



Telecom Primary reference source

VCH-1008C



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.

The Key application:

- ◆ Digital SDH networks clock synchronization;



VCH-1008C Specifications

Signal Outputs :-

Waveform	Qty	Amplitude	Width, μ s	Rise time	Termination
5MHz (sine)	1	$1 \pm 0.2 V_{RMS}$	-	-	SMA/50 Ω
10 MHz (sine)	1	$1 \pm 0.2 V_{RMS}$	-	-	SMA/50 Ω
100 MHz (sine)	1	$1 \pm 0.2 V_{RMS}$	-	-	SMA/50 Ω
2048 MHz (Sq. pulse)	1	$1.5 \sim 2.8 V_{pp}$	(ITU-T G.703 part13)		SMA/75 Ω
1 Hz (pulse) PPP	1	$>2.5 V$	$100 \pm 0.1; 10 \pm 0.01;$	$< 15 ns$	SMA/50 Ω
1/60 Hz (pulse) PPP	1	$>2.5 V$	$1 \pm 0.01; 0.1 \pm 0.01$	$< 15 ns$	SMA/50 Ω
Relative frequency accuracy :	$\pm 3 \times 10^{-13}$ (Factory calibration)				
Accuracy (over environment):	$\leq \pm 1 \times 10^{-12}$				
Output signals frequency tuning	resolution :				1×10^{-15}
	retuning range :				1×10^{-10}

Frequency stability, $\sigma_y(2, \tau)$:

	τ	Std.
Allan deviation at (25 \pm 1) $^{\circ}$ C, env. effects are excluded	1 s	$\leq 1 \times 10^{-12}$
	10 s	$\leq 3 \times 10^{-13}$
	100 s	$\leq 1 \times 10^{-13}$
	1 hour	$\leq 3 \times 10^{-14}$
	1 day	$\leq 2 \times 10^{-14}$

Time errors requirements of ITU-T G.811 / 6.1 and ETS 300 462-6 / 5.1.

Maximum Time Interval Error	Time interval t(s)	MTIE (ns)
	$0.1 < t \leq 1000$	$0.275t + 25$
	$t > 1000$	$0.01t + 290$
Time Deviation Error	Time interval t(s)	TDEV (ns)
	$0.1 < t \leq 100$	3
	$100 < t \leq 1000$	$0.03t$
	$1000 < t \leq 10$	30



Manual synchronization to external 1 pps TTL signal accuracy :	$\leq \pm 50 ns$
Magnetic sensitivity :	$\leq \pm 2 \times 10^{-14}$ 1/Gauss
Harmonic distortion (for 5 MHz output) :	$< 30 dB$
Non-harmonic distortion from 10 Hz to 10 kHz :	$< -100 dB$
Temperature sensitivity in operating range (+10 ~ +35) $^{\circ}$ C :	$< \pm 2 \times 10^{-14} / ^{\circ}$ C

General

Dimensions (WxHxD) mm:	470 x 200 x 530
Weight:	27 kg
Digital control and monitoring:	Remotely via interface
Interface:	RS-232C; USB; LAN .
Power AC:	100–240 V, 50-60 Hz
Power DC: (Option 1 - Dual Power supplies)	38.4–57.6 V
Power consumption:	120 VA AC, 80 W DC.
Operating temperature range ($\pm 1^{\circ}$ C/Hour):	+10 ~ +35 $^{\circ}$ C
Warranty:	3 years

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