

### **C-03 Frequency spectrum monitoring using a personal computer**

**G A D Punchihewa**

*Dept of Electronics & Telecommunication Engineering, University of Moratuwa & Sri Lanka Television Training Institute*

With the de-regulation of telecommunication, radio and television broadcasting, many telecom operators and broadcasters came into operation. Most of them started their operations without having a master plan for their coverage. Therefore their networks created interferences to the other networks. Generally frequency spectrum monitoring is done by the telecom regulator or the commission of a given nation. However, individual telecom operators and broadcasters could have a simple frequency monitoring setup, may be on a mobile vehicle, to make sure that their operations comply with the technical standards specified by the frequency regulator.

The main objective of this research was to develop an economical frequency monitoring system for each television broadcaster. The same system can be used for a radio operator or for any other telecom operator with minor changes to a few parameters of the programme. The system was developed using a personal computer, spectrum analyser and a plotter.

A sample from a RF signal at the output of the television transmitter is given to the spectrum analyser. The spectrum analyser is controlled by the computer through the interface called General Purpose Interface Bus. The computer issues commands to the spectrum analyser to obtain the required measurements. The computer reads the data from the spectrum analyser and they are analysed and available in different formats for the presentation.

The frequency response can be plotted on a plotter. This frequency response diagram can be used to assess whether the transmitter generates intermodulation products out of its specified bandwidth.