

Transmodulation

THE PROBLEM

QPSK-to-QAM Transmodulation

Soon after the introduction of the DRAKE DIGITAL product line, it became apparent that the reliable and economical transparent conversion of a QPSK satellite signal to the cable standard QAM format was going to be the initial "killer application" for these products. The reference to "transparent" refers to the fact that no decoding of any conditional access "scrambling" is required during the transmodulation (also referred to as transcoding) process. By requiring a set-top-box at the end user location to do the final and only "descrambling", the significant expense of headend descrambling and rescrumbling as is done in many large franchised systems is eliminated. Such an approach lends itself to smaller franchised and private cable systems. These systems require special set-top boxes since they must process recovered data streams that still have the original satellite link attributes (scrambling, etc.). Another requirement is that customer account administration must be handled by an off premise centralized third party rather than by the system operator.

Although the process is transparent to any conditional access, the FEC (Forward Error Correction) added to the satellite uplink signal must be removed and replaced by a less intensive FEC for the QAM signal. This is done for the sake of efficiency. The cable medium is a more forgiving or "quieter" environment than a satellite link, therefore less protection in the form of error correction is required. Percent overhead, as measured by the % of channel bit rate that is used for error correction is typically 33% for a satellite uplink, while the overhead for a QAM signal will be less than half this. Since the desire is to pack as much information in a given fixed bandwidth as possible, it is important that the minimum amount of protection data be added to the actual information represented by the primary data stream.

THE SOLUTION

DRAKE DIGITAL Transmodulators

The **DRAKE** SDQPSK Satellite Demodulator, the TMQAM QAM Modulator and either the DUC550 or DUC860 Upconverters combine to provide high performance, high quality transmodulation capability. This solution provides the ultimate in features, control, and reliability for the large franchised operator as well as the quality minded private cable operator. The units are packaged in the popular vertical minirack format and feature an LCD readouts for parameter setup and display.

DRAKE also offers the SCT860 Series of all inclusive transmodulators. The SCT860 Satellite (QPSK)-to-Cable (QAM) Transmodulator is a single package unit only 2 minirack units wide (2") and 2 rack units tall (3.5"). This system allows up to 6 SCT860s to be mounted in a 2 rack unit height space. Consistent with the **DRAKE** commitment to quality and reliability, each SCT860 has its own miniature cooling fan to assure reliable long-term operation. A single robust/reliable power supply powers a total of 6 units and occupies the same 2 rack unit height. As with all **DRAKE DIGITAL** products, in the unlikely case of failure or other problems, an individual transmodulator can quickly and easily be removed and a replacement put in its place. Competing products that combine several units in a single chassis compromise good headend management by requiring several units to be taken out of service even if only one has a problem. The SCT860 allows 16, 32, 64, 128, or 256 QAM operation and can be used on any cable channel up to 860 MHz. The standard SCT860 model can be upgraded to have "null packet stuffing" capability by means of a plug-in accessory board.

For complete & detailed specifications on DRAKE transmodulation products as well as other DRAKE Digital products, refer to their individual product sheets.



R.L. DRAKE COMPANY
230 INDUSTRIAL DRIVE FRANKLIN, OHIO 45005 U.S.A.
TELEPHONE: +1 (937) 746-4556 TELEFAX: +1 (937) 743-4510
WORLD WIDE WEB SITE: <http://www.rldrake.com>



DRAKE DIGITAL™ is a trademark of the R.L. Drake Company
© Copyright 2001 R.L. Drake Company Printed in the U.S.A.

TYPICAL SYSTEM STRUCTURE

