



Multichannel Frequency Comparator

VCH-315



Frequency comparator VCH-315 is intended for precise phase and frequency instability measurements. It contains eight identical measuring channels and performs high precision phase and frequency comparison.

Key Applications

- ✦ Verification of metrological parameters of precision frequency signals sources;
- ✦ Time & Frequency etalons system;
- ✦ Embedded Time Keeping system;
- ✦ Scientific measurement.

Key Features

- ✦ Input signals: 5 MHz; 10 MHz; 100 MHz (0.8 - 1.2 V_{RMS} on 50 Ohm load);
- ✦ Number of measurement channels: 8 (two groups with four tested and one reference inputs);
- ✦ Maximum relative frequency difference: $(\Delta f/f) = \pm 5 \times 10^{-9}$;
- ✦ Multiplication coefficient: $K = 10^6$;
- ✦ Pass band : $P = (10 \pm 3)\text{Hz}$;
- ✦ Averaging time range : from 1s up to 10^6 s.

VCH-315 Specifications

Inputs :

| Waveform | Qty | Amplitude | Max. Freq. Diff. | Type | Load |
|----------------------|------|----------------------------|-------------------------|------|------|
| 5/10/100 MHz (Since) | 8 | 0.8 - 1.2 V _{RMS} | ±5.0 x 10 ⁻⁹ | SMA | 50 Ω |
| Passband | 10Hz | | | | |

| Frequency stability, (noise floor) * | Avg. T | ADEV | Typical | Remarks * Specified under condition: ambient temperature changing rate <1°C/hour. |
|--------------------------------------|--------|---------------------------|-------------------------|--|
| | 1 s | ≤ 1.5 x 10 ⁻¹³ | ≤ 6 x 10 ⁻¹⁴ | |
| | 10 s | ≤ 2.0 x 10 ⁻¹⁴ | ≤ 5 x 10 ⁻¹⁵ | |
| | 100 s | ≤ 3.0 x 10 ⁻¹⁵ | ≤ 6 x 10 ⁻¹⁶ | |
| | 1000 s | ≤ 5.0 x 10 ⁻¹⁶ | ≤ 4 x 10 ⁻¹⁶ | |
| | 1 Day | ≤ 1.0 x 10 ⁻¹⁶ | ≤ 1 x 10 ⁻¹⁶ | |

| | |
|----------------------------|---|
| VCH-315 Software features: | Calculates phase changing and frequency difference for each signals pair, two-samples Allan deviation, N-samples Allan deviation; |
| | Represents measurement results as tables, plots & save in files. |
| | Operating systems: WinXP, Win7 (Recomm.) |

General

| | |
|------------------------|------------------------|
| Interface: | RS232C & USB |
| Operating Temp.: | +10°C ... +35°C |
| Warming-up: | 4 Hours |
| Power Supply : | 220±10% VAC; 50-60 Hz; |
| DC Power supply: | 22 – 30 VDC |
| Consumptions: | < 60 VA |
| Dimension 3U (WxHxD) : | 483×133×370 mm |
| Weight: | ~ 8 Kg |



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