CPU **MODULE**

## TD-CPU-192 Technical Specifications

Universal controller for Telcodium High Efficiency Modules

FEATURES

- Low profile, small size
- Vertical or horizontal mount

PRODUCT OVERVIEW

The Telcodium CPU module integrates the software required to manage all the functions of a all Telcodium High Efficiency Modules. Both input and output current and voltage, are monitor by the CPU, the led, sensor and fan are also monitor by the CPU and this information are available with the PMBUS interface to the optional redundant feed control (patented technology).
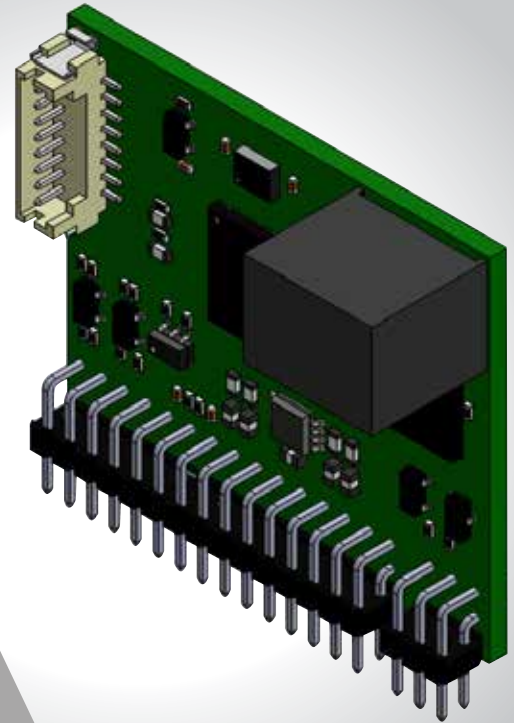
APPLICATIONS

- Power supply design using HEM modules from Telcodium
- High efficiency equipment design
- Convection cooling equipment
- High end power supply with PMBUS interface
- Power Supply with monitoring and Datalogging

PARAMETERS	MIN	TYP	MAX	UNITS	NOTES
Absolute maximum rating					
Input voltage (DC) Continuous	3.1	3.3	3.6	Vdc	VCC_3V3_CPU
Operating temperature	-40	-	70	C	
Storage temperature	-45	-	125	C	
Humidity (non condensing) Operating Non-Operating	 20 10	 - -	 95 95	 % %	 RH RH
Input characteristic					
Operating input voltage DC power input voltage	3.1	3.3	3.6	Vdc	VCC_3V3_CPU
DC Input current	-		tbd	A	
Input pin					
Vout sense	-			Vdc	VCC_12V
Vcc early	-			Vdc	VCC_5V_EARLY
Input current sense	-			A	INPUT_CURRENT
Output current sense	-			A	12V_CURRENT
Sense Feed 1P,2P	-			Vdc	Isolated voltage input sense positive
Sense Feed 1N,2N	-			Vdc	Isolated voltage input sense negative
PGOOD1 ,2	3.1	3.3	3.5	Vdc	Power good internal feature (TDBuck)**
APWRG	-			Vdc	TTL output power good signal
TACH_IN	0		3.3	Vdc	Fan Tach input signal
Output pin					
PMBUS1_CTRL,PMBUS2_CTRL	-				PMBUS internal control (TDBuck**)
LEDA1,A2,A3,A4	-	3.3			3.3V led output control
ENA#12V	-	0			Enable (active low) auxiliary power (-12V)
ENA_LLC	-	0			Enable (active low) LLC and PFC module
SW_FEED1	-				TD redundant feed module (***)
APWR_ON	-	0			
PWM_OUT	-	3.3			Fan speed control
OUT_SUPPLY 1,2	-				TTL 0-5.0V logic level static output
COM PORT					
I2C_SCL	-				Internal I2C clock , 3V3
I2C_SDA	-				Internal I2C Data , 3V3
I2C_SCL_5VA	-				External I2C clock , 5.0V protected *
I2C_SDA_5VA	-				External I2C Data , 5.0V protected *

DEBUG PORT					
ADEBUG_TXD0	-	-	-	Vdc	Digital interface 115200 Baud
ADEBUG_RXD0	-	-	-	Vdc	Digital interface 115200 Baud
OTHER					
*not high voltage isolated, ** To be use with TDBuck module , *** To be use with TBRedundancy					

Table 1

OUTLINE DRAWING
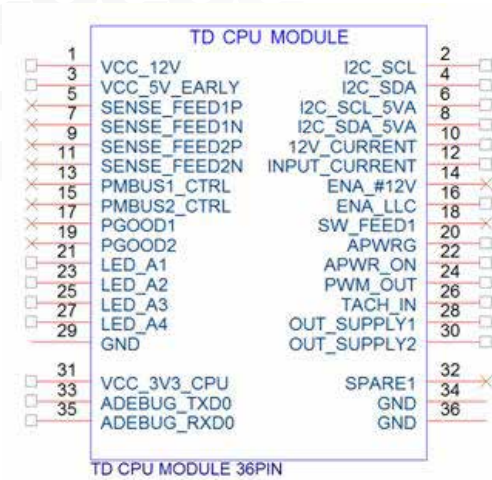## Figure 1.

Top View

Isometric View
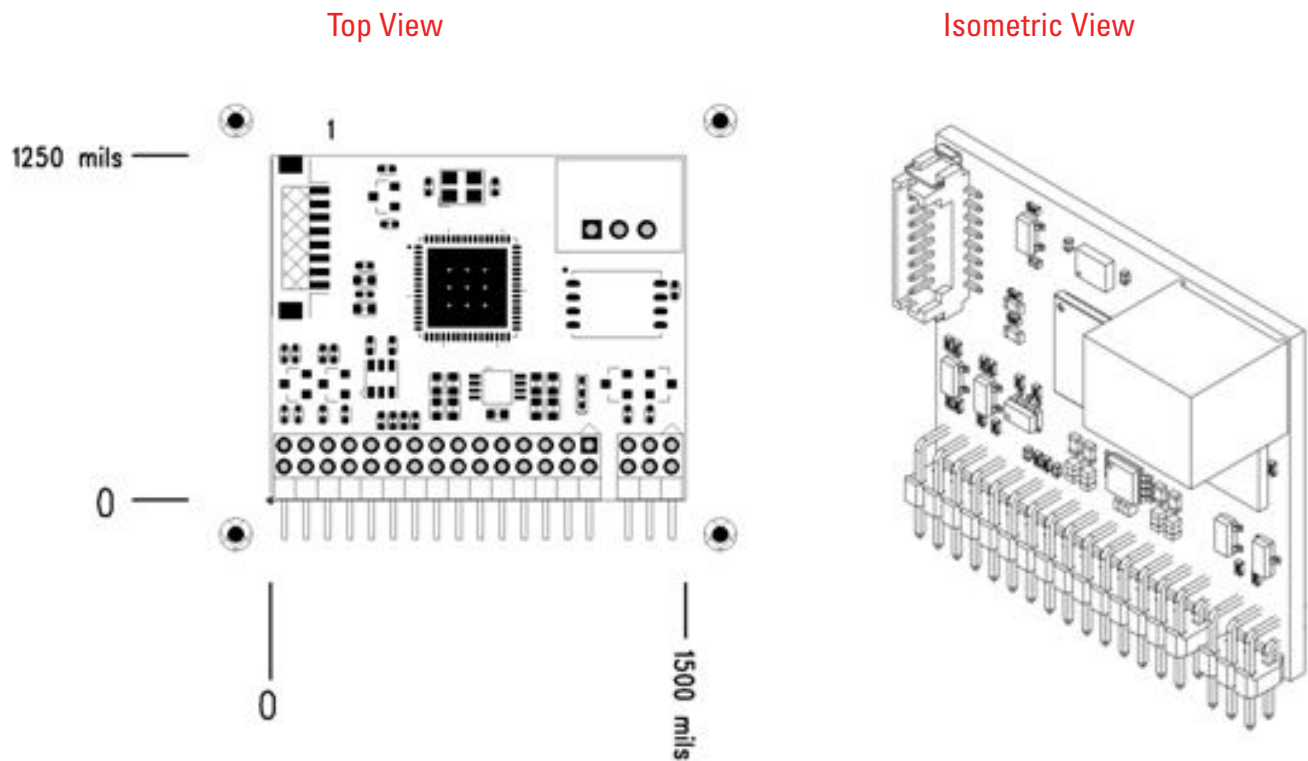
✓ See design guide PCB layout for proper clearance and trace width routing
✓ Connector, 0.1" (2.54mm) dual row

Symbol   Top View Pinout
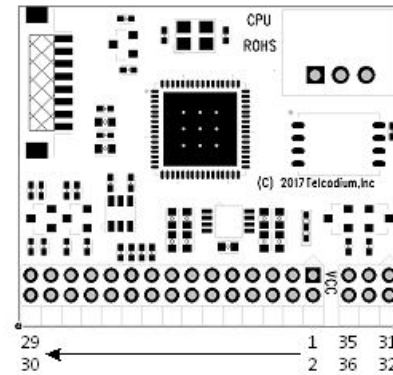

Figure 2.

ELECTRICAL CONNECTIONS

Pinout description

- Pin1: VCC_12V, input
- Pin3: VCC_5V_EARLY, input
- Pin2,4 : Internal I2C, SCL, SDA interface 3.3V
- Pin6,8: External I2C, SCL, SDA interface 5.0V
  not isolated with I/O protection ESD
- Pin7,9: Sense Feed1P, 1N, high precision differential
  voltage input sense
- Pin11,13: Sense Feed2P, 2N, high precision differential
  voltage input sense
- Pin10: 12V output current sense
- Pin12: Main input (AC) isolated with external device, current sense
- Pin15,17: PMBUS1, 2 Control pin used with TDBuck module
- Pin14: Enable -12V, external I/O used for standard ATX -12V
  (See TDCPU manual)
- Pin16: ENA_LCC, use to enable both PFC and LLC HEM Module
- Pin17,19: PGOOD1, 2, power good input from TDBuck module
- Pin18: SW_FEED1, use with TDRedundancy module
  option to switch active feed

- Pin21-27: Led output 3.3V, bicolor led control
- Pin20: APWRG, input from ATX compliant device
  for power status
- Pin22: APWR_ON, output to activate power ATX
- Pin24: PMW_OUT, Fan speed control output
- Pin26: TACH_IN, Fan speed monitoring
- Pin28,30: TTL 5.0V static output signal
- Pin29,34,36: Module GND
- Pin31: Module power input 3.3V
- Pin32: Spare1, configurable I/O , 3.3V pin
- Pin33: ADEBUG_TXD0, RS232, 3.3V, N8,1,
  115200 Baud
- Pin35: ADEBUG_RXD0, RS232, 3.3V, N8,1,
  115200 Baud

✓ See CPU document for complete I/O
  and function description

RoHS COMPLIANCE

The EU led RoHS (Restriction of Hazardous Substances) Directive bans the use of Lead, Cadmium, Hexavalent Chromium, Mercury, Polybrominated Biphenyls (PBB), and Polybrominated Diphenyl Ether (PBDE) in Electrical and Electronic Equipment. Telcodium product is 6/6 RoHS compliant. For more information please refer to the Telcodium website RoHS addendum.

TELCODIUM
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