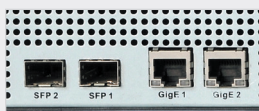**PBI**

digital horizon

DCH-5100TM
IP to QAM Modulator

The DCH-5100TM is a professional high density IP to DVB-C QAM modulator. It receives up to 64 or 160 digital TV transport streams from both Gigabit Ethernet and ASI ports. After processing, it can modulate these transport streams to 16-way or 32-way QAM RF carriers. For 16-way QAM modulator option, the TS can be generated and re-multiplexed from 160 SPTS/MPTS of ASI/IP inputs. For 32 QAM modulator option, the re-multiplexer function has to be disabled, each QAM carrier is directly converted from any one of the 64 TS from IP or ASI input. These QAM RF carriers are independently up-converted with high speed DAC to achieve excellent RF performance covering the full spectrum up to 1GHz. The equipment is housed in a 1-RU chassis with two AC power supplies in redundancy.
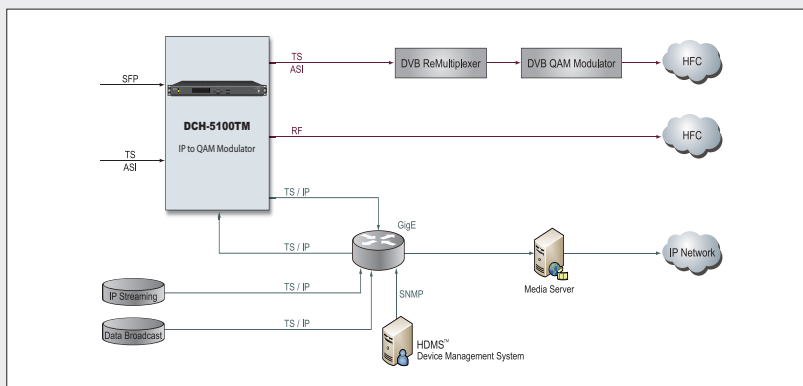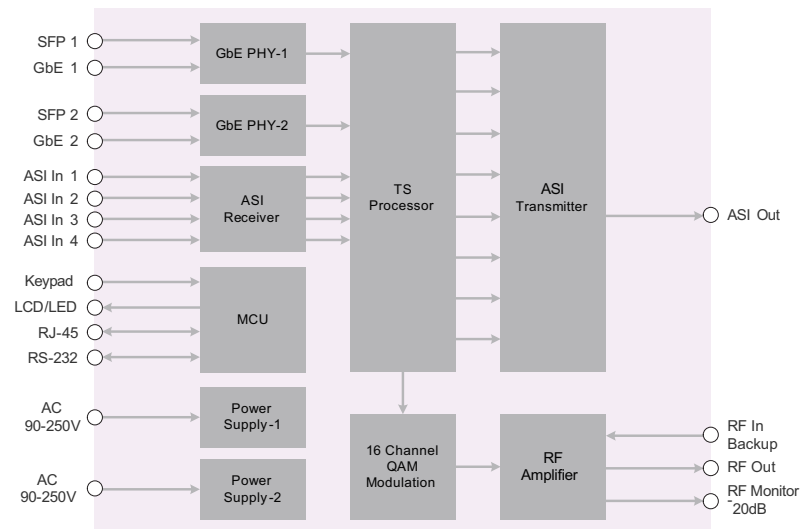
Main Feature

- Compliant with ITU J.83 Annex A & C and DVB-C EN300429 standards
- Transport stream de-encapsulation from IP of GbE port
- 4 TS/IP GbE ports with 2 x RJ-45 & 2 x SFP, 2+2 redundancy mode
- TS/IP input de-jitter ≤200ms

- Up to 64 or 160 TS Inputs over GbE
- 16 or 32 independent QAM modulators
- RF output backup port for 1+1 redundancy
- Redundant Power Supply
- Network Management through SNMP, HTTP, CLI

Support Two switched GigE ports inputs

SFP 2   SFP 1   GigE 1   GigE 2

32 QAM output channels on single RF output

SFP 2   SFP

Redundant power supplies

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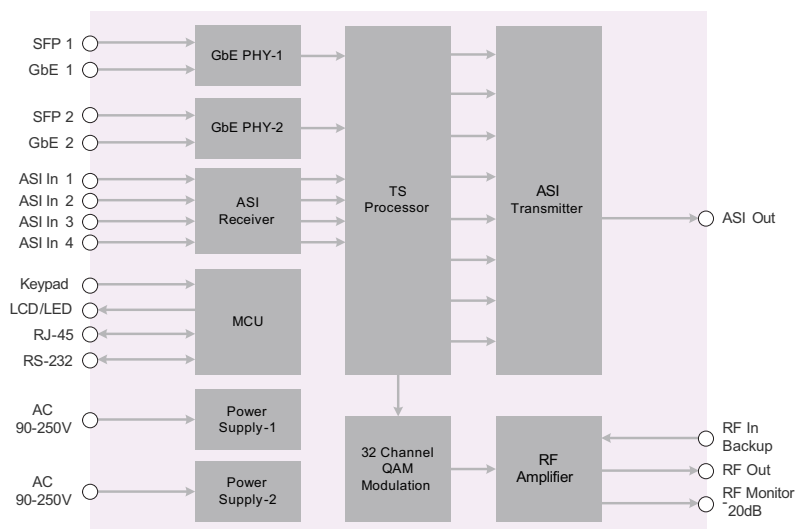
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Modulators

Specification

IP Input	
Connector Type	(1000Base-T + SFP) x 2, IEEE803.2, 2+2 redundant
Protocol	IPv4, IGMPv2, IGMPv3, ARP, UDP, RTP
Operating Mode	Full duplex, Auto negotiable
Streaming addressing Type	Multicast or Unicast
Number of Streaming Input	64 or 160 (software option)
Type of TS Streaming	SPTS or MPTS
TTL	1~256 (adjustable)
De-jitter	≤200ms
Effective Input Bit Rate	≤950Mb/s

ASI Input	
Connector Type	4×BNC female, 75Ω
Standard	DVB-ASI, EN50083-9
Input Return Loss	15dB
Minimum Input Level	200mV
Input Data Mode	Burst or Byte, 188 or 204 Byte/Packet
Input Data Rate	≤216Mb/s

Re-Multiplexing (applicable to DCH-5100TM-16X)	
TS Input Management	Remultiplexing up to 4 DVB-ASI inputs and 160 MPTS/SPTS inputs
Service and PID management	Service or component based Remultiplexing, filtering and PID remapping
PSI/SI	PSI/SI table regeneration, NIT and SDT edition, LCN Edition and Re-generation

QAM Modulation	
Standard	DVB-C EN300 429, J.83 Annex A & C
Symbol Rate	3.6MBauds~7MBauds
Roll-off Factor	12%, 15%, 18%
MER	>36dB (with Tester Equalizer = off)
Number of QAM Carrier	16 or 32 (software option)

RF Output	
Connector Type	1×F type Female, 75Ω
Channel Spacing	6MHz, 8MHz
Output Frequency Range	49 ~ 1000 MHz
Output Frequency Adjustment Step	1MHz
Output Frequency Accuracy	±25ppm
Output Level	105dBuV (per channel)
Output Level Attenuation	30dB (step by 1dB)
Output Return Loss	15dB min.
Shoulder Attenuation	50dBc (typical.) @ BW±10%
Spurious Rejection	60dBc (typical.)
Spectrum Flatness	4dB (over full output frequency range)
Useful Output Bit Rate	800Mb/s

Control & Monitoring	
Connector Type	1×RJ-45, 10/100 Base-T (for remote control)
Remote Control	HDMS, HTTP 1.1
Protocol	SNMP v1 & v2, HTTP 1.1
Local Control	LCD and 6-key on front panel
Serial Port	1×RS-232 D-sub 9-pin (for debug use only)
RF Monitor Port	1×F type female, 75Ω, -20dB lower than the main RF output

Alarm and Contact Relay	
Connector Type	1×D-sub 9-pin
Alarm & Warning Indicator	Dual colors LED on Front panel, Contact Relay on Rear panel
Trap	SNMP v1 & v2
Event Log	last 100 events logged in non-volatile memory

Sensors & Indicators	
Temperature Sensor	Yes
Fan Status Sensor	Yes
Alarm Buzzer	Yes
Bit rate Capacity Indication	Yes (For each QAM)

Power Supply	
Power Supply	AC 90V ~ 250V, 50/60Hz
Power Consumption	50Watts Max.

Physicals	
Dimension	445mmx543mmx44mm
Weight	8Kg Net, 12Kg Gross
Operating Temperature	0 ~ 45℃
Storage Temperature	-10 ~ 60℃
Operating Humidity	10 ~ 90%, non-condensing

Certification	
	EMC: EN 55024:1998+A1:2001+A2:2003, EN 55022:2006+A1:2007, EN 61000-3-2:2006, EN 61000-3-3:2008
	FCC: Part 15 Class B
	Environment: RoHS, WEEE

Block Diagram of DCH-5100TM-16X: 16 Channel QAM modulation with Remux function

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Block Diagram of DCH-5100TM-32: 32 Channel QAM modulation without Remux function

Order Information

Function / Model	DCH-5100TM-16X	DCH-5100TM-32
ASI-In	x4	x4
Built-in Remux	YES	NO
TS/IP In	x160	x64
RF-In Backup	x1	x1
RF-Out	x1	x1
ASI-Out	x1	x1
Modulation	16 channel QAM	32 channel QAM

Back Panel Interface

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