. Audio output is 3W into 8Ω. (see Manufacturer's specification).

Good heat-sinking (like this) is essential for mobile use.

The manufacturer's specifications state that the transmitter output as 6W on a.m., 25W peak envelope power (p.e.p.) on s.s.b. and 25W on n.b.f.m. Not high power of course, but useful just the same. So, how did I get on with the rig on the air? To answer, I'll describe some of the features and explain how I enjoyed using the rig on holiday!

On The Air

As is often the case when I'm hoping to get good DX conditions during the loan period of a review - I was out of luck for the 'juicy' QSOs. However, despite the rather flat conditions on 'Ten' I had many inter-European QSOs and several really good West Coast USA successes to report.

The transceiver went with me to Ireland on holiday and it proved exceptionally simple to set up and use. All my QSOs from Ireland were using a 28MHz whip antenna, and took place (mostly) from beaches, or very near to the sea in Counties Wexford and Waterford.

In my car I had an empty slot the size of an older car radio in the dashboard and the Albrecht fitted snugly in there. Very convenient!

As the above photograph shows, the front panel and main display is clean and uncluttered. Of real interest to the Amateur Radio operator is the concentrically operated r.f. gain and microphone gain controls.

The main 'stepper' type tuning control is smaller than is found on 'standard' design Amateur Radio equipment and is located on the far right under the Squelch control. Immediately to its left is the 'Clarifier' control which provides

Single Band 28MHz Equipment: Important changes regarding the importation and use of single band 28MHz Amateur Radio equipment came into force on 1st May 2000. The announcement (see page 8 in the July 2000 issue of *PW*) brought the welcome news that Radio Amateurs in the United Kingdom can now legally own and operate '10 metre' only transceivers.

the necessary 'swing' of ±1kHz to 'fill in' the synthesiser stepping 'gaps'. The 'stepping' can be set to either 1, 10 or 100kHz

The 'scan' feature is simple and searches for active channels (it's so simple I used it quite often). The switchable blanker is only effective on ignition type noises - not much use on my diesel car but it proved effective in reducing noise from passing motorbikes and petrol powered vehicles).

There are five memories available (although I didn't use them they are extremely simple to use). Equipped with a tone-burst (1750kHz) and the transceiver has the ability to work via the n.b.f.m. repeaters on the band (but I didn't hear any during my holiday).

In use the transceiver proved to be extremely sensitive and reasonably selective. I can say this because despite a flurry of c.w. activity around (and actually on!) the International Beacon Frequency Project of 28.250MHz I was able to copy the various beacons despite the QRM - quite good bearing in mind that this transceiver is not aimed at the c.w. operator.

Incidentally, if I owned one of these rigs I'd be tempted to modify it to provide c.w. It wouldn't be difficult and the 'Clarifier' (in reality it's an RIT control), would allow the incoming c.w. beat note to be adjusted.

Manufacturer's Specifications

General

Frequency Range	28.000 to 29.699MHz
Frequency Control	Phase Lock Loop (PLL) synthesiser
Frequency Stability	±400Hz
Frequency Tolerance	0.003%
Emission Mode	A3E (a.m.), F3E (n.b.f.m.), J3E (s.s.b.)
Microphone	Plug in electret; push-to-talk
Input Voltage	13.8V d.c. nominal, 16V max, 12V min
Size (WDH)	2 3/64 x 6 1/2 x 7 41/64in
Weight	2.65lbs (1.2kg)
Antenna Connector	SO-239 50Ω unbalanced
Speaker	8Ω, 3W

Transmitter

Power Output	a.m. 6W, n.b.f.m. 25W, s.s.b. 25W p.e.p.
Spurious Emission	65dB or better
Current Drain No Modulation	a.m. <3.5A n.b.f.m. <6A s.s.b. <1A
Current Drain at Max Power	a.m. <3.5A n.b.f.m. <6A s.s.b. <6A
Modulation Freq. Response (1kHz, 0dB Reference)	Lower, at 450Hz, a.m. -63B, s.s.b. -6dB Upper, at 2.5kHz, a.m. -6dB, s.s.b. -6dB
Microphone Sensitivity	a.m.4mV for 50% mod. n.b.f.m. 4mV for 1kHz deviation s.s.b. 4mV for 10W p.e.p.

Receiver

Max Sensitivity for 6dB S/N	a.m. 0.5µV, n.b.f.m./s.s.b. 0.25µV
Sensitivity for 10dB S/N	a.m 0.5µV, n.b.f.m./s.s.b. 0.25µV
Overload Audio	
Fidelity at 6dB Down	450Hz-2100Hz
Adjust Channel Selectivity	a.m./n.b.f.m. 60dB, s.s.b. 70dB
Image Rejection	Typically better than 90dB
IF Rejection	70dB or better
Max Audio Output Power	2.5W
Squelch Range	Adjustable from 0.5µV to 1mV
Receiver Clarifier Range	±1kHz variable
Dynamic Range	65dB (s.s.b.)

Fig. 2: The transceiver is supplied with an electet insert microphone rather than the more common moving coil type often found on CB radio equipment.

Using a modified Nevada CB antenna (shortened to resonate on 28MHz) I found no difficulty in working all over Europe during my holiday in Ireland. Audio quality is reasonable - and it would have been better to use an external speaker in my car as the speaker aperture was screened. Audio output was more than adequate for mobile use and it could have coped with a much noisier vehicle.

Transmitted audio quality reports, received from other stations were particularly pleasing. The majority of other stations said the 'communications' quality was particularly effective. Several friends who know (and have known me for many years) said that they recognised my voice immediately when they heard my transmissions on 28MHz. I put this down to the sensitive electret microphone - and the impressive results have made me consider one for my Alinco DX-70 transceivers!

In My Car?

So...would I buy an Albrecht 485 S for my car if looking for a budget-priced rig? In answer, I would say "Yes". The transceiver, and any of the many similar re-tuned CB transceivers will provide a good value-for-money rig for anyone on a tight budget.

And (again) "Yes", it is obviously a CB transceiver retuned to 28MHz - but at the same time performance isn't bad at all bearing in mind the price. (The CB fratenity often benefit from really large scale 'mass production' in this way). The only reservations I have involve the limited tuning increments and the obvious 'switchy' feel of the tuning although the controls and basic operation are delightfully simple.

An excellent 'starter' rig in my opinion for budget mobile use (possible modification for 50MHz perhaps?).

Product

The Albrecht AE 485 S 28MHz multi-mode transceiver.

Pros & Cons

Pros: *Good value for money rig, clear and uncluttered display and delightfully simple operation.*

Cons: *Limited tuning increments and 'switchy' feel of the tuning.*

My thanks go to the Shortwave Shop of 18 Fairmile Road, Christchurch, Dorset BH23 2LJ. Tel/FAX: (01202) 490099 *for the loan of the AE 485 S*

Summary

The display is excellent and clear and the rig is well made and I'm left wondering just what sort of interest could develop if the (I assume the transceiver is made in Taiwan) manufacturers re-worked the transceiver for - let's say - 7MHz with c.w. replacing the n.b.f.m. mode. Now that would be even more interesting!

RRP: £179 Plus £8.00 P&P