

## MULTICHANNEL AMPLIFIERS SA51, SA51D

### PRODUCT DESCRIPTION

Multichannel amplifiers SA51, SA51D are parts of medium or large SMATV networks.

SA51 is designed as a launch amplifier and usually is installed at the beginning of network. Its main purposes are:

- to equalize the power of signals in different lines;
- to make amplitude pre-correction of signal for compensation its loss in network;
- to supply voltage to LNB converters and other network elements like interstage amplifiers SA51D, MV series multiswitches, terrestrial path amplifiers and so on.

SA51D is designed as interstage amplifier with remote powering. Generally it is installed inside cascaded type networks to compensate signal loss in trunk lines. It could be used as a launch amplifier if additional power supply is plugged to relative connector.

The housing of amplifiers meets more stringent screening requirements according to EN50083-2, class A.

Suitable for moderate and tropical climates.

The amplifiers are intended for indoor use only.

### SAFETY INSTRUCTIONS

Installation of the amplifiers must be done according IEC60728-11 and national safety standards.

Amplifier SA51 is powered from mains 230 V~ (this voltage is dangerous to life) and SA51D - from line 12...20 V DC via input connector.

Any repairs must be done by a qualified personnel.

Amplifier SA51 is double isolated from mains 230 V~.

To avoid the electric shock follow these instructions:

Do not remove the cover of the power supply section, without disconnecting the amplifier from the mains supply.

Do not plug the amplifier into the mains supply if the power cord or plug is damaged.

Do not plug the amplifier SA51 into the mains supply until all cables have been connected correctly.

To disconnect the amplifier SA51 completely - disconnect plug from the mains socket.

The mains socket must be easily accessible.

To disconnect the amplifier SA51D completely from supply voltage, disconnect the cable from input connector.

The amplifiers shall not be exposed to dripping or splashing water and no objects filled with liquids, such as vases, shall be placed on it.

Avoid placing amplifier next to central heating components, near highly combustible materials and in areas of high humidity.

No naked flame sources, such as lighted candles, should be placed on amplifiers.

If the amplifier has been kept in cold conditions for a long time, keep it in a warm room no less than 2 hours before plugging into the mains.

Do not insert any objects into ventilation openings.

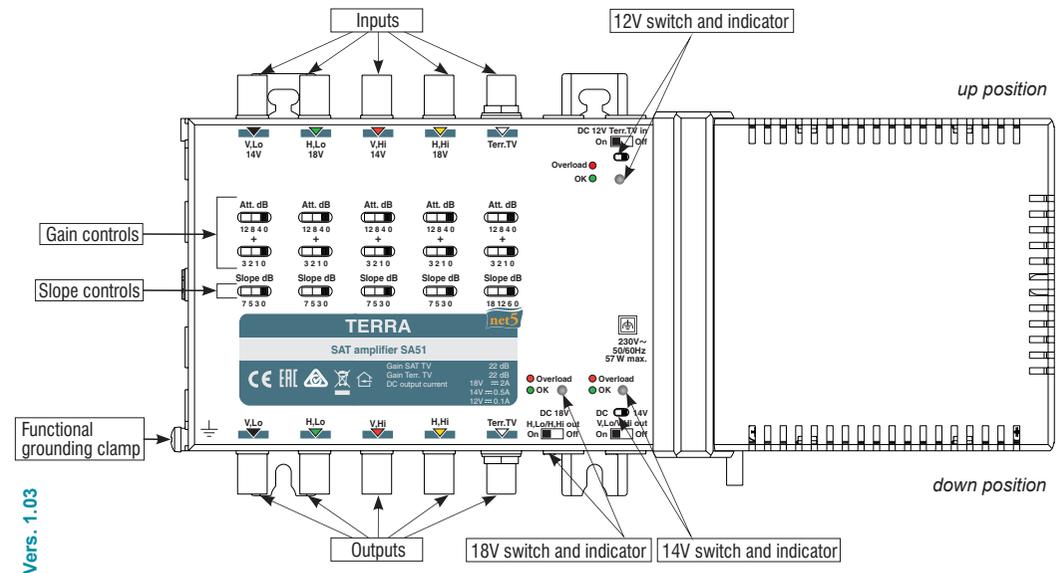
The ventilation should not be impeded by covering the ventilation openings with items, such as newspapers, table-cloths, curtains.

Mount the amplifier on not flammable wall or in not flammable installation box in vertical position with power supply unit on the right side.

From top, front and bottom of installed amplifier must be at least 10 cm free space.

### MONTAGE VIEW

Mount the amplifier in vertical position with power supply unit on the right side. The amplifier must be fixed with steel screws  $\varnothing$  4-5 mm. The screws are not included in a package.



## OPERATING

A multichannel amplifier consists of highly isolated individual amplifiers for every incoming line. Gain and slope controls of each amplifier are located between input and output connectors of corresponding line.

Gain regulation is performed by two step attenuators. The first rough control attenuator has 4 positions with 4 dB steps and the second fine control attenuator has 4 positions with 1 dB steps. The gain of amplifier is defined by subtracting joint attenuation of both attenuators from maximum gain.

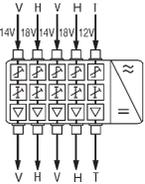
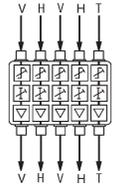
Slope control has 4 positions. The value of each position determines the difference of gain at highest and lowest frequencies.

Amplifier SA51 provides voltages 18 V to all horizontal polarization connectors, 14 V to all vertical polarization connectors and 12 V to Terrestrial TV input connector. The switches on the output side allows disconnect voltages of 18 V and 14 V from output connectors. This is useful in large networks for prevention of interference between power supply units, when several of them are incorporated. The switch on the input side allows disconnecting of voltage 12 V from from terrestrial TV input line to avoid short-circuiting of power supply if terrestrial amplifier with remote powering is not installed. All voltage sources have short circuit protection with LED indicators. Green light on them indicates normal operation. The red light signals that short-circuit emerged in corresponding line or power supply is overloaded (in the case of overloading 18 V red light will be intermittent). After that amplifier SA51 must unplugged from mains and network must be repaired. Do not plug amplifier to mains again until 30 sec. time will pass.

Amplifier SA51D is powered from central network power supply (for example SA51) through horizontal polarization lines. Both lines regarding DC are interconnected to minimize voltage loss in lines. It consumes up to 0.2 A from 18 V power supply. Amplifier has connector for auxiliary power supply if voltage from central power supply is not accessible. If it is plugged voltage is distributed to horizontal polarization lines in the same way as SA51. In every case presence of voltage in lines will be indicated by green LEDs near the corresponding switch. Voltage 12 V in the input connector of Terrestrial path will be only if 18 V is present in horizontal polarization lines.

Both amplifiers SA51 and SA51D has DC through path in every Satellite TV line. It provides flexibility for installation of power supply units inside the network.

## TECHNICAL CHARACTERISTICS

Type		SA51	SA51D
Frequency range	SAT IF	950-2400 MHz	
	Terr. TV	47-862 MHz	
Gain	SAT IF, adjustable	22 dB (0 ÷ -15 dB) by 1 dB step	
	Terr. TV, adjustable	22 dB (0 ÷ -15 dB) by 1 dB step	
Slope	SAT IF, switchable	0/3/5/7 dB	
	Terr. TV, switchable	0/6/12/18 dB	
Isolation	SAT/SAT	30 dB	
	SAT/Terr. TV	30 dB	
Noise figure, typical		≤ 9 dB	
Output level IMD3=60 dB (DIN45004B) Terr. TV****		109 dBμV	
Output level IMD3=35 dB (EN50083-3) SAT IF****		114 dBμV	
External equipment powering	through V lines	14 V 0.5 A max. (switchable)	-
	through H lines	18 V 2 A* max. (switchable)	-
	through Terr line	12 V 0.1 A max. (switchable)	-
DC pass through, switchable	through H lines	2 A* max.	
Supply voltage limit values, power consumption		198-250 V~ 50/60 Hz 5 W**	DC 9-18 V 4 W***
Operating temperature range		-20° ÷ + 50° C	
Dimensions/Weight (packed)		284x135x52 mm/1 kg	178x135x32 mm/0.6 kg
			

\* 1 A max. through one line

\*\* without external DC loading; with maximal external DC load - 57 W

\*\*\* in line powering of SA51D through H lines

\*\*\*\* measured using 2 equal signals

## APPLICATION DIAGRAM

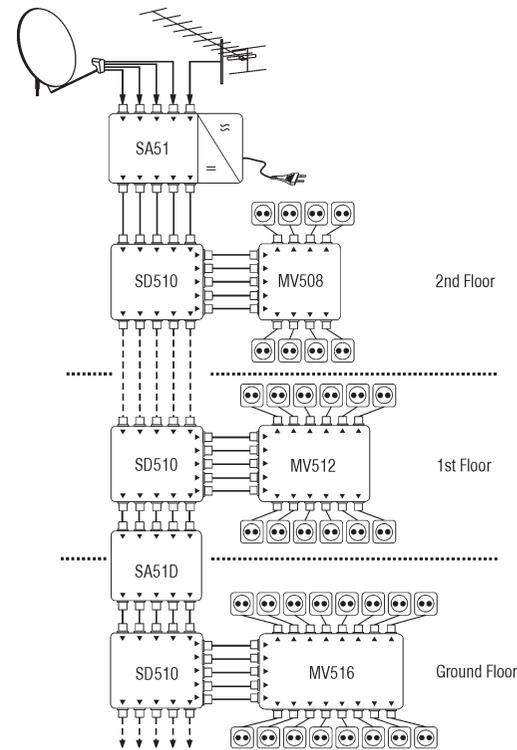


Figure 1. Floor by floor installation powered from SA51.



Caution!



Risk of electric shock.



This product complies with the relevant clauses of the European Directive 2002/96/EC. The unit must be recycled or discarded according to applicable local and national regulations.



Equipment intended for indoor usage only.



Equipment is double insulated from the mains, with functional earthing.



Functional earthing. Connect to the main potential equalization.



TERRA confirms, that this product is in accordance with following norms of EU: EMC norm EN50083-2, safety norm EN60065, RoHS norm EN50581.



TERRA confirms, that this product is in accordance with Custom Union Technical Regulations: "Electromagnetic compatibility of technical equipment" CU TR 020/2011, "On safety of low-voltage equipment" CU TR 004/2011.



TERRA confirms, that this product is in accordance with safety standard AS/NZS 60065 and EMC standards of Australia.