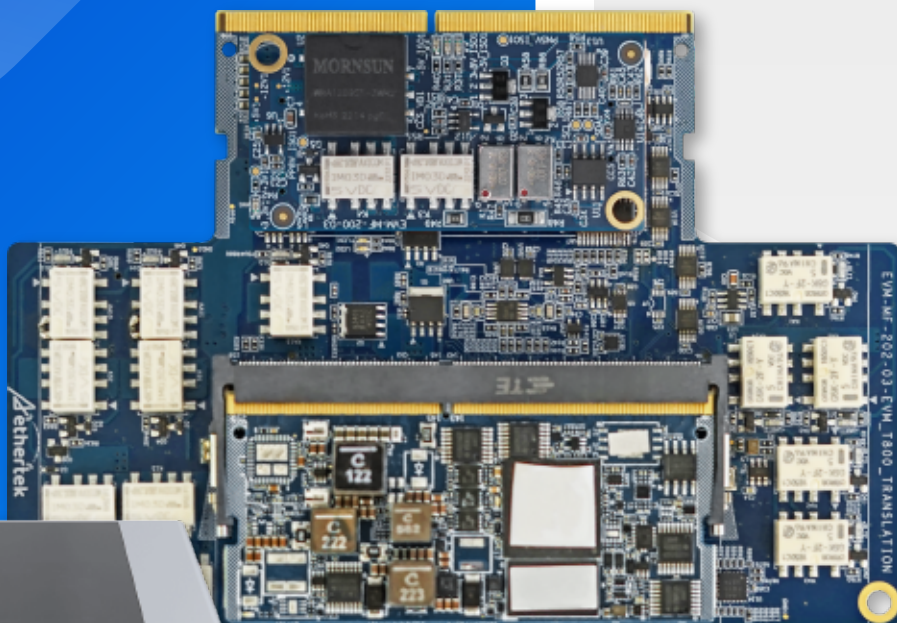




CoreOne

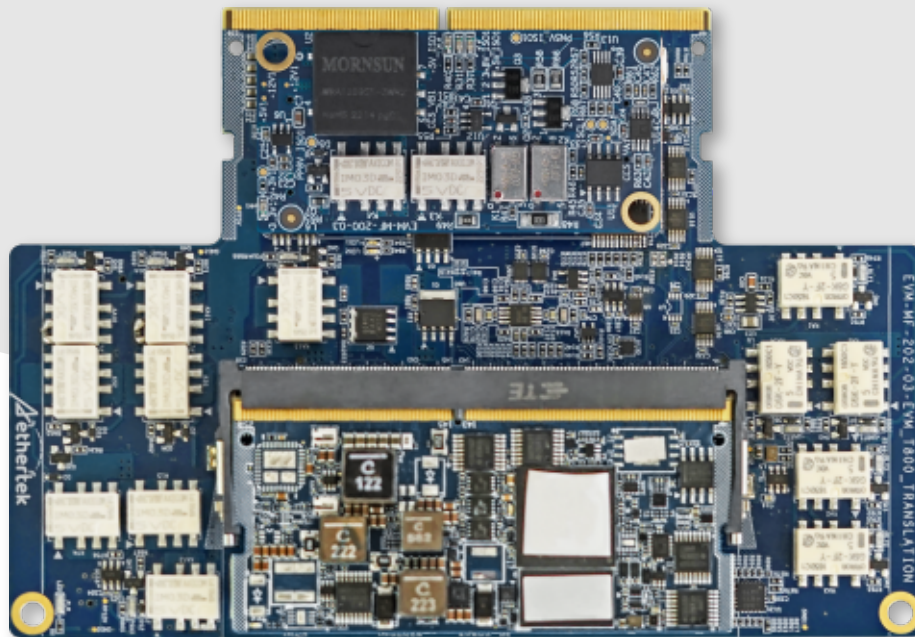
T800 / T800 Desktop
Board Level Testing



*DATA
SHEET*

T-800 CoreOne

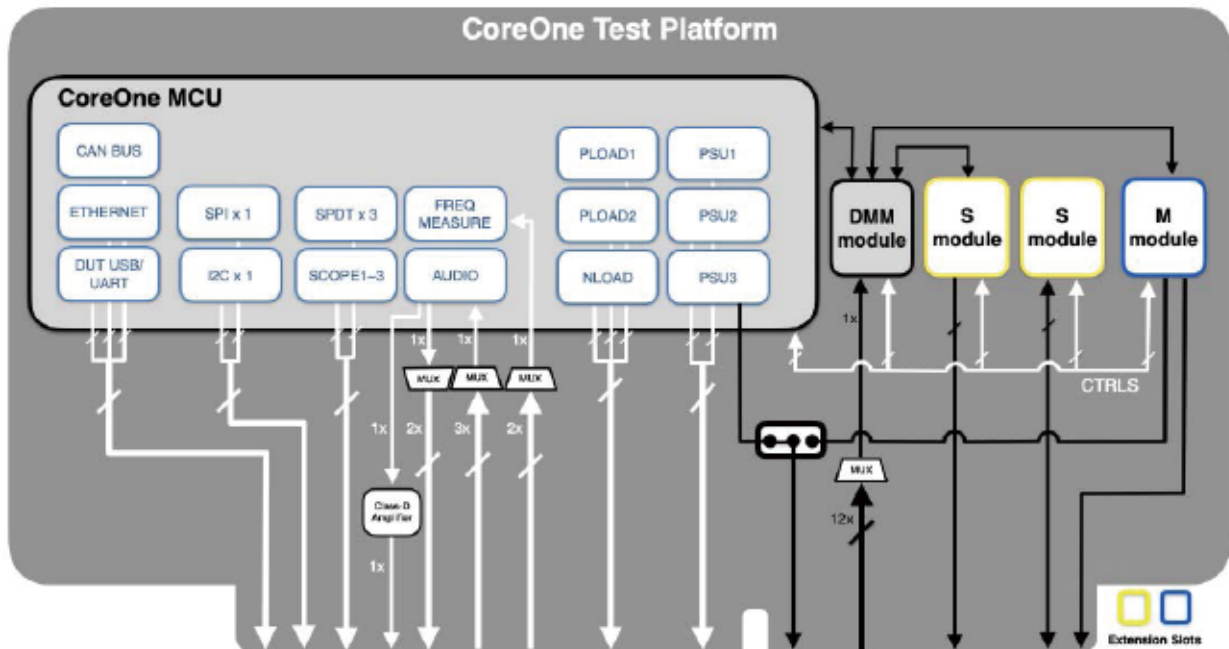
Board Level Testing



1. Features

- Flexible control interface: USB & Ethernet
- Multiple interface option to DUT: (CAN, USB, I2C, SPI, etc.)
- Precision voltage and current measurement
- Audio analyzer and generator to perform audio test
- Multi-channel battery emulator for charging test
- Multi-channel E-load for discharging test

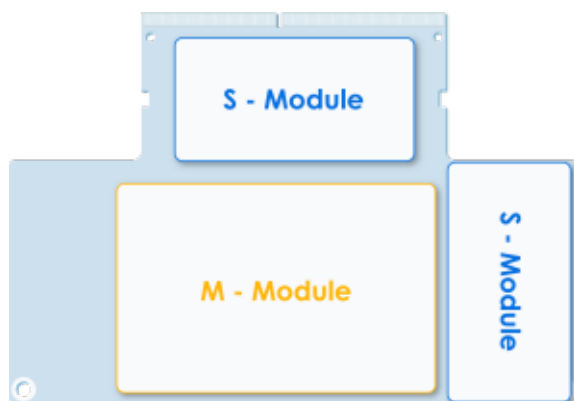
2. Functional Block Diagram



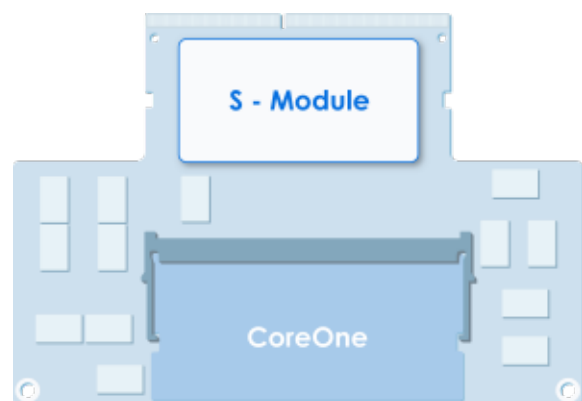
3. CoreOne Platform

All in one module

- ARM Base Cortex-MM7
- Digitizer
- FW DL (SWD / QSPI)
- Frequency / Timer
- PDM / TDM
- Communication interface
- Communication interface (usB / Ethernet / UART12C / SPI / CAN)

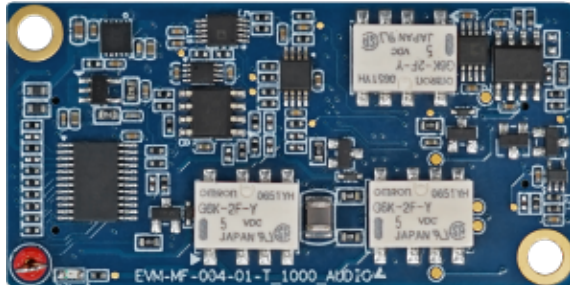


Front View
(Standard Package)



Rear View

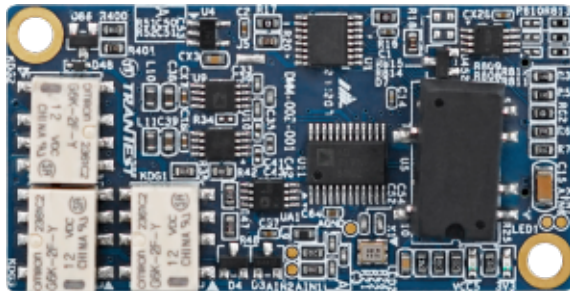
S-Module



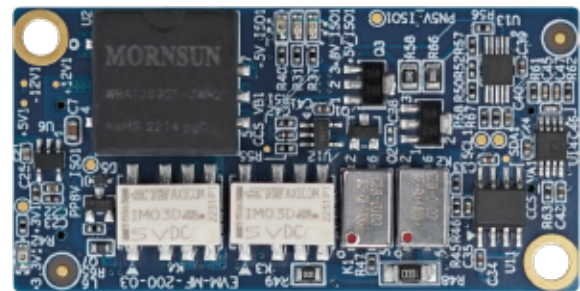
Quick Audio Analyzer



LCR Meter



High Accuracy DMM

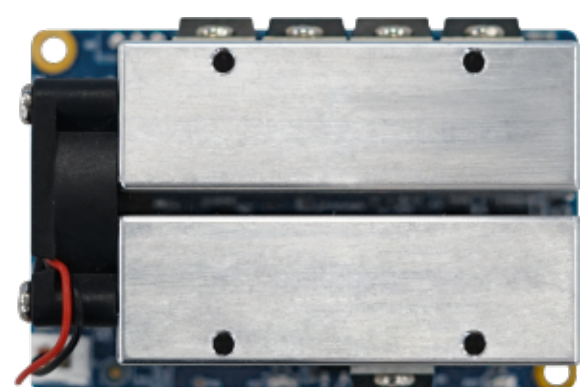


Constant Current Source

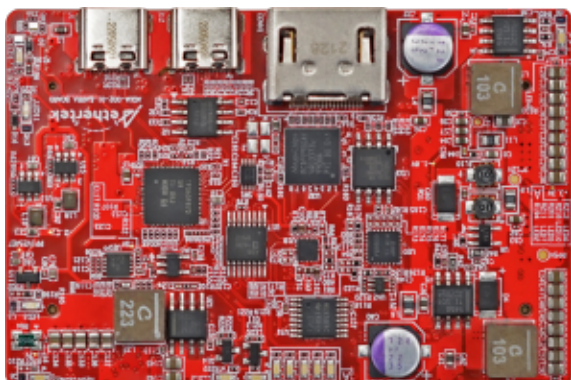
M-Module



Isolation Battery EMU



Electronic Current Load



USB PD

4. Electrical Specifications

DMM specifications

Voltage		
Voltage DC	Accuracy	$\pm 24V$
	Resolution	$\pm (0.1\%+1mV)$
Channel	24 bits	
	12	

Frequency measurement

Waveforms		
Input Level Range	Sine-wave, sine+DC offset, square-wav	
Measurement Frequency Range (Fs)	0 V to 1.8 V	
Measurement Accuracy	DC to 25MHz	
	$\pm 25ppm$	



Audio Generator		Specifications
Channel count		2 (Single end) or 1 (Differential) with 1 (Class-D)
General Output	Waveforms	Sine-wave
	Frequency Range	0.1 Hz to 10 kHz
	Frequency Accuracy	100Hz~500Hz: $\leq \pm 6\%$ 500Hz~1kHz: $\leq \pm 1\%$ 1kHz~10kHz: $\leq \pm 0.5\%$
	Amplitude Range	≤ 2.0 Vpp
	Amplitude Accuracy, 1 kHz	$\pm 0.5\%$
	Residual THD+N	≤ -75 dB, 20KHz BW, 1K tone, 2 Vpp
Class D Output	Output Voltage Level	± 3 V
	Output Driving Current	0.375A
	Output Frequency Range	20 Hz ~ 10 Khz
	Driving Capability	Up to 8 ohm / 1w speaker load

Audio Generator		Specifications
Channel count		3 (Differential)
Input Voltage Vac		≤ 3 Vpp
Input Frequency Range		20 Hz to 10 kHz
Level (Amplitude) Measurement		$\pm 0.5\%$
THD+N Measurement		≤ -80 dB, 20KHz BW, 1K tone, 3 Vpp



Hardware Interface		Specifications	
Interface	Ethernet	1x	PC to CoreOne
	USB HS	1x	
	UART	1x	UART1
	CAN	1x	CAN1
	I2C	1x	I2C3
	SPI	1x	SPI4

Digitizer (Scope)		Specifications	
Waveform capture	Voltage Range	0~5V	
	Trigger mode	Pre-trigger, rise / fall trigger, continuous acquisition	
	Sample rate	2MSPS* (Simultaneous)	Note 2MSPS for 2 channels 1MSPS for 3 channels
	Channel count	3	CAN1



Electronic Load (E-Load)		Specifications	
Positive E-Load 1	Current sink capability	0.5V to 20V 100mA to 6000mA	CC mode
	Readback accuracy	FI : $\pm(0.1\%+1\text{mA})$ MI : $\pm(0.1\%+1\text{mA})$ MV : $\pm(0.3\%+1\text{mV})$	
Positive E-Load 2	Current sink capability	0.5V to 20V 1mA to 1200mA	CC mode
	Readback accuracy	FI : $\pm(0.1\%+0.1\text{mA})$ MI : $\pm(0.1\%+0.1\text{mA})$ MV : $\pm(0.3\%+1\text{mV})$	
Negative E-Load	Current sink capability	-0.5V to -20V 100mA to 3000mA	CC mode
	Readback accuracy	FI : $\pm(0.1\%+1\text{mA})$ MI : $\pm(0.1\%+1\text{mA})$ MV : $\pm(0.3\%+1\text{mV})$	

5. Power Specifications

Power Specifications		PSU1	PSU2	PSU3
Power Type	Source / Sink	Source	Source / Sink	
DC output rating		1.5 to 20 V	1.5 to 4.7 V	1.5 to 4.7 V
		0 to 3A (<12 V) 0 to 2A (12V to 20V)	0 to 6A	0 to 6A
DC input rating		-	0 to 6A	0 to 6A

Programming accuracy $\pm$ (% of output + offset)

Voltage	$\pm (0.3\%+1\text{mV})$
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Readback accuracy $\pm$ (% of output + offset)

Voltage		$\pm (0.3\%+1\text{mV})$
	$< 6 \text{ A}$ * 3A for PSU1	$\pm (0.5\%+1\text{mA})$
Current	$< 80\text{mA}$	$\pm (0.5\%+0.1\text{mA})$
	$< 80\text{uA}$	$\pm (0.5\%+0.1\text{uA})$

Load transient recovery time

Time (@Max. current load)	$< 250 \text{ uS}$	$< 50 \text{ uS}$	$< 70 \text{ uS}$
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Output ripple and noise (20 Hz to 20 MHz)

Normal mode voltage (@Max. current load)	$< 35\text{m Vpp}$	$< 20\text{m Vpp}$	$< 35\text{m Vpp}$
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Protection $\pm$ (% of output + offset)

Overcurrent protection (OCP)	$\pm 1\%$
Overvoltage protection (OVP)	$\pm 1\%$

Activation time (average time for the output to start to drop after OVP or OCP condition occurs)

Overcurrent (OCP)	$< 2 \text{ ms}$
Overvoltage (OVP)	$< 2 \text{ ms}$

Load regulation $\pm$ (% of output + offset)

Voltage (@Max. current load)	$\pm (0.3\%+1\text{mV})$
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Parameter		Min.	Typ.	Max.	Unit
DC Supply -1	Voltage	11	12	13	V
	Current	-	16	-	A
DC Supply -2	Voltage	4.6	5	5.5	V
	Current	-	2	-	A
DC Supply -3	Voltage	-13	-12	-11	V
	Current	-	2	-	A

6. General Specifications

Parameter	Conditions	Min.	Typ.	Max.	Unit
Operating Temperature		0	-	40	V
Dimension	Length	-	130	-	A
	Width	-	45	-	V
	Height	-	100	-	A

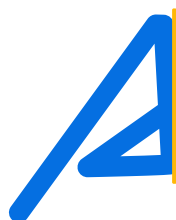
T-800 CoreOne

Board Level Testing



DATA SHEET

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