Receivers for Luminato platform

High density Luminato receivers for Cable TV and IPTV networks

Luminato enables flexible selection of free-to-air and scrambled services from DVB-S, DVB-S2, DVB-T, DVB-T2, DVB-C, DVB-ASI, ISDB-T and IP sources, which can be adjusted to the operator’s service line-up with the built-in advanced transport stream processing capabilities. The Luminato receivers support Standard Definition, High Definition and 3D video in MPEG-2 and MPEG-4 AVC video formats and numerous audio formats.
Headend platform with flexible modularity

The Teleste Luminato receivers provide best of breed receiving platform for Cable TV and IPTV operators. The receivers enable flexible selection of free-to-air and scrambled services from DVB-S, DVB-S2, DVB-T, DVB-T2, DVB-C, DVB-ASI, ISDB-T or IP sources, which can be adjusted to the operator’s service line-up with the built-in advanced transport stream processing capabilities.

High density

High-performance Luminato chassis has six module slots to be freely furnished with any combination of the receiver modules which enables low-cost applications even with partially equipped chassis. Similarly, Luminato support perfectly pay-as-you-grow model in order to allow optimal timing for investments and system expansion.

Luminato receiver modules can receive content from satellite utilizing DVB-S, DVB-S2 and DVB-ASI networks or terrestrial DVB-T, DVB-T2, DVB-C, ISDB-T or IP networks. All receiver types enable reliable and high performance operation for receiving up to four digital television Multi-Program Transport Streams per module.

Satellite and terrestrial receivers are available as quad-receiver model or dual-receiver model with DVB descrambling. All Luminato module slots furnished with quad-receivers enable having up to 24 receivers in one RU chassis. As one receiver can process multiple services per receiver, the amount of received services can be vast. This increases efficiency and lowers headend investments dramatically. The optional descrambling uses DVB Common Interface modules flexibly supporting large variety of Conditional Access Systems.

Efficiency and reliability

With advanced transport stream processing, operator can select the services and components which are relevant to his network - either to save bandwidth or otherwise simplify the outgoing stream content. The Luminato receiver follow-up any changes on the received stream to automatically readjust the processing to provide uninterrupted service. This will allow the operator to efficiently manage network capacity usage.

The available tools provide high degree of automated features to minimise the cost of system set-up and operation, and avoiding downtime due to changes in the received services.

Interoperability as standard

Luminato receivers support Standard Definition, High Definition and 3D video in MPEG-2 and MPEG-4 AVC video formats and numerous audio formats.

The output of the receiver is always fully DVB compatible IP streams – complete with automatically generated PSI/SI streams. The output can be either carried as Multiprotocol Transport Stream or de-multiplexed to Single Program Transport Streams, which are directly suitable for IPTV networks and allow highly flexible stream routing and re-multiplexing on Cable TV networks. The IP output streams from the device can be transmitted either directly to another module on the chassis for further processing, to IP connected head-end equipment on the local or remote head-end, or directly to IPTV network. Further, each module can create up to 120 output IP streams.
Multiservice descrambling

Luminato receivers use DVB Common Interface modules to descramble incoming services with DVB scrambling.

Receiver models with descrambling capability are equipped with two Common Interface modules slots and two or four satellite, terrestrial or cable inputs. The Common Interface modules can be flexibly connected to either of the inputs. For example, each of the inputs can allocate own Common Interface module, or one input can use both modules for descrambling higher number of services or two different CAS system descrambling. When both descrambling slots are assigned to one input, then the other input can still be used for Free to Air services.

Embedded content protection

All receiver modules have the optional capability to do DVB Common Scrambling Algorithm and AES content protection. The embedded scrambling doesn’t require any additional hardware and the user can freely select which services will be scrambled. The content is never accessible in unprotected format which is highly appreciated by content providers. The component level scrambling is also supported to allow only video and audio scrambling and leave other streams untouched to avoid descrambling challenges for bursty data in set-top box.
### Technical specifications

#### Satellite receiver RF input – DVB-S / DVB-S2
- **Parameter**: Impedance
  - **Specification**: 75 ohm
- **Frequency range**: 950 ... 2150 MHz
- **AFC Range**: 8 MHz
- **Constellation**: QPSK, 8PSK, 16APSK
- **FEC modes (autodetected)**: All ratios compliant with ETS302307
- **Symbol rates**: 1.5 ... 67.5 MS/s
- **Packet format**: UDP/IP 1...7 TS packets per frame
- **Traffic type**: unicast or multicast
- **Input streams per module**: 2
- **Dejittering buffer size**: 120 ms
- **FEC modes (autodetected)**: All ratios compliant with ETS302307
- **Maximum bit rate per input**: 180 mb/s
- **Signal levels**: -70… -25 dBm
- **Constellation**: QPSK, 8PSK, 16APSK

#### Terrestrial receiver RF input – DVB-T / DVB-T2 / ISDB-T
- **Parameter**: Impedance
  - **Specification**: 75 ohm
- **Frequency range**: 47…862 MHz
- **Constellation**: QPSK, 16QAM, 64QAM
- **OFDM spectrum**: 2k, 8k
- **Segments**: Full (13seg)
- **Symbol rates**: 4… 7,2 MS/s
- **Packet format**: 1...7 DVB transport packets in UDP/IP or RTP/P
- **Traffic type**: unicast or multicast
- **Traffic shaping** max peak traffic limiter
- **Supply voltages**: 24 V
- **Power consumptions**: 6 W
- **Transport stream bitrates per RF input**: According to standards
- **Channel bandwidth**: 6, 7, 8 MHz
- **Channel bandwidth**: 7, 8 MHz
- **Signal levels**: -90 … -20 dBm

#### Cable receiver RF input - DVB-C
- **Parameter**: Impedance
  - **Specification**: 75 ohm
- **Frequency range**: 110...862 MHz
- **Constellation**: 16QAM, 64QAM, 128QAM, 256QAM
- **FEC modes (autodetected)**: All ratios compliant with standards
- **Symbol rates**: 4… 7,2 MS/s
- **Power consumptions**: 7 W
- **Power consumptions**: 9 W
- **Nordig unified ver 2.2.1**: 7 W
- **Max. speed total (4 ports)**: 250 Mb/s
- **Storage temperature**: -30…+70 °C
- **Operating temperature**: 0…+45 °C
- **Max. speed per interface**: 216 Mb/s
- **Max. speed total (4 ports)**: 250 Mb/s
- **Shared with 4 inputs**: 10 W

#### DVB ASI input
- **Parameter**: Impedance
  - **Specification**: 75 ohm
- **Max. speed per interface**: 216 Mb/s
- **Max. speed total (4 ports)**: 250 Mb/s
- **Shared with 4 inputs**: 20 x 109 x 253 mm
- **Dimensions (H x W x D)**: 20 x 109 x 253 mm
- **Excluding connectors and locking screws**: 216 Mb/s
- **Operating temperature**: -10...+55 °C
- **Storage temperature**: -30...+70 °C
- **Specifications met**: 0...+45 °C

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**Note**: Asterisk (*) indicates special modes. **Note**: B** Note: Asterisk (*) indicates special modes. **Note**: Exclusion of bound modules and interface ports. **Note**: Note: Total DC feed power must be less than main PSU capacity minus installed module power consumption. **Note**: Notes: AMD/ATI, NEOTION and SMIT CA modules are verified to operate with Luminato Terrestrial receiver RF input – DVB-T / DVB-T2 / ISDB-T
- **Parameter**: Impedance
  - **Specification**: 75 ohm
- **Frequency range**: 47…862 MHz
- **Constellation**: QPSK, 16QAM, 64QAM
- **OFDM spectrum**: 2k, 8k
- **Segments**: Full (13seg)
- **Symbol rates**: 4… 7,2 MS/s
- **Packet format**: 1...7 DVB transport packets in UDP/IP or RTP/P
- **Traffic type**: unicast or multicast
- **Traffic shaping** max peak traffic limiter
- **Supply voltages**: 24 V
- **Power consumptions**: 6 W
- **Transport stream bitrates per RF input**: According to standards
- **Channel bandwidth**: 6, 7, 8 MHz
- **Channel bandwidth**: 7, 8 MHz
- **Signal levels**: -90 … -20 dBm
- **Max. speed total (4 ports)**: 250 Mb/s
- **Storage temperature**: -30…+70 °C
- **Operating temperature**: 0…+45 °C
- **Max. speed per interface**: 216 Mb/s
- **Max. speed total (4 ports)**: 250 Mb/s
- **Shared with 4 inputs**: 10 W
- **Specifications met**: 0...+45 °C