

Cost:	£199.95
Company:	Waters & Stanton PLC
Contact:	Sales
Tel:	(01702) 206835
Website:	www.wsplc.com

The SGC-237 PCB Automatic Antenna Tuner Unit

Rob Mannion G3XFD suggests you may like to consider the 'add on' a.a.t.u. printed circuit board unit from SGC

Rob Mannion G3XFD asks "Considering adding an automatic antenna tuning to your favourite older rig"? If you are, Rob suggests you may like to consider the 'add on' a.a.t.u. printed circuit board unit from SGC which he's been evaluating.

Nowadays, many medium-to-higher priced Amateur Radio transceivers come already fitted with automatic antenna tuning units (a.a.t.u.s) and from personal experience I can tell you that they work very well. Indeed, I feel that - for safety's sake - the manufacturers often tend to play down the wide range of impedances the a.a.t.u. can match. But as I've been told on many an occasion ... better safe than sorry!

And when it comes to older transceivers it's become increasingly evident that many of you still cherish older non a.a.t.u fitted equipment. So, with that in mind I thought it would be an excellent time to look at a possible a.a.t.u. suitable for older rigs, which at the same time could be classed as an investment for newer equipment later on.

I mention 'investment' because it's inevitable that 'add-ons' can appear to be quite expensive - especially when you consider the 'trade in' price (compared to the value given to the equipment by the proud owner). My own recently acquired Digital Signal Processing (DSP) unit - the W9GR DSP III is just such an example.

Reviewed by yours truly in 1999, a new DSP III was not available after I wrote a good review because too many readers had bought them! However, 'Bargain Basement' came to my res-

cue and Arthur Tait GM3LBE sold me his unit. However, although working well, the DSP III is probably worth half the value of some of my older transceivers.

Despite the apparent expense, once you have got a non type specific 'add-on' - with careful planning it can be used with whatever transceiver you have in your shack. So, I ask you to take my advice seriously - forget the 'commercial' value of your older rig if you still enjoy using it and want to add even more to your enjoyment

by purchasing or building (via kits) a modern 'add on' unit - do so. I have ...and I'm not regretting my decision.

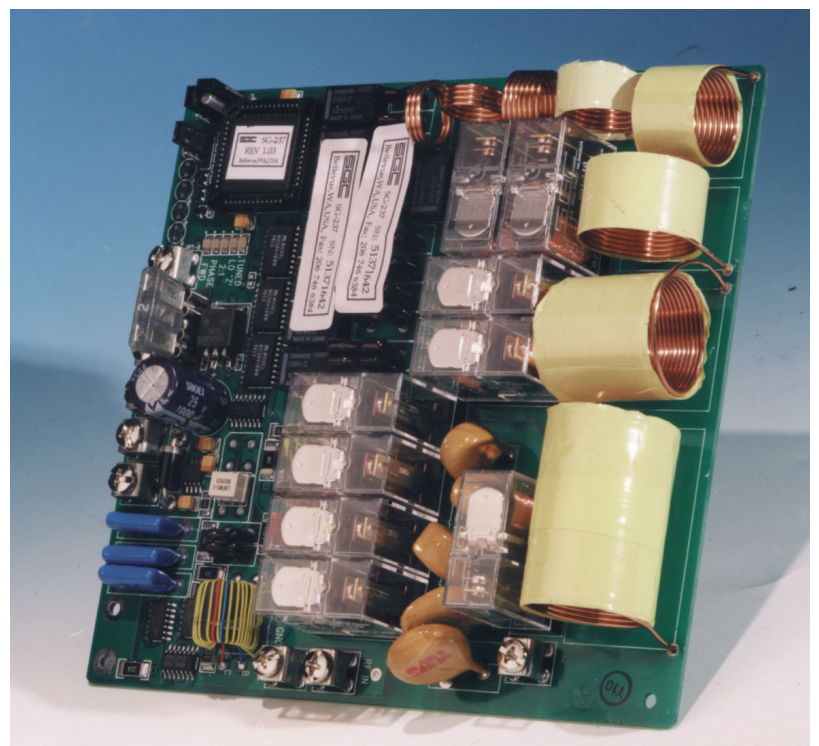
What's On Offer?

So, if you are considering some form of 'add-on' a.a.t.u. what does the SGC-237 PCB Coupler have to offer us? Well in answer the '237' is a complete a.a.t.u., ready built on a printed circuit board (p.c.b.) and ready to go - minus the case.

Assembled on a p.c.b. measuring only 5 x 5.3in, the unit provides a completely automatic tuning process for a variety of antennas. These include the following: Whips, Backstay (marine, sail) centre fed dipole, dipole with line feed, Loop (small 2 x 2 turns), loop (large) 10ft and upwards, single turn, long wire and 'ladder' (open feeder).

- The SG-237 automatic antenna tuning unit is small enough to be fitted inside many transceivers. It could prove to be useful if you're considering installing an 'add on' a.a.t.u.

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



Product

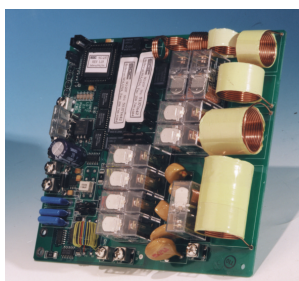
The SGC-237 PCB Automatic Antenna Tuner Unit

Pros & Cons

Pros: *The SG-237 is very convenient to mount on a board and I found the unit to be extremely effective and very quick when in use.*

Cons: *I must again be honest and say that by no stretch of the imagination could the SG-237 be described as 'silent' in operation. It certainly isn't - the click-clack of the relays see to that!*

My thanks for the loan of the SG-237 unit go to Waters & Stanton, of 22 Main Road, Hockley, Essex SS5 4QS. Tel: (01702) 206835, FAX: (01702) 205843.



Summary

So, would I consider buying a SG-237 to use with my portable operating station? The answer is 'Yes' - and it would be very convenient to mount on the board I've got my existing transceiver set-up fixed onto, with no bother at all. Finally, for wheelchair bound (and those like me who aren't able to get in and out of the car/caravan very easily) the SG-237 would be extremely useful. I think it's really is worth considering the idea.

RRP:
£199.95

The frequency coverage of the SG-237 ranges from 1.8 to 60MHz. The quoted input impedance range is from 45 to 55Ω.

In use the a.a.t.u. requires a minimum r.f. input of 3W (p.e.p.) and can handle up to 100W p.e.p. However, on c.w. there's a power input limit of 40W (although the SGC manual does not state whether this is 40W d.c. input or 40W p.e.p.).

Usefully, the SG-237 can be operated directly from the now standard 13.8V d.c. supplies found on Amateur Radio equipment. Average current requirements are 300mA and the unit will operate on voltages between 10.5 and 18V d.c.

In use the SG-237 has an unlimited number of 'memory' channels although in practice the manual states that there are: 168 'revolving' memories' available. In practice, from my experience of using these units this means that the a.a.t.u. will 'remember' the tuning combinations required for up to 168 'spot frequencies' before it has to work out the requirements again, with the minimum time being taken to do so on number '169'.

The SGC manual states that the 'random' (frequency) set time is typically "less than two seconds", with "re-current set time" (in other words - back to a frequency which has been used beforehand) as less than 10 milliseconds.

The SG-237 p.c.b. unit only weighs around 570gm (approximately 1.25lbs) and can be operated in any position. Operating temperatures are quoted as being within the range of -35° to +75°C.

Practical Experience

The only really valid method to evaluate this sort of 'add-on' unit is to try it out 'in the field' gaining practical experience. Well, although I did venture outside ...I didn't literally end up in the field - I just parked next to one in my car!

To be honest, I did use the SG-237 at home, operating it in conjunction with a selection of transceivers, and the very low mounted single wire antenna I have to use at my temporary home. This, in effect, can just be called a 'long

wire' for the 7MHz band. Despite this I've had some good contacts using it, even though it's only 4m above the ground.

At home I found the unit to be extremely effective and very quick. I didn't time it in operation but I think it's very unlikely indeed that the SG-237 took more than two seconds to tune the antenna - it seemed much less!

However, operating as a 'bare chassis' p.c.b. unit (as supplied) I must again be honest and say that by no stretch of the imagination could the SG-237 be described as 'silent' in operation. It certainly isn't - the click-clack of the relays see to that!

Sound level comparison: I was rather stuck for a suitable comparison regarding the sound level of the relays on the a.a.t.u. After a great deal of thought I consider that the noise level can be compared to half a dozen small coins in a trouser pocket 'clicking' and jingling together. But bear in mind that whereas coins jingle every time you walk - the a.a.t.u. soon stops clicking.

Despite the clicking of the relays as the a.a.t.u. works to find the best combination of L and C to match the antenna -it's fascinating to watch and it's also quick. Additionally, once mounted in a suitable metal case I don't think much, if any, sound would escape.

Personally, I feel that a larger die-cast aluminium case (similar in fashion to the well known 'Eddystone' boxes) would be ideal to house the SG-237. In fact, apart from screening the mechanical sounds - if buying one of these units for myself - I would invest in a die-cast box to provide radio frequency (r.f.) screening.

I suggest using the SG-237 unit mounted in a screened metal box because on several occasions I found that r.f. was affecting the switching on the a.a.t.u. The problem was only intermittent, and then it was only a fleeting hesitancy on the '237 which drew my attention to the fact that r.f. (mostly s.s.b.) was getting into the operating side of the unit.

The problem only occurred on 3.5 and 7MHz, and then only on speech peaks. It lead the SG-237 to momentarily re-tune the anten-

na. This only took a second or so but was disconcerting.

However, when you consider that for most of the time the SG-237 will be operating long wire or end-fed antennas - it's not unreasonable to expect a certain amount of r.f. at the operating end. Even with a good r.f. 'ground' I thought it best to place the SG-237 in an old Eddystone aluminium box.

As an inveterate buyer of die-cast enclosures 'just in case' at rallies and junk sales - I had one which was just right! Once installed in a box the unit was well and truly screened, but even in a small biscuit tin it received enough r.f. screening!

On The Air

Operating 'portable' from my car I used a selection of antennas, including a random long wire of around 20 metres in length, in association with a ground stake which I now carry. I also used something new - one of the increasingly popular fibreglass telescopic fishing rod antennas (used with a wire to provide a vertical antenna) which extend out to 10 metres and this proved **outstandingly successful**. Using the portable equipment set-up which is well known to PW readers - minus my manual antenna tuning unit - I was soon working all over Europe on s.s.b. and c.w. Sitting in its temporary screened aluminium alloy box the SG-237 worked exceptionally well and very quickly indeed (I could just about hear the relays ticking away as it worked). It soon provided a good match on all the frequencies I tried on 3.5, 7, 10, 14, 18, 21 and 28MHz. (No activity heard on 1.8MHz or 24MHz).

Intrigued, I also tried to load one of my mobile whips (my 18MHz whip) onto 50MHz. It worked! - and although I didn't get a QSO I heard a repeater and was able to access it okay. Quite a surprise too!

However, the outstanding success proved to be when I used the SG-237 with my new fishing rod antenna. It was a joy to use and I had long QSOs with Canada, West Coast USA and South Africa. Not bad for 50W (s.s.b.) and 10W on c.w. eh?