
CM1K-PGA69 Module

Hardware Specification

Product Code 901-2000



Version 2.5.2

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Technical Manual

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Introduction

The CM1K-PGA69 module is intended to assist customers in prototyping their hardware based pattern recognition systems with the CM1K. It comes complete with a CM1K TQFP device mounted on a 4-layer PCB with a 69 pin grid array header with .1" spacing. This can be used for connection on a prototyping mother board for easy addition and/or removal of CM1K's from the system. The module requires a standard 3.3v power supply (300ma) and includes the on-board circuitry for generating 1.2V for the CM1K core voltage.

Reference Documentation

- CM1K Hardware User's Manual under product:

http://www.cognimem.com/docs/Technical-Manuals/TM_CM1K_Hardware_Manual.pdf

http://www.cognimem.com/docs/Datasheet/DS_CM1K.pdf

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Specifications

- 1024 silicon neurons working in parallel with automatic model generator
- Classify vectors of up to 256 bytes, Up to 16382 categories
- Radial Basis Function (Restricted Coulomb Energy machine learning) or K-Nearest Neighbor non-linear classifiers
- CM1K-PGA69 supports both Parallel and VDATA buses

Power Supply

A 1.2V voltage regulator is supplied onboard to supply 1.2V to the CM1K. The only supply voltage needed is 3.3V

Pin Header Signal Mapping

Pin	Signal Name	Pin	Signal Name	Pin	Signal Name
1	G_RESET_	24	V_FV	47	DATA_1
2	I2C_EN	25	3.3V	48	DATA_2
3	G_STDBY	26	V_CLK	49	DATA_3
4	G_CLK	27	GND	50	DATA_4
5	I2C_SCK	28	REG_0	51	DATA_5
6	GND	29	3.3V	52	DATA_6
7	DCI	30	REG_1	53	DATA_7
8	3.3V	31	REG_2	54	DATA_8
9	I2C_SDA	32	REG_3	55	DATA_9
10	GND	33	REG_4	56	DATA_10
11	V_EN	34	RECO_EN	57	GND
12	3.3V	35	R_W_	58	DATA_11
13	V_D0	36	UNC_	59	3.3V
14	GND	37	ID_	60	DATA_12
15	V_D1	38	RDY	61	GND
16	V_D2	39	DS_	62	DATA_13
17	V_D3	40	GND	63	3.3V
18	V_D4	41	DIST_VALID	64	DATA_14
19	V_D5	42	3.3V	65	DATA_15
20	V_D6	43	DCO	66	CAT_VAL
21	V_D7	44	GND	67	3.3V
22	V_LV	45	DATA_0	68	S_CHIP
23	GND	46	3.3V	69	GND

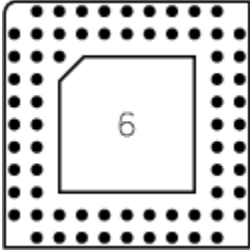
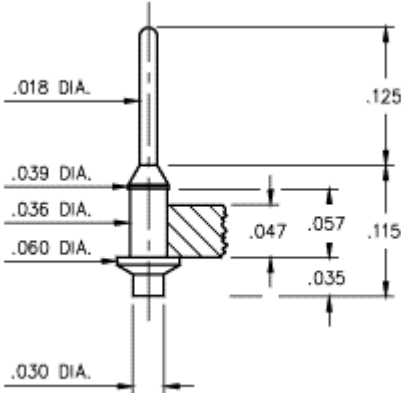
For signal descriptions refer to the CM1K Hardware Manual.

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Mechanical Definition

The CM1K-PGA Module is 1.1" x1.1".

Pin Header diagram:



Lead spacing:
X= 0.100"
Y= 0.100"

Bill of Materials

Item	Quantity	Part Description
1	17	CAP CER .1UF 6.3V Y5V SMD 0402
2	1	CAP TANT 10UF 6.3V SMD 0603
3	1	RES 120 OHM 1/10W 5% 0402 SMD
4	26	RES 270 OHM 1/10W 5% 0402 SMD
5	1	RES 0.0 OHM 1/8W 0805 SMD
6	1	IC CTI ASIC CM1K
7	1	IC REG LDO 1.2V 950MA SOT-223
8	1	Header, PGA, .100", 69-Pin, SMD
	1	PCB, Bare Board