

3 July 2018

## AVT-423 rev. "C" and "D" Product Data Sheet

AVT-423 Multiple Computer Network Interface

### Capabilities

Full speed 10/100 Mbaud Ethernet to host.  
(No on-board throughput restrictions.)

Four CAN channels.

- CAN0: (classical CAN only), 2-wire.
- CAN1: (classical CAN only), 2-wire or Single Wire software selected.
- CAN2: (FD), 2-wire.
- CAN3: (FD), 2-wire.

Two LIN channels.

- LIN0: LIN or KWP operations anticipated; software selected.
- LIN1: LIN only operations anticipated.

~~One dual-bus Flexray channel.~~

- ~~FR0: dual-bus or single-bus operations anticipated.~~

Should provide a huge improvement over the AVT-853 in capability, data throughput, CPU performance, and memory.

(Continued on next page.)

### Revision “C” Board

Current in-stock production board is revision “C”.

About thirty (qty. 30) rev. “C” boards are on-the-shelf and available for shipment.

Picture on page 7. Board outline on page 8. Board top plot on page 9.

Maximum height including RJ-45 connector is approximately 1.15 inches.

### Revision “D” Board

The next production board will be revision “D”.

Revision “D” incorporates circuitry corrections. No changes to capability.

Board outline on page 8. Board top plot on page 10.

Maximum height including RJ-45 connector is approximately 1.15 inches.

### Flexray

All boards do NOT have the Flexray hardware installed. Flexray firmware is not available. The Flexray hardware can be added at a later time for additional cost. Firmware can be updated in the field, at any time.

Flexray development has been suspended and is not expected to resume.

### Enclosure

Board is compatible with Hammond Mfg. RM2055M enclosure. Picture on page 7.

### Card Cage

The AVT-423 board should be compatible with the following Vector card cages.

- CCA17S/90 (assembled, snap-in plastic card guides)
- CCK17S/90 (un-assembled kit, snap-in plastic card guides)
- CCA17P/90 (assembled, screw-in plastic card guides)
- CCK17P/90 (un-assembled kit, screw-in plastic card guides)
- CCA17M/90 (assembled, screw-in aluminum card guides)
- CCK17M/90 (un-assembled kit, screw-in aluminum card guides)

## CPU

Netburner MOD54415-100 module.

Picture on page 11.

32-bit 250 MHz Coldfire processor.

32 MBytes FLASH.

64 MBytes RAM.

## Operational Firmware Description

Netburner Integrated Development Environment (GNU based).

Firmware is easily updated in-the-field.

All code is written in 'C' with the exception of certain time sensitive routines.

I will make source code available to select customers, on request, at no charge.

User can purchase the development environment from Netburner for about US\$ 100.00. (One time fee.) Talk to AVT about this.

The AVT-423 uses the same command and response structure as the AVT-853.

Due to significant hardware differences, few commands between the AVT-423 and AVT-853 will be compatible. However, they do 'look alike'.

## Operational Firmware Status (as of v0019)

CAN communications on all four CAN channels operational.

CAN periodic messages operational.

CAN ISO 15765 implemented for channels CAN0 and CAN1.

LIN0 and LIN1 operational.

LIN periodic messages (both Master and Slave) operational.

## Documentation

Updated User's Manual is posted to and available from the web site, Product Documents page. The manual is updated when necessary.

## Power

Input operating voltage range: +8 to +18 VDC.  
(Max. voltage is limited by K-line and SWC devices.)

Power dissipation: 2.7 watts. (Flexray NOT installed.)

Operating temperature range: 0 to +70 degrees C (under review)

No special cooling needs.

## Indicators

The following LEDs are located under the RJ45 connector at board edge.

Green:	3.3 VDC power.
Yellow:	Ethernet connection active.
Red:	CPU heartbeat.
Red:	CAN-FD FPGA heartbeat.

## Pricing

Current pricing is provided separately. Ask AVT for a price sheet.

## Connections

Ethernet: RJ-45 connector with link and activity lights.

Network and Power is through a DB-25P connector; described here.

<u>DB-25 pin #</u>	<u>Signal</u>
1	CAN0_H
14	CAN0_L
2	CAN1_H
15	CAN1_L
3	CAN2_H
16	CAN2_L
4	CAN3_H
17	CAN3_L
5	FR-BUS_A_P
18	FR-BUS_A_M
6	FR-BUS_B_P
19	FR_BUS_B_M
7	
20	
8	
21	
9	
22	
10	CAN1_SWC
23	LIN0
11	LIN1
24	GND
12	GND
25	RAW_VIN
13	RAW_VIN

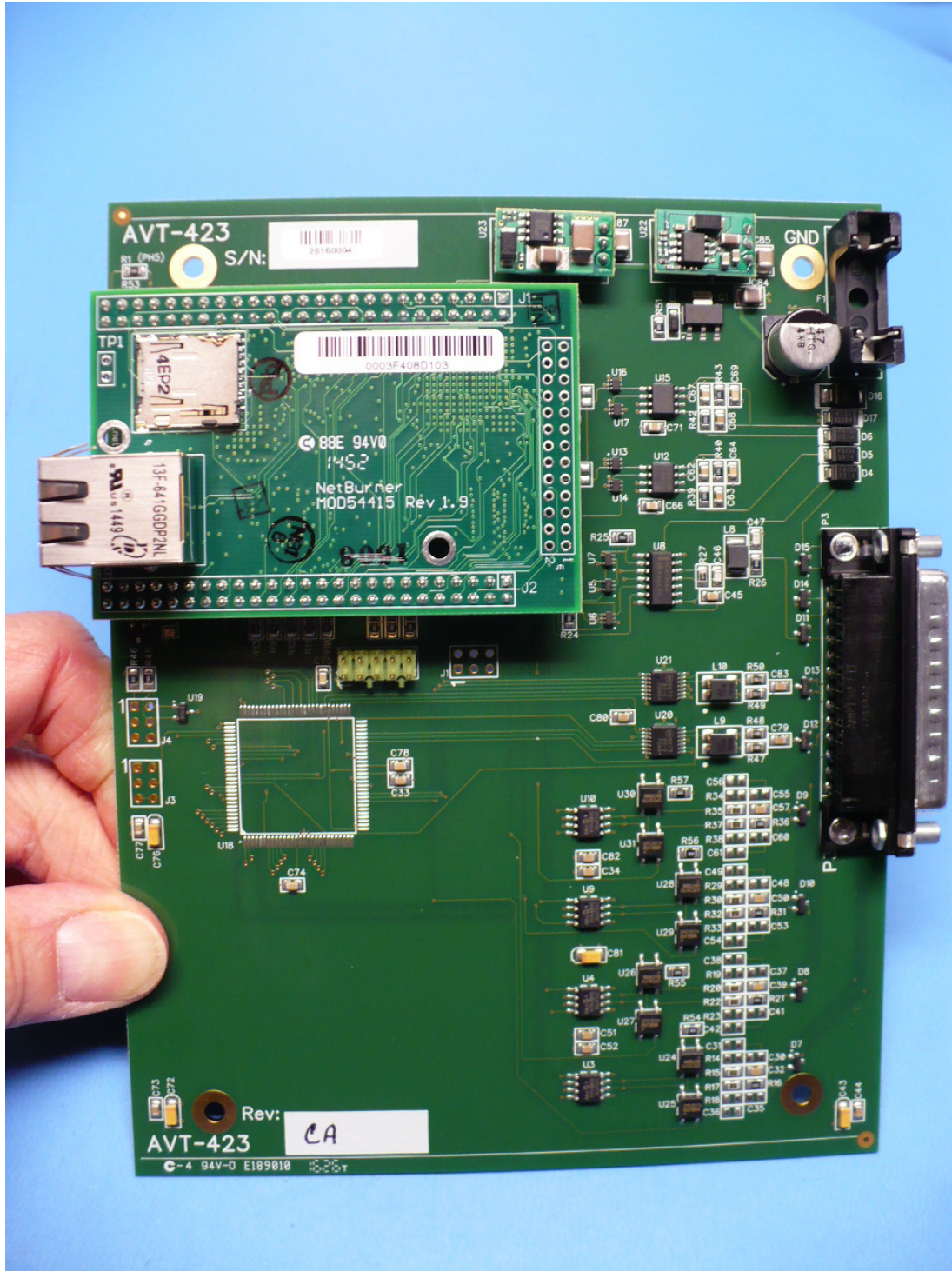
Questions, comments, etc. ...

Michael Riley      410-798-4038

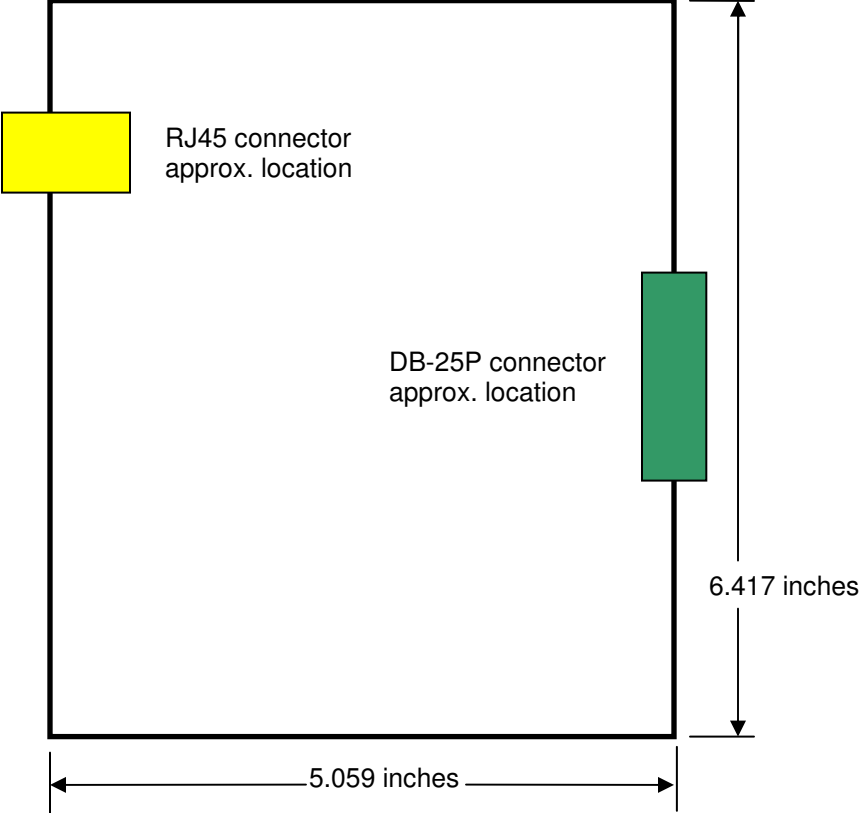
MRiley@AVT-HQ.com

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AVT-423 rev. "CA" board photo.

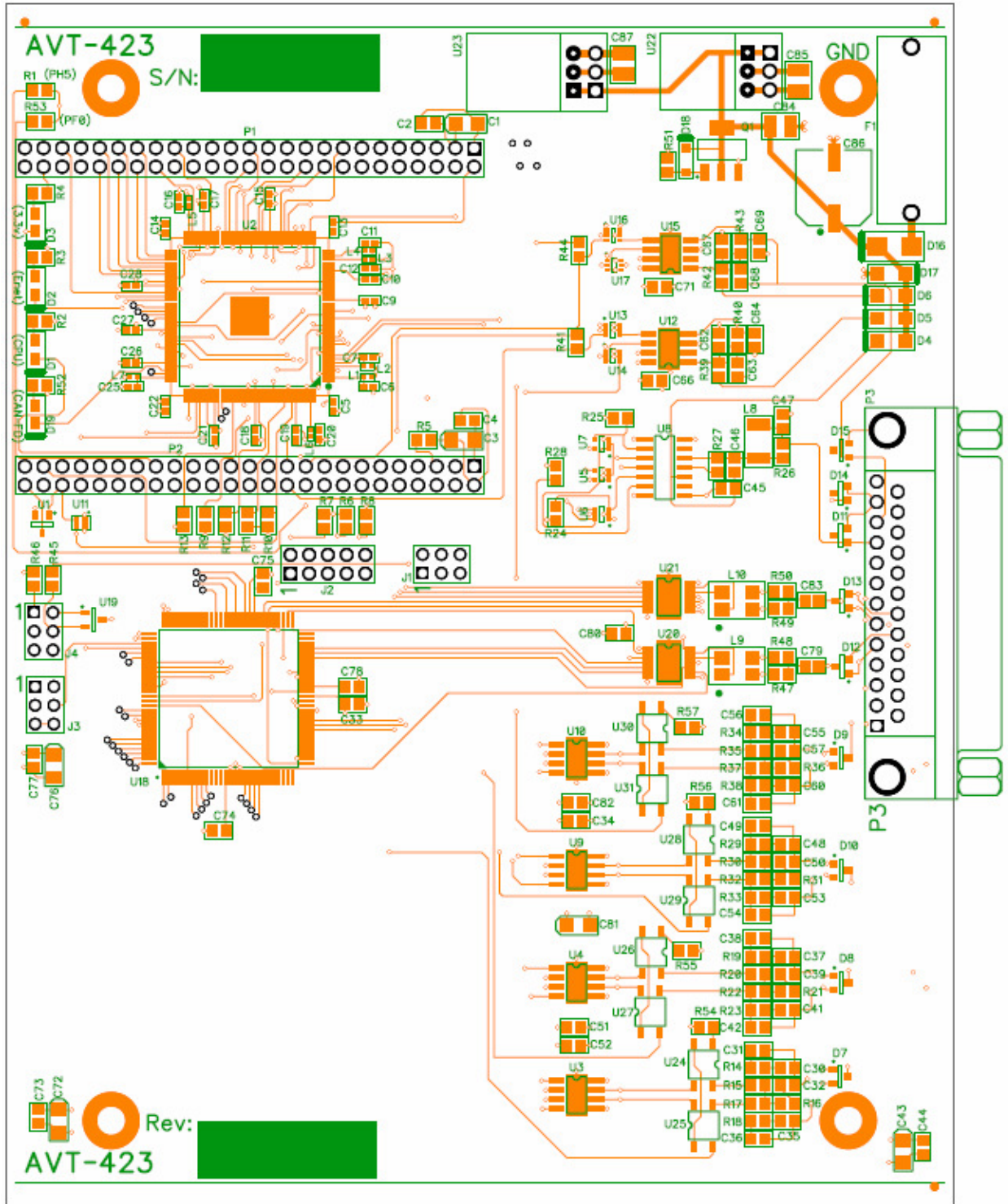


AVT-423 PC board rev. "B" and "C" and "D" board outline.

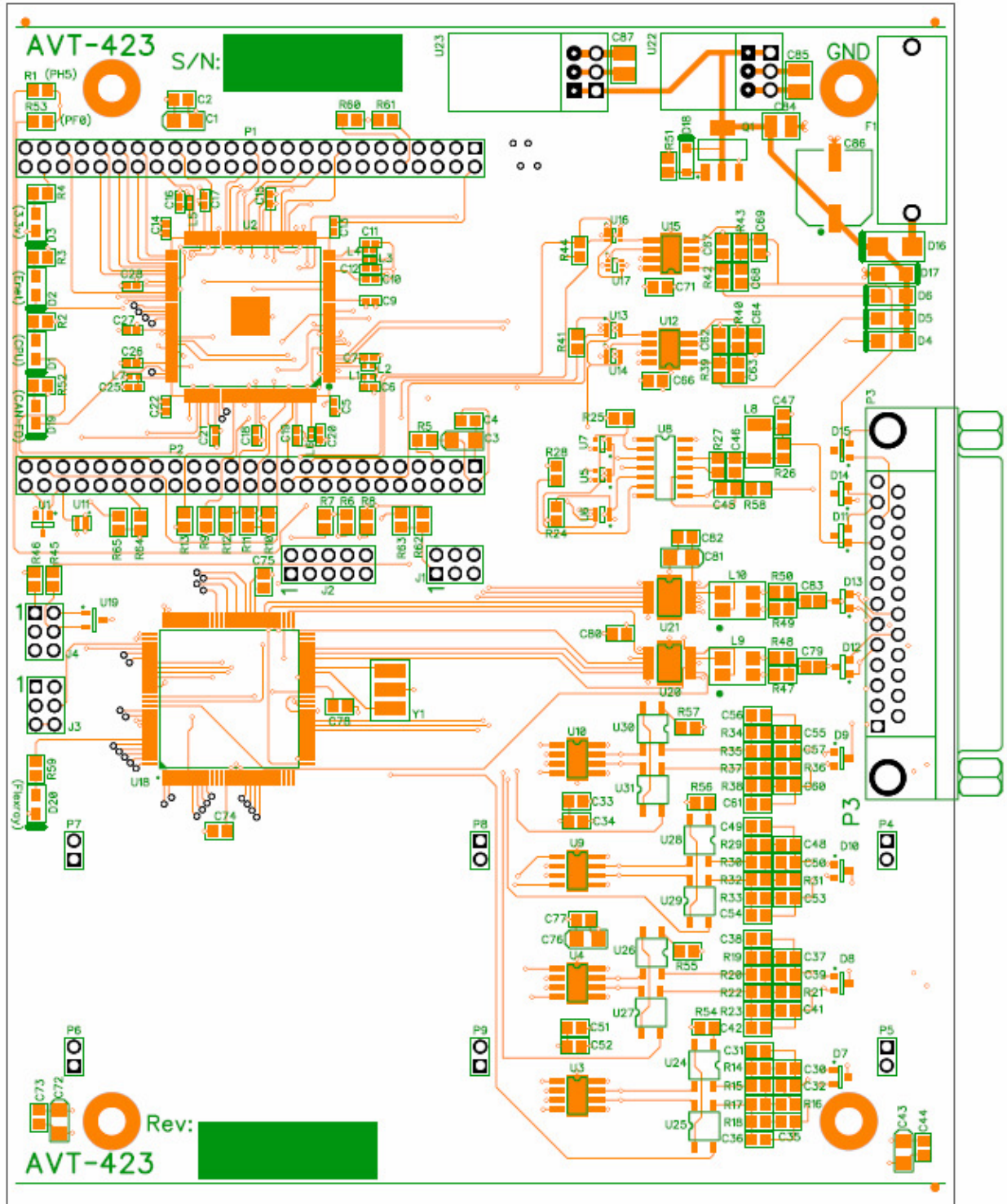


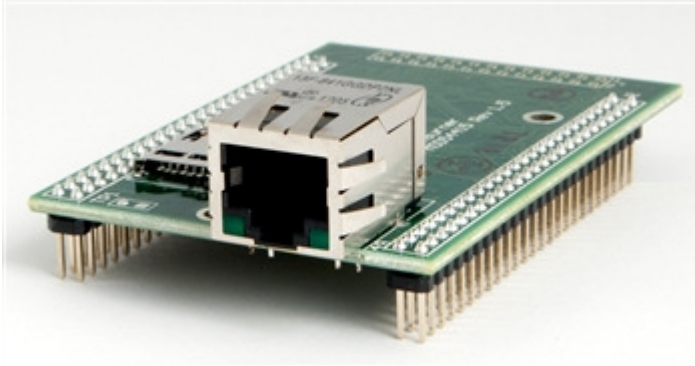


AVT-423 PC board rev. "C" top layout

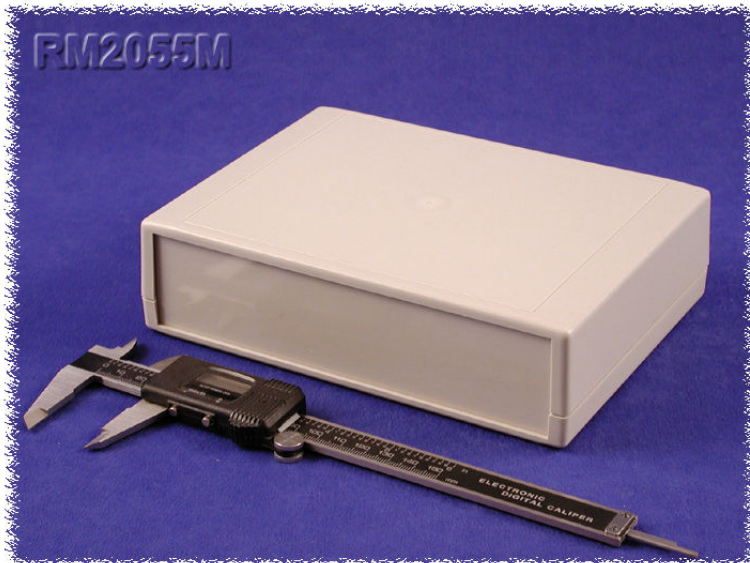


AVT-423 PC board rev. "D" top layout





Netburner MOD54415-100 CPU module.



Hammond Manufacturing RM2055M enclosure.  
Overall dimensions are: 7.480 W x 5.512 D x 1.988 H (inches)