

Accuphase

DIGITAL VOICING EQUALIZER

DG-78

- Fully digital signal processing Voicing Equalizer
- Smooth Voicing feature maximizes low frequency reproduction
- High-precision 40-bit floating-point DSP signal processing
- 4MDS, high-precision 32-bit A/D converter
- 8MDS++, high-precision 32-bit D/A converter
- Dedicated Voicing and Equalizer ON/OFF buttons
- Capacitive touch panel for intuitive fingertip operation
- Equalizer adjustment with real time analyzer characteristics or Voicing result displays
- Memory for saving of Equalizer characteristics and Voicing result combinations





Visualized speaker characteristics for flexible control

The DG-78 is the sixth-generation Digital Voicing Equalizer designed using our ultra-advanced digital technology. Simple operations allow for quick reductions to differences between left and right characteristics, which greatly affect sound field reproduction. Furthermore, a stylus pen and high-definition, high-resolution IPS LCD panel enable you to draw your desired sound field reproduction curve. This freedom to control the sound field and tonal quality ensures that the DG-78 creates only the highest quality music reproduction.

In 1997, Accuphase released the DG-28 Digital Voicing Equalizer, which revolutionized conventional ideas about graphic equalizers. Since then, the DG series has undergone repeated improvements and received such unparalleled esteem that it has almost evolved from an accessory to an indispensable component of any audio system.

■ What is a "Voicing Equalizer"?

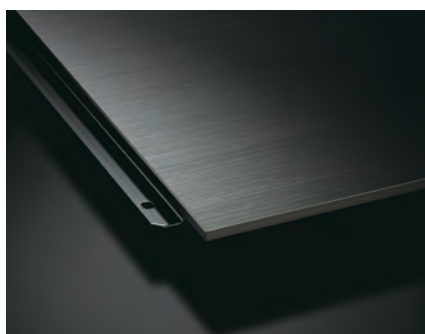
The Voicing Equalizer from Accuphase brings together two major functions, namely sound field compensation for optimizing the acoustic properties of the listening room and a graphic equalizer for adjusting individual frequency bands, thereby controlling the tonal quality of the music being played. A supplied precision microphone is used to measure the acoustics of the listening room and allow users to automatically create their desired sound field. The graphic equalizer function then enables further fine tuning and flexible tonal adjustments. As the word "Voicing" in Voicing Equalizer also carries the meaning of "fine-tuning," the product was named with the idea of tuning the listening room.

■ DG-78

The sixth-generation DG-78 features a highly acclaimed operating system for easy and advanced automatic measurements and compensation function adjustments. The digital signal processing section is equipped with the latest dedicated digital signal processor (DSP) for highly advanced processing of analog input and high-resolution digital input signals. Abundant digital and analog inputs and outputs provide unprecedented versatility with connections, and the highly advanced A/D and D/A converters ensure dramatically improved sound quality and performance both on the analog input and output side.

Advanced Features

- Smooth Voicing feature maximizes low frequency reproduction capabilities
- Optimized measurement time and method for more accurate measurement
- Individual Voicing and Equalizer ON/OFF buttons
- Capacitive touch panel display for intuitive fingertip or stylus operation
- Equalizer adjustment with real time analyzer characteristics or Voicing result displays
- Intuitive and highly readable menu screens for easy operation
- 30 memory slots for saving Equalizer characteristics and Voicing result combinations
- Setting data and display screenshots can be saved to a USB flash drive
- Thick aluminum top plate with exquisite hairline finish
- Elegant side panels with natural wood grain finish
- Sound field measurement microphone AM-68 included
- High-quality, high-grade audio cable ASL-10B included

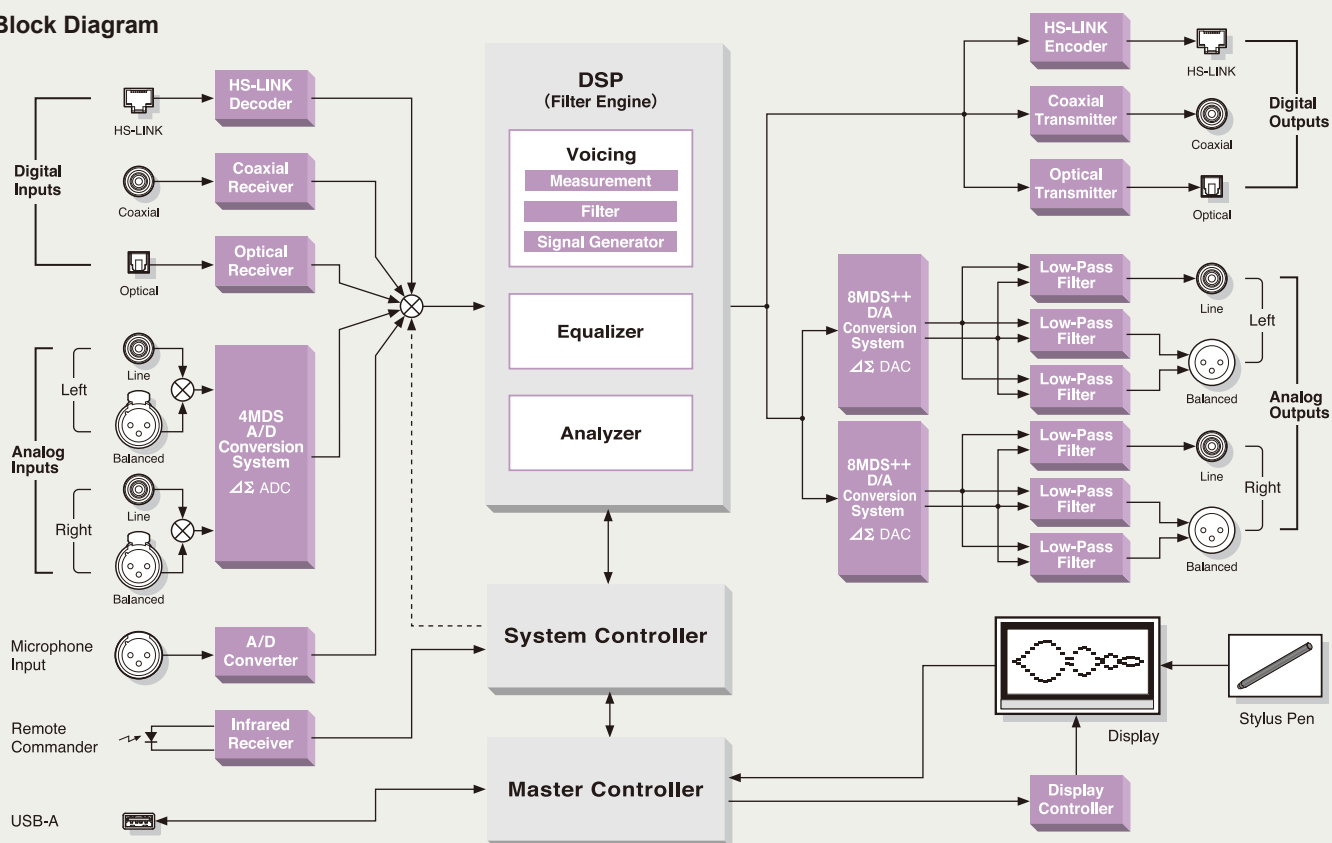


Aluminum top plate with hairline finish



Sound field measurement microphone AM-68

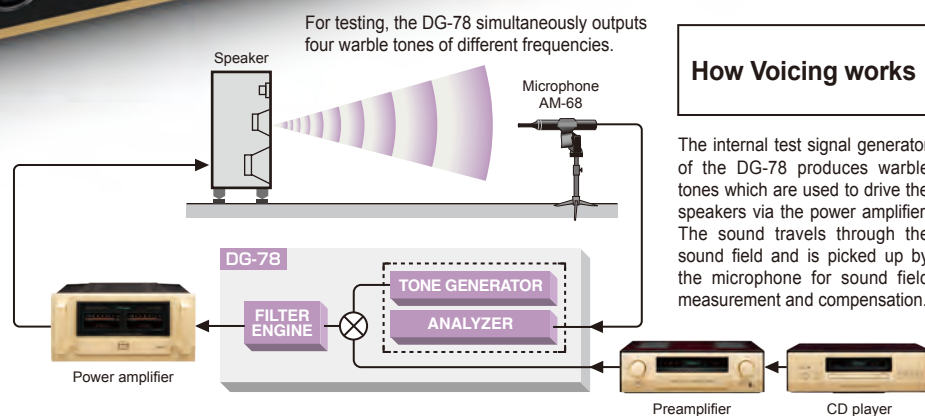
■ Block Diagram





Supplied remote commander RC-340

Enables remote operation of Voicing and Equalizer on/off, input switching, memory save and load, cursor movement, etc.



Smooth Voicing

Adjustment incorporating speaker and room characteristics

Smooth Voicing keeps frequency response differences between the left and right channels to an absolute minimum, creating a very smooth response curve.

Step 1



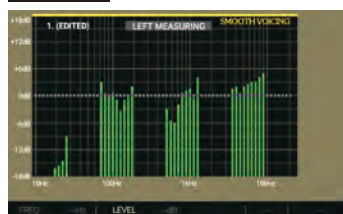
Set measurement signal level

Step 2



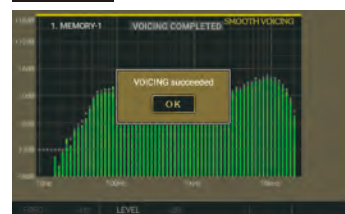
Select memory number for saving settings

Step 3



Start automatic measurement and compensation

Step 4

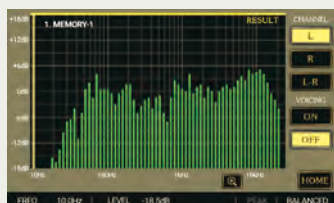


Compensation completed

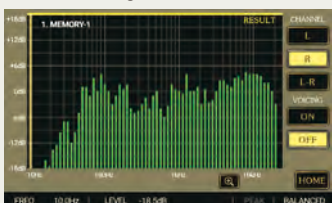
Smooth Voicing measurement results

Before compensation

Left channel

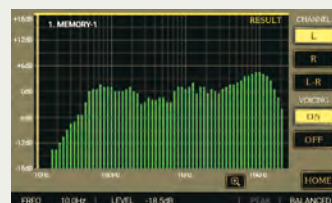


Right channel

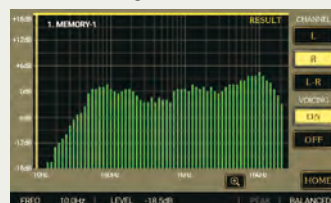


After compensation

Left channel



Right channel



Technology development ahead of the curve

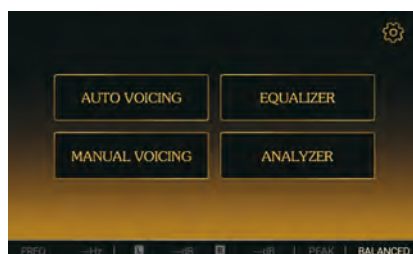
- **40-bit floating-point DSP chip ADSP-21565** from Analog Devices realizes super-accurate fully digital signal processing
- **32-bit A/D converter chip AK5578EN** from Asahi Kasei Microdevices used in a fourfold parallel configuration for each channel to optimize performance
- **32-bit D/A converter chip ES9028PRO** from ESS Technology used in an eight-fold parallel configuration for each channel to optimize performance
- **ANCC (Accuphase Noise and Distortion Canceling Circuit)** technology in A/D and D/A converter circuitry minimizes noise and distortion
- **BALANCED and LINE level analog inputs and outputs plus three types of digital inputs and outputs (HS-LINK Ver. 2 / COAXIAL / OPTICAL)**



DG-78 Triple Functionality: VOICING / EQUALIZER / ANALYZER

The DG-78 incorporates three complementary functions. The desired function can be selected easily with one of the four large buttons on the HOME screen (there are two choices for Voicing).

The various buttons and graph displays that are shown for each function can be directly manipulated with the supplied stylus pen. For fine-tuning adjustments, the up/down/left/right cursor buttons at the right side of the front panel will also come in handy during input.

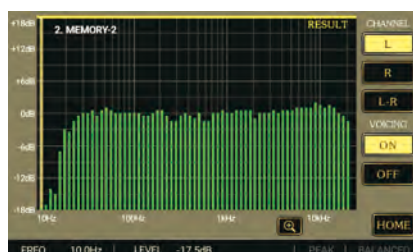


HOME screen

Sound field compensation: VOICING

The Voicing function involves measuring the acoustic characteristics of the room using a microphone and then applying compensation to achieve ideal music reproduction conditions.

The user can choose between two adjustment methods for Voicing. With AUTO VOICING, the entire process is performed automatically for superior operation convenience. MANUAL VOICING gives the user full control over each item, enabling manual adjustment while checking the results.



VOICING measurement result screen

Equalizing function: EQUALIZER

The Equalizer allows for adjusting the tonal result by selectively boosting or attenuating the level of the music signal in specific frequency bands.

The DG-78 offers an amazing 80 bands covering the frequency range up to 100 kHz. By controlling the level in these bands, any desired frequency response can be created.

While listening to actual music, use the stylus pen to draw a response curve. Being able to make adjustments visually while checking the audible result makes all the difference.

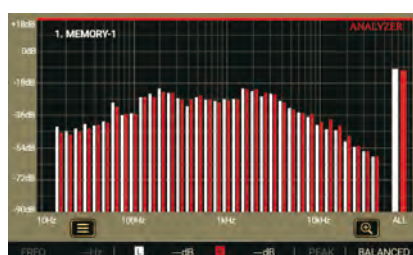


EQUALIZER screen

Spectrum analyzer function: ANALYZER

A spectrum analyzer makes it possible to display the actual frequency components of the music being played. The DG-78 divides the frequency spectrum into 35 bands, reaching up to 50 kHz. The level of each band is analyzed and shown on-screen.

When using the Equalizer, the Analyzer lets the user first check the spectral frequency distribution of the music, to determine where adjustments will be most effective.

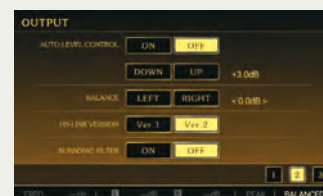


ANALYZER screen

Other functions and features

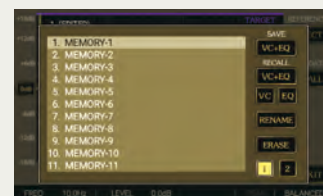
■ Full control over system environment settings

- Adjust analog input sampling frequency and gain settings
- Adjust output level automatically or manually
- Adjust left/right balance
- Select HS-LINK output version
- Turn subsonic filter on or off
- Adjust display brightness or turn display off
- Disable the remote commander



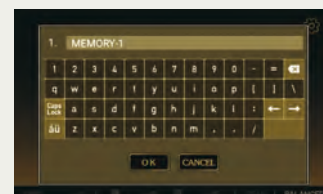
■ Memory functions

The unit provides 30 memory slots for saving Voicing and Equalizer results and settings. Each memory slot is assigned an editable name, and memory data can be backed up onto a USB flash drive. Deleting data that are no longer required is also possible.



■ Large text for exceptional operability

The DG-78 uses the largest possible buttons and characters for easy operations. This is illustrated here by the sample screens for MEMORY operation and the keyboard.



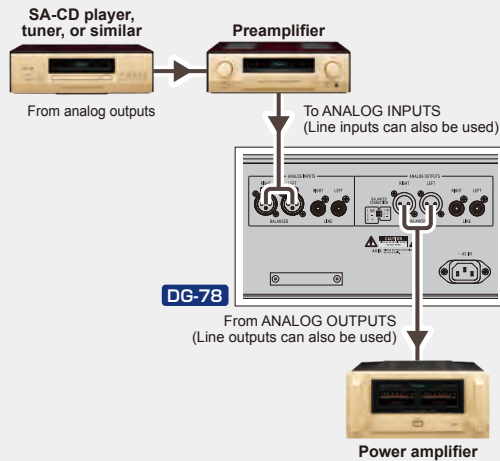
Connection Examples

Integrating the DG-78 into your existing audio system will enable you to create the ideal environment for enjoying music as deeply as never before. Because the DG-78 is equipped with balanced and line (unbalanced) analog inputs/outputs as well as digital inputs/outputs including HS-LINK, it can be connected to all types of equipment, either digital or analog.

Analog connection examples

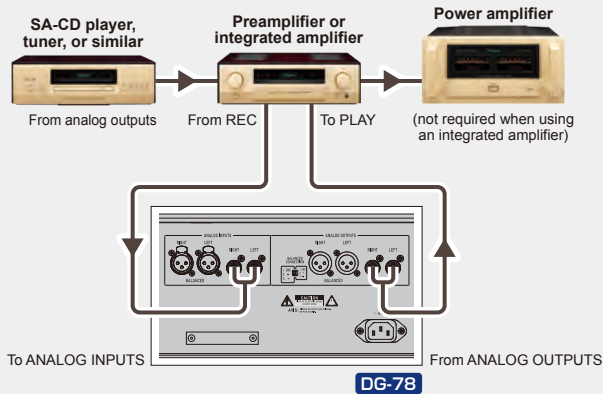
■ Connection of DG-78 between preamplifier and power amplifier

This is an example for a conventional analog connection, inserting the DG-78 between the preamplifier and power amplifier. The connection can be made either with balanced or line (unbalanced) cables.



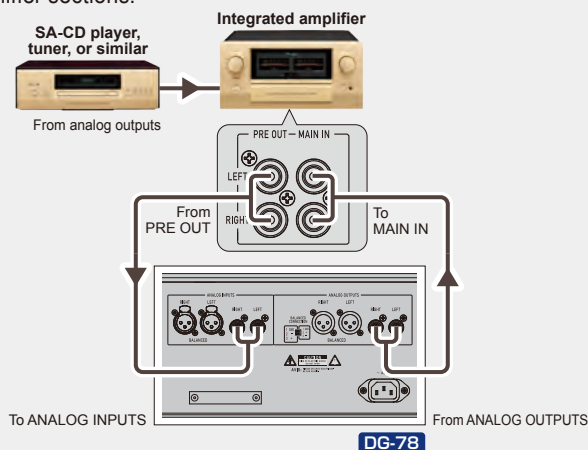
■ Connection of DG-78 in RECORDER loop of preamplifier or integrated amplifier

This is an example for inserting the DG-78 in the RECORDER loop (using the PLAY / REC connectors) of a preamplifier or integrated amplifier.



■ Connection of DG-78 between preamplifier section and power amplifier section of integrated amplifier

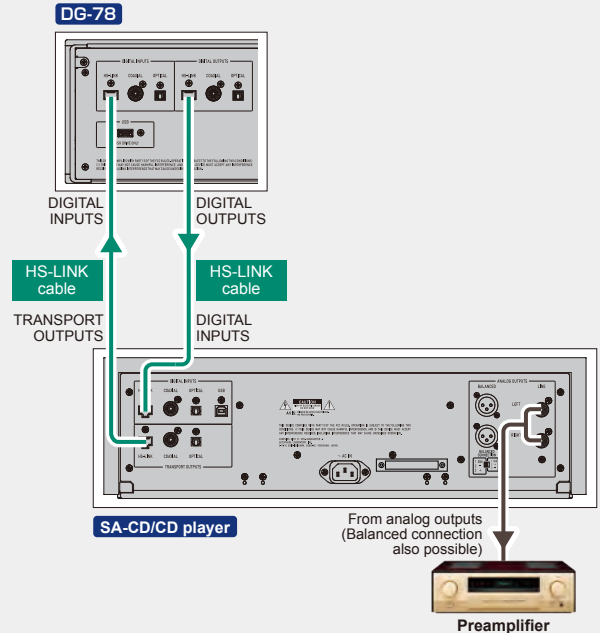
This is an example for connecting the DG-78 to an integrated amplifier that allows separation of the preamplifier and power amplifier sections.



Digital signal connection example

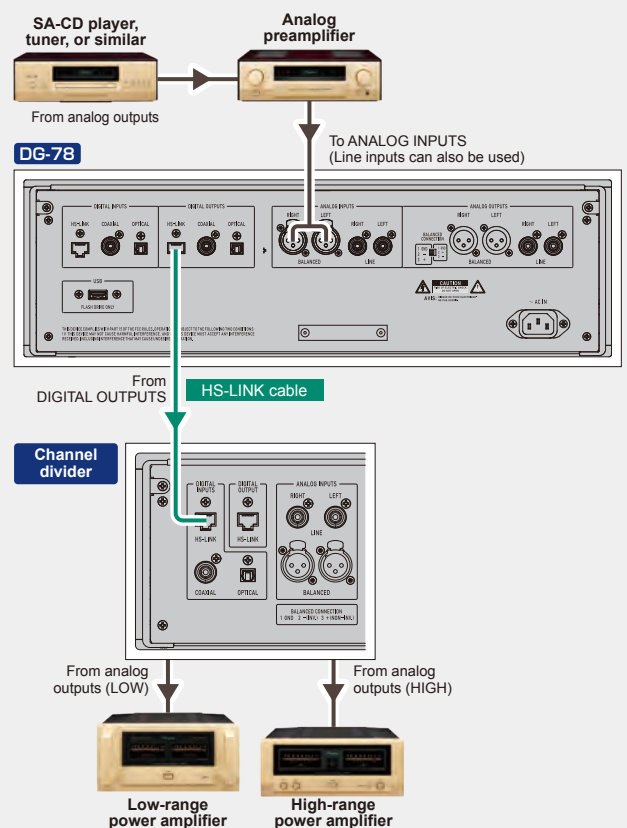
■ Direct digital connection of SA-CD/CD player and DG-78

The transport section output of an SA-CD/CD player can be used to directly process the signal in the digital domain for sound field compensation.



Connection example for use of DG-78 in a multi-amped system with a channel divider

In this example of a 2-way multi-amped system, the analog preamplifier output is sent to the DG-78 for sound field compensation and then supplied (from the DIGITAL OUTPUTS) in digital form to the channel divider.

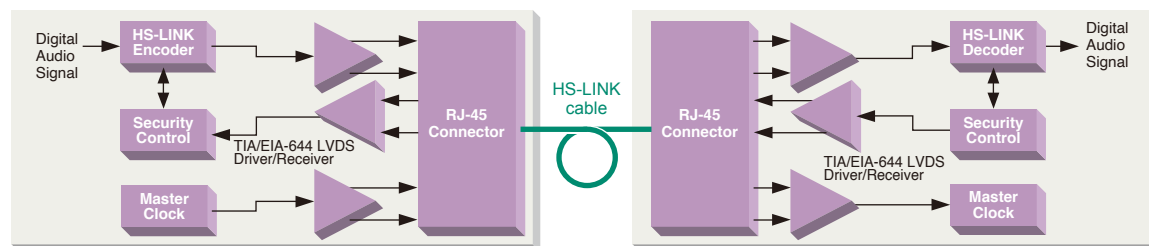


About HS-LINK Ver. 2

HS-LINK Version 2 is a further enhanced version of the Accuphase HS-LINK interface, providing expanded sampling frequency and quantization support.

- The DG-78 supports both HS-LINK Ver. 1 and HS-LINK Ver. 2

Input	Format (2-channel)	Sampling frequencies	Number of bits
HS-LINK Ver.1	DSD	2.8 MHz	1
	PCM	32 / 44.1 / 48 / 88.2 / 96 / 176.4 / 192 kHz	16~24
HS-LINK Ver.2	DSD	2.8 / 5.6 MHz	1
	PCM	32 / 44.1 / 48 / 88.2 / 96 / 176.4 / 192 / 352.8 / 384 kHz	16~32

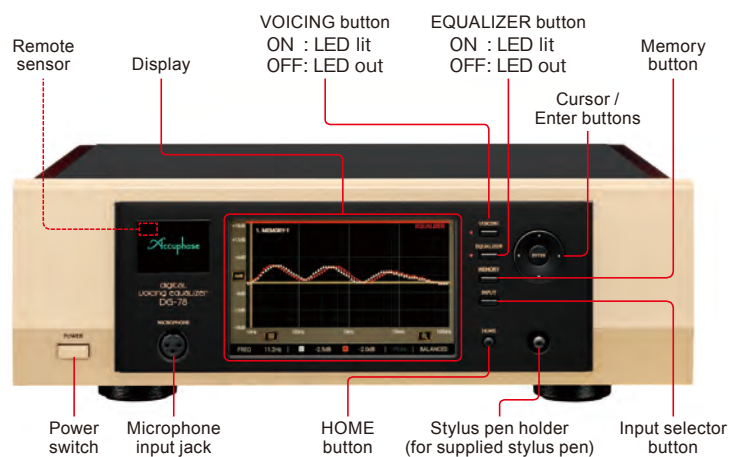


HS-LINK Ver. 2 Signal Transmission Block Diagram

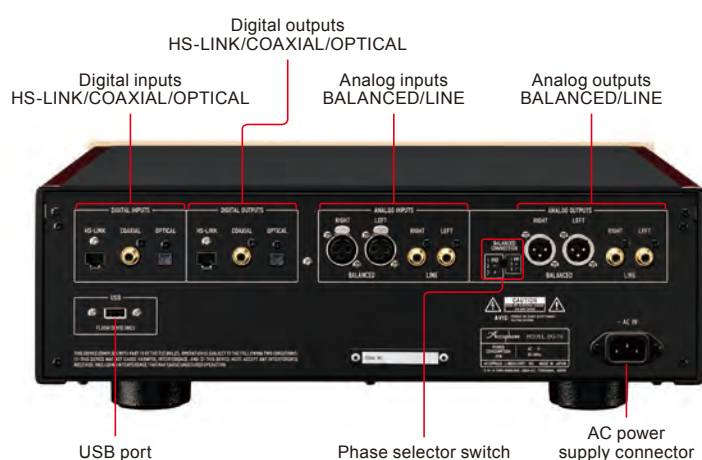
*HS-LINK cable can be used both for HS-LINK Ver. 1 and HS-LINK Ver. 2 signal transmission.

*With HS-LINK Ver. 2, the data and clock signal are transmitted separately, and high sampling frequencies up to 5.6 MHz 1-bit DSD and 384 kHz 32-bit PCM are supported.

Front Panel



Rear Panel



DG-78 Guaranteed Specifications

Voicing	1/6 octave, 67 bands, IIR filter		
	Adjustment range	±12 dB	
Equalizer	1/6 octave, 80 bands, IIR filter		
	Adjustment range	±12 dB	
Measurement signal	Warble tones		
Frequency response curve input methods	Direct drawing with stylus pen, input with cursor keypad		
Spectrum analyzer	1/3 octave, 35 bands, real-time analyzer		
	Display level	+18 dB to -90 dB (6 ranges, selectable)	
Frequency response	0.5 Hz to 50 kHz		+0 dB, -3 dB
THD + Noise	Analog input → Analog output 20 Hz to 20 kHz		0.0007 %
Gain	+12 to -90 dB, variable		
Analog input	Maximum level	GAIN +6 dB	0.89 V
		GAIN 0 dB	1.78 V
		GAIN -6 dB	3.55 V
	Input impedance	BALANCED	40 kΩ
		LINE	20 kΩ
Digital inputs / outputs	HS-LINK	Format	Proprietary standard
		Suitable cable	Dedicated HS-LINK cable
	COAXIAL	Format	IEC 60958 compliant, AES-3 compliant
	OPTICAL	Format	JEITA CP-1212 compliant

A/D converter	Method		4MDS		
	Sampling frequencies		44.1 kHz, 88.2 kHz, 176.4 kHz, 352.8 kHz		
	Resolution		32-bit		
D/A converter	Method		8MDS++		
	Sampling frequencies		32 kHz to 384 kHz		
	Resolution		32-bit		
Analog outputs	Output voltage / output impedance		BALANCED	5 V / 50 ohms	
			LINE	5 V / 50 ohms	
Sampling frequencies	HS-LINK	Ver.1	DSD	2.8 MHz*	1 bit
		Ver.2	PCM	32 kHz~192 kHz	16~24 bits
			DSD	2.8 MHz / 5.6 MHz*	1 bit
			PCM	32 kHz~384 kHz	16~32 bits
	COAXIAL	PCM	32 kHz~192 kHz	16~24 bits	
	OPTICAL	PCM	32 kHz~96 kHz	16~24 bits	
USB port	USB 2.0 / 3.0 Type-A, for USB flash memory (up to 128 GB)				
Power requirements	120 V, 220 V, 230 V AC (voltage as indicated on rear panel)				
	50 / 60 Hz				
Power consumption	29 W				
Maximum dimensions	Width 465 mm (18.31") x Height 161 mm (6.34") x Depth 397 mm (15.63")				
Mass	Net			15.0 kg (33.1 lbs)	
	In shipping carton			22 kg (49 lbs)	

* Digital input only
● Guaranteed Specifications measured according to JEITA standard CP-2150.

Supplied accessories

- Stylus pen
- Microphone cable, 5 m (16.4')
- AC power cord, 2 m (6.5')
- Remote Commander RC-340
- Microphone AM-68
- Microphone holder
- Audio cable with plugs ASL-10B, 1 m (3.3')
- Cleaning cloth

Remarks

- ★ This product is available in versions for 120/220/230 V AC. Make sure that the voltage shown on the rear panel matches the AC line voltage in your area.
- ★ The 230 V version has an Eco Mode that switches power off after 120 minutes of inactivity.
- ★ The shape of the plug of the supplied AC power cord depends on the voltage rating and destination country.



ACCUPHASE LABORATORY, INC.