



AIR THROTTLE CONTROL MODEL# ATI-PRG-CAT PART# 000642

642LIT ATI-CAT-PRG (WI-80 PSI)
Revision: 1.1
02-FEB-2017
Ray Garcia



DESCRIPTION

The model ATI-PRG-CAT is a microprocessor based product that converts control air pressure to pulse width modulation (PWM). PWM is the required signal to throttle the CAT ECM from 0-100%. There is a serial interface provided to facilitate programming and setup. When multiple engines are chained together the ATI-PRG-CAT can be adjusted to even load distribution. The ATI-PRG-CAT will also respond to serial commands to throttle the engine.

OPERATION

As the input air pressure is adjusted by the operator or other machinery the ATI-PRG-CAT converts air pressure to voltage then voltage to PWM. Low air pressure corresponds to narrow pulse width while a higher input pressure outputs a wide pulse width signal. The (minimum and maximum pulse widths), pressure range, and tweak factor can be changed by serial command. The tweak factor is the amount of throttle setting that the ATI-PRG-CAT can be changed relative to another ATI-PRG-CAT at the same pressure setting. This enables engines to be matched as to load sharing. Pressure range is the maximum pressure required for 100% throttle.

PRESSURE TRANSDUCER

Stainless steel membrane compatible with all fluids. Burst pressure is 450 psi. Regulator and filter are recommended but not necessary.

SPECIFICATIONS

Material..... Stainless Steel
Temperature Range.....-40°F to +185°F
Power.....24 VOLTS DC
ECM Output500 Hertz Pulse Width Modulation
Peak to Peak5 VOLTS
Air Pressure Input.....0-80 PSI (500)Max

CONNECTIONS

Included: Adapter cable (Part #642-2) to connect to ECM (+12 - +24, GND, PWM). This cable consists of a 6 pin plug (Deutsch DT06-6S) to a 3 pin receptacle Deutsch DT04-3P with 3 pin plug (Deutsch DT06-3S).

Optional: Programming cable (Part #642-1) that attaches to ECM and Serial link (Rx, Tx, Gnd). This cable consists of a 6 pin Plug (Deutsch DT06-6S) to a 3 pin receptacle (Deutsch DT04-3P) and D-SUB 9 pin Female configured to connect to D-sub 9 pin male

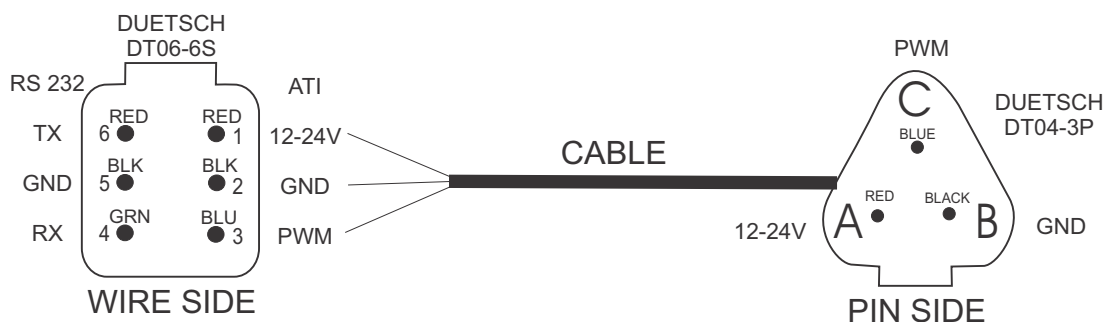
Standard serial port.

Pin Connections 6 pin receptacle:

- 1) +12 or +24 VDC - (RED)
- 2) Ground - (BLACK)
- 3) PWM (5 volts peak to peak 500 hertz variable pulse Width) - (BLUE)
- 4) RS232 Receive Rx - (GREEN)
- 5) RS232 Ground - (BLACK)
- 6) RS232 Transmit Tx - (RED)

SPECIAL INSTRUCTIONS

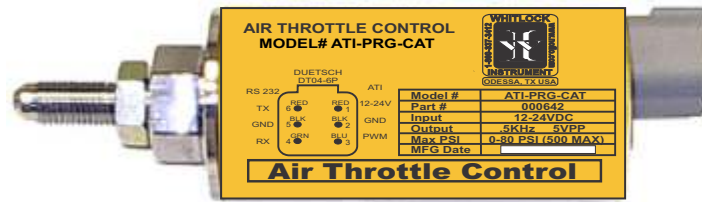
Mount with the threaded end facing down. This is to prevent water accumulation and ice formation.



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MODEL# ATI-PRG-CAT PART# 000642

PROGRAMMING INSTRUCTIONS



PROGRAMMING:

Any terminal program can be used to communicate with the ATI-PRG-CAT. Microsoft Hyperterminal is one example. All that is necessary is to establish a direct serial link at 9600 baud.

The following key strokes are used to change or display operating parameters.

Pressing lower case (d) will return the following:

V1.1	06/03/02	Version number and date of last program change
PN000642	Model ATI-CAT-PRG	Part number and model designation
Tweak	1.6%	Tweak factor (Range 0.2% - 2.9%)
Idle	10%	Minimum PWM at 0 PSI (Range 01% - 49%)
Throttle	10%	Current throttle setting in PWM
Max	94%	Maximum PWM at 100% throttle (range 51%-99%)
Pressure range	80PSI	Current programmed pressure range for maximum throttle (available ranges are 60,80,100,120 PSI)

To change a setting press the first letter of the setting to change then use the (+) plus or (-) minus keys. Use lower case letters not capitals.

Tweak factor:	(t) then + or - will increment or decrement the tweak factor
Idle setting:	(i) then + or - will increment or decrement the minimum PWM at 0 psi
Maximum	(m) then + or - will increment or decrement the maximum PWM at 100 % throttle
Pressure range	(p) then + or - will increment or decrement the pressure range for 100% throttle

To accelerate the engine using keyboard commands press (a) then use the + or - key to increase or decrease the engine speed. Pressing (i) will return the engine to idle immediately. This feature enables an engine to be controlled by computer or PLC commands through a serial link.

Pressing (d) at any time will return a listing as above of all the settings.

Factory default settings:	Tweak	1.6%
	Idle	10%,
	Max	94%,
	Pressure Range	80PSI

The settings are stored in permanent memory and will not change on loss of power.

Connections:

Included: Adapter cable(Part #642-2) to connect to ECM (+12 - +24, GND, PWM)

This cable consist of a 6 pin plug (Deutsch DT06-6S) to a 3 pin receptacle (Deutsch DT04-3P) with 3 pin plug (Deutsch DT06-3S).

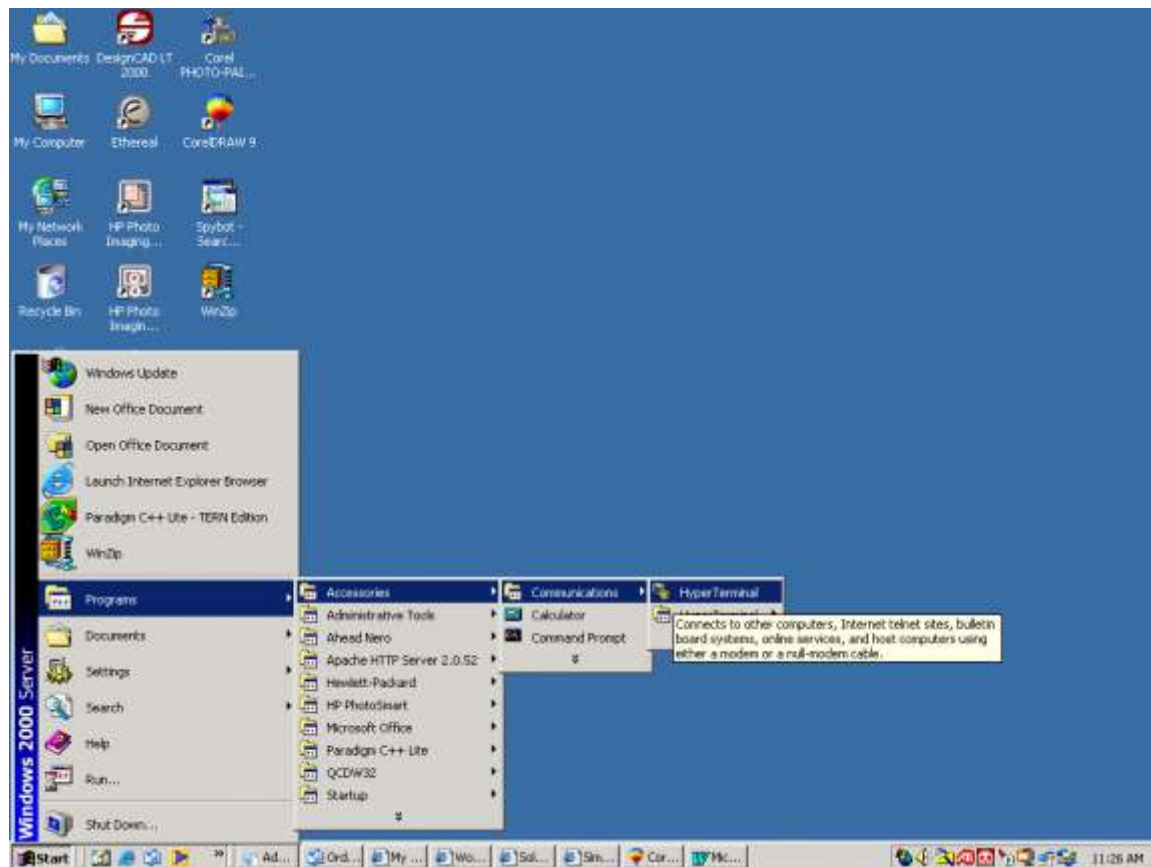
Optional: A programming cable (Part #642-1) that attaches to ECM and Serial link(Rx,Tx,Gnd).

This cable consist of a 6 pin plug (Deutsch DT06-6S) to a 3 pin receptacle (Deutsch DT04-3P) and D-SUB 9 pin female configured to connect to D-sub 9 pin male standard serial port.

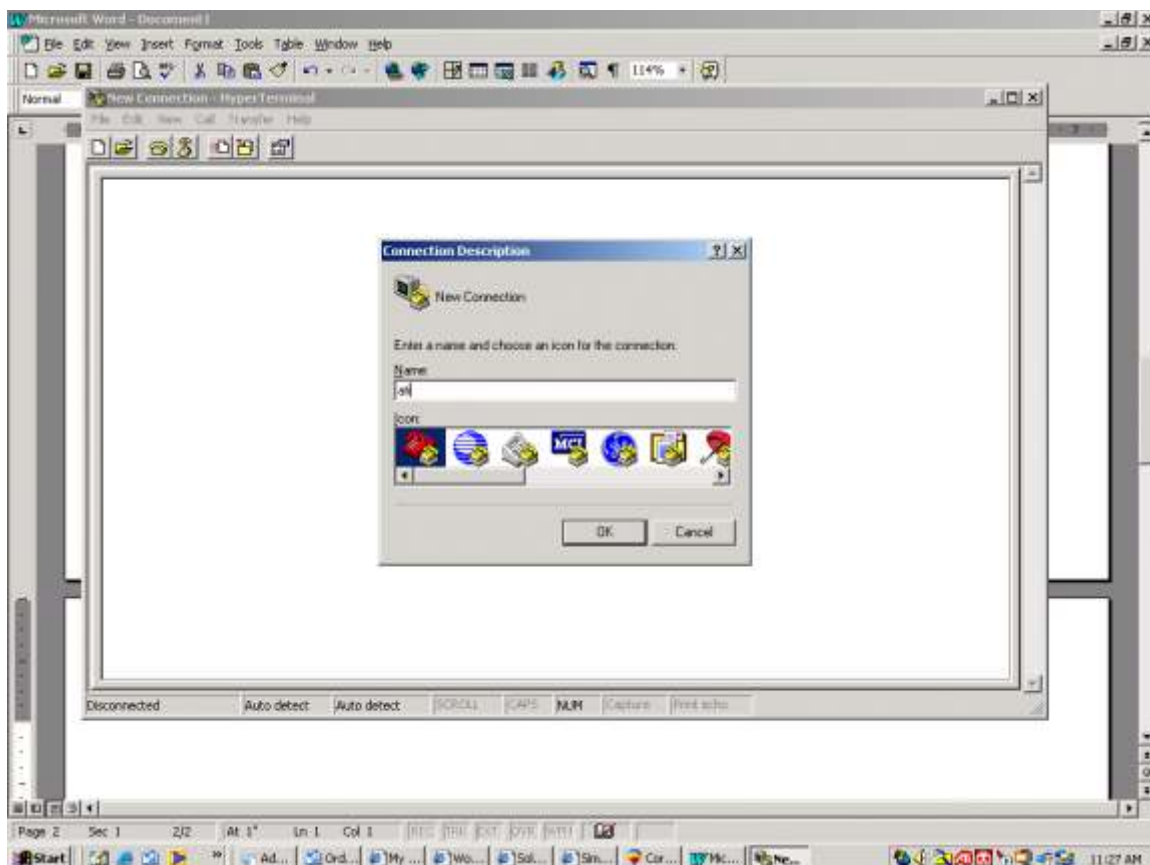
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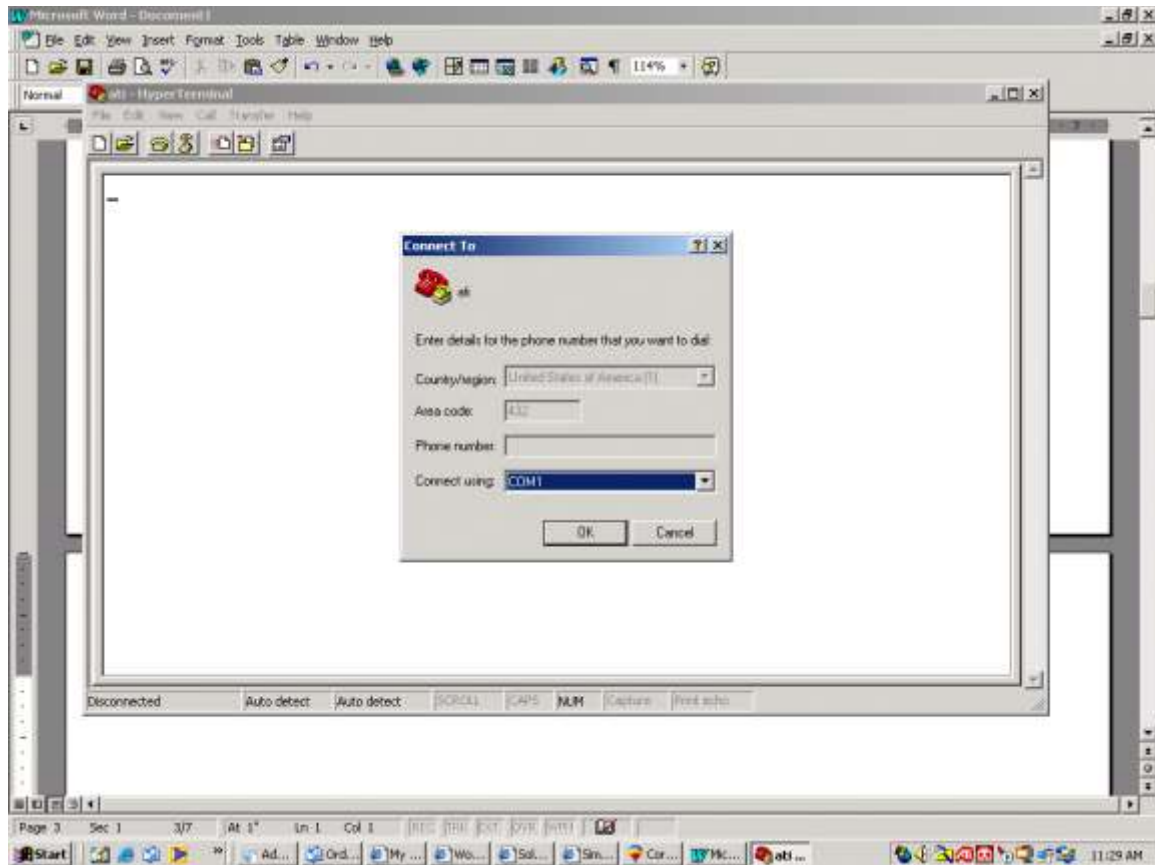
1. WHERE TO FIND HYPER TERMINAL



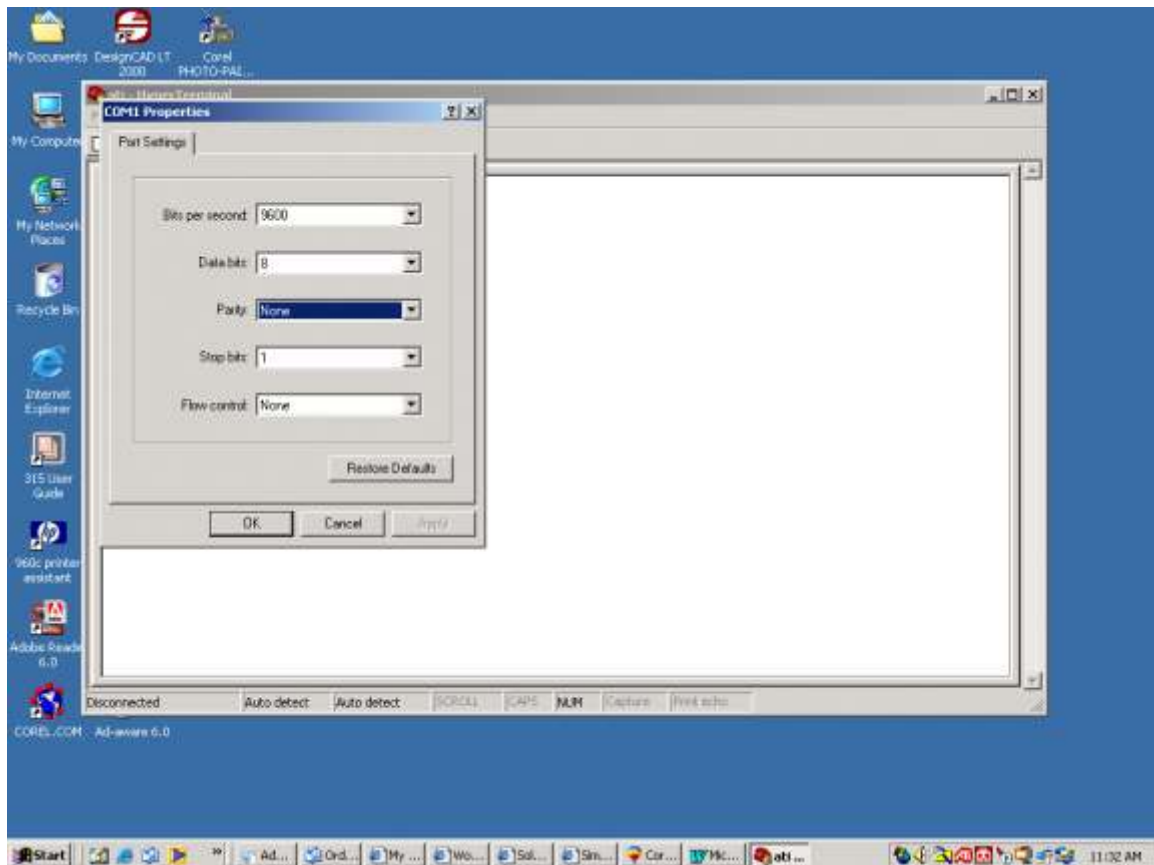
2. HYPER TERMINAL - OPENING SCREEN



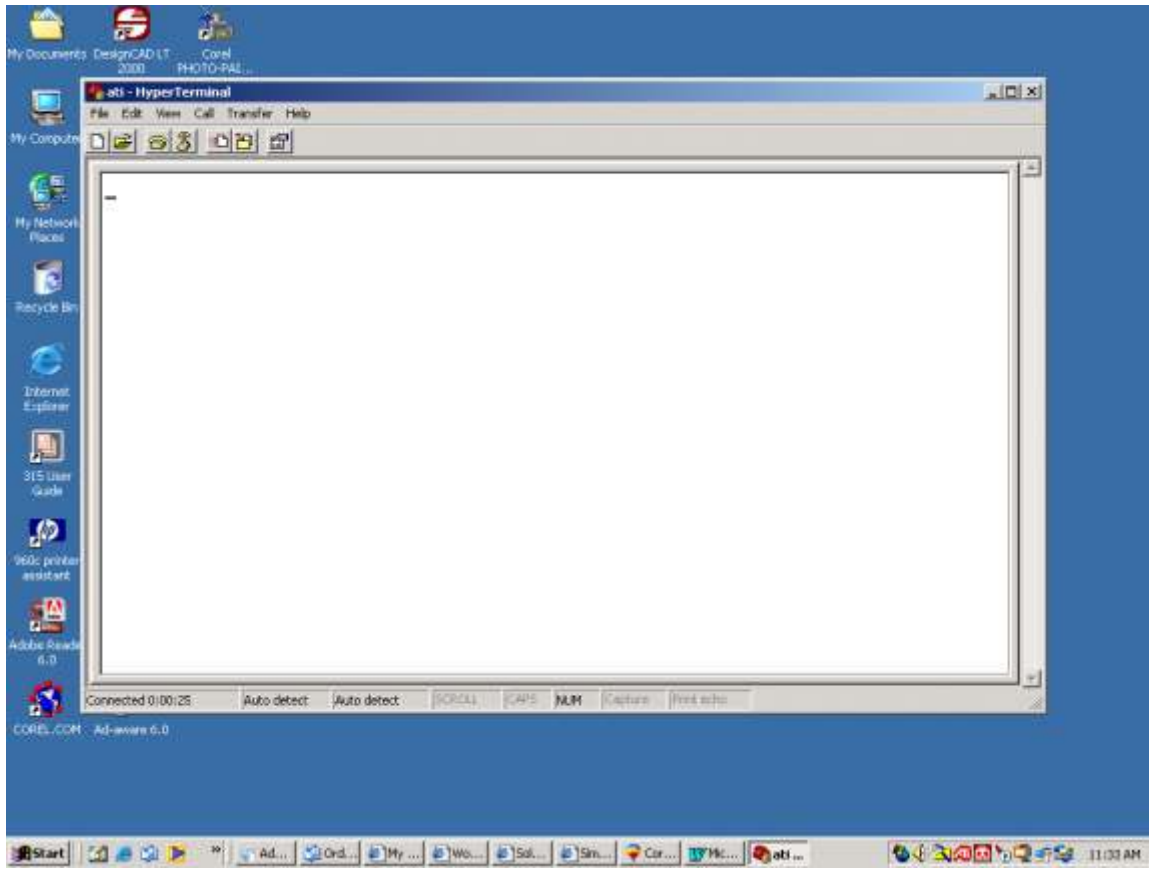
3. HYPER TERMINAL - COMPORT SETTING



4. HYPER TERMINAL - COMPORT PROPERTIES



5. HYPER TERMINAL - READY



6. HYPER TERMINAL - WORKING

