

DIGITAL FREQUENCY DIVIDING NETWORK DF-65



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In 1999, Accuphase launched DF-35 which was installed fully digital technology for multi-amplification to divide the music spectrum into several distinct bands.

DF-35 realized 59 cut off frequency points and up to 96dB/oct filter slope characteristics. It attracted the audio enthusiasts, and got well known as the indispensable equipment for multi-amplified system.

DF series continues to evolve, DF-45 was launched in 2005 and so was DF-55 in 2011. Then, DF-65 is the 4th generation of this product lineup.

Technical high lights of this DF-65 are featured “sophisticated technology of digital signal processing” and “ultra low THD and noise performance”.

Dimensions and Weight

- Same unit dimensions but heavier than DF-55

DF-55

W: 465 mm
H: 151 mm
D: 396mm

Weight: 14.7 kg



DF-65

W: 465 mm
H: 151 mm
D: 396mm

Weight: 15.1 kg

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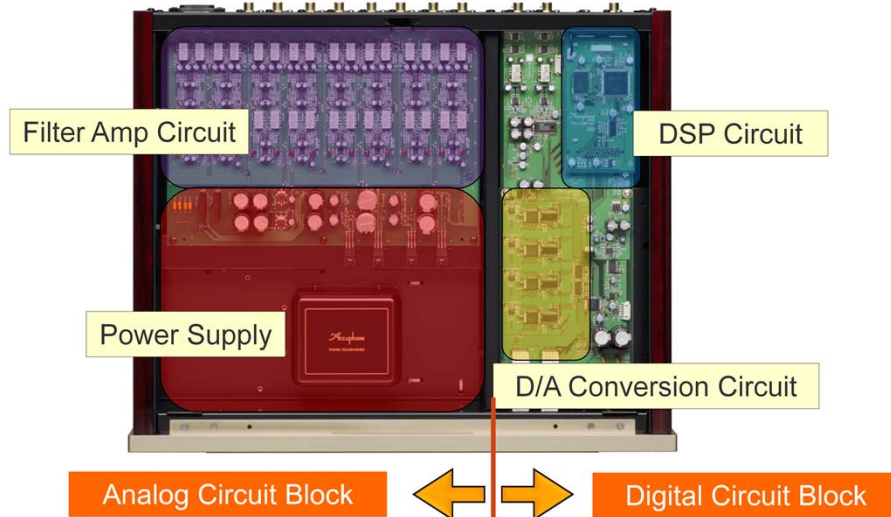
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The dimension of DF-65 is same but the weight is slightly heavier than DF-55.

This comes from the rigid frame construction and the aluminum top plate to absorb the vibration.

Internal Layout

- Digital / Analog Isolated Block Topology



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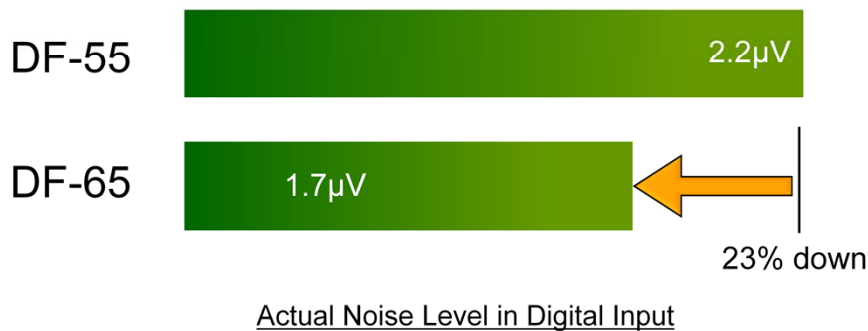
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DF-65 is applied the Analog/Digital isolated layout. Each circuit block is logically placed to make the signal path as short as possible.

The digital circuits are on the right side and the analog circuits are on the left side.

Electrical Performance

- Ultra Low Noise in Digital Connection



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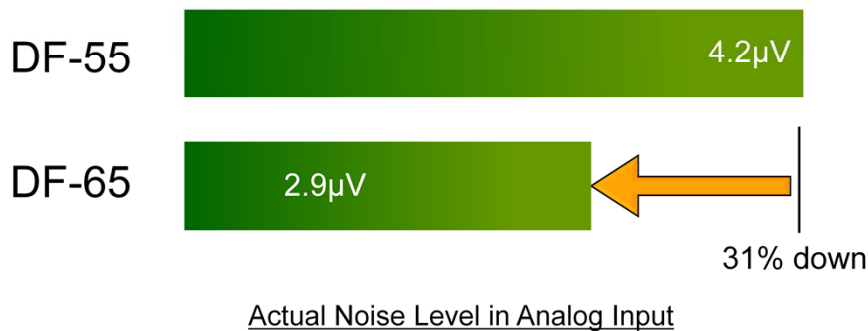
Ultra Low Noise is one of the main technical features of DF-65.

The former model, DF-55 still has the excellent noise performance, however, DF-65 achieves another 23% lower output noise voltage than DF-55.

DF-65 guarantees 121dB signal to noise ratio in stereo mode and can assure 123dB in MONO operation.

Electrical Performance

- Ultra Low Noise even in Analog Connection



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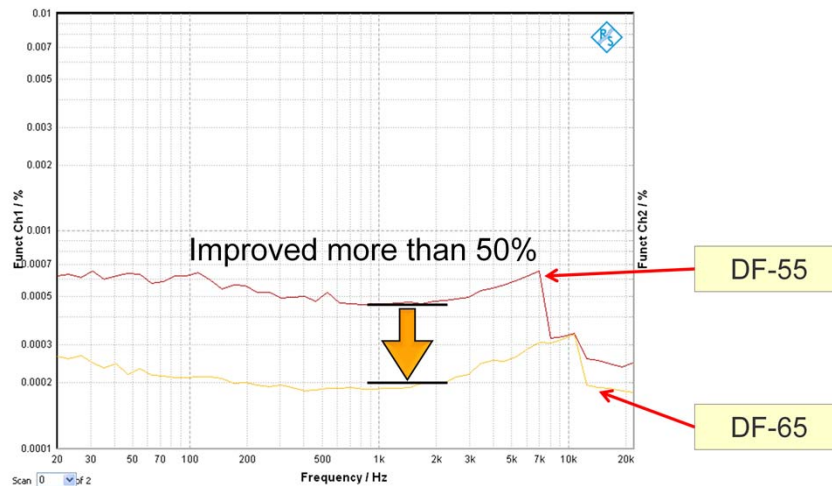
Analog performance is important since the channel divider is normally connected between preamplifier and power amplifier in most cases.

DF-65 achieves 2.9µV actual noise level in analog input. It reaches the 31% lower level than DF-55, guaranteed S/N ratio is 116dB improved by 3dB.

No audiophile has to care about the deterioration of signal quality caused by the AD/DA conversion processing.

Electrical Performance

- Ultra Low Noise THD + Noise



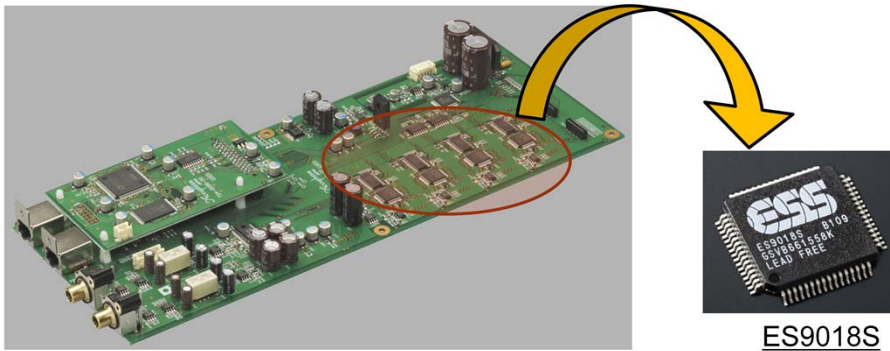
THD + Noise to Frequency

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DF-65 shows the great THD + Noise characteristics which are quite important for music playbacks, and this clearly proves that DF-65 is capable of walking with our flagship digital processor DC-950.

D/A Converter

- 4 parallel D/A converters per channel
 - Featured ES9018S (ESS Technologies)
 - MDS++ Architecture for All Digital Signals
 - 8 parallel D/A Converters are applied in MONO operation



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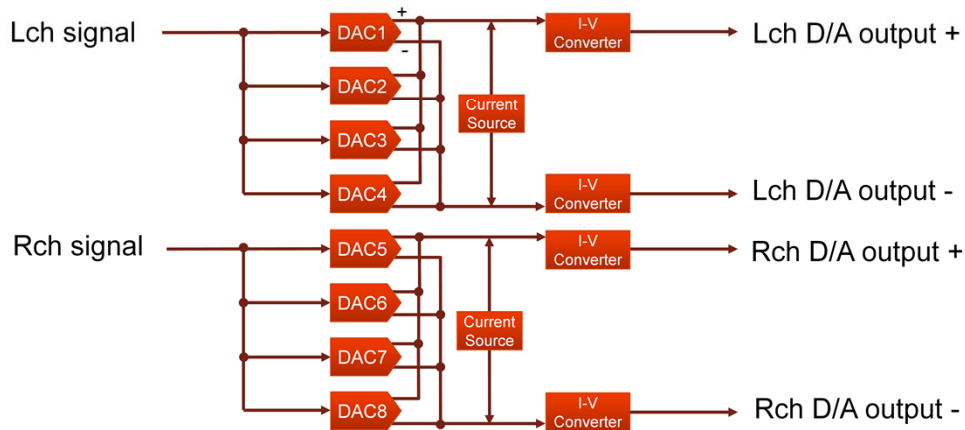
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For D/A converter section, Accuphase updates the DAC chip to ESS Technology's 32bit Hyperstream DAC ES9018S for DF-65. ES9018S has 8 DACs inside, and DF-65 uses 4 DACs connected in parallel per channel with Accuphase's unique technology, MDS++ conversion system.

Fully-balanced structure is employed after D/A converter section, in addition, the independent low pass filter is installed for each audio output. Due to this, the sound signals from all the outputs become the best quality.

Multiple Delta-Sigma++

- Technique to make DAC parallel
- Performances improved by a factor of 2



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MDS++ is a technique to make DACs parallel. The same digital signal is supplied to each converter. The output of each DAC is combined.

The Audio signal values are added up. But the conversion error and noise are canceled. The ratio between the signal and conversion errors increases. So the converter performance is improved. The improvement degree works by a square root of the number of DACs.

In DF-65, all performances are improved by a factor of 2.

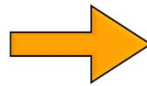
DF-65 is ready for MONO Mode function. In MONO Mode, each channels are connected 8 DACs in parallel to obtain extreme performance which is improved by a factor of 2.8.

Easy to Use

- Character Display for Memory SAVE / RECALL



DF-55



DF-65

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DF-65 renews the characteristic display in the center of the front panel. It helps the users to be aware which memory they are using and which command is going to be chosen. It prevents the human errors and protect the user's own settings from an unexpected delete.

Inputs

- Balanced / Line Inputs for Analog Connection
- HS-LINK
 - Version1: 192kHz/24bit PCM
 - Version2: 384kHz/32bit PCM
- Optical: 96kHz/24bit
- Coaxial: 192kHz/24bit



Back Panel

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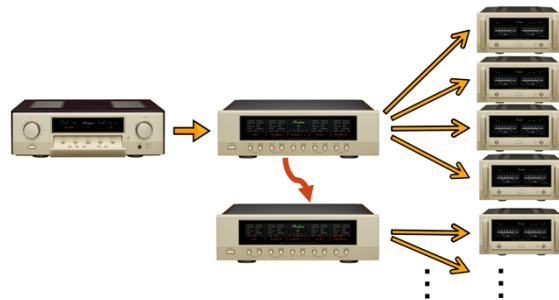
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DF-65 has the 3 digital inputs, Coaxial, Optical and HS-LINK. HS-LINK has been evolved into Version2. Original HS-LINK(Ver.1) transmits and receives only 192kHz/24bit-PCM but Ver.2 comes to be able to do up to 384kHz/32bit-PCM.

Balanced and line inputs are also ready for analog inputs. DF-65 accepts all types of connectors from a pre-amplifier or a digital equipment.

Others

- Full System Back-Up Function
- Simple Configuration for Level / Delay Adjustment
- Cascade Connection allows for huge multi-channel system



Cascade Connection with another DF

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DF-65 has another memory backup system called “Full System Back-up Function”. This allows users to save all contents of memories including basic setting parameters such as volume protection, HS-LINK version and so on. This full backup can be reloaded anytime users want.

In simple setting mode, users can set both channel’s level and delay values at the same time. If users want to adjusting both values separately, independent setting mode is also available.

Furthermore, DF-65 can be operated as the cascade connection through HS-LINK. The signal from pre-amplifier is distributed to another DF-65 to build up more than 4 way multi-amplified system.