



QAM Module for the Luminato platform

## HIGH QUALITY QAM MODULATION

The Luminato QAM module enables flexible multiplexing of SPTS and MPTS video services and PSI/SI table streams. High quality QAM modulation with agile up conversion provides easy adaptation to DVB-C delivery over HFC network.

### **Versatile functionality**

The Teleste Luminato quad QAM module provides an advanced DVB-C platform for Cable TV operators for multiplexing of SPTS and MPTS video services and also PSI/SI table streams. High quality QAM modulation with agile up conversions secures seamless DVB-C delivery over HFC network.

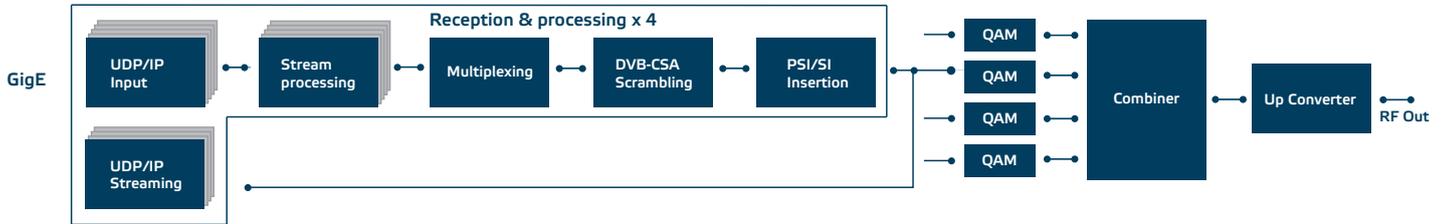
The Luminato quad QAM multiplexers support selection of free-to-air and scrambled services from IP stream sources, which can be adjusted to the operator's service line-up with the built-in advanced transport stream processing capabilities. The Luminato quad QAM module supports Standard Definition, High Definition and 3D video in CBR and VBR formats and numerous audio formats. Optional content protection is based on DVB simulcrypt standard.

### **Effective flexibility**

The Luminato quad QAM module is fully compatible with the high-performance Luminato chassis, where it can be fitted freely to any of the six module slots. According to the Luminato system architecture, the video processing is performed on the quad QAM modules. This enables low-cost applications even with partially equipped chassis, while having the performance scalability to fully equipped chassis.

### **Complete cable TV headend in 1 RU**

One or more Quad QAM modules can be included in 1 RU Luminato platform with Luminato satellite, terrestrial, cable, IP and DVB-ASI receivers, together forming a complete cable TV headend. The flexible architecture enables complementing service bouquet with locally received content in the edge of the network.



Block Diagram, Quad QAM

### Embedded content protection

Quad QAM module has the optional capability for 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. Component level scrambling is also supported to allow only video and audio scrambling to avoid descrambling challenges in set-top boxes.

### Efficiency and reliability

With the advanced transport stream processing, operators can select the services and components that are relevant to their network, enabling them to efficiently manage the network capacity usage. Thanks to a high degree of automated functions the cost of system set-up and operation is minimised. This reduces downtime due to changes in the received services.

Parameter	Specification	Note	Parameter	Specification	Note
<b>IP inputs</b>			Out of band noise, 1)	<-58,5 dBc	1st adj. channel
Frame formats	UDP/IP, RTP/UDP/IP		<-62 dBc	2nd adj. channel	
TS packet per UDP frame	1...7		<-64 dBc	3rd adj. channel	
Max inputs streams/module	120		<-66 dBc	other channels	
Dejittering	PCR processing & buffering		-70 dBc	other channels, 2)	
<b>Multiplexers</b>			Harmonics	<-60 dBc	
Number of multiplexer	4		MER	>43 dB	LQM-A, LQM-C
Max input service/multiplexer	120		<b>IP streamer output of multiplexer</b>		
Max components per service	32		Framing format	UDP/IP, RTP/UDP/IP	
Output speed	depends on QAM modulator settings		Traffic type	unicast or multicast	
<b>DVB Common Scrambling Algorithm Content Protection</b>			TS format	CBR, VBR	
Max scrambled services	120 per module	LQM-A, LQM-C	Max TS packet speed/ streamer	directly related to QAM output speed	
<b>QAM Output</b>			Maximum speed total	250 Mb/s	
Standard	ITU-T J.83 Annex A, B and C		<b>General</b>		
QAM constellations	16, 32, 64, 128, 256		Power consumption	15 W	
Symbol Rate	4...7,4 MS/s		Supply voltage	24 V	
Impedance	75 ohm		Connectors, RF Out	F	
Output return loss	>14 dB	active channel	Dimensions	20 x 109 x 253 mm	(HxWxD), 3)
	>12 dB	act. ch 81...862 MHz	Weight	0,4 kg	
	>10 dB	act. ch 862...1000 MHz	Enclosure classification	IP21	
Output Level	102 ... 112 dBµV	four adj. channels	Operating temperature range	-10...+55 °C	
	104 ... 114 dBµV	three adj. channels	Storage temperature range	-30...+70 °C	
	106 ... 116 dBµV	two adj. channels	Specification is met	0...+45 °C	
	110 ... 120 dBµV	one adj. channel	<b>Notes</b>		
Output Power step size	0,2 dB		1) Values for quad channels active. Excluding harmonics		
Output center frequency	85...999 MHz		2) Typical value outside 100 MHz of active channel block		
Output frequency step size	50 kHz		3) Dimensions excluding connectors and locking screws		



TELESTE CORPORATION  
www.teleste.com

P4P\_Luminato QAM module 05/17

Copyright © 2017 Teleste Corporation. All rights reserved. Teleste and the Teleste logo are registered trademarks of Teleste Corporation. Other product and service marks are property of their respective owners.

Teleste reserves the right to make changes to any features and specifications of the products without prior notice. Although the information in this document has been reproduced in good faith, the contents of this document are provided "as is". Teleste makes no warranties of any kind in relation to the accuracy, reliability or contents of this document, except as required by applicable law.