

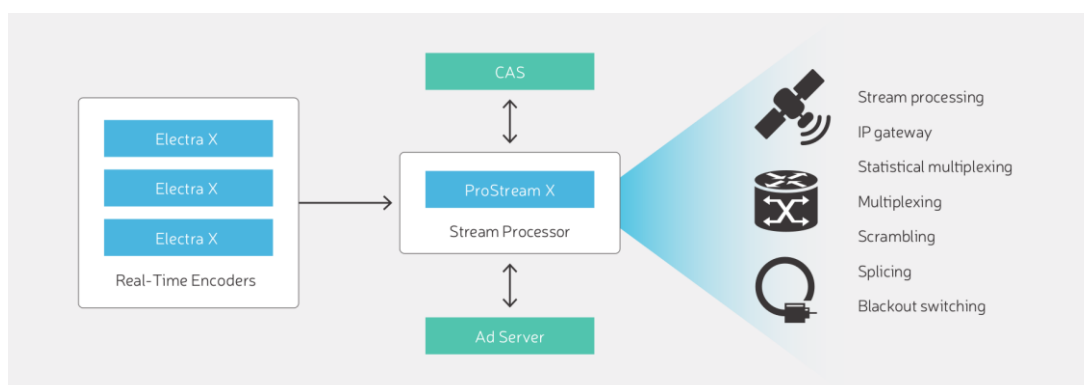
HARMONIC ProStream X



VIDEO STREAM PROCESSOR & GATEWAY

Der ProStream X bietet marktführendes Hochleistungs-Stream-Processing für betriebsnotwendige Broadcast-, Kabel, Satelliten-, IPTV- und OTT-Anwendungen.

- Multiplexing und Scrambling von bis zu 2,000 parallelen Broadcast-Diensten
- Video Gateway mit bis zu 10-Gbps Datendurchsatz
- Fortgeschrittenes Multiplexing jeden Dienstes von jedem Input zu jedem Output
- Target Average Bitrate
- DataTrack
- IP Networking und Mirroring
- DiviTrack IP statistisches Multiplexing mit Remote-Encodern
- Live-to-live Splicing für MPEG-2, MPEG-4 AVC und HEVC Video-Streams
- DVB CSA3, DVB CSA2 und AES Scrambling
- Emergency Alert System (EAS) konform einschließlich SCTE-18 Trigger



SPEZIFIKATIONEN

10-GbE IP I/O	
Type	IEEE 802.3z
IP Ports	Four independent
Connectors	Four 1-GbE ports, RJ45 on board PCI option card for two 10-GbE ports SFP (up to two cards per platform) Support for IEEE 802.Q VLAN tagging
I/O Speed	Up to 10 Gbps
IP Encapsulation	MPEG TS over UDP/IP/MAC 1 to 7 TS/IP
MPEG Format	188 B per TS
MPEG Transport Streams	MPTS and SPTS
I/O Processing	1,000 sockets Up to 10 Gb per platform (configuration dependent)
Maximum Bitrate per Socket	300 Mbps
Addressing	Multicast
Management	IGMPv2/v3

ASI I/O	
Type	ASI input/output
ASI Ports	Eight ports per card, up to two cards per platform
Connectors	Eight mini-DIN ports
I/O Direction	Configurable, input or output, per port
MPEG Format	188/204 B per TS
I/O Processing	One MPTS/SPTS per port Up to 213 Mbps per input or output
MANAGEMENT INTERFACES	
Ethernet	1000Base-TX
Connectors	Two RJ45 (1 management, 1 CAS)
SCRAMBLING	
SCS	Internal
Standards	DVB common scrambling Open CAS DVB CSA2, DVB CSA3, AES-CBC, AES-NSA2 scrambling AES descrambling Fix Key scrambling and descrambling
CAS connections	Simultaneous connections to 30 different CA systems
BISS Encryption	Mode 1
Number of ECMs	2,000 ECMs per platform
STATMUX CONTROL	
Codecs Supported	MPEG-2, MPEG-4 AVC, HEVC
Formats Supported	SD, HD, UHD, interlaced, progressive
Frame Rates Supported	PAL, NTSC
REMULTIPLEXING	
Routing	Any input to any output
PID	Remapping, filtering, multicasting
PID Multicasting	Any input PID can be multicasted to multiple TS outputs with different remapping and processing (different CW, if scrambled)
PSI/SI	Extraction, injection, spooling, regeneration
Output Mirroring	Any to any
Advanced Stream Processing	Live-to-live splicing, PID range
REDUNDANCY	
Device	1:1 Under NMX or stand-alone GUI management
Internal	Any-to-any input TS TS output mirroring Port redundancy
Triggers	ETR 290
SYSTEM MANAGEMENT	
NMX™ Digital Service Manager 7.6.2 or later	
Stand-alone web user interface	
PHYSICAL	
Dimensions (W x H x D)	17.28 in x 1.7 in x 28 in (1 RU) 43.9 cm x 4.32 cm x 71.12 cm
Weight	28.7 lbs/13 kg
POWER	
Power Supplies	Dual redundant
Voltage	90-132 V 180-264 V
Line Frequency	47-63 Hz

ENVIRONMENTAL	
Cooling	Six fans, hot-swappable
Operating Temperature	
ASHRAE Class A2	+50° to +95° F +10° to +35° C Continuous operation with max rate of change: 10° C/hr
ASHRAE Class A3	Includes operation up to 40° C for up to 900 hrs/yr
ASHRAE Class A4	Includes operation up to 45° C for up to 90 hrs/yr
Storage Temperature	-40° to +158° F -40° to +70° C
Safety Compliance	UL60950-CSA 60950 (USA/Canada) EN60950 (Europe) IEC60950 (International) CB Certificate & Report, IEC60950 CE-Low Voltage Directive 2006/95/EC (Europe)
Electromagnetic Compliance (Class A)	FCC /ICES-003 -Emissions (USA/Canada) Verification CISPR 22 - Emissions (International) CISPR 24 - Immunity (International) EN55022 - Emissions (Europe) EN55024 - Immunity (Europe) CE-EMC Directive 2004/108 EC (Europe) AS/NZS 3548 Emissions (Australia/New Zealand) BSMI CNS 13438 Emissions (Taiwan) KC Certification (Korea)

BESTELLINFORMATIONEN

PLATFORM

PART NUMBER	DESCRIPTION
PRM-X-21-AC-FF	ProStream X G2 stream processing platform with AC dual PSU
PRM-X-21-DC-FF	ProStream X G2 stream processing platform with DC dual PSU
PRM-X-DUAL-10GBE	ProStream X G2 stream processing platform with dual-port 10-Gbe optical NIC with SFP+
PRM-X-OCTO-ASI	ProStream X optional ASI card, with up to eight ASI I/O ports
FW-PRM-X-BASE	ProStream X base license
FW-PRM-X-LAB	ProStream X firmware license for lab license
FW-PRM-X-DEMO	ProStream X firmware license for all functions for 90-day demo usage; for none commercial use only
FW-PRM-X-SPARE	ProStream X cold spare firmware license for all ProStream functions; 30 days; one per chassis
FW-PRM-X-DEVICEREDUNDANCY	ProStream X stand-alone device redundancy firmware license; one per chassis required

MULTIPLEXING

PART NUMBER	DESCRIPTION
FW-PRM-X-DT-POOL	ProStream X firmware license for statmux control; one DiviTrackIP license per pool
FW-PRM-X-SLATE-SRV	ProStream X firmware license for Slate Insertion; one per service required
FW-PRM-X-EAS-SRV	ProStream X firmware license for Emergency Alert System; one per service required
FW-PRM-X-FEC-TS	ProStream X FEC firmware license; one per transport stream required
FW-PRM-X-DT-REGIONALSRV	ProStream X firmware license for sharing common services between regional statmux pools; license is per one duplicate of the common services
FW-PRM-X-ESAM	ProStream X ESAM interface firmware license; one per service required
FW-PRM-X-DT-TARGETBTR-SRV	ProStream X with Target Average bitrate algorithm; one per service required.
FW-PRM-X-DATATRACK	ProStream X capability to add external Data/Audiopids to the DiviTrack statmux pool.

SCRAMBLING

PART NUMBER	DESCRIPTION
FW-PRM-X-DVB-CSAv3-CW	ProStream X DVB CSA3 scrambling firmware license; one per service required
FW-PRM-X-DVB-CW	ProStream X DVB SCR firmware license; one per service required
FW-PRM-X-BISS-FIX-	ProStream X BISS fixed key

SRV	firmware license; one per service required
FW-PRM-X-AES-CW	ProStream X AES SCR firmware license; one per service required
FW-PRM-X-SCR-FIX-SRV	ProStream X fixed key firmware license; one per service required
FW-PRM-X-SELC-SCR	ProStream X Selective Encryption firmware license; one per service required
FW-PRM-X-SELC-EHP	ProStream X Encryption Hacking Prevention scrambling firmware license; one per service required
FW-PRM-X-DES-FIX-SRV	ProStream X AES Fixed key descrambling firmware license. One per service required

HIGH THROUGHPUT

PART NUMBER	DESCRIPTION
FW-PRM-X-2G-GATEWAY	ProStream X 2-Gbps throughput firmware license

SPLICING

PART NUMBER	DESCRIPTION
FW-PRM-X-SRV-SUB	ProStream X Splicing Service Substitution firmware license; one per service required