Multireceiver for Luminato platform

Versatile Luminato receiver for Cable TV and IPTV networks

Luminato quad multi-standard receiver enables flexible selection of free-to-air and scrambled services via DVB-S, DVB-S2, DVB-S2X, DVB-T, DVB-T2, DVB-C, ISDB-T, ITU-T J.83 A/B/C and IP interfaces. The Luminato multireceiver supports video resolutions from SD (Standard Definition) to UHD (Ultra High Definition) in MPEG-2, MPEG-4 AVC and HEVC video formats.

Flexibility for diverse needs

The Teleste Luminato multireceiver is a versatile and compact receiver module for Cable TV and IPTV operators. It enables a flexible selection of free-to-air and scrambled services, which can be adjusted to the operator's service line-up with the built-in advanced transport stream processing capabilities.

High density with 4 + 2 receivers in one module

Teleste Luminato quad multi-standard receiver provides a future-proof, compact and multifunctional module for satellite, terrestrial, cable and IP reception. It supports DVB-S, DVB-S2, DVB-S2X, DVB-T, DVB-T2, DVB-C, ISDB-T, ITU-T J.83 A/B/C and IP standards. It has two physical ports with dual receivers for receiving payload via satellite, terrestrial and cable networks. In addition to this, the module is equipped with two IP inputs for receiving either encrypted or free to air video content over IP network.

Several possible alternative input configurations simplify the system set-up and save space as less input modules are required for receiving content from different sources. What's best: all input alternatives are enabled with software and available without additional software keys/licenses. The number of received services by each receiver can be substantial as one receiver can process multiple services simultaneosly. This again increases efficiency and lowers headend investments dramatically.

High-performance Luminato chassis has six module slots and the multireceiver module can be fitted to any of them. In accordance with the Luminato system architecture, the advanced video processing can be performed in the receiver module and additional output modules are not necessary in pure IP based headend solutions.

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 follows up on 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

The Luminato multireceiver supports video resolutions from SD (Standard Definition) to UHD (Ultra High Definition) in MPEG-2, MPEG-4 AVC and HEVC video formats and numerous audio formats such as AAC or MPEG.

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.

Multiservice descrambling

Luminato receivers use DVB Common Interface modules to descramble incoming services. The multireceiver is equipped with two Common Interface modules slots, and the Common Interface modules can be flexibly connected to either of the inputs. For example, each of the inputs can allocate separate Common Interface modules, or one input can use both modules for descrambling higher number of services. When both descrambling slots are assigned to one input, then other inputs can still be used for free-to-air services.

Embedded content protection

The Luminato Multireceiver has 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. Component level scrambling is also supported to allow video and audio scrambling only and to leave other streams untouched to avoid descrambling challenges for bursty data in set-top box.

Emergency signal streaming

The Multireceiver module features a useful emergency signal streaming function for added security and safety. All output services in MPTS or SPTS streams can be over-ridden with a user specified multicast stream content. In case of emergency or other significant trigger event, all existing services can be replaced with emergency channel to transmit instructions to every connected viewing point.
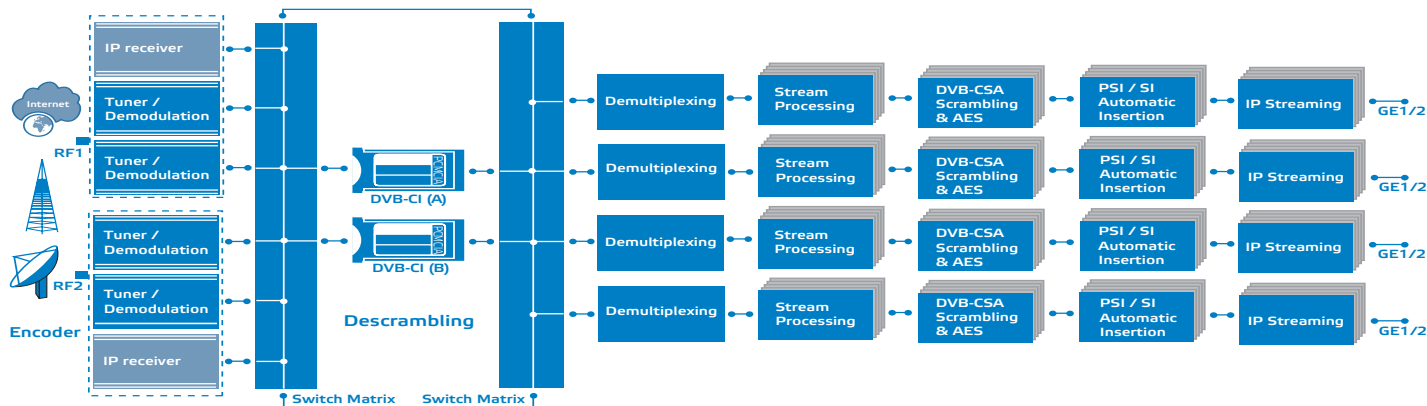
- Two physical ports with dual receivers: Several possible input configurations
- Descrambling on all of the inputs
- 2 IP inputs for encrypted or free-to-air content
- DVB-S2X reception for efficient high bitrate satellite video
- Advanced transport stream processing
- All input alternatives are enabled with software and available without additional software keys/licenses
- High service availability with input stream redundancy
- Emergency video streaming

High-performance Luminato chassis has six module slots

Block Diagram

Technical specifications

Parameter	Specifications	Note	Parameter	Specification	Note
Satellite receiver RF input – DVB-S / DVB-S2 / DVB-S2X			**IP Input**		
Impedance	75 ohm		Packet format	UDP/IP 1...7 TS packets per frame	
Frequency range	950 ... 2150 MHz		Traffic type	unicast or multicast	
AFC Range	8 MHz		Input streams per module	2	
Constellation	QPSK, 8PSK, 16APSK , 32APSK		Dejittering buffersize	120 ms	
FEC modes (autodetected)	All ratios compliant with ETS302307		Maximum bitrate per input	192 Mb/s	
Spectral Inversion	Automatic		Bitrate format	CBR & VBR	
Signal levels	-70... -25 dBm		**IP Streaming**		
Symbol rate	1,5...67,5 MS/s		Packet format	1...7	DVB transport packets in UDP/IP or RTP/P
Transport Stream Bitrates per input	up to 145 Mb/s		Traffic type	unicast or multicast	
Adjustable LNB voltage	off/13/18 V		Max. IP streamer per module	120	
Max output current per connector	500 mA	2)	Max. streaming capacity per module	400 Mb/s 500 Mb/s	DVB scrambling AES scrambling
22 kHz tone	on/off		Traffic shaping	max peak traffic limiter	
DiSEqC	v 1.1		**DVB Common Interface Descrambling**		
Standard	ETS300421, ETS302307, BlueBook A83-1	DVB-S, DVB-S2	Connector	PCMCIA	dual slots
	EN302307-2/ BlueBook A83-2	DVB-S2X	Standard	DVB_CI EN50221	
Terrestial receiver RF input – DVB-T / DVB-T2 / ISDB-T			CA module	PC-Card type II	
Impedance	75 ohm		TS bitrate	up to 192 Mbit/s	
Frequency range	47...862 MHz		**DVB CSA and AES Content Protection**		
Constellation	QPSK, 16QAM, 64QAM	DVB-T/T2/ISDB-T	Max services to be scrambled per module	120	
	256QAM	DVB-T2	**DC Feed**		
	DQPSK	ISDB-T	Adjustable voltage	off/13/18 V	1)
FEC modes (autodetected)	All ratios compliant with standards		Max output current per connector	500 mA	2)
Adjustable voltage	off/13		**General**		
Max output current per connector	500 mA	2)	Supply voltages	24 V	
OFDM spectrum	2k, 8k	DVB-T	Power consumption	14 W	3)
	2k, 4k, 8k	ISDB-T	Connectors, RF	F female	
	1k, 2k, 4k, 8k, 16k, 32k	DVB-T2	Dimensions	20 x 109 x 253 mm	h x w x d, 4)
Segments	Full (13seg)	ISDB-T	Weight	0,3 kg	
Signal levels	-90 … -20 dBm		Enclosure classification	IP21	
Channel Bandwidth	6, 7, 8 MHz		Operating temperature	-10...+55 ºC	
Transport stream bitrates per RF input	According to standards		Storage temperature	-30...+70 ºC	
Standard	EN300744	DVB-T	Specification is met	0…+45 ºC	
	EN302755 V1.4.1	DVB-T2			
	Nordig unified ver 2.2.1	DVB-T/T2	**Notes**		
	ABNT NBR 15601	ISDB-T	1) On terrestrial reception 13 V only		
Cable receiver RF input - DVB-C			2) Do not exceed the chassis PSU total power capacity when feeding external devices.		
Impedance	75 ohm		3) Excluding CAM modules and DC feed.		
Frequency range	110…862 MHz		4) Dimensions excluding connectors and locking screws.		
Constellation	16QAM, 64QAM, 128QAM, 256QAM				
FEC modes (autodetected)	All ratios compliant with standards				
Levels	-65…-32 dBm				
Channel bandwidth	7, 8 MHz				
Symbol rate	4… 7,2 MS/s				
Standard	ITU-T J.83 Annex A,B and C				
	EN 300 429				
	Nordig unified ver 2.2.1				

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