MEQ1000

Hybrid QAM Modulator
Drake Solutions

- Cost effective custom QAM solutions from diverse program sources such as locally encoded content, IP, OTA digital and satellite
- Meeting the unique challenges of local edge channel insertion
- Advanced drop and add programs to existing multiplexes to optimize bandwidth
- Meets the video needs of schools, gated communities, and other MDUs
Example 1) Trans-modulation of encrypted or unencrypted satellite programming with local channel insertion
Example 2) Trans-modulation two ATSC off air digital channels into one 256QAM channel
MEQ1000
Custom QAM Application

Example 3) MPEG-2 or H.264 encoding of uncompressed HD and or analog programs
MEQ1000
Custom QAM Application

Example 4) Multiplexing programs from diverse sources to build custom QAM channels
MEQ1000 Drop and ADD Advanced Application

- Insert locally generated content on existing QAM channel
  - Security camera
  - Company channel
  - Local advertising

- Add to under loaded existing QAM channel or drop program stream(s) to free up bandwidth

- Null packet processing and PCR correction of output multiplex then QAM modulate on original CATV channel.

- The “in band data” including DTA and prior encryption remain in the transport stream
MEQ1000
DROP and ADD Implementation

DIGITAL RF INPUT FROM CABLE PROVIDER
2 WAY SPLITTER
CRF CHANNEL ELIMINATION FILTER
2 WAY COMBINER

LOCAL CAMERA FOR INSERTION
LOCAL AUDIO/VIDEO

DTD1000 DIGITAL TUNER AND DEMODULATOR MODULE
SDE24A DUAL SD-MPEG ENCODER
MEQ1000A MULTIPLEXING HYBRID QAM MODULATOR

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MEQ1000
DROP and ADD Overview

MEQ 1000 Chassis

Digital Drop and Add Multiplexer

Demodulator

Encoder

New Programs

RF Cable input

Splitter

Channel Deletion Filter

Coupler

Digital Channel

New Digital Channel

RF Cable output

Dropped Programs

New Programs

New Program 1

New Program 2

Encoder

Modulator

Demodulator

Digital Channel

Deleted Channel

Digital Channel

Digital Channel

New Digital Channel

Splitter

Coupler
**Digital Drop and Add**

**QAM Channel Deletion Filter**

- 1 RU rack mount channel deletion filter
- Performance will not effect adjacent channels
- Allows user to delete an existing CATV QAM channel from a portion of the CATV spectrum and locally insert custom QAM channel
- Custom design available on request
MEQ1000 Overview

- The Drake MEQ1000 commercial-grade, multiplexing Hybrid QAM modulator is ideal for applications where a single QAM output is required from each Hybrid QAM chassis.

- The MEQ1000 hybrid QAM modulator enables trans-modulation, MPEG encoding, RF demodulation and IP stream acquisition in a single platform.

- Program multiplexing to build custom QAM’s from up to two diverse sources allowing operators to best utilize their bandwidth.
MEQ1000 Platform

- 1 RU chassis for digital channel processing applications
- Two rear panel input module bays
- High level, low noise single multiplexed RF QAM output
-ASI output of QAM transport stream or for EAS and DTA data to additional MEQ1000’s or EH encoder hosts
MEQ1000 Features

- Input:
  - 2 Rear Panel Input Module Bays can accommodate any combination of input modules

- Program Multiplexing and Grooming:
  - Two to one program stream multiplexer
  - Null packet processing and PCR correction of output multiplex
  - Rewriting and custom offsets of MPEG program numbers when required.
  - PSIP pass through to build a new table for the combined output signal, disable PSIP or will build its own MGT and VCT tables for program streams
  - EAS (Emergency Alert System) compatible with SCTE18 force tune table generation and or as a slave to existing Drake EH24/244 encoder hosts.

- RF Output:
  - High level (+61 dBMV), low noise multiplexed single RF QAM output
MEQ1000
RF Input DTD1000

- DTD1000 Digital Tuner and Demodulator Module
  - Demodulates ATSC 8-VSB, CATV QAM RF
  - Frequency Coverage: 54 to 1002 MHz
  - Can process MPEG-2 or MPEG-4/H.264, clear or encrypted program streams
MEQ1000
Satellite Input SDM1000

- SDM1000 Satellite Tuner and Demodulator Module
  - Demodulates QPSK, 8PSK
  - DVB-S2, DCII, and advanced Turbo FEC modes
  - 950MHz - 2150MHz Wide Band Tuner
  - Can process MPEG-2 or MPEG-4/H.264, clear or encrypted program streams
MEQ1000
IP Input IPI1000

- IPI1000 IP program acquisition
  - Accepts up to 20 programs
  - 1 MPTS or 20 SPTS
  - Accepts VBR (Variable Bit-Rate) and CBR (Constant Bit-Rate) Video Streams
  - UDP and RTP Protocols support
  - IGMPv2 and IGMPv3 support
**MEQ1000**

**ASI Input ASI II**

- ASI II ASI input Module
  - DVB-ASI SPTS or MPTS ASI input
  - Data rates up to 80 Mbps
  - ASI Loop Output of incoming ASI stream
MEQ1000
Encoder Options SDE24A

SDE24A - SD Dual Video Encoder

- Accepts 2 composite inputs sources
  - Video + Left and Right Audio
- Supports MPEG-2 or H.264 encoding
- Encoding Bitrate 1 Mbps to 8 Mbps
- Audio Encoding
  - AC3-Dolby Digital Stereo
  - MPEG1,Layer 2 (MP2) Audio
HDE24A - HD Video Encoder

- Accepts non-encrypted HDMI, Component or Composite video input
- Supports MPEG-2 or H.264 encoding
- Encoding Bitrate up to 19 Mbps
- Audio Encoding
  - AC3-Dolby Digital Stereo
  - MPEG1, Layer 2 (MP2) audio
MEQ1000
Encoder Options SDI24A

SDI24A - HD Video Encoder

- Accepts HD/SD-SDI video input
- Supports MPEG-2 or H.264 encoding
- Encoding Bitrate up to 19 Mbps
- Audio Encoding
  - From PCM embedded or analog stereo
  - AC3-Dolby Digital Stereo or MPEG1, Layer 2 (MP2) audio
About Drake

• Industry leader in providing modular and scalable solutions for leading CATV Operators, Broadcasters, Private Networks and Government Facilities

• Cost effective and reliable solutions to meet the needs and challenges for the continual evolution of the CATV and Broadcast industry.

• The MEQ1000 with multiple input card options cover a wide range of applications
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