Cermetek microelectronics

Application Note #147:

Description of New AT+MS Command Implementation
for CH179X and CH2056 products

OVERVIEW

Effective 1 August 2000, all Cermetek Microelectronics CH179X and CH2056 products will contain a different AT +MS command implementation. This command modification was necessitated by the obsolescence of a critical integrated circuit component. The new +MS implementation IS NOT upward compatible with the older **AT +MS** command.

During the transition period prior to 1 August 2000, a limited quantity of older **AT +MS** command products will be available upon special request. Existing orders shall receive the older **AT +MS** command products until stocks are exhausted. Unless otherwise indicated, all new orders booked after 30 June 2000 shall receive product containing the new **AT +MS** command implementation.

NEW AT +MS COMMAND DESCRIPTION AND EXAMPLES

+MS - Modulation Selection.
This extended-format compound parameter controls the manner of operation of the modulation capabilities in the modem. It accepts six sub-parameters:

Syntax.
   +MS=[<carrier>[,<automode>[,<min_tx_rate>[,<max_tx_rate>[,<min_rx_rate>[,<max_rx_rate>]]]]]]

   Where: Possible **<carrier>, <min_tx_rate>, <max_tx_rate>, <min_rx_rate>**, and **<max_rx_rate>**
               values are listed in are Table 3-2 (see definitions below).

TABLE I. AT +MS Command Supported Rates.

Modulation	<carrier>	Possible (<min_rx_rate>, <min_rx_rate>, (<min_tx_rate>), and <max_tx_rate>) Rates (bps)
Bell 103	B103	300
Bell 212	B212	1200 Rx/75 Tx or 75 Rx/1200 Tx
V.21	V21	300
V.22	V22	1200
V.22 bis	V22B	2400 or 1200
V.23	V23C	1200
V.32	V32	9600 or 4800
V.32 bis	V32B	14400, 12000, 9600, 7200, or 4800
V.34	V34	33600, 31200, 28800, 26400, 24000, 21600, 19200, 16800, 14400, 12000, 9600, 7200, 4800, or 2400
V.90	V90	56000, 54667, 53333, 52000, 50667, 49333, 48000, 46667, 45333, 42667, 41333, 40000, 38667, 37333, 36000, 34667, 33333, 32000, 30667, 29333, 28000
K56flex	K56	56000, 54000, 52000, 50000, 48000, 46000, 44000, 42000, 40000, 38000, 36000, 34000, 32000

Defined Values

<carrier>   A string which specifies the preferred modem carrier to use in originating or answering a connection. **<carrier>** values are strings of up to eight characters, consisting only of numeric digits and upper case letters. **<carrier>** values for ITU standard modulations take the form: **<letter><1-4digits><other letters as needed>**. Defined values are listed in Table I.

<automode>   A numeric value which enables or disables automatic modulation negotiation (e.g., ITU-T V.32 bis Annex A or V.8).

0 = Automode disabled.
1 = Automode enabled. (Default.)

<min_rx_rate>,   Numeric values which specify the lowest (**<min_rx_rate>**) and highest (**<max_rx_rate>**
<max_rx_rate>   rate at which the modem may establish a receive connection. May be used to condition distinct limits for the receive direction as distinct from the transmit direction. Values for this sub-parameter are decimal encoded, in units of bit/s. The possible values for each modulation are listed in Table I. Actual values will be limited to possible values corresponding to the entered **<carrier>** and fall-back **<carrier>** as determined during operation. (Default = lowest (**<min_rx_rate>**) and highest (**<max_rx_rate>**) rate supported by the selected carrier.)

<min_tx_rate>,   Numeric values which specify the lowest (**<min_tx_rate>**) and highest (**<max_tx_rate>**)
<max_tx_rate>   rate at which the modem may establish a transmit connection. Non-zero values for this sub-parameter are decimal encoded, in units of bit/s. The possible values for each modulation are listed in Table I. Actual values will be limited to possible values corresponding to the entered **<carrier>** and fall-back **<carrier>** as determined during operation. (Default = lowest (**<min_tx_rate>**) and highest (**<max_tx_rate>**) rate supported by the selected carrier.)

Reporting Current or Selected Values.
Command: **+MS?**
Response: **+MS: <carrier>, <automode>, <min_tx_rate>, <max_tx_rate>, <min_rx_rate>, <max_rx_rate>**

Note: The current active settings are reported under control of the **+MR** parameter.

Example: **+MS: K56, 1,300,33600,300,56000 F**or default values.
This example allows maximum system flexibility to determine optimal receive and transmit rates during operation.

Reporting Supported Range of Parameter Values.
Command: **+MS=?**
Response: **+MS**: (**< carrier>** range), (**<automode>** range), (**<min_tx_rate>** range), (**<max_tx_rate>** range), (**<min_rx_rate>** range), (**<max_rx_rate>** range)

Example: **+MS: (B103,B212,V21,V22,V22B,V23C,V32,V32B,V34,K56,V90),(0,1),(300-33600),(300-33600), (300-56000),(300-56000)**

Result Code
OK   Valid sub-parameter string
ERROR   Otherwise.

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