



ESR series service routers

ESR-10, ESR-12V, ESR-12VF, ESR-15, ESR-15R, ESR-15VF, ESR-20, ESR-21, ESR-30, ESR-31, ESR-100, ESR-200, ESR-1000, ESR-1200, ESR-1500, ESR-1511, ESR-1700, ESR-3100, ESR-3200, ESR-3200L, ESR-3300

Maintenance manual

Firmware version 1.24

Table of contents

1	General instructions.....	3
2	Maintenance procedure	4
2.1	List of tasks performed as part of DM.....	4
2.2	List of tasks performed as part of TM-1.....	13
2.3	List of tasks performed as part of TM-2.....	13

1 General instructions

Technical maintenance includes a set of measures carried out by service personnel to keep ESR service routers in working order. The following types of maintenance are required:

- *Daily maintenance (DM)*. DM is performed daily. The maintenance is carried out without interrupting communication;
- *Technical maintenance No. 1 (TM-1)*. TM-1 is performed once every 6 months. The maintenance is carried out without interrupting communication;
- *Technical maintenance No. 2 (TM-2)*. TM-2 is performed when necessary, depending on the operating conditions of the equipment. The work is carried out with interruption of communication.

2 Maintenance procedure

2.1 List of tasks performed as part of DM

1. Visual inspection of equipment for external defects;
2. Checking the status of the LED alarm system.

Light indication of ESR-10 system indicators

When operating normally, the **Power** indicator should be green.

Table 1 provides a description of the device's system indicator statuses and their meanings.

Table 1 - System indicator statuses.

Indicator status	Device status
Green	The device is powered normally. The power supply is functioning normally, and the main firmware has been loaded.
Red	The main firmware has not been loaded.
Amber	The device is in the process of loading firmware.
Disabled	Failure of the device's internal power supply.

Light indication of ESR-12V(F), ESR-15, ESR-15R, ESR-15VF, ESR-20, ESR-21, ESR-30, ESR-31 system indicators

When operating normally, the **Status** and **Power** indicators should be green and the **Alarm** indicator should be disabled.

Table 2 provides a description of the device's system indicator statuses and their meanings.

Table 2 - System indicator statuses.

Indicator name	Indicator function	Indicator status	Device status
Power	Device power indicator.	Green	The device is powered normally. The power supply is functioning normally, and the main firmware has been loaded.
		Red	The main firmware has not been loaded.
		Disabled	Failure of the device's internal power supply.
Status	Indicator of the current status of the device.	Green	The device is operating normally.

Indicator name	Indicator function	Indicator status	Device status
		Red	The device is in the process of loading firmware.
Alarm	Indicator of presence and level of fault.	-	-

Light indication of ESR-100, ESR-200 system indicators

When operating normally, the *Status* and *Power* indicators should be green, the *Alarm* and *Fan* indicators should be disabled.

Table 3 provides a description of the device's system indicator statuses and their meanings.

Table 3 - System indicator statuses.

Indicator name	Indicator function	Indicator status	Device status
Status	Indicator of the current status of the device.	Green	The device is operating normally.
		Red	The device is in the process of loading firmware.
Alarm	Indicator of presence and level of fault (not supported in the current firmware version).	-	-
Power	Device power indicator.	Green	The device is powered normally. The main power supply, if installed, is functioning normally.
		Red	Failure of the main power source, accident or absence of the primary network.
		Disabled	Failure of the device's internal power supply.
Fan	Status of the cooling fan.	Disabled	All fans are operational.
		Red	Failure of one or more fans. The cause of the accident may be the failure of at least one of the fans - stoppage or reduced speed.

Light indication of ESR-1000, ESR-1200, ESR-1700 system indicators

When operating normally, the *Status*, *Power* and *RPS* (if a backup power supply is installed) indicators should be green, the *Alarm* and *Fan* indicators should be disabled.

Table 4 provides a description of the device's system indicator statuses and their meanings.

Table 4 - System indicator statuses.

Indicator name	Indicator function	Indicator status	Device status
Status	Indicator of the current status of the device.	Green	The device is operating normally.
		Red	The device is in the process of loading firmware.
Alarm	Indicator of presence and level of fault.	-	-
Power	Device power indicator.	Green	The device is powered normally. The main power supply, if installed, is functioning normally.
		Orange	Failure of the main power source, accident or absence of the primary network.
		Disabled	Failure of the device's internal power supply.
Fan	Status of the cooling fan.	Disabled	All fans are operational.
		Red	Failure of one or more fans. The cause of the accident may be the failure of at least one of the fans - stoppage or reduced speed.
RPS	Redundant power supply operation mode.	Green	The redundant power supply is installed and operational.
		Disabled	Redundant supply is not installed.

Indicator name	Indicator function	Indicator status	Device status
		Red	Absence of primary power supply to the redundant supply or its malfunction.

Light indication of ESR-1500, ESR-1511, ESR-3100, ESR-3200, ESR-3200L, ESR-3300 system indicators

When operating normally, the *Status*, *Power* and *RPS* (if a backup power supply is installed) indicators should be green, the *Alarm* and *Fan* indicators should be disabled.

Table 5 provides a description of the device's system indicator statuses and their meanings.

Table 5 - System indicator statuses.

Indicator name	Indicator function	Indicator status	Device status
Status	Indicator of the current status of the device.	Green	The device is operating normally.
		Flashes green	The device is in the process of loading firmware.
Alarm	Indicator of presence and level of fault.	-	-
Power	Device power indicator.	Green	The device is powered normally. The main power supply, if installed, is functioning normally.
		Red	Failure of the main power source, accident or absence of the primary network.
		Disabled	Failure of the device's internal power supply.
Fan	Status of the cooling fan.	Disabled	All fans are operational.
		Red	Failure of one or more fans. The cause of the accident may be the failure of at least one of the fans – stoppage or reduced speed.

Indicator name	Indicator function	Indicator status	Device status
RPS	Redundant power supply operation mode.	Green	The redundant power supply is installed and operational.
		Disabled	Redundant supply is not installed.
		Red	Absence of primary power supply to the redundant supply or its malfunction.

3. Checking the status of LAN port indicators.

The indication should only be present on active ports.

Light indication of the status of ESR-10 and ESR-15 interfaces

The status of Gigabit Ethernet copper interfaces and SFP interfaces is indicated by an amber/green SPEED LED.

Table 6 provides a description of the light indicator values.

Table 6 - System indicator statuses.

SPEED indicator light	Ethernet interface status
Disabled	The port is disabled or the connection has not been established.
Constant amber light	Connection established at a speed of 1000 Mbps.
Constant green light	Connection established at a speed of 10 or 100 Mbps.
Flashes	Data transfer in progress.

Light indication of the ESR-12V(F), ESR-15, ESR-15R, ESR-15VF, ESR-20, ESR-21, ESR-30, ESR-31 Ethernet interfaces status

The status of Gigabit Ethernet copper interfaces is indicated by two LED indicators: LINK/ACT (green) and SPEED (amber).

Table 7 provides a description of the light indicator values.

Table 7 - Light indication of the status of RJ-45 and SFP/SFP+ interfaces.

SPEED indicator light	LINK/ ACT indicator light	Ethernet interface status
Disabled	Disabled	The port is disabled or the connection has not been established.
Disabled	Constant green light	Connection established at a speed of 10 or 100 Mbps.
Constant amber light	Constant green light	Connection established at a speed of 1000 Mbps.
X	Flashes	Data transfer in progress.

Light indication of the status of ESR-12V(F), ESR-15VF FXS/FXO interfaces

The status of FXS/FXO interfaces is indicated by a single green LED indicator. Table 8 provides a description of the light indicator values.

Table 8 - Light indication of FXS/FXO interface status.

Indicator light	FXS/FXO interface status
Flashes at a frequency of 20 Hz for one second, then pauses for 4 seconds.	FXS/FXO port receives a call
Indicator is lit	FXS/FXO closed loop (line active)
Periodic rare flashing	No registration for FXS port
Indicator is not lit	FXS/FXO loop open (call waiting)

Light indication of the status of ESR-100 and ESR-200 interfaces

The status of Gigabit Ethernet copper interfaces and SFP interfaces is indicated by two LED indicators: LINK/ACT (green) and SPEED (amber). Light indicator values are described in Table 9.

Table 9 provides a description of the light indicator values.

Table 9 - Light indication of the status of RJ-45 and SFP/SFP+ interfaces.

SPEED indicator light	LINK/ACT indicator light	Ethernet interface status
Disabled	Disabled	The port is disabled or the connection has not been established.
Disabled	Constant green light	A connection at a speed of 10 or 100 Mbps has been established.
Constant amber light	Constant green light	Connection established at a speed of 1000 Mbps.
X	Flashes	Data transfer in progress.

Light indication of the status of ESR-1000, ESR-1200, ESR-1700 interfaces

The status of Gigabit Ethernet copper interfaces is indicated by two LED indicators: *LINK/ACT* (green) and *SPEED* (amber). The status of SFP interfaces is displayed by two indicators: *RX/ACT* and *TX/ACT*. Light indicator values are described in Tables 10 and 11, respectively.

Table 10 - Light indication of the status of RJ-45 interfaces.

SPEED indicator light	LINK/ACT indicator light	Ethernet interface status
Disabled	Disabled	The port is disabled or the connection has not been established.
Disabled	Constant green light	A connection at a speed of 10 or 100 Mbps has been established.
Constant amber light	Constant green light	Connection established at a speed of 1000 Mbps.
X	Flashes	Data transfer in progress.

Table 11 - Light indication of the status of SFP/SFP+/SFP28 interfaces.

SPEED indicator light	LINK/ ACT indicator light	Ethernet interface status
Disabled	Disabled	The port is disabled or the connection has not been established.
Disabled	Constant green light	Connection established at a speed of 1 Gbps.
Constant amber light	Constant green light	Connection established at a speed of 10 Gbps.
X	Flashes	Data transfer in progress.

Light indication of the status of ESR-1500, ESR-1511, ESR-3100, ESR-3200, ESR-3200L, ESR-3300 interfaces

The status of Gigabit Ethernet copper interfaces is indicated by two LED indicators: *LINK/ACT* (green) and *SPEED* (amber). The status of SFP interfaces is displayed by two indicators: *RX/ACT* and *TX/ACT*. Light indicator values are described in Tables 12, 13 and 14, respectively.

Table 12 - Light indication of the status of RJ-45 interfaces.

SPEED indicator light	LINK/ACT indicator light	Ethernet interface status
Disabled	Disabled	The port is disabled or the connection has not been established.
Disabled	Constant green light	A connection at a speed of 10 or 100 Mbps has been established.
Constant amber light	Constant green light	Connection established at a speed of 1000 Mbps.
X	Flashes	Data transfer in progress.

Table 13 - Light indication of the status of SFP/SFP+/QSFP+ interfaces.

RX/ACT indicator light	TX/ ACT indicator light	Ethernet interface status
Disabled	Disabled	The port is disabled or the connection has not been established.
Disabled	Constant green light	Connection established at a speed of 1 Gbps.

Indicator light RX/ACT	TX/ ACT indicator light	Ethernet interface status
Constant amber light	Constant green light	Connection established at a speed of 10 Gbps.
X	Flashes	Data transfer in progress.

Table 14 - Light indication of the status of QSFP+/QSFP28 interfaces

Indicator status				Ethernet interface status
Disabled	Disabled	Disabled	Disabled	The port is disabled or the connection has not been established.
Constant green light	Disabled	Disabled	Disabled	Connection established at a speed of 40 Gbps.
Constant green light	Disabled	Disabled	Constant amber light	Connection established at a speed of 100 Gbps.
Flashing	X	X	X	Data transfer in progress.

2.2 List of tasks performed as part of TM-1

1. Work within the scope of DM;
2. Detailed external inspection and cleaning of dust from the surface of the housing;
3. Checking the reliability of the device's attachment to the supporting structure;
4. Checking the reliability of the grounding connection;
5. Checking the reliability of cable connections.

2.3 List of tasks performed as part of TM-2

1. Work within the scope of TM-1;
2. Cleaning external parts:
 1. Disconnect the router from the power supply;
 2. Disconnect all cables from the device. Disconnect the cables in the following sequence: first all power cables, then interface cables and finally the ground wire;
 3. Remove the router from the rack;
 4. Use a vacuum cleaner to remove dust from the external surfaces and from inside the router through the ventilation openings;
 5. Restore device connections in accordance with the requirements of the user manual.

TECHNICAL SUPPORT

For technical assistance in issues related to operation of Eltex Ltd. equipment, please contact the Service Centre:

Feedback form on the website: <https://eltex-co.com/support/>

Servicedesk: <https://servicedesk.eltex-co.ru>

Visit Eltex official website to get the relevant technical documentation and software, benefit from our knowledge base and send us online request:

Official site: <https://eltex-co.com/>

Knowledge base: <https://docs.eltex-co.ru/display/EKB/Eltex+Knowledge+Base>

Download Center: <https://eltex-co.com/support/downloads>