COM1000
Setup and Configuration using AT Commands

September 2004

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USA requirements only
Federal Communications Commission (FCC) Compliance Notice: Radio Frequency Notice
This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

European requirements only
EN 55 022 statement
This is to certify that the SimpleComTools COM1000 is shielded against the generation of radio interference in accordance with the application of Council Directive 89/336/EEC, Article 4a. Conformity is declared by the application of EN 55 022 Class B (CISPR 22).

Canada requirements only
Canadian Department of Communications Radio Interference Regulations
This digital apparatus does not exceed the Class B limits for radio-noise emissions from digital apparatus as set out in the Radio Interference Regulations of the Canadian Department of Communications.

Règlement sur le brouillage radioélectrique du ministère des Communications
Cet appareil numérique respecte les limites de bruits radioélectriques visant les appareils numériques de classe B prescrites dans le Règlement sur le brouillage radioélectrique du ministère des Communications du Canada.

Preface

The COM1000 is part of the SimpleComTools Industrial Internet Appliance family. The COM1000 supports secure, reliable serial and IP communications and Internet Messaging applications in a single, integrated hardware device. In this guide, the COM1000 may also be referred to as *'the device'.*

This guide provides instructions on how to install the COM1000, and how to install and replace other devices that may interface with the various inputs or interfaces available in the COM1000. This guide also includes technical specifications.

Before you begin

This guide is intended for qualified service personnel who are installing the COM1000 for the first time or who need to install a switch, gauge, modem, or other device to an existing COM1000. However, before you install anything related to the COM1000, make sure that the proper cables have been selected and/or the required network cabling has been installed using standard cable system practices.

Acronyms

This guide uses the following acronyms:

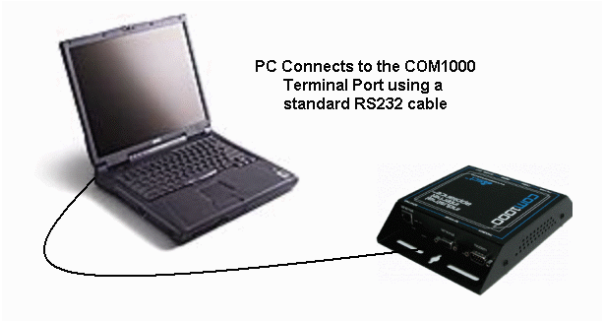
CTS	clear to send
DCD	data carrier detect
DCE	data communications equipment
DSR	data set ready
DTE	data terminal equipment
DTR	data terminal ready
GND	ground
IP	Internet Protocol
LAN	local area network
LED	light emitting diode
MAC	media access control
NC	normally closed
NO	normally open
PPP	point-to-point protocol
PSTN	public switched telephone network
RTS	ready to send
RX	receive data
TX	transmit data
URL	uniform resource locator
VPN	virtual private network
WAN	wide area network

COM1000 Setup and Configuration using AT Commands

To make setup and configuration easy, the COM1000 provides a common *AT Command* interface. This means the device is easily configured using any Telnet or Terminal application, such as HyperTerminal, Tera Term, or similar communications programs. **This interface is also available via Telnet on TCP port 6123.**

Connection Steps

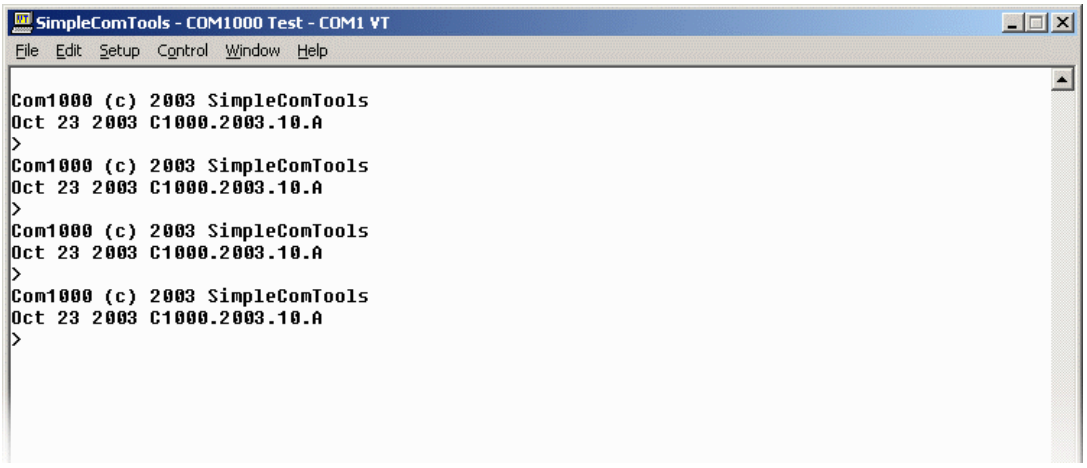
Step 1: Connect your PC to the COM1000 Terminal Port using a standard RS232 serial cable. The COM1000 Terminal Port is a DCE port, so there is no need for a null adapter or crossover cable. A standard serial cable should work fine.



Step 2: Open a connection using any Terminal program, such as HyperTerminal or Tera Term. The default setup for the Terminal Port is 115200, 8, None, and 1.

NOTE: **You may find it necessary to configure the Terminal Port of the COM1000 to meet certain parameters of your PC, such as a lower baud rate, or different parity, etc. If so, please refer to the RS232/Terminal Port section of the attached Command Appendix. You must also press the RESET button on the COM1000 in order for any serial port changes to take effect.**

Step 3: Once connected, hit the ENTER key. You should see the COM1000 respond with a command prompt that looks like the one shown here. If the COM1000 does not respond with a command prompt, it is likely in *Protected Mode,* which means you will need a password to gain access. (Refer to SECURITY section for more details)



Step 4: Once you have successfully gained access to the command prompt, you can view or edit any of the COM1000 application registers. To view ALL the current register settings, use the AT command **AT&V**. To see just a portion of the registers, type AT&V followed by the number of the portion you wish to view. Example: to view the GENERAL section, type AT&V 1.

The AT Command for each parameter is described in detail in a later section.

SECURITY

To make the COM1000 secure from unauthorized users, you can set it to run in the PROTECTED MODE. This is an option that must be activated by the user. The following are the steps to enabling this feature.

Step 1: **Set the device Password**

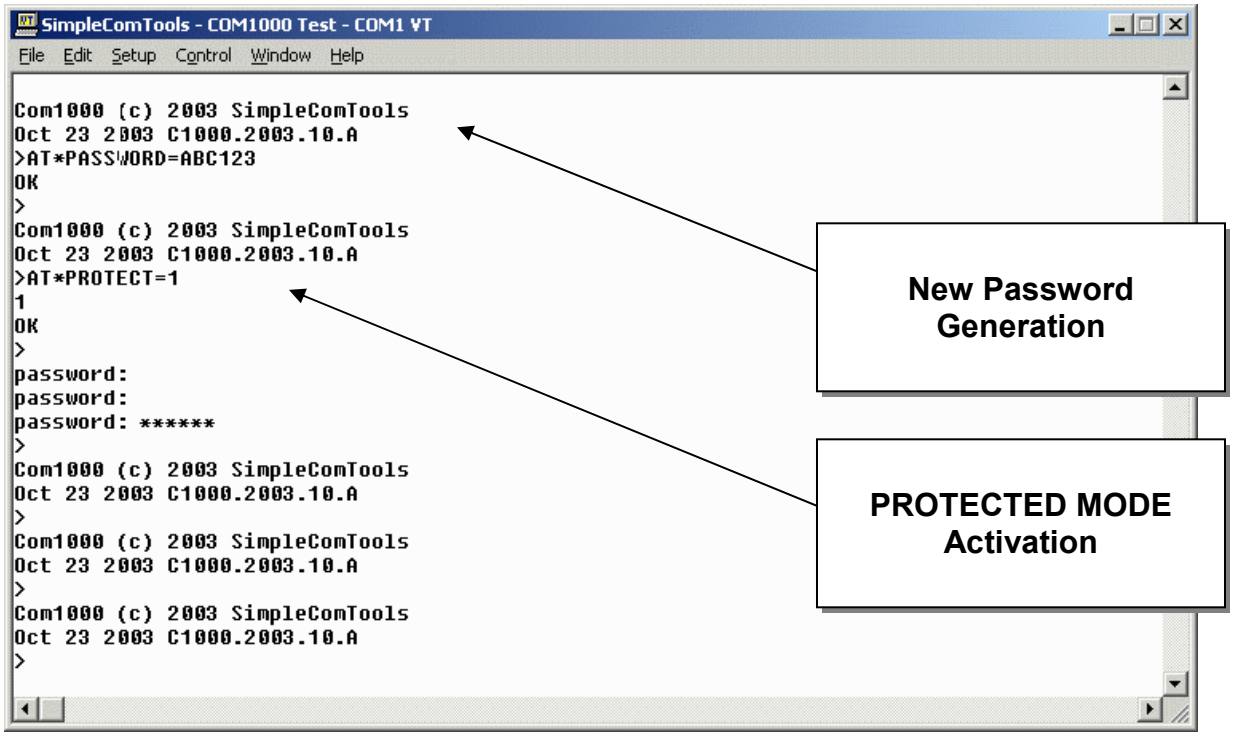
BEFORE activating PROTECTED MODE, it is necessary to select a device password. This will be the secret password used at the serial or Telnet command prompt. The factory default password is 'SIMPLE' (uppercase).

To set the new device password, enter the command **AT*PASSWORD=xxxxxx**, where 'xxxxxx' is any alphanumeric character stream up to 20 characters.

Step 2: **Activate PROTECTED MODE**

Now that you have a known password, you can set the device to operate in PROTECTED MODE. This means that users will need to know the device password to get past the command line prompt.

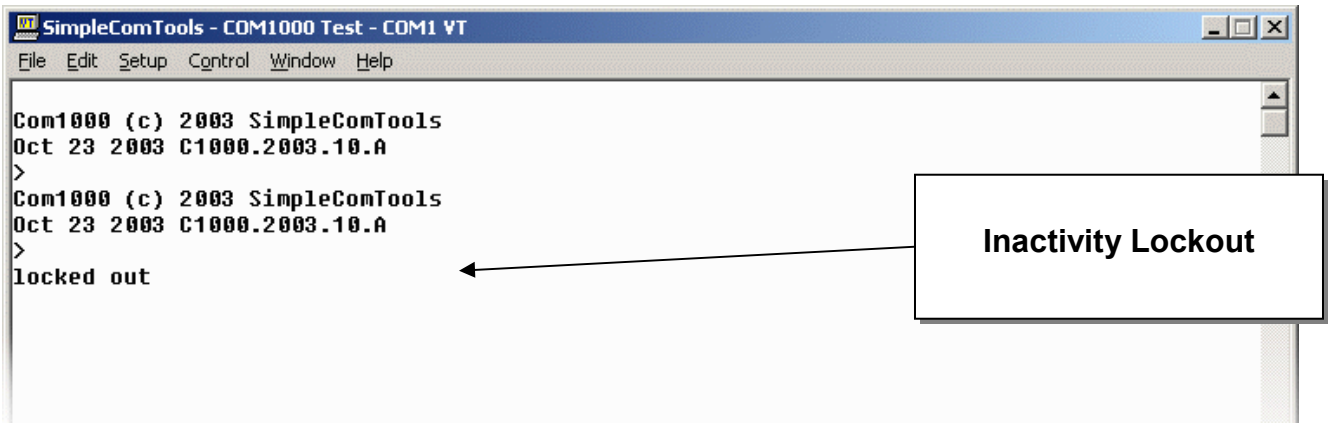
To activate/enable PROTECTED MODE, type the command AT*PROTECT=1 at the prompt. The screen will display a '1' and an 'OK' to show that the command was accepted. The '>' symbol will now be shown as the as the prompt. Pressing the ENTER key will result in a password challenge. To access the device, enter the dev ice password (*xxxxxx from above*).



Other Security Features

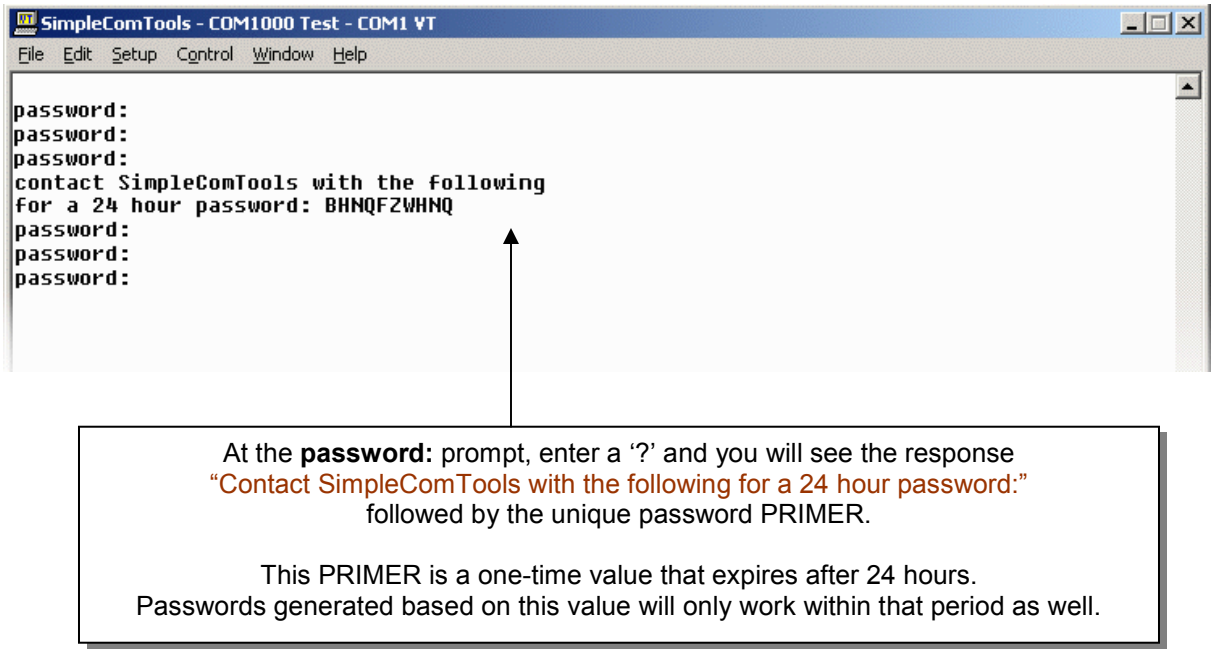
Inactivity Lockout:

After 15 minutes of inactivity (no keystrokes), the COM1000 will drop back into PROTECTED MODE, and you will need to re-enter the device password to gain access to the device.



Password Recovery:

In the event the password for a COM1000 is lost or unrecoverable, SimpleComTools can provide a unique 24-hour access password. This is a unique password generated by SCT based upon a primer provided by the COM1000 at the command prompt. To activate this primer, simply enter a '?' at the command prompt. See the example below…



AT Command Usage

The COM1000 provides (4) types of Commands:

- AT : These are traditional Hayes-Compatible AT Commands
- AT& : These are traditional Hayes-Compatible AT Commands
- AT* : These are COM1000 specific AT Commands
- Non AT Commands : These are commands that do not use the 'AT' prefix

The following is a list of the AT Commands in alphabetical order. For more specifics on how to apply these commands, please consult the *COM1000 User Manual*.

AT Command	Description
E	Echo typed characters back locally
Q	Terminal Port Quiet Mode
Z	Resets the device. Stops all operations. Does NOT delete values stored in NVRAM.
\Q	Terminal Port Flow Control
&C	Terminal Port DCD Control
&D	Terminal Port DTR Control
&F	Returns OK No valid operation. All register settings remain the same.
&S	Terminal Port DSR Control
&V	Displays all registers. AT&V followed by a space and integer will display a single group of values. Integers correspond to the Configuration Utility tabs. 1 – General 2 – Clock 3 – Modem Port 4 – Terminal Port 5 – RS485 Port 6 – DNS/DDNS 7 – Messaging 8 – FTP Client 9 – Instant Messaging 10 - Scheduler 11 – Analog Input 12 – Digital Input 13 – Digital Input 2 14 – Digital Input 3 15 – Digital Input 4 16 – Relay Examples: "AT&V 8" returns all FTP Client settings
&W	Returns OK when changes are successfully written to registers.

* I1TCPDESTIP	IP or Domain of TCP Packet Destination x.x.x.x or abc.123.com (Up to 50 characters)
* I1TCPDESTPORT	TCP Packet Destination Port = nnnnn (5 digit value with range between 1 and 65535)
* I1UDPDESTIP	IP or Domain of UDP Packet Destination x.x.x.x or abc.123.com (Up to 50 characters)
* I1UDPDESTPORT	UDP Packet Destination Port = nnnnnn (5 digit value with range between 1 and 65535)
*485APP1	RS485 Application #1;
*485APP2	RS485 Application #2;
*485APP3	RS485 Application #3;
*485BAUD	Sets RS485 Port Baud Rate Syntax = <baud rate> Example: 19200DEFAULT = 9600
*485BUFFER	RS485 Port Application Buffer Size: (n = 0 - 256 KBytes). Amount of data to be stored before executing any of the *485APP selections. This value requires that one of the RS485 PORT APP triggers be set to 4 (Buffer).Note: The buffer size is shared between the TERMINAL and RS485 PORTS for a total of 256 KBytes. The amount available to one port will depend on the usage of the other.
*485E	Echo typed characters back locally
*485ESC	Sets Terminal Escape String: Alphanumeric value up to 20 characters
*485EVENTMSG	Customizable RS485 event message text. (Up to 20 characters) A free-text field used when applications are set to 3 or 4 (SMTP or SMS). This text will be seen as the message SUBJECT field.
*485H	Sets Terminal Hangup String: Alphanumeric value up to 20 characters
*485ICT	RS485 Inter-Character Timer. (n = 100 - 65535 milliseconds)The length of time between characters that is necessary to consider the data stream ended. This value requires that one of the RS485 PORT APP triggers be set to 2 (Inter-character Timer.).
*485Q	Quiet Mode:

*485RECIPIENT	n, n, n, n … = Desired message recipient(s) as detailed in Message Config registers. (Comma separation for multiple, ie 1,2,3,4,5,6,7,8) Max number = 8.
*485STREAM1	Serial Data Stream used to trigger events (Up to 20 characters)
*485STREAM2	Serial Data Stream used to trigger events (Up to 20 characters)
*485STREAM3	Serial Data Stream used to trigger events (Up to 20 characters)
*485TCPDESTIP	IP or Domain of TCP Packet Destination x.x.x.x or abc.123.com (Up to 50 characters)
*485TCPDESTPORT	TCP Packet Destination Port = nnnnnn (5 digit value with range between 1 and 65535)
*485TCPIATIMER	TCP inactivity timer. Device will drop TCP connection if there is no data flow for that period of time. (n =0-255 Seconds)
*485TCPRETRIES	The number of TCP Retries. Number of times to retry making a connection to the TTCPDESTIP remote IP address after a failed connection attempt.
*485TCPSERVER	TCP/Device Server Application:
*485TCPSESSTIME	TCP Session connection timer. TCP Client will drop TCP connection after the stated period of time. (n =0-255 Seconds)
*485TCPSVRPORT	TCP/Device Server Application Port. = nnnnnn (5 digit value with range between 1 and 65535)
*485TCPSVRTIMER	TCP/Device Server inactivity timer. Device Server will drop TCP connection if there is no data flow for that period of time. (n =0-255 Seconds)
*485TIMER1	Timer: (n = # Minutes)
*485TIMER2	Timer: (n = # Minutes)
*485TIMER3	Timer: (n = # Minutes)
*485TRIG1	RS485 Application #1 Trigger;
*485TRIG2	RS485 Application #2 Trigger;

*485TRIG3	RS485 Application #3 Trigger;
*485UDPDESTIP	IP or Domain of UDP Packet Destination. x.x.x.x or abc.123.com (Up to 50 characters)
*485UDPDESTPORT	UDP Packet Destination Port = nnnnnn (5 digit value with range between 1 and 65535)
*485UDPSERVER	UDP/Device Server Application
*AALARMREPT	Desired message recipient(s) as detailed in Messaging Config registers. =[n, n, n, n …](Comma separation for multiple, ie 1,2,3,4,5,6,7,8) Max number = 8.
*ACALIBRATE	Calibrates the COM1000 to match the actual current sensor reading. If you know the ACTUAL value being measured, you would enter that real value. The COM1000 will take its current reading, and perform a calculation to come up with the offset so as to give you a more accurate reading going forward.
*ACTMSGFREQ	Repeat Active Event Message Transmission Frequency; Frequency of Repeating Active Event Messages. This value controls the behavior when a Digital Input state or Analog Input value has not changed, and a repeat message is about to be sent. Default is every 30 Minutes
*AHIGHALARM	Displays High Alarm Count.
*AHIGHALARMACT	Sets the High Alarm Action.
*AHIGHALARMMSG	Customized High Alarm Set Point Message. (Up to 20 characters) A free-text field used in all UDP, TCP, SMS, and SMTP messages. For SMS and SMTP, this will be seen as the SUBJECT field.
*AHIGHALARMSET	High Alarm Set Point Set Point for exception reporting (n = 0.0-30.0)
*AHIGHWARN	Displays High Warning Count.
*AHIGHWARNACT	Sets the High Warning Action.
*AHIGHWARNMSG	Customized High Warning Set Point Message. (Up to 20 characters) A free-text field used in all UDP, TCP, SMS, and SMTP messages. For SMS and SMTP, this will be seen as the SUBJECT field.
*AHIGHWARNSET	High Warning Set Point. The Set Point for exception reporting (n = 0.0-30.0)

*ALOWALARM	Displays Low Alarm Count.
*ALOWALARMACT	Sets the Low Alarm Action.
*ALOWALARMMSG	Customized Low Alarm Set Point Message. (Up to 20 characters) A free-text field used in all UDP, TCP, SMS, and SMTP messages. For SMS and SMTP, this will be seen as the SUBJECT field.
*ALOWALARMSET	Low Alarm Set Point. The Set Point for exception reporting (n = 0.0-30.0)
*ALOWWARN	Displays Low Warning Count.
*ALOWWARNACT	Sets the Low Warning Action.
*ALOWWARNMSG	Customized Low Warning Set Point Message. (Up to 20 characters) A free-text field used in all UDP, TCP, SMS, and SMTP messages. For SMS and SMTP, this will be seen as the SUBJECT field.
*ALOWWARNSET	Low Warning Set Point. The Set Point for exception reporting (n = 0.0-30.0)
*ANALOG	Returns current reading of analog input
*ANALOGEXT	Free text extension appended to the analog value output.
*ANAME	Customized ANALOG Interface Name. A free-text field for the NAME of the interface which will be used in all UDP, TCP, and SMTP alerts. For SMTP alerts, this will be seen as the FROM field. (Up to 20 characters)
*ARANGEMAX	Highest range value of the chosen sensor.
*ARANGEMIN	Lowest range value of the chosen sensor.
*ATCPDESTIP	IP or Domain of TCP Packet Destination. x.x.x.x or abc.123.com (Up to 50 characters)
*ATCPDESTPORT	TCP Packet Destination Port = nnnnnn (5 digit value with range between 1 and 65535)
*AUDPDESTIP	IP or Domain of UDP Packet Destination. x.x.x.x or abc.123.com (Up to 50 characters)

*AUDPDESTPORT	UDP Packet Destination Port = nnnnnn (5 digit value with range between 1 and 65535)
*AVALRESET	Reset COUNTER value after reporting
*AVOLTMAX	Highest voltage output of the chosen sensor.
*AVOLTMIN	Lowest voltage output of the chosen sensor.
*AWARNRECPT	Desired message recipient(s) as detailed in Messaging Config registers. =[n, n, n, n …](Comma separation for multiple, ie 1,2,3,4,5,6,7,8) Max number = 8.
*CLEARCOUNTS	Sets all the Digital Inputs back to '0'.
*CLEAREVENTS	Erases the COM1000 EVENT log. New log will begin immediately.
*CLEARLOG	Erases the COM1000 performance log buffer. New log will begin immediately.
*DATE	Set DATE: MM/DD/YYYY
*DDNS	Forces DDNS update to DDNS server
*DDNSIP	IP or Domain Name of Dynamic Domain Name System (DNS) Server. Accepts n.n.n.n or abc.123.com (Up to 50 characters)
*DDNSPASS	DDNS Account Password;
*DDNSPORT	DDNS Server Port = nnnnnn (5 digit value with range between 1 and 65535) (Default is 53)
*DDNSTIMER	Sets the update interval update interval for timed updates to DDNS server Options: 0 = not active (DEFAULT) 1-65535 = number of minutes between updates
*DDNSTYPE	Dynamic DNS Server Protocol or Service. Options: 0 = DDNS Not Used 1 = DTDNS.COM 2 = SITESOLUTIONS.COM 3 = DYNDNS.ORG-DYNAMIC 4 = DYNDNS.ORG-CUSTOM 5 = DYNDNS.ORG-STATIC

*DDNSUSER	Primary DDNS Account Username;
*DELIMITER	Device stored data default output delimiter:
*DHCP	Dynamic Host Configuration Protocol (DHCP) is used for assigning dynamic IP addresses to devices on a network. DHCP being on by default allows for the COM1000 to be added to a network without manually assigning a unique IP address. Leaving DHCP on means the unit will get a different IP address every time it connects to the network.
*DNS1	x.x.x.x = IP of Primary Domain Name Server 0.0.0.0 = DNS Supplied by PPP or DHCP
*DNS2	x.x.x.x = IP of Secondary Domain Name Server 0.0.0.0 = DNS Supplied by PPP or DHCP
*DOMAIN	Device DOMAIN (domain.com): Names consists of a sequence of two or more groups of characters separated by periods; and include the first-level domain name (or top-level domain name), along with second or third level names. Example: the host “computer.mydomain.com" would belong to the Domain “mydomain.com”. Accepts alphanumeric values up to 50 characters. Acceptable characters include A-Z, 0-9, and – or _. Characters ~ ! @ # $ % ^ & *,.; are invalid.
*DST	Daylight savings time enabled:
*FACTORY	Resets all register values to factory default.
*FTPDIR	Initial Remote Host Directory
*FTPFILENAME	FTP Remote File Name Syntax;
*FTPIP	x.x.x.x or abc.123.com = IP or Domain of FTP Server (Up to 50 characters)
*FTPMODE	By default, FTP data connections are established by the FTP server. Passive Mode forces the data connections to be established by the client. Passive mode may be required for users who are behind some types of router-based firewalls or behind a gateway requiring passive transfers.
*FTPPASS	Primary FTP Server Account Password;
*FTPPORT	FTP Server Port (Default is 21) = nnnnnn (5 digit value with range between 1 and 65535)

*FTPUSER	Primary FTP Server Account Username;
*GATEWAY	x.x.x.x = IP address of the router or computer that routes the traffic from the COM1000 to another outside network such as the Internet. Consult your Network Administrator for the appropriate GATEWAY value.
*GSMS	'GET SMS MESSAGES' (Forces COM1000 to initiate a check of the SMS Modem/Radio to see if there are any new SMS Messages)
*GETEVENTS	Returns content of the Event Log. Will return either COUNTS and/or EVENT log depending on configuration of interfaces and SCHEDULER.
*GETLOG	Returns contents of the COM100 performance log. Includes system startup, network connections, system errors, input state changes, etc.
*HOSTNAME	Device HOSTNAME: Name to be used for domain name and as NETBIOS name for Windows Networks Example: the hostname "computer " would be known as "computer" on the local Windows LAN and "computer.mydomain.com" over the internet. *HOSTNAME accepts alphanumeric values up to 50 characters. Acceptable characters include A-Z, 0-9, and – or _. Characters ~ ! @ # $ % ^ & *,.; are invalid.
*I1	Current Digital Input 1 Status; (Query ONLY)
*I1ACTIVEACTION	Digital Input 1 ACTIVE EVENT action. This is the event that will be triggered when the switch connected to the digital input changes to the ACTIVE state.
*I1ACTIVEMSG	Customized Digital Input 1 Active State message. (Up to 20 characters) A free-text field used when the switch is in the ACTIVE state. Text is used in all Serial, UDP, TCP, SMS, and SMTP messages. For SMS and SMTP, this will be seen as the SUBJECT field.
*I1ACTIVENAME	Customized Digital Input 1 Active State name. (Up to 20 characters) A free-text field used when the switch is in the ACTIVE state. Name will be used in all UDP, TCP, SMS, and SMTP messages. For SMS and SMTP, this will be seen as the SUBJECT field.
*I1COUNT	Reports current count of Digital Input 1 (Query ONLY)
*I1INACTIVEACTION	Digital Input 1 INACTIVE EVENT action. This is the event that will be triggered when the switch connected to the digital input changes to the INACTIVE state.
*I1INACTIVEMSG	Customized Digital Input 1 Inactive State message. (Up to 20 characters) A free-text field used when the switch is in the INACTIVE state. Text is used in all Serial, UDP, TCP, SMS, and SMTP messages. For SMS and SMTP, this will be seen as the SUBJECT field.

*I1INACTIVENAME	Customized Digital Input 1 Inactive State name. (Up to 20 characters) A free-text field used when the switch is in the INACTIVE state. Name will be used in all UDP, TCP, SMS, and SMTP messages. For SMS and SMTP, this will be seen as the SUBJECT field.
*I1NAME	Customized Digital Input 1 interface NAME. (Up to 20 characters) A free-text field for the NAME of the interface which will be used in all UDP, TCP, and SMTP alerts. For SMTP alerts, this will be seen as the FROM field.
*I1RECIPIENT	Desired message recipient(s) as detailed in Message Config registers. =[n, n, n, n …](Comma separation for multiple, ie 1,2,3,4,5,6,7,8) Max number = 8.
*I1SWITCHTYPE	Digital Input 1 Switch Type
*I1VALRESET	Reset COUNTER value after reporting
*IMBUDDY1	IM Buddy Nickname;
*IMBUDDY2	IM Buddy Nickname;
*IMBUDDY3	IM Buddy Nickname;
*IMBUDDY4	IM Buddy Nickname;
*IMBUDDY5	IM Buddy Nickname;
*IMBUDDY6	IM Buddy Nickname;
*IMBUDDY7	IM Buddy Nickname;
*IMBUDDY8	IM Buddy Nickname;
*IMMODE	Instant Message Protocol Mode;
*IMNICK	IM Account Nickname;
*IMPASS	IM Account Password;

*IMSERVERIP	IP or Domain of Instant Message Server. x.x.x.x or abc.123.com (Up to 50 characters)
*IMSERVERPORT	Instant message Server Port = nnnnnn (5 digit value with range between 1 and 65535)
*IMUSER	IM Account Username;
*INACTMSGFREQ	Repeat Inactive Event Message Transmission Frequency; Frequency of Repeating Inactive Event Messages. This value controls the behavior when a Digital Input state or Analog Input value has not changed, and a repeat message is about to be sent. Default is every 30 Minutes
*M\Q	Flow Control:
*MC	DCD Control:
*MD	DTR Control:
*MDIAL	Sets Modem Dial String: Alphanumeric value up to 20 characters
*ME	Echo typed characters back locally
*MESC	Sets Modem Escape String: Alphanumeric value up to 20 characters
*MH	Sets Modem Hangup String: Alphanumeric value up to 20 characters
*MINIT	Sets Modem Initialization String: Alphanumeric value up to 20 characters
*MMODE	Modem Mode of Operation
*MMODETIMER	Modem Connection Timer
*MPORT	Sets Modem Port Baud Rate, Data Bits, Parity and Stop Bits. Syntax = <baud rate>,<data bits><parity><stop bits> Example: 19200,8N1DEFAULT = 115200,8N1
*MSGMETHOD	Outbound Message Notification Method;

*MPASSWORD	AT*MPASSWORD=xxxxxx Sets the dialup or PPP Password, where 'xxxxxx' is any alphanumeric character stream up to 20 characters. Acceptable characters include A-Z, 0-9, and - or _. Characters ~ ! @ # $ % ^ & *,.; are invalid.
*MUSER	AT*MUSER=xxxxxx Sets the dialup or PPP Uername, where 'xxxxxx' is any alphanumeric character stream up to 20 characters. Acceptable characters include A-Z, 0-9, and - or _. Characters ~ ! @ # $ % ^ & *,.; are invalid.
*NETMASK	x.x.x.x = IP address subnet mask used to determine what subnet an IP address belongs. Examples include: 255.255.255.0; 255.255.240.0; 255.255.0.0, etc. Consult your Network Administrator for the appropriate SUBNET MASK value.
*PASSWORD	AT*PASSWORD=xxxxxx Sets the device Password, where 'xxxxxx' is any alphanumeric character stream up to 20 characters. Acceptable characters include A-Z, 0-9, and - or _. Characters ~ ! @ # $ % ^ & *,.; are invalid. This will be the secret password used at the serial or Telnet command prompt. Factory default password is 'SIMPLE' (uppercase).
*PKTFORMAT	Select a packet format for UDP/TCP application messages. Options: 0 = Data Only (DEFAULT) 1 = Message Only 2 = HostName, Data 3 = Date/Time, Data 4 = HostName, Date/Time, Data 5 = HostName, Date/Time, Message, Data 6 = Use Status 7 = Raw Data
*PINGIP	x.x.x.x or abc.123.com IP or Domain of remote destination where the device will PING to ensure a PPP connection is still active. (Up to 50 characters)
*PINGRETRIES	Number of times to PING the remote destination IP or Domain during a PING event. This number should be tuned to guarantee at least one PING success during an event. (5 digit value with range between 0 and 65535)
*PINGTIMER	Number of minutes to wait before the next PING attempt. Options: 0 = PING if Off (DEFAULT) 1-65535 = Number of Minutes to wait before next attempt
*PROTECT	Enable/Disable PROTECTED mode. Protected Mode restricts access to the device. Options: 0 = Disabled (DEFAULT) 1 = Enabled NOTE: When Protected Mode is enabled, the '>' symbol will now be shown as the as command the prompt. Pressing the ENTER key will result in a password challenge. To access the device, enter the device password.
*RELAY	Displays current state of RELAY. Command followed by =n will execute that value.

*RNAME	Customized RELAY Interface Name. A free-text field for the NAME of the interface which will be used in all UDP, TCP, SMS, and SMTP messages. (Up to 20 characters)
*ROFFALIAS	Customizable Relay ON command. This is a free-text field to be used to create a term to be interpreted as the *ROFF AT Command. (Accepts up to 20 characters)Example: 'AT*ROFFALIAS=engine-off' would allow for the term 'engine-off' to be used as a command to DE-ENERGIZE the relay.
*ROFFAUTO	Relay Auto-Off Timer; Interval of timer the relay will stay energized after being turned on.
*ROFFMSG	Customized Relay De-energized State message. (Up to 20 characters) A free-text field used when the Relay is in the active state. Text is used in all UDP, TCP, SMS, and SMTP messages. For SMS and SMTP, this will be seen as the SUBJECT field.
*RONALIAS	Customizable Relay ON command. This is a free-text field to be used to create a term to be interpreted as the *RON AT Command. (Accepts up to 20 characters)Example: 'AT*RONALIAS=engine-off' would allow for the term 'engine-off' to be used as a command to ENERGIZE the relay.
*RONMSG	Customized Relay Energized State message. (Up to 20 characters) A free-text field used when the Relay is in the active state. Text is used in all UDP, TCP, SMS, and SMTP messages. For SMS and SMTP, this will be seen as the SUBJECT field.
*RRECIPIENT	Desired message recipient(s) as detailed in Message Config registers. Comma separation for multiple, (ie 1,2,3,4,5,6,7,8). Max number = 8.
*RSCHDOM	Sets the DAY OF MONTH for regularly scheduled relay triggering. Set this value if you do NOT want the relay to be triggered every day. Otherwise, the default value of 0 will ensure this happens daily. Options: 0 = Every Day (DEFAULT) 1-31 = Day of the Month. (1=1st day, 2=2nd day, etc) Note: Triggering once-per-month requires that DAY OF WEEK be set to '0'.
*RSCHDOW	Sets the DAY OF WEEK for regularly scheduled relay triggering. Only set this value if you do NOT want the relay to be triggered every day. Otherwise, the default value of 0 will ensure this happens daily. Options: 0 = Every Day (DEFAULT) 1-7 = Day of the Week starting with Sunday. (Sun=1, Mon=2, etc) Note: Requires the value DAY OF WEEK or DAY OF MONTH be set as well.
*RSCHTIMER	Sets the time interval for recurring relay triggering to take place within the same 24-hour period. This requires that the value *ROFFAUTO also be set, or else the relay will stay on after the first trigger. Options: 0 = no timer active (DEFAULT) 1-1440 = number of minutes between relay triggers

*RSCHTOD	Sets the TIME OF DAY for regularly scheduled relay triggering. Set the time value using the format HH:MM. Must enter value in Military time. Example = 16:00 (aka: 4PM). Options: 00:00 = Midnight (DEFAULT) Note: Requires the value DAY OF WEEK or DAY OF MONTH be set as well.
*RTC	Forces real-time clock update from SNTP server specified in the *RTCIP.
*RTCTIME	Real-time Clock Timer. Update interval for timed updates from SNTP server specified in the *RTCIP.
*RTCIP	IP or Domain of Simple Network Time Protocol (SNTP) server. x.x.x.x or abc.123.com (Up to 50 characters)
*RTCZONE	Real Time Clock Zone. Time zone where the device will be located. Enter integer value between -12 and +13 to indicate the offset from Greenwich Mean Time (GMT). Values are as follows: -12:00 = GMT-12 – Eniwetok -11:00 = GMT-11 – Samoa -10:00 = GMT-10 – Hawaii -09:00 = GMT- 9 – Alaska -08:00 = GMT- 8 – US Pacific Time -07:00 = GMT- 7 – US Mountain Time -06:00 = GMT- 6 – US Central Time -05:00 = GMT- 5 – US Eastern Time -04:00 = GMT- 4 – Atlantic Time -03:00 = GMT- 3 – Greenland -02:00 = GMT- 2 – Mid-Atlantic -01:00 = GMT- 1 – Azores 00:00 = GMT- 0 – Greenwich Mean Time +01:00 = GMT+ 1 – Berlin, Rome, Paris +02:00 = GMT+ 2 – Jerusalem, Helsinki +03:00 = GMT+ 3 – Moscow, Nairobi +04:00 = GMT+ 4 – Abu Dhabi +05:00 = GMT+ 5 – Karachi +06:00 = GMT+ 6 – Astana +07:00 = GMT+ 7 – Bangkok +08:00 = GMT+ 8 – Hong Kong, Singapore +09:00 = GMT+ 9 – Tokyo +10:00 = GMT+10 – Guam +11:00 = GMT+11 – New Caledonia +12:00 = GMT+12 – Fiji +13:00 = GMT+13 – Nuku'alofa
*SCHEDDOM	Sets the DAY OF MONTH for regularly scheduled EVENT logging. Set this value if you do NOT want the log to be appended every day. Otherwise, the default value of 0 will ensure that event data is added to the log daily. Options: 0 = Every Day (DEFAULT) 1-31 = Day of the Month. (1=1st day, 2=2nd day, etc) Note: Triggering once-per-month requires that DAY OF WEEK be set to '0'.
*SCHEDDOW	Sets the DAY OF WEEK for regularly scheduled EVENT logging. Set this value if you want the log to be appended every day. Otherwise, the default value of 0 will ensure that event data is added to the log daily. Options: 0 = Every Day (DEFAULT) 1-7 = Day of the Week starting with Sunday. (Sun=1, Mon=2, Tue=3, etc) Note: Requires that the value DAY OF WEEK or DAY OF MONTH be set as well.
AT*SCHFTPTIME	SCHEDULED FTP TIMER Time interval for scheduled FTP upload of data files. Time value is in minutes. Options: 0 = not active (DEFAULT) 1-65535 = number of minutes (65535 min = ~45 days)

AT*SCHFTPTYPE	SCHEDULED FTP TYPE Data format to be uploaded by FTP client. Data will be sent in TXT file format. Options: 0 = None (DEFAULT) 1 = Status (The STATUS events specified in the General Tab) 2 = Log (The device EVENT LOG will be uploaded)
*SCHMSGTIME	SCHEDULED MESSAGE TIMER. Sets the time interval for scheduled sending of data files via SMTP or SMS. Value is in minutes. Options: 0 = not active (DEFAULT) 1-65535 = number of minutes (65535 min = ~45 days)
*SCHMSGRECIPIENT	SCHEDULED MESSAGE RECIPIENTS Scheduled message recipient(s) for SMTP or SMS messages. Recipient details are specified in the MESSAGING tab. Max number of recipients = 8. (Comma separation for multiple recipients - ie; 1,2,3,4,5,6,7,8)
*SCHEDTIMER	Sets the time interval for recurring logging to take place within the same 24-hour period. Options: 0 = no logging (DEFAULT) 1-1440 = number of minutes between log entries
*SCHEDTOD	Sets the TIME OF DAY for regularly scheduled logging. Set the time value using the format HH:MM. Must enter value in Military time. Example = 16:00 (aka: 4PM). Options: 00:00 = Midnight (DEFAULT) Note: Requires that the value DAY OF WEEK or DAY OF MONTH be set as well.
*SCHEDTYPE	Sets the TYPE of log entries being created. Options: 0 = COUNT INPUT EVENTS (DEFAULT) 1 = LOG INPUT EVENT DETAILS
*SENDTO1	50 character alphanumeric value; can be phone number or email address
*SENDTO2	50 character alphanumeric value; can be phone number or email address
*SENDTO3	50 character alphanumeric value; can be phone number or email address
*SENDTO4	50 character alphanumeric value; can be phone number or email address
*SENDTO5	50 character alphanumeric value; can be phone number or email address
*SENDTO6	50 character alphanumeric value; can be phone number or email address
*SENDTO7	50 character alphanumeric value; can be phone number or email address

*SENDTO8	50 character alphanumeric value; can be phone number or email address
*SMSGETTIME	SMS GET MESSAGE TIMER Frequency on which to check for SMS Messages
*SMSMODEM	SMS Modem Type;0 = No SMS Service Used1 = AirLink Redwing CDMA2 = AirLink Redwing GPRS3 = AnyData iPort4 = Nokia GSM5 = Siemens M206 = Wavecom Fastrack
*SMTPAUTH	SMTP Server Uses Authentication;
*SMTPEMAIL	EMAIL for SMTP Authentication:
*SMTPIP	IP or Domain of SMTP Server. x.x.x.x or abc.123.com (Up to 50 characters)
*SMTPPASS	SMTP Account Password;
*SMTPPORT	SMTP Server Port = nnnnnn (5 digit value with range between 1 and 65535) (Default is 25)
*SMTPUSER	SMTP Account Username;
*STATICIP	x.x.x.x = Static IP address to be assigned to the Ethernet interface. This is the address to be used every time the device is powered up. Only takes effect if the value *DHCP=0.Consult your Network Administrator for the appropriate IP Address.
*STATUS	Configures interface values to be displayed by the 'STATUS' command. This includes Analog Input, Digital Inputs, Relay State, and Modem status. Multiple values are separated by commas. (Example AT*STATUS=1,2,3,4,5,6,7,8,9)
*TAPP1	Terminal Port Application #1;
*TAPP2	Terminal Port Application #2;
*TAPP3	Terminal Port Application #3;
*TBUFFER	Terminal Port Application Buffer Size: (n = 0- 256 KBytes). Amount of data to be stored before executing any of the *TAPP selections. This value requires that one of the TERMINAL PORT APP triggers be set to 4 (Buffer).Note: The buffer size is shared between the TERMINAL and RS485 PORTS for a total of 256 KBytes. The amount available to one port will depend on the usage of the other.

*TESC	Sets Terminal Escape String: Alphanumeric value up to 20 characters
*TEVENTMSG	Customizable Terminal Port message text. (Up to 20 characters) A free-text field used when Terminal Port Applications are set to 3 or 4 (SMTP or SMS). This text will be seen as the message SUBJECT field.
*TH	Sets Terminal Hangup String: Alphanumeric value up to 20 characters
*TICT	Terminal Port Inter-Character Timer. (n = 100 - 65535 milliseconds)The length of time between characters that is necessary to consider the data stream ended. This value requires that one of the TERMINAL PORT APP triggers be set to 2 (Inter-character Timer.).
*TIME	Set TIME: HH:MM:SS. Must express value in Military time (24Hour Clock)
*TPORT	Sets Terminal Port Baud Rate, Data Bits, Parity and Stop Bits. Syntax = <baud rate>,<data bits><parity><stop bits> Example: 19200,8N1DEFAULT = 115200,8N1
*TRECIPIENT	n, n, n, n … = Desired message recipient(s) as detailed in Message Config registers. (Comma separation for multiple, ie 1,2,3,4,5,6,7,8) Max number = 8.
*TSTREAM1	Serial Data Stream used to trigger events (Up to 20 characters).This value requires that TERMINAL PORT APP #1 TRIGGER be set to 3 (Stream).
*TSTREAM2	Serial Data Stream used to trigger events (Up to 20 characters).This value requires that TERMINAL PORT APP #2 TRIGGER be set to 3 (Stream).
*TSTREAM3	Serial Data Stream used to trigger events (Up to 20 characters).This value requires that TERMINAL PORT APP #3 TRIGGER be set to 3 (Stream).
*TTCPDESTIP	IP or Domain of TCP Packet Destination. x.x.x.x or abc.123.com (Up to 50 characters)
*TTCPDESTPORT	TCP Packet Destination Port = nnnnnn (5 digit value with range between 1 and 65535)
*TTCPIATIMER	TCP inactivity timer. Device will drop TCP connection if there is no data flow for that period of time. (n =0-255 Seconds)
*TTCPRETRIES	The number of TCP Retries. Number of times to retry making a connection to the TTCPDESTIP remote IP address after a failed connection attempt.
*TTCPSERVER	TCP/Device Server Application:
*TTCPSESSTIME	TCP Session connection timer. TCP Client will drop TCP connection after the stated period of time. (n =0-255 Seconds)

*TTCPSVRPORT	TCP/Device Server Application Port = nnnnnn (5 digit value with range between 1 and 65535)
*TTCPSVRTIMER	TCP/Device Server inactivity timer. Device Server will drop TCP connection if there is no data flow for that period of time. (n =0-255 Seconds)
*TTIMER1	Terminal Port Application #1 Timer Trigger: (n = # Minutes) Period of time to wait before executing *TAPP1.
*TTIMER2	Terminal Port Application #1 Timer Trigger: (n = # Minutes) Period of time to wait before executing *TAPP2.
*TTIMER3	Terminal Port Application #1 Timer Trigger: (n = # Minutes) Period of time to wait before executing *TAPP3.
*TTRIG1	Terminal Port Application #1 Trigger
*TTRIG2	Terminal Port Application #2 Trigger
*TTRIG3	Terminal Port Application #3 Trigger
*TTRIG3	Terminal Port Application #3 Trigger
*TUDPDESTIP	IP or Domain of UDP Packet Destination (Up to 50 characters)
*TUDPDESTPORT	UDP Packet Destination Port = nnnnnn (5 digit value with range between 1 and 65535)
*TUDPSERVER	UDP/Device Server Application
*WEBSVR	Web Server Enabled/Disabled
*WEBSVRPORT	Web Server Port = nnnnnn (5 digit value with range between 1 and 65535) (Default = 80)

Other 'Non-AT' Device Commands

Command	Description
IPCONFIG	Plain-text command useable from a TCP, UDP or Terminal interface. Returns the Current Ethernet IP Address and PPP Link Status
PING	Plain-text command useable from a TCP, UDP, Terminal, or Instant Message interface. Will force the COM1000 to send an ICMP PING to any IP reachable via the default interface (*DEFINT). Example: PING 203.123.123.121
RCONNECT	Plain-text command useable from a TCP, UDP or Instant Message interface. Will create an end-to-end socket between the user's application interface and any device installed on the COM1000 RS485 port.
STATUS	Plain-text command useable from a TCP, UDP, Terminal or Instant Message interface. Returns the values chosen using the AT*STATUS command.
TCONNECT	Plain-text command useable from a TCP, UDP or Instant Message interface. Will create an end-to-end socket between the user's application interface and any device installed on the COM1000 RS232 Terminal port