Wave gen

<https://www.mouser.com/ProductDetail/Analog-Devices/AD9833BRMZ?qs=BpaRKvA4VqFt3Bdw9RBKCQ%3D%3D>

* **AD9833BRMZ**
* Price: $13.29
* Length: 3 mm
* Width: 3 mm
* Max Vout = 0.65 V
* Powered at 2.3 - 5.5 V
* Serial Clock has a frequency of 40 MHz max
* I(max) = 5.5 mA, I(idle) = 0.5 mA

Microcontroller

#### **ESP32-WROOM-32D**

[Link](https://www.digikey.com/en/products/detail/espressif-systems/ESP32-WROOM-32D-N4/9381716)(without Dev board)

[ESP with dev board](https://www.digikey.com/en/products/detail/espressif-systems/ESP32-DEVKITC-32UE/12091813?utm_adgroup=&utm_source=google&utm_medium=cpc&utm_campaign=PMax%20Shopping_Product_Low%20ROAS%20Categories&utm_term=&utm_content=&utm_id=go_cmp-20243063506_adg-_ad-__dev-c_ext-_prd-12091813_sig-CjwKCAiAlcyuBhBnEiwAOGZ2S2n0K9tyK10mdnVAGIQ-kKgARnKtznGf3bW2zeewnh_lMT6MU6pvVhoCZx8QAvD_BwE&gad_source=1&gclid=CjwKCAiAlcyuBhBnEiwAOGZ2S2n0K9tyK10mdnVAGIQ-kKgARnKtznGf3bW2zeewnh_lMT6MU6pvVhoCZx8QAvD_BwE)

Specs:

Price: $2.68 per unit

Price: $10.00 per unit

Core count - 2

Pinout - 38 I/O pins

Voltage supply - 3v - 3.6v

Length - 25mm

Width - 18mm

I(max) = 0.379 A, I(idle) = 0.118 A

ESP 32 as a cos wave gen check esp 32 technical reference manual page 638

12 to 3 V Buck Converter

\*\*\*<https://www.mouser.com/ProductDetail/Texas-Instruments/TPS562231DRLR?qs=l4Gc20tDgJK5KnXgCyg0Bw%3D%3D>

$0.33 for 1, $0.221 for 100

Input V range: 4.5-17 V

Output V: 0.6-7 V

2 A Output current

Shows the expected pinout for a 3.3 V application

Operating supply current 220 uA (300 uA max)

Looks about 1.7x1.7 mm

<https://www.mouser.com/ProductDetail/Texas-Instruments/ADC141S626CIMM-NOPB?qs=7X5t%252BdzoRHCk2zqpP70%252BpA%3D%3D>

ADC141S626CIMM/NOPB

Price: $10.58

Sample Rate: 250kS/s

VS (Max): 5, 3 V

VS (Min): 5, 3 V

Analog Supply Voltage: 2.7 V to 5.5 V

Inverting Buck IC for +12 -> -12 V

<https://www.mouser.com/ProductDetail/Texas-Instruments/LM2611BMFX-NOPB?qs=X1J7HmVL2ZGO3szAPbzB4g%3D%3D>

Current Sense Amplifier (MAX4080TASA+T)

<https://www.mouser.com/ProductDetail/Analog-Devices-Maxim-Integrated/MAX4080TASA%2bT?qs=1eQvB6Dk1vggLtAF0LXiqA%3D%3D>

Price: $3.61

Package: SOIC-8

VCC : 4.5 V to 76 V

Operating Supply Current: 75 uA

Power DIssipation: 471 mW

Power Jack

<https://www.mouser.com/ProductDetail/Wurth-Elektronik/694108402002?qs=a9WhcLg8qCzJQpyag5XvEQ%3D%3D>

Resistor (1 ohm)

<https://www.mouser.com/ProductDetail/SEI-Stackpole/RMCF1210FT1R00?qs=IPgv5n7u5QY%252BgVPKo7K9fw%3D%3D>

RMCF1210FT1R00

Power Rating : 500 mW