

Rexon RL-102 2m Transceiver

by Paul Lovell, G3YMP

FIVE YEARS AGO, nearly all imported amateur transceivers were marked with the familiar legend 'Made in Japan'. However the increase in the value of the Yen has made that country's exports relatively expensive, and as many readers will have noticed, rigs from other parts of the world are becoming more commonplace.

The Rexon RL-102 featured here is an interesting example of this trend. It is made in Taiwan, but appears to lack none of the features of its Japanese counterparts. Indeed, from the user's point of view, operation is remarkably similar to several other handhelds already on the market.

ACTION PACKED

ALONG THE TOP REAR of the transceiver are sockets for the antenna (BNC), external speaker or headphones and external microphone. In front of these are the usual variable controls for squelch and on/off-volume. On the right is a rotary switch for channel selection. On the left of the case are two buttons – the upper one is a function control used in conjunction with the front panel switches, and the lower is a push-to-talk (PTT).

Next turn to the front panel, and the three small push buttons on the left control the 1750Hz toneburst, and the back lighting of the LCD display and keypad. This light goes out after five seconds to conserve battery power. The middle of the three is a monitor button which opens the squelch, and this proved useful on occasions for receiving 'fluttery' mobile signals.

The LCD display is comprehensive but rather small, and although readout of the channel frequency is quite clear, it proved rather difficult to see the indications of programmed functions. The Rexon was no worse than a number of other rigs in this respect, however. Below the frequency readout is a 14-segment bargraph S-meter, which gave a useful signal strength indication.

Each key on the main front keypad has three functions, and the couple of hours spent experimenting and studying the manual were found to be most rewarding! Direct entry of operating frequency is possible with the keypad, and all programmable features are retained while the RL-102 is switched off by means of an internal lithium battery.

TUNING AROUND

OPERATION OF THE REXON is very straightforward, once a few of the default settings have been changed to suit the UK

bandplan (see *RadCom*, January). These include channel spacing which is originally set to 10kHz, but can be set to any one of six spacings between 5 and 50kHz. Also the call frequency of 145MHz is probably best changed to 145.500MHz (S20).

The RL-102 has a number of very useful scan modes which facilitate coverage between either preset limits (eg 145.3MHz to 145.775MHz), or complete 1MHz sectors. The twenty memory positions can also be scanned, although it should be noted that two of these memories are the upper and lower frequency limits of the preset scan range just mentioned.

Repeater shift on transmit is programmable, and this function can be entered into the various memory channels as required. Fortunately, it is not possible inadvertently to program out-of-band channels as coverage is restricted to 144-146MHz on both transmit and receive. This is in contrast to most other 2m handhelds on the market, which often have an extended frequency coverage on receive.

SENSITIVE

IN USE, THE RECEIVER WAS sensitive and modulation reports were good. No evidence of spurious responses was found, and all the controls worked smoothly. The maximum power output of 5 watts (with an external 13.8V power unit) is good for a rig of this class. Lower power output of either 2.5W or 350mW is also possible by setting the appropriate front panel controls.

I found that the 'Busy Scan' mode of the memory channels was the most useful, but it would have been nice to have been able to resume scanning by turning the rotary channel selector, rather than having to press a button – it's rather easy to press the wrong one accidentally! Perhaps an audio detector would be useful on rigs of this type, so that the scan facility was not interrupted by unmodulated carriers.

Yet another mode is known as 'Dual Watch' and, as its name implies, this allows listening on two frequencies. In fact it is possible (and sometimes quite useful) to incorporate this facility with the memory scan, with the result that the Rexon scans all its memories plus the indicated dial frequency.

When using the radio for long periods there are two ways to conserve power. The first is to use the 350mW transmit output setting and the second is by activating the battery save function when monitoring a vacant channel for long periods.



Also, the radio's auto-power off (APO) feature can be enabled so that the RL-102 will power off automatically when a signal has not been received, and no button has been pressed for a period of about 30 minutes.

GOING BY THE BOOK

A COMPREHENSIVE 55-PAGE operating manual, with a reasonable translation gives all that most owners would wish to know. All the functions are well illustrated, with step-by-step diagrams showing which buttons to press. Unfortunately, a circuit diagram is not in-

continued on page 53 ►

Home Construction Is Dead...?

by John Morris, GM4ANB

IN RADCOM, MAY 1991 (page 29), Pat Hawker reprinted some comments from Robert W Lucky, originally published in *IEEE Spectrum*. In essence it was a long moan about the death of electronics as a hobby, with the blame being firmly placed on manufacturers who make better and cheaper products than can come off the most expert kitchen table.

What a load of baloney! The whole tirade reminded me of a medieval monk complaining about ye cursed Caxton fellow who can produce books by the library in the time it takes to illustrate the first page of a manuscript by the traditional methods.

Reading the reprint again, it was clear that the real grouse was about money and pride: "See my great hi-fi system? Built it myself, saved a bundle . . ."; "I was more proud of my home designed computer . . ."; "It costs more to package a kit than to build the finished product"; "Ever try to buy the parts? Forget it, they cost a lot more than the finished and tested board"; "Any computer program I could think of had already been packaged and worked far better than anything I could write".



"The real grouse was about money and pride."

Depressing stuff. But it all completely misses the point. So you can buy hi-fis, televisions, radios, transceivers, computers, software and the rest off the shelf. So what? Just because there is a black box on the store's shelf does not make it illegal to do something for yourself!

WHY SHOULD WE BUILD?

ISN'T IT TIME WE took a look at our motives for building things? There's no point doing it to save money, true. These days it is also true that you don't get a better product for your money (with some exceptions). But there remains one thing. It is still *fun*!

Forget what you can buy off the shelf. Do it

because you enjoy it. Professional electronics and radio have moved way beyond what you can do at home, but who cares? I can still design and build things and enjoy myself doing it.



"I like cooking . . . I certainly have no qualifications (apart from a lifetime's over-indulgence in the results)."

Let me give you an analogy. I like cooking, though I am not particularly good at it. I certainly have no qualifications (apart from a lifetime's over-indulgence in the results). Occasionally I will spend an afternoon preparing the best meal I know how; sometimes for a small party, but usually for just my wife and myself. I read the recipe books. I use basic ingredients and stay away from instant powders and pre-cooked sauces. I go all out for perfection; or as near to it as I can get.

Usually the food goes down well, and I get congratulations – maybe just out of politeness. But that's not the point. The point is that I've had a good time creating something, in this case a meal. If I had applied common sense then I'd have been far better off packing us into the car, driving to a restaurant and waving the plastic card. It would have been quicker and probably cheaper in the long run – especially if you factor my time into the equation. But it would have been much less fun! The fact that a meal came out at the end was almost incidental. It was a nice by-product, but not the essence of the exercise. The joy was in the making, not in the eating.

Electronics is the same. If you want to build something to save money or to impress your friends, forget it. Don't do it for them. Don't do it for your bank account. Do it for yourself. The neighbour with the satellite dish on the roof watching full colour high definition pictures live from a sporting event in Australia will take

one look at your home-brew automatic electronic cat flap opener and yawn, and possibly start to doubt your sanity. And that neighbour would be right to yawn.

But electronics is moving. It has been moving for 170 years (Faraday made the first electric motor in 1821) and will carry on moving. The movement seems to have left Robert W Lucky behind in its trail. I beg to differ. For me each movement just unfolds new opportunities, new wonders to behold, new territories to explore: and I don't care if somebody has been there before. Did expeditions to Everest stop just because Hillary and Tensing had been there?

For example, PAL (Programmable Array Logic) devices have been around for a while. Some time ago I decided to read up on them, just out of interest. It took a little while for the new ideas to penetrate my brain, but eventually they did. So I built a circuit using them. I designed the PAL equations myself, after a few false starts. Eventually I got it working. Now it doesn't matter what that circuit was, because I know that it will never be used again. So what was the point? Easy – I had a lot of fun, and I learned a lot. As Kipling put it, I fed the elephant's child.

IS ELECTRONICS DEAD?

NO, HOBBY ELECTRONICS – and I include both amateur radio and home computing as parts of that – is not dead, any more than it was when coils started to be manufactured, so that you could buy them instead of having to wind your own. I have a copy of the *RSGB Radio Handbook Supplement*, published shortly after the second world war. (Price 2s 6d). On page 120 it tells you how to repair a broken resistor. Wasn't it terrible when resistors got so cheap that instead of repairing them you just threw the broken one away and replaced it with a new resistor?



"Your home-brew automatic electronic cat flap opener . . ."

Electronics is growing all the time; getting bigger and bigger. In early Victorian times it was possible for a single person to understand and remember practically all of the scientific knowledge of the day. Today we have chemists, botanists, geologists, surgeons, metallurgists and mathematicians. There is so much knowledge that you have to specialise. Electronics is getting to the stage where a single person cannot keep up with all of it. Computer programmers who can't change a fuse. It is not important. You don't have to know *everything*.

I remember the first time I made a QSO with Spain on two metres. Boy, what a thrill! I can still remember the excitement. A few years ago I visited Spain. While I was there I phoned home. In both cases I had managed to establish communication between G and EA. The only difference was that the phone was cheaper, clearer and much more convenient. So why was doing it on the air so exciting? Because I had put a bit of myself into it. I had set up the station, rigged the antenna, operated the station. So what if I didn't build the rig. I didn't smelt the iron used for the antenna mast either.

SMALL BEGINNINGS

SO TO ALL OF you moaners about the death of home construction, snap out of it! If you don't build things that is your problem. Don't try and blame anybody else. You can't keep up with the commercial companies where dozens of engineers spend months sur-

rounded by thousands or millions of pounds worth of design and test equipment, so don't try. Just create something for your own satisfaction. Nobody else's, just yours. Build a direct conversion receiver. Write a computer program to send Morse code. String random wires all over the garden to see which works best on top band. It's been done before, but not by you.



"Write a computer program to send Morse code."

Maybe all you'll get out of it is junk. Maybe it will work, but then you'll decide to replace it with something bought. Maybe you'll become a world expert and take it up for a living. That doesn't matter. What does matter is that you'll have fun. (If you don't have fun don't waste my time moaning and groaning. I'm too busy learning about data compression techniques to listen to your grouches). I'll give you a cast iron, money-back guarantee that whatever you try, however well or badly it comes out, you will learn something new. Not new to the world perhaps, but new to you. Remember the bit about 'self training' in the licence? . . . Long live home construction!

More Reading . . .

**Technical Topics Scrapbook
1985-89 (RSGB)**

by Pat Hawker, G3VA

Reprint of all the 77 pages from 1985-89 inclusive, with an index. Invaluable for experimenters and constructors. 340 pages.

(£9.00) Members £7.65

**G-QRP Club Circuit
Handbook (RSGB)**

by George Dobbs, G3RJV

If you like construction, and want to build some simple circuits that work, this is the book. It is a pot-pouri of eight years of the best articles that have appeared in *Sprat* - the journal of the G-QRP Club. 96 pages.

(£6.75) Members £5.70

**Amateur Radio
Techniques (RSGB)**

by Pat Hawker, G3VA

Reprint of 7th edition. A large selection of circuit ideas and devices, information on antennas plus constructional hints from *RadCom's* popular Technical Topics feature. 386 pages.

(£7.99) Members £6.79



**Radio Society of Great Britain,
Lambda House, Cranborne Road,
Potters Bar, Herts. EN6 3JE**

**Rexon RL-102
2m Transceiver**

continued from page 49

cluded but there is a handy troubleshooting chart, to help if you find a problem.

The Rexon RL-102 is supplied with a small battery pack which takes six rechargeable AA NiCad cells. A 12cm 'rubber duck' antenna, hand strap and belt clip are also included with the set. A CTCSS unit is available as an optional extra, and there is also a 12V 600mAH rechargeable battery pack, which is attached to the rig in place of the smaller one shown in the photograph.

**WELL UP WITH THE
COMPETITION**

PERFORMANCE OF THE REXON was well up with the competition, and the facilities included should be more than adequate for most amateurs. In this sector of the market, the RL-102 faces some tough competition.

The final decision may well be made on value-for-money grounds, and here the Rexon should certainly score. The RL-102 is priced at £199 inc VAT plus £7.50 P&P, and the optional RNB112 12V 600mA battery pack is £39.95 extra.

Our thanks to South Midlands Communications Ltd for the loan of the review model. Their telephone number is 0703 254247 for any further queries you may have.

**MANUFACTURER'S
SPECIFICATIONS**

GENERAL

Frequency range	144-146MHz
Modulation type	F3
Channel steps	5, 10, 12.5, 20, 25, 50kHz
Antenna impedance	50Ω unbalanced
Input voltage range	5.0 to 12VDC
Nominal voltage	7.2V
Approx Current drain:	
Transmit 13.8V:	
5W	950mA
2.5W	650mA
0.35W	500mA
Transmit 7.2V:	
2W	900mA
0.35W	450mA
Standby	35mA
Battery save	15mA
Auto power off	7mA
Dimensions	152 x 65 x 35mm
Net weight	300g (with battery and antenna)

RECEIVER

Sensitivity	Better than 0.16µV (12dB SINAD)
20dB quieting	Better than 0.25µV
Squelch sensitivity	0.16µV max.
Audio output power	250mW at 10% distortion (8Ω)

TRANSMITTER

RF output power	5W (13.8V), 2W (7.2V)
Max deviation	±5kHz
Frequency stability	±10ppm from -20 to +60°C
Distortion	Less than 5%
Spurious and harmonic emission	Less than -60dB

**Missed the GB2RS
Broadcast Again?**

WOULD YOU LIKE TO HEAR the latest Amateur Radio News as soon as it is available? With a new service from the RSGB you can always keep up-to-date with the latest developments by telephone.

**For the latest
National Amateur
Radio News from the
RSGB, Call:**

0336 40 73 94

**Calls cost 39p/min cheap rate,
49p/min all other times**

The recording is updated on Thursdays and contains the complete text of the national *GB2RS* news. A proportion of the call charges goes directly to the RSGB, helping to keep subscription rates down and improve services to you.

**Another service from the Radio
Society of Great Britain**