Amateur Radio Digital Transmissions and Robust Packet Radio.

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I bought my first computer around 1981, a ZX81 which was released in that year. In 1982 I bought a ZX Spectrum which was a better model than the ZX81. My interest was how to use this new toy in amateur radio. Later, when we started listening to satellite signals, I used it to predict satellite passes.

In those days a common means of communication was by teleprinter, a machine that looked like a typewriter but was connected to telephone lines and permitted operators to type on one machine and send a typewritten message to another machine far away. This was in use at my place of work.

Some radio amateurs obtained some of these teleprinters and built interfaces to allow them to send messages by radio and this was called RTTY and is a mode still in use today, especially for contests.

RTTY was used by news services over the world and also shipping companies and weather services and those signals were often heard when one tuned around the bands.

Of course when one hears such signals, you wonder what is being sent and how you could decode them to find out what they are saying.

It was not long before someone wrote a program for the ZX Spectrum that enabled one to decode such signals. I did just that and there were also commercially available black boxes that could do the same. I remember in Cape Town there was a short wave listening group who took an interest in listening to strange radio signals and to decode some of them.

After a while I knew where to listen to some of the news services and I remember reading on my screen how a passenger plane was shot down near Korea by a Russian military plane because it had strayed into Russian territory. And the next day it was on the news! Teleprinter machines had a bell that could be rung when an important news item was received to alert people who used such information.

Radio amateurs started erecting bulletin board systems on short wave, (HF for high frequency), and one could send a message to the nearest BBS which could forward the message to the next BBS and so on until it reached it's destiation. And not long before the same could be done by using satellites.

There are several systems in use, Packet radio, Pactor, Amtor, RTTY, and so on. For long distance use, Pactor is probably the fastest but there is also a mode called Packet radio. Pactor is a one to one mode, which means that one operator can connect to only one other operator and communicate with that station, but Packet Radio allows several stations to send messages in turn to one BBS. It is not as fast as Pactor but is used for position reporting which needs only short messages to be sent.

Special Communications Systems, SCS, studied the packet radio protocol and found that it could be improved, and they then developed a mode called Robust Packet Radio, RPR, and then developed a hardware device called a Tracker which they marketed for a while but stopped producing. It is quite expensive and Farallon Electronics in the USA still advertise it.

SCS then produced a program for running RPR on a computer using the computer sound card and called WinRPR. This is a better mode than conventional packet radio. In my opinion it is a very suitable mode for emergency messaging and position reporting and the WinRPR program can be downloaded for free.

There is agroup in Virginia in the USA who are promoting RPR and RPR is used in Europe and the UK and Ireland by groups of radio amateurs.

I hope to start RPR in South Africa from next year when I obtain a new transceiver and get on the air again. It should be usable for any short messaging system such as emergency communications and position reporting.