UNRIVALED
VERSATILITY
THE NEW DIGITAL RECORDING MULTI-TOOL

Made for iPod iPhone iPad

Made for iPhone 5, iPhone 5s, iPhone 5c, iPad (4th generation), iPad Air, iPad mini, iPod touch (5th generation)

// DGT 650
USER MANUAL

SOUNDS LIKE LEWITT

// Index


RETURN
DIRECT
lin
80Hz
160Hz
0dB
-10dB
-20dB
GAIN L R

// Intro

Thank you for choosing a LEWITT DGT 650!

In brief: It's the most versatile USB microphone on the market. It's compatible with Windows, Mac and even iOS devices. It can be used to record vocals, instruments, ambient sound, samples, podcasts and more, both mono with a cardioid polar pattern and stereo thanks to its XY capsule arrangement.

Plug in and record your guitar, synthesizer, mixing desk or any other line output-equipped device via the breakout box. You can even plug any MIDI input device directly into your DGT 650's own 5-pin MIDI jack ...

You see, this is way more than a simple USB microphone: it's your Digital Multi-Tool.

// Features

// XY stereo capsule arrangement for authentic recordings of any acoustic event
// Switchable to cardioid polar pattern
// Hi-Z stereo line-in (6.3 mm, ¼ inch) for directly connecting your instruments
// Illuminated user interface for quick and easy handling even in dark environments
// Streamlined cable handling due to our breakout box
// Recording on the go with iPhone, iPod touch or iPad
// Built in lithium-ion battery for mobile applications
// Bus-powered on PC & Mac
// 4 recording modes
// MIDI support
// Headphone amp
// Zero-latency direct monitoring
// Mixable direct monitoring and tape return signal for host device playback and zero-latency monitoring of the microphone
// Asynchronus USB transfer: precise internal clock handles the samplerate timing to avoid jitter and ensure bit & pitch accurate audio reproduction

// Top applications

// Home studio and live recording
// Mobile / outdoor recording
// Sample and demo recording
// Podcasts and YouTube productions

// Recording Modes

We've built four different recording modes into your DGT 650 to make it the most versatile USB microphone in the world, serving you as a true digital multi-tool. Since we'll need to refer to those different modes later on in this user manual (and because we think they're really cool), we'd like to briefly introduce them to you here:

XY Stereo Mode // Two cardioid capsules with 90° opening for XY stereo recording. Use this mode for recording live concerts, band rehearsals, ambient sounds, background vocals and for similar applications where you want to capture the room sound and the stereo image of any acoustic event.

Cardioid Mode // The two capsules are mixed together to create a cardioid pattern. Best used for vocal recording or other applications where you need good rear and side rejection.

Singer/Songwriter Mode // Channel 1 is the cardioid mic and channel 2 is the line input. Use this mode for simultaneous recording of acoustic and line sources. For example: plug in your guitar to the line input and sing into the microphone to put the two signals on separate tracks. If you plug a stereo source into the line input, it will be summed mono (this could possibly cause phase issues on some synthesizers).

Stereo Line-In Mode // Used to capture a stereo line signal. Connect a synthesizer or mixing console output and record it directly to your device.

// Setup

Connect the breakout box to the lockable hi-speed 18-pin data connector (11) of the microphone, then connect the USB cable to the computer or the lightning connector (sold separately) to your iOS device. If you need to extend the USB cable, be sure to use a HI-SPEED-compatible USB extension cord. We do not recommend the use of USB hubs, but if you need to, only use a powered hub or use the dedicated charging port to power the DGT 650.

OS X (10.6 and up) // Connect the DGT 650 to the breakout box and the breakout box to the USB port.
Open “system preferences” in the menu at the top of the screen.
Click on the “Sound” icon.
Click the “Output” tab and select “DGT 650.”
Click the “Input” tab and also select the “DGT 650.”

Windows // Connect the DGT 650 to the breakout box and the breakout box to the USB port.
Download and install the drivers – please follow the onscreen instructions.
To use the DGT 650 with your preferred sequencer / digital audio workstation, refer to the software manual.
Download the **Control Center at** **www.lewitt-audio.com/DGT-Series/DGT-650/Downloads** in order to change the settings of your DGT 650 from your computer

iOS // Just plug and play. But do make sure that the internal battery is charged or that a charger is connected to the dedicated charging port.

// User Interface

1 Input indicator // Displays active recording mode
a // Stereo Mode
b // Cardioid Mode
c // Singer/Songwriter Mode
d // Stereo Line-In Mode

2 Monitoring modes // Mix the output signal of your device with the input signal of your microphone – simply put: hear the playback and your voice at the same time ...
Return // Monitor the output of your PC, Mac or iOS device
Direct // Monitor the input of the DGT 650 without any latency

3 High-pass filter // Use these filters to get rid of unwanted low frequencies like wind, footsteps, structure-borne noise, ... The high-pass filters at 80Hz or 160Hz affect the microphone and line input at 12dB per octave.

4 Pre-Attenuation // For loud signals to prevent clipping. 0/-10/-20 dB of pre-attenuation affect the microphone only.

5 LED Graph // Displays a value for some settings like headphone gain, input gain, and others.

6 I/O Gain // Input and output gain settings

7 Battery Status // Indicates whether the device is being powered by the internal battery .

8 Jog Dial // Push and turn to change settings.

9 Status Indicator // Displays the current state of the microphone:

Illuminated white // Standard mode

Not illuminated // Settings mode

Illuminated red // Overload has occurred. Decrease the gain or change the pre-attenuation setting.

10 Charging Port // Micro USB port; use a dedicated USB charger as power supply for the DGT 650 on mobile devices to charge the internal battery. It is not possible to charge the microphone by connecting the dedicated charging port to a PC's USB port, but there's no need to do so, since the DGT 650 will then be charged via the data connection.

11 Breakout Box // Connects your DGT 650 with everything else.

12 Data Connector // Connects your DGT 650 to your device; if connected to a PC or Mac, the internal battery will be charged.

13 Headphone Jack // Plug in your headphones here.

14 MIDI In // Plug in your MIDI device here.

15 Line In // Plug in your instrument here.

// Operating the microphone

The following will walk you through all the settings of your DGT 650.

Standard Mode // This is the default state of the device when you power it on (9 is illuminated white).

Settings Mode // This is where you can change all the settings on your DGT 650 including recording modes, monitoring options, high-pass filters, pre-attenuation and gain. The illuminated LEWITT logo will turn off as soon as the microphone switches to Settings Mode. Press the jog dial 8 to switch from setting to setting and rotate it to change the selected setting.

Headphone/Output Gain // The headphone symbol is lit. Rotate the jog dial to change the output volume. **ATTENTION**: Your DGT 650 has a professional, built-in headphone amp. Be sure to check your gain settings befor using headphones, the signal can be very loud. Honestly, we mean it - this can seriously harm your ears.

Input Gain // Press the jog dial until the input gain symbol is lit. We use a very fine gain control – there are intermediate steps that do not show up on the LEDs. The settings will change depending on the selected recording mode. You can set input gain levels for all 4 recording modes individually.

Stereo Mode selected // Gain L R will be lit. Rotate the jog dial to change the gain for both capsules together.

Cardioid Mode selected // Gain L R will be lit. Rotate the jog dial to change the gain.

Singer/Songwriter Mode selected // Gain L will be lit first. This lets you set the gain for the left channel – in this mode, it's the cardioid microphone. Press the jog dial; Gain R will now be lit. This lets you change the gain of the right channel – in this mode, it's the line input.

Stereo Line Mode selected // Gain L R will be lit first. This lets you change the left and right-channel gain settings together. Press the jog dial again; Gain L will be lit. This lets you adjust the gain of the left input separately. Press the jog dial again to change the gain of the right channel separately.

Recording Mode // The selected recording mode symbol is lit. Rotate the jog dial to change the recording mode. Press the jog dial to switch to the next setting.

Monitoring Mode // Use the jog dial to blend between tape return monitoring and direct monitoring 2. The LED graph 6 shows the mixture of the two modes. Press the jog dial to switch to the next option.

High-pass Filter // Set the high-pass 4 with the jog dial. Available settings are: flat, 80Hz@12dB/Oct and 160Hz@12dB/Oct.

Pre-Attenuation // Set the pre-attenuation 5 by rotating the jog dial the options are 0dB, -10dB and -20dB.

// Tech Data

// Microphone

Acoustical operating principle //
pressure gradient transducer, permanently polarized, XY-stereo

Transducer Ø //
2 x 17 mm / 0.67 inch

Polar pattern //
cardioid, XY-stereo

Frequency range //
20 ... 20,000 Hz

Dynamic range of mic. Amp. //
110 dB-A

Pre-attenuation pad //
10 dB
20 dB switchable

Bass cut filter slope //
12 dB / octave at 80 Hz
12 dB / octave at 160 Hz

// General

Resolution //
24 Bit

Sample rates //
44.1 kHz // 48 kHz // 96 kHz

Recording modes //
1: left / right = microphone X/Y
2: left / right = microphone cardioid
3: left / right = stereo line-in
4: left = microphone cardioid / right = line input left

Master gain (analogue) //
0 dB ... 40 dB

Supply voltage //
USB high-power device, 5V (+/-5%) / Internal battery

Internal battery //
Li-ion, 950mAh / 3,7V; > 3h playtime

Current consumption //
< 500mA (charging) // < 275mA (normal operation)

Connector //
18-pin lockable hi-speed connector

Dimensions //
138 x 52 x 36 mm, 5.43 x 2.04 x 1.42 inch

Net weight //
310 g, 10.9 oz

// Sensitivity, SPL, Self-noise
0 dB gain, no attenuators //
Sensitivity: -45.6 dBFS
Limiting spl: 140 dB
Self-noise: 31.6 dB, 29.2 dB (A)

10 dB gain, no attenuators //
Sensitivity: -35.6 dBFS
Limiting spl: 130 dB
Self-noise: 25 dB, 21 dB (A)

20 dB gain, no attenuators //
Sensitivity: -25.6 dBFS
Limiting spl: 120 dB
Self-noise: 24.9 dB, 19.6 dB (A)

30 dB gain, no attenuators //
Sensitivity: -15.6 dBFS
Limiting spl: 110 dB
Self-noise: 26.7 dB, 20.8 dB (A)

40 dB gain, no attenuators //
Sensitivity: -5.6 dBFS
Limiting spl: 100 dB
Self-noise: 22.5 dB, 18 dB (A)

// Line-in
Input impedance //
> 1 Meg ohm

Full scale input voltage //
8 dBu

Input dynamic range //
110 dB (A)

Frequency response //
20 ... 20,000 Hz

// Headphones
Output power //
40mW / 16 ohm THD+N < 0.2 %
20mW / 32 ohm THD+N < 0.14 %

Frequency response // 30 ... 20,000 Hz

Headphone volume control // - 60 dB ... 0 dB

// Saftey Guidelines

// The capsule is a sensitive, high precision component. Make sure you do not drop it from high heights and avoid strong mechanical stress and force.

// To ensure high sensitivity and best sound reproduction of the microphone, avoid exposing it to moisture, dust or extreme temperatures.

// Keep this product out of the reach of children.

// Do not use force on the switch or cable of the microphone.

// When disconnecting the microphone cable, grasp the connector and do not pull the cable.

// Do not attempt to modify or fix it. Contact qualified service personnel in case any service is needed. Please do not disassemble or modify the microphone for any reasons as this will void users warranty.

// The casing of the microphone can be cleaned easily using a wet cloth, never use alcohol or another solvent for cleaning. If necessary the foam wind stopper can be washed with soap water. Please wait till it is dry before using it again.

// Please also refer to the owner's manual of the component to be connected to the microphone.

// Warranty

All products manufactured by LEWITT GmbH feature a limited two-year warranty. This two-year warranty is specific to the date of purchase as shown on your purchase receipt.

LEWITT GmbH shall satisfy the warranty obligations by remedying any material or manufacturing faults free of charge at LEWITT's discretion either by repair or by exchanging individual parts or the entire appliance. Any defective parts removed from a product during the course of a warranty claim shall become the property of LEWITT GmbH.

While under warranty period, defective products may be returned to the authorized LEWITT dealer together with original proof of purchase. To avoid any damages in transit, please use the original packaging if available. Please do not send your product to LEWITT GmbH directly as it will not be serviced. Freight charges have to be covered by the owner of the product.

For further information please visit www.lewitt-audio.com or check your warranty card.

// Regulatory Information

LEWITT GmbH declares under its sole responsibility that DGT 650 complies with the European directive 2004/108/EC and 2006/95/EC. The product has been tested according to harmonized European standards:
EN 55022: 2010
EN 55024: 2010
EN 61000-3-2: 2006 + A2: 2009
EN 61000-3-3: 2008
EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011

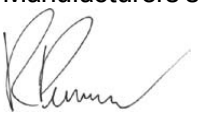
Product testing was carried out by SEM. Test Compliance Service Co., Ltd. notified body number SEM11124587 / SEM11126875.

LEWITT GmbH hereby declares under its sole responsibility that DGT 650 has been tested and conforms to the following FCC and ANSI standards:
FCC Part 15B Section 15.205, 15.107 and 15.109
ANSI C63.4-2009

Product testing was carried out by SEM. Test Compliance Service Co., Ltd.

WEEE note: Electronic waste has to be collected separately. Please bring this device to a local recycling center at the end of its life time.

Manufacturers signature:



Date: 9th October 2014 DI Roman Perschon

Place: Vienna, AUSTRIA CEO – Lewitt GmbH

Declaration of conformity can be downloaded at **www.lewitt-audio.com** or obtained from **info@lewitt-audio.com**.