New V.250 Commands to Support V.92

No extra space is allowed in the commands; otherwise the modem will return an error response. All the settings of these commands can overwrite, or be overwritten by, the results of the related commands in the current modem command set.

The commands support both read and test syntax. The format of the read syntax is "+XXX?". This type of command will return the current settings in use for the command. The format of the test syntax is "+XXX=?". This type of command will return a list of the support values for the command.

+MS Modulation Selection

Added support for a valid carrier value of V.92

Valid Parameter Syntax:
+MS=<carrier>,<automode>,<0>,<max_rate>,<0>,<max_rx_rate>
+MS?
+MS=?

To support V.92, a new valid carrier value has been defined. A list of the valid <carrier> values which are currently supported are shown below in Table 1. The current version of code does not support V.92 upstream. Therefore, no other modifications have been made to the +MS command. Note that the maximum rate upstream, <max_rate>, is limited to 31200 for V.90 and V.92. Please see the Venus AT Command Document for a complete description of the +MS command.

Table 1. Valid Carrier Values

Value	Description
V92	V.92 (default)
V90	V.90
K56	K56flex
V34	V.34
V32	V.32
V32B	V.32bis
V22	V.22
V.22B	V.22bis
V23C	V.23, constant carrier, asymmetric FDM
V21	V21
Bell212A	Bell 212A
Bell103	Bell 103

+DCS Selection of data compression algorithm

Added support for V.44

Valid Parameter Syntax:
+DCS=[<v42bis>,<v44>]
+DCS=?
+DCS?

This command will select the data compression algorithm. The parameter <v42bis> specifies whether the V.42 *bis* algorithm should be enabled. The parameter<v44> specifies whether the V.44 algorithm should be enabled.

Table 2: Valid <v42bis> Values

Value	Description
0	V.42 bis must not be used
1	V.42 bis acceptable (default)

Table 3: Valid <v44> Values

Value	Description
0	V.44 must not be used
1	V.44 acceptable
2	V.44 only if v92 server (default)

+DR Data Compression Reporting

Added support for V.44

Valid Parameter Syntax:
+DR=<value>
+DR?
+DR=?

This command will turn on/off the compression report.

Table 4. DR=x Data Compression Report Value

Value	Description
0	Disables the compression report. (default)
1	Enables the compression report.

If the compression report is enabled, the +DR:<type>, intermediate result code, reports the current DCE-DCE data compression type. It is issued after the Error Control Report (+ER) and before the final result code (e.g. CONNECT). The format is shown in Table 5.

Table 5. +DR=x Data Compression Reporting Intermediate Result Codes

Value	Description
+DR: NONE	Data compression not in use
+DR: V42B	V.42 bis is in use in both directions
+DR: V44	V.44 is in use in both directions

+PCW Call Waiting enable

Added for V.92 support

Valid Parameter Syntax:
+PCW=<call waiting>
+PCW?
+PCW=?

This command will control the action to be taken upon detection of call waiting in a V.92. The values specified by this command are not modified when an AT&F command is issued.

Table 6: Valid <call waiting> Values

Value	Description
0	Toggle V.24 Circuit 125 and collect Caller ID if enabled by +VCID
1	Hang up
2	Ignore V.92 call waiting (default)

+PMH Modem on Hold enable

Added for V.92 support

Valid Parameter Syntax:
+PMH=<value>
+PMH?
+PMH=?

This command will control if modem on hold procedures are enabled during V.92 operation. The values specified by this command are not modified when an AT&F command is issued.

Table 7: Valid +PMH=<value> Values

Value	Description
0	Enables V.92 modem on hold
1	Disables V.92 modem on hold(default)

+PMHT Modem on Hold Timer

Added for V.92 support

Valid Parameter Syntax:
+PMHT=<value>
+PMHT?
+PMHT=?

This command will determines if the modem will accept a Modem on Hold (MOH) request and will set the MOH Timeout.

Table 8. +PMHT=<value> Values

Value	Description
0	Deny MOH Request (default)
1	Grant MOH Request with 10 sec timeout
2	Grant MOH Request with 20 sec timeout
3	Grant MOH Request with 30 sec timeout
4	Grant MOH Request with 40 sec timeout
5	Grant MOH Request with 1 min timeout
6	Grant MOH Request with 2 min timeout
7	Grant MOH Request with 3 min timeout
8	Grant MOH Request with 4 min timeout
9	Grant MOH Request with 6 min timeout
10	Grant MOH Request with 8 min timeout
11	Grant MOH Request with 12 min timeout
12	Grant MOH Request with 16 min timeout
13	Grant MOH Request with indefinite timeout

+PMHR Initiate Modem on Hold (MOH)

Added for V.92 support

Valid Parameter Syntax:
+PMHR=<value>
+PMHR?
+PMHR=?

This command will determines if the modem will accept a Modem on Hold (MOH) request and will set the MOH Timeout. This command is only valid if MOH is enabled and the modem is offhook or in data mode. Otherwise, ERROR will be returned.

Table 9. +PMHR=<value> Values

Value	Description
0	Deny MOH Request (default)
1	Grant MOH Request with 10 sec timeout
2	Grant MOH Request with 20 sec timeout
3	Grant MOH Request with 30 sec timeout
4	Grant MOH Request with 40 sec timeout
5	Grant MOH Request with 1 min timeout
6	Grant MOH Request with 2 min timeout
7	Grant MOH Request with 3 min timeout
8	Grant MOH Request with 4 min timeout
9	Grant MOH Request with 6 min timeout
10	Grant MOH Request with 8 min timeout
11	Grant MOH Request with 12 min timeout
12	Grant MOH Request with 16 min timeout
13	Grant MOH Request with indefinite timeout

+PIG PCM upstream ignore

Added for V.92 support

Valid Parameter Syntax:
+PIG=[<value>]
+PIG?
+PIG=?

This command will control the use of PCM upstream in a V.92. PCM upstream is supported for Mercury based modems with 12 ns (or faster) RAM.

Table 10: Valid +PIG=[<value>] Values

Value	Description
0	Enable PCM upstream
1	Disable PCM upstream (default)

+PQC V.92 Phase 1 and Phase 2 Control

Added for V.92 support

Valid Parameter Syntax:
+PQC=<value>
+PQC?
+PQC=?

This command will control the enabling or disabling of the V.92 shortened Phase 1 and Phase 2 startup. This command is used in conjunction with the +PSS command. Changes to the value of either S109 or +PQC will affect the values of the other AT command.

Table 11: Valid +PQC=<value> Values

Value	Description
0	Enable Short Phase 1 and Short Phase 2
1	Enable Short Phase 1
2	Enable Short Phase 2
3	Disable Short Phase 1 and Short Phase 2 (default)

+PMHF V.92 Modem Hook Flash

Added for V.92 support

Valid Parameter Syntax:
+PMHF

This command causes the DCE to go on-hook for a specified period of time, and then return off-hook for at least a specified period of time. The specified period of time is normally one-half second, but may be governed by national regulations. "ERROR" is returned if MOH is not enabled.

+DS44 V.44 Data Compression

Added for V.44 support

Valid Parameter Syntax:
+DS44=<direction>,<0>,<0>,<max_codewords_tx>,<max_codewords_rx>,<max_string_tx>
,<max_string_rx>,<max_history_tx>,<max_hostory_rx>
+DS44?
+DS44=?

This command will control the V.44 data compression function.

The <direction> parameter specifies the DTE direction of the data compression

Table 12. Valid <direction> Values

Value	Meaning
0	No compression
3	Both directions (default)

The <max_codewords_tx> specifies the maximum number of code words to be negotiated in the transmit direction. The <max_codewords_rx> specifies the maximum number of code words to be negotiated in the receive direction. The valid range for the receive and transmit values is shown in table 13.

Table 13. Valid Range of <max_code_words_tx> and <max_code_words_rx> Values

Value	Meaning
1024	(default)
256-2048	number of codewords in tx/rx direction

The <max_string_tx> specifies the maximum string length to be negotiated in the transmit direction. The <max_string_rx> specifies the maximum string length to be negotiated in the receive direction. The valid range for both the receive and transmit values is shown in table 14.

Table 14. Valid Range of <max_string_tx> and <max_string_rx> Values

Value	Meaning
255	(default)
31-255	string length in tx/rx direction

The <max_history_tx> specifies the maximum length of the history buffer to be negotiated in the transmit direction. The <max_history_rx> specifies the maximum length of the history buffer to be negotiated in the receive direction.

Table 15. Valid Range of <max_string_tx> and <max_string_rx> Values

Value	Meaning
5120	transmit direction default
4096	receive direction default
512-11008	history buffer size in tx/rx direction