

IPGuardV2 for HDc

1+1 Smart switch for IP redundancy



IPGuardV2 is ENENSYS' unique and secure solution that enables 1+1 automatic redundancy of IP streams with bypass mechanism.

Automatic IP Switch

IPGuardV2 is the ENENSYS solution to secure the delivery of any IP streams. It is designed to provide automatic 1+1 redundancy of:

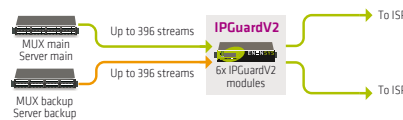
- any equipment that delivers TSolP or IP streams such as encoders, multiplexers, DVB-T2 gateways, MIP inserters, data servers,...
- any IP network used to transport IP streams, handling different delays.

By default, the IPGuardV2 offers an IP bypass mechanism in order to offer 100% of service availability in case of power outage: incoming IP streams are still delivered at the output although the IPGuardV2 has no power. In addition, it can perform FEC correction of incoming TSolP streams to cope with packet loss. On the output FEC configuration can be kept, modified or even removed.

High Density Solution

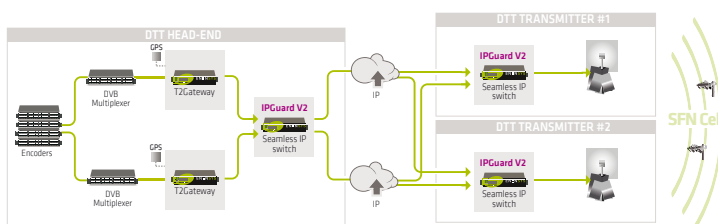
Up to 6 IPGuardV2 modules can be housed in the same 1RU HDc chassis. One IPGuardV2 module is able to manage up to 6 TSolP switches based on advanced TS criteria and up to

60 IP switches based on IP conditions. With DaisyChain option, several IPGuardV2 can be serialized, increasing the whole processing capability to be convenient in applications dealing with high number of streams.



Seamless Switching

The IPGuardV2 offers seamless switching capability between two identical MPEG-2 TS, bTS, T2-MI, RTP or STL streams that are carried over redundant IP-based networks with different delays: it aligns both streams to perform a seamless switching. When combined with ENENSYS gateways, IPGUARDV2 can provide a seamless switch-over between two gateways for ATSC3.0, DVB-T/T2 & ISDB-Tb networks.



Applications

- 1+1 automatic redundancy of IP equipment
- 1+1 automatic redundancy between IP streams
- DVB-T/T2 and ISDB-T automatic switch-over
- ATSC 1.0 & 3.0 automatic switch-over
- Seamless TS over IP switch-over
- Seamless T2-MI, bTS & STL over IP switch-over
- Seamless RTP switch-over
- High Density redundancy switching for Cable, IPTV, OTT Head-End

Benefits

- Multi-standard applicable (DVB, ATSC, ISDB,...)
- Video agnostic: MPEG-2, H.264 or HEVC
- Maintain service continuity
- Running in High Density chassis (HDc):
 - to allow up to 6 IPGuardV2 modules in 1U
 - to combine with other Enensys products
 - to extend processing with daisy chain mode
- Avoid TV black-out in SFN (and MFN in DVB-T2)
- Avoid video glitches with delayed sources
- Transparent for end-to-end devices

IPGuardV2 for HDc

INPUT

| | |
|---------|--|
| Control | 1x Gigabit Ethernet (RJ45) for GUI/SNMP |
| Data | <ul style="list-style-type: none"> • 2x Gigabit Ethernet (RJ45) for UDP/IP input streams • 2x optional SFP ports |

OUTPUT

| | |
|--------------|--|
| Data | <ul style="list-style-type: none"> • 2x mirrored Gigabit Ethernet (RJ45) for UDP/IP output streams • 2x optional SFP ports |
| Availability | Bypass mechanism to always output IP streams in case of power outage |

PHYSICAL

| | |
|-------------------|------------------------------------|
| Height | 43 mm / 1.69 in. |
| Width | 443,7 mm / 17.46 in. |
| Depth | 322,8 mm / 12,70 in. |
| Format | 1 RU, width 19" |
| Front Panel | LCD Display and controls |
| Power supply | 100-240V 50/60Hz - 48V DC (option) |
| Power consumption | 20W/module |

FEATURING

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| UDP/IP stream management | <ul style="list-style-type: none"> • Unicast/Multicast stream • RTP support • VLAN management |
| IP switch | <ul style="list-style-type: none"> • Up to 60 IP streams switches • Up to 6 TS/T2-MI over IP switches • Up to 6 STL over IP switches • IP Bypass for service availability |
| Seamless switch | <ul style="list-style-type: none"> • Seamless switch-over between TS, T2-MI, STL or RTP identical streams • SMPTE2022-7 support • Alignment of delayed streams (up to several seconds for RTP switch) |
| Switching modes | <ul style="list-style-type: none"> • Automatic or Manual switch • Priority input • Peering to allow switching synchronisation between 2 IPGuardV2 |
| Switching conditions | <ul style="list-style-type: none"> • IP alarms (presence, bit rate,...) • ETR290, MIP, and T2-MI alarms • Advanced TS alarms |
| Daisy chain mode | Serialization of several IPGuards to increase processing capacities |
| FEC management | <ul style="list-style-type: none"> • SMPTE 2022-1 (Pro MPEG CoP#3) • FEC input correction (TSolP) • FEC output generation (option) |
| T2 Gateways N+1 redundancy | N+1 automatic redundancy of ENENSYS DVB-T2 Gateways |
| Monitoring Supervision | <ul style="list-style-type: none"> • Real-time monitoring of incoming streams, Web-based GUI • Full SNMP v2 support |

HDc ▶ MULTI



ORDERING CODES

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|-----------------------|--------------------------------------|
| HDc-Multi-220V | High Density chassis with 220V input |
| HDc-Multi-48V | High Density chassis with 48V input |

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| Chassis Options | HDcMulti-In220VRedundant HDcMulti-In48VRedundant | 110V/220V redundant power supply 48V DC redundant power supply |
|-----------------|---|---|

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|----------------------|------------------------------------|
| HDm-IPGuardV2 | 1+1 smart switch for IP redundancy |
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| Module Options | IPGuardV2-SeamlessTS IPGuardV2-SeamlessT2-MI IPGuardV2-SeamlessRTP IPGuardV2-FEC IPGuardV2-1/2/6 TSolP IPGuardV2-1/2/6STL IPGuardV2-DaisyChain IPGuardV2-SFP IPGuardV2-Peering IPGuardV2-GWRRedundant | Seamless switch for TS streams T2-MI MFN & SFN seamless switch Seamless switch for 6xRTP streams FEC generation on the output Manage 1, 2 or 6 TSolP streams Manage 1, 2 or 6 STL streams Add processing with other IPGuard Add SFP ports to the module Synchronize several IPGuardV2 Redundancy of N+1 Enensys T2 GW |
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