

Primary reference source VCH-1008C



vremya-ch.com/index.php/en/products-en/telecommunic-en/vch-1008c-en/index.html



VCH-1008C Primary Reference Source on the base of Passive Hydrogen Maser is intended to be used as the first class SDH synchronization equipment of digital telecommunication networks. Full digital processing of modulation and servo loop signals is realized. Extremely high frequency stability is provided by state-of-the-art technology.

Key applications

– Digital SDH networks clock synchronization.

Specifications

Output signals:

Sine: 5 MHz; 10 MHz; 100 MHz, (1 ± 0.3) V RMS into 50 Ω load.

Pulse: 2.048 MHz (square pulse), $(1.5 \div 2.8)$ V (pp) into 75 Ω (ITU-T G.703 part15).

1Hz; positive polarity pulse, width 100 ± 0.01 ; 10 ± 0.01 ; 1 ± 0.01 ; $0,1 \pm 0.01$ μ s, TTL level into 50 Ω , rise time: <15 ns.

Relative frequency accuracy (without auto-tuning)	$\pm 1 \times 10^{-11}$
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Relative frequency accuracy (in auto-tuning mode using embedded GNSS receiver)	$\pm 1 \times 10^{-12}$
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Output signals frequency corrector	resolution	$1 \cdot 10^{-15}$
	retuning range	$1 \cdot 10^{-10}$

1 s	$\leq 1.0 \cdot 10^{-12}$
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10 s	$\leq 3.0 \cdot 10^{-13}$
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100 s	$\leq 1.0 \cdot 10^{-13}$
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Frequency stability (Allan variance at $(25 \pm 1)^\circ\text{C}$, environmental effects are excluded)	1 hour	$\leq 3.0 \cdot 10^{-14}$
	1 day	$\leq 2.0 \cdot 10^{-14}$

MTIE and TDEV without auto-tuning (comply with the requirements of ITU-T G.811 / 6.1 and ETS 300 462-6 / 5.1.)

Time interval t(s)	MTIE (ns)
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$0.1 < t \leq 1000$	$0.275t + 25$
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Maximum Time Interval Error	$t > 1000$	$0.01t + 290$
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Time interval t(s)	TDEV (ns)
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$0.1 < t \leq 100$	3
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$100 < t \leq 1000$	$0.03t$
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Time Deviation	$1000 < t \leq 10000$	30
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MTIE and TDEV in auto-tuning mode using embedded GNSS receiver (comply with the requirements of ITU-T G.811.1)

	Time interval t(s)	MTIE (ns)
	0.1 < t ≤ 1	0.004
	1 < t ≤ 100	$0.11114 \times 10^{-3} t + 0.00389$
	100 < t ≤ 1000	$0.0375 \times 10^{-6} t + 0.015$
Maximum Time Interval Error	t > 1000	$10^{-6} t + 0.0140375$

	Time interval t(s)	TDEV (ns)
Time Deviation	0.1 < t ≤ 10000	1
Manual synchronization to external 1 pps TTL signal accuracy		≤ ±50 ns
Magnetic sensitivity		≤ ±2 · 10 ⁻¹⁴ 1/Oersted

Full digital processing of modulation and servo loop signals.

Interface: RS-232C; USB; LAN .

Power supply: AC (100÷240) V, (50÷60) Hz; DC (40÷72) V, two inputs.

Power consumption: 80 W.

Dimensions (W×H×D): 483×200×550 mm.

Weight: 30 kg.

Warranty: 3 years (10 years extended).

Life time: 15 years.

