



## REF10 NANO

### Audiophile 10 MHz Reference Master Clock



The REF10 NANO is the focused version of an audiophile 10 MHz reference master clock in the superior quality you should expect from clocking specialist MUTEC. Based on the well-known REF10, it transfers its technology, praised by many customers and reviewers, into a new, significantly lower price range.

With the REF10 NANO, dedicated music lovers are for the first time able to significantly improve the sound performance of their home digital audio systems for a moderate investment. Likewise, thanks to this MUTEC reference master clock, aspiring studio owners can guarantee their customers maximum sound quality

#### Features

- Audiophile 10 MHz reference generator with extra low phase noise
- Improves and enhances compatible DACs, audio re-clockers, music servers, and master clocks
- Engineered around a handcrafted, extra low phase noise OCXO Made in Germany
- Generates a very high slew-rate square wave signal for superior lock precision compared to the sine wave signals used by competing brands
- Provides simultaneous reference outputs with 50 and 75  $\Omega$  impedance for maximum compatibility with clocks and DACs by other manufacturers
- Four galvanically isolated, individually switchable BNC clock outputs
- Revolutionary, sub-Hz optimized, lowest noise power supply for every circuit section
- Integrated international power supply
- DC voltage input to improve the REF10 NANO's noise performance with an external low-noise DC power supply
- Power supply redundancy by using mains and DC voltage supply simultaneously
- Self-explanatory user interface
- Developed and manufactured in Germany

when mastering and recording their music productions with help of the REF10 NANO. No matter which kind of playback setup the REF10 NANO is used in, a noticeable increase in transparency, spatiality and dynamics will be clearly audible in general.

The REF10 NANO can be directly connected to up to four 10 MHz-compatible devices. D/A converters, network switches, re-clockers, clock generators, CD players, servers or streamers are perfect partners.

In case these components do not have a dedicated 10 MHz input, an MC3+ or MC3+ USB interface from MUTEC provides the necessary interconnection between the REF10 NANO and the audio equipment to be synchronized. On the other hand, the REF10 NANO is the perfect partner to an existing MC3+ or MC3+ USB. Together they raise the signal's audiophile quality – already improved and re-clocked by the MC3+/MC3+ USB interface – to an even higher level.

The REF10 NANO is the perfect device for all sound enthusiasts who want to get the advantages of an original MUTEC reference master clock at the lowest possible price – without making a significant trade off! This smallest 10 MHz reference master clock in the MUTEC range offers almost every of the important quality features of its big brother REF10.

### Applications

- As an audiophile performance enhancement for compatible DACs, audio re-clockers and music servers of any brand
- As a low noise, high stability clock reference for the entire digital audio chain at home or in the studio
- As an ideal high-end upgrade for MUTEC's own MC3+ USB audio re-clocker and MC3+ and iClock master clocks

For the REF10 NANO – developed by MUTEC in the expected reputable quality – the formula reads: half the size, half the price, but almost as good as the REF10! This certainly makes the REF10 NANO the best 10 MHz reference master clock currently available in its price class.

Take the chance and discover what your digital audio system is capable of. Entering the sound-enhancing world of 10 MHz reference master clocks has never been more affordable than with the REF10 NANO from MUTEC!



Phase noise:	dBc/Hz
1 Hz:	≤ -112
10 Hz:	≤ -142
100 Hz:	≤ -158
1000 Hz:	≤ -164
Noise floor:	≤ -167

All measurement were taken at the device's outputs and figures represent average values. Minor production related deviations will be expected.

REF10 NANO rear view



Learn more about the REF10 NANO now at [www.mutec-net.com](http://www.mutec-net.com)