

CANCUN 222-Mic CANCUN 442-Mic

Professional USB Audio Interface

Preliminary version v0.99



User manual



For technical support, please contact your supplier

www.digigram.com

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INFORMATION FOR THE USER **IMPORTANT NOTICE FEATURES** Cancun 222-Mic and CANCUN 442-Mic main hardware features CANCUN 222-Mic CANCUN 442-Mic Software features HARDWARE REQUIREMENTS SUPPORTED OPERATING SYSTEMS HARDWARE INSTALLATION SOFTWARE INSTALLATION OF CANCUN UNDER WINDOWS SETTING AND MONITORING CANCUN PARAMETERS FROM THE CONTROL PANEL Starting the control panel **Configuration of Preferences** Configuration of audio inputs parameters Adjusting the gains on the analog inputs and displaying vu-meters Input pad and 48V phantom power Displaying the signal level on the AES/EBU input(s) Adjusting the gains on the analog outputs and displaying vu-meters Displaying the signal level on the AES/EBU output(s) Configuration of headphone output parameters SETTING CANCUN PARAMETERS FROM THE CANCUN TOUCH PANEL Input gains setting Pad Variable analog input gain Output gains settings 48V phantom power **SPECIFICATIONS** Configuration Audio specifications Inputs Outputs Analog audio performances External Connectors **Delivered Cables Environments CANCUN 222-Mic CABLE** CANCUN 222-Mic cable schematic CANCUN 222-Mic Wiring diagram CANCUN 222-Mic cable pinout CANCUN 442-Mic CABLE CANCUN 442-Mic cable schematic CANCUN 442-Mic Wiring diagram CACUN 442-Mic cable pinout





INFORMATION FOR THE USER

The user's manual or instruction manual for an intentional or unintentional radiator shall caution the user that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment

This device complies with part 15 of FCC rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a CLASS B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions contained in this data sheet, may cause harmful interference to radio and television communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

* reorient or relocate the receiving antenna

- * increase the separation between the equipment and the receiver
- * connect the equipment into an outlet on a circuit different from that of the receiver
- * consult the dealer or an experienced audio television technician.
 - **Note:** Connecting this device to peripheral devices that do not comply with CLASS B requirements or using an unshielded peripheral data cable could also result in harmful interference to radio or television reception. The user is cautioned that any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment. To ensure that the use of this product does not contribute to interference, it is necessary to use shielded I/O cables.

IMPORTANT NOTICE

This device has been tested and found to comply with the following standards:

- International: CISPR22 Class B
- · Europe: EMC 89/336/CEE (1992) specifications.
- United States: FCC Rules-Part 15-Class B (digital device).

For best compliance with these standards, Digigram recommends to use audio shielded cables shorter than three meters.

FEATURES

CANCUN 222-Mic and CANCUN 442-Mic are professional audio interface for USB ports (compatible with USB 2.0 and USB 3.0 hosts).

They are powered via USB. In some configurations (typically when using several static



microphones, it may be necessary to connect the CANCUN device to two different USB Ports so as to get enough current from the PC). CANCUN devices are delivered with a 'Y' USB cable allowing powering the device from two USB ports.

Cancun 222-Mic and CANCUN 442-Mic main hardware features

- Simultaneous analog & AES I/Os in a compact form factor
- A/D and D/A conversions 24-bit / frequency : 32 kHz, 44.1 kHz, 48 kHz, 88.2 kHz, 96 kHz, 192 kHz
- Excellent MIC preamp (55dB gain, from -60 dBu sensitivity, typical -105 dB THD+N, and -128 dB EIN)
- Switchable 48V phantom power (7 mA Max on each input)
- Adjustable analog input gain from 0 to 55 dB, by 1 dB steps
- Switchable -30 dB input signal Pad (level attenuator)
- Maximum analog input signal: +25 dBu
- Guaranteed low latency (<4 mS) on both Windows™ and Mac OSX™ platforms
- Ergonomically advanced user interface for quick setup and efficient monitoring on both Windows™ and Mac OSX™ platforms
- Innovative hardware controls with LED-lighted touch panel
- Neutrik[™] XLR connectivity and break-out cable

CANCUN 222-Mic

- 2 balanced analog mono line/mic inputs, +25 dBu max signal level
- 2 balanced analog mono line outputs, +10 dBu max signal level
- 1 additional balanced stereo AES/EBU input
- 1 additional balanced stereo AES/EBU output
- 1 stereo headphone output on female 6.35mm jack



CANCUN 442-Mic

- 4 balanced analog mono line/mic inputs, +25 dBu max signal level
- 4 balanced analog mono line outputs, +10 dBu max signal level
- 2 additional balanced AES/EBU inputs
- 2 additional balanced AES/EBU outputs
- 1 stereo headphone output on female 6.35mm jack

Software features

- CANCUN 222-Mic and CANCUN 442-Mic comply with the USB Audio 2.0 specification
- Simultaneous record and playback on all the audio I/Os
- Supported formats: PCM 8, 16, 24 bits
- DirectSound devices CANCUN 222-Mic: 2 stereo input devices (1 analog, 1 AES/EBU) CANCUN 442-Mic: 4 stereo output devices (2 analog, 2 AES/EBU)
- ASIO devices CANCUN 222-Mic: 4 mono input devices (2 analog, 2 AES/EBU) CANCUN 442-Mic: 8 mono output devices (4 analog, 4 AES/EBU)
- Control Panel GUI for quick setup and efficient monitoring on both Windows[™] and Mac OSX[™](*) platforms
- Mixing of the inputs and playback ouputs to the headphone output
- Host platform Control Panel synchronized with CANCUN touch panel

As Windows operating systems don't feature the USB Audio 2.0 compatibility, it is necessary to install a driver package. CANCUN devices are visible as DirectSound and ASIO devices. CANCUN is also compatible with Kernel Streaming applications.

HARDWARE REQUIREMENTS

• A USB port (standard 2.0 or higher)

SUPPORTED OPERATING SYSTEMS

- Windows XP, Windows Seven (32-bit and 64-bit)
- Mac OS X
- Linux(*)

* Not available yet. Will be available by software upgrade

HARDWARE INSTALLATION

Connect the mini-B USB connector of the provided USB cable to the mini-B USB port located underneath CANCUN.



Connect the standard type A male USB connector of the provided USB cable to a USB port (USB 2.0) or your computer.

It will then automatically be detected by the operating system.

Under Windows operating systems, it is necessary to install the driver package for Windows (because Windows OS don't support USB Audio 2.0).

Note: If you have several USB peripherals connected to the same USB controller of your computer, they may consume more energy than the USB controller can provide. In this case, disconnect some of these peripherals.

SOFTWARE INSTALLATION OF CANCUN UNDER WINDOWS

The first time you connect your Cancun device to your computer, it is necessary to install its driver, as USB Audio 2.0 is not supported yet by Windows operating systems

Connect your Cancun device to a free USB port of your computer.

Execute the driver installation package you have downloaded from Digigram WEB site, and proceed as follows.

Setup		Click on Next.
8	Welcome to the Digigram CANCUN v1.50.03 Setup Wizard	
	This wizard will guide you through the installation of Digigram CANCUN v1.50.03. It is recommended that you close all other applications before starting Setup. This will make it possible to update relevant system files without having to reboot your computer. Click Next to continue.	
	Next > Cancel	

Delejgram

Setup License Agreement Please review the license terms before installing Digigram CANCUN v1.50.03. Press Page Down to see the rest of the agreement. DIGIGRAM SOFTWARE LICENSE AGREEMENT PLEASE READ THESE TERMS CAREFULLY BEFORE DOWNLOADING, INSTALLING OR USING OUR SOFTWARE Your use of Digigram software means that you accept these terms and conditions. If you do not agree with these terms and conditions, then Digigram is not willing to license the software to you (Licensee'), and you should not use the software. By installing, downloading or using the software, you addrowledge that you have read these terms and conditions, that you understand them, and that you agree to be bound If you accept the terms of the agreement. If you cacept the terms of the Jucense Agreement Control Agreement to install Digigram CANCUN v1.50.03. Click Next to continue. If you cacept the terms of the License Agreement Cancel Cancel	Accept the License Agreement, and click on Next .
Setup Choose Install Location Choose Install Location Choose the folder in which to install Diggram CANCUN v1.50.03. Setup will install Diggram CANCUN v1.50.03 in the following folder. To install in a different folder, click Browse and select another folder. Click Install to start the installation. Destination Folder Program Flest Diggram CANCUR Browse Space required: 16.7M8 Space available: 130.2G8	By default, driver files are installed in folder C:\Program Files\Digigram CANCUN. Select another folder if you want, and click on Install.
Setup Installing Please wait while Digigram CANCUN v 1.50.03 is being installed. This may take some time to complete. Please wait Preparing installation. This may take some time to complete. Please wait	Wait during the installation of the driver.





The Cancun DirectSound devices are now listed in the Windows "Sound" control panel, in "Playback" and "Record" tabs.

selectionnez un perphenque de lecture d-	ressous pour mourner ses parami	paramétro	6:	
AES Out 1 CANCUN 442-mic Audio Prêt			Analog In 1/2 CANCUN 442-mic Audio Prét	
AES Out 2 CANCUN 442-mic Audio Prêt			Analog In 3/4 CANCUN 442-mic Audio Prét	
Analog Out 1/2 CANCUN 442-mic Audio Prêt			AES In 1 CANCUN 442-mic Audio Prét	
Analog Out 3/4 CANCUN 442-mic Audio Prêt			AES In 2 CANCUN 442-mic Audio Prêt	
Haut-parleurs Périphérique High Definition A Non connecté	udio		Microphone Périphérique High Definition Audio Non connecté	
Configurer	Par défaut	Confi	purer	ar défaut 💌 Propriétés

The ASIO devices can be selected from any ASIO application.



SETTING AND MONITORING CANCUN PARAMETERS FROM THE CONTROL PANEL

Starting the control panel

Digigram CANCUN CONTROL Panel CANCUN Control Panel CANCUN Firmware Updater CANCUN Uninstall CANCUN User Manual	Cancun parameters can be set from its control panel. To open Cancun control panel, go in Start menu, Programs, Digigram CANCUN, and select Cancun Control Panel. Note that the Control Panel is automatically opened when connecting the CANCUN to the PC (provided that the driver has been installed under Windows).
IN OUT	 Four main groups of parameters are accessible from the Control Panel bottom bar: Preferences: Clock selection, buffer size (latency), opacity of the Control Panel display, presets. Parameters for the audio inputs (adjustable gains, vu – meters, Mute, PAD, 48V phantom power). Parameters for the audio outputs (adjustable gains, vu – meters,) Parameters for the headphone output (adjustable attenuation, Left/right balance, mix of input signals).

Configuration of Preferences



Cards: allows select the CANCUN device to set its parameters. Clocks: allows selecting the sampling clock:

- Internal: sampling clock is generated internally
- AES1: sampling clock is extracted from digital input AES1. Without digital signal connected to the input "AES 1", AES1 clock selection is displayed as "not valid".

Buffers: these parameters allow adjusting the latency of the

- Streaming: this is the lowest level of buffering, which impacts the latency in DirectSound as well as in ASIO.
- Possible selections are: min latency, low latency, standard, relax,

ASIO: this is the buffering used by the ASIO driver, in samples. Possible values are: 64, 128, 256, 512, 1024, 2048, 4096, 8192

The minimum selectable value depends on the

When "Streaming" is set to "low latency", all values are allowed. When "Streaming" is set to "extra safe", values higher or equal to

Note: minimum latency settings require good PC performances.

Configuration of audio inputs parameters

Adjusting the gains on the analog inputs and displaying vu-meters

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Input pad and 48V phantom power





48V IFF . When 48V is enabled on an input, the button is displayed as follows:
Note that any modification of the Pad from the software Control Panel is reflected on the touch pad of Cancun, and vice versa.

Displaying the signal level on the AES/EBU input(s)



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Adjusting the gains on the analog outputs and displaying vu-meters



Displaying the signal level on the AES/EBU output(s)



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Configuration of headphone output parameters







SETTING CANCUN PARAMETERS FROM THE CANCUN TOUCH PANEL

Input gains setting

Pad

Press the **Pad** touch button to enable/disable the fixed attenuation on the desired.

When PAD is ON, a green led appears. An attenuation of -30.0 dB is applied to the analog input signal.

When PAD is OFF, the LED is turned off. No attenuation is applied.



Note that the Pad status is reflected in the software Control Panel.

Variable analog input gain

R CHART	 The analog input gain is adjustable with the upper rotary button when: the IN/OUT touch button on the right of the rotary button is in position IN (green led in front of IN) and the touch button on the left of the rotary wheel is active (green led).
	Pressing the button several times allows selecting analog input 1, analog input 2, both inputs, or no input (LED turned off). The analog gain adjustment is then applied to the selected input(s). Note that moving the rotary button automatically updates the fader position in the software control panel for the concerned channels.



Output gains settings

E O E	 The analog output gain is adjustable with the upper rotary button when: the IN/OUT touch button on the right of the rotary button is in position OUT (green led in front of OUT) and the touch button on the left of the rotary wheel is active (green led).
V2 A A A A A A A A A A A A A A A A A A A	Pressing the button several times allows selecting analog output 1, analog output 2, both outputs, or no output (LED turned off). The analog gain adjustment is then applied to the selected output(s). Note that moving the rotary button automatically updates the fader position in the software control panel for the concerned channels.

48V phantom power

In case you are using a static microphone on an analog input, it is necessary to activate the 48V phantom power on this input. Press the " 48v " touch button of the concerned input. 48v phantom power is enabled when a red LED appears. It is disabled otherwise.
Note: in case several static microphones are used, it may be necessary to connect the Cancun to a second USB controller of the PC so as to get enough current (a single USB controller may not provide enough current).





SPECIFICATIONS

Configuration

Bus Format	USB 2.0 / Compliant with the USB 2.0 Audio specification
Size	254 mm x 96 mm x 36 m
Operating : temp / Humidity	0°C to +50°C / 0 % to 90 % (non condensing)

Audio specifications

A/D and D/A converters resolution	24 bits
Sampling frequencies available	32 kHz, 44.1 kHz, 48 kHz, 88.2 kHz, 96 kHz, 192 kHz
Audio formats supported	PCM 8, 16, 20, and 24 bits
Latency	3.4 mS Analog-to-PC or PC-to-Analog (Windows 7 / 64 bits) 3.8 mS Analog-to-MAC or MAC-to-Analog (Mac OS X 10.6.8)
ADAT / S/PDIF	24-bit/192kHz ADAT *

* Not available yet. Will be available by software upgrade

Inputs

	CANCUN 222-Mic	CANCUN 442-Mic
Analog line inputs (mono)	2 balanced	4 balanced
Maximum input level/ impedance	Line: +25 dBu / >3.5 kOhms Mic: -5 dBu / >2 kOhms	Line: +25 dBu / >3.5 kOhms Mic: -5 dBu / >2 kOhms
Programmable input gain	From 0 to 55 dB by 1 dB steps	From 0 to 55 dB by 1 dB steps
Input Pad	- 30 dB switchable on each analog input	- 30 dB switchable on each analog input
Input sensitivity	Line (PAD On): 0 dBfs adjustable from -30 dBu to +25 dBu Mic (PAD Off): -60 dBu to -5 dBu	Line (PAD On): 0 dBfs adjustable from -30 dBu to +25 dBu Mic (PAD Off): -60 dBu to -5 dBu
Digital inputs (stereo)	1 AES/EBU (AES3-2003) compliant	2 AES/EBU (AES3-2003) compliant
AES11 synchronization	Yes, on AES 1 Input	Yes, on AES 1 Input
Other inputs	ADAT / S/PDIF*	ADAT / S/PDIF*



* Not implemented yet. This will be available by software upgrade.

Outputs

	CANCUN 222-Mic	CANCUN 442-Mic	
Analog line outputs (mono)	2 balanced	4 balanced	
Maximum output level/ impedance	+10 dBu / 2x33 Ohms	+10 dBu / 2x33 Ohms	
Digital outputs (stereo) 1 AES/EBU		2 AES/EBU	
Programmable output attenuation	From 0 to -72 dB by 1 dB steps	From 0 to -72 dB by 1 dB steps	
Headphones output	Dedicated output stage, >10 mW from 32 to 600 Ohms Bandwidth: 10Hz-20 kHz +-0.1 dB Dynamic range : 93 dB @32 Ohms, typical	Dedicated output stage, >10 mW from 32 to 600 Ohms Bandwidth: 10Hz-20 kHz +-0.1 dB Dynamic range : 93 dB @32 Ohms, typical	
Other outputs ADAT / S/PDIF*		ADAT / S/PDIF*	

* Not implemented yet. This will be available by software upgrade.

Analog audio performances

	Cancùn 222-Mic and 442-Mic	
Frequency response (A/D Input)	 20 Hz–20 kHz +0/-0.5 dB @48 kHz 20 Hz–40 kHz +0/-0.6 dB @96 kHz 20 Hz–80 kHz +0/-2.0 dB @192 kHz 	
S/N (A/D Input)	· S/N: 111 dBA - 108 dB unweighted @48 kHz, typical	
THD + noise, ref 1 kHz at –3 dBfs (A/D Input)	 -105 dB THD+N / 20 Hz-20 kHz @48 to 192 kHz, typical -107 dBA THD+N / 20 Hz-20 kHz @48 kHz to 192 kHz, typical 	
Mic inputs E.I.N.	· -128 dB EIN / Zsource = 40 Ohms; Pad Off; gain 55 dB, typical	
Frequency response (D/A Ouput)	 10 Hz–20 kHz +0/-0.1 dB @48 kHz 10 Hz–40 kHz +0/-0.3 dB @96 kHz 10 Hz–80 kHz +0/-1.3 dB @192 kHz 	
S/N (D/A Output)	· S/N: -111 dB unweighted @48 kHz, typical	
THD + noise, ref 1 kHz at –1 dBfs (D/A Output)	· -98 dB THD+N / 20 Hz-24 kHz @48 kHz to 192 kHz, typical	
Channel phase difference (A/D Input and D/A Output)	• +- 0.2° / 20 Hz-20 kHz	
Jitter, jitter sensitivity and jitter suppression	· AES3 (AES3-2003) compliant	
Latency	 3.4 mS Analog-to-PC or PC-to-Analog (Windows 7 / 64 bits) 3.8 mS Analog-to-MAC or MAC-to-Analog (Mac OS X 10.6.8) 	



External Connectors

	CANCUN 222-Mic	CANCUN 442-Mic	
Analog and digital I/ Os	25 pin Sub-D (compatible with DB25 YAMAHA DIGITAL) XLR female for analog input 1	44 pin Sub-D HD XLR female for analog input 1	
Headphone output	6.35mm jack	6.35mm jack	
ADAT / S-PDIF	Optical*	Optical*	
USB mini-B USB on card side Standard, includes two A-type on PC side, one		mini-B USB on card side Standard, includes two A-type on PC side, one	

* Functionality not implemented yet. This will be available by software upgrade.

Delivered Cables

	CANCUN 222-Mic	CANCUN 442-Mic	
Analog and digital I/ Os	Breakout cable 25 pin Sub-D to 6 XLRs <mark>Neutrik (c)</mark>	Breakout cable 44 pin Sub-D HD to 12 XLRs <mark>Neutrik (c)</mark>	
USB	'Y' cable composed of a mini-B USB on CANCUN side, and two A-type on PC side	'Y' cable composed of a mini-B USB on CANCUN side, and two A-type on PC side	

Environments

	CANCUN 222-Mic		
Supported operating systems	Windows XP, Windows Seven 32 and 64 bits, Mac OS X, Linux		
Management	Windows XP: DirectSound, ASIO, Digigram np SDK through Virtual PCX Windows Seven; DirectSound, ASIO, Core Audio, WASAPI, Digigram np SDK via Virtual PCX Mac OS X: CoreAudio Linux: Alsa*		

* Functionality not implemented yet. This will be available by software upgrade.



CANCUN 222-Mic CABLE

CANCUN 222-Mic cable schematic



CANCUN 222-Mic Wiring diagram



CANCUN 222-Mic cable pinout

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Pin#	Signal	Pin#	Signal
1	ANALOG IN1 Left +	14	ANALOG IN1 Left -
2	ANALOG IN2 Right +	15	ANALOG IN2 Right -
3	Not connected	16	Not connected
4	AES IN1 + (AES SYNCHRO)	17	AES IN1 - (AES SYNCHRO)
5	ANALOG OUT1 Left +	18	ANALOG OUT1 Left -
6	ANALOG OUT <mark>2</mark> Right +	19	ANALOG OUT <mark>2</mark> Right -
7	Not connected	20	Not connected
8	AES/EBU OUT +	21	AES/EBU OUT -
9	Not connected	22	GND
10	GND	23	GND
11	Not connected	24	GND
12	GND	25	GND
13	GND		



CANCUN 442-Mic CABLE

CANCUN 442-Mic cable schematic



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CANCUN 442-Mic Wiring diagram





CACUN 442-Mic cable pinout

Pin#	Signal	Pin#	Signal
1	ANALOG IN4 Right +	23	GND
2	ANALOG IN4 Right -	24	GND
3	ANALOG IN3 Left +	25	Not connected
4	ANALOG IN3 Left -	26	GND
5	ANALOG OUT1 Left +	27	GND
6	ANALOG OUT1 Right +	28	GND
7	ANALOG OUT3 Left +	29	GND
8	ANALOG OUT3 Left -	30	AES/EBU IN2 +
9	Not connected	31	ANALOG IN1 Left +
10	AES/EBU IN1 + (AES Synchro)	32	ANALOG IN1 Left -
11	AES/EBU IN1 - (AES Synchro)	33	ANALOG IN2 Right +
12	GND	34	ANALOG IN2 Right -
13	GND	35	ANALOG OUT2 Right +
14	AES/EBU OUT2 -	36	ANALOG OUT2 Right -
15	AES/EBU OUT2 +	37	ANALOG OUT4 Right +
16	GND	38	ANALOG OUT4 Right -
17	GND	39	Not connected
18	GND	40	Not connected
19	GND	41	Not connected
20	GND	42	AES/EBU OUT1 +
21	GND	43	AES/EBU OUT1 -
22	GND	44	AES/EBU IN2 -