

ANANKE 3.0

UA-E 1030 | QUICK USER GUIDE

Ananke 3.0 is an audio evaluation set including MEMS-based in-ear earphones and an amplifier evaluation board designed specifically for Ganymede speakers.

The amplifier evaluation board features two amplifiers for driving the USound earphones, Bluetooth controller and digital signal processor (DSP). The DSP allows implementation of customised acoustic filter settings.

FEATURES

- Drives MEMS-based earphone with distinct sound performance
- Stereo amplifier for Ganymede MEMS speakers
- Bluetooth controller compliant to Bluetooth specification V4.2 (supports A2DP)
- Analog audio inputs
- DSP (programmable with analog devices programmer)

PACKAGE CONTENT

- Ananke 3.0 evaluation board
- USound earphones
- 5 V power supply
- 3.5 mm stereo jack cable
- Ear tip in different sizes

SETTING UP THE SYSTEM



- Provide power to the Ananke 3.0 evaluation board using 5 V DC-connector over the POWER plug
- Use the 3.5 mm stereo jack cable to connect an audio source (signal generator, phone, mp3 player) to the INPUT plug in the device
- Alternatively, any Bluetooth enable device such as a smartphone, can be connected to the Ananke 3.0 evaluation board via Bluetooth. Search for BC0xxxxx on the device and connect to stream audio to the Ananke evaluation board
- Connect the USound earphones to the OUTPUT (Tiny XLR connector).

This quick setup uses the self-boot option of the DSP. At startup, it loads a pre-configured set of parameters into the DSP that are stored in an EEPROM. The DSP is configured in a way that both input signals (analog and Bluetooth) are added in the DSP, therefore it is possible to play both sources simultaneously.

If one needs advanced settings or to do setting changes for DSP, contact your customer-service@usound.com

PERFORMANCE REQUIREMENTS

PARAMETERS		TEST CONDITIONS	MIN	TYP	MAX	UNIT
V_{CC}	Supply voltage			5		V
I_{DD}	Quiescent power supply current	$V_{in} = 0\text{ V}$		62		mA
PD	Power consumption	$V_{in} = 400\text{ mV}$, $f_{in} = 1\text{ kHz}$		65		mVA
Z_{load}	Load range for the amplifier	without earphones	20		100	nF
V_{in}	Input voltage range				400	mV
R_{in}	Input resistance			10		kOhm
V_{DC}	Speaker DC offset voltage			15		V
AV	Amplifier gain	$f_{in} = 80\text{ Hz}$		23		V/V
SPL	Sound pressure level	$V_{in} = 400\text{ mV}$, $f_{in} = 1\text{ kHz}$	102	105	108	dB SPL
THD	Total harmonic distortion	$V_{in} = 400\text{ mV}$, $f_{in} = 1\text{ kHz}$		1.7	3	%
f_{Low}	Lower bandwidth limit	Lowest frequency where $SPL_{flow} = SPL@80\text{ Hz} - 3\text{ dB}$		10	20	Hz

