

Smart Antenna Simulator SAS-4/4-LAN

MTS-No.: 60.90.0310-01

Application

With the MTS SAS-4/4-LAN you can emulate the air interface of a 4-section smart antenna. To avoid the influence from the live net, the signals are connected with cables directly from the different signal sources, as for example WiMAX base stations or signal generators etc. over the MTS SAS-4/4-LAN to the mobile devices.

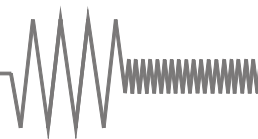
Description

The SAS-4/4-LAN emulates a 4 section smart antenna for 3 adjustable receiving directions by programmable delay lines. It can be used in the range from 2000 MHz to 4000 MHz. The SAS gives the opportunity to control not only the signal level of the antenna but also the beam characteristics. Due to this it gives the user the possibility to adjust the whole signal power to one point in the emulated scenario.



Characteristics

- ▶ Frequency range from 2000 MHz to 4000 MHz
- ▶ 3 different receiving angles can be adjusted to emulate 3 mobile stations at different 'places' at the same time. The calculation of the delay times assumes a 4-section antenna-line array with $\lambda/2$ distance of the partial antennas and depends on the adjusted frequency and the max. delay time
- ▶ The alternative adjustment of the 3x4 delay times from 0 to 600 ps directly with 5 ps step size gives the opportunity to emulate also other antenna configurations
- ▶ 2 additional outputs with a fix 0° receiving direction
- ▶ Adjustable attenuation from 0 to 93 dB with 1 dB steps
- ▶ Control by LAN-interface
- ▶ Input power up to 24 dBm cw at 25° C
- ▶ High switching reliability
- ▶ High quality materials and components for extended durability
- ▶ Smart Antenna Simulators can be designed according to customers individual requirements



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Configuration:

4 inputs and 5 outputs

Technical data:

1 RF-specifications:

1.1 Impedance	50 Ω
1.2 Input power	+26 dBm max. @ inputs +24 dBm max. @ outputs
1.3 Frequency range	2000 MHz – 4000 MHz
1.4 RF-connections	N female
1.5 VSWR In	2 : 1 max.
1.6 VSWR Out	2 : 1 max.
1.7 Insertion loss	48 dB max. @ 0 dB attenuation
1.8 Linearity regarding insertion loss	$\pm 4,5$ dB
1.9 Attenuation	0 dB – 93 dB in 1 dB steps
1.10 Gradation	1 dB / 2 dB / 4 dB / 8 dB / 16 dB / 30 dB / 32 dB
1.11 Setting accuracy of attenuation	1 dB $\pm 0,4$ dB 2 dB $\pm 0,8$ dB 3 dB - 9 dB $\pm 1,0$ dB 10 dB - 29 dB $\pm 1,5$ dB 30 dB - 79 dB $\pm 3,0$ dB 80 dB - 89 dB -3,0 dB / +6,0 dB 90 dB - 93 dB $\pm 6,0$ dB
1.12 Adjustable delay Δt Receiving direction α (alternatively to the adjustment of the delay Δt)	600 ps max. in 5 ps steps -90° to +90° deflection for the outputs 1, 4 and 5 depending of the emulated antenna section distances ($\lambda/2$ assumed) and the adjusted frequency (f), only possible within the available delay time Δt
1.13 Setting accuracy of delay	± 10 ps approximately
1.14 Differential loss between arbitrary delay states	$\pm 0,3$ dB from 2 GHz to 3 GHz $\pm 0,5$ dB from 3 GHz to 4 GHz

2 Connections:

2.1 Front side	Power supply switch with integrated control lamp RF-connections
2.2 Rear side	Power supply Control card Appliance plug with the integrated fuses F1 and F2

Ground connector
Control interfaces

3 General specifications:

3.1 Power supply	100 V – 240 V 50 Hz / 60 Hz
3.2 Internal voltage	5 V DC
3.3 Control displays	Control lamp in power switch Control LED for 5 V DC at the power supply unit
3.4 Control interfaces	LAN RS-232 (only for configuration of the LAN-interface)
3.5 Power consumption primarily	0,04 A typ. @ 230 V
3.6 Voltage supply	Standard rubber connector
3.7 Operating temperature	+10 °C – +30 °C
3.8 Reference temperature for specifications	+25 °C
3.9 Dimensions	19"-unit x 6 HU x 370 mm (dimensions without handles and connections)
3.10 Colour	Front side colourless anodized Rear side colourless anodized
3.11 Weight	15 kg

4 Delivered parts:

SAS-4/4-LAN
Power cable
Operating manual (on CD)

5 Comments:

Warranty 12 months
RoHS-compliant No

6 Recommended accessories:

RF-cables
Hybrid couplers
Splitters (combiners)

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Views:

