TONE2 PRO

QUICKSTART

INTERFACE
DIAGRAM

VOLUME KNOB	0
RGB LED RING	9
USB	8
POWER LED	7
I2S	6
S/PDIF (COAXIAL)	5
BALANCED RCA-L	4
BALANCED RCA-R	3
3.5MM SINGLE END	1
4.4MM BALANCED	2

DRIVER
INSTALLATION

1 **INSTALL THE KHADAS USB DRIVER**
Download the latest driver from **dl.khadas.com/products/tone2/driver**.

2 **DISCONNECT & RECONNECT TONE2**
Unplug and replug the USB-C cable connecting Tone2 Pro to your Windows PC.

* Windows 10's USB-audio driver **does not** fully support the Tone2 Pro. It has latency and sampling rate issues, and no ASIO.

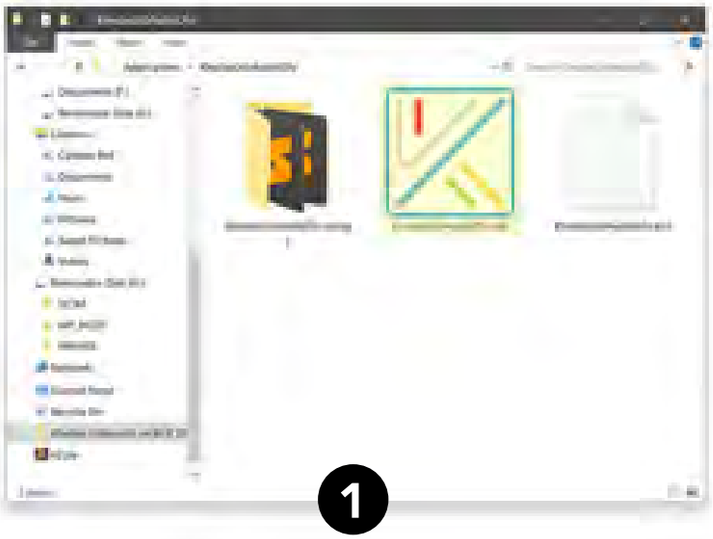
FIRMWARE

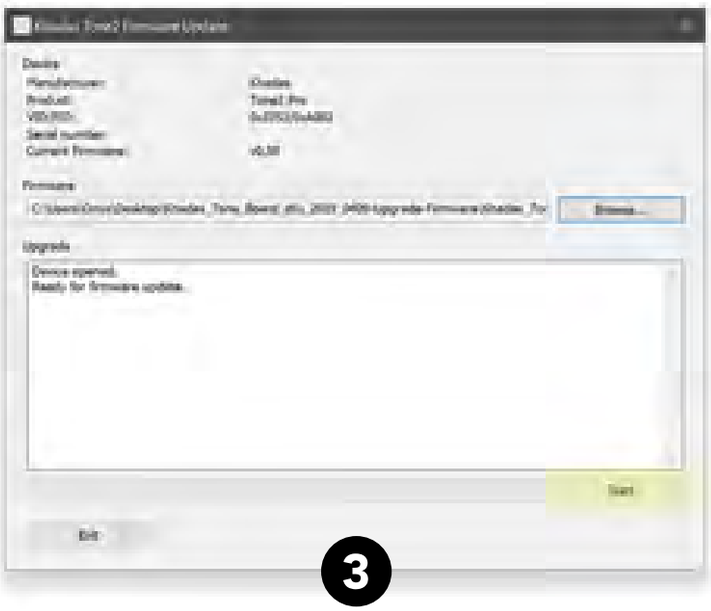
UPGRADE

1 **OPEN THE KHADAS DFU UPGRADE TOOL**
Download the latest tool from **dl.khadas.com/products/tone2/dfu_tool**.

2 **DOWNLOAD THE LATEST TONE2 PRO FIRMWARE**
Download the latest firmware from **dl.khadas.com/products/tone2/firmware**.

3 **FLASH NEW FIRMWARE TO TONE2 PRO**
Connect your Tone2 Pro via USB-C to your PC, and use the DFU tool to burn the new firmware.





* For more details, visit **docs.khadas.com/tone2**.

INPUT / OUTPUT

SOURCES

1 — **3.5MM HEADPHONES** (ANALOG OUT)

2 — **4.4MM BALANCED HEADPHONES** (ANALOG OUT)

3 — **PRE-AMP** (ANALOG OUT) **–> AMP –> HI-FI SPEAKERS**

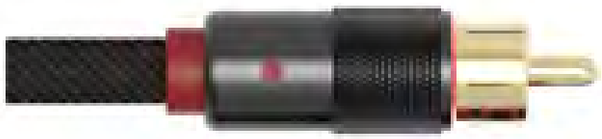
4 — **PRE-AMP** (ANALOG OUT) **–> AMP –> HI-FI SPEAKERS**

5 — **CD PLAYER** (S/PDIF COAX IN)

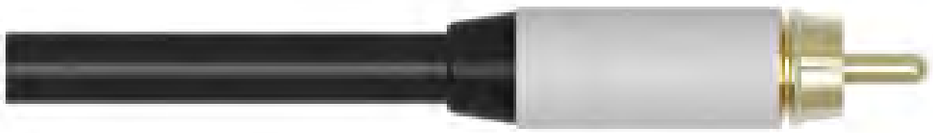
6 — **BLUETOOTH MODULE** (DATA IN) **/ USB-C 5V LINEAR POWER SUPPLY** (POWER IN)

7 — **COMPUTER / SMARTPHONE / SBC** (DATA IN + POWER IN)

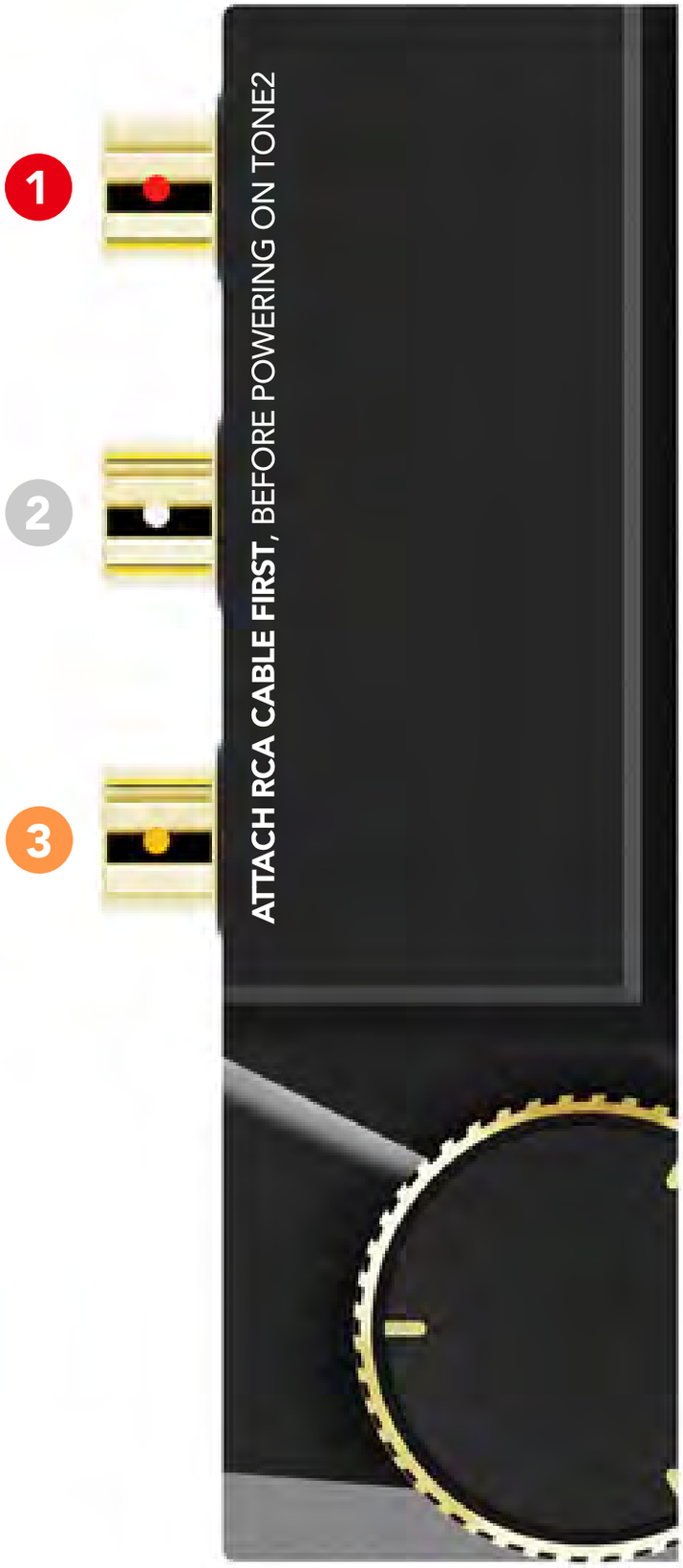
RCA
USAGE MODES



● **KHADAS BALANCED RCA TO XLR-3 CONVERTER**



● **STANDARD RCA CABLE**



	RCA PORT	**STANDARD** RCA CABLE	**BALANCED** RCA CABLE
1	**BALANCED** RCA-R	**UNBALANCED** SIGNAL R	**BALANCED** SIGNAL R
2	**BALANCED** RCA-L	**UNBALANCED** SIGNAL L	**BALANCED** SIGNAL L
3	**S/PDIF** IN/OUT	**INPUT S/PDIF** SIGNAL R+L	

POWER
PRIORITY

If both I2S and USB are connected **simultaneously**, power will be drawn from **I2S (higher priority).**

1 **USB-C (I2S)**
LINEAR POWER SUPPLY

2 **USB-C (USB)**
SMARTPHONE / PC / SBC

VOLUME KNOB

ROTARY/PUSH ENCODER

ACTION		[1] PUSH				[2] ROTATE	
MODE	FUNCTION	SINGLE	DOUBLE	TRIPLE	LONG	CLOCK	ANTI-C
GENERAL	PLAY/STOP	X					
	UN/LOCK			X			
	ON/OFF				X		
VOLUME	INCREASE		X			X	
	DECREASE						X
TRACK	NEXT		X			X	
	PREVIOUS						X
GAIN (headphones)	HIGH		X			X	
	LOW						X
INPUT	AUTO		X			X	
	I2S						
	S/PDIF						
	USB						X
FILTER	NEXT		X			X	
	PREVIOUS						X

* The **double-push** action should be performed first, to activate the corresponding **rotate** action.

LED LIGHTS

INTERPRETATION

POWER LED

WHITE
LINEAR POWER SUPPLY

MAUVE
PC USB POWER SUPPLY

RGB RING LIGHT

* For a more **detailed explanation** of the RGB ring light, go to the next page.

RGB RING LIGHT

INTERPRETATION

MODE
SELECTION (RED)

VOLUME (MUTE)

TRACK

GAIN

INPUT

FILTER

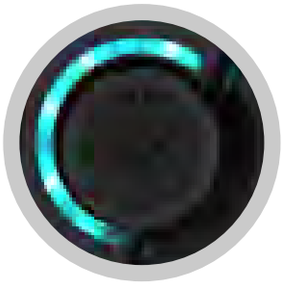
VOLUME
HEADPHONES (TURQUOISE)

1 - 20%

21 - 40%

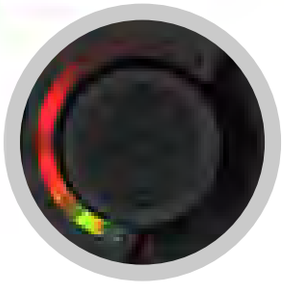
41 - 60%

61 - 80%



81 - 100%

GAIN
HEADPHONES (GREEN, RED)



LOW

HIGH

RGB RING LIGHT

INTERPRETATION

INPUT
SELECTION (YELLOW, RED)

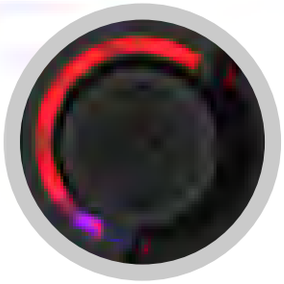
USB

S/PDIF

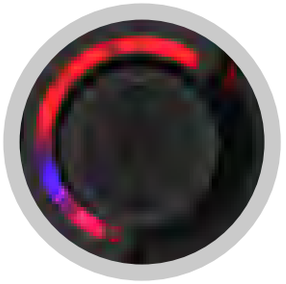
I2S

AUTO

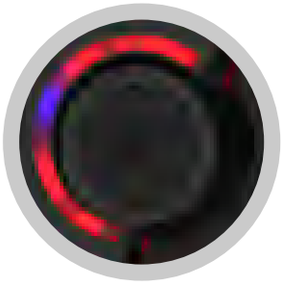
FILTER
SELECTION (BLUE, RED)



LINEAR FAST

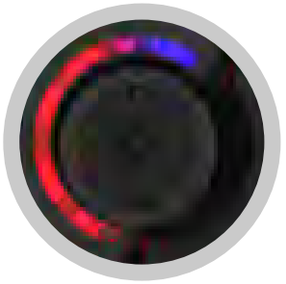


LINEAR SLOW

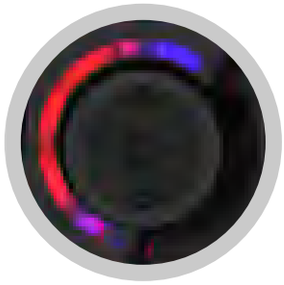


MINI FAST

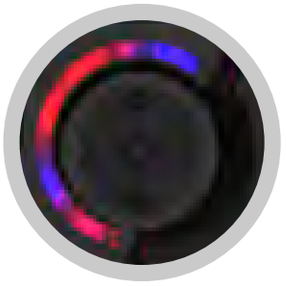
MINI SLOW



APODIZING



MINI FAST



BRICK WALL

RGB RING LIGHT

INTERPRETATION

MQA OFS
FORMAT (MAGENTA)

44.1 / 48K | 88.2 / 96K | 176.4 / 192K | 352.8 / 384K | 705.6 / 768K

MQA STUDIO
FORMAT (BLUE)

44.1 / 48K | 88.2 / 96K | 176.4 / 192K | 352.8 / 384K | 705.6 / 768K

MQA
FORMAT (GREEN)

44.1 / 48K | 88.2 / 96K | 176.4 / 192K | 352.8 / 384K | 705.6 / 768K

RGB RING LIGHT

INTERPRETATION

DSD
FORMAT (WHITE)

64

128

256

512

PCM
FORMAT (YELLOW)

44.1 / 48K

88.2 / 96K

176.4 / 192K

352.8 / 384K

705.6 / 768K

LOCK
ENCODER (WHITE)

LOCKED

FREQUENTLY
ASKED QUESTIONS

1 **Why does Windows require the Khadas USB driver?**
The Khadas USB driver provides ASIO support and removes the latency and sample rate conversion issue experienced with the default Windows USB driver for DACs.

2 **What does MQA stand for?**
MQA is an award-winning British technology that delivers the sound of the original master recording. The master MQA file is fully authenticated and is small enough to stream or download. The Tone 2 Pro LED glows green or blue to indicate that the unit is decoding and playing an MQA stream or file, and denotes provenance to ensure that the sound is identical to that of the source material. It glows blue to indicate it is playing an MQA Studio file, which has either been approved in the studio by the artist/producer or has been verified by the copyright owner.

3 **What is balanced-RCA?**
A new balanced audio connector standard, designed by Khadas for small form-factor desktop DACs. It is backwards compatible with standard RCA plugs and cables, more details: **https://khadas.com/balanced-rca**

4 **How do I use my existing XLR-3 equipment with balanced-RCA?**
Purchase the Khadas Balanced-RCA to XLR-3 adapter; it is a male balanced-RCA plug connected to a male XLR-3 plug.

5 **What is the maximum headphone impedance supported by Tone2 Pro's headphone amplifier?**
3.5mm Single-End: **150ohm**
4.4mm Balanced: **300ohm**

6 **How do I use S/PDIF input?**
Attach a standard RCA cable, and set the input mode to “S/PDIF” or “Auto”.

7 **How do I connect my smartphone to Tone2 Pro via Bluetooth?**
Attach an external bluetooth module to the USB-C (I2S) port, and set input mode to “I2S” or “Auto”.

8 **Why doesn’t my USB-C to Lightning charging cable work with the Tone2 Pro?**
Use the Apple C78-USBH Lightning to USB-C cable, and connect a 5V power supply to the USB-C (I2S) port.

9 **Can the USB-C input be used with the USB-C output of my phone?**
Yes, Tone2 Pro can be powered by most Android smartphones via USB-C. iPhone users require an external 5V powerbank connected to the USB-C (I2S) port; the iPhone has insufficient power to drive the Tone2 Pro.

10 **Does the Tone2 Pro support native DSD decoding?**
Yes, DSD512 native decoding can be enabled by installing the Khadas USB Driver.

11 **Does the hybrid digital/analog volume knob control RCA volume?**
No. RCA output is independent from the 3.5mm and 4.4mm headphone outputs.

* For the latest FAQ, visit **khadas.com/tone2pro-faq**.

FREQUENTLY
ASKED QUESTIONS

12 **What is the voltage level of the RCA balanced connection, is it the standard 4V?**
4.0Vrms for balanced RCA mode, and 2.0Vrms for standard RCA mode (single-end).

13 **What are the priorities when input mode is set to "Auto"?**
Priority from high to low: Bluetooth, then USB, and finally S/PDIF. When the input is set to "Auto", and a song is playing on Bluetooth, the Tone2 Pro will automatically switch from S/PDIF or USB to Bluetooth input.

14 **How can I play MQA music?**
Tone2 Pro supports full hardware decoding of MQA data. Stream or play music from a software or app that contains music that uses MQA encoding. Visit **mqa.co.uk/how-it-works** to learn about MQA-supported software and apps.

15 **Is there a cutoff when headphones are plugged in or will it play through both RCA and headphones concurrently?**
There is no cutoff, Tone2 Pro will play through both RCA and headphone jacks concurrently.

16 **Can I use the Tone2 Pro to receive a signal from the TV via coaxial and send it to the amplifier via RCA?**
Yes. Set the input mode as "S/PDIF" or "Auto", Tone2 Pro will output to both the RCA and headphone jacks.

* For the latest FAQ, visit **khadas.com/tone2pro-faq**.

TROUBLESHOOTING
GUIDE

1 **Why is the Volume Knob unresponsive and flashing full-white when I turn it?**
It has been locked, triple-press it to unlock.

2 **Help! My iPhone is connected to Tone2 Pro, and the LEDs keep flickering!**
Your iPhone cannot provide sufficient power to drive the Tone2 Pro, plug in a 5V power supply to the secondary USB-C port labelled "I2S". Ensure that you are also using the Apple C78-USBH Lightning to USB-C converter cable.

3 **Why can't my Android phone detect the Tone2 Pro? I've plugged USB-C in, but the power LED remains off.**
Go to "Settings" and enable the "USB-OTG" feature, most phones have this on by default.

4 **My Tone2 Pro is connected to my PC and I'm playing a song but there's no sound!**
Check your computer's sound-output device, switch from "Speakers" to the "Tone2 Pro". Secondly, check that your Tone2 Pro's input mode is set to "USB" or "Auto".

5 **Why is the volume so low? I've already rotated the volume knob to maximum!**
You are using a high-impedance headphone, set the headphone gain mode to "high".

6 **Help! I've connected my PC to the Tone2 Pro and the lights are on, but my computer cannot detect it!**
Ensure that you've plugged your USB-C cable into the USB-C port labelled "USB".

* For more technical assistance, visit **forum.khadas.com/c/khadas-tone**.

CUSTOMER

WARRANTY

LIMITED PARTS & SERVICING
1 year from date of purchase.

OUR COMPANY
Khadas Technology Co., Ltd.
Registration No. (China): 91440300MA5G98LD1B

ATTENTION
Please contact customer service before arranging return-shipment.

CUSTOMER SERVICE

SUPPORT FORUM
forum.khadas.com/c/khadas-tone

DOCUMENTATION
docs.khadas.com/tone2

WEBSITE
khadas.com/tone2pro

EMAIL
support@khadas.com

KHADAS

FCC Statement

This device complies with part 15 of the 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.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: 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, may cause harmful interference to radio 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 receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.