



Tone2 Specifications

Model	Tone2	
Overview	Hi-Fi Mini Desktop DAC	
Highlights	High Performance Analog DAC High Resolution Bit-Perfect Decoding Supports External Bluetooth Audio Receivers Balanced RCA Line-Out (Works w/ Standard RCA)	
Finish [1]	Black, Dream Blue	
Materials	Enclosure/Volume Knob: Aircraft-Grade Aluminum Bottom Cover: ABS Foot Pad: Silicone	
Performance [2]	Balanced RCA:	
	THD+N	0.000126% (-118dB)
	SINAD	118dB
	Noise	3.5uVrms
	SNR	121dB
	DNR	119dB
	Crosstalk, 200KΩ	> 120dB
	Output, 200KΩ	4.0 Vrms
	Output Impedance	200Ω
	Frequency Response, 20Hz~20KHz	±0.2dB
	RCA (Single End):	
	THD+N	0.000158% (-116dB)
	SINAD	116dB
	Noise	2.3uVrms
	SNR	119dB
	DNR	118dB
	Crosstalk, 100KΩ	> 119dB
	Output, 100KΩ	2.0 Vrms
	Output Impedance	100Ω
	Frequency Response, 20Hz~20KHz	±0.2dB
Sampling Rate	USB Input: PCM 768KHz 32bit USB Input: DSD 512 (Native) Coaxial Input: 192KHz 24bit	
Audio Formats	DSF, DFF, AAC, FLAC, APE, WMA, WAV, OGG, MP3 ...	
Processor	XMOS XU208, 8 Real-time Logical Cores	
Coprocessor	STM8S003, Programmable	
DAC Chipset	ESS ES9038Q2M 32-Bit Stereo Mobile Audio DAC	
Amplifier Chipsets	I/V Stage: TI OPA1612 x2 LPF Stage: RT6862 x2	
Ultralow Noise LDOs	1x ESS ES9311Q, 1.3uVrms (10Hz-100KHz) 5x ADI ADP151, 9uVrms (10Hz-100KHz) 1x ADI ADP7118, 11uVrms (10Hz-100KHz) 1x ADI ADP7182, 18uVrms (10Hz-100KHz)	
Jitter Filter Technology	Built-in Intel Altera MAX V CPLD, Pre-shaping Technology Accusilicon AS318-L Series Professional Audiophile Crystal Oscillator	
High Precision	0.1% Film Resistors 5% Film Capacitors	
PCB Board	Stackup: 4 Layers	

	Glass Transition Temperature (Tg Rating): 150 °C	
Knob	Hybrid Digital Volume Control	
	Rotate/Push Operation	
LEDs	Side: White, Pink, Red	
	Knob: RGB Light Ring	
Connectivity	USB Port: USB-C 2.0	
	I2S Port: USB-C with I2S Pinout, Linear Power Supply	
	Balanced RCA (Orange): Coaxial Input	
	Balanced RCA (White): Left Channel Line-out	
	Balanced RCA (Red): Right Channel Line-out	
Expansion I/O [3]	30-pin 0.5mm FPC Connector: UART, I2S, I2C (MCU)	
	14-pin 0.5mm FPC Connector: USB 2.0, I2C (MCU), 3.3V	
	14-pin 0.5mm FPC Connector: XMOS JTAG, CPLD JTAG	
	40-pin 2.54mm Header: USB 2.0, I2S, UART, 5.0V	
	4-pin VIN Connector: DC Input, Rated Voltage 4.8V-14.0V	
O/S Compatibility	Windows 7, 8, 10, 11 (Khadass USB ASIO driver required)	
	macOS	
	Linux (with UAC2 compliant kernel)	
	Android (supports OTG function)	
	iPadOS	
Rated Voltage	DC 5.0V	
Power Consumption	Power off: 7mA	
	Standby: 320mA	
	DSD256: 360mA (max)	
	PCM384: 420mA (max)	
	DSD512: 410mA (max)	
	PCM768: 450mA (max)	
Compliances	RoHS, CE, FCC, PSE, UKCA, KC [4]	
Size	12.7mm(h) x 82.0mm(w) x 56.0mm(l) / 65.0mm (with RCA), Maker Kit Board	
	17.0mm(h) x 88.0mm(w) x 61.5mm(l) / 68.0mm (with RCA), Finish	
Weight	34 grams (Maker Kit Board) / 95 grams (Finish)	
Warranty	1 Year Limited Hardware Warranty	
In the Box	Tone2	Maker Kit
	Tone2 w/ Enclosure	Bare Board (Tone2 PCBA)
	USB-C Cable (C to C, 1 meter)	User Manual
	User Manual	Warranty Card
	Warranty Card	

[1] Tone2 is sold in two versions, a finished product with an enclosure, and a bare PCBA 'Maker Kit'.

[2] Performance tests were based on USB input, coaxial input will exhibit slight differences.

[3] Only the Tone2 Maker Kit includes additional I/O access via FPC/VIN headers integrated into the PCBA.

[4] KC certification only applies to finished products with enclosures, it does not apply to the Tone2 Maker Kit.