

Measuring System 3000

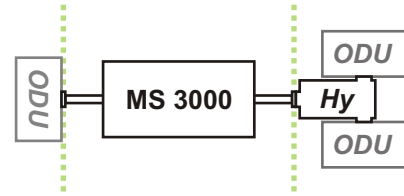
Introduction

MS 3000 is a professional microwave measuring system for testing a complete microwave link in laboratory conditions.

Besides testing under normal conditions, special investigations on effects of fading can also be performed, while transmission spectrum may be monitored by analyzers via coaxial probes (optional).

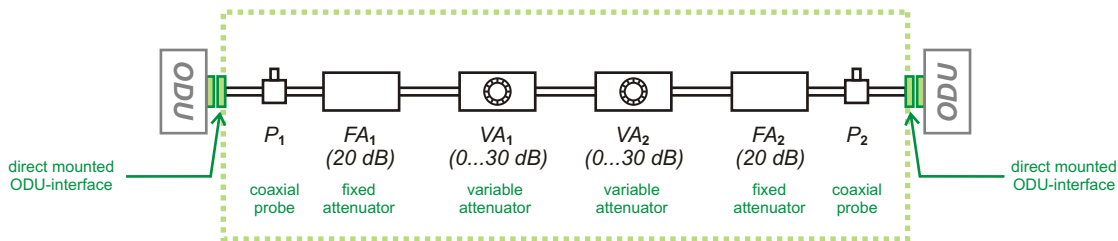
MS 3000 measuring system connects directly to out-door radio units (ODUs) and/or hybrid couplers via direct mounted ODU-interface.

MS 3000 series measuring systems are available in both single polarized (MS 3100) and dual polarized (MS 3200) versions.



Measuring System 3000 with ODU (left) and with hybrid coupler and ODUs (right)

System Description – Single Polarized System (MS 3100)



Block Scheme of Measuring System 3100 with Typical Attenuation Values and Coaxial Probes

The two main connection interfaces of MS 3100 are the direct mounted ODU-interfaces where outdoor radio units or hybrid couplers can be directly mounted as simply as to a direct mounted antenna.

Fixed attenuators ($FA_1, FA_2, 2 \times 20$ dB) protects the Rx modules of the ODUs from high power levels, while variable attenuators ($VA_1, VA_2, 2 \times 0 \dots 30$ dB) – together with the fixed ones – model free-space attenuation and fading in the dynamic range of 40 to 100 dB (different dynamic range is available upon request). Small attenuation values may be used for testing normal operation, while fading may also be simulated by increasing the overall attenuation of the fine-tunable variable attenuators.

The spectrum of the microwave link may be monitored via coaxial probes (P_1 and P_2 , optional).

Besides testing single-ODU (1+0) link configurations, one may connect direct mounted hybrid combiners to the ODU-interface, and investigate (1+1) hot standby systems.

Specifications – Single Polarized System (MS 3100)

Type	Frequency Range	Attenuators*	Coaxial Probes**
MS 3100 7185	7.125–8.500 GHz	2×20 + 2×0...30 dB	optional
MS 3100 100110	10.100–11.700 GHz	2×20 + 2×0...30 dB	optional
MS 3100 130150	12.750–15.350 GHz	2×20 + 2×0...30 dB	optional
MS 3100 180230	17.700–23.600 GHz	2×20 + 2×0...30 dB	optional
MS 3100 260	24.500–26.500 GHz	2×20 + 2×0...30 dB	optional
MS 3100 280	27.500–29.500 GHz	2×20 + 2×0...30 dB	optional
MS 3100 320380	31.000–39.500 GHz	2×20 + 2×0...30 dB	optional
MS 3100 420	40.500–43.500 GHz	2×20 + 2×0...30 dB	optional
MS 3100 800	71.000–86.000 GHz	2×20 + 2×0...30 dB	n.a.



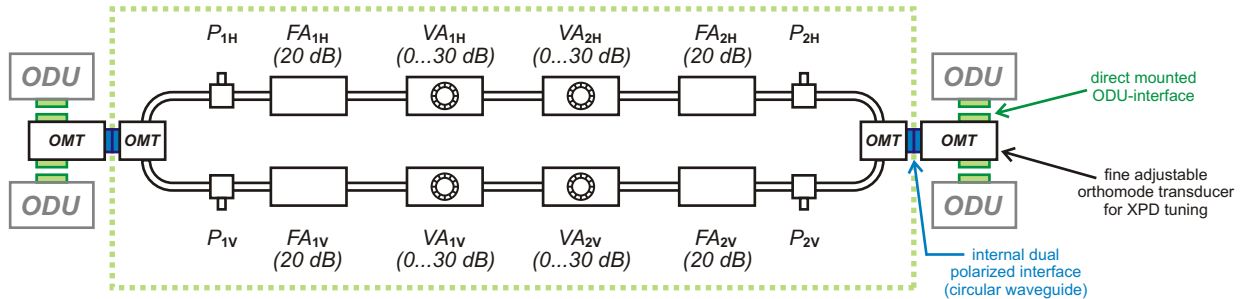
MS 3100 180230

* Different attenuators are available upon request.

** Coaxial probe types: 3.5 mm (SMA), 2.92 mm (K), 2.4 mm or other upon request.

Measuring System 3000

System Description – Dual Polarized System (MS 3200)



Block Scheme of Measuring System 3200 with Typical Attenuation Values and Coaxial Probes

Similarly to MS 3100, the main connection interfaces of MS 3200 are the direct mounted ODU-interfaces where outdoor radio units can be directly mounted. However, there is a significant difference: MS 3200 is equipped with dual polarized interface, therefore, four radio units can be connected by default (two on each side).

The signals of the radio units are combined together in a circular waveguide and immediately separated to two rectangular waveguides using orthomode transducers, giving the possibility to fine-tune the cross-polar discrimination of the microwave link.

The attenuation scheme of both the horizontal and vertical branches are the same as for MS 3100, the attenuators can be adjusted independently.



MS 3200 130

Specifications – Dual Polarized System (MS 3200)

Type	Frequency Range	Attenuators*	Coaxial Probes**
MS 3200 7185	7.125–8.500 GHz	2×20 + 2×0...30 dB	optional
MS 3200 100110	10.100–11.700 GHz	2×20 + 2×0...30 dB	optional
MS 3200 130	12.750–13.250 GHz	2×20 + 2×0...30 dB	optional
MS 3200 150	14.200–15.350 GHz	2×20 + 2×0...30 dB	optional
MS 3200 180	17.700–19.700 GHz	2×20 + 2×0...30 dB	optional
MS 3200 230	21.200–23.600 GHz	2×20 + 2×0...30 dB	optional
MS 3200 260	24.500–26.500 GHz	2×20 + 2×0...30 dB	optional
MS 3200 280	27.500–29.500 GHz	2×20 + 2×0...30 dB	optional
MS 3200 320	31.000–33.400 GHz	2×20 + 2×0...30 dB	optional
MS 3200 380	37.000–39.500 GHz	2×20 + 2×0...30 dB	optional
MS 3200 420	40.500–43.500 GHz	2×20 + 2×0...30 dB	optional
MS 3200 800	71.000–86.000 GHz	2×20 + 2×0...30 dB	n.a.



fine XPD adjustment

* Different attenuators are available upon request.

** Coaxial probe types: 3.5 mm (SMA), 2.92 mm (K), 2.4 mm or other upon request.