



Phase Comparator-Analyzer

VCH-325 / VCH-325A



VCH-325 Phase comparator-analyser is intended for phase and frequency instability and power spectral density measurements of precise signals in the frequency range from 1 MHz up to 100 MHz. The VCH-325 Phase comparator-analyser has two identical measuring channels (three inputs) and uses correlation processing providing extremely low measurement error and the frequency stability calculation of each input signals.

The Phase comparator-analyser **VCH-325A** has the additional built-in quartz oscillators with frequencies of 4.8MHz and 5.3MHz, designed for use as reference signal sources for accurate Phase Noise measurements.

Key Applications

- ◆ Monitoring of the metrological characteristics in the production of precision signal sources, including crystal oscillators and quantum frequency standards;
- ◆ Time and frequency references;

Key Features

- ◆ VCH-325A has built-in quartz oscillators with frequencies of 4.8MHz and 5.3MHz, designed for use as reference signal sources.
- ◆ Input signals: sine-wave 1MHz up to 100 MHz (permit different frequencies in all three channels) with level (0.6 - 1.2) Vrms; impedance: 50 Ω;
- ◆ Noise pass band: 0.5, 1.5, 5, 50, 500 Hz.
- ◆ ADEV Measurement range: 0.01 s to 1 Day;
- ◆ Phase noise spectrum measurement range: 0.001Hz to 100 kHz.

VCH-325 Specifications

Inputs :-

Wave-form	Qty.	Signal Level	Type / Load
1MHz - 100 MHz (Sine)	3	0.6 - 1.2 V _{RMS} (8dBm - 15dBm)	N-Type(F)/50 Ω
Noise Pass band:	0.5, 1.5, 5, 50, 500 Hz.		
Avg. Time:	0.001 s to 1 day		
Phase Noise Range:	0.001 Hz to 100 KHz.		
VCH-325A:	In-built 4.8MHz & 5.3MHz Oscillator		

Allan Variance (noise floor)

Pass band	Avg. time, τ	Specifications		Typical	
		Ref1/DUT & Ref2/DUT	Ref1/DUT & 3 输入 - DUT	Ref1/DUT & Ref2/DUT	Ref1/DUT & 3 输入 - DUT
50 Hz	0.01 s	5x10 ⁻¹²	3x10 ⁻¹³	2.5x10 ⁻¹²	3x10 ⁻¹⁴
5Hz	0.1 s	6x10 ⁻¹³	1x10 ⁻¹³	2.5x10 ⁻¹³	9x10 ⁻¹⁵
0.5 Hz	1 s	3x10 ⁻¹⁴	1x10 ⁻¹⁴	9x10 ⁻¹⁵	1x10 ⁻¹⁵
	10 s	5x10 ⁻¹⁵	2x10 ⁻¹⁵	1.5x10 ⁻¹⁵	1.5x10 ⁻¹⁶
	100 s	2x10 ⁻¹⁵	1x10 ⁻¹⁵	5.5x10 ⁻¹⁶	8x10 ⁻¹⁷
	1 hour	5x10 ⁻¹⁶	3x10 ⁻¹⁶	8x10 ⁻¹⁷	9x10 ⁻¹⁷
	1 day	1x10 ⁻¹⁶	1x10 ⁻¹⁶	5x10 ⁻¹⁷	7x10 ⁻¹⁸

Phase Noise dBc/Hz "Two inputs" mode for the input signal pairs (Ref1/DUT, Ref2/DUT)	Offset	Specifications			Typical		
		5MHz	10MHz	100MHz	5MHz	10MHz	100MHz
1Hz		-135	-130	-110	-146	-142	-120
10Hz		-150	-145	-127	-160	-155	-138
100Hz		-155	-153	-140	-168	-170	-150
1000Hz		-160	-158	-143	-170	-170	-162
10KHz		-163	-160	-150	-171	-171	-160
100KHz		-163	-160	-155	-172	-171	-160

Phase Noise dBc/Hz "Three inputs" mode DUT input signal pairs (Ref1/DUT, Ref2/DUT)	Offset	Specifications			Typical		
		5MHz	10MHz	100MHz	5MHz	10MHz	100MHz
1Hz		-130	-127	-107	-137	-130	-110
10Hz		-143	-135	-115	-145	-140	-120
100Hz		-145	-143	-127	-148	-146	-130
1000Hz		-146	-145	-133	-150	-150	-138
10KHz		-147	-145	-135	-150	-151	-142
100KHz		-148	-146	-140	-150	-151	-144

Operations :

Interfaces:	USB 2.0
Software:	calculates relative frequency difference, Allan deviation, phase noise spectrum.
Temperature:	+10°C to +35°C
Humidity:	< 80% (non-condensing)
Power supply:	220± 10%VAC, 50 / 60 Hz.
Consumption:	≤ 60VA
Size (WxHxD):	449×184×339 mm.
Weight:	~ 12Kg



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