

# ONE STEP FURTHER...

...IN CLOCK DISTRIBUTION  
AND SIGNAL REGENERATION

iD



REDUNDANT MULTIPLE AUDIO CLOCK PROCESSOR



MUTEC

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## REDUNDANT MULTIPLE AUDIO CLOCK PROCESSOR

**DSD**  
Direct Stream Digital  
**DXD**  
Digital eXtreme Definition



Due to the increasing number of professional studios which own more and more digital outboard gear, the problem of synchronization quickly attains a large importance. In this case flexible clock distribution is necessary just like the reliability of this. Also with regards to inquiries of our professional customers, we decided to design the industry's first redundant-working and strictly DDS-based Word Clock distribution amplifier, simply called: **iD**.

### IMPROVEMENT OF SOUND QUALITY AND CLOCK REFERENCES

Conventional audio clock distributors only distribute and amplify the incoming reference through different outputs, but the distributed signal itself will not be further processed. In result, the connected devices receive jitter-disturbed and unstable clock signals which causes uncertain synchronization and degraded sound quality!

iD works as a clock distributor in an entirely different way. Based on latest DDS-technology, iD decouples the incoming reference completely to the output signals. Due to this, the connected devices will receive most stable and jitter-free clock signals possible at any time – no matter if the incoming reference consists of high jitter, is instable or partly interrupted. Also digital audio re-clocking and format converting is supported for regeneration of poor digital audio signals. Thus, iD offers a highly convenient solution to upgrade your studio set-up and improve your produced sound quality overall!

### INCREASE OF CLOCK DISTRIBUTION TO A NEW LEVEL OF FLEXIBILITY AND RELIABILITY

iD is not only a signal-regenerating distribution amplifier but can also be used as a master clock reference. In both operation modes iD supports the industry's widest range of audio-related Word Clock rates from 8.0kHz to 24.576MHz. The 3 inputs accept various clock references which can be distributed through 16 Word Clock (expandable to 20!), 2 AES/EBU and 2 S/PDIF outputs. Every output pair can transmit a different clock rate at the same time and a digital varispeed function can be added regardless of the operation mode. A lot of more special features ensure the use of iD in every studio environment.

Due to security demands of broadcast houses and professional studios, iD is designed to supply highest possible redundancy. Therefore the internal DDS process ensures the availability of all outgoing sync signals in every state of iD's operation.

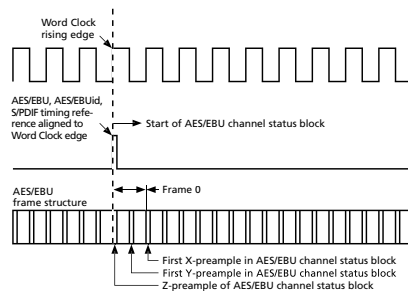
Even in cases of drop outs or total absence of the reference clock signal, all outgoing signals are straightforward available without any influences based on the unlimited freewheel protection mode. Recurring reference signals will be gently re-synchronized through iD's efficient SoftRelock functionality without any phase jumps in the output signals.

### INNOVATION OF CLOCKING TECHNOLOGY

Based on MUTEC's innovative DDS-technology which was previously designed for a high-frequency measurement system, the new iD represents now the latest level of this technological development, with respect to the used frequency synthesis process, digital filtering and noise-reducing PCB design. The result is the hardest jitter-reduction ever in combination with an extensive sync safety process providing reliable sync signals at any time.

### INTELLIGENCE

To reach the maximum of accuracy for synchronization of your audio equipment, iD offers a unique, high-precision signal management. The phase relationships of all input and output signals will be observed and adjusted in real-time automatically, aligned to AES11–1997/2003 und EBU R83–1996. This process reaches a control accuracy in the nanosecond range.



### INTEGRATION AND INVESTMENT SECURITY AT A GLANCE

In today's fast-moving technological world, iD supports future-oriented functionalities as well as software and hardware upgradability never expected before from such a device. The unprecedented versatility and outstanding performance offer a reliable investment for any A/V studio.

Regarding many unique features, like

- working as distributor and generator for Word Clock, Word Clock ×256, AES/EBU and S/PDIF,
- based on iCLOCK's lowest-jitter DDS technology,
- supporting the industry's widest range of Word Clock frequencies,
- entirely jitter elimination and drop out compensation of incoming reference signals,
- redundant (fail-safe) operation for broadcast use and centralized clock distribution,
- SoftRelock functionality for recurring reference signals,
- digital audio re-clocking for AES/EBU and S/PDIF signals,
- various multiples and divisible of the reference clock simultaneously available,
- digital varispeed of ±20%, available during internal and external synchronization,
- intelligent high-precision signal management aligned to AES11-1997 and EBU R83-1996,
- easy and convenient operation through large display with brightness control,
- software and hardware upgradability and recalibratability,

MUTEC's iD offers sophisticated technology and the most flexible concept for future-oriented reference clock distribution and conversion today!

### APPLICATIONS

- Word Clock distribution and generation.
- Jitter attenuation in clock signals.
- Improvement of the set-up's sound quality.
- Centralized + redundant clock distribution.
- Clock conversion between Word Clock, AES/EBU, AES/EBU ID and S/PDIF.
- Improvement of digital audio recordings through re-clocking.
- Format conversion between AES3, AES11, AES3id, AES11id and S/PDIF.
- Failure securing in clock distribution systems.

