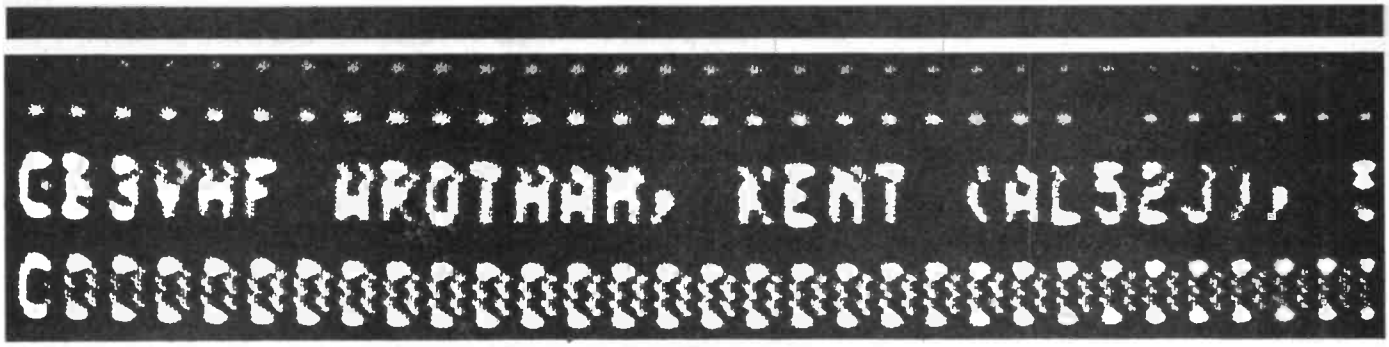

RTTY identification from GB3VHF beacon. Photo from UHF TV receiver.

associated logic. Throughout the design there is scope for expansion ie. space and decoding exists for 2732 EPROMS instead of the current 2716 and there are many vacant IC pads. The same boards are obviously used in the *4001* transmit/ receive version.

Operating impressions

One word of warning when using this unit is that it is not designed for the quick 'lash up'. As the information sheets advise, all leads must be very thoroughly screened and the box lid screwed down tightly or else excessive QRM is experienced. This also means that the TV/VDU should be situated well away from the rig/aerial feeder. However bearing this in mind, the picture quality is acceptable on a standard UHF set and is perfectly readable even when using a 6" portable (although the black on white option did produce some rather distracting vertical dark lines between character slots). For the best results a VDU should be used and then the picture produced is excellent.

On 2m FM the unit performed very well, although one or two minor irritations were found. A good noise-free signal of at least S2 is needed, otherwise rubbish is generated, and the audio input required to drive the unit is rather high. If you want to monitor the tones while decoding, the level is ear shattering! Initially a little trouble was experienced with selecting the mode and speeds, but with practice this becomes second nature. However, I found that the speed select push button could have done with a little more 'de-bouncing', as it occasionally stepped twice. With so much going on when initialising a contact, especially on HF or 2m SSB, this can lead to confusion and frayed tempers! I also feel that rather more band pass or even lowpass filtering of the signal would be helpful as any noise (eg. FM hiss or more notably HF noise) on the signal causes rubbish to be displayed. On the subject of 'rubbish' in the BAUDOT mode, noise or an unrecognised code produces a stream of full stops or commas. This can be confusing as many RTTY operators punctuate QSOs with a string of full stops. Perhaps some more appropriate character could be programmed as the 'invalid' code eg. ■ or an inverse 'E'. A better solution might be to have software error traps and not display anything.

Tuning

When trying to decode HF RTTY considerable practice and patience is needed. The points mentioned above together with problems in tuning the receiver to produce the correct tones make it a very difficult task. Eventually one becomes accustomed to the correct sound and can tune in by ear approximately. The so-called tuning LEDs (one for mark and one for space) are practically useless and it becomes more of a hit and miss process. For HF reception I was using an old *KW2000 (without the mods — I really must read that series!)* and found that its stability, while being what I would consider adequate for the reception of SSB, was not really good enough for this unit. Speeds higher than 45.5 baud and high speed ASCII were practically impossible to resolve consistently. *I found exactly the same tuning difficulty experienced by Peter Metcalfe when using the unit with my synthesised transceiver, stability 10's of Hz/hour. — Ed.* To be fair to Microwave Modules, they do warn you of this albeit for a different reason!

"At 300,600 and 1200 baud ASCII the purity of the received tones becomes more and more critical. Therefore it is essential that the receiver in use is of sufficient quality so as not to alter the audio quality which could result in corrupt copy".

Generally the unit, although having a few drawbacks, provides a quick and easy (if not cheap) way of listening to RTTY. For VHF work, especially FM, it is quite adequate for beginners. However, I feel that one would soon want to dabble in a homebrew TU for better results and here the unit can provide a ready-built decoder of excellent quality. The construction is sound and the information sheets, while being a little skimpy, do provide sufficient information to get going. ●

Table 1

Digital frequency discriminator settings

MARK TONE (Hz)	*SPACE TONE (Hz)*	*SHIFT (Hz)*
1445	1275	170
1275	1445	170
1700	1275	425
1275	1700	425
2125	1275	850
1275	2125	850
2400	1200	1200
1200	2400	1200