

**Table 1**

<b>Type</b>		<b>HA 113U</b>	<b>HD113U</b>
Frequency range	forward path*	47/75/87 - 862 MHz	
	return path*	5-30/55/65 MHz	
Gain	forward path**	34 dB	
	return path with pd 02-xx/pr 02-xx	20/-1.5 dB	
Frequency response**		± 0.5 dB	
Gain adjustment		20 dB	
Slope adjustment, typical		18 dB	
Maximal output level IMD3=60 dB (DIN45004B)		117 dB $\mu$ V	
Maximal output level IMD3=60 dB (EN50083-3)		111 dB $\mu$ V	
Maximal output level IMD2=60 dB (EN50083-3)		114 dB $\mu$ V	
Input and output return loss***		> 14 dB	
Noise figure		< 6 dB	
Test point attenuation		- 30 dB	
Power consumption	mains powering	~198-250V/50 Hz/7 VA	-
	remote powering	-	~24-65 V/50 Hz/5 VA
AC pass current (through IN and OUT, switchable)		-	0.4 A max.
Operating temperature range		-20 °C ÷ +50 °C	
Dimensions/Weight (packed)		107x148x53 mm/0.66 kg	107x148x53 mm/0.43 kg

\* depends on return path modules: passive pd 02-xx or active pr 02-xx

\*\* for amplifiers with return path - ± 0.7 dB

\*\*\* when  $f \geq 40$  MHz, return loss  $\geq 14$  dB (40 MHz) - 1.5 dB/octave, but not less 10 dB

## Technical characteristics

**Table 2**

Type		HA 203U	HD203U
Frequency range	forward path*	47/75/87 - 862 MHz	
	return path*	5-30/55/65 MHz	
Gain	forward path**	34 dB	
	return path with pd 02-xx/pr 02-xx	20/-1.5 dB	
Frequency response***		± 0.5 dB	
Gain adjustment		20 dB	
Slope adjustment, typical		18 dB	
Maximal output level IMD3=60 dB (DIN45004B)		120 dB $\mu$ V	
Maximal output level IMD3=60 dB (EN50083-3)		114 dB $\mu$ V	
Maximal output level IMD2=60 dB (EN50083-3)		117 dB $\mu$ V	
Input and output return loss****		> 14 dB	
Noise figure		< 7 dB	
Test point attenuation		- 30 dB	
Power consumption	mains powering	~198-250 V/50 Hz/11 VA	-
	remote powering	-	~24-65 V/50 Hz/7 VA
AC pass current (through IN and OUT, switchable)		-	0.8 A max.
Operating temperature range		-20 °C + +50 °C	
Dimensions/Weight		243x125x53 mm/0.98 kg	243x125x53 mm/0.7 kg

\* depends on return path modules: passive pd 02-xx or active pr 02-xx

\*\* with link 0 dB instead of interstage attenuator JXP-xx; recommended maximal value of the attenuator -6 dB

\*\*\* for amplifiers with return path - ± 0.7 dB

\*\*\*\*when  $f \geq 40$  MHz, return loss  $\geq 14$  dB (40 MHz) - 1.5 dB/octave, but not less 10 dB

## Plug-in module

**Table 3. Plug-in interstage attenuator**

Type	JXP-6
Frequency range	5-862 MHz
Attenuation	6 dB