

4.7 Counter/Frequency Module Command

4.7.1 Configuration, Counter Input and Display Command Set

Command Syntax	Command Name	Description	I/O Module
%AANNTTCFF	Configuration	Sets the address, input mode, baud rate, checksum status and/or frequency gate time for a specified counter/ frequency module	4080, 4080D
\$AA2	Configuration Status	Returns configuration parameters from the specified counter/frequency module	4080, 4080D
\$AAF	Read Firmware Version	Return firmware version code from the specified counter/frequency module	4080, 4080D
\$AAM	Read Module Name	Return the module name from the specified counter/frequency module	4080, 4080D
\$AABS	Set Input Signal Mode	Sets the input signal mode of the specified counter/frequency module to either non-isolated or photo-isolated input signals	4080, 4080D
\$AAB	Read Input Signal Mode	Read the input signal mode of the specified counter/frequency module.	4080, 4080D
#AAN	Read Counter or Frequency Value	Returns the value of counter 0 or counter 1 from a specified counter/ frequency module in hex format	4080, 4080D
\$AA8V	Select LED Data Origin	Select whether LED will display data from the counter/frequency module directly or from the host computer	4080D
\$AA8	Read LED Data Origin	Returns the status of the LED Data origin. Origin is either direct from module or from host computer	4080D
\$AA9(data)	Send Data to LED	PC sends data to LED display. This command is valid only after selectting to display host computer data (\$AA8V)	4080D

%AANNTTCCFF

Name: Configuration

Description: Sets the address, input mode, baud rate, checksum status and/or frequency gate time for a specified counter/frequency module

Syntax: %AANNTTCCFF (cr)

% is a delimiter character.

AA (range 00-FF) represents the 2-character hexadecimal address of counter module that you want to interrogate.

NN represents the new hexadecimal address of the counter/frequency module. Range is from 00h to FFh.

TT represents the input mode:

50h : counter input mode

51h : frequency measurement mode

CC represents the baud rate code (See table 4-7).

FF is a hexadecimal number that equals the 8-bit parameter representing the checksum status and frequency gate time. The layout of the 8-bit parameter is shown in figure 4-5.

Bits 0, 1, 3, 4, 5 and 7 are not used and set to 0.

(cr) is the terminating character, carriage return (0Dh)

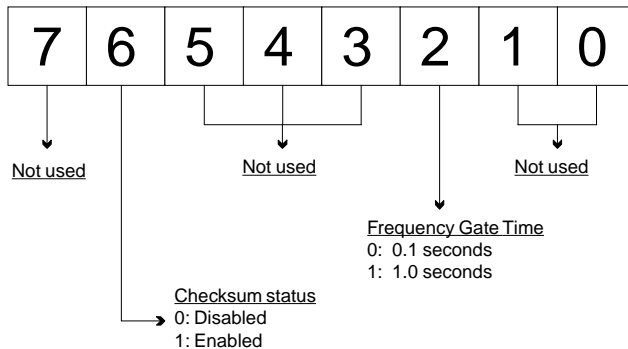


Figure 4-5 Data format for 8-bit parameter

%AANNTTCCFF

Response: !AA(cr) if the command is valid.
 ?AA(cr) if an invalid parameter was entered or if the INIT* terminal was not grounded when attempting to change baud rate or checksum setting.
 There is no response if the module detects a syntax error or communication error, or if the specified address does not exist.
 ! is a delimiter character indicating a valid command was received.
 ? is a delimiter character indicating the command was invalid.
 AA (range 00-FF) represents the 2-character hexadecimal address of a counter/frequency module.
 (cr) is the terminating character, carriage return (0Dh).

Example

command: %0120510600(cr)
response: !20(cr)

The ADAM 4080D module at address 01 is configured to new address 20, frequency measurement module, baud rate 9600, frequency gate time 0.1 second and no checksum checking or generation.

The response indicates that the command was received.

Wait seven seconds to let the new configuration settings take effect before you issue a new command to the module.

Baud Rate Code (Hex)	Baud Rate
03	1200 bps
04	2400 bps
05	4800 bps
06	9600 bps
07	19.2 Kbps
08	38.4 Kbps

Table 4-7:
Baudrate Codes

NOTICE: *You can change all configuration parameters dynamically except checksum and baud rate parameters. They can only be altered when the INIT* terminal is grounded.*

\$AA2

Name Configuration Status

Description The command requests the return of the configuration data from the counter/frequency module at address AA.

Syntax \$AA2(cr)

\$ is a delimiter character.

AA (range 00-FF) represents the 2-character hexadecimal address of the analog input module that you want to interrogate.

2 is the Configuration Status command.

(cr) is the terminating character, carriage return (0Dh)

Response

!AATTCCFF (cr) if the command is valid.

?AA(cr)if an invalid operation was entered

There is no response if the module detects a syntax error or communication error, or if the specified address does not exist.

! is a delimiter character indicating a valid command was received

? is a delimiter character indicating the command was invalid

AA (range 00-FF) represents the 2-character hexadecimal address of counter/frequency module that you want to interrogate.

TT (50h or 51h) represents the type code. 50h means that using module as counter. 51h means using module as frequency measurement module.

CC represents the baud rate code.

FF is a hexadecimal number that equals the 8-bit parameter representing the checksum status and frequency gate time. The layout of the 8-bit parameter is shown in figure 4-5. bits not used are set to 0.

(cr) is the terminating character, carriage return (0Dh)

(Also see the %AANNTTCCFF configuration command)

\$AAF

Name	Read Version
Description	The command requests the analog input module at address AA to return the version code of its firmware
Syntax	<p>\$AAF (cr)</p> <p>\$ is a delimiter character.</p> <p>AA (range 00-FF) represents the 2-character hexadecimal address of the counter/frequency module that you want to interrogate.</p> <p>F identifies the version command.</p> <p>(cr) is the terminating character, carriage return (0Dh)</p>
Response	<p>!AA(Version)(cr) if the command is valid.</p> <p>There is no response if the module detects a syntax error or communication error, or if the specified address does not exist.</p> <p>! is a delimiter character indicating a valid command was received.</p> <p>AA (range 00-FF) represents the 2-character hexadecimal address of counter/frequency module.</p> <p>(version) is the version code of the module's firmware at address AA.</p> <p>(cr) is the terminating character, carriage return (0Dh).</p>

\$AAM

Name Read Module Name

Description The command requests the counter/frequency module at address AA to return its name

Syntax \$AAM (cr)

\$ is a delimiter character.

AA (range 00-FF) represents the 2-character hexadecimal address of counter/frequency module that you want to interrogate.

M identifies the Read Module Name command.

(cr) is the terminating character, carriage return (0Dh)

Response

!AA(Module Name)(cr) if the command is valid.

There is no response if the module detects a syntax error or communication error, or if the specified address does not exist.

! is a delimiter character indicating a valid command was received.

AA (range 00-FF) represents the 2-character hexadecimal address of counter/frequency module.

(Module Name) is the name of the module at address AA. For example: 4080D

(cr) is the terminating character, carriage return (0Dh).

\$AABS

Name	Set Input Mode
Description	Set the input signal mode of the specified counter/frequency module to either non-isolated (TTL) or photo-isolated.
Syntax	<p>\$AABS(cr)</p> <p>\$ is a delimiter character.</p> <p>AA (range 00-FF) represents the 2-character hexadecimal address of counter/frequency that you want to interrogate.</p> <p>B identifies the Set Input Signal Mode command.</p> <p>S indicates the input signal mode. S = 0 configures the module for non-isolated (TTL) input and S = 1 configures the module for photo-isolated input .</p> <p>(cr) is the terminating character, carriage return (0Dh)</p>
Response	<p>!AA(cr) if the command is valid.</p> <p>There is no response if the module detects a syntax error or communication error or if the specified address does not exist.</p> <p>! is a delimiter character indicating the command was valid.</p> <p>AA (range 00-FF) represents the 2-character hexadecimal address of a counter/frequency module.</p> <p>(cr) is the terminating character, carriage return (0Dh).</p>
Example	<p>command: \$03B0(cr)</p> <p>response: !03(cr)</p> <p>The command configures the counter/frequency modules at address 03 to receive non-isolated input. The addressed module replies by sending its address to indicate that it executed the command.</p>

NOTICE: *The input mode command is not related to a specific channel. When the input mode is set both channels are changed accordingly.*

\$AAB

Name	Read Input Mode.
Description	Read the input mode of the specified counter/frequency module.
Syntax	<p>\$AAB(cr)</p> <p>\$ is a delimiter character.</p> <p>AA (range 00-FF) represents the 2-character hexadecimal address of counter/frequency that you want to interrogate.</p> <p>B identifies the Read Input Signal Mode command.</p> <p>(cr) is the terminating character, carriage return (0Dh)</p>
Response	<p>!AAS(cr) if the command is valid.</p> <p>There is no response if the module detects a syntax error or communication error, or if the specified address does not exist.</p> <p>! delimiter character indicating the command was valid.</p> <p>AA (range 00-FF) represents the 2-character hexadecimal address of a counter/frequency module.</p> <p>S indicates the input signal mode. S = 0 configures the module for non-isolated (TTL) input and S = 1 configures the module for photo-isolated input.</p> <p>(cr) is the terminating character, carriage return (0Dh).</p>
Example	<p>command: \$03B(cr)</p> <p>response: !030(cr)</p> <p>The command requests the counter/frequency module at address 03 to return its input mode. The addressed module replies that its input mode is set to receive non-isolated input.</p>

#AAN

Name: Read Counter or Frequency Value

Description: Instructs the addressed counter/frequency module at address AA to read the counter or frequency value of counter 0 or counter 1 and return the acquired data.

Syntax: #AAN(cr)

is a delimiter character.

AA (range 00-FF) represents the 2-character hexadecimal address of counter/frequency module that you want to interrogate.

N represents the counter number.

N=0 represents counter 0

N=1 represents counter 1

(cr) is the terminating character, carriage return (0Dh)

Response: >data(cr) if the command is valid.

?AA(cr) if an invalid operation was entered.

There is no response if the module detects a syntax error or communication error or if the specified address does not exist.

? is a delimiter character indicating the command was invalid.

AA (range 00-FF) represents the 2-character hexadecimal address of a counter/frequency input module.

(data) is the value that is retrieved by the module by reading counter 0 or counter 1. The data format consists of eight hexadecimal digits.

(cr) is the terminating character, carriage return (0Dh).

Example: command: #120(cr)

response: >000002FE(cr)

The command requests the counter/frequency module at address 12 to read the counter 0 and return the data. The counter/frequency module at address 12 responds that the value of counter 0 is 000002FE (hexadecimal) which equals 766 (decimal).

\$AA8V

Name	Select LED Data Origin
Description	Select whether LED will display data from the counter/frequency module directly or from the host computer.
Syntax	<p>\$AA8V(cr)</p> <p>\$ is a delimiter character.</p> <p>AA (range 00-FF) represents the 2-character hexadecimal address of counter/frequency module that you want to interrogate.</p> <p>8 identifies the Select LED Data Origin command.</p> <p>V indicates the origin of the data to be displayed on the LED: V=0 sets the LED data origin to the module's counter 0 V=1 set the LED data origin to the module's counter 1 V=2 set the LED data origin to the host computer</p> <p>(cr) is the terminating character, carriage return (0Dh)</p>
Response	<p>!AA(cr) if the command is valid.</p> <p>?AA(cr) if an invalid operation was entered.</p> <p>There is no response if the module detects a syntax error or communication error or if the specified address does not exist.</p> <p>! is a delimiter character indicating the command was valid.</p> <p>? is a delimiter character indicating the command was invalid.</p> <p>AA (range 00-FF) represents the 2-character hexadecimal address of a counter/frequency input module.</p> <p>(cr) is the terminating character, carriage return (0Dh).</p>
Example	<p>command: \$0182(cr)</p> <p>response: !01(cr)</p> <p>The command sets the counter/frequency modules at address 01 to display data sent by the host computer. After this command has been issued the host computer can use command \$AA9(data) to send the data to the addressed module.</p>

\$AA8

Name	Read LED Data Origin
Description	Read the LED Data Origin status which determines whether LED will display data from the counter/frequency module directly or from the host computer
Syntax	<p>\$AA8(cr)</p> <p>\$ is a delimiter character.</p> <p>AA (range 00-FF) represents the 2-character hexadecimal address of counter/frequency module that you want to interrogate.</p> <p>8 identifies the Read LED Data Origin command.</p> <p>(cr) is the terminating character, carriage return (0Dh)</p>
Response	<p>!AAV(cr) if the command is valid.</p> <p>?AA(cr) if an invalid operation was entered.</p> <p>There is no response if the module detects a syntax error or communication error, or if the specified address does not exist.</p> <p>! is a delimiter character indicating the command was valid.</p> <p>? is a delimiter character indicating the command was invalid.</p> <p>AA (range 00-FF) represents the 2-character hexadecimal address of a counter/frequency input module.</p> <p>V indicates the origin of the data to be displayed on the LED: V=0 sets the LED data origin to the module's counter 0 V=1 set the LED data origin to the module's counter 1 V=2 set the LED data origin to the host computer</p> <p>(cr) is the terminating character, carriage return (0Dh).</p>
Example	<p>command: \$018(cr)</p> <p>response: !011(cr)</p> <p>The command requests the counter/frequency module at address 01 to return its LED Data Origin status. The module replies that it currently displays data from counter 1.</p>

\$AA9(data)

Name	Send Data to LED
Description	The host computer sends data to the addressed module to display on its LED.
Syntax	<p>\$AA9(data)(cr)</p> <p>\$ is a delimiter character.</p> <p>AA (range 00-FF) represents the 2-character hexadecimal address of counter/frequency module that you want to interrogate.</p> <p>9 identifies the Send LED Data command.</p> <p>(data) is a floating point numeral consisting of five number digits and one digit for the decimal point. Its maximum value is 99999.</p> <p>(cr) is the terminating character, carriage return (0Dh)</p>
Response	<p>!AA(cr) if the command is valid.</p> <p>?AA(cr) if an invalid operation was entered.</p> <p>There is no response if the module detects a syntax error or communication error or if the specified address does not exist.</p> <p>! is a delimiter character indicating the command was valid.</p> <p>? is a delimiter character indicating the command was invalid.</p> <p>AA (range 00-FF) represents the 2-character hexadecimal address of a counter/frequency module.</p> <p>(cr) is the terminating character, carriage return (0Dh).</p>
Example	<p>command: \$0198999.9(cr)</p> <p>response: !01(cr)</p> <p>The command requests the host computer to send 8999.9 to the counter/frequency module at address 01 to display on its LED display. This command is only valid after the command \$0182 has been issued.</p>