**SynFoNizer**

Multi-link Single Frequency Network Synchronizer

Running at the transmission-side of DVB-T or DVB-H networks, SynFoNizer provides a cost effective and high reliable solution for synchronizing redundant Single Frequency Network (SFN) feeds and performing a seamless switch-over in case of one network distribution failure.

Customers request for high-level quality of services mandating broadcast operators to guarantee the delivery of TV signal. Knowing that a single de-synchronization or wrong SFN signaling can disturb transmission and cause a complete black-out, broadcast operators use double paths (satellite, microwave, ...) to safely distribute the content with SFN information towards each transmitter.

Each path introducing a different propagation delay (typically 250 ms for satellite and few ms for microwave), SynFoNizer guarantees a seamless SFN switch from one path to another one in case of one path failure. SynFoNizer can handle up to two DVB multiplexes at a time.

SynFoNizer supports various passthrough mechanisms to guarantee service continuity in case of power down.

**Applications**

- Synchronize redundant SFN feeds for:
  - DVB-T Broadcast
  - DVB-H Mobile TV Broadcast

**Benefits**

- Avoid TV blackouts in case of network failure
- Reuse existing network equipment
- Address 2 independent Multiplexes at a time
- Maintain service continuity during breakdown
- Straight integration into NMS
- Low power consumption
- Monitor each path of your network

**Characteristics**

- Unique and patented solution
- Several switching modes (automatic with or without priority, manual)
- Flexible switching condition configuration
- Passive and Advanced passthru mechanisms
- 2x Multiplexes simultaneous processing
- Built-in GPS receiver
- Redundant power supply
- Easy to use Web-based GUI
- Real-time monitoring
- Full SNMPv2 support

**Options**

- NN6-In48V : 48VDC input voltage
- NN6-DualPower : Redundant power supply
- NN6-GPSv2 : Built-in GPS receiver

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## Input Interface

- **MPEG2-TS**: 2x2 ASI inputs, MIP parsing and analysis
- **Clock Reference**: 10MHz and 1PPS inputs, Configurable internal 10MHz and 1PPS automatic switching upon external reference loss
- **Control**: 10/100 Base-T for standard web based interface.

## Output Interface

- **MPEG2-TS**: 2x2 ASI mirrored outputs, Packet/Burst mode
- **Availability**: Basic passthru replicating the inputs, Advanced passthru maintaining the last selected path
- **GPS out**: 10MHz and 1PPS outputs

## Processing

- **Inputs resynchronization**: Correlates streams from inputs to output one single MPEG-2 TS per MUX with Megafame Initialization Packet (MIP)
- **SFN preservation**: Enables seamless switch in case one distribution fails while maintaining SFN synchronization
- **Switching modes**: Automatic switch from one input to the other upon failure, Automatic switch with priority on inputs, Manual switch
- **Switch conditions**: ASI sync loss, ETR290 alarms (TS sync loss, PAT error, PCR error, continuity counter, ...)
- **Monitoring**: Statistics on the number of switch, network propagation delay, ...
- **Supervision**: Full SNMP v2 support, Easy integration into NMS

## Architecture

![Architecture Diagram](image)

## Alarms

- **Sources**: ASI Sync missing, ETR 290 alarms, 10MHz / 1PPS loss, GPS signal loss (option)
- **SNMP**: Any alarm can be configured as a trap and/or trigger relay out

## Physical

- **Height**: 444 mm / 17.48 in.
- **Width**: 444 mm / 17.48 in.
- **Depth**: 274 mm / 10.79 in.
- **Format**: 1 RU, width 19"
- **Power supply**: 100-240VAC
- **Power consumption**: 48V DC (option) / 20W

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