BITSTREAM®

Leader in time synchronization and data transmission solutions

Multiplexer

CHIRON-4E1

Carrying PDH traffic of the primary primary group over an Ethernet packet network.

Reliable

Safe

Easy to configure

Solid

CHIRON-4E1

TDM over IP multiplexer

- ✓ Connection of up to 4 PDH, G.703 E1 2048Mbit/s streams over a 10/100/1000 Mbit/s Ethernet packet network (Transparent transmission of framing and signaling according to G.704 and G.723)
- ✓ Built-in five-port switch 4x 10/100/1000Mbit/s RJ45 + 1000Mbit/s SFP
- ✓ Support for VLAN (802.1Q and 802.1ad)
- ✓ Support for QoS (802.1p)
- ✓ Point-to-point operation
- ✓ SNMP, WWW, TELNET management, SNTP, Syslog support
- ✓ Remote software update

Features CHIRON-4E1

Reliable

The CHIRON-4E1 thus acts as a PDH multiplexer. The E1 streams encapsulated by the TDM over IP module go out to the Ethernet ports of the device and can be carried by any Layer 2 and Layer 3 devices such as switches, routers or bridges or beacons. Each packet stream associated with an E1 port can have its priority defined in accordance with IEEE 802.1p to ensure the highest quality of service. E1 data streams are carried transparently without modification to CRC or slot 16 content, enabling seamless interoperability between devices based on G.704 and G.732.

Easy to configure

Built-in HTTP server, TELNET server and SNMP agent allows secure configuration of device parameters via standard WWW browser and continuous fault monitoring from the level of any management platforms supporting SNMP protocol. In addition, built-in support for SMTP protocol allows to notify the operator via email in case of a failure in the system.

Tailored to your needs

The CHIRON-4E1 is equipped with a number of QoS mechanisms. The devices support eight traffic classes, transmission priorities for individual frames can be assigned based on port priorities, MAC addresses, VLAN IDs, DSCP/ToS values and TCP/UDP port numbers. The available transmission bandwidth can be adjusted in the outbound and inbound directions for both ports and individual queues (priorities). The device supports Ethernet OAM functionality (Link OAM and Service OAM) providing advanced mechanisms to monitor and control performance (remote loops, link continuity checking via CFM frames, Ethernet statistics collection from remote devices).

Technical specification

Supported transmission standards

- ✓ IEEE 802.3 10Base-T Ethernet
- ✓ IEEE 802.3u 100Base-TX Fast Ethernet
- ✓ IEEE 802.3u 100Base-FX Fast Ethernet Fiber
- ✓ IEEE 802.3ab 1000Base-T
- ✓ IEEE 802.3z Gigabit Fiber
- ✓ IEEE 802.3x Flow Control and Back-pressure
- ✓ IEEE 802.1p Class of Service (CoS)
- ✓ IEEE 802.1Q VLAN
- ✓ IEEE 802.1ad QinQ
- ✓ ITU-T G.703
- ✓ ITU-T G.704 Transparent transmission channel
- ✓ ITU-T G.723 Transparent transmission channel

Supported protocols

- ✓ SNMP v1
- ✓ NTP, SMTP, RMON,
- ✓ HTTP, Telnet, Syslog,
- ✓ MIB-II

Supported standards, recommendations and directives EMC, safety*

PN-EN 55011:2016	Industrial, scientific and medical equipment	Radio frequency disturbance characteristics - Limits and methods of measurement.
PN-EN 55035:2017-09	Electromagnetic compatibility for multimedia equipment	Resilience Requirements.
PN-EN IEC 62368-1:2020-11	Audio/visual, information technology and telecommunications equipment.	Part 1: Safety requirements.
PN-EN 60825-1:2014-11	Laser equipment safety Part 1: Equipment classification and requirements.	Part 1: Equipment classification and requirements.
EMC 2014/30/EU	EMC Electromagnetic Compatibility Directive.	
LVD 2014/35/EU	LVD Low Voltage Directive.	
IEC 61000-4-2	Electromagnetic Compatibility (EMC)	Part 4-2: Test and measurement methods - Electrostatic discharge immunity test.
IEC 61000-4-3	Electromagnetic Compatibility (EMC)	*Part 4-3: Test and measurement methods - RF radiated electromagnetic field immunity test.*
IEC 61000-4-4	Electromagnetic Compatibility (EMC)	Part 4-4: Test of resistance to a series of fast electrical transients.
IEC 61000-4-5	Electromagnetic Compatibility (EMC)	Part 4-5: Test and measurement methods -- Impact resistance testing.
IEC 61000-4-6	Electromagnetic Compatibility (EMC)	Part 4-6: Test and measurement methods -- Testing for immunity to conducted disturbances induced by radio frequency fields.
IEC 61000-4-8	Electromagnetic Compatibility (EMC)	Part 4-8: Testing for immunity to mains frequency magnetic fields.
IEC 61000-4-11	Electromagnetic Compatibility (EMC)	Part 4-11: Tests for resistance to voltage drops, short interruptions and voltage changes.
IEC 61000-4-12	Electromagnetic Compatibility (EMC)	Part 4-12: Test and measurement methods - Immunity test for damped sinusoidal waveforms
IEC 61000-4-29	Electromagnetic Compatibility (EMC)	Part 4-29: Testing for immunity to voltage dips, interruptions and voltage changes at a DC power connection

* - The scope and list of supported standards may change as the device evolves

E1 ports

- ✓ ITU-T G.703/704/723 compliant, 2048 kbit/s
- ✓ Loss of packages 1 %
- ✓ Maximum delay in each direction 100 ms according to ITU-T G.114
- ✓ Jitter - delay variations ≤100 ms
- ✓ BER ≤10-9
- ✓ Wave impedance 120 Ohms
- ✓ Line code HDB3
- ✓ Clock retrieved from E1 interface or Ethernet
- ✓ RJ-45 connectors

Ethernet Interfaces

- ✓ 4xRJ45 10/100/1000 Mbps
- ✓ 1 x SFP 1000 Mbps
- ✓ Flow control function
- ✓ MDI, MDI-X "autocrossover" function
- ✓ Support for VLAN, IEEE 802.1q
- ✓ MTU: up to 9000 B

Management

- ✓ HTTP protocol and web browser as management application, telnet, SNMP
- ✓ SMTP - sending e-mail in case of failure
- ✓ In-band, through any Ethernet port, the ability to separate a dedicated management channel.

Physical characteristics

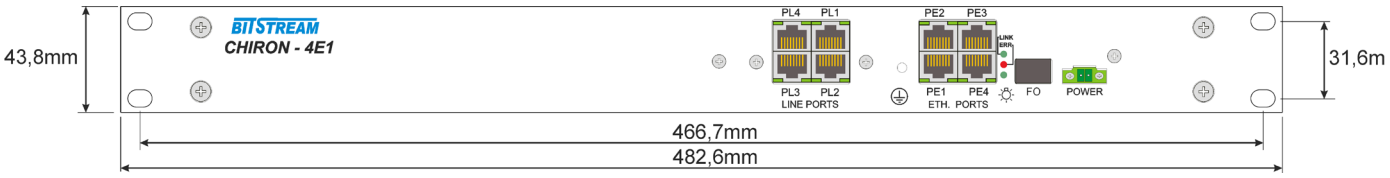
- ✓ Metal enclosure IP-30
- ✓ 483x170x44 mm enclosure - dimensions for 1U 19" version
- ✓ Weight up to 1.7 kg
- ✓ Standard operating temperature: 0 to +50°C
- ✓ Standard ambient humidity during operation: 0 to 95 % (non-condensing)
- ✓ Location type: class C according to EN 60870-2-2 - sheltered locations

Power supply

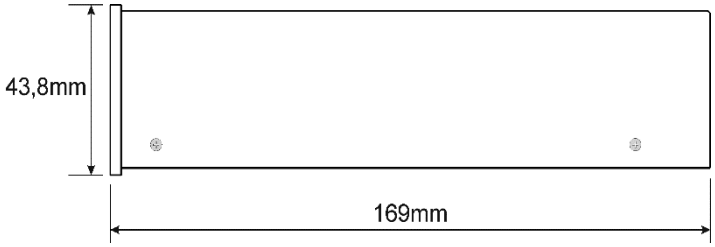
- ✓ DC Power Supply, 20-60V VDC /550mA - 210mA
- ✓ AC Power Supply, 100-370VDC / 88-264VAC / 90-40mA - comes as a separate module ordered separately.
- ✓ Two power inputs, redundant power supply - option for AC power

Mechanical drawing

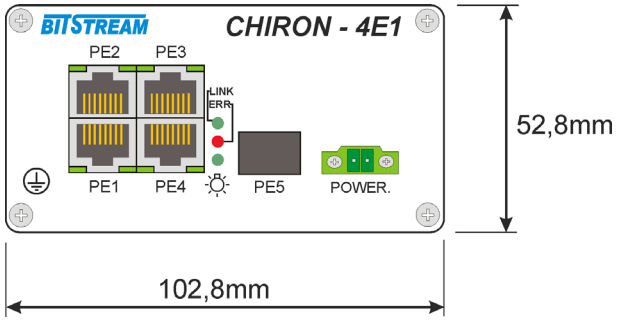
View 19" - front



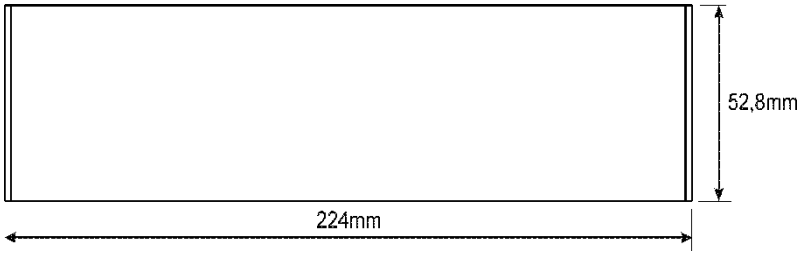
View 19" - flank



Front view



View - Side



CHIRON-4E1-(D)-(X)

CHIRON-4E1	(D)	(X)
double device in one housing	D	
Version		
free-standing device		-
1U/19" device		19"

M-ZAS module - additional 230V AC redundant power supply module for devices in 1U 19" enclosure ordered separately

Additional accessories

Designation	Transmission speed	Wavelength	Fiber optic cable type	Distance	Insert type	WDM	Connector type	Operating temperature
BTP-8524-S5CD	1.25 Gbps	850 nm	MM	550 m	SFP	-	LC	0~70°C
BTP-3124-L2CD	1.25 Gbps	1310 nm	MM/SM	2/20 km	SFP	-	LC	0~70°C
BTP-3124-L4CD	1.25 Gbps	1310 nm	SM	40 km	SFP	-	LC	0~70°C
BTP-5524-L4CD	1.25 Gbps	1550 nm	SM	40 km	SFP	-	LC	0~70°C
BTPB-3524L-L2CD	1.25 Gbps	1310/1550 nm	SM	20 km	SFP	YES	LC	0~70°C
BTPB-5324L-L2CD	1.25 Gbps	1550/1310 nm	SM	20 km	SFP	YES	LC	0~70°C
BTPB-3524S-L2CD	1.25 Gbps	1310/1550 nm	SM	20 km	SFP	YES	SC	0~70°C
BTPB-5324S-L2CD	1.25 Gbps	1550/1310 nm	SM	20 km	SFP	YES	SC	0~70°C
BTE-GB-P1RT	10/100/1000 Mbps	100m (UTP-5)	-	-	Copper	-	RJ-45	0~70°C
LT-19-02	19" rack mounting strip for 4x Chiron-4E1 devices							

List of proposed power supplies for BITSTREAM devices

Power Supply Designation	Output voltage range(DC)	Nominal output power	Operating temperatureC-standardT-industrial
ZAS-24-25-W-T	24 V	25 W	-30°C ~ +70°C
ZAS-48-25-W-T	48 V	25 W	-30°C ~ +70°C
ZAS-24-25-S-T	24 V	25 W	-30°C ~ +70°C
ZAS-48-25-S-T	48 V	25 W	-30°C ~ +70°C
ZAS-24-20-R-T	24 V	20 W	-20°C ~ +70°C
ZAS-48V56-40-R-T	48 - 56 V	40 W	-20°C ~ +70°C

Legend of symbols: W - plug-in; S - standalone; R - for DIN rail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