

The Frequency Synthesizers ND 500 S and ND 1000 S are bench top instruments with manual control via front panel rotary switches. This manual operation ensures that fixed frequency settings will be changed only consciously. However the ultra-fast switching of frequency changes less than 1  $\mu$ s is only possible via BCD parallel control.

The RF-output is located on the front panel and the output level can be set in a wide range by a potentiometer. Two LED's on the front panel indicate stand-by mode and temperature status of the OCXO. An interface-switch selects the operation modes, IEEE-Bus, RS 232, BCD or local control via rotary switches.

## Frequency Synthesizer ND 500 S

- ◆ Frequency range 100 kHz ... 500 MHz
  - ◆ Manual rotary switches on the front panel to set frequency
  - ◆ Highly-stable refer. frequency (OCXO)
  - ◆ Residual FM  $\leq$  0.1 Hz
  - ◆ SSB phase noise  $\leq$  - 126 dBc/Hz
  - ◆ Fast frequency switching  $\leq$  1  $\mu$ s
  - ◆ BCD parallel control
- RS 232 and IEEE-Bus as option



## Specifications ND 500 S

### Reference Frequency:

Frequency/Type: ..... 10 MHz/OCXO  
Temperature stability (+ 5 °C ... + 45 °C): .....  $\leq 3 \times 10^{-8}$   
Ageing: .....  $\leq 2 \times 10^{-8}$ /month  
Reference frequency output: ..... 10 MHz; + 10 dBm  
Reference frequency input: ..... 10 MHz, 5 MHz, 2 MHz  
.....  $\pm 2 \times 10^{-7}$   
Input level: ..... 0 dBm ... + 8 dBm

### Synthesizer:

Frequency range: ..... 100 kHz ... 499.999 999 9 MHz  
Resolution: ..... 0.1 Hz  
Accuracy: ..... same as reference  
Frequency setting: ..... rotary switches and BCD-parallel  
..... RS 232 and IEEE-Bus (option)  
Switching time to new frequency: steps < 1 MHz: ...  $\leq 1 \mu\text{s}$   
..... steps  $\geq 1$  MHz: ...  $\leq 20 \mu\text{s}$   
Phase (< 1 MHz step width): ..... phase-continuous

### Spectral purity:

Harmonics (level  $\leq + 13$  dBm): .....  $\leq - 30$  dBc  
Sub-harmonics: ..... none  
Discrete spurious: .....  $\leq - 72$  dBc  
Residual FM (CCITT, rms): .....  $\leq 0.1$  Hz  
SSB-phase noise (10 kHz offset): .....  $\leq - 126$  dBc/Hz  
Noise floor: .....  $\leq - 138$  dBc/Hz

### Output:

Output level range: ..... 0 dBm ... + 13 dBm  
Frequency response: .....  $\leq \pm 1$  dB  
Impedance: ..... 50  $\Omega$   
VSWR: .....  $\leq 1.5$   
Connector: ..... N-socket

### General data:

Power supply: ..... 110 V/120 V, 220 V/240 V  $\pm 10$  %  
..... 47 Hz ... 63 Hz; 80 VA (Stand-by 9 VA)  
Electrical safety: ..... EN 61010  
Operating temperature: ..... + 5 °C ... + 45 °C  
EMC: ..... CE-mark  
Dimensions (W x H x D): ..... 447 mm x 88 mm x 450 mm  
Weight: ..... approx. 12.7 kg

### Supplied accessories :

1 ea. .... power cord  
1 ea. .... operating manual  
1 set ..... spare fuses

### Ordering information:

Frequency Synthesizer ND 500 S ..... BN 86302.000  
with BCD-interface  
Frequency Synthesizer ND 500 S ..... BN 86302.001  
with BCD-, RS 232-, IEEE-Bus interface

### Accessory:

19" adapters for rack mounting ..... BN 86302.101