CUI Devices is now Same Sky! Learn More

MODEL: DEVKIT-MEMS-002 | DESCRIPTION: MICROPHONE DEVELOPMENT KIT

FEATURES

- 4 detachable evaluation boards
- digital MEMS
- top port
- plated through hole I/O terminals for multiple testing options



RoHS

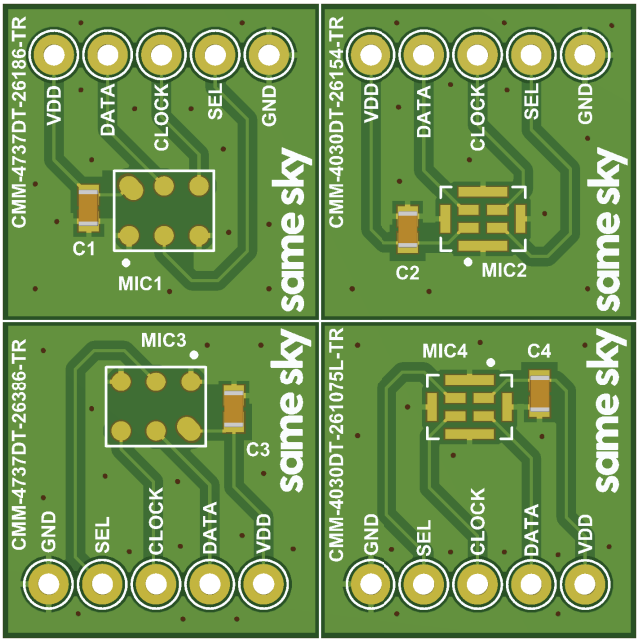
EVAL BOARD

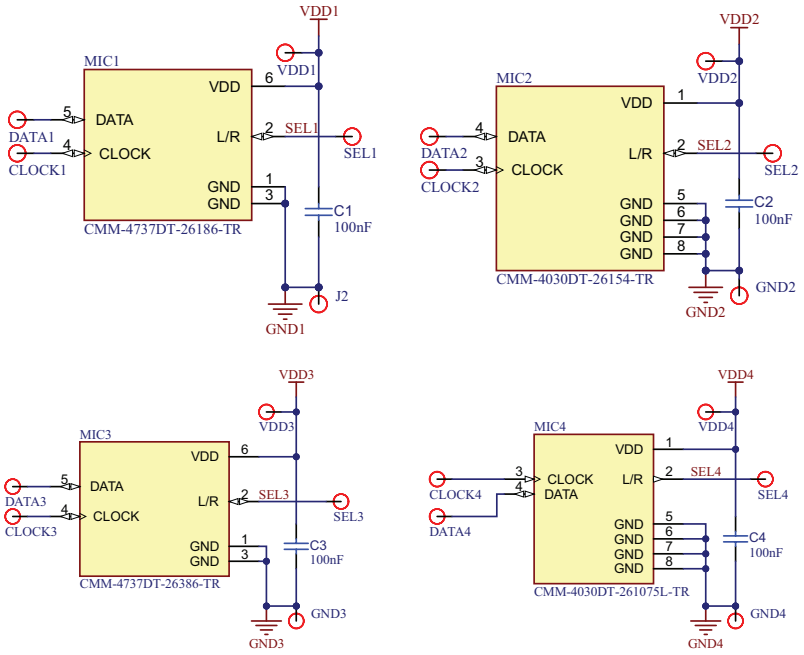
	circuit	technology	output	acoustic port	size (mm)	sensitivity typ (dB)	current max (µA)
CMM-4737DT-26186-TR	MIC1	MEMS	digital	top	4.72 x 3.76	-26	750
CMM-4030DT-26154-TR	MIC2	MEMS	digital	top	4.0 x 3.0	-26	750
CMM-4737DT-26386-TR	MIC3	MEMS	digital	top	4.72 x 3.76	-26	750
CMM-4030DT-261075L-TR	MIC4	MEMS	digital	top	4.0 x 3.0	-26	900

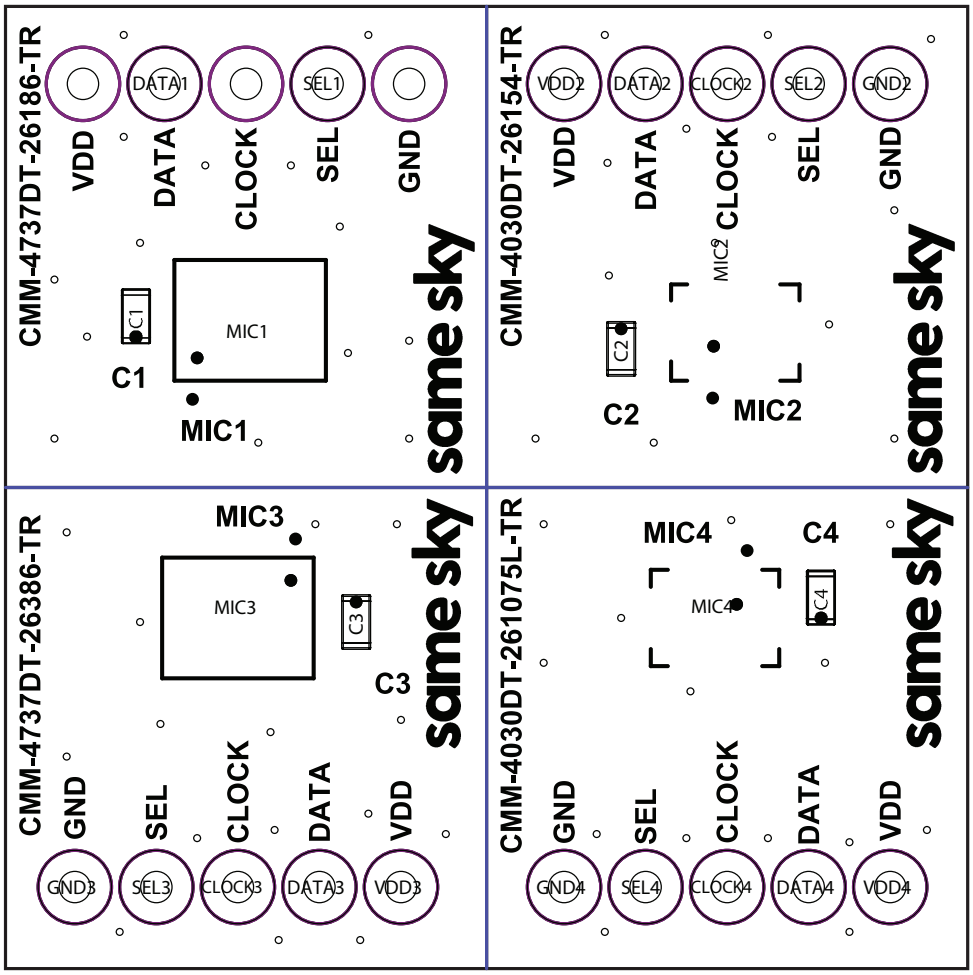
OPERATIONAL INSTRUCTIONS

This Same Sky MEMS microphone evaluation board consists of four independent digital microphone evaluation circuits. Only top sound port options are provided. External bypass capacitors are included on the power supply rails of the evaluation boards. A DC power supply of 1.6~3.6 Volts should be connected between the VDD and GND pins of the board to be evaluated. Please refer to the respective data sheets for proper connections to the remaining signal pins.

CIRCUIT DIAGRAMS & BOARD LAYOUTS







CMM-4737DT-26186-TR

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ELECTRICAL

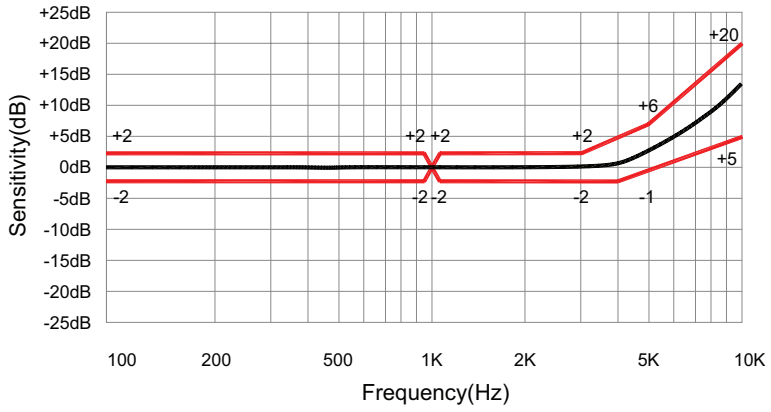
parameter	conditions/description	min	typ	max	units
directivity	omnidirectional				
sensitivity (S)	at 94 dB SPL, 1 kHz	-27	-26	-25	dB FS
supply voltage (V_{DD})		1.6	2.0	3.6	V
current consumption (I_{DD})				0.75	mA
sensitivity reduction	V_{DD} = 3.6 ~ 1.6 V		-0.5		dB FS
frequency (f)		100		10,000	Hz
signal to noise ratio (S/N)	at 94 dB SPL, 1 kHz (A-weighted)		57		dBA
total harmonic distortion (THD)	at 94 dB SPL, 1 kHz		0.2		%
acoustic overload point (AOP)	at 10% THD, 1 kHz		120		dB SPL
output impedance (Zout)	at 1 kHz			300	Ω
power supply rejection (PSR)	100 mVp-p square wave at 217 Hz (A-weighted)		-90		dB FS

DIGITAL INTERFACE

parameter	conditions/description	min	typ	max	units
sleep current (I_{SLEEP})	F_{CLOCK} < 1 kHz		3	4	µA
fall-asleep time	F_{CLOCK} < 1 kHz			50	µs
wake-up time	F_{CLOCK} ≥ 1.024 MHz			52	ms
short circuit current (I_{SC})	grounded data pin		1	10	mA
output load (C_{LOAD})				100	pF
data format	1-Bit PDM				
clock frequency (F_{CLOCK})		1.024	2.4	3.25	MHz
clock duty cycle (F_{DC})		40		60	%
clock rise time (t_{CR})				10	ns
clock fall time (t_{CF})				10	ns
logic input high (V_{IH})	I_{OUT} = 1 mA	0.75xV_{DD}			V
logic input low (V_{IL})	I_{OUT} = 1 mA			0.25xV_{DD}	V
logic output high (V_{OH})	I_{OUT} = 1 mA	0.9xV_{DD}			V
logic output low (V_{OL})	I_{OUT} = 1 mA			0.1xV_{DD}	V
delay time for valid data (t_{DV})		18		40	ns
delay time for high z (t_{DH})		0		15	ns

Notes: 1. All specifications measured at 23±2°C, humidity at 55±20%, V_{DD} = 2.0 V, F_{CLOCK} = 2.4 MHz, unless otherwise noted.

FREQUENCY RESPONSE CURVE



CMM-4030DT-26154-TR

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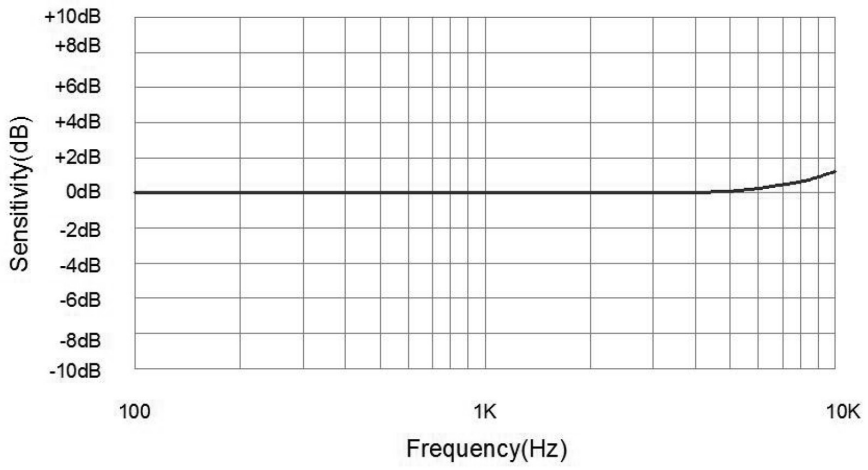
parameter	conditions/description	min	typ	max	units
directivity	omnidirectional				
sensitivity (S)	at 94 dB SPL, 1 kHz	-27	-26	-25	dB FS
supply voltage (V_{DD})		1.6	2.0	3.6	V
current consumption (I_{DD})			0.54		mA
sensitivity reduction	V_{DD} = 3.6 ~ 1.6 V		-0.5		dB FS
frequency (f)		100		10,000	Hz
signal to noise ratio (S/N)	at 94 dB SPL, 1 kHz (A-weighted)		65		dBA
total harmonic distortion (THD)	at 94 dB SPL, 1 kHz		0.2		%
acoustic overload point (AOP)	at 10% THD, 1 kHz		120		dB SPL
output impedance (Zout)	at 1 kHz			300	Ω
power supply rejection (PSR)	100 mVp-p square wave at 217 Hz (A-weighted)		-90		dB FS

DIGITAL INTERFACE

parameter	conditions/description	min	typ	max	units
sleep current (I_{SLEEP})	F_{CLOCK} < 1 kHz		3	4	µA
fall-asleep time	F_{CLOCK} < 1 kHz			50	µs
wake-up time	F_{CLOCK} ≥ 1 MHz			52	ms
short circuit current (I_{SC})	grounded data pin		1	10	mA
output load (C_{LOAD})				100	pF
data format	1-Bit PDM				
clock frequency (F_{CLOCK})		1.0	2.4	3.2	MHz
clock duty cycle (F_{DC})		40		60	%
clock rise time (t_{CR})				10	ns
clock fall time (t_{CF})				10	ns
logic input/output low (V_{IOL})	I_{OUT} = 1 mA	-0.30		0.35xV_{DD}	V
logig input/output high (V_{IOH})	I_{OUT} = 1 mA	0.65xV_{DD}		V_{DD}+0.3	V
delay time for valid data (t_{DV})		18		60	ns
delay time for high z (t_{DH})		0		16	ns

Notes: 1. All specifications measured at 23±2°C, humidity at 55±20%, V_{DD} = 2.0 V, F_{CLOCK} = 2.4 MHz, unless otherwise noted.

FREQUENCY RESPONSE CURVE



CMM-4737DT-26386-TR

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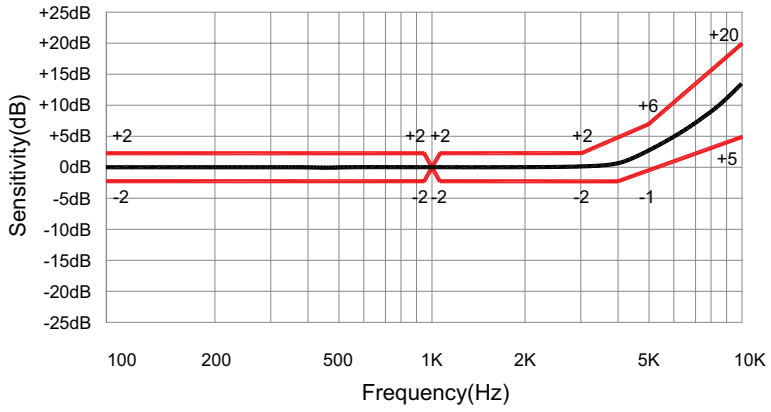
parameter	conditions/description	min	typ	max	units
directivity	omnidirectional				
sensitivity (S)	at 94 dB SPL, 1 kHz	-29	-26	-23	dB FS
supply voltage (V_{DD})		1.6	2.0	3.6	V
current consumption (I_{DD})				0.75	mA
sensitivity reduction	V_{DD} = 3.6 ~ 1.6 V		-0.5		dB FS
frequency (f)		100		10,000	Hz
signal to noise ratio (S/N)	at 94 dB SPL, 1 kHz (A-weighted)		57		dBA
total harmonic distortion (THD)	at 94 dB SPL, 1 kHz		0.2		%
acoustic overload point (AOP)	at 10% THD, 1 kHz		120		dB SPL
output impedance (Zout)	at 1 kHz			300	Ω
power supply rejection (PSR)	100 mVp-p square wave at 217 Hz (A-weighted)		-90		dB FS

DIGITAL INTERFACE

parameter	conditions/description	min	typ	max	units
sleep current (I_{SLEEP})	F_{CLOCK} < 1 kHz		3	4	µA
fall-asleep time	F_{CLOCK} < 1 kHz			50	µs
wake-up time	F_{CLOCK} ≥ 1.024 MHz			52	ms
short circuit current (I_{SC})	grounded data pin		1	10	mA
output load (C_{LOAD})				100	pF
data format	1-Bit PDM				
clock frequency (F_{CLOCK})		1.024	2.4	3.25	MHz
clock duty cycle (F_{DC})		40		60	%
clock rise time (t_{CR})				10	ns
clock fall time (t_{CF})				10	ns
logic input high (V_{IH})	I_{OUT} = 1 mA	0.75xV_{DD}			V
logic input low (V_{IL})	I_{OUT} = 1 mA			0.25xV_{DD}	V
logic output high (V_{OH})	I_{OUT} = 1 mA	0.9xV_{DD}			V
logic output low (V_{OL})	I_{OUT} = 1 mA			0.1xV_{DD}	V
delay time for valid data (t_{DV})		18		40	ns
delay time for high z (t_{DH})		0		15	ns

Notes: 1. All specifications measured at 23±2°C, humidity at 55±20%, V_{DD} = 2.0 V, F_{CLOCK} = 2.4 MHz, unless otherwise noted.

FREQUENCY RESPONSE CURVE



CMM-4030DT-261075L-TR

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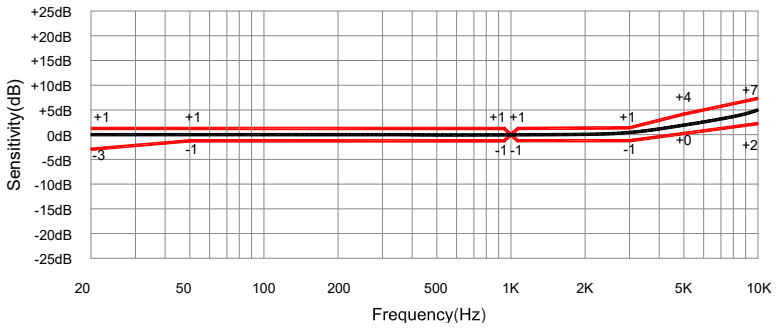
parameter	conditions/description	min	typ	max	units
directivity	omnidirectional				
sensitivity (S)	at 94 dB SPL, 1 kHz	-27	-26	-25	dB FS
supply voltage (V_{DD})		1.65		3.6	V
current consumption (I_{DD})	low-power mode normal mode		300 700	420 900	µA µA
frequency (f)		20		10,000	Hz
signal to noise ratio (S/N)	at 94 dB SPL, 1 kHz (A-weighted) low-power mode normal mode		 64 65		 dBA dBA
total harmonic distortion (THD)	at 94 dB SPL, 1 kHz		0.15	0.5	%
acoustic overload point (AOP)	at 10% THD, 1 kHz		120		dBSPL
power supply rejection (PSR)	100 mVp-p square wave @ 217 Hz (A-weighted) low-power mode normal mode		 -88 -85		 dB FS dB FS

DIGITAL INTERFACE

parameter	conditions/description	min	typ	max	units
clock frequency	sleep mode low-power mode normal mode	0 150 1.3		10 900 4.8	kHz kHz MHz
sleep current (I_{SLEEP})	F_{CLOCK} < 10 kHz		3		µA
DC output	full scale= ±100		1		%FS
data format	1/2 cycle PDM				
short circuit output current (I_{SC})	grounded data pin	1		20	mA
output load (C_{LOAD})				100	pF
fall-asleep time	F_{CLOCK} < 10 kHz			20	µs
wake-up time	F_{CLOCK} > 150 kHz			20	ms
startup time (T_{start})	time to start up in any mode after VDD and CLOCK are applied			20	ms
mode switch time	time to switch between modes, VDD remains on			20	ms
clock duty cycle		40		60	%
logic input high (V_{IH})	I_{OUT} = 1 mA	0.65XV_{DD}		V_{DD}+0.3	V
logic input low (V_{IL})	I_{OUT} = 1 mA	-0.3		0.35XV_{DD}	V
logic output high (V_{OH})	I_{OUT} = 1 mA	V_{DD}-0.45			V
logic output low (V_{OL})	I_{OUT} = 1 mA			0.45	V

Notes: 1. All specifications measured at 23±2°C, humidity at 55±20%, V_{DD} = 2.0 V, F_{CLOCK} = 2.4 MHz (normal mode), F_{CLOCK} = 768 kHz (low-power mode), L/R pin grounded, no load, unless otherwise noted.

FREQUENCY RESPONSE CURVE



REVISION HISTORY

rev.	description	date
1.0	initial release	12/17/2025

The revision history provided is for informational purposes only and is believed to be accurate.

same sky

Same Sky offers a one (1) year limited warranty. Complete warranty information is listed on our website.

Same Sky reserves the right to make changes to the product at any time without notice. Information provided by Same Sky is believed to be accurate and reliable. However, no responsibility is assumed by Same Sky for its use, nor for any infringements of patents or other rights of third parties which may result from its use.

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