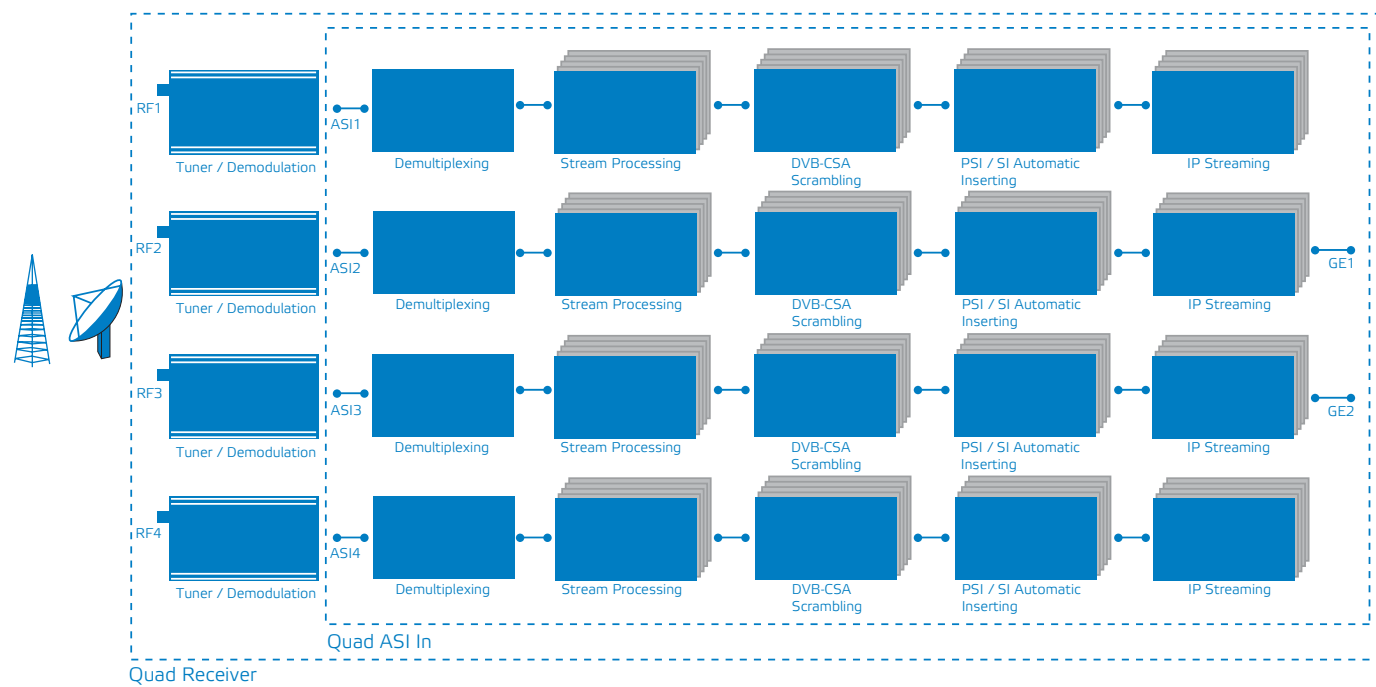


High density Luminato receivers for Cable TV and IPTV networks

Luminato enable flexible selection of free-to-air and scrambled service from DVB-S, DVB-S2, DVB-T and DVB-ASI sources, which can be adjusted to the operator's service line-up with the built-in advanced transport streamprocessing capabilities. The Luminato receivers support Standard Definition and HighDefinition video in MPEG-2 and MPEG-4 AVC video formats and numerous audio formats.



Block Diagram, Quad Receiver & Quad ASI In

Technical specifications

Parameter	Specification	Note	Parameter	Specification	Note
Satellite Receiver RF input			DVB Common Scrambling Algorithm Content Protection		
Impedance	75 ohm		Max service to be scrambled per module	120	dual inputs module quad inputs module
Frequency Range	950 ... 2150 MHz			120	
AFC Range	8 MHz		IP Streaming		
Constellation	QPSK, 8PSK, 16APSK 3)		Packet format	1 ... 7	DVB transport packets over UDP/IP
FEC modes (autodetected)	All ratios compliant with ETS302307		Traffic type	unicast or multicast	
Signal levels	-70 ... -25 dBm		Max. IP streamer per module	120	
Symbol rate	1,5...47 MS/s 1,5...31,5 MS/s 1,5...47 MS/s	QPSK 8PSK 16APSK, 3)	Max. streaming capacity per module	250 Mb/s	
Transport Stream Bitrates per RF input	90 Mb/s 72 Mb/s	descrambling not used descrambling in use	Traffic shaping	max peak traffic limiter	
Standard	ETS300421, ETS302307		LNB Power		
Terrestrial Receiver RF input			Adjustable voltage	13/18 v	
Impedance	75 ohm		22 kHz tone	on/off	
Frequency Range	47 ... 862 MHz		Max output current per connector	500 mA	4)
Constellation	QPSK, 16QAM, 64QAM		General		
FEC modes (autodetected)	All ratios compliant with standard		Supply voltages	24 V	
OFDM spectrum	2k and 8k		Power consumption	6 W 7 W 7 W 7 W	LAS-A quad ASI inputs LRS-A dual sat. receiver, 2) LRS-B quad satellite receiver LRT-A dual DVB-T receiver
Levels	-90 ... -20 dBm		Connectors, RF	F	
Channel Bandwidth	6, 7, 8 MHz		DVB-ASI	BNC 75 ohm	
Transport Stream Bitrates per RF input	90 Mb/s 72 Mb/s	descrambling not used descrambling in use	Dimensions	20 x 109 x 253 mm (H x W x D), 1)	
Standard	ETS300744 Nordig Unified ver 2.0		Weight	0,3 kg	
DBV ASI input			Enclosure classification	IP21	
Impedance	75 ohm		Operating temperature	-10...+55 °C	
Maximum speed per interface	216 Mb/s	payload traffic	Storage temperature	-30...+70 °C	
Maximum speed total (4 ports)	250 Mb/s	shared with 4 inputs	Specification is met	0...+45 °C	
Standard	EN50083-9		Note!		
DVB Common Interface Descrambling			1) Dimensions excluding connectors and locking screws		
Connector	PCMCIA	dual slots	2) Excluding CAM module and LNB powering		
Standard	DVB_CI EN50221		3) 16APSK only available in RF1 in dual DVB-S2 module (RF2 disabled) and RF1 and RF3 in quad DVB-S2 module (RF2 and RF4 disabled).		
CA module	PC-Card type II	Hot Plug	4) Total LNB power must be less than main PSU capacity minus installed module power consumption		
Note: Aston and SMIT CA modules are verified to operate with Luminato					



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Headend platform with flexible modularity

- Multiple services per receiver – high efficiency, lower investments
- Embedded security – services can't be accessed in unprotected format
- Hot swap as standard – swap the module and remain the configurations

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 or DVB-ASI 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 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

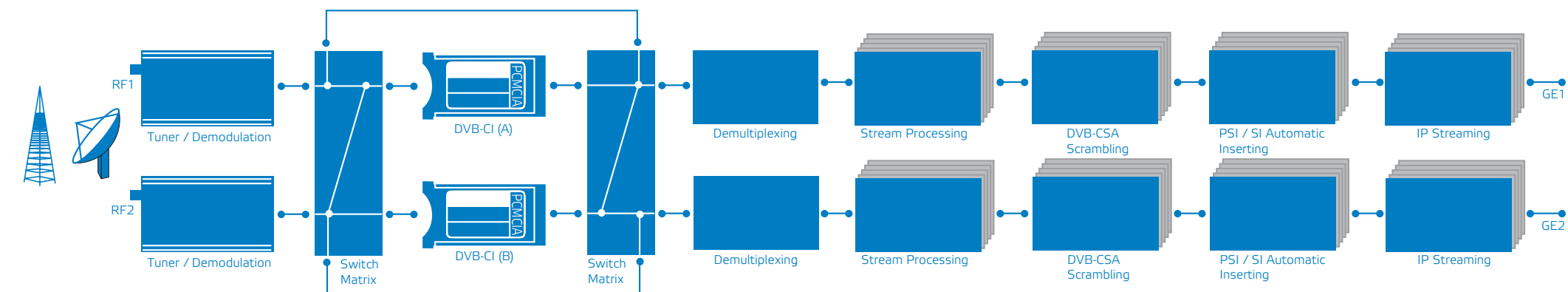
With advanced transport stream processing, operator can select the services and components which are relevant to his network - either to save bandwidth or otherwise simplify the outgoing stream content. The Luminato receiver follow-up any changes on the received stream to automatically readjust the processing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

- LNB power feed, adjustable Voltage and 22 kHz tone
- DVB-S/S2 IF, DVB-ASI or DVB-T reception
- Advanced transport stream processing
- Demultiplexing from MPTS to SPTS
- PID remapping and filtering
- PSI/SI pass-through or regeneration
- Service follow up, service ID remapping, stream type filtering, SID follow up and service information
- Automatic/manual PSI-SI table generation
- 2 Standard CA-module slots
- MPEG transport stream over UDP/IP streaming
- MPTS passthrough



Intuitive and user friendly graphical web user interface for management providing local and remote access.



Block Diagram, Dual Receivers



Luminato platform fully furnished with ASI modules and Dual S2 receiver module with CI.

Interoperability as standard

Luminato receivers support Standard Definition and High Definition 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 Multi Program 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.



Dual DVB-S2 (S) Module with Dual Common Interface Module (optional) Installed.



Quad DVB-S2 (S) Module.



Dual DVB-T Module with Dual Common Interface Module (optional) Installed.



Quad DVB-ASI Module.

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 satellite or terrestrial 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 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.