



# BITSTREAM®

Leader of time synchronization & data transmission solutions



## Wireless router MAGNETAR-105

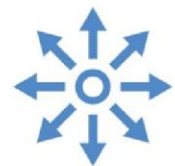
*Multifunctional router providing access and sharing of 2G/3G/4G/LTE mobile network.*



Reliable



Easy to Configure



Multitasking

# Magnetar-105

Wireless 2/3/4G LTE Ethernet/RS232 Router /485 and interfaces input/output

- ✓ 1x WAN **modem 2/3G/4G LTE**
- ✓ 1x LAN *Ethernet* 10/100Mbps
- ✓ 2x **RS232** interfaces
- ✓ Modes for RS interfaces: TCP/IP Server/Client , UDP Server
- ✓ 1x USB OTG
- ✓ Static routing, NAT, Masquerade
- ✓ Security mechanisms: Firewall, IPsec, Open VPN, GRE
- ✓ Management via HTTP, *SNMPv2c/v3*, HTTPS, SSH, CLI
- ✓ Operating temperature from **-40 to +75°C**
- ✓ Robust metal enclosure **IP-30 DIN**
- ✓ **DC** power supply

## Features of Magnetar-105



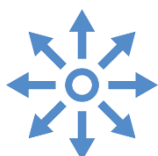
### Reliable

Magnetar-105 device has been designed to work in harsh conditions. Its durable IP-30 enclosure provides protection against external factors, additionally the device is adapted to work in temperature range from -40°C to +75°C



### Easy to configure

Built-in **http/https** server, **SSH** server and **SNMPv.3** agent allows secure configuration of device parameters via standard WWW browser and continuous fault monitoring from any management platforms equipped with SNMP protocol.



### Multitasking

Apart from Ethernet ports, the Magnetar-105 router can be equipped with additional interfaces expanding its capabilities:

- two RS232 serial interfaces.

## Supported standards, recommendations and directives EMC, safety\*

<b>PN-EN 55035:2017-09</b>	Electromagnetic compatibility for multimedia equipment	Resilience Requirements.
<b>PN-EN 55032:2015-09</b>	Electromagnetic compatibility for multimedia equipment	Emission Requirements.
<b>PN-EN IEC 62368-1:2020-11</b>	Audio/visual, information technology and telecommunications equipment	Part 1: Safety requirements
<b>PN-EN 55011:2016</b>	Industrial, scientific and medical equipment	Radio frequency disturbance characteristics - Limits and methods of measurement.
<b>PN-EN 60825-1:2014-11</b>	Safety of laser equipment	Part 1: Equipment classification and requirements.
<b>EMC 2014/30/EU</b>	EMC Electromagnetic Compatibility Directive.	
<b>LVD 2014/35/EU</b>	LVD Low Voltage Directive.	
<b>IEC 61000-4-2</b>	Electromagnetic Compatibility (EMC)	Part 4-2: Test methods and measurements - ESD immunity test
<b>IEC 61000-4-3</b>	Electromagnetic Compatibility (EMC)	Part 4-3: Test and measurement methods - Testing for immunity to radiated radio frequency electromagnetic fields
<b>IEC 61000-4-4</b>	Electromagnetic Compatibility (EMC)	Part 4-4: Test for immunity to a series of fast electrical transients
<b>IEC 61000-4-5</b>	Electromagnetic Compatibility (EMC)	Part 4-5: Test and measurement methods - Impact test
<b>IEC 61000-4-6</b>	Electromagnetic Compatibility (EMC)	Part 4-6: Test and measurement methods - Immunity test for conducted disturbances induced by radio frequency fields
<b>IEC 61000-4-8</b>	Electromagnetic Compatibility (EMC)	Part 4-8: Testing for immunity to mains frequency magnetic fields
<b>IEC 61000-4-11</b>	Electromagnetic Compatibility (EMC)	Part 4-11: Testing for resistance to voltage dips, interruptions and voltage changes
<b>IEC 61000-6-5:2016-01</b>	Electromagnetic Compatibility (EMC)	Part 6-5: Generic standards - Immunity for equipment used in power plant and substation environments
<b>PN-ETSI 60529:2003/A2:2014-07</b>	Degrees of protection provided by enclosures (IP code)	
<b>PN-ETSI EN 301 511 V12.5.1:2017-10</b>	Global System for Mobile communications (GSM) -- Mobile station equipment -- Harmonized EN covering essential requirements under Article 3.2 of Directive 2014/53/EU	
<b>PN-ETSI EN 301 489-1 V2.2.3:2020-07</b>	Electromagnetic Compatibility (EMC) standard for radio equipment and systems	Part 1: Common technical requirements - Harmonized standard for electromagnetic compatibility
<b>PN-ETSI EN 301 489-7 V1.3.1:2006</b>	Electromagnetic compatibility and radio spectrum matters (ERM) - Electromagnetic compatibility (EMC) standard for radio equipment and services	Part 7: Specific requirements for mobile and portable radio and ancillary equipment of digital cellular radio telecommunications systems (GSM and DCS)

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

### Supported transmission standards

- ✓ IEEE 802.3 10Base-T Ethernet;
- ✓ IEEE 802.3u 100Base-TX Fast Ethernet;
- ✓ IEEE 802.1Q VLAN.

### Supported protocols

- ✓ TCP/IP, IPv4, UDP, ICMP, IPv6,
- ✓ SNMP v1/v2c/v3, DHCP Client,
- ✓ NTP Server, NTP Client,
- ✓ HTTP, HTTPS, SSH v2,
- ✓ MIB, SNMP Inform,
- ✓ Firewall, NAT, Masquerade,
- ✓ Modes for RS interfaces: TCP/IP Server, TCP/IP Client, and UDP Server
- ✓ Static Routing,
- ✓ IPSEC, GRE, Open VPN

### Ethernet Interfaces

- ✓ **WAN** modem 2/3/4G LTE (4G LTE available only with GSM4 module),
- ✓ **LAN/WAN** 1x 10/100Mbps RJ45,
- ✓ **Protocols:** TCP/IP, IPv4, UDP, ICMP, static routing,
- ✓ Security features: Firewall, IPsec, Open VPN, GRE.

### GSM modem

- ✓ 1x GSM 2/3G/4G LTE modem (4G available only with GSM4 module),
- ✓ CDMA/HSPA/UMTS/EDGE/LTE standards,
- ✓ Radio frequencies: 800/900/1800/2100MHz,
- ✓ 1/2 x SIM card,
- ✓ 1 SMA antenna,
- ✓ Indicates operating status and signal quality,
- ✓ Automatic login and packet session establishment in APN, hardware reboot of the device after failed attempts,

### RS232 ports

- ✓ The port has galvanic separation,
- ✓ Transmission rate 1200-115200bps,
- ✓ 2x RS232 serial interfaces with RJ45 connector,
- ✓ RJ45 or screw connectors depending on version.

### Environmental requirements

- ✓ Standard operating temperature: -40 to +75°C,
- ✓ No active cooling/heating components in the unit and no external sources are required,
- ✓ Standard ambient humidity during operation: 0 to 95 % (non-condensing),
- ✓ Location type: class C according to PN-EN 60870-2-2 - sheltered locations,
- ✓ Degree of protection according to IP-30.

### Management

- ✓ HTTP/HTTPS, SSH, SNMPv2c/v3, SMTP, CLI,
- ✓ Remote/local diagnostics, reading of: S/N, IP address, GSM status,
- ✓ Remote and local password authentication,
- ✓ Save/export configuration and restore default configuration,

- ✓ Remote/local firmware update,
- ✓ Configuration via SMS commands,
- ✓ Monitoring of GSM parameters, supply voltage level, operating temperature.

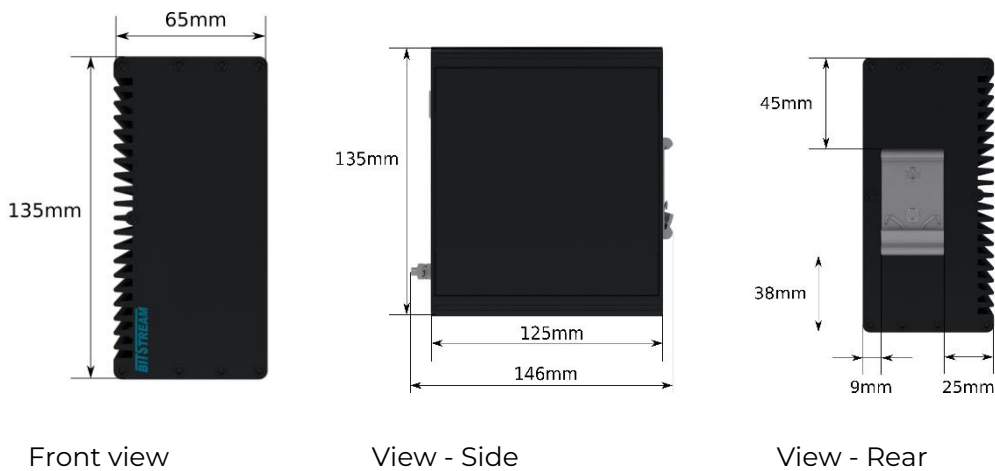
### Power supply

- ✓ DC 9-36V range,
- ✓ 18-60V DC range,
- ✓ Screw connection

### Physical characteristics

- ✓ Dimensions: 135x124x65mm
- ✓ Weight: 0.80kg
- ✓ Can be mounted on TH35 DIN rail
- ✓ Metal enclosure IP-30

## Mechanical drawing



## Labels

### MAGNETAR-10X-Z-(Y)-U

Magnetar	X	Z	(Y)	U
1x RJ45 (10M/100M)	5			
<b>Serial interface connector type</b>				
Version with RJ45 connector		Z		
<b>GSM / RF module</b>				
baseline			_2	
router equipped with GSM modem			GSM <sup>1</sup>	
router equipped with radio module			RF <sup>1</sup>	
<b>Power supply</b>				
range 30 - 60V DC				4
range 9 - 36V DC				5

#### LEGEND:

- 1** - When completing the symbol, specify the module designation. Available modules in the table below.
- 2** - The device cannot be extended with RF or GSM modules

## List of available modules

Module designation for insertions into the symbol	Description	Notes
<b>GSM3</b>	GSM 2/3G modem - built-in	Availability by arrangement with R&D
<b>GSM4</b>	GSM 2/3G/4G LTE modem - built-in	
<b>RF</b>	WIFI radio module - 802.11 - built-in	Availability by arrangement with R&D
<b>RFBLU</b>	BLUETOOTH radio module - built-in	Availability by arrangement with R&D
<b>RFZIG</b>	Zigbee* radio module - built-in	Availability by arrangement with R&D

## Example designations:

**MAGNETAR-105-Z-GSM4-5**      Magnetar - 105; 1x GSM 2/3G/4G LTE modem; 1x LAN RJ45; 2x RS232; Power supply

## List of proposed power supplies for BITSTREAM devices

Power Supply Designation	Output voltage range	nominal output power	Number of ports with PoE (15W)	Number of ports with PoE+ (30W)	Number of ports with PoE++ (60W)	Number of ports with PoE++ (90W)	Operating temperature	NOTES
	DC	W						
ZAS-24-25-W-T	24 V	25	0	0	0	0	-30°C ~ +70°C	No PoE support
ZAS-48-25-W-T	48 V	25	1	0	0	0	-30°C ~ +70°C	PoE support
ZAS-24-25-S-T	24 V	25	0	0	0	0	-30°C ~ +70°C	No PoE support
ZAS-48-25-S-T	48 V	25	1	0	0	0	-30°C ~ +70°C	PoE support
ZAS-24-20-R-T	24 V	20	0	0	0	0	-20°C ~ +70°C	No PoE support
ZAS-24-40-R-T	24V	40	0	0	0	0	-20°C ~ +70°C	No PoE support



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