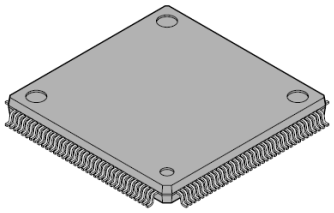
1. General Description

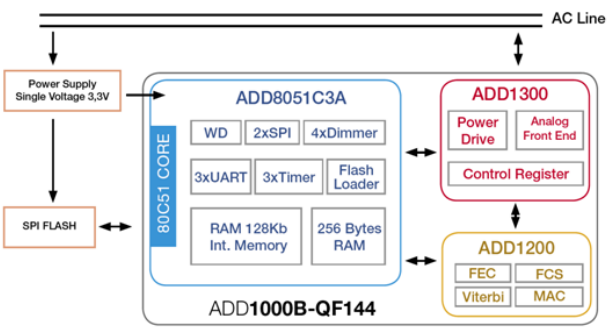
The ADD1000B is a Power Line System on Chip oriented to industrial and home automation applications. It includes an enhanced 8051 microcontroller (IP core ADD8051C3A), a Medium Access Controller (MAC), and a FSK Modem circuit for the C band CENELEC Power Line Medium specifications. The complete system works with a single 3.3v DC power supply.



144-pin plastic LQFP
(16x16 mm)

Features:

- Power Line Carrier Modem for 50 and 60Hz mains
- Carrier Frequency: 132.5 kHz
- Baudrate Selectable: 600 to 4800 bps
- Compliant to EHS and KONNEX
- Half Duplex
- Receiver Sensitivity: Up to 44dBμVrms
- Convolutional coding, Viterbi decoding
- CRC and FEC error correction
- Enhanced 8051 core, Average speedup of 5 times
- 128Kbytes internal SRAM
- Auto Boot-loading Program from Serial Flash
- In-circuit Serial Flash Programming
- Programmable Watchdog
- 3 x UART
- SPI to Serial Flash and external RTC
- Buffered SPI to external metering IC
- Quadruple Dimmer in/out
- Power Supply 3.3v
- Pb-Free and RoHS compliant
- Ambient Temperature Range: -40°C to +85°C



Typical Applications:

- Automated Meter Reading (AMR)
- Street lighting
- Home Automation

MARKING DIAGRAM

ADD	*=Customer Logo*
CCCCCCCCCCCCC	*=Customer Part number*
OOOOO	*=Country of Origin*
YYWW	*=Year/week code*
TTT	*=Control Code*
LL	*=Lead Free Code*

Ordering Code :	***ADD1000BQF144***
	Pb-Free

1.1 Block Diagram

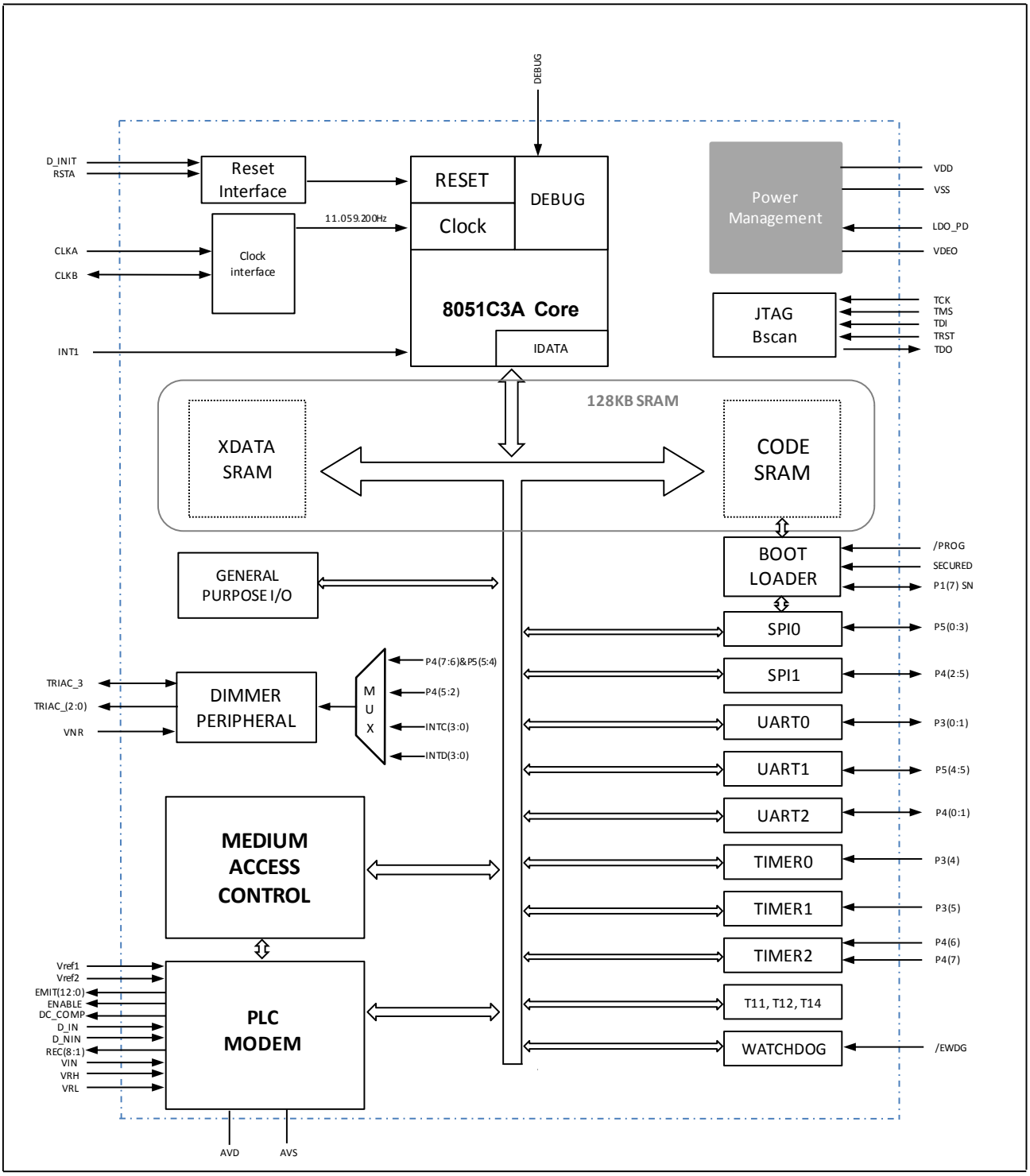


Figure 1. ADD1000B Block Diagram

1.2 Pin Assignment

The following figure illustrates the pinout of the ADD1000B LQFP144 package:

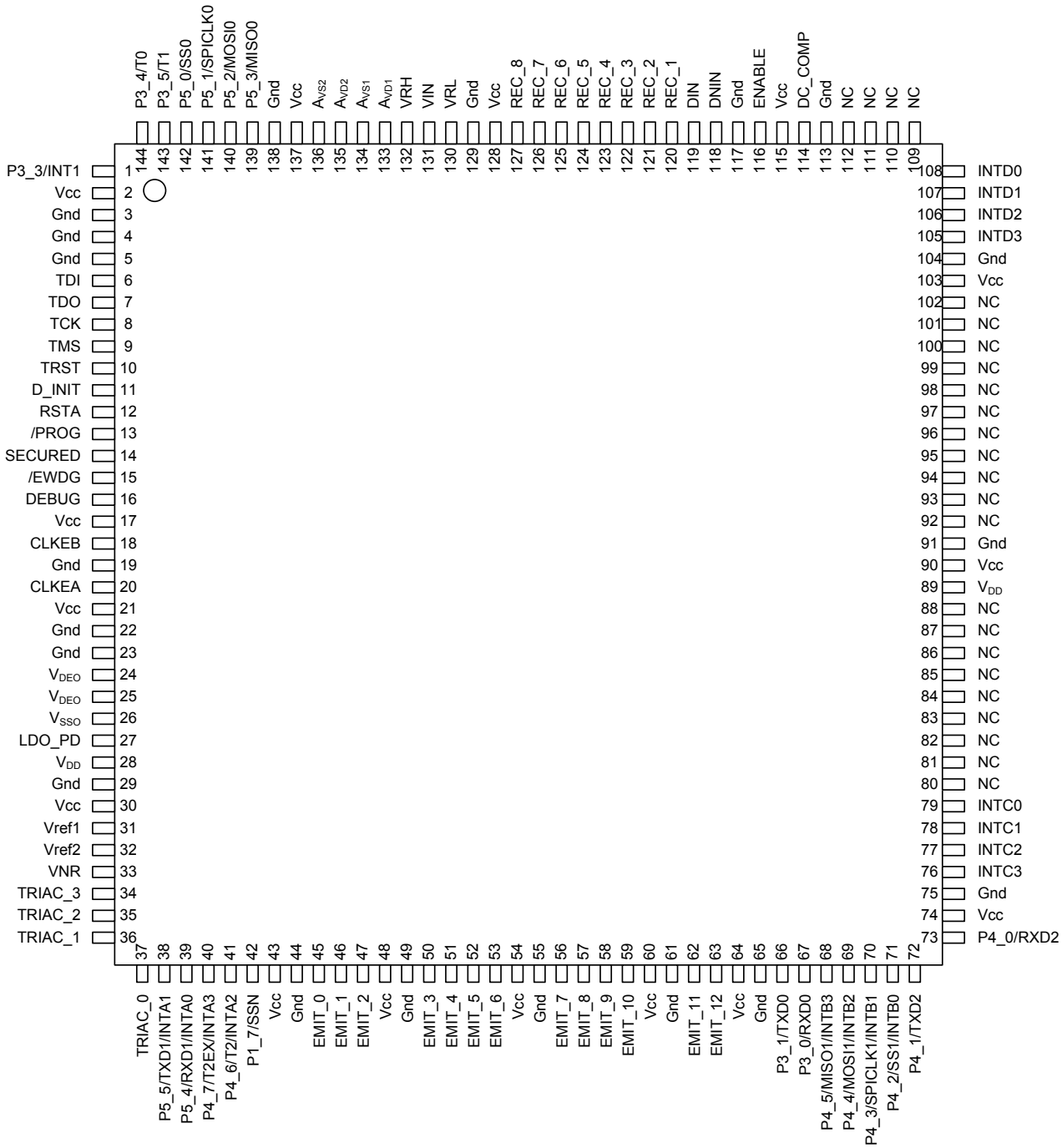


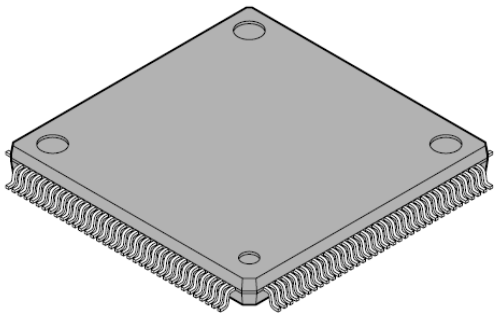
Figure 2. LQFP pin assignment

2. Mechanical data

144-pin plastic LQFP (16x16mm) Pb-free, RoHS compliant.

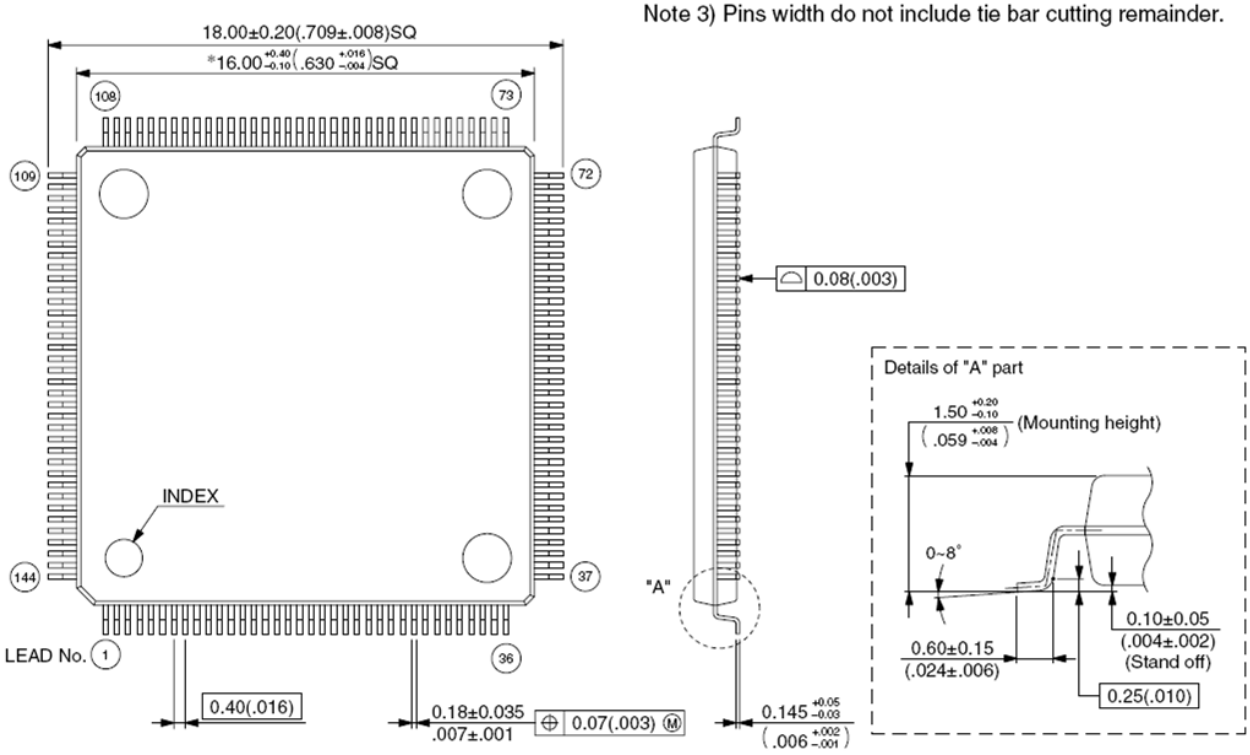
Ambient Temperature Range: -40ºC to +85ºC.

Ordering Code: **ADD1000BQF144**

144-pin plastic LQFP		
	Lead pitch	0.40 mm
	Package width × package length	16.0 × 16.0 mm
	Lead shape	Gullwing
	Sealing method	Plastic mold
	Mounting height	1.70 mm MAX
	Weight	0.88 g
	Code (Reference)	P-LFQFP144-16×16-0.40

Dimensions in mm (inches).
Note: The values in parentheses are reference values.

Note 1) * : These dimensions include resin protrusion.
Resin protrusion is +0.25(.010)Max(each side).
Note 2) Pins width and pins thickness include plating thickness.
Note 3) Pins width do not include tie bar cutting remainder.

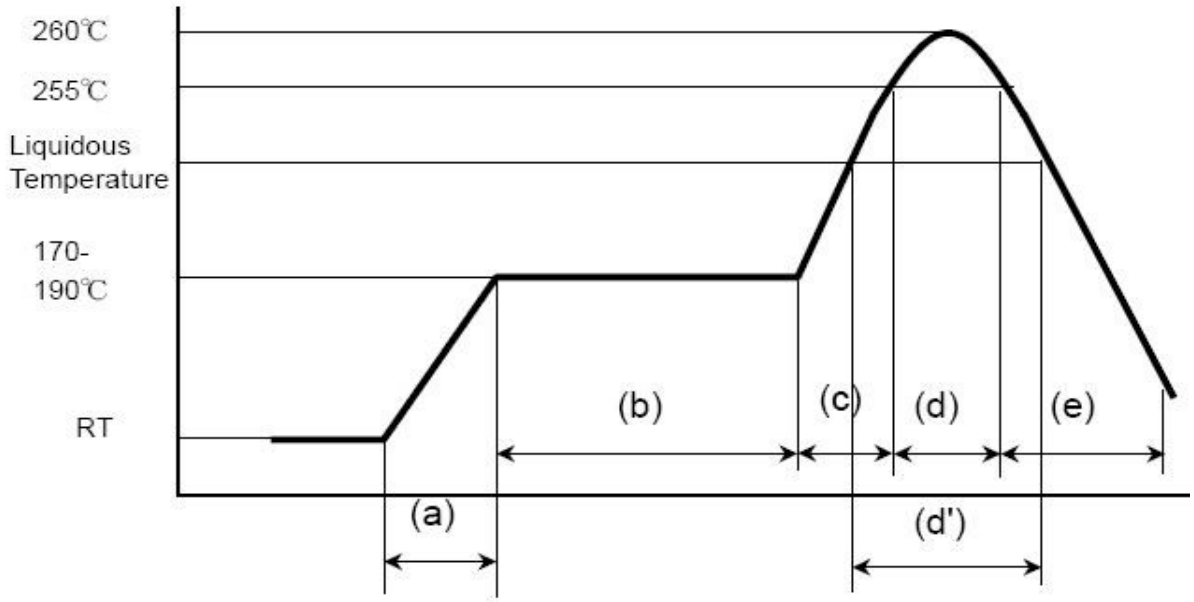


2.1 Recommended mounting conditions

2.1.1 Conditions of Standard Reflow

Items	Contents	
Method	IR(Infrared Reflow) / Convection	
Times	2	
Floor life	Before unpacking	Please use within 2 years after production
	From unpacking to second reflow	Within 8 days
	In case over period of floor life	Baking with 125°C +/- 3°C for 24hrs +2hrs/-0hrs is required. Then please use within 8 days. (please remember baking is up to 2 times)
Floor life condition	Between 5°C and 30°C and also below 70%RH required. (It is preferred lower humidity in the required temp range.)	

Temperature Profile



H rank: 260°C Max

(a) Average ramp-up rate: 1°C/s to 4°C/s

(b) Preheat & Soak: 170°C to 190°C, 60s to 180s

(c) Average ramp-un rate: 1°C/s to 4°C/s

(d) Peak temperature: 260°C Max, Up to 255°C within 10s

(d') Liquidous temperature: Up to 230°C within 40s or
Up to 225°C within 60s or
Up to 220°C within 80s

(e) Cooling: Natural cooling or forced cooling

Temperature on the top of the package is measured