

- January '2001 Issue
- Editor's Scatview
- Mailbox
- Indian News
- International News
- Focus : KU Band Signals
- Convergence News
- Star TV In Pakistan
- Zee Restructured
- Discovery's India Thrust
- AAJ Tak Launch
- Internet Delivery
- Internet Reach Doubles
- Internet On CATV
- Murdoch For Hughes
- Reverse Path
- Events
- Dish Doctor
- Channel Guide

AN INTRODUCTION TO DIGITAL CABLE TV

PART II

By A.K.Sekhar ,

General Manager - Applications Engineering
GI India (Motorola Broadband Communications Sector)

WHAT WE HAVE SEEN?

We have seen so far the main advantages of turning digital in terms of high bandwidth utilisation and better consistent quality till the end point of the network. In one analog BW we can accommodate at least 8 digital video programming and typical bit rate per movie channel is 3Mbps. QAM modulation is the proven technique in the cable networks and highly BW efficient. Higher orders of QAM namely 256 are also deployed in the Cable networks but still the C/N requirements are lower than analog transmission.

In this part

We will get in to the details of specific products that MBCS can offer for Digital headend and the subscriber homes. The actual configuration of a headend may vary based on the services that are to be offered There are variety of settops available from MBCS for digital applications. Many programmers have developed applications on our settops to suit their local requiremnts. MBCS encourages such development of applications on our settop platforms and have several programmes for the same.

A settop is to be considered like a PC hardware with minimal booting software and all applications are like the programmes running on PC.

Typical Digital headend Digital headend like analog headend is the origination point of services to the cable subscribers. A typical digital headend consist of the following:

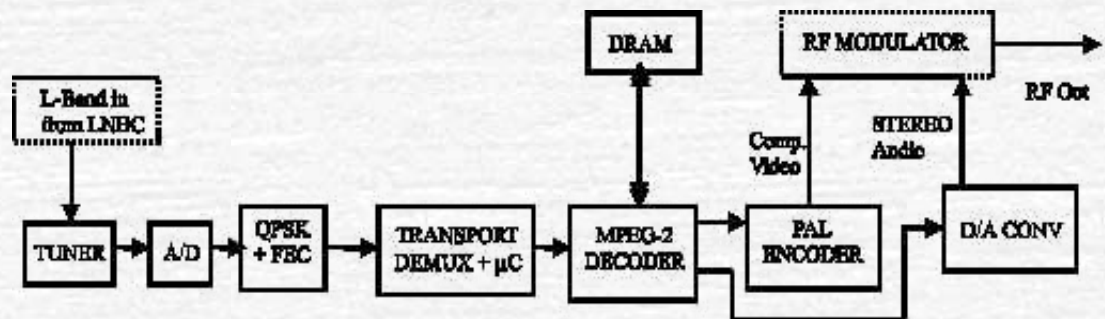


Fig 2 Block Diagram of Integrated Receiver Decoder

Integrated receiver encoder recovers the Satellite transmitted digital stream and delivers into the QAM modulator. The up converter places the service in the required frequency slot in the spectrum. Headend controller. Out of band modulator and return path Modulator are for controlling the set top at the customer premises. Interactive television

Interactive television isn't really a new idea. Almost every television transmission sends data with their signals already. Closed captioning and descriptive audio are sent to millions of televisions everyday, but only a small percentage of the viewers actually see (or hear) any of it. These are a great benefit to those who can't hear or see the television, but they are very limited in their interactivity. For many households, the television is the most popular appliance. So, why is it less interactive than any thing?



In the 1980's, many cable companies tested out their own versions of interactive television on some test markets. Subscribers to their services could shop online, play games with people across town, and do a lot of the things we dreamed an interactive TV should offer. Most of the testers found the service very useful, but none could cover the costs of operating the service while keeping the prices reasonable for the consumer. Headend for delivering advanced interactive services

DIGITAL SETTOP

The convergence of television and computers is going to take a major step with digital broadcasts. Data will be sent along with video and audio. How we'll use the data is still largely being explored, but one of the more practical options is the set-top box control and advanced interactive services.

Its name is very descriptive. It will probably be a box that sits on top of your television, just like many VCRs do right now. Also, just as your VCR does, a set-top box will take input from the cable service, and output to your television in the format acceptable. In other words the output of the settop box is the analog TV signal like what we have today.

The set-top box will process the data sent with the broadcast, storing some of the data and executing applications. There are a few steps in the process which still need to be defined and implemented, including the format of the data, the set-top box's operating system, and the application environment. Efforts are on to standardise the interface specification of the box so that the boxes become interoperable with all operators. At this point, it looks like these set-top boxes will be based on something like Windows CE or Java. No matter which system is chosen, though, TV is becoming an interactive experience with endless possibilities.

ADVANCED INTERACTIVE DIGITAL CONSUMER TERMINAL

Motorola Broadband communications Sector (General Instrument), the world's leading supplier of digital interactive systems introduces the DVi-5000+, the most advanced interactive digital consumer terminal available. The DVi-5000+ builds upon our industry leading interactive digital platform providing a whole new level of broadband networking services. Through a 300+ MIPS processor, 32 bit 2D/3D graphics, Integrated DOCSIS cable modem, 14+ MB of memory, the DVi-5000+ delivers PC-like functionality to the home video environment. Such capabilities enable operators to offer additional revenue generating services that require dedicated upstream bandwidth, such as high speed data services, IP telephony, IP video conferencing, on-line shopping, home banking and more. To ensure system security of these valuable interactive services the DVi-5000+ employs GI's Emmy award winning DigiCipher® II access control and encryption technology recognized world wide as the most advanced access control system available for public use today.

WATCH, TALK N' SURF

One of the distinguishing features in the DVi-5000+ is its unique Triple Tuner™ architecture; one tuner dedicated to video services and another to the DOCSIS channel for high-speed data services.

The third tuner is used for the out-of-band control channel. With this architecture, users can simultaneously perform high speed Internet access and IP Telephony functionality while continuing to watch traditional video services. The consumer is never forced to chose between one or the other. This functionality provides the consumer with a seamless interaction between data services such as Internet access and revenue generating video services.

The DOCSIS tuner can also be shared by an external device via an Ethernet connection on the back panel of the Dvi-settop without interrupting the TV viewing experience. Such a device could be a PC or IP telephony device. As such, someone could be surfing the Web or talking to a friend on an IP telephone while another continuously watches TV.

APPLICATIONS

The DVi-5000+ Open Cable Platform provides unparalleled flexibility in selecting an operating system for deployment in an interactive network. MBCS continues to work with companies such as Microsoft, NCI, Sony, and others to assure competitive selection when choosing an application suite. These applications will support many of today's Electronic Program Guide functions such as; PPV, parental control, theme search, and one touch record, as well as many other features designed to utilize the high end processing and graphic capabilities of the DVi-5000+.

STATE-OF-THE-ART AUDIO AND VIDEO COMPATIBILITY

The DVi-5000+ continues to offer the latest in audio and video technology. The MPEG-2 video decoder ensures the highest picture quality available while providing compatibility with a wide range of programming sources. The DVi-5000+ will also optionally support High Definition Television Decoding. In addition to traditional analog and digital stereo, the DCT-5000+ supports Dolby® Digital AC-3 as well as PCM audio.

CONCLUSION

It is quite evident that future networks and systems have to necessarily move into Digital platforms, in order to provide variety of Video and interactive services. The key lies in the quality two way networks and usage of more and more Fibre deeper into the networks. The value addition and services on demand that digital can bring in terms of return to the operator is considerable since the world in future will be fully digital except humans who will remain analog for ever.

 [Email Us](#)