

Namaste Layers

21 March 2008

W5NYV

Summary

Layer	Thoughts
Physical	The bits are here. Electromagnetic waves. Antennas. Waveguides. Low-noise amplifiers. Feed line. Receiver, downconverter, and demodulator. The relationship between a device and a physical medium. Encoding and transmission.
Data Link	Frames. Ethernet. Switches. The interactions of multiple devices with a shared physical medium.
Network	IP. X.25. Packets. The network layer provides the functional and procedural means of transferring variable length data sequences from a source to a destination over one or more networks, while maintaining the quality of service requested by the Transport layer. This is the layer that interfaces with IPICS and the P25 terrestrial interface module.
Transport	TCP and UDP. Quality of service defined here. Transparent data services provided here. End-to-end. Can provide reliability. Data arrives in-order, data has minimal error, duplicate data is discarded, lost and discarded packets are resent, and traffic congestion control happens.
Application	Here are the applications on the personal computers and other Namaste. Data is encapsulated in the transport layer protocol.

Physical

Antenna

The baseline antenna is one of several used in satellite television applications.

Incident waveform from satellite - treat as unknown and find minimum level.

This sets gain of satellite transmit antenna.

22.8dB receiver antenna gain.

Waveguides – input waveguide?

Low Noise Amplifier

LNAs are available for the downlink frequency with less than 0.8dB noise figure from Down East Microwave.

Feedline

Limit this item to as short a run as possible.

Downconverter

Translates the received waveform from 3.4GHz to an IF of

Filter

Demodulator

Recovers the encoded waveform from the received waveform.

Demultiplexer

Decompression

Digital Output