

## CH1-81, CH1-83 Rubidium Frequency Standards



CH1-81

CH1-83

### DESCRIPTION

The CH1-81 and CH1-83 Rb Frequency Standards are used to keep time and frequency, to measure high-stability time and frequency parameters, to calibrate various types of high-stability crystal oscillators and measurement equipment. The units are used as reference oscillators.

The CH1-81 Rubidium Frequency Standards has six modifications: CH1-81/1/2/3/4/5.

The standards can be supplied:

as a separate module with a 27 Vdc power supply; in a standard case (they are delivered with a time scale former providing time scale signals at outputs and their synchronization by an external time scale signal with 0.1  $\mu$ s accuracy).

### SPECIFICATIONS

Output: 5 MHz (sine),  $1 \pm 0.2$  V RMS into 50 Ohm

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

Measurement time	CH1-81
1 s	$1 \cdot 10^{-11}$
10s	$5 \cdot 10^{-12}$
100s	$3 \cdot 10^{-12}$
1 day	$4 \cdot 10^{-12}$ *
	$6 \cdot 10^{-12}$ **

\* For the CH1-81/2/4

\*\* For the CH1-81/3/5

Temperature coefficient of frequency:  $1.2 \cdot 10^{-12}/^\circ\text{C}$   
 Frequency tuning range (by a magnetic field):  $1.5 \cdot 10^{-9}$   
 Drift per day:  $1 \cdot 10^{-12}$  (CH1-81, CH1-81/2/4),  $3 \cdot 10^{-12}$  (CH1-81/1/3/5)

Offset from carrier	SSB Phase Noise, dB/Hz
1 Hz	-90
10 Hz	-120
100 Hz	-130
1 kHz	-140
10 kHz	-150

Harmonic distortion: <-40 dB

Non-harmonic distortion: <-80 dB

### GENERAL

Power: 22-30 V dc

Power consumption:

warm-up: <80 W

operating mode at 25  $^\circ\text{C}$ : <20 W

Operating temperature range: -40...55  $^\circ\text{C}$

Dimensions, mm; weight, kg:

358x167x82; 3.5 (CH1-81, CH1-81/1)

459x188x129; 6.0 (CH1-81/2/3)

459x188x129; 6.5 (CH1-81/4/5)

Life: 15 years

The CH1-83 Rb Frequency Standard can comprise any of the CH1-81/2, CH1-81/3 Standards and the CHK7-51 Frequency Comparator. The CH1-83 specifications represent the joint variant of both instrument specifications.

## JH5-328 Power Supply



### DESCRIPTION

The JA5-328 is a dc power supply for the CH1-81 Frequency Standards. In case of an ac line failure it provides an automatic switching to dc supply.

### SPECIFICATIONS

Power: 220 $\pm$ 22 V, 45-65 Hz; 220 $\pm$ 11 V, 400 Hz

Power consumption: <90 VA ac

Output voltage: 22-30 V dc

Ripple: 15 mV

Operating temperature range: -40...50  $^\circ\text{C}$

Dimensions: 460x127x130 mm

Weight: 5 kg