

SMPTE 310M Interface

Agilent Technologies MPEGscope Test Systems

E6292A

***Synchronous serial interface that
provides connectivity to ATSC
equipment***



Agilent Technologies

Innovating the HP Way

Introduction

The SMPTE 310M interface, specified by the Society of Motion Picture and Television Engineers, has become widely accepted as a standard transport stream interface in low-noise environments. It provides direct point-to-point connection between DTV devices for transmission of MPEG-2 transport streams. Standard coaxial cable is used to carry MPEG-2 transport stream packets that are specified in the MPEG-2 and ATSC standards.

The Agilent E6292A SMPTE 310M Interface is an optional add-on synchronous serial interface that converts SMPTE signals to and from DVB SPI signals for the Agilent MPEGScope test system. This internal interface card provides connectivity of the MPEGScope system to ATSC equipment, such as DTV encoders, multiplexers, modulators and receivers. Through the SMPTE 310M Interface, streams can be analyzed in real-time, recorded for off-line analysis, captured on disk, or played-out from disk. Offline analysis and full decode of ATSC transport stream and PSIP tables is included as part of the MPEGScope base system software.

The Agilent SMPTE 310M interface supports both 19.39 Mb/s for 8-VSB terrestrial broadcasting and 38.78 Mb/s for 16-VSB cable broadcasting. The data rate can also be adjusted in 0.023 Hz increments, allowing the data rate to range from 16 Mb/s to 40 Mb/s.

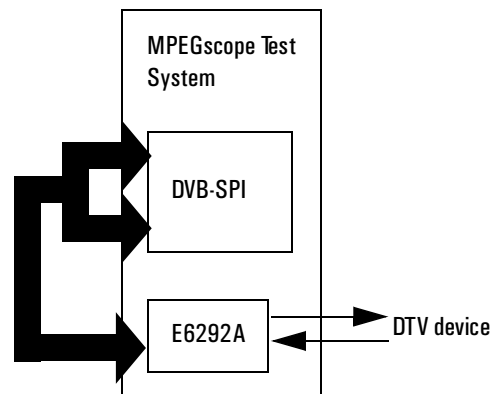
Application

- Testing of DTV devices under ATSC standards
- ATSC streams record and play-out
- Off-line and real-time analysis of ATSC streams

Key Features and Benefits

- Record, play and monitor ATSC streams over SMPTE 310M
- Supports 19.39 Mb/s for 8-VSB systems and 38.78 Mb/s for 16-VSB systems
- Data rate adjustable in 0.023 Hz increments
- ± 2.5 ppm clock accuracy

System Configuration



The SMPTE 310M internal interface is connected to the DVB-SPI through an external cable.

Technical Specification

General

Packet format: 188, 204 or 208 bytes
Input data rate: 16 - 40 Mb/s
Output data rate: 16 - 40 Mb/s
Frequency error: ± 2.5 ppm (max. over 5 years)
Packet timestamp: Clock frequency: 10 MHz \pm 2.5 ppm
Clock resolution: 100 ns
Accuracy: ± 1 timestamp clock period
Source impedance: 75 Ω
Connector types: BNC input and output

Electrical

Data input voltage: 800 mV pp (nominal)

Physical

Short form-factor PCI card:
Dimensions: 4.2 x 7.0 inches

Standards

SMPTE 310M Synchronous Serial Interface for MPEG-2
Digital Transport Streams (1998)

Regulatory & Safety

Radiated emissions:
EN 55011:1991 / CISPR 11:1992 +A2:1996
Conducted emissions:
EN 55011:1991 / CISPR 11:1992 +A2:1996
Immunity Compliance:
EN 61000-3-3:1994 / IEC 1000-3-3:1994
ESD:
EN 61000-4-2:1995 / IEC 1000-4-2: 1995

Related Products

MPEGscope Base Systems:

E6277C MPEGscope Plus
E6301A MPEGscope Lite
E6300A MPEGscope Portable
E6302A MPEGscope Portable Lite

Interfaces:

E6289A ARIB (Parallel TTL) Interface
E6291A ASI/M2S and Serial ECL (DHEI) Interface
E6292A SMPTE 310M Interface
E6293A IEEE 1394 Interface

All MPEGscope base system platforms have a standard DVB-SPI (Synchronous Parallel LVDS) interface installed. Additional interface boards can be added on request. The MPEGscope Plus and MPEGscope Lite can be configured with up to two additional interfaces. The MPEGscope Portable and MPEGscope Portable Lite can be configured with one additional interface.





Agilent MPEGscope Test System

The MPEGscope family of digital TV test products provide a complete spectrum of stream-capture, generation and in-depth analysis tools for MPEG-2, DVB, ISDB and ATSC standards. Agilent's tools cover the entire MPEG-2 protocol stack - from deep macroblock analysis to display, error-checking and editing of the DVB, ATSC and ISDB tables.

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