

# SAT IF distribution system

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## 4 cable system

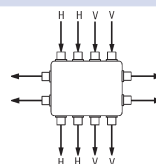
# Cascadable multiswitches

- 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 SAT 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



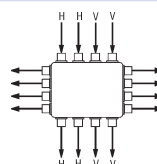
Technical specifications				
T Y P E	MS404L06	MS404G02	MS404G06	MS404G15
Ordering number	01756	01761	01757	01759
Frequency range	950-2400 MHz			
Tap gain	-6 dB	2 dB	6 dB	15 dB
SAT inputs decoupling	> 28 dB			
Outputs decoupling	> 25 dB			
Through loss	< 3 dB			
Maximal output level IMD3=35 dB(EN50083-3)	93 dB $\mu$ V			
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)	106x76x34mm/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 dB $\mu$ V			
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

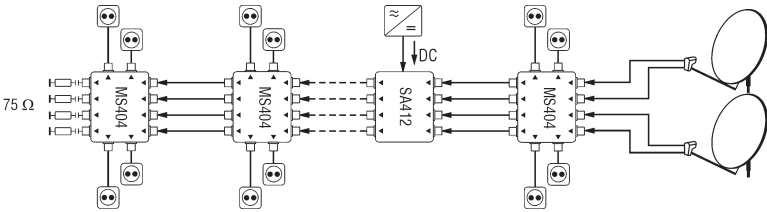
- 4 path equalized line amplifier of SAT IF signals
- for compensation of through losses of multiswitches and interconnection cables in 4 cable distribution system
- extremely low power consumption
- fixed 4 dB slope pre-correction
- in line powering from H lines
- DC pass through H & V lines



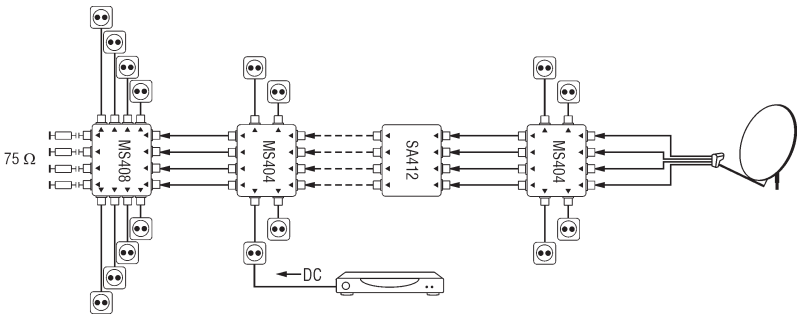
Technical specifications	
T Y P E	SA412
Ordering number	01766
Frequency range	950 - 2400 MHz
Gain	13 - 17 dB
Slope pre-correction, fixed	4 dB
Isolation between channels	≥ 30 dB
Noise figure, typical	≤ 10 dB
Maximal output level, IMD3=35 dB (EN 50083-3)*	106 dBμV
DC feeding for external	+ 18 V & 1 A max.
DC pass through, switchable	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 power-

1. Powered through line amplifier SA412



2. Powered from SAT receiver







## 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**

5x4 multiswitch

**MSR508**

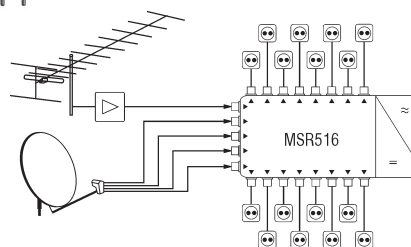
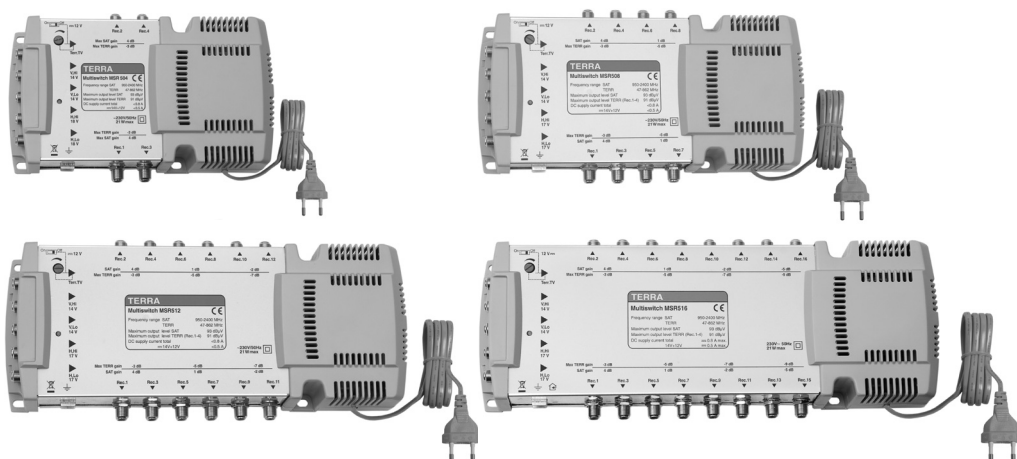
5x8 multiswitch

**MSR512**

5x12 multiswitch

**MSR516**

5x16 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 17 dB	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 dB $\mu$ V				
Output level for Terr. TV (DIN45004B)	outputs 1-4		91 dB $\mu$ V	91 dB $\mu$ V	91dB $\mu$ V	91 dB $\mu$ V
	outputs 5-8		-	88 dB $\mu$ V	88 dB $\mu$ V	88 dB $\mu$ V
	outputs 9-12		-	-	86 dB $\mu$ V	86 dB $\mu$ V
	outputs 13-16		-	-	-	83 dB $\mu$ V
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			-20° ÷ + 50° 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

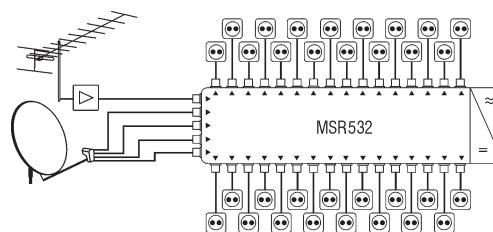
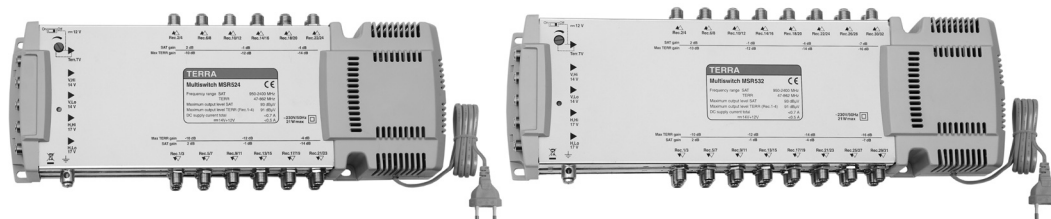
- for star distribution system of 4 SAT IF polarities and terrestrial TV signal up to 32 users
- built-in power supply for remote DC feeding
- possibility to feed preamplifier through terrestrial TV input

### MSR524

5x24 multiswitch

### MSR532

5x32 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		1 ÷ 2 dB		
		outputs 9-16		-1 ÷ -1 dB		
		outputs 17-24		-3 ÷ -4 dB		
		outputs 25-32		-		-5 ÷ -7 dB
		Terr. TV		-7 ÷ -10 dB		
		adjustable		-8 ÷ -12 dB		
		17 dB		-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)			310x128x53 mm/1 kg		350x128x53 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 path 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 +18 V power supply unit: recommended power supply - PS182F (page 37)

### MSV504

5x4 multiswitch

### MSV508

5x8 multiswitch

### MSV512

5x12 multiswitch

### MSV516

5x16 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	950-2400 MHz				
		Terr. TV	47-862 MHz				
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 path 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 +18 V power supply unit: recommended power supply - PS182F (page 37)

### MSV524

5x24 multiswitch

### MSV532

5x32 multiswitch



### Technical specifications

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	-	2 ÷ 5 dB		
	Terr. TV	outputs 1-8	5 ÷ 10 dB			
		outputs 9-16	4 ÷ 8 dB			
		outputs 17-24	3 ÷ 6 dB			
		outputs 25-32	-	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 1-8	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			-20º ÷ + 50º 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

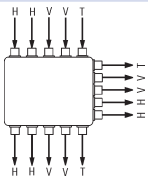
- 2 way splitter and one way taps of 4 SAT + 1 terrestrial signals
- low losses
- DC pass through H trunk lines; switchable DC pass to tap H outputs
- accepts central pin  $\varnothing$  1.2 mm max.

<b>SS504</b> 2 way splitter	<b>SS515</b> 1 way 15 dB tap
<b>SS510</b> 1 way 10 dB tap	<b>SS520</b> 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			



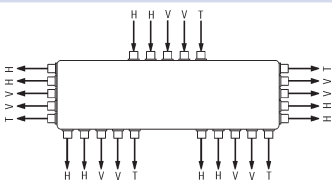
# 4 way splitter

- 4 way splitter of 4 SAT + 1 terrestrial TV signals
- DC pass through H trunk lines; switchable DC pass to tap H outputs
- accepts central pin  $\varnothing$  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
- cascadable 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, except SA503) slope pre-correction on SAT IF lines

### SA501, SA502, SA503

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)

**SA501** - medium gain 22 dB, with slope

**SA503** - medium gain 22 dB, without slope

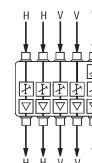
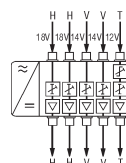
**SA502** - high gain 33 dB, with slope

### 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 lines); 12 V feeding via Terr. TV input (switchable)



Technical specifications		T Y P E			
		SA501	SA502	SA503	SA511
Ordering number		01740	01774	01790	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)	22 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	through V lines	14 V 0.6 A max.			-
powering	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*	230 V~ 50 Hz 7 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

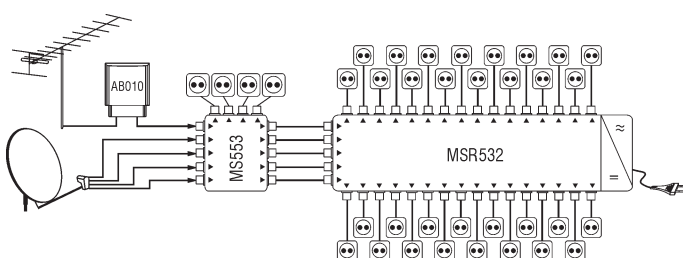
\*\* in line powering of SA511 through H lines



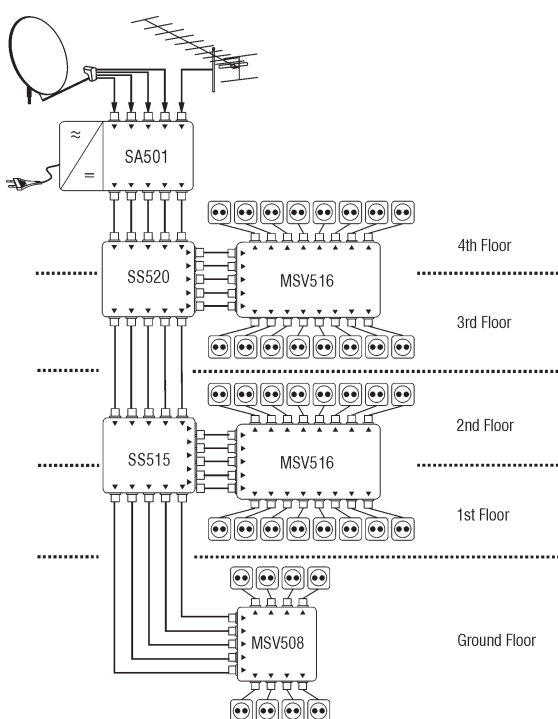
## 5 cable system

# Application diagrams

Radial installation for 36 subscribers.



Installation of single multiswitch for two floors. 8 subscribers on every floor.



AB010 - fixed gain UHF masthead amplifier, [page 41](#)

MS553 - through line 5x4 multiswitch, [page 9](#)

MSR532 - 5x32 multiswitch, [page 11](#)

MSV508 - 5x8 multiswitch, [page 12](#)

MSV516 - 5x16 multiswitch, [page 12](#)

SA501 - launch amplifier, [page 15](#)

SS515 - 1 way 15 dB tap, [page 14](#)

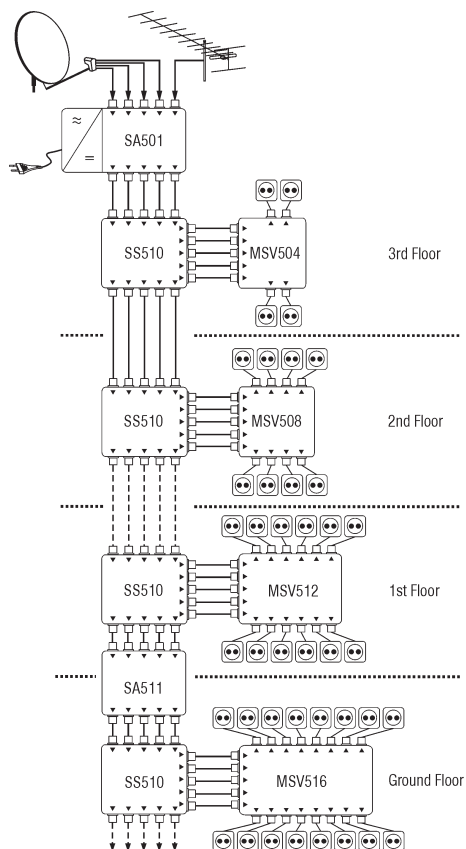
SS520 - 1 way 20 dB tap, [page 14](#)



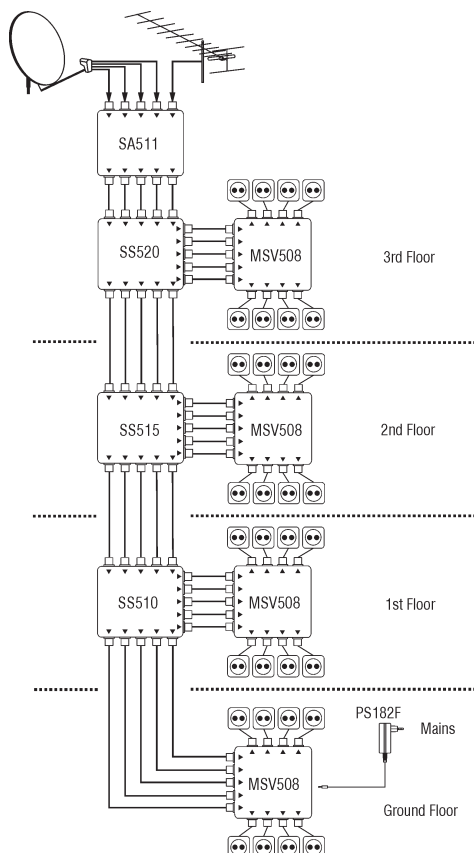
## 5 cable system

# Application diagrams

Floor by floor installation powered from SA501.



Floor by floor installation powered from external power supply on ground level.



MSV504 - 5x4 multiswitch, [page 12](#)

MSV508 - 5x8 multiswitch, [page 12](#)

MSV512 - 5x12 multiswitch, [page 12](#)

MSV516 - 5x16 multiswitch, [page 12](#)

PS182F - power supply, [page 37](#)

SA501 - launch amplifier, [page 15](#)

SA511 - line amplifier, [page 15](#)

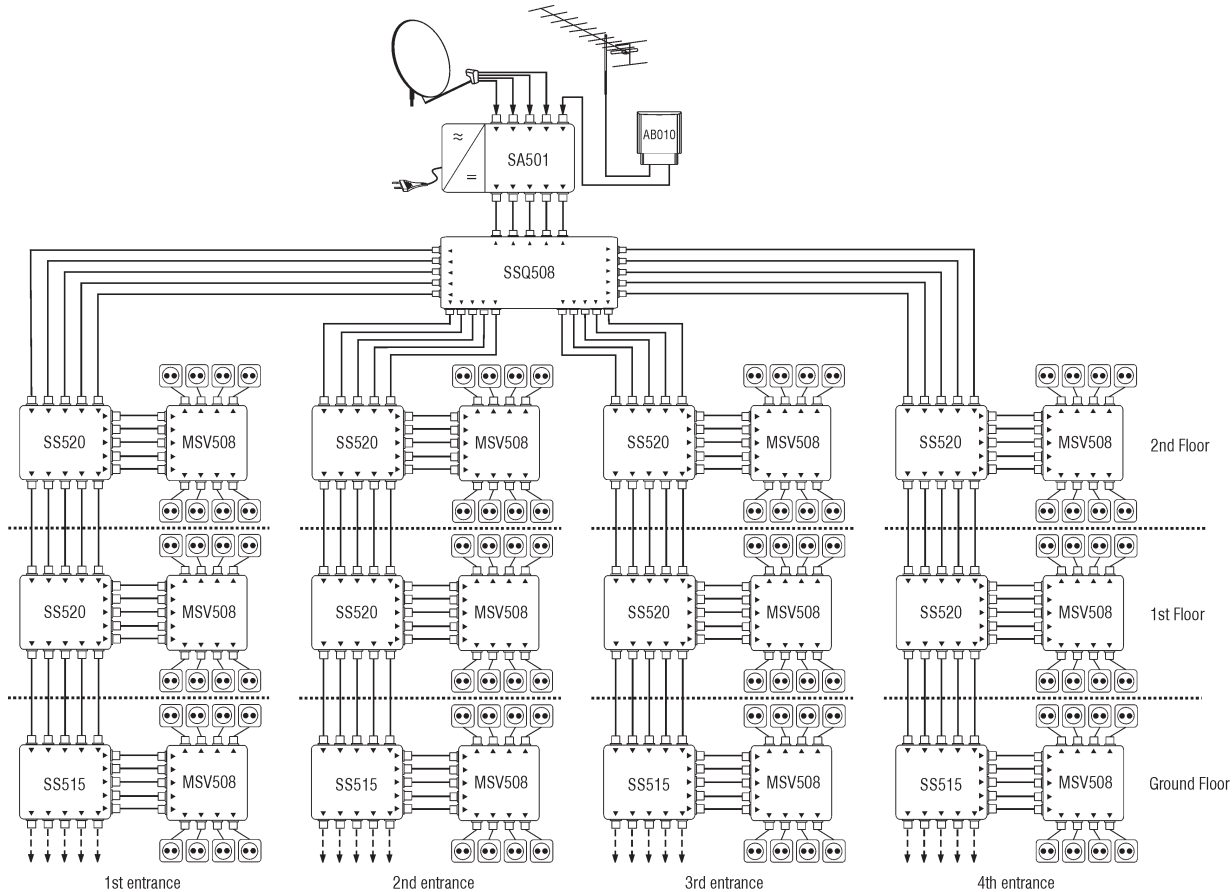
SS510 - 1 way 10 dB tap, [page 14](#)



## 5 cable system

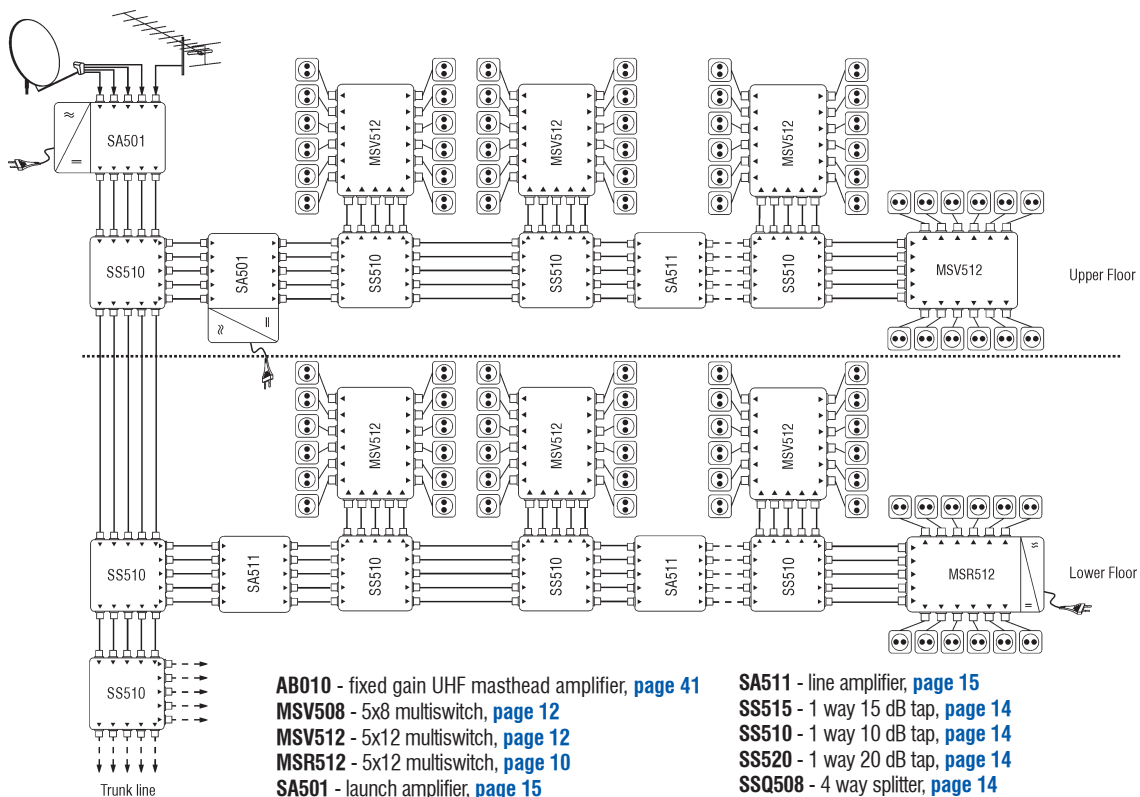
## Application diagrams

Four entrances house, 2 floors house installation. Whole system powered from SA501.



Long coridor house installation. Trunk line powered from SA501.

Upper coridor line powered from SA501. Lower coridor line powered from MSR512.



AB010 - fixed gain UHF masthead amplifier, [page 41](#)

MSV508 - 5x8 multiswitch, [page 12](#)

MSV512 - 5x12 multiswitch, [page 12](#)

MSR512 - 5x12 multiswitch, [page 10](#)

SA501 - launch amplifier, [page 15](#)

SA511 - line amplifier, [page 15](#)

SS515 - 1 way 15 dB tap, [page 14](#)

SS510 - 1 way 10 dB tap, [page 14](#)

SS520 - 1 way 20 dB tap, [page 14](#)

SSQ508 - 4 way splitter, [page 14](#)



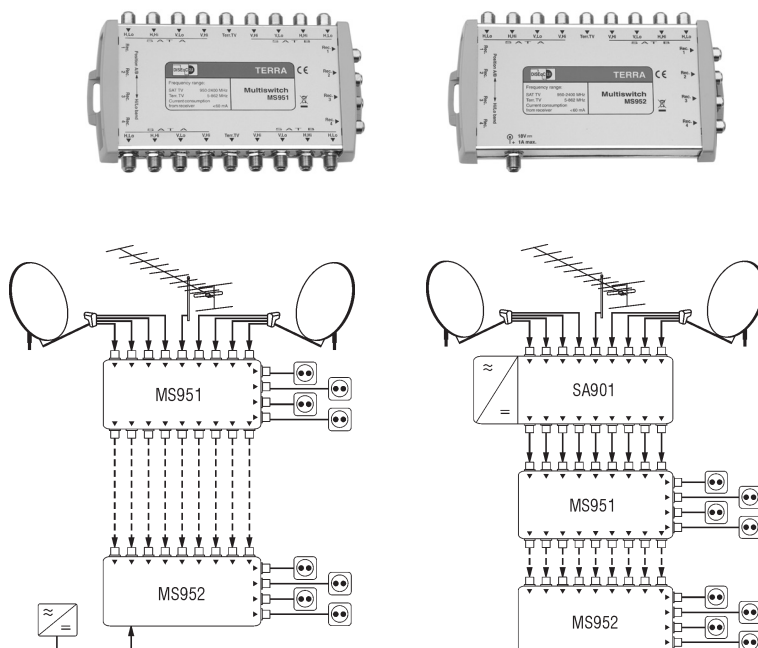
## 9 cable system

# 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; MS952 makes 14V from external 18V source
- passive terrestrial TV path 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 - PS182F (page 37)

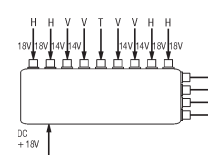
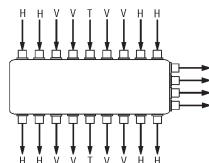
**MS951**  
through line 9x4 multiswitch

**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	through V lines	-	14 V & 0.5 A max.
18V power supply	through H lines	-	18 V & 1 A max.
Current consumption from receiver		< 60 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)		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**

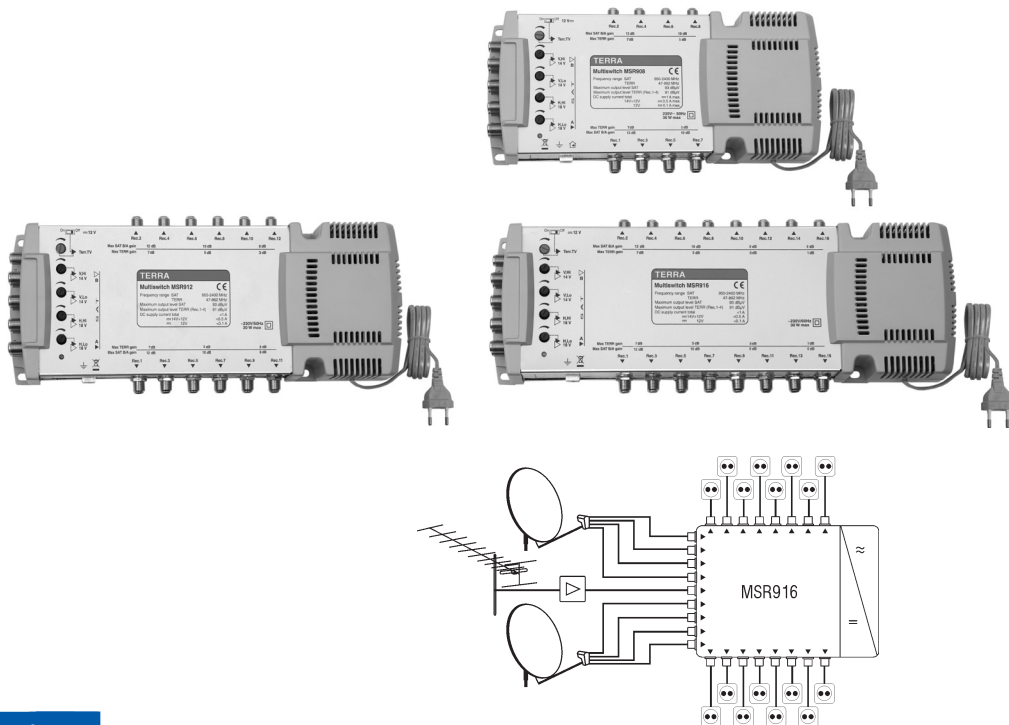
9x8 multiswitch

**MSR912**

9x12 multiswitch

**MSR916**

9x16 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		950-2400 MHz		
	Terr. TV		47-862 MHz		
Gain, typical (fixed slope pre-correction)	SAT	outputs 1-4	7 ÷ 12 dB		
	(SAT A	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 dB $\mu$ V		
Output level for Terr. TV (DIN45004B)		outputs 1-4	91 dB $\mu$ V	91 dB $\mu$ V	91 dB $\mu$ V
		outputs 5-8	88 dB $\mu$ V	88 dB $\mu$ V	88 dB $\mu$ V
		outputs 9-12	-	86 dB $\mu$ V	86 dB $\mu$ V
		outputs 13-16	-	-	83 dB $\mu$ V
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 max.		
Control signals			14/18 V, 0/22 kHz, tone burst or DiSEqC 2.0		
Power consumption*			230 V~ 50 Hz 4 W		
Operating temperature range			-20° ÷ + 50° C		
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

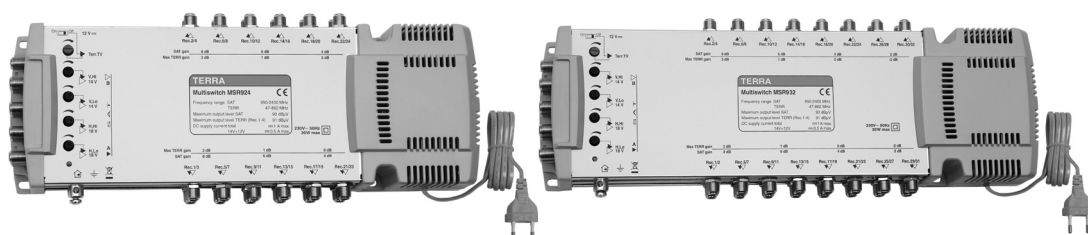




## 9 cable system

# 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

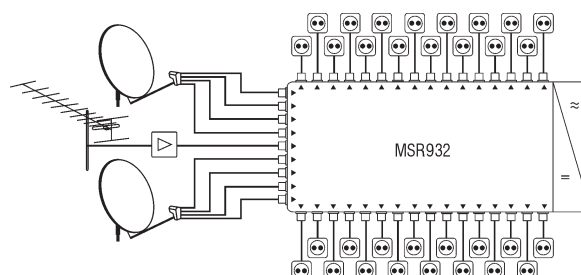


### MSR924

9x24 multiswitch

### MSR932

9x32 multiswitch



### Technical specifications

T Y P E			MSR924	MSR932
Ordering number			01775	01776
Number of outputs			24	32
Frequency range	SAT IF		950-2400 MHz	
	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 max.	
Control signals			14/18 V, 0/22 kHz, tone burst or DiSEqC 2.0	
Power consumption*			230 V~ 50 Hz 4 W	
Operating temperature range			-20° ÷ + 50° C	
Dimensions/Weight (packed)			310x128x53mm/1.1 kg	350x128x53 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 path 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 - PS182F (page 37)

### MSV908

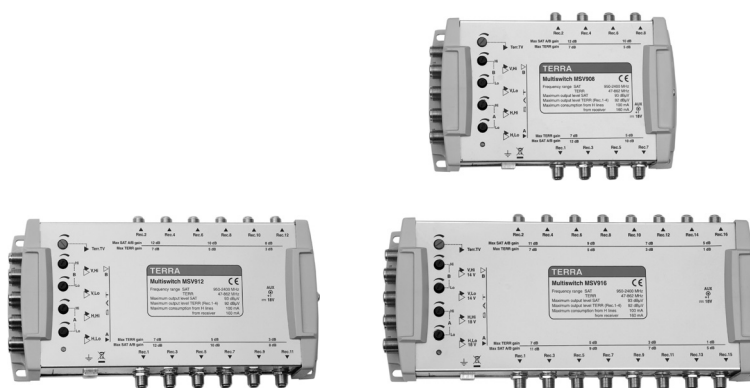
9x8 multiswitch

### MSV912

9x12 multiswitch

### MSV916

9x16 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 dB $\mu$ V		
Output level for Terr. TV (DIN45004B)		outputs 1-4	91 dB $\mu$ V		
		outputs 5-8	89 dB $\mu$ V		
		outputs 9-12	-	87 dB $\mu$ V	
		outputs 13-16	-	85 dB $\mu$ V	
SAT inputs decoupling			> 25 dB		
Outputs decoupling		SAT IF	> 25 dB		
		Terr. TV	> 30 dB		
Current consumption from receiver			< 160 mA max.		
Current consumption from inputs H lines or from external power supply			+12 V 100 mA ÷ +18 V 70 mA max.		
Control signals			14/18 V, 0/22 kHz, tone burst or DiSEqC 1.0, DiSEqC 2.0 or compatible versions		
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



## 9 cable system

# Remotely powered multiswitches

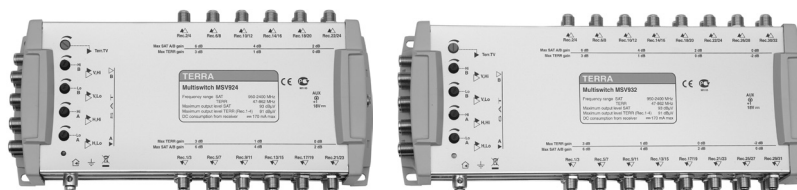
- for large installations of SAT IF distribution systems
- in line powering through H lines
- length of the subscriber line up to 80 metres
- 4 gain regulators\* for SAT IF and separate regulator for terrestrial TV
- optimized for operation with terrestrial digital/analog signals
- active terrestrial TV path 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 - PS182F (page 37)

### MSV924

9x24 multiswitch

### MSV932

9x32 multiswitch



### Technical specifications

T Y P E			MSV924	MSV932
Ordering number			01781	01782
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	2 ÷ 6 dB	
		outputs 9-16	1 ÷ 4 dB	
		outputs 17-24	0 ÷ 2 dB	
		outputs 25-32	-	-1 ÷ 0 dB
	Terr. TV	outputs 1-8	-1 ÷ 3 dB	
		outputs 9-16	-2 ÷ 1 dB	
		outputs 17-24	-3 ÷ 0 dB	
		outputs 25-32	-	-4 ÷ -2 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 1-8	91 dBµV	
		outputs 9-16	89 dBµV	
		outputs 17-24	87 dBµV	
		outputs 25-32	-	85 dBµV
SAT inputs decoupling			> 25 dB	
Outputs decoupling	SAT IF		> 25 dB	
	Terr. TV		> 30 dB	
Current consumption from receiver			< 170 mA max.	
Current consumption from inputs H lines or from external power supply			+ 12 V 100 mA ÷ + 18 V 70 mA max.	
Control signals			14/18 V, 0/22 kHz, tone burst or DiSEqC 1.0, DiSEqC 2.0 or compatible versions	
Operating temperature range			-20° ÷ + 50° C	
Dimensions/Weight (packed)			251x128x53 mm/0.9 kg	291x128x53 mm/1.04 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-MSR932, MSV908-MSV932 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.

<b>SS904</b> 2 way splitter	<b>SS915</b> 1 way 15 dB tap
<b>SS910</b> 1 way 10 dB tap	<b>SS920</b> 1 way 20 dB tap



Technical specifications		SS904	SS910	SS915	SS920
T Y P E		02710	02711	02712	02713
Ordering number	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		SSQ908
T Y P E		02714
Ordering number	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 pre-correction 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)

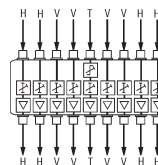
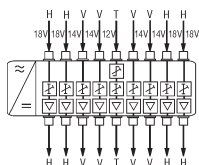
### SA911

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

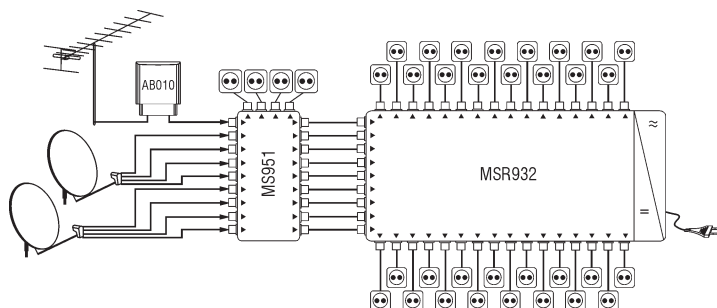
\*\* in line powering of SA911 through H lines



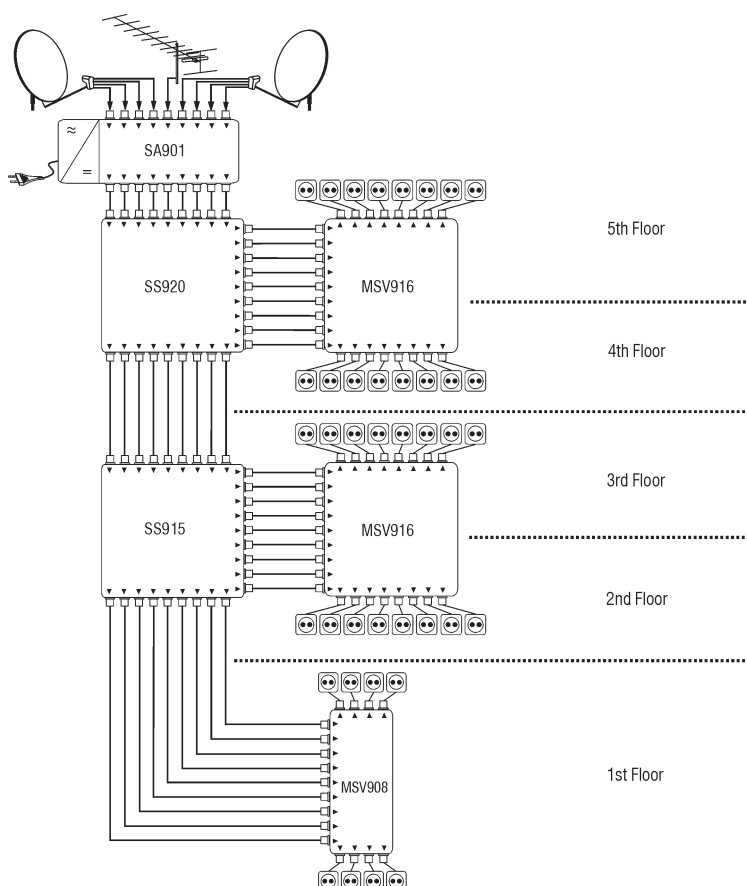
## 9 cable system

# Application diagrams

Radial installation for 36 subscribers.



Installation of single multiswitch for two floors. 8 subscribers on every floor.



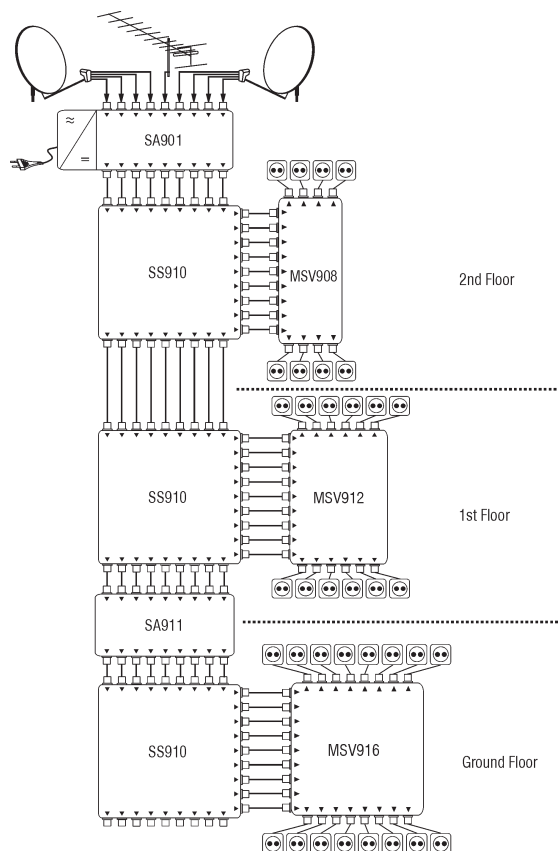
- AB010 - UHF masthead amplifier, [page 41](#)
- MS951 - through line 9x4 multiswitch, [page 19](#)
- MSV908 - 9x8 multiswitch, [page 22](#)
- MSV912 - 9x12 multiswitch, [page 22](#)
- MSV916 - 9x16 multiswitch, [page 22](#)
- MSR932 - 9x32 multiswitch, [page 21](#)
- SA901 - launch amplifier, [page 25](#)
- SS915 - 1 way 15 dB tap, [page 24](#)
- SS920 - 1 way 20 dB tap, [page 24](#)



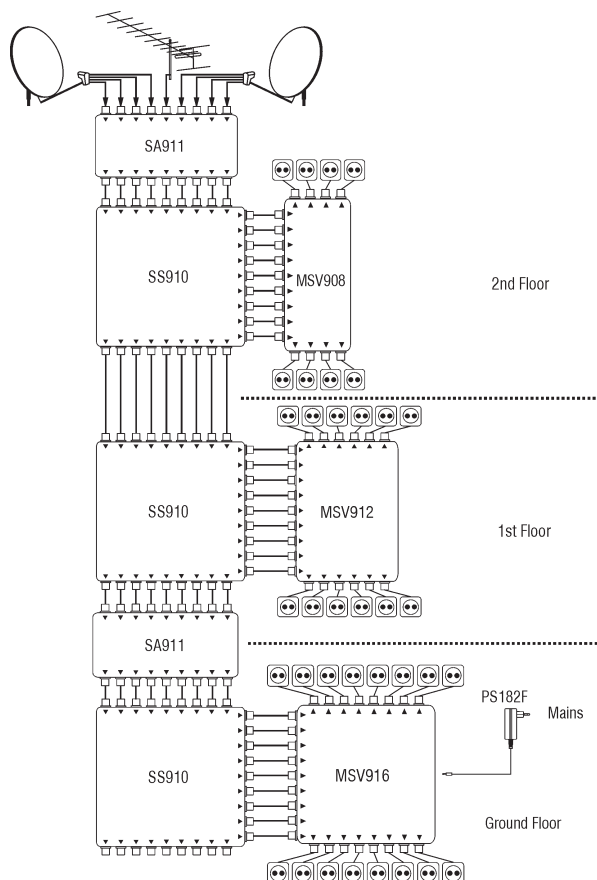
## 9 cable system

## Application diagrams

Floor by floor installation powered from SA901.



Floor by floor installation powered from external power supply on ground level.



MS951 - through line 9x4 multswitch, [page 19](#)

MSV908 - 9x8 multswitch, [page 22](#)

MSV912 - 9x12 multswitch, [page 22](#)

MSV916 - 9x16 multswitch, [page 22](#)

PS182F - power supply, [page 37](#)

SA901 - launch amplifier, [page 25](#)

SA911 - line amplifier, [page 25](#)

SS910 - 1 way 10 dB tap, [page 24](#)

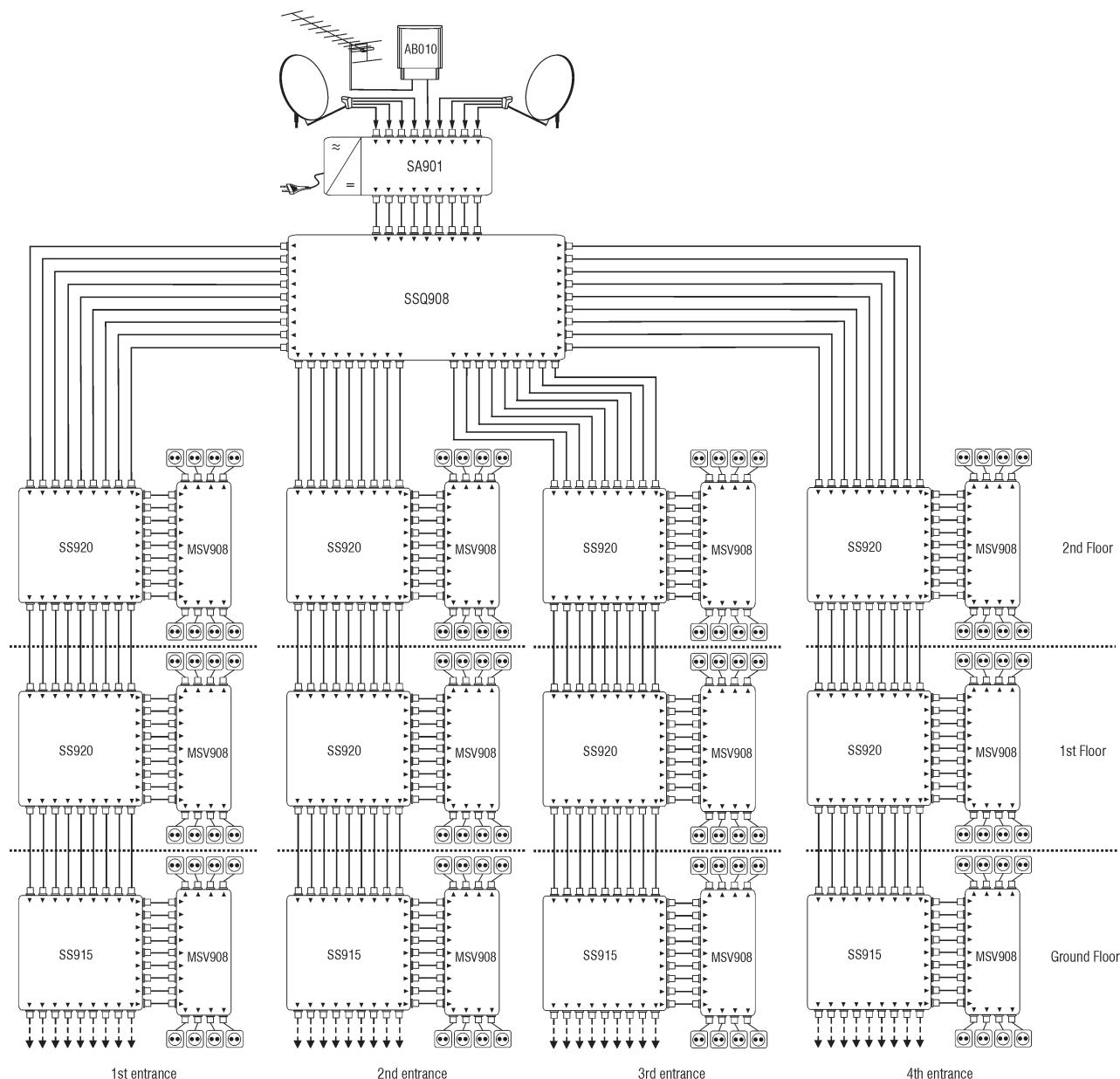




## 9 cable system

## Application diagrams

Four entrances house, 2 floors house installation. Whole system powered from SA901.



AB010 - UHF masthead amplifier, [page 41](#)

MSV908 - 5x8 multiswitch, [page 22](#)

SA901 - launch amplifier, [page 25](#)

SS915 - 1 way 15 dB tap, [page 24](#)

SS920 - 1 way 20 dB tap, [page 24](#)

SSQ908 - 4 way splitter, [page 24](#)

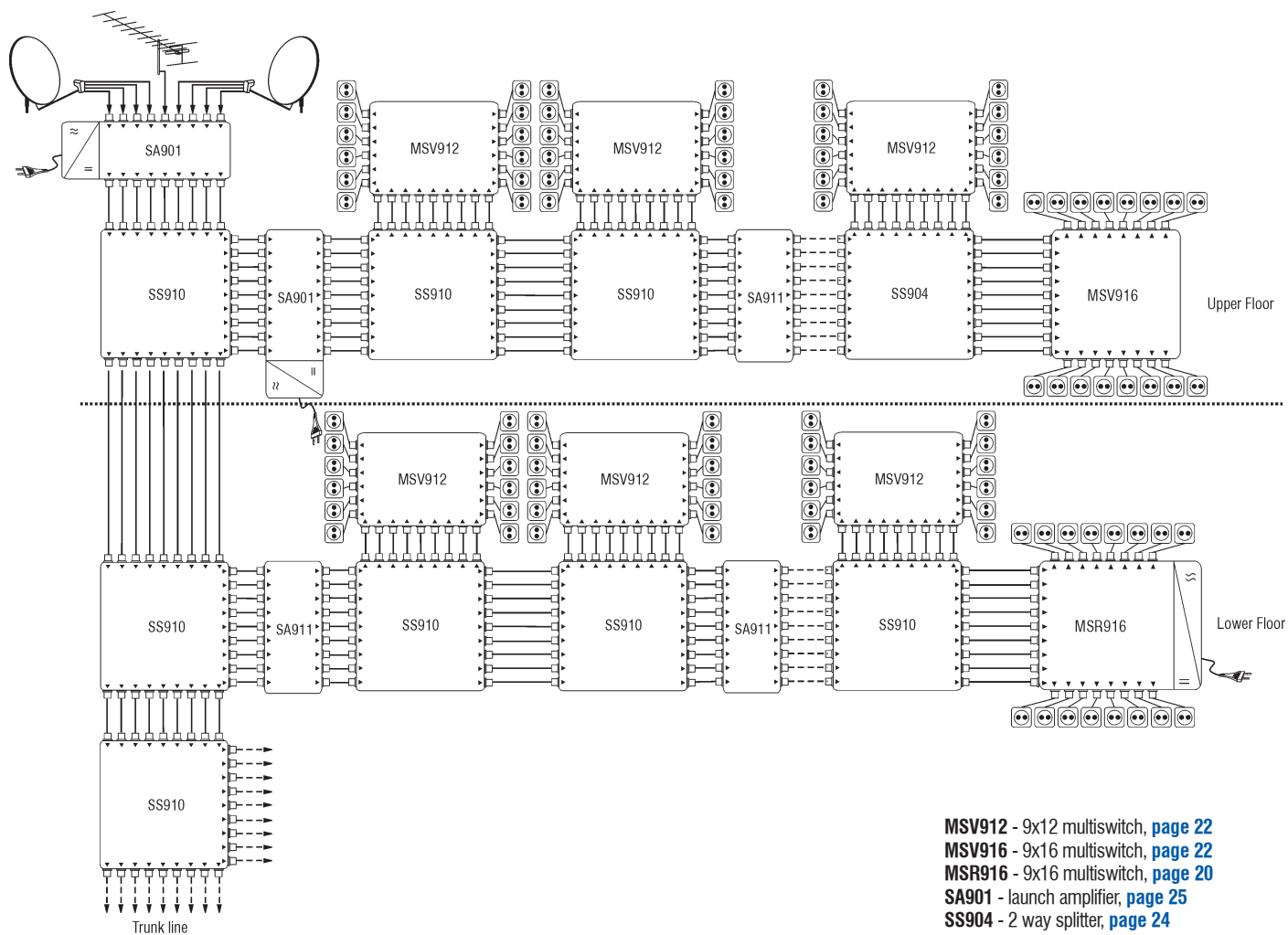


## 9 cable system

## Application diagrams

Long corridor house installation. Trunk line powered from SA901.

Upper coridor line powered from SA901. Lower coridor line powered from MSR916.



MSV912 - 9x12 multiswitch, [page 22](#)

MSV916 - 9x16 multiswitch, [page 22](#)

MSR916 - 9x16 multiswitch, [page 20](#)

SA901 - launch amplifier, [page 25](#)

SS904 - 2 way splitter, [page 24](#)

SS910 - 1 way 10 dB tap, [page 24](#)



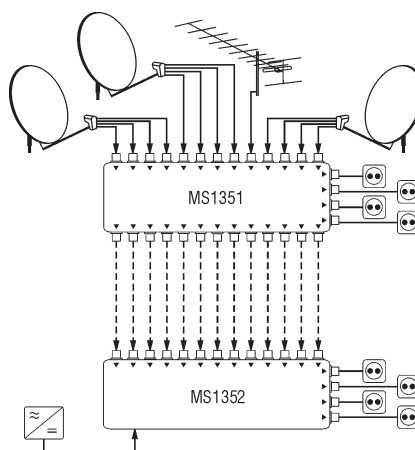
## 13 cable system

# 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; MS1352 makes 14V from external 18V source
- passive terrestrial TV path 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 - PS182F ([page 37](#))

**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 dB $\mu$ V	
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



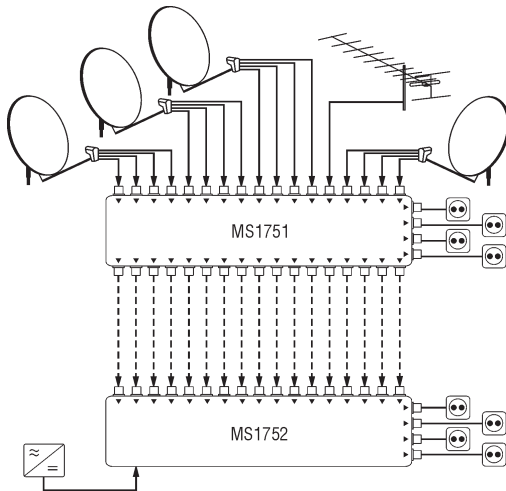
# 17 cable system

## 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; MS1752 makes 14V from external 18V source
- passive terrestrial TV path 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 - PS182F (page 37)

**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 dB $\mu$ V	
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/0.75 kg	232x106x53 mm/0.7 kg



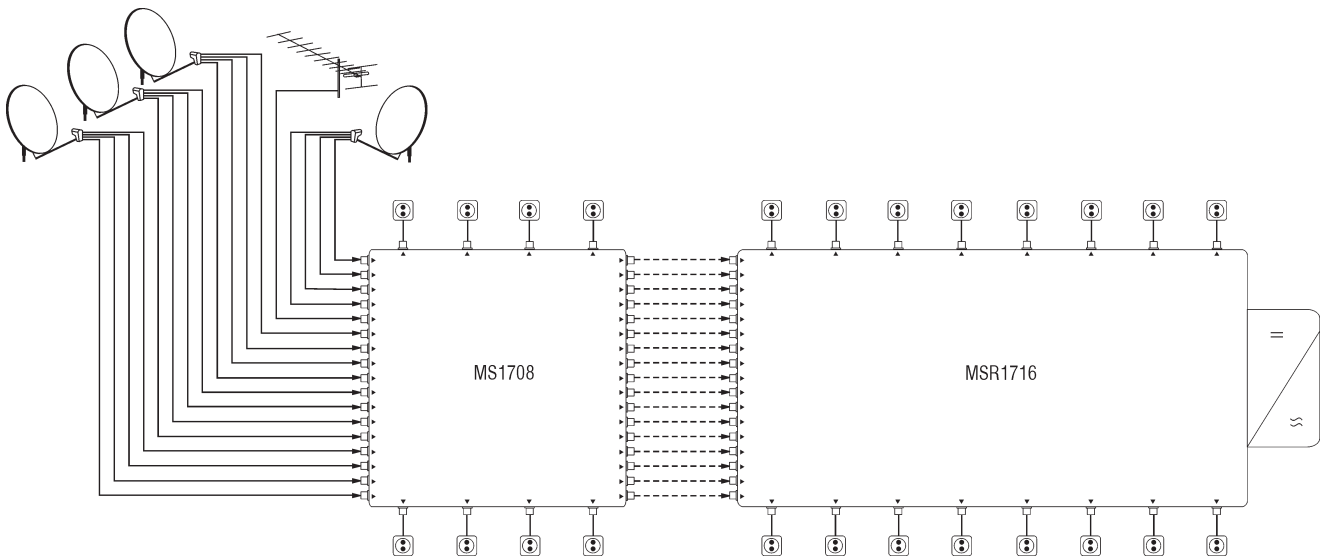
17 cable system  
Cascadable multiswitch

- 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
	adjustable 13 dB	outputs 5-8	-7 ÷ -1 dB
	Terr. TV	outputs 1-4	-8 ÷ -5 dB
	adjustable 20 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			> 40 dB
Through gain	SAT IF		-6 dB
	Terr. TV		6 ÷ 8 dB max.
DC pass through SAT input-output			1 A max. (through single line)
Current consumption from receiver			90 mA max.
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

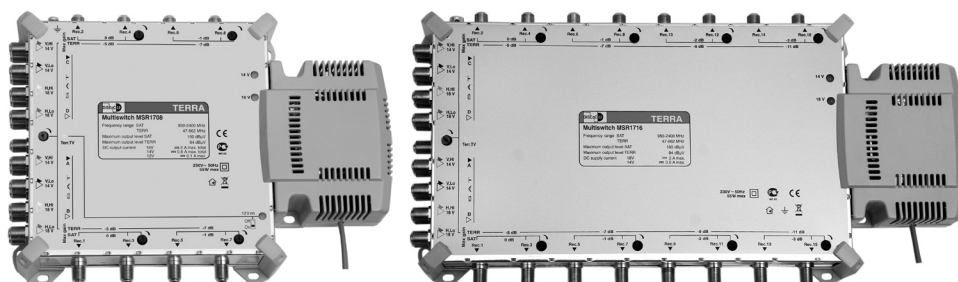
- star distribution system of 16 SAT IF polarities and terrestrial TV signal up to 16 users
- separate SAT IF gain adjustment for every pair of subscribers outputs
- built-in power supply with possibility of remote DC feeding for LNBs and other network components including amplifiers inside terrestrial TV path
- 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	outputs 1-4	-6 ÷ 0 dB			
	adjustable	outputs 5-8	-7 ÷ -1 dB			
	13 dB	outputs 9-12	-	-8 ÷ -2 dB		
		outputs 13-16	-	-9 ÷ -3 dB		
	Terr. TV	outputs 1-4	-8 ÷ -5 dB			
	adjustable	outputs 5-8	-9 ÷ -7 dB			
	17 dB	outputs 9-12	-	-10 ÷ -9 dB		
		outputs 13-16	-	-11 ÷ -11 dB		
Output level for SAT IF (IMD3=35 dB)			100 dB $\mu$ V			
Output level for Terr. TV		outputs 1-4	94 dB $\mu$ V			
(DIN45004B)		outputs 5-8	92 dB $\mu$ V			
		outputs 9-12	-	90 dB $\mu$ V		
		outputs 13-16	-	88 dB $\mu$ V		
SAT inputs decoupling			> 25 dB			
Outputs decoupling			> 40 dB			
Rejection, SAT/Terr. TV			≥ 30 dB			
Output voltage through RF inputs			H/Lo, H/Hi - 18 V; V/Lo, V/Hi - 14 V			
DC supply current	+18V		2 A max. total			
through RF inputs	+14V		0.6 A max. total			
	+12V		0.1 A max.			
Current consumption from receiver			90 mA max.			
Control signals			DiSEqC 1.0 , DiSEqC 2.0 or compatible versions			
Power consumption**			230 V~ 50 Hz 3.5 W			
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



## System accessories

# Splitband 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
- die-cast housing

### SA100

SAT IF amplifier with passive terrestrial TV path

### HSA100

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

### HSA100R30

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

### HSA100R65

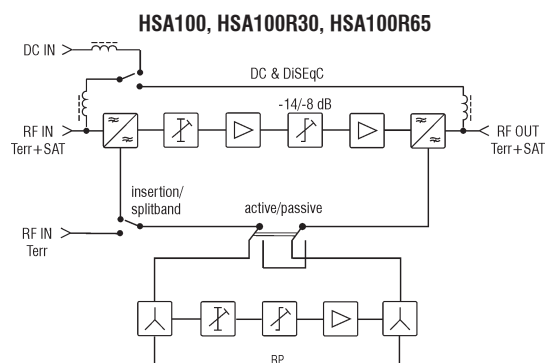
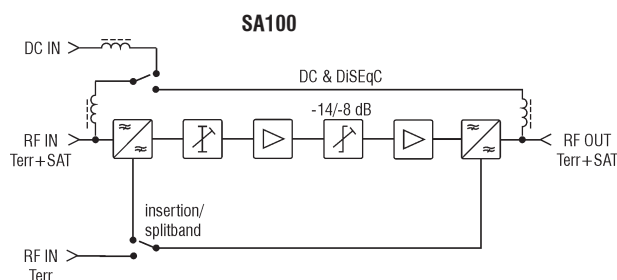
SAT IF amplifier with active/passive terrestrial TV path and 65 MHz passive return path, switchable



#### 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 (pre-correction)			
	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 (2 equal carriers)			
Maximal output level IMD3=60 dB (DIN45004B)	Terr. TV	-	115 dBμV		
Noise figure	SAT IF	-	8 dB		
	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







System accessories

Splitband amplifiers



- for amplification signals of SAT and terrestrial TV bands
- possibility of DC and DiSEqC signals pass
- built-in separate gain regulators for every band
- die-cast housing inside plastic case

HSA001

SAT IF amplifier with active terrestrial TV path,  
without return path

HSA001R3

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

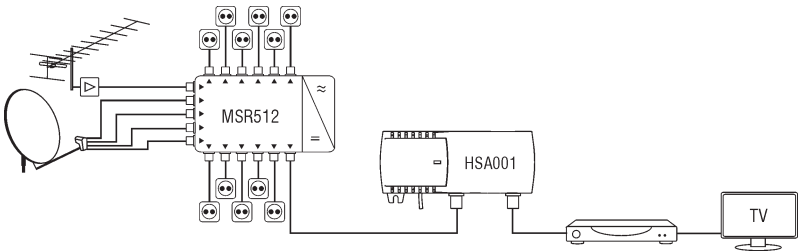
HSA001R6

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

CABRIOLINE



Technical specifications		T Y P E		
		HSA001	HSA001R3	HSA001R6
Ordering number		01786	01787	01788
Forward path				
Frequency range	SAT IF	950- 2400 MHz		
	Terr. TV	47-862 MHz		87-862 MHz
Gain	SAT IF	18-25 dB (pre-correction)		
	Terr. TV	14-18 dB (pre-correction)		
Gain adjustment	SAT IF	10 dB		
	Terr. TV	15 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	115 dBμV (2 equal carriers)		
Maximal output level IMD3=60 dB (DIN45004B)	Terr. TV	110 dBμV		
DC pass		400 mA max.		
Return path				
Frequency range		-	5 - 30 MHz	5-65 MHz
Loss		-		-4 dB
Return loss		-		> 14 dB
General				
Mains power consumption		230 V~ 50 Hz 4 W		
Temperature range		-20° ÷ +50° C		
Dimensions		133x73x39 mm/0.36 kg		





## System accessories

### Masthead products

#### Line amplifier SA002

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

#### Diplexer DC010

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

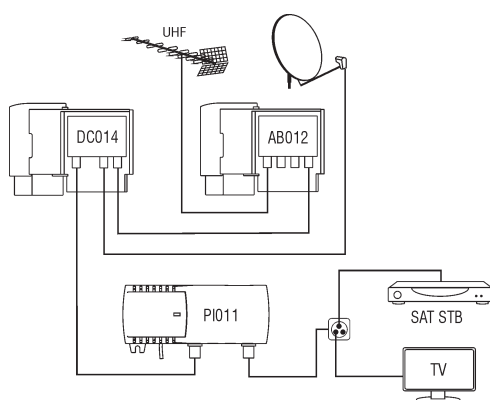
#### Diplexer DC014

- for combining of SAT IF and terrestrial TV signals with built in automatic DC switch
- allows to feed terrestrial TV preamplifier from power supply PI011 (page 43) when SAT STB is switched off
- built-in short circuit proof for terrestrial TV
- DC and tone pass through to SAT TV input
- for outdoor mounting



#### Technical specifications

T Y P E	SA002	DC010	DC014
Ordering number	01791	02556	02557
Frequency range	950-2400 MHz	47-862 MHz/950-2400 MHz	
Attenuation in the stop-band	18 dB	25 dB	
Gain Terr/SAT	- / 6.5 ÷ 10 dB	- 2 / -2.5 dB	
Noise figure, typical	≤ 7 dB	-	-
Maximal output level IMD3=35 dB (EN50083-3)	104 dBμV	-	-
DC pass Terr/SAT	- / 0.5 A max.		0.1 / 0.4 A max.
Current consumption	+12 ÷ +18 V 35 mA	-	+10 ÷ +18 V 20 mA
Dimensions/Weight (packed)	89x107x43mm/0.20 kg	89x107x43mm/0.18 kg	



Dual DC feeding for antennas equipment:

1. SAT STB is switched on -  
for LNB & terrestrial preamplifier DC feeding from STB
2. SAT STB is switched off -  
DC feeding only for terrestrial preamplifier from power supply PI011, [page 43](#)

#### DiSEqC controlled switches

- metal housing inside 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	
Current consumption / Through pass	10 mA / 0.5 A max.	
Operating temperature range	-20° ÷ + 50° C	
Dimensions/Weight (packed)	97x101x23 mm/0.11 kg	97x101x23 mm/0.15 kg



## 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

### Polarity/band switch PI010

- for insertion 14 V/18 V / 0/22 kHz control signal
- powered from line or external 18 V power supply



#### Technical specifications

T Y P E	SA001	DC009	PI010
Ordering number	00701	01543	01789
Frequency range	950-2400 MHz	47-862 MHz/950-2400 MHz	950-2400 MHz
Attenuation in the stop-band	-	20 dB	-
Gain	17-22 dB	- 1.5 dB	- 1 dB
Noise figure, typical	≤ 9 dB	-	-
Maximal output level IMD3=35 dB (EN50083-3)	104 dBμV	-	-
DC pass	-	-	0.3 A max.
Current consumption	+12 ÷ +18 V 60 mA	-	14 V/18 V 30 mA
Dimensions/Weight (packed)	79x40x24mm/0.06 kg	53x64x24mm/0.07 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		
Current consumption	+12 ÷ +18 V 20 mA		
Dimensions/Weight (packed)	79x40x24mm/0.07 kg	79x64x24mm/0.07 kg	79x64x24mm/0.08 kg

### Power supply

- high efficiency 18 V & 2 A switch-mode power supply



#### Technical specifications

T Y P E	PS182F
Ordering number	00626
DC output	+18 V 2 A
Output DC connector	F male
Mains voltage	180 V ÷ 240 V ~ 50 Hz
Dimensions	78x130x33 mm



### Power inserter

- F female, 5-2400 MHz
  - I max. 1 A
- Ordering number 00797



### Link

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

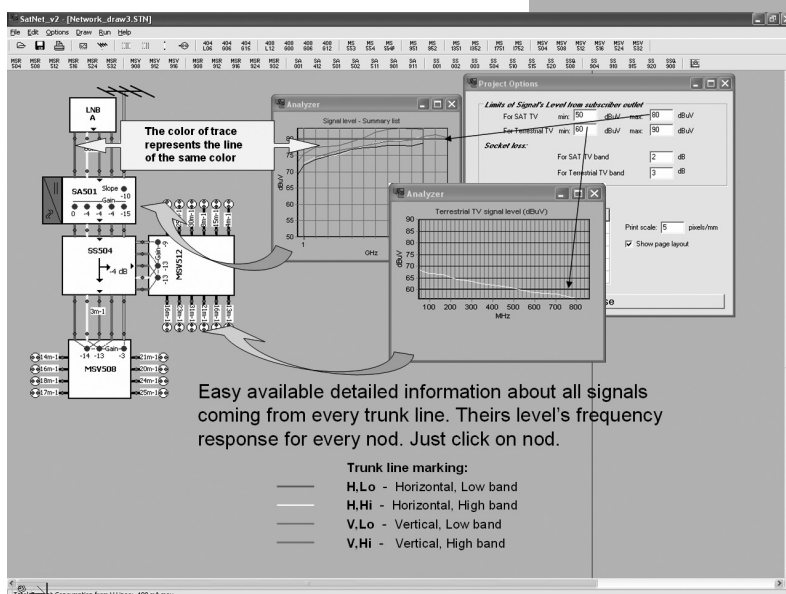
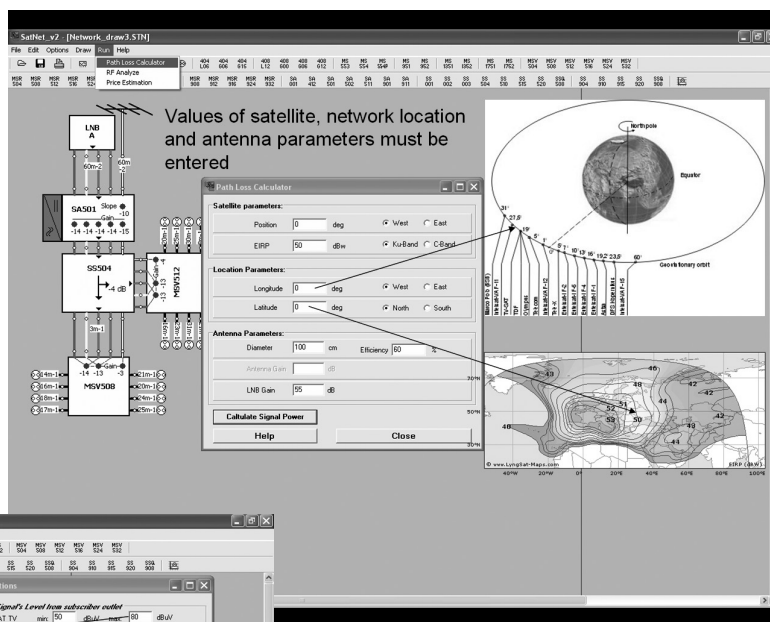


# System accessories

## Simulation Software SatNet

Freeware software for simulation of SAT IF distribution networks the latest version could be downloaded from [www.terraelectronics.com](http://www.terraelectronics.com), section **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
- have a useful tools for automatic positioning of controls and navigating inside big network
- easy to learn - short animated tutorial available



1. Allowed complexity of network:	
- SAT IF trunk lines	up to 16 (4 quatro LNB)
- terrestrial path	1
- subscribers points	unlimited
2. Results	<ul style="list-style-type: none"> <li>- comprehensive information about signal's level on every nod</li> <li>- indication of overloaded components</li> <li>- indication of nodes with lacking signal strength</li> <li>- total consumed current</li> <li>- report for network's price estimation</li> </ul>
3. Memory occupied by software	12 MB (zipped)
4. Minimum hardware requirements	<ul style="list-style-type: none"> <li>- 1 GHz CPU</li> <li>- VGA 768 by 1024 pixels</li> <li>- Windows 98/Windows XP or later version</li> </ul>