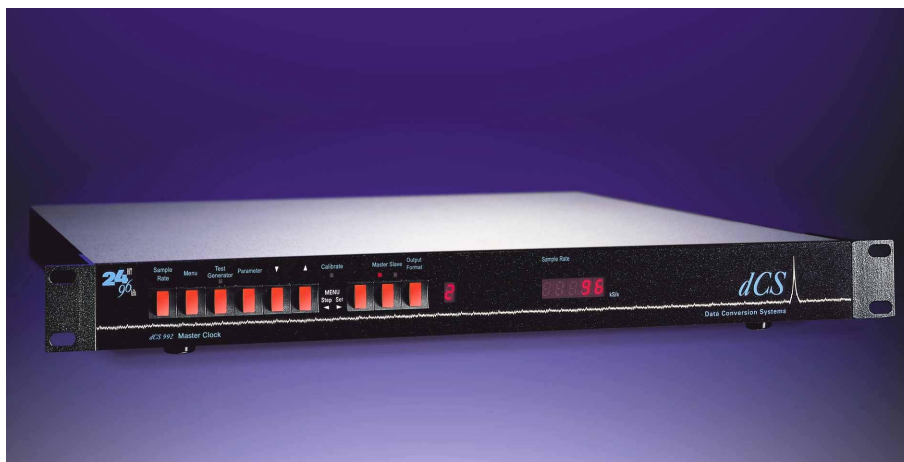


The dCS 992 Master Clock is a high stability reference generator designed for studio and live recording applications. The unit provides reference clocks to support systems sampling from 11.025kS/s to 192kS/s or DSD, via AES3 or SDIF-2 Word Clock formats..

dCS 992 Master Clock 24/96 - 24/192 - DSD

It offers a variety of "Superclock" options up to 256Fs and can generate all the commonly used sample rates from 11.025kS/s to 96kS/s, and output up to 10 different sample rates simultaneously - all phase locked together.



The relative phase of each output may be adjusted by plus or minus 1 sample, in steps of 1/128th of a sample. With the dCS 992, synchronising all the components of a multiple sample rate digital audio system becomes a simple and painless task.

All principal functions are controlled via front panel switches, making the units very easy to set up and use. A simple menu system gives access to a wide range of additional functions, such as anti-aliasing filter selection, self test, sync source selection and a digital signal generator

4 AES3 outputs: Each AES output can be set to any standard sample rate in the range 11.025kS/s to 96kS/s and the phase of each output is adjustable by ± 1 sample in 1/128 UI steps. The AES message of each output is also individually settable

12 Word Clock outputs: Each Word Clock output can be set to any standard sample rate in the range 11.025kS/s to 96kS/s as well as 4, 8, 16, 32, 64, 128 and 256 Fs Superclock. The phase of each output is adjustable by ± 1 sample in 1/128 UI steps.

Precision TCXOs: The dCS 992 uses two on-board voltage controlled crystal oscillators in a temperature compensated (TCXO) configuration, as a clock source – one for 48 kS/s related outputs and one for 44.1 kS/s related outputs. These are pre-aged to allow the crystal to relax from manufacturing stresses and are then specially selected for predictable behaviour over temperature. After assembly, each unit is subjected to repeated temperature cycling, during which calibration data is collected. This data is unique to each dCS 992, and is stored in non-volatile memory. A final calibration run confirms the accuracy of the unit.

Master mode or slave operation: In Master mode the unit uses its internal TCXOs. The typical accuracy of these when shipped is ± 0.1 ppm. The frequency of either TCXO may be offset by ± 5 ppm in 0.05 ppm steps. The offset may be altered on-the-fly and the changes are glitchless, allowing recording to continue without disruption.

In Slave mode, the unit can be slaved to a standard word clock frequency in the range 11.025kS/s to 96kS/s, or to a 1MHz, 5MHz or 10MHz signal from a GPS receiver or laboratory reference source.

Set-up Stores: The unit has 5 factory defined set-up stores and 9 user definable set up stores. Each store holds a complete "set-up". The stores may be recalled via the front panel allowing the unit to be quickly and easily changed from one application to another.

A Learn Mode enables the unit to freewheel should the sync signal be lost for any reason.

If the sync signal reappears, the dCS 992 will very slowly and gradually adjust its frequency and phase to align with the reference again – there will be no switching glitches - ensuring that units deriving their clock signals from the unit carry on working without interruption.

In a typical example of Learn Mode performance a dCS 992 was left to learn, for about an hour, and then the reference removed. After a period of half an hour. The unit had changed in phase relative to the reference less than 3 μ secs – i.e. the learning and subsequent temperature compensation was accurate to about 0.002 ppm.

A choice of 9 different PLL bandwidths in slave mode allows the user to choose the best compromise between low frequency timing accuracy and the suppression of modulating signals in the slave clock.

This degree of flexibility is made possible by the use of a precision digital PLL and eliminates the need for the large resistors and capacitors that would otherwise be required to achieve such ultra-low bandwidths. These

components can also add substantial amounts of flicker noise, making their elimination doubly desirable.

When synchronising to an external source the flexibility of the dCS 992's PLL provides a high degree of "clock cleaning", so that the unit can use even a poor quality source and clean this up to regenerate an excellent one, if necessary.

A high quality signal generator covers the range 0dB0 to -120dB0 in 0.1dB steps. Over 60 spot frequencies are available between 0 and half of the sample rate selected.

An intuitive Windows based remote control makes the unit very quick and easy to use. It also allows the unit to be remotely located whilst maintaining full control over all the settings. A combination of drop-down menus and drag and drop icons enables the unit to be fully configured for a job with the minimum of effort.

Communication between the dCS 992 and the PC is via a RS232 interface and any combination of up to six dCS converters may be controlled from one COM port.

Digital outputs	AES Reference (XLR male x 4) Word Clock (BNC x 12)
Output sample rates	11.025, 12, 16, 22.05, 24, 32, 44.1, 48, 88.2 & 96kS/s
Super Clocks	4, 8, 16, 32, 64 128 & 256Fs based on either 44.1kS/s or 48kS/s
Accuracy	< \pm 1ppm when shipped
PLL bandwidths	2Hz, 1Hz, 500mHz, 250mHz, 125mHz, 62.5mHz, 31.5mHz, 15.625mHz & 7.8125mHz
Digital sync inputs	TTL and Bipolar (BNC x 1)
Power consumption	15 watts nominal
Dimensions	430mm W x 52mm H x 390mm D 16.9" W x 2" H x 15.6" D The unit fits 1U in a standard 19 inch rack
Weight	6.8kg (15lbs)

For full and up to date details of this and other dCS products, please see the dCS web site at www.dcsltd.co.uk.