

SAT IF distribution system



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4 cable system

Cascadable multiswitches

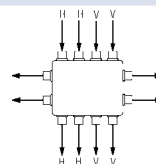
- DC pass from receiver to all SAT lines
- cascadable distribution system of 4 SAT polarities for floor by floor installation and star distribution
- economical power using concept - no DC power consumption from line; subscriber line is powered from a corresponding receiver
- to make easier level equalization in distribution network, several types of multiswitches with different tap gain are produced

MS404L06, MS404G02, MS404G06, MS404G15
through line 4x4 multiswitches



Technical specifications

T Y P E	MS404L06	MS404G02	MS404G06	MS404G15
Ordering number	01756	01761	01757	01759
Frequency range	950-2400 MHz			
Tap gain	-6 dB	2 dB	6 dB	15 dB
SAT inputs decoupling	> 28 dB			
Outputs decoupling	> 25 dB			
Through loss	< 3 dB			
Maximal output level IMD3 = 35 dB (EN50083-3)	93 dBμV			
Current consumption from receiver	< 40 mA			
Control signals V/Lo, H/Lo, V/Hi, H/Hi	11.5-14.5 V/0 kHz, 16.5-19 V/0 kHz, 11.5-14.5 V/22 kHz, 16.5-19 V/22 kHz			
DC pass through each of SAT lines	1 A max.			
DC pass from Rec. - SAT lines	0.5 A max.			
Operating temperature range	-20° + 50° C			
Dimensions/Weight (packed)	106x76x34 mm/0.18 kg			

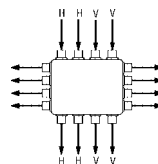


MS408L12, MS408G00, MS408G06, MS408G12
through line 4x8 multiswitches



Technical specifications

T Y P E	MS408L12	MS408G00	MS408G06	MS408G12
Ordering number	01762	01763	01764	01765
Frequency range	950-2400 MHz			
Tap gain	-12 dB	0 dB	6 dB	12 dB
SAT inputs decoupling	> 25 dB			
Outputs decoupling	> 25 dB			
Through loss	< 5 dB			
Maximal output level IMD3 = 35 dB (EN50083-3)	93 dBμV			
Current consumption from receiver	< 40 mA			
Control signals V/Lo, H/Lo, V/Hi, H/Hi	11.5-14.5 V/0 kHz, 16.5-19 V/0 kHz, 11.5-14.5 V/22 kHz, 16.5-19 V/22 kHz			
DC pass through each of SAT lines	1 A max.			
DC pass from Rec. - SAT lines	0.5 A max.			
Operating temperature range	-20° + 50° C			
Dimensions/Weight (packed)	106x117x34 mm/0.27 kg			





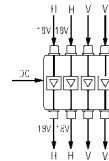
4 cable system

Line amplifier

- 4 path equalized line amplifier of SAT IF signals
- for compensation of trough losses of multiswitches and interconnection cables in 4 cable distribution system
- extremely low power consumption
- fixed 4 dB slope pre-correction
- in line powering from H lines
- DC pass through H & V lines

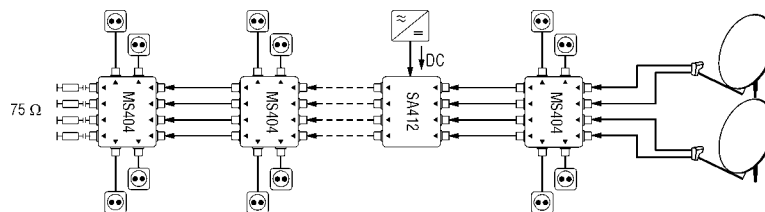


Technical specifications	
T Y P E	SA412
Ordering number	01766
Frequency range	950 - 2400 MHz
Gain	13 - 17 dB
Slope pre-correction, fixed	4 dB
Isolation between channels	≥ 30 dB
Noise figure, typical	≤ 10 dB
Maximal output level, IMD3 = 35 dB (EN 50083-3)*	106 dB μ V
External DC feeding	+ 18 V & 1 A max.
DC pass through	1 A max.
Power consumption from H lines	+ 12 + + 18 V 65 mA
Operating temperature range	-20° + + 50° C
Dimensions/Weight (packed)	94x76x34 mm/0.16 kg

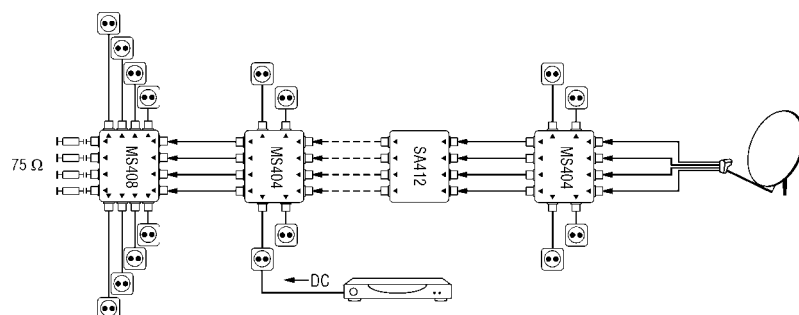


* in case of 18V DC powering

1. Powered through line amplifier SA412



2. Powered from SAT receiver





5 cable system

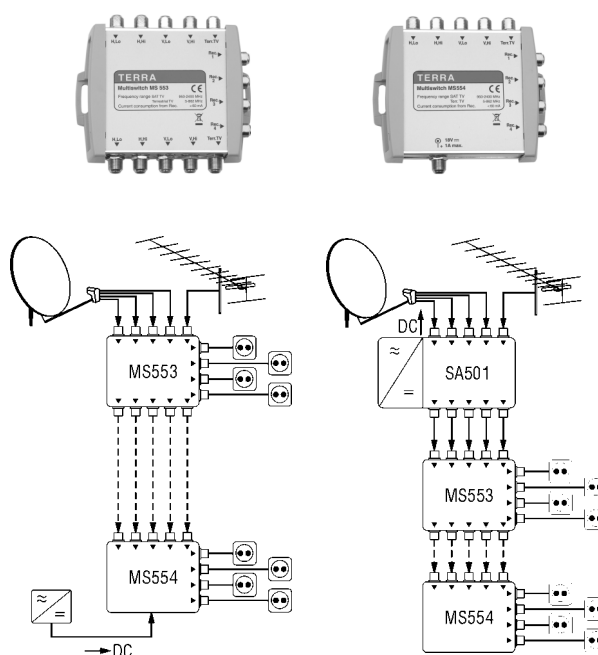
Cascadable multiswitches

- cascadable distribution system of 4 SAT polarities and terrestrial TV for floor by floor installation and/or star distribution
- possibility to supply DC for LNBs through end line multiswitches MS554, MS554P
- economical power using concept - no DC power consumption from line
- passive terrestrial TV port allows to receive terrestrial TV programs without switching on SAT TV receiver
- depending on interconnection cable up to 5 multiswitches can be connected into cascade without compensating amplifier
- ready for return path operation

MS553
through line 5x4 multiswitch

MS554
end line 5x4 multiswitch feeds DC to all SAT IF incoming lines

MS554P
end line 5x4 multiswitch;
creates 14 V DC for powering via vertical lines;
18 V DC feeds via horizontal lines



Technical specifications

T Y P E		MS553	MS554	MS554P
Ordering number		01727	01728	01729
Frequency range	SAT IF	950-2400 MHz		
	Terr. TV	5-862 MHz		
Tap gain	SAT IF	2 dB		
	Terr. TV	-19 dB		
Maximal output level for SAT IF circuit, IMD3=35 dB (EN50083-3)		93 dBμV		
SAT inputs decoupling		> 30 dB		
Outputs decoupling	SAT IF	> 30 dB		
	Terr. TV	> 30 dB		
Through gain	SAT IF	-3 dB	-	-
	Terr. TV	-3.5 dB	-	-
DC pass through SAT input-output		2 A max.	-	-
DC pass from external 18 V power supply	through V lines	-	+12 V + +18 V	14 V & 0.5 A max.
	through H lines	-	& 1 A max.	18 V & 1 A max.
Current consumption from receiver		< 60 mA		
Control signals	V/Lo, H/Lo	11.5-14.5 V/0 kHz, 16.5-19 V/0 kHz		
	V/Hi, H/Hi	11.5-14.5 V/22 kHz, 16.5-19 V/22 kHz		
Operating temperature range		-20° + 50° C		
Dimensions/Weight (packed)		117x106x34mm/0.25 kg		117x97x34mm/0.23 kg



5 cable system Radial multiswitches

- for star distribution system of 4 SAT IF polarities and terrestrial TV signal up to 16 users
- built-in power supply for remote DC feeding
- possibility to feed preamplifier through terrestrial TV input

MSR504

4 outputs multiswitch

MSR508

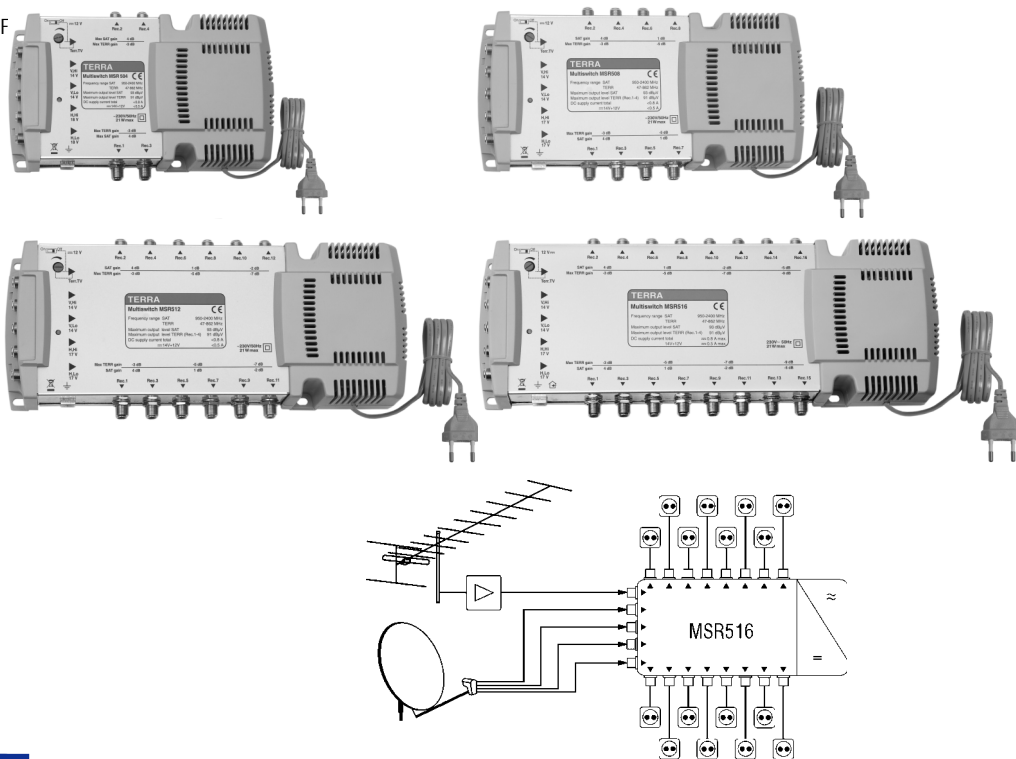
8 outputs multiswitch

MSR512

12 outputs multiswitch

MSR516

16 outputs multiswitch



Technical specifications

T Y P E			MSR504	MSR508	MSR512	MSR516
Ordering number			01705	01706	01707	01708
Number of outputs			4	8	12	16
Frequency range	SAT IF		950-2400 MHz			
	Terr. TV		47-862 MHz			
Gain (fixed slope pre-correction)	SAT IF	outputs 1-4	1 ÷ 4 dB			
		outputs 5-8	-	-1 ÷ 1 dB		
		outputs 9-12	-	-3 ÷ -2 dB		
		outputs 13-16	-	-5 ÷ -5 dB		
	Terr. TV adjustable	outputs 1-4	-7 ÷ -3 dB			
		outputs 5-8	-	-8 ÷ -5 dB		
		outputs 9-12	-	-9 ÷ -7 dB		
		outputs 13-16	-	-10 ÷ -9 dB		
Output level for SAT IF (IMD3 = 35 dB)			93 dBµV			
Output level for Terr. TV (DIN45004B)		outputs 1-4	91 dBµV	91 dBµV	91dBµV	91 dBµV
		outputs 5-8	-	88 dBµV	88 dBµV	88 dBµV
		outputs 9-12	-	-	86 dBµV	86 dBµV
		outputs 13-16	-	-	-	83 dBµV
SAT inputs decoupling			> 30 dB			
Outputs decoupling			> 30 dB			
Rejection	Terr. TV/SAT		≥ 30 dB			
	SAT/Terr. TV		≥ 40 dB			
Supply voltage through RF inputs			H/Lo, H/Hi - 17 V; V/Lo, V/Hi - 14 V; Terr. TV - 12 V			
DC supply current	+ 17V & +14V & +12V		< 0.8 A			
through RF inputs	+ 14V & +12V		< 0.5 A			
Current consumption from receiver			< 80 mA			
Control signals			14/18 V, 0/22 kHz			
Power consumption*			230V ~ 50Hz 2.5 W			
Operating temperature range			-20º ÷ + 50º C			
Dimensions/Weight (packed)			200x128x53 mm/0.68 kg	230x128x53 mm/0.78 kg	270x128x53 mm/0.88 kg	310x128x53 mm/0.98 kg

* without external DC load; with maximal load 21 W



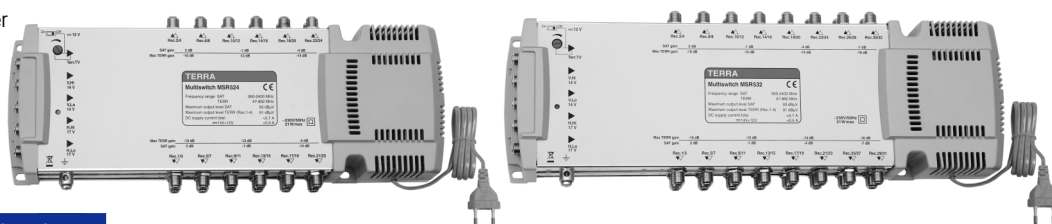
5 cable system

Radial multiswitches

- for star distribution system of 4 SAT IF polarities and terrestrial TV signal up to 32 users
- built-in power supply for remote DC feeding
- possibility to feed preamplifier through terrestrial TV input

MSR524
5x24 outputs multiswitch

MSR532
5x32 outputs multiswitch



Technical specifications

T Y P E			MSR524		MSR532	
Ordering number			02708		02709	
Number of outputs			24		32	
Frequency range		SAT IF		950-2400 MHz		
		Terr. TV		47-862 MHz		
Gain (fixed slope pre-correction)	SAT IF	outputs 1-8	1 ÷ 2 dB			
		outputs 9-16	-1 ÷ -1 dB			
		outputs 17-24	-3 ÷ -4 dB			
		outputs 25-32	-	-5 ÷ -7 dB		
	Terr. TV adjustable 17 dB	outputs 1-8	-7 ÷ -10 dB			
		outputs 9-16	-8 ÷ -12 dB			
		outputs 17-24	-9 ÷ -14 dB			
		outputs 25-32	-	-10 ÷ -16 dB		
Output level for SAT IF (IMD3 = 35 dB)			93 dBµV			
Output level for Terr. TV (DIN45004B)		outputs 1-8	91 dBµV			
		outputs 9-16	88 dBµV			
		outputs 17-24	86 dBµV			
		outputs 25-32	-	83 dBµV		
SAT inputs decoupling			> 30 dB			
Outputs decoupling			> 30 dB			
Rejection	Terr. TV/SAT		≥ 30 dB			
	SAT/Terr. TV		≥ 40 dB			
Supply voltage through RF inputs			H/Lo, H/Hi - 17 V; V/Lo, V/Hi - 14 V; Terr. TV - 12 V			
DC supply current	+ 17V & + 14V & + 12V		< 0.7 A			
through RF inputs	+ 14V & + 12V		< 0.5 A			
Current consumption from receiver			< 160 mA			
Control signals			14/18 V, 0/22 kHz, tone burst or DiSEqC 2.0			
Power consumption*			230V ~ 50Hz 2.5 W			
Operating temperature range			-20° ÷ + 50°C			
Dimensions/Weight (packed)			310x126x53 mm/1 kg		350x126x53 mm/1.2 kg	

* without external DC load; with maximal load 21 W



5 cable system

Remotely powered multiswitches

- for large installations of SAT IF distribution systems
- in line powering through H lines
- all components of 5 cable distribution system are compatible to each other
- length of the subscriber line up to 80 metres
- two gain regulators* for SAT IF and separate regulators for terrestrial TV
- optimized for operation with terrestrial digital/analog signals
- active terrestrial TV port is powered from central power supply allows to receive terrestrial TV programs without switching on SAT TV receiver
- LED indication of 18 V line powering
- possibility to supply powering for LNBs and network equipment from external +18V power supply unit: recommended power supply - SA125A-1913G-S(F) (page 22)

MSV504

5x4 outputs multiswitch

MSV508

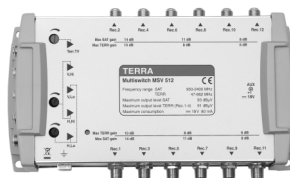
5x8 outputs multiswitch

MSV512

5x12 outputs multiswitch

MSV516

5x16 outputs multiswitch



Technical specifications

T Y P E			MSV504	MSV508	MSV512	MSV516
Ordering number			01709	01710	01711	01714
Number of outputs			4	8	12	16
Frequency range	SAT IF		950-2400MHz			
	Terr. TV		47-862MHz			
Gain (fixed slope pre-correction)	SAT IF	outputs 1-4	6.5 ÷ 14 dB			
		outputs 5-8	-	5 ÷ 11 dB		
		outputs 9-12	-	3.5 ÷ 8 dB		
		outputs 13-16	-	2 ÷ 5 dB		
	Terr. TV	outputs 1-4	5 ÷ 10 dB			
		outputs 5-8	-	4 ÷ 8 dB		
		outputs 9-12	-	3 ÷ 6 dB		
		outputs 13-16	-	2 ÷ 4 dB		
Gain adjustment	SAT IF*		10 dB			
	Terr. TV		17 dB			
Output level for SAT IF (IMD3 = 35 dB)			93 dBµV			
Output level for Terr. TV (DIN45004B)		outputs 1-4	91 dBµV	91 dBµV	91 dBµV	91 dBµV
		outputs 5-8	-	89 dBµV	89 dBµV	89 dBµV
		outputs 9-12	-	-	87 dBµV	87 dBµV
		outputs 13-16	-	-	-	85 dBµV
SAT inputs decoupling			> 30 dB			
Outputs decoupling	SAT IF		> 30 dB			
	Terr. TV		> 30 dB			
Current consumption from receiver			< 180 mA			
Current consumption from inputs H lines or from external power supply			+ 12 V + - 18 V 80 mA			
Control signals	V/Lo, H/Lo		11.5-14.5 V/0 kHz, 16.5-19 V/0 kHz			
	V/Hi, H/Hi		11.5-14.5 V/22 kHz, 16.5-19 V/22 kHz			
Operating temperature range			-20° + - 50° C			
Dimensions/Weight (packed)			130x128x53 mm/0.45 kg	170x128x53 mm/0.55 kg	210x128x53 mm/0.65 kg	250x128x53 mm/0.75 kg

* synchronic adjustment for high and low band inputs



5 cable system

Remotely powered multiswitches

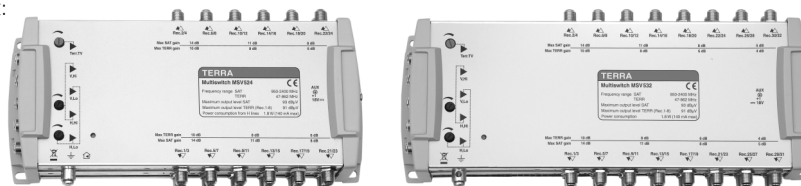
- for large installations of SAT IF distribution systems
- in line powering through H lines
- all components of 5 cable distribution system are compatible to each other
- length of the subscriber line up to 80 metres
- two gain regulators* for SAT IF and separate regulator for terrestrial TV
- optimized for operation with terrestrial digital/analog signals
- active terrestrial TV port is powered from central power supply allows to receive terrestrial TV programs without switching on SAT TV receiver
- LED indication of 18 V line powering
- possibility to supply powering for LNBs and network equipment from external +18V power supply unit: recommended power supply - SA125A-1913G-S(F) (page 22)

MSV524

5x24 outputs multiswitch

MSV532

5x32 outputs multiswitch



Technical specifications

T Y P E			MSV524		MSV532		
Ordering number			01716		01717		
Number of outputs			24		32		
Frequency range		SAT IF		950-2400 MHz			
		Terr. TV		47-862 MHz			
Gain (fixed slope pre-correction)		SAT IF		outputs 1-8			6.5 ÷ 14 dB
				outputs 9-16			5 ÷ 11 dB
				outputs 17-24			3.5 ÷ 8 dB
				outputs 25-32			-
		Terr. TV		outputs 1-8			5 ÷ 10 dB
				outputs 9-16			4 ÷ 8 dB
				outputs 17-24			3 ÷ 6 dB
				outputs 25-32			-
Gain adjustment		SAT IF*		10 dB			
		Terr. TV		17 dB			
Output level for SAT IF (IMD3 = 35 dB)				93 dBµV			
Output level for Terr. TV (DIN45004B)		outputs 1-8		91 dBµV			
		outputs 9-16		89 dBµV			
		outputs 17-24		87 dBµV			
		outputs 25-32		- 85 dBµV			
SAT inputs decoupling				> 30 dB			
Outputs decoupling		SAT IF		> 30 dB			
		Terr. TV		> 30 dB			
Current consumption from receiver				< 180 mA			
Current consumption from inputs H lines or from external power supply				+ 12 V 140 mA + + 18 V 100 mA			
Control signals		V/Lo, H/Lo		11.5-14.5 V/0 kHz, 16.5-19 V/0 kHz			
		V/Hi, H/Hi		11.5-14.5 V/22 kHz, 16.5-19 V/22 kHz			
Operating temperature range				-20° ÷ + 50° C			
Dimensions/Weight (packed)				250x128x53 mm/0.84 kg		290x128x53 mm/1 kg	

* synchronic adjustment for high and low band inputs



5 cable system

Taps and splitter

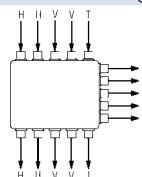
- 2 way splitter and one way taps of 4 SAT + 1 terrestrial signals
- low losses
- switchable DC pass to tap H outputs
- accepts central pin Ø 1.2 mm max.

SS504	SS515
2 way splitter	1 way 15 dB tap
SS510	SS520
1 way 10 dB tap	1 way 20 dB tap



Technical specifications

T Y P E		SS504	SS510	SS515	SS520
Ordering number		01747	01748	01749	01750
Frequency range	SAT IF	950-2400 MHz			
	Terr. TV	5-862 MHz			
Through loss	SAT IF	4 dB	1.5 dB	1.1 dB	0.7 dB
	Terr. TV	4 dB	1.5 dB	1.2 dB	1 dB
Tap loss	SAT IF	4 dB	8 ÷ 12 dB	13 ÷ 17 dB	18 ÷ 22 dB
	Terr. TV	4 dB	10 dB	15 dB	20 dB
SAT inputs decoupling	SAT IF	30 dB			
	Terr. TV	30 dB			
DC pass through		2 A max.			
Operating temperature range		-20° ÷ + 50° C			
Dimensions/Weight (packed)		120x120x34 mm/0.3 kg			



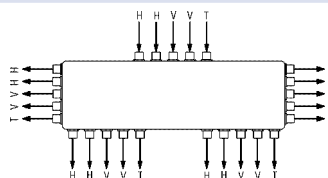
4 way splitter

- 4 way splitter of 4 SAT + 1 terrestrial TV signals
- switchable DC pass to tap H outputs
- accepts central pin Ø 1.2 mm max.



Technical specifications

T Y P E		SSQ508
Ordering number		01751
Frequency range	SAT IF	950-2400 MHz
	Terr. TV	5-862 MHz
Through loss	SAT IF	8 dB
	Terr. TV	8 dB
SAT inputs decoupling	SAT IF	30 dB
	Terr. TV	30 dB
DC pass through		2 A max.
Operating temperature range		-20° ÷ + 50° C
Dimensions/Weight (packed)		254x120x34 mm/0.4 kg





5 cable system

Launch and line amplifiers

- for compensation of through losses of multiswitches and interconnection cables in 5 cable distribution systems
- cascable with 5 cable system components: taps, splitters and multiswitches
- signal level control at all inputs
- built-in adjustable equalizer and push-pull amplifier on terrestrial TV line
- fixed 7 dB (5 dB for SA502) slope pre-correction on SAT IF lines

SA501, SA502

launch amplifiers for amplifying of 4 SAT IF and terrestrial TV signals; built-in switch-mode power supply allows to feed: 18 V DC via H inputs and 14 V DC via V inputs to up lines; 18 V DC (switchable) via H outputs and 14 V DC via V outputs to down lines; 12 V DC via Terr. TV input (switchable)

SA511

line amplifier for amplifying of 4 SAT IF and terrestrial TV signals; in line powering through H lines; DC pass through H and V lines (switchable through H line); 12 V feeding via Terr. TV input (switchable)



Technical specifications				
T Y P E		SA501	SA502	SA511
Ordering number		01740	01774	01741
Frequency range	SAT IF	950-2400 MHz		
	Terr. TV	47-862 MHz		
Gain	SAT IF, adjustable	15-22 dB (0 ÷ -10 dB)	28-33 dB (0 ÷ -10 dB)	15-22 dB (0 ÷ -10 dB)
	Terr. TV, adjustable	17 dB (0 ÷ -20 dB)	32 dB (0 ÷ -20 dB)	17 dB (0 ÷ -20 dB)
Slope	SAT IF, fixed	7 dB	5 dB	7 dB
	Terr. TV, adjustable	0 ÷ -15 dB		
Isolation	SAT/SAT	30 dB		
	SAT/Terr. TV	30 dB		
Noise figure, typical		≤ 9 dB	< 8 dB	≤ 9 dB
Output level IMD3= 60 dB (DIN45004B) Terr. TV		112 dBμV	116 dBμV	112 dBμV
Output level IMD3= 35 dB (EN50083-3) SAT IF		114 dBμV	116 dBμV	114 dBμV
External equipment powering	through V lines	14 V (14 V + 12 V 0.6 A max.)		
	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.		
Power consumption		230 V ~ 50 Hz 7 W*	230 V ~ 50 Hz 8 W*	DC 9-18 V 4 W**
Operating temperature range		-20° + + 50° C		
Dimensions/Weight (packed)		227x128x53mm/0.8 kg		170x128x53mm/0.53 kg

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

** in line powering of SA511 through H lines



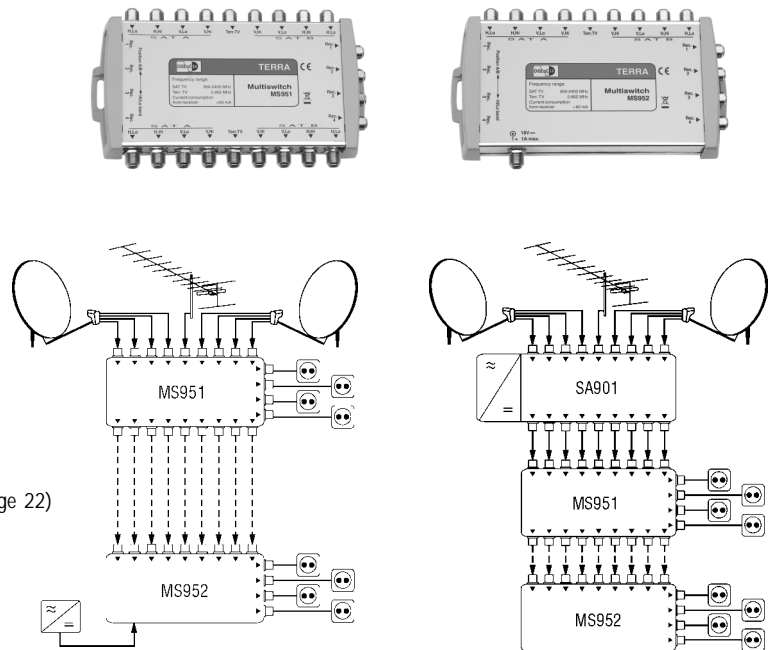
9 cable system

Cascadable multiswitches

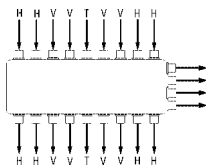
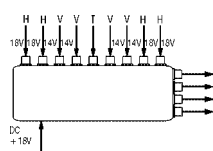
- cascadable distribution system of 8 SAT polarities and terrestrial TV for floor by floor installation and/or star distribution
- economical power using concept - no DC power consumption from line; subscriber line is powered from a corresponding receiver
- possibility to supply DC for LNBs through end line multiswitch MS952 as well as multipath launch amplifier SA901
- passive terrestrial TV port allows to receive terrestrial TV programs without switching on SAT TV receiver
- depending on interconnection cable up to 5 multiswitches can be connected into cascade without using a compensation amplifier
- ready for return path operation
- high isolation between all outputs
- recommended power supply - SA125A-1913G-S(F) (page 22)

MS951
through line 9x4 multiswitch

MS952
end line 9x4 multiswitch



Technical specifications

T Y P E		MS951	MS952
Ordering number		01725	01726
Frequency range	SAT IF	950-2400 MHz	
	Terr. TV	5-862 MHz	
Tap gain	SAT IF	3 dB	
	Terr. TV	-19 dB	
Maximal output level for SAT IF circuit IMD3 = 30 dB (EN50083-3)		93 dBμV	
SAT inputs decoupling		> 30 dB	
Outputs decoupling	SAT IF	> 30 dB	
	Terr. TV	> 30 dB	
Through gain	SAT IF	-3 dB	-
	Terr. TV	-3.5 dB	-
DC pass through		1 A max.	-
DC pass from external 18V power supply	through V lines	-	14 V & 0.5 A max.
	through H lines	-	18 V & 1 A max.
Current consumption from receiver		< 60 mA	
Control signals		14/18 V, 0/22 kHz, tone burst or DiSEqC 2.0	
Operating temperature range		-20° + 50° C	
Dimensions/Weight (packed)		199x106x34mm/0.4 kg	199x106x34mm/0.37 kg
			



9 cable system

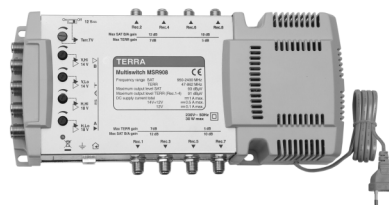
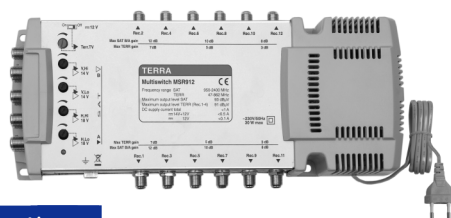
Radial multiswitches

- star distribution system of 8 SAT IF polarities and terrestrial TV signal up to 16 users
- built-in power supply for remote DC feeding
- possibility to feed DC for preamplifier through terrestrial TV input

MSR908
8 outputs multiswitch

MSR912
12 outputs multiswitch

MSR916
16 outputs multiswitch



Technical specifications

T Y P E			MSR908	MSR912	MSR916
Ordering number			01767	01768	01769
Number of outputs			8	12	16
Frequency range	SAT IF		950-2400MHz		
	Terr. TV		47-862MHz		
Gain, typical (fixed slope pre-correction)	SAT	outputs 1-4	7 + 12 dB		
	(SATA	outputs 5-8	6 + 10 dB		
	adjustable	outputs 9-12	-	5 ÷ 8 dB	
	10 dB)	outputs 13-16	-	4 ÷ 6 dB	
	Terr. TV	outputs 1-4	3 ÷ 7 dB		
	adjustable	outputs 5-8	2 ÷ 5 dB		
	20 dB	outputs 9-12	-	1 ÷ 3 dB	
		outputs 13-16	-	0 ÷ 1 dB	
Output level for SAT IF (IMD3 = 35 dB)			93 dBµV		
Output level for Terr. TV (DIN45004B)	outputs 1-4		91 dBµV	91 dBµV	91 dBµV
	outputs 5-8		88 dBµV	88 dBµV	88 dBµV
	outputs 9-12		-	86 dBµV	86 dBµV
	outputs 13-16		-	-	83 dBµV
SAT inputs decoupling			> 25 dB		
Outputs decoupling			> 25 dB		
Rejection	Terr. TV/SAT		≥ 24 dB		
	SAT/Terr. TV		≥ 45 dB		
Supply voltage through RF inputs			H/Lo, H/Hi - 18 V; V/Lo, V/Hi - 14 V; Terr. TV - 12 V		
DC supply current	+ 18V & + 14V & + 12V		< 1 A		
through RF inputs	+ 14V & + 12V		< 0.5 A		
	+ 12V		< 0.1 A		
Current consumption from receiver			< 60 mA		
Control signals			14/18 V, 0/22 kHz, tone burst or DiSEqC 2.0		
Power consumption*			230 V ~ 50 Hz 4 W max.		
Operating temperature range			-20º ÷ + 50ºC		
Dimensions/Weight (packed)			244.5x128x53 mm/0.9 kg	284.5x128x53mm/1 kg	324.5x128x53 mm/1.1 kg

* without external DC load; with maximal load 30 W



9 cable system

Radial multiswitches

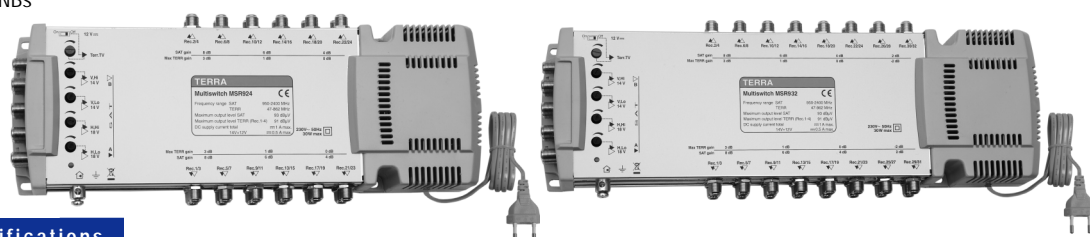
- star distribution system of 8 SAT IF polarities and terrestrial TV signal up to 32 users
- built-in power supply with possibility of remote DC feeding for LNBs and preamplifier through terrestrial TV input

MSR924

9x24 outputs multiswitch

MSR932

9x32 outputs multiswitch



Technical specifications				
T Y P E			MSR924	
Ordering number			01775	
Number of outputs			24	
Frequency range	SAT IF		950-2400MHz	
	Terr. TV		47-862 MHz	
Gain, typical (fixed slope pre-correction)	SAT	outputs 1-8	3 ÷ 8 dB	
	(SAT A	outputs 9-16	2 ÷ 6 dB	
	adjustable	outputs 17-24	1 ÷ 4 dB	
	10 dB)	outputs 25-32	-	0 ÷ 2 dB
	Terr. TV	outputs 1-8	-1 ÷ 3 dB	
	adjustable	outputs 9-16	-2 ÷ 1 dB	
	20 dB	outputs 17-24	-3 ÷ 0 dB	
		outputs 25-32	-	-4 ÷ -2 dB
Output level for SAT IF (IMD3=35 dB)			93 dBµV	
Output level for Terr. TV (DIN45004B)		outputs 1-8	91 dBµV	
		outputs 9-16	88 dBµV	
		outputs 17-24	86 dBµV	
		outputs 25-32	-	83 dBµV
SAT inputs decoupling			> 25 dB	
Outputs decoupling			> 25 dB	
Rejection	Terr. TV/SAT		≥ 24 dB	
	SAT/Terr. TV		≥ 45 dB	
Supply voltage through RF inputs			H/Lo, H/Hi - 18 V; V/Lo, V/Hi - 14 V; Terr. TV - 12 V	
DC supply current	+ 18V & + 14V & + 12V		< 1 A	
through RF inputs	+ 14V & + 12V		< 0.5 A	
	+ 12V		< 0.1 A	
Current consumption from receiver			< 60 mA	
Control signals			14/18 V, 0/22 kHz, tone burst or DiSEqC 2.0	
Power consumption*			230 V ~ 50 Hz 4 W max.	
Operating temperature range			-20° ÷ + 50°C	
Dimensions/Weight (packed)			284.5x128x53mm/1.1 kg	324.5x128x53 mm/1.3 kg

* without external DC load; with maximal load 30 W



9 cable system

Remotely powered multiswitches

- for large installations of SAT IF distribution systems
- in line powering through H lines
- length of the subscriber line up to 80 metres
- 4 gain regulators* for SAT IF and separate regulator for terrestrial TV
- optimized for operation with terrestrial digital/analog signals
- active terrestrial TV port is powered from central power supply allows to receive terrestrial TV programs without switching on SAT TV receiver
- LED indication of 18 V line powering
- possibility of supply powering for LNBs equipment from external +18V power supply unit: recommended power supply - SA125A-1913G-S(F) (page 22)

MSV908

9x8 outputs multiswitch

MSV912

9x12 outputs multiswitch

MSV916

9x16 outputs multiswitch



Technical specifications

T Y P E			MSV908	MSV912	MSV916
Ordering number			01770	01771	01772
Number of outputs			8	12	16
Frequency range	SAT IF		950-2400 MHz		
	Terr. TV		47-862 MHz		
Gain (fixed slope pre-correction)	SAT IF	outputs 1-4	7 ÷ 12 dB		
		outputs 5-8	6 ÷ 10 dB		
		outputs 9-12	-	5 ÷ 8 dB	
		outputs 13-16	-	4 ÷ 6 dB	
	Terr. TV	outputs 1-4	3 ÷ 7 dB		
		outputs 5-8	2 ÷ 5 dB		
		outputs 9-12	-	1 ÷ 3 dB	
		outputs 13-16	-	0 ÷ 1 dB	
Gain adjustment	SAT IF*		10 dB		
	Terr. TV		17 dB		
Output level for SAT IF (IMD3 = 35 dB)			93 dBµV		
Output level for Terr. TV (DIN45004B)	outputs 1-4		92 dBµV	92 dBµV	92 dBµV
	outputs 5-8		90 dBµV	90 dBµV	90 dBµV
	outputs 9-12		-	88 dBµV	88 dBµV
	outputs 13-16		-	-	86 dBµV
SAT inputs decoupling			> 25 dB		
Outputs decoupling	SAT IF		> 25 dB		
	Terr. TV		> 30 dB		
Current consumption from receiver			< 160 mA		
Current consumption from inputs H lines or from external power supply			+ 12 V ÷ + 18 V 100 mA max.		
Control signals			14/18 V, 0/22 kHz, tone burst or DiSEqC 2.0		
Operating temperature range			-20° ÷ + 50° C		
Dimensions/Weight (packed)			170x128x53 mm/0.58 kg	210x128x53 mm/0.68 kg	250x128x53 mm/0.78 kg

* synchronic adjustment for high and low band inputs

Access mode control unit PC101

Control unit PC101 allows to change the access mode of multiswitches MSR908-MSR916, MSV908-MSV916 by changing reaction of the multiswitches to receiver's control commands (analog 14/18 V / 0/22 kHz and DiSEqC 1.0/2.0). Two modes are available:

1. Default mode (access to SAT A, SAT B by DiSEqC commands, access to SAT A by analog commands;
2. Restricted mode (access to SAT B only by analog or DiSEqC commands).

Ordering number 01773





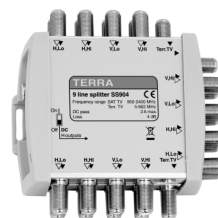
9 cable system

Taps and splitter

- 2 way splitter and one way taps of 8 SAT + 1 terrestrial signals
- low losses
- switchable DC pass to tap H outputs
- accepts central pin Ø 1.2 mm max.

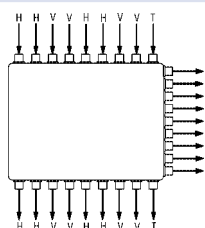
SS904 **SS915**
2 way splitter 1 way 15 dB tap

SS910 **SS920**
1 way 10 dB tap 1 way 20 dB tap



Technical specifications

T Y P E		SS904	SS910	SS915	SS920
Ordering number		02710	02711	02712	02713
Frequency range	SAT IF	950-2400 MHz			
	Terr. TV	5-862 MHz			
Through loss	SAT IF	4 dB	1.7 dB	1.2 dB	0.9 dB
	Terr. TV	4 dB	1.6 dB	1.2 dB	1 dB
Tap loss	SAT IF	4 dB	8 ÷ 12 dB	13 ÷ 17 dB	18 ÷ 22 dB
	Terr. TV	4 dB	10 dB	15 dB	20 dB
SAT inputs decoupling	SAT IF	30 dB			
	Terr. TV	30 dB			
DC pass through		2 A max.			
Operating temperature range		-20° ÷ + 50° C			
Dimensions/Weight (packed)		120x120x51 mm/0.4 kg			



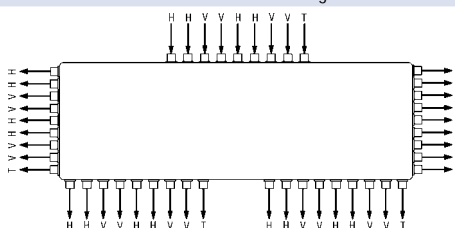
4 way splitter

- 4 way splitter of 8 SAT + 1 terrestrial TV signals
- switchable DC pass to tap H outputs
- accepts central pin Ø 1.2 mm max.



Technical specifications

T Y P E		SS908
Ordering number		02714
Frequency range	SAT IF	950-2400 MHz
	Terr. TV	5-862 MHz
Through loss	SAT IF	8 dB
	Terr. TV	8 dB
SAT inputs decoupling	SAT IF	30 dB
	Terr. TV	30 dB
DC pass through		2 A max.
Operating temperature range		-20° ÷ + 50° C
Dimensions/Weight (packed)		254x120x51 mm/0.8 kg

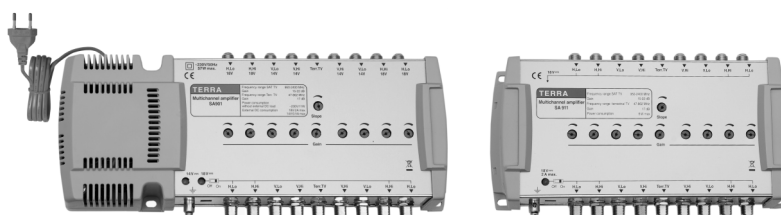




9 cable system

Launch and line amplifiers

- for compensation of through losses of multiswitches and interconnection cables in 9 cable distribution systems
- cascadable with multiswitches MS951, MS952 and other 9 cable system components
- signal level control at all inputs
- built-in adjustable equalizer and push-pull amplifier on terrestrial TV line
- fixed 7 dB slope precorrection on SAT IF lines



SA901

launch amplifier for amplifying of 8 SAT IF and terrestrial TV signals; built-in switch-mode power supply allows to feed: 18 V DC via H inputs and 14 V DC via V inputs to up lines; switchable 18 V DC via H outputs to down lines; 12 V DC via Terr. TV input (switchable)

SA911

line amplifier for amplifying of 8 SAT IF and terrestrial TV signals; in line powering through H lines; DC pass through H and V lines (switchable through H lines); 12 V feeding via Terr. TV input (switchable)

Technical specifications

T Y P E		SA901	SA911
Ordering number		01742	01743
Frequency range	SAT IF	950-2400 MHz	
	Terr. TV	47-862 MHz	
Gain	SAT IF	15-22 dB (0 ÷ -10 dB adjustable)	
	Terr. TV	17 dB (0 ÷ -17 dB adjustable)	
Slope	SAT IF	7 dB (fixed)	
	Terr. TV	0 ÷ -15 dB (adjustable)	
Isolation	SAT/SAT	30 dB	
	SAT/Terr. TV	30 dB	
Noise figure, typical		≤ 9 dB	
Output level IMD3 = 60 dB (DIN45004B)		112 dBμV (for terrestrial TV)	
Output level IMD3 = 35 dB (EN50083-3)		114 dBμV (for SAT IF)	
External equipment powering	through V lines	14 V (14 V + 12 V 0.5 A max.)	-
	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.	
Power consumption		230 V ~ 50 Hz 11 W*	DC 9-18 V 6 W**
Operating temperature range		-20° + + 50° C	
Dimensions/Weight (packed)		291x128x53 mm/1 kg	234x128x53 mm/0.75 kg

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

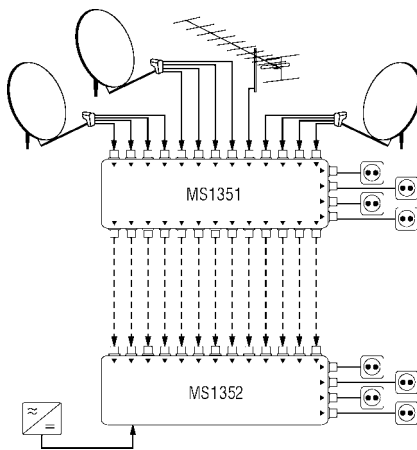
** in line powering of SA911 through H lines



13 cable system

Cascadable multiswitches

- cascadable distribution system of 12 SAT polarities and terrestrial TV for floor by floor installation and/or star distribution
- economical power using concept - no DC power consumption from line; subscriber line is powered from a corresponding receiver
- possibility to supply DC for LNBs through end line multiswitch MS1352
- passive terrestrial TV port allows to receive terrestrial TV programs without switching on SAT TV receiver
- depending on interconnection cable up to 5 multiswitches can be connected into cascade without using a compensation amplifier
- ready for return path operation
- high isolation between all outputs
- recommended power supply - SA125A-1913G-S(F) (page 22)



MS1351
through line 13x4 multiswitch

MS1352
end line 13x4 multiswitch

Technical specifications		T Y P E		MS1351	MS1352
Ordering number				01754	01755
Frequency range	SAT IF			950-2400 MHz	
	Terr. TV			5-862 MHz	
Tap gain	SAT IF			1 dB	
	Terr. TV			-19 dB	
Maximal output level for SAT IF circuit IMD3=30 dB (EN50083-3)				90 dBμV	
SAT inputs decoupling				> 30 dB	
Outputs decoupling	SAT IF			> 30 dB	
	Terr. TV			> 30 dB	
Through gain	SAT IF			-3 dB	-
	Terr. TV			-3.5 dB	-
DC pass through SAT input-output				1 A max.	-
DC pass from external 18 V power supply	through V lines			-	14 V & 1 A max.
	through H lines			-	18 V & 1 A max.
Current consumption from receiver				< 90 mA	
Control signals				DISEqC 2.0 or lower version	
Operating temperature range				-20° ÷ + 50° C	
Dimensions/Weight (packed)				232x106x53 mm/0.7 kg	232x106x53 mm/0.65 kg



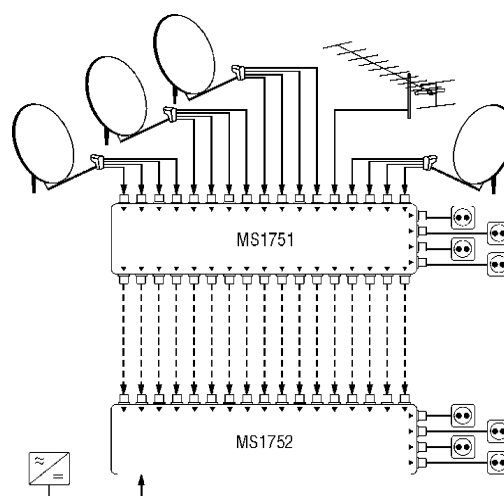
17 cable system

Cascadable multiswitches

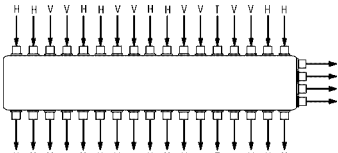
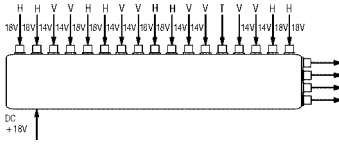
- cascadable distribution system of 16 SAT polarities and terrestrial TV for floor by floor installation and/or star distribution
- economical power using concept - no DC power consumption from line; subscriber line is powered from a corresponding receiver
- possibility to supply DC for LNBs through end line multiswitch MS1752
- passive terrestrial TV port allows to receive terrestrial TV programs without switching on SAT TV receiver
- depending on interconnection cable up to 5 multiswitches can be connected into cascade without using a compensation amplifier
- ready for return path operation
- high isolation between all outputs
- recommended power supply - SA125A-1913G-S(F) (page 22)

MS1751
through line 17x4 multiswitch

MS1752
end line 17x4 multiswitch



Technical specifications

T Y P E		MS1751	MS1752
Ordering number		01752	01753
Frequency range	SAT IF	950-2400 MHz	
	Terr. TV	5-862 MHz	
Tap gain	SAT IF	1 dB	
	Terr. TV	-20 dB	
Maximal output level for SAT IF circuit IMD3=30 dB (EN50083-3)		90 dBμV	
SAT inputs decoupling		> 30 dB	
Outputs decoupling	SAT IF	> 30 dB	
	Terr. TV	> 30 dB	
Through gain	SAT IF	-3 dB	-
	Terr. TV	-3.5 dB	-
DC pass through SAT input-output		1 A max.	-
DC pass from external	through V lines	-	14 V & 1 A max.
18 V power supply	through H lines	-	18 V & 1 A max.
Current consumption from receiver		< 90 mA	
Control signals		DiSEqC 2.0 or lower version	
Operating temperature range		-20° + 50° C	
Dimensions/Weight (packed)		232x106x53 mm/0.75 kg	232x106x53 mm/0.7 kg
			



System accessories

Splitband medium power amplifiers

- for amplification signals of SAT and terrestrial TV bands
- suitable for signals combining of SAT and terrestrial TV bands
- possibility of DC feeding for LNBs from external power supply
- possibility of DC and DiSEqC signals pass
- built-in separate gain & slope regulators for every band
- diecast housing

SA100

SAT IF amplifier with passive terrestrial TV path

HSA100

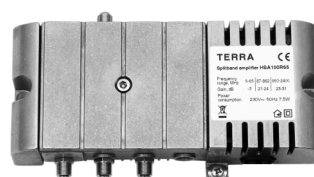
SAT IF amplifier with terrestrial TV path active/passive, switchable

HSA100R30

SAT IF amplifier with terrestrial TV path active/passive and 30 MHz passive return path, switchable

HSA100R65

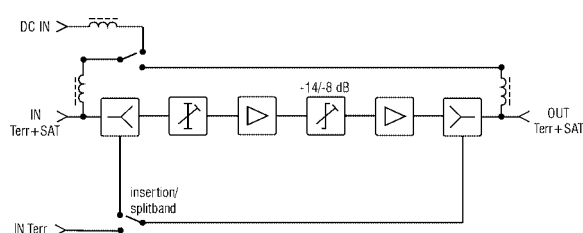
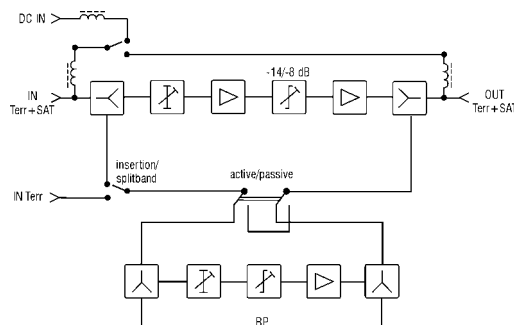
SAT IF amplifier with terrestrial TV path active/passive and 65 MHz passive return path, switchable



Technical specifications

T Y P E		SA100	HSA100	HSA100R30	HSA100R65
Ordering number		01777	01778	01779	01780
Forward path					
Frequency range	SAT IF	950-2400 MHz			
	Terr. TV	5-862 MHz	47-862 MHz	87-862 MHz	
Gain	SAT IF	23-31 dB			
	Terr. TV	-4 dB	21-24 dB (pre-correction)/-4 dB switchable		
Gain adjustment	SAT IF	10 dB			
	Terr. TV*	-	18 dB		
Slope adjustment	SAT IF	14/8 dB switchable			
	Terr. TV*	-	18 dB		
Input and output return loss	SAT IF	> 10 up to 1750 MHz, 1750-2400 MHz linear decrease from 10 dB up to 7 dB			
	Terr. TV	> 10 dB			
Maximal output level IMD3=35 dB (EN50083-3)	SAT IF	120 dBμV			
Maximal output level IMD3=60 dB (DIN45004B)	Terr. TV	-	115 dBμV		
Noise figure	Terr. TV	-	8 dB		
Return path					
Frequency range		-	5 - 30 MHz	5-65 MHz	
Loss		-	-3 dB		
Return loss		-	> 14 dB		
General					
Mains power consumption		230 V~ 50 Hz 5 W	230 V~ 50 Hz 7.5 W		
Temperature range		-20° ÷ +50° C			
Dimensions		185x91x47 mm/0.7 kg			

* terrestrial gain, slope adjustment and return path are not available at passive terrestrial TV mode

SA100**HSA100, HSA100R30, HSA100R65**



System accessories

Line amplifier SA001

- for recovering of signal loss in SAT IF distribution networks
- DC and tone pass through

Diplexer DC009

- for combining of SAT IF and terrestrial TV signals
- DC and tone pass through to SAT TV input



Technical specifications

T Y P E	SA001	DC009
Ordering number	00701	01543
Frequency range	950-2400 MHz	47-862 MHz/950-2400 MHz
Attenuation in the stop-band	-	20 dB
Gain	17-22 dB	-1.5 dB
Noise figure, typical	≤ 9 dB	-
Maximal output level IMD3 = 35 dB (EN50083-3)	104 dBμV	-
Power consumption	+12 + +18 V 60 mA	-
Dimensions/Weight (packed)	79x40x24mm/0.06 kg	53x64x24mm/0.07 kg

Active SAT IF splitters

- DC and tone through pass
- high outputs isolation

- SS001 - 2 way active splitter
 SS002 - 4 way active splitter
 SS003 - 6 way active splitter



Technical specifications

T Y P E	SS001	SS002	SS003
Ordering number	00704	00702	00703
Frequency range	950-2400 MHz		
Gain	-1 +3 dB		
Noise figure	≤ 10 dB		
Maximal output level IMD3 = 35 dB (EN50083-3)	94 dBμV		
Power consumption	+12 + +18 V 20 mA		
Dimensions/Weight (packed)	79x40x24mm/0.07 kg	79x64x24mm/0.07 kg	79x64x24mm/0.08 kg

DiSEqC switches

- metal housing and weather-cap



Technical specifications

T Y P E	TRU4508	TRU4518
Ordering number	11796	11797
Number of inputs	2	4
Frequency range	950-2300 MHz	
Through loss	2 dB	
Return loss	8 dB	
Control	DiSEqC 2.0	
Current consumption	10 mA	
Current through pass	0.5 A max.	
Operating temperature range	-20° + + 50° C	
Dimensions/Weight (packed)	97x101x23 mm/0.11 kg	97x101x23 mm/0.15 kg

Power supply

- high efficiency 18 V & 1.3 A switch-mode power supply

Technical specifications

T Y P E	SA125A-1913G-S(F)
Ordering number	00617NF
DC output	+18 V/1.3 A
Output DC connector	F male
Mains voltage	180 V + 240 V ~ 50 Hz
Dimensions	86x53x35.5 mm



Link

- F plug-quick - F plug-quick for interconnection of the equipment
- Ordering number 00933



System accessories

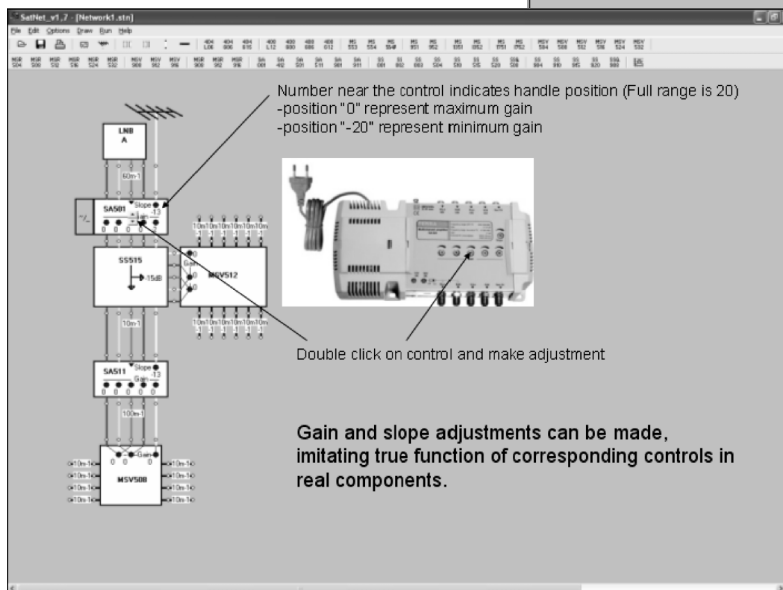
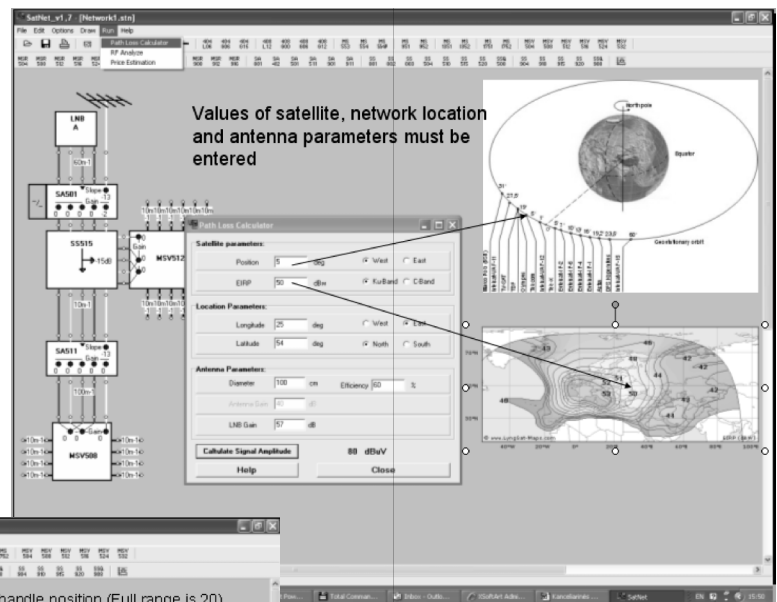
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Simulation Software SatNet

Freeware software for simulation of SAT IF distribution networks the latest version could be downloaded from www.terraelectronics.com, [downloads](#)

- significantly facilitates designing of complex satellite IF distribution networks with TERRA components
- component library includes all TERRA satellite IF products and is constantly updated when new products are available
- accurateness of calculating allows to avoid preparing of invalid bill of materials, unreasonable estimated network prices and consumed time for troubleshooting the network during installation
- user-friendly graphical interface
- include "Path Loss Calculator" in the case if measured input levels are not available
- realistically simulates action of controls if they are
- easy to learn - short animated tutorial available



1. Allowed complexity of network:	
- SAT IF trunk lines	up to 16 (4 quattro LNB)
- terrestrial path	1
- subscribers points	unlimited
2. Results	<ul style="list-style-type: none"> - comprehensive information about signal's level on every nod - indication of overloaded components - indication of nodes with lacking signal strength - total consumed current - report for network's price estimation
3. Memory occupied by software	11 MB (zipped)
4. Minimum hardware requirements	<ul style="list-style-type: none"> - Pentium 500 MHz or equivalent CPU - VGA 800 by 600 pixels - Windows 98/Windows XP or later version



17 cable system

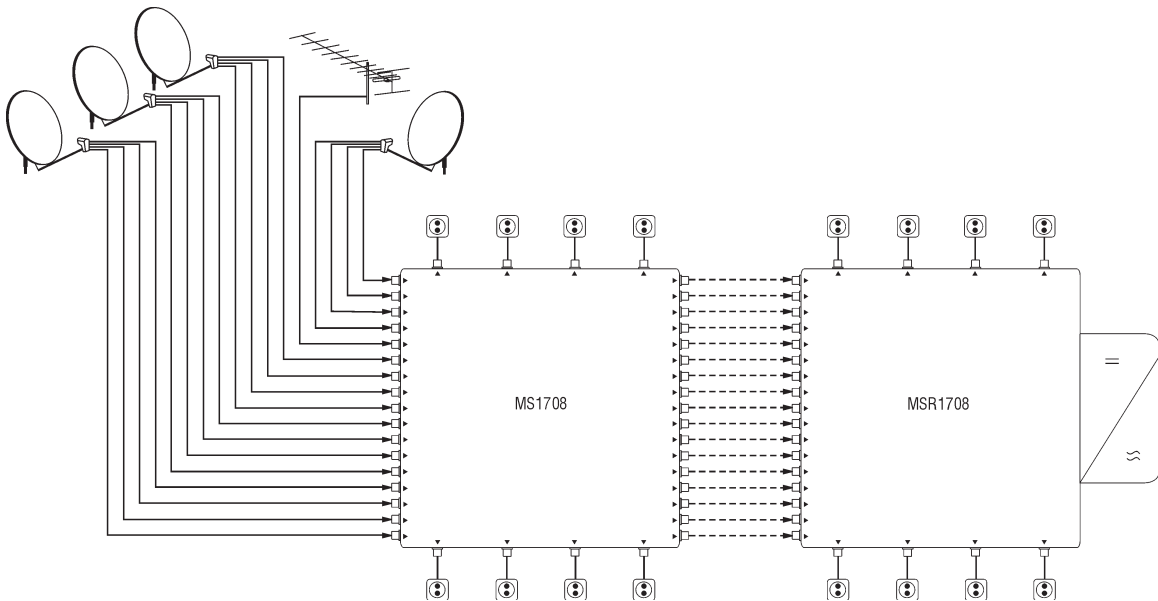
Cascadable multiswitch

- through line 17x8 multiswitch
- cascadable distribution system of 16 SAT polarities and terrestrial TV for floor by floor installation and/or star distribution
- separate SAT IF gain adjustment for every pair of subscribers outputs
- DC through path and multiswitch feeding from SAT A HLo, SAT A HHi lines



Technical specifications			
T Y P E			MS1708
Ordering number			01783
Frequency range	SAT IF		950-2400 MHz
	Terr. TV		5-862 MHz
Gain, typical (fixed slope pre-correction)*	SAT IF	outputs 1-4	-6 ÷ 0 dB
		outputs 5-8	-7 ÷ -1 dB
	Terr. TV	outputs 1-4	-8 ÷ -5 dB
		outputs 5-8	-9 ÷ -7 dB
Output level for SAT IF (IMD3=35 dB)			100 dBμV
Output level for Terr. TV (DIN45004B)		outputs 1-4	94 dBμV
		outputs 5-8	92 dBμV
SAT inputs decoupling			> 25 dB
Outputs decoupling			> 25 dB
Through gain	SAT IF		-6 dB
	Terr. TV		8 ÷ 10 dB, max.
DC pass through SAT input-output			1 A max. (through single line)
Current consumption from receiver			< 90 mA
Current consumption from SAT A HLo, SAT A HHi lines			18 V 80 mA ÷ 12 V 120 mA
Control signals			DiSEqC 1.0, DiSEqC 2.0 or compatible versions
Operating temperature range			-20° ÷ + 50° C
Dimensions/Weight (packed)			190x190x55 mm/0.8 kg

* max. gain on 2150 MHz





17 cable system

Radial multiswitches

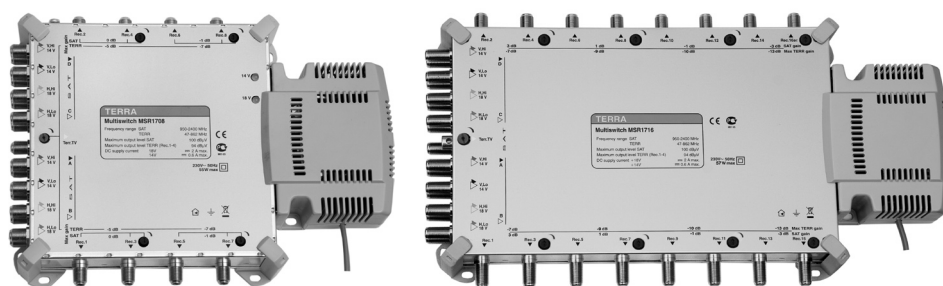
- star distribution system of 16 SAT IF polarities and terrestrial TV signal up to 16 users
- separate SAT IF gain adjustment for every pair of subscribers outputs
- built-in power supply with possibility of remote DC feeding for LNBs and other network components
- power supply has short-circuit and overload protection with LED indicators

MSR1708

17x8 multiswitch

MSR1716

17x16 multiswitch



Technical specifications				
T Y P E			MSR1708	MSR1716
Ordering number			01784	01785
Number of outputs			8	16
Frequency range	SAT IF		950-2400 MHz	
	Terr. TV		47-862 MHz	
Gain, typical (fixed slope pre-correction)*	SAT IF adjustable	outputs 1-4	-6 ÷ 0 dB	
		outputs 5-8	-7 ÷ -1 dB	
		outputs 9-12	-	-8 ÷ -2 dB
		outputs 13-16	-	-9 ÷ -3 dB
	Terr. TV adjustable	outputs 1-4	-8 ÷ -5 dB	
		outputs 5-8	-9 ÷ -7 dB	
		outputs 9-12	-	-10 ÷ -9 dB
		outputs 13-16	-	-11 ÷ -11 dB
Output level for SAT IF (IMD3=35 dB)		100 dBμV		
Output level for Terr. TV (DIN45004B)	outputs 1-4	94 dBμV		
	outputs 5-8	92 dBμV		
	outputs 9-12	-	90 dBμV	
	outputs 13-16	-	88 dBμV	
SAT inputs decoupling		> 25 dB		
Outputs decoupling		> 25 dB		
Rejection, SAT/Terr. TV		≥ 30 dB		
Supply voltage through RF inputs		H/Lo, H/Hi - 18 V; V/Lo, V/Hi - 14 V		
DC supply current	+18V		< 2 A	
through RF inputs	+14V		< 0.6 A	
Current consumption from receiver		< 90 mA		
Control signals		DiSEqC 1.0 , DiSEqC 2.0 or compatible versions		
Power consumption**		230 V~ 50 Hz 3.5 W max.		
Operating temperature range		-20° ÷ + 50° C		
Dimensions/Weight (packed)		260x190x55mm/1.06 kg	360x190x55 mm/1.7 kg	

* max. gain on 2150 MHz

** without external DC load; with maximal load 55 W