

# 84x10G/1G nanoSwitch

**84(128)x10G nanoSwitch** is a leading Russian development in the field of high-speed packet switching, aggregation and balancing of telecommunication channels. The device is designed for solution of specific problems of Ethernet-frames and IP-packets management on the basis of the flexible rules and the analysis of their content in 10G-40G-100G networks.

For most purposes the platform **84(128)x10G nanoSwitch** provides only a hardware analysis and transmission of data. The platform does not use CPU resources and is able to operate zero-loss for years.

Support of complex networking stacks and configurations, advanced functionality and updates can be delivered to the customer in the form of a firmware produced by "NORSI-TRANS".



84(128)x10G nanoSwitch

## TECHNICAL CHARACTERISTICS:

- Integrated 64 duplex 10G/1G Ethernet (or 128 half-duplex), STM-1/4/16/64;
- Expanding to 2x100G Ethernet/20x10G Ethernet (up to 84x10G), possibility of connection of up to 16x40G Ethernet;
- 3 basic modes of operation: aggregation, switching, virtualization;
- Transparent channel aggregation «any to any» with a balancing feature;
- Special technology of aggregation of up to 9.8 Gb/s traffic on the outgoing port;
- Virtualization of Ethernet: forwarding, redundancy, half duplex;
- Support of network stack of any complexity (depth).

## BRIEF SPECIFICATION:

Ethernet 10G standard	802.3ae
Ethernet 40G/100G standard	802.3ba
Small Form-factor Pluggable	SFP+, CFP2+CFP4, special, STM-1, STM-4, STM-16, STM-64
The number of 10G Ethernet ports	12/24/32/64
Power consumption	100-200W
Power supply redundancy	220V 50Hz
Device management	ETH/SSH/WEB
Form-factor	1RU
Optional connectivity of 40G and 100G Ethernet interfaces	

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## POWER EFFICIENCY, COMPACTNESS AND STABILITY:

- Power consumption 1RU up to 200W;
- Guaranteed network bandwidth not less than 640 Gbit/s in 1RU (or 1280 Gbit/s half-duplex);
- Channel data processing without hard drives, processors and operating systems.

## FLEXIBILITY OF THE PRODUCT:

- Flexible re-configurable product, possibility to buy new modes of the product without hardware replacement;
- Software updating in the form of firmware.



100G nanoSwitch

## FIELDS OF APPLICATION:

### 1. Aggregation of traffic tapping points for network monitoring without loss 84x10G RX + 84x10G TX 1RU:

- management of traffic streams: aggregation of any input to any output;
- balancing of streams: even distribution of the aggregated stream on the outputs;
- filtering, classification: monitoring of only selected types of traffic or packets;
- stacking of devices.

### 2. Ethernet 84x10G in 1RU virtualization:

- 84x42U 10GE full-duplex ports for traffic monitoring in a single rack;
- trunk ports with minimal delays (100 ns), and no bandwidth limitations;
- switching of virtual channels with bandwidth limitations;
- shaping of virtual channels, bandwidth differentiation;
- redundant channels, constant testing with switching to the backup channel on the basis of L2 switching.

### 3. Filtering and content management in real-time mode:

- total number of L2/L3/L4 filters — up to 16384;
- simultaneous non-blocking duplication and filtration of each incoming port to any outgoing ports;
- possibility of binding of several rules of filtration by OR-NOT logical rules;
- possibility of selection by IP/PORT pairs, including subnet masks, the mode of two-way (BIDIR) filtration;
- parsing of the tunnelled and fragmented traffic.

### 4. Additional DPI services on the basis of the “KROZ” product (supplied additional server, 1RU):

- “the user’s account” for a choice of restrictions of access to thematic sections (processing of the traffic of the users who used the service voluntarily);
- anti-DDoS solution — preliminary processing of multiple inquiries of users at the speed of up to 100G;
- reliable URL blocking (including alternative writing) with automatic updating of the list of forbidden URL and IP;
- traffic filtration by signs of the IP, URL, HOST, EMAIL, PHONE, LOGIN protocols without restriction of channel speed;
- shaping on the basis of traffic classification;
- possibility of realization of filtration by URL as a service within the Customer’s data center.

### 5. Statistics gathering server from the service provider’s network (the bandwidth graphics, the double graphics, the narrow places of network), 1RU.

