

SDI-12 Verifier Sensor Report

PC Software Version: 5.1.0.4
Firmware Version: 1.6

11/7/2011
10:17:43

Sensor Address: 0
Sensor ID: 013ISI MS1 2.0MS1-2150
SDI-12 Version: 1.3

Version of SDI-12 being tested: 1.3

Basic Command Test

Command	Response	Result
0!	0<CR><LF>	success
OI!	013ISI MS1 2.0MS1-2150 <CR><LF>	success
OV!	00004<CR><LF>	success
OD0!	0+0+0+0+0<CR><LF>	success
OM!	00206<CR><LF>	success
OD0!	0+1.11000+2.22000+3.32999+4.44000<CR><LF>	success
OD1!	0+5.50000+1.11000<CR><LF>	success
OM1!	00000<CR><LF>	success
OM2!	00000<CR><LF>	success
OM3!	00000<CR><LF>	success
OM4!	00000<CR><LF>	success
OM5!	00000<CR><LF>	success
OM6!	00000<CR><LF>	success
OM7!	00000<CR><LF>	success
OM8!	00000<CR><LF>	success
OM9!	00000<CR><LF>	success
OC!	002006<CR><LF>	success
OD0!	0+1.11000+2.22000+3.32999+4.44000+5.50000 +1.11000<CR><LF>	success
OC1!	000000<CR><LF>	success
OC2!	000000<CR><LF>	success
OC3!	000000<CR><LF>	success
OC4!	000000<CR><LF>	success
OC5!	000000<CR><LF>	success
OC6!	000000<CR><LF>	success
OC7!	000000<CR><LF>	success
OC8!	000000<CR><LF>	success
OC9!	000000<CR><LF>	success
OR0!	0<CR><LF>	success
OR1!	0<CR><LF>	success
OR2!	0<CR><LF>	success
OR3!	0<CR><LF>	success
OR4!	0<CR><LF>	success
OR5!	0<CR><LF>	success
OR6!	0<CR><LF>	success
OR7!	0<CR><LF>	success
OR8!	0<CR><LF>	success
OR9!	0<CR><LF>	success
OMC!	00206<CR><LF>	success
OD0!	0+1.11000+2.22000+3.32999+4.44000Ct {<CR><LF>	success
OD1!	0+5.50000+1.11000I\u<CR><LF>	success
OMC1!	00000A} [<CR><LF>	success
OMC2!	00000A} [<CR><LF>	success
OMC3!	00000A} [<CR><LF>	success
OMC4!	00000A} [<CR><LF>	success
OMC5!	00000A} [<CR><LF>	success
OMC6!	00000A} [<CR><LF>	success
OMC7!	00000A} [<CR><LF>	success
OMC8!	00000A} [<CR><LF>	success
OMC9!	00000A} [<CR><LF>	success
OCC!	002006<CR><LF>	success

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OD0!      0+1.11000+2.22000+3.32999+4.44000+5.50000
          +1.11000JjO<CR><LF>
OCC1!     000000N}^<CR><LF>
OCC2!     000000N}^<CR><LF>
OCC3!     000000N}^<CR><LF>
OCC4!     000000N}^<CR><LF>
OCC5!     000000N}^<CR><LF>
OCC6!     000000N}^<CR><LF>
OCC7!     000000N}^<CR><LF>
OCC8!     000000N}^<CR><LF>
OCC9!     000000N}^<CR><LF>
ORC0!     0AP@<CR><LF>
ORC1!     0AP@<CR><LF>
ORC2!     0AP@<CR><LF>
ORC3!     0AP@<CR><LF>
ORC4!     0AP@<CR><LF>
ORC5!     0AP@<CR><LF>
ORC6!     0AP@<CR><LF>
ORC7!     0AP@<CR><LF>
ORC8!     0AP@<CR><LF>
ORC9!     0AP@<CR><LF>

```

```

success
success
success
success
success
success
success
success
success
success
success
success
success
success
success
success
success
success
success
success

```

Break/Reset Test

Command	Response	SR Received	Command	Response	Result
0V!	00004<CR><LF>	ttt = 000 (test not applicable)			
0M!	00206<CR><LF>	no	0D0!	0<CR><LF>	pass
0M1!	00000<CR><LF>	ttt = 000 (test not applicable)			
0M2!	00000<CR><LF>	ttt = 000 (test not applicable)			
0M3!	00000<CR><LF>	ttt = 000 (test not applicable)			
0M4!	00000<CR><LF>	ttt = 000 (test not applicable)			
0M5!	00000<CR><LF>	ttt = 000 (test not applicable)			
0M6!	00000<CR><LF>	ttt = 000 (test not applicable)			
0M7!	00000<CR><LF>	ttt = 000 (test not applicable)			
0M8!	00000<CR><LF>	ttt = 000 (test not applicable)			
0M9!	00000<CR><LF>	ttt = 000 (test not applicable)			
0MC!	00206<CR><LF>	no	0D0!	0AP@<CR><LF>	pass
0MC1!	00000A} [<CR><LF>] ttt = 000 (test not applicable)				
0MC2!	00000A} [<CR><LF>] ttt = 000 (test not applicable)				
0MC3!	00000A} [<CR><LF>] ttt = 000 (test not applicable)				
0MC4!	00000A} [<CR><LF>] ttt = 000 (test not applicable)				
0MC5!	00000A} [<CR><LF>] ttt = 000 (test not applicable)				
0MC6!	00000A} [<CR><LF>] ttt = 000 (test not applicable)				
0MC7!	00000A} [<CR><LF>] ttt = 000 (test not applicable)				
0MC8!	00000A} [<CR><LF>] ttt = 000 (test not applicable)				
0MC9!	00000A} [<CR><LF>] ttt = 000 (test not applicable)				

Data Retention Test

Command	Response	Result
0V!	00004<CR><LF>	
0D0!	0+0+0+0+0<CR><LF>	
0D0!	0+0+0+0+0<CR><LF>	

Test Results

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-----
Data From Pass 1      Data From Pass 2
+0                    +0                    pass
+0                    +0                    pass
+0                    +0                    pass
+0                    +0                    pass

```

```

0M!      00206<CR><LF>
0D0!     0+1.11000+2.22000+3.32999+4.44000<CR><LF>
0D1!     0+5.50000+1.11000<CR><LF>
0D0!     0+1.11000+2.22000+3.32999+4.44000<CR><LF>
0D1!     0+5.50000+1.11000<CR><LF>

```

Test Results

Data From Pass 1	Data From Pass 2	
+1.11000	+1.11000	pass
+2.22000	+2.22000	pass
+3.32999	+3.32999	pass
+4.44000	+4.44000	pass
+5.50000	+5.50000	pass
+1.11000	+1.11000	pass

OM1! 00000<CR><LF>
OM2! 00000<CR><LF>
OM3! 00000<CR><LF>
OM4! 00000<CR><LF>
OM5! 00000<CR><LF>
OM6! 00000<CR><LF>
OM7! 00000<CR><LF>
OM8! 00000<CR><LF>
OM9! 00000<CR><LF>
OC! 002006<CR><LF>
OD0! 0+1.11000+2.22000+3.32999+4.44000+5.50000
+1.11000<CR><LF>
OD0! 0+1.11000+2.22000+3.32999+4.44000+5.50000
+1.11000<CR><LF>

Test Results

Data From Pass 1	Data From Pass 2	
+1.11000	+1.11000	pass
+2.22000	+2.22000	pass
+3.32999	+3.32999	pass
+4.44000	+4.44000	pass
+5.50000	+5.50000	pass
+1.11000	+1.11000	pass

OC1! 000000<CR><LF>
OC2! 000000<CR><LF>
OC3! 000000<CR><LF>
OC4! 000000<CR><LF>
OC5! 000000<CR><LF>
OC6! 000000<CR><LF>
OC7! 000000<CR><LF>
OC8! 000000<CR><LF>
OC9! 000000<CR><LF>
OMC! 00206<CR><LF>
OD0! 0+1.11000+2.22000+3.32999+4.44000Ct{<CR><LF>
OD1! 0+5.50000+1.11000I\u<CR><LF>
OD0! 0+1.11000+2.22000+3.32999+4.44000Ct{<CR><LF>
OD1! 0+5.50000+1.11000I\u<CR><LF>

Test Results

Data From Pass 1	Data From Pass 2	
+1.11000	+1.11000	pass
+2.22000	+2.22000	pass
+3.32999	+3.32999	pass
+4.44000	+4.44000	pass
+5.50000	+5.50000	pass
+1.11000	+1.11000	pass

OMC1! 00000A}{<CR><LF>
OMC2! 00000A}{<CR><LF>
OMC3! 00000A}{<CR><LF>
OMC4! 00000A}{<CR><LF>

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OMC5!      00000A} [<CR><LF>
OMC6!      00000A} [<CR><LF>
OMC7!      00000A} [<CR><LF>
OMC8!      00000A} [<CR><LF>
OMC9!      00000A} [<CR><LF>
OCC!       002006<CR><LF>
OD0!       0+1.11000+2.22000+3.32999+4.44000+5.50000
           +1.11000JjO<CR><LF>
OD0!       0+1.11000+2.22000+3.32999+4.44000+5.50000
           +1.11000JjO<CR><LF>

```

Test Results

```

-----
Data From Pass 1          Data From Pass 2
+1.11000                 +1.11000                 pass
+2.22000                 +2.22000                 pass
+3.32999                 +3.32999                 pass
+4.44000                 +4.44000                 pass
+5.50000                 +5.50000                 pass
+1.11000                 +1.11000                 pass

```

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OCC1!      000000N} ^<CR><LF>
OCC2!      000000N} ^<CR><LF>
OCC3!      000000N} ^<CR><LF>
OCC4!      000000N} ^<CR><LF>
OCC5!      000000N} ^<CR><LF>
OCC6!      000000N} ^<CR><LF>
OCC7!      000000N} ^<CR><LF>
OCC8!      000000N} ^<CR><LF>
OCC9!      000000N} ^<CR><LF>

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Minimum Break Test

Break (milliseconds)	Command	Response
0.00	0!	no response
0.83	0!	no response
1.67	0!	no response
2.50	0!	no response
3.33	0!	no response
4.17	0!	no response
5.00	0!	no response
5.83	0!	no response
6.66	0!	no response
7.50	0!	no response
8.33	0!	0<CR><LF>
9.16	0!	0<CR><LF>
10.00	0!	0<CR><LF>
10.83	0!	0<CR><LF>
11.66	0!	0<CR><LF>
12.50	0!	0<CR><LF>
13.33	0!	0<CR><LF>
14.16	0!	0<CR><LF>
14.99	0!	0<CR><LF>
15.83	0!	0<CR><LF>
16.66	0!	0<CR><LF>

pass
The sensor responded to a command with a 12.5 millisecond break.
The sensor did not respond to a command with a break < 6.66 milliseconds.

Parity Test

Parity	Command	Response	Result
even	0!	0<CR><LF>	success
odd	0!		no response (as expected)
even	0I!	013ISI	MS1 2.0MS1-2150 <CR><LF> success
odd	0I!		no response (as expected)

even	0V!	00004<CR><LF>	success
odd	0V!		no response (as expected)
even	0M!	00206<CR><LF>	success
odd	0M!		no response (as expected)
even	0M1!	00000<CR><LF>	success
odd	0M1!		no response (as expected)
even	0M2!	00000<CR><LF>	success
odd	0M2!		no response (as expected)
even	0M3!	00000<CR><LF>	success
odd	0M3!		no response (as expected)
even	0M4!	00000<CR><LF>	success
odd	0M4!		no response (as expected)
even	0M5!	00000<CR><LF>	success
odd	0M5!		no response (as expected)
even	0M6!	00000<CR><LF>	success
odd	0M6!		no response (as expected)
even	0M7!	00000<CR><LF>	success
odd	0M7!		no response (as expected)
even	0M8!	00000<CR><LF>	success
odd	0M8!		no response (as expected)
even	0M9!	00000<CR><LF>	success
odd	0M9!		no response (as expected)
even	0C!	002006<CR><LF>	success
odd	0C!		no response (as expected)
even	0C1!	000000<CR><LF>	success
odd	0C1!		no response (as expected)
even	0C2!	000000<CR><LF>	success
odd	0C2!		no response (as expected)
even	0C3!	000000<CR><LF>	success
odd	0C3!		no response (as expected)
even	0C4!	000000<CR><LF>	success
odd	0C4!		no response (as expected)
even	0C5!	000000<CR><LF>	success
odd	0C5!		no response (as expected)
even	0C6!	000000<CR><LF>	success
odd	0C6!		no response (as expected)
even	0C7!	000000<CR><LF>	success
odd	0C7!		no response (as expected)
even	0C8!	000000<CR><LF>	success
odd	0C8!		no response (as expected)
even	0C9!	000000<CR><LF>	success
odd	0C9!		no response (as expected)
even	0MC!	00206<CR><LF>	success
odd	0MC!		no response (as expected)

even	0MC1!	00000A} [<CR><LF>	success
odd	0MC1!		no response (as expected)
even	0MC2!	00000A} [<CR><LF>	success
odd	0MC2!		no response (as expected)
even	0MC3!	00000A} [<CR><LF>	success
odd	0MC3!		no response (as expected)
even	0MC4!	00000A} [<CR><LF>	success
odd	0MC4!		no response (as expected)
even	0MC5!	00000A} [<CR><LF>	success
odd	0MC5!		no response (as expected)
even	0MC6!	00000A} [<CR><LF>	success
odd	0MC6!		no response (as expected)
even	0MC7!	00000A} [<CR><LF>	success
odd	0MC7!		no response (as expected)
even	0MC8!	00000A} [<CR><LF>	success
odd	0MC8!		no response (as expected)
even	0MC9!	00000A} [<CR><LF>	success
odd	0MC9!		no response (as expected)
even	0CC!	002006<CR><LF>	success
odd	0CC!		no response (as expected)
even	0CC1!	000000N} ^<CR><LF>	success
odd	0CC1!		no response (as expected)
even	0CC2!	000000N} ^<CR><LF>	success
odd	0CC2!		no response (as expected)
even	0CC3!	000000N} ^<CR><LF>	success
odd	0CC3!		no response (as expected)
even	0CC4!	000000N} ^<CR><LF>	success
odd	0CC4!		no response (as expected)
even	0CC5!	000000N} ^<CR><LF>	success
odd	0CC5!		no response (as expected)
even	0CC6!	000000N} ^<CR><LF>	success
odd	0CC6!		no response (as expected)
even	0CC7!	000000N} ^<CR><LF>	success
odd	0CC7!		no response (as expected)
even	0CC8!	000000N} ^<CR><LF>	success
odd	0CC8!		no response (as expected)
even	0CC9!	000000N} ^<CR><LF>	success
odd	0CC9!		no response (as expected)
even	0R0!	0<CR><LF>	success
odd	0R0!		no response (as expected)
even	0R1!	0<CR><LF>	success
odd	0R1!		no response (as expected)
even	0R2!	0<CR><LF>	success
odd	0R2!		no response (as expected)
even	0R3!	0<CR><LF>	success

odd	0R3!		no response (as expected)
even	0R4!	0<CR><LF>	success
odd	0R4!		no response (as expected)
even	0R5!	0<CR><LF>	success
odd	0R5!		no response (as expected)
even	0R6!	0<CR><LF>	success
odd	0R6!		no response (as expected)
even	0R7!	0<CR><LF>	success
odd	0R7!		no response (as expected)
even	0R8!	0<CR><LF>	success
odd	0R8!		no response (as expected)
even	0R9!	0<CR><LF>	success
odd	0R9!		no response (as expected)
even	0RC0!	0AP@<CR><LF>	success
odd	0RC0!		no response (as expected)
even	0RC1!	0AP@<CR><LF>	success
odd	0RC1!		no response (as expected)
even	0RC2!	0AP@<CR><LF>	success
odd	0RC2!		no response (as expected)
even	0RC3!	0AP@<CR><LF>	success
odd	0RC3!		no response (as expected)
even	0RC4!	0AP@<CR><LF>	success
odd	0RC4!		no response (as expected)
even	0RC5!	0AP@<CR><LF>	success
odd	0RC5!		no response (as expected)
even	0RC6!	0AP@<CR><LF>	success
odd	0RC6!		no response (as expected)
even	0RC7!	0AP@<CR><LF>	success
odd	0RC7!		no response (as expected)
even	0RC8!	0AP@<CR><LF>	success
odd	0RC8!		no response (as expected)
even	0RC9!	0AP@<CR><LF>	success
odd	0RC9!		no response (as expected)

Power Down Test (address)

Command	Response	Result
0!	0<CR><LF>	
Z!	no response (as expected)	
0!	no response (as expected)	pass
0I!	013ISI MS1 2.0MS1-2150 <CR><LF>	
ZI!	no response (as expected)	
0I!	no response (as expected)	pass

Power Down Test (marking)

Marking Duration (msec)	Command	Response	Results
80	0!	0<CR><LF>	success
85	0!	0<CR><LF>	success
90	0!	0<CR><LF>	success

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95          0!          0<CR><LF>          success
100         0!          0<CR><LF>          success
105         0!          no response
110         0!          no response
115         0!          no response
120         0!          no response
125         0!          no response
130         0!          no response
135         0!          no response
140         0!          no response
145         0!          no response
150         0!          no response
155         0!          no response
160         0!          no response
165         0!          no response
170         0!          no response
175         0!          no response
180         0!          no response
185         0!          no response
190         0!          no response
195         0!          no response
200         0!          no response
205         0!          no response
210         0!          no response
215         0!          no response
220         0!          no response
225         0!          no response

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Pass (no response after 210 milliseconds of marking)

Service Request Test

Command	Response	SR Received	Expected (<)	Actual	Result
0V!	00004<CR><LF>	ttt = 000 (test not applicable)			
0M!	00206<CR><LF>	yes	20 seconds	14.19 seconds	pass
0M1!	00000<CR><LF>	ttt = 000 (test not applicable)			
0M2!	00000<CR><LF>	ttt = 000 (test not applicable)			
0M3!	00000<CR><LF>	ttt = 000 (test not applicable)			
0M4!	00000<CR><LF>	ttt = 000 (test not applicable)			
0M5!	00000<CR><LF>	ttt = 000 (test not applicable)			
0M6!	00000<CR><LF>	ttt = 000 (test not applicable)			
0M7!	00000<CR><LF>	ttt = 000 (test not applicable)			
0M8!	00000<CR><LF>	ttt = 000 (test not applicable)			
0M9!	00000<CR><LF>	ttt = 000 (test not applicable)			
0MC!	00206<CR><LF>	yes	20 seconds	14.11 seconds	pass
0MC1!	00000A}{<CR><LF>ttt = 000 (test not applicable)				
0MC2!	00000A}{<CR><LF>ttt = 000 (test not applicable)				
0MC3!	00000A}{<CR><LF>ttt = 000 (test not applicable)				
0MC4!	00000A}{<CR><LF>ttt = 000 (test not applicable)				
0MC5!	00000A}{<CR><LF>ttt = 000 (test not applicable)				
0MC6!	00000A}{<CR><LF>ttt = 000 (test not applicable)				
0MC7!	00000A}{<CR><LF>ttt = 000 (test not applicable)				
0MC8!	00000A}{<CR><LF>ttt = 000 (test not applicable)				
0MC9!	00000A}{<CR><LF>ttt = 000 (test not applicable)				

Stay Awake Test

Command	Response	Result
0V!	00004<CR><LF>	
0D0!	0+0 ...	Pass, response to 0D0! received without a break
0M!	00206<CR><LF>	
0D0!	0+1.11000 ...	Pass, response to 0D0! received without a break
0M1!	00000<CR><LF>	
0M1!	00000<CR><LF>	Pass, response to 0M1! received without a break
0M2!	00000<CR><LF>	
0M2!	00000<CR><LF>	Pass, response to 0M2! received without a break

0M3!	00000<CR><LF>	
0M3!	00000<CR><LF>	Pass, response to 0M3! received without a break
0M4!	00000<CR><LF>	
0M4!	00000<CR><LF>	Pass, response to 0M4! received without a break
0M5!	00000<CR><LF>	
0M5!	00000<CR><LF>	Pass, response to 0M5! received without a break
0M6!	00000<CR><LF>	
0M6!	00000<CR><LF>	Pass, response to 0M6! received without a break
0M7!	00000<CR><LF>	
0M7!	00000<CR><LF>	Pass, response to 0M7! received without a break
0M8!	00000<CR><LF>	
0M8!	00000<CR><LF>	Pass, response to 0M8! received without a break
0M9!	00000<CR><LF>	
0M9!	00000<CR><LF>	Pass, response to 0M9! received without a break
0MC!	00206<CR><LF>	
0D0!	0+1.11000 ...	Pass, response to 0D0! received without a break
0MC1!	00000A} [<CR><LF>	
0MC1!	00000A} [<CR><LF>	Pass, response to 0MC1! received without a break
0MC2!	00000A} [<CR><LF>	
0MC2!	00000A} [<CR><LF>	Pass, response to 0MC2! received without a break
0MC3!	00000A} [<CR><LF>	
0MC3!	00000A} [<CR><LF>	Pass, response to 0MC3! received without a break
0MC4!	00000A} [<CR><LF>	
0MC4!	00000A} [<CR><LF>	Pass, response to 0MC4! received without a break
0MC5!	00000A} [<CR><LF>	
0MC5!	00000A} [<CR><LF>	Pass, response to 0MC5! received without a break
0MC6!	00000A} [<CR><LF>	
0MC6!	00000A} [<CR><LF>	Pass, response to 0MC6! received without a break
0MC7!	00000A} [<CR><LF>	
0MC7!	00000A} [<CR><LF>	Pass, response to 0MC7! received without a break
0MC8!	00000A} [<CR><LF>	
0MC8!	00000A} [<CR><LF>	Pass, response to 0MC8! received without a break
0MC9!	00000A} [<CR><LF>	
0MC9!	00000A} [<CR><LF>	Pass, response to 0MC9! received without a break

Wake Up Test

Command	Response	Results
0!	0<CR><LF>	pass
0I!	013ISI MS1 2.0MS1-2150 <CR><LF>	pass
0V!	00004<CR><LF>	pass
0D0!	0+0+0+0+0<CR><LF>	pass
0M!	00206<CR><LF>	pass
0D0!	0+1.11000+2.22000+3.32999+4.44000<CR><LF>	pass
0D1!	0+5.50000+1.11000<CR><LF>	pass
0M1!	00000<CR><LF>	pass
0M2!	00000<CR><LF>	pass
0M3!	00000<CR><LF>	pass
0M4!	00000<CR><LF>	pass
0M5!	00000<CR><LF>	pass
0M6!	00000<CR><LF>	pass

```

OM7!      00000<CR><LF>          pass
OM8!      00000<CR><LF>          pass
OM9!      00000<CR><LF>          pass
OC!       002006<CR><LF>        pass
OD0!      0+1.11000+2.22000+3.32999+4.44000+5.50000
          +1.11000<CR><LF>        pass
OC1!      000000<CR><LF>        pass
OC2!      000000<CR><LF>        pass
OC3!      000000<CR><LF>        pass
OC4!      000000<CR><LF>        pass
OC5!      000000<CR><LF>        pass
OC6!      000000<CR><LF>        pass
OC7!      000000<CR><LF>        pass
OC8!      000000<CR><LF>        pass
OC9!      000000<CR><LF>        pass
OR0!      0<CR><LF>            pass
OR1!      0<CR><LF>            pass
OR2!      0<CR><LF>            pass
OR3!      0<CR><LF>            pass
OR4!      0<CR><LF>            pass
OR5!      0<CR><LF>            pass
OR6!      0<CR><LF>            pass
OR7!      0<CR><LF>            pass
OR8!      0<CR><LF>            pass
OR9!      0<CR><LF>            pass
OMC!      00206<CR><LF>        pass
OD0!      0+1.11000+2.22000+3.32999+4.44000Ct{<CR><LF>
          pass
OD1!      0+5.50000+1.11000I\u<CR><LF>
          pass
OMC1!     00000A} [<CR><LF>    pass
OMC2!     00000A} [<CR><LF>    pass
OMC3!     00000A} [<CR><LF>    pass
OMC4!     00000A} [<CR><LF>    pass
OMC5!     00000A} [<CR><LF>    pass
OMC6!     00000A} [<CR><LF>    pass
OMC7!     00000A} [<CR><LF>    pass
OMC8!     00000A} [<CR><LF>    pass
OMC9!     00000A} [<CR><LF>    pass
OCC!      002006<CR><LF>        pass
OD0!      0+1.11000+2.22000+3.32999+4.44000+5.50000
          +1.11000JjO<CR><LF>    pass
OCC1!     000000N} ^<CR><LF>    pass
OCC2!     000000N} ^<CR><LF>    pass
OCC3!     000000N} ^<CR><LF>    pass
OCC4!     000000N} ^<CR><LF>    pass
OCC5!     000000N} ^<CR><LF>    pass
OCC6!     000000N} ^<CR><LF>    pass
OCC7!     000000N} ^<CR><LF>    pass
OCC8!     000000N} ^<CR><LF>    pass
OCC9!     000000N} ^<CR><LF>    pass
ORC0!     0AP@<CR><LF>        pass
ORC1!     0AP@<CR><LF>        pass
ORC2!     0AP@<CR><LF>        pass
ORC3!     0AP@<CR><LF>        pass
ORC4!     0AP@<CR><LF>        pass
ORC5!     0AP@<CR><LF>        pass
ORC6!     0AP@<CR><LF>        pass
ORC7!     0AP@<CR><LF>        pass
ORC8!     0AP@<CR><LF>        pass
ORC9!     0AP@<CR><LF>        pass

```

C Command Reset Test

```

          D0 (to abort)          D0 (after ttt delay)
OC!  002006  OD0! 0<CR><LF>      OD0! 0<CR><LF>          pass
OC1! 000000  ttt = 000 (test not applicable)
OC2! 000000  ttt = 000 (test not applicable)
OC3! 000000  ttt = 000 (test not applicable)
OC4! 000000  ttt = 000 (test not applicable)

```

```

0C5! 000000 ttt = 000 (test not applicable)
0C6! 000000 ttt = 000 (test not applicable)
0C7! 000000 ttt = 000 (test not applicable)
0C8! 000000 ttt = 000 (test not applicable)
0C9! 000000 ttt = 000 (test not applicable)
0CC! 002006 0D0! 0AP@<CR><LF> 0D0! 0AP@<CR><LF> pass
0CC1! 000000N}^ ttt = 000 (test not applicable)
0CC2! 000000N}^ ttt = 000 (test not applicable)
0CC3! 000000N}^ ttt = 000 (test not applicable)
0CC4! 000000N}^ ttt = 000 (test not applicable)
0CC5! 000000N}^ ttt = 000 (test not applicable)
0CC6! 000000N}^ ttt = 000 (test not applicable)
0CC7! 000000N}^ ttt = 000 (test not applicable)
0CC8! 000000N}^ ttt = 000 (test not applicable)
0CC9! 000000N}^ ttt = 000 (test not applicable)

```

Concurrent Measurement Test

Command	Response	Result
0C!	002006<CR><LF>	success

1C! no response

0D0!	0+1.11000+2.22000+3.32999+4.44000+5.50000 +1.11000<CR><LF>	success
0C1!	000000<CR><LF>	success
0C2!	000000<CR><LF>	success
0C3!	000000<CR><LF>	success
0C4!	000000<CR><LF>	success
0C5!	000000<CR><LF>	success
0C6!	000000<CR><LF>	success
0C7!	000000<CR><LF>	success
0C8!	000000<CR><LF>	success
0C9!	000000<CR><LF>	success
0CC!	002006<CR><LF>	success

1CC! no response

0D0!	0+1.11000+2.22000+3.32999+4.44000+5.50000 +1.11000JjO<CR><LF>	success
0CC1!	000000N}^<CR><LF>	success
0CC2!	000000N}^<CR><LF>	success
0CC3!	000000N}^<CR><LF>	success
0CC4!	000000N}^<CR><LF>	success
0CC5!	000000N}^<CR><LF>	success
0CC6!	000000N}^<CR><LF>	success
0CC7!	000000N}^<CR><LF>	success
0CC8!	000000N}^<CR><LF>	success
0CC9!	000000N}^<CR><LF>	success

CRC Test

Command	Response	CRC received	CRC expected	Result
0MC!	00206<CR><LF>			
0D0!	0+1.11000+2.22000+3.32999+4.44000Ct{<CR><LF>Ct{ (3D3B)	Ct{ (3D3B)	Ct{ (3D3B)	pass
0D1!	0+5.50000+1.11000I\u<CR><LF>	I\u (9735)	I\u (9735)	pass
0MC1!	00000A} [<CR><LF>			
0MC2!	00000A} [<CR><LF>			
0MC3!	00000A} [<CR><LF>			
0MC4!	00000A} [<CR><LF>			
0MC5!	00000A} [<CR><LF>			
0MC6!	00000A} [<CR><LF>			
0MC7!	00000A} [<CR><LF>			
0MC8!	00000A} [<CR><LF>			
0MC9!	00000A} [<CR><LF>			
0CC!	002006<CR><LF>			
0D0!	0+1.11000+2.22000+3.32999+4.44000+5.50000+1. 11000JjO<CR><LF>	JjO (AA8F)	JjO (AA8F)	pass
0CC1!	000000N}^<CR><LF>			

```

OCC2! 000000N}^<CR><LF>
OCC3! 000000N}^<CR><LF>
OCC4! 000000N}^<CR><LF>
OCC5! 000000N}^<CR><LF>
OCC6! 000000N}^<CR><LF>
OCC7! 000000N}^<CR><LF>
OCC8! 000000N}^<CR><LF>
OCC9! 000000N}^<CR><LF>
ORC0! 0AP@<CR><LF> AP@ (1400) AP@ (1400) pass
ORC1! 0AP@<CR><LF> AP@ (1400) AP@ (1400) pass
ORC2! 0AP@<CR><LF> AP@ (1400) AP@ (1400) pass
ORC3! 0AP@<CR><LF> AP@ (1400) AP@ (1400) pass
ORC4! 0AP@<CR><LF> AP@ (1400) AP@ (1400) pass
ORC5! 0AP@<CR><LF> AP@ (1400) AP@ (1400) pass
ORC6! 0AP@<CR><LF> AP@ (1400) AP@ (1400) pass
ORC7! 0AP@<CR><LF> AP@ (1400) AP@ (1400) pass
ORC8! 0AP@<CR><LF> AP@ (1400) AP@ (1400) pass
ORC9! 0AP@<CR><LF> AP@ (1400) AP@ (1400) pass

```

Command Iterations

Command	n	Time Until Start Bit (msec)				Time Until Line Feed (msec)				Retries
		Mean	Std	Min	Max	Mean	Std	Min	Max	
O!	100	8.71	0.03	8.66	8.78	25.10	0.01	25.07	25.12	0
OI!	100	9.82	0.03	9.77	9.88	299.45	0.02	299.42	299.48	0
OV!	1	8.74				59.37				0
OD0!	100	10.00	0.03	9.94	10.06	93.67	0.01	93.66	93.68	0
OM!	1	9.58				59.37				0
OD0!	100	8.89	0.03	8.85	8.94	299.48	0.02	299.43	299.50	0
OD1!	100	8.89	0.03	8.84	8.95	162.26	0.02	162.21	162.30	0
OM1!	1	8.95				59.34				0
OM2!	1	8.99				59.38				0
OM3!	1	9.02				59.37				0
OM4!	1	8.98				59.34				0
OM5!	1	9.00				59.38				0
OM6!	1	8.99				59.38				0
OM7!	1	9.03				59.34				0
OM8!	1	9.00				59.38				0
OM9!	1	8.98				59.38				0
OC!	1	9.88				67.93				0
OD0!	100	8.89	0.03	8.84	8.95	436.64	0.02	436.61	436.69	0
OC1!	1	9.03				67.91				0
OC2!	1	9.04				67.95				0
OC3!	1	9.07				67.91				0
OC4!	1	9.01				67.95				0
OC5!	1	9.04				67.93				0
OC6!	1	8.98				67.95				0
OC7!	1	9.05				67.95				0
OC8!	1	9.02				67.93				0
OC9!	1	8.98				67.91				0
OR0!	100	8.74	0.03	8.69	8.80	25.10	0.02	25.08	25.13	0
OR1!	100	8.73	0.03	8.69	8.80	25.09	0.01	25.08	25.13	0
OR2!	100	8.73	0.03	8.69	8.79	25.09	0.02	25.08	25.13	0
OR3!	100	8.74	0.03	8.69	8.80	25.09	0.02	25.08	25.13	0
OR4!	100	8.74	0.03	8.69	8.80	25.09	0.01	25.08	25.13	0
OR5!	100	8.73	0.03	8.69	8.79	25.09	0.01	25.08	25.13	0
OR6!	100	8.73	0.03	8.69	8.80	25.10	0.01	25.08	25.13	0
OR7!	100	8.74	0.03	8.69	8.81	25.10	0.01	25.08	25.13	0
OR8!	100	8.74	0.03	8.69	8.80	25.09	0.01	25.08	25.13	0
OR9!	100	8.73	0.03	8.69	8.80	25.09	0.01	25.08	25.13	0
OMC!	1	9.60				59.37				0
OD0!	100	8.89	0.03	8.84	8.95	325.20	0.02	325.16	325.22	0
OD1!	100	8.89	0.03	8.84	8.95	187.98	0.02	187.94	188.02	0
OMC1!	1	10.53				85.06				0
OMC2!	1	10.58				85.06				0
OMC3!	1	10.51				85.09				0
OMC4!	1	10.52				85.09				0
OMC5!	1	10.55				85.09				0

OMC6!	1	10.55				85.06				0
OMC7!	1	10.57				85.04				0
OMC8!	1	10.54				85.09				0
OMC9!	1	10.50				85.04				0
OCC!	1	9.80				67.98				0
OD0!	100	8.89	0.03	8.84	8.95	462.36	0.03	462.32	462.41	0
OCC1!	1	10.85				93.66				0
OCC2!	1	10.82				93.66				0
OCC3!	1	10.89				93.63				0
OCC4!	1	10.86				93.66				0
OCC5!	1	10.80				93.66				0
OCC6!	1	10.82				93.63				0
OCC7!	1	10.87				93.66				0
OCC8!	1	10.81				93.63				0
OCC9!	1	10.86				93.66				0
ORC0!	100	9.21	0.03	9.15	9.26	50.80	0.02	50.78	50.83	0
ORC1!	100	9.20	0.03	9.15	9.26	50.80	0.02	50.78	50.83	0
ORC2!	100	9.21	0.03	9.15	9.26	50.80	0.02	50.78	50.83	0
ORC3!	100	9.20	0.03	9.15	9.26	50.80	0.02	50.78	50.83	0
ORC4!	100	9.21	0.03	9.15	9.26	50.80	0.02	50.78	50.83	0
ORC5!	100	9.21	0.03	9.15	9.26	50.80	0.02	50.78	50.83	0
ORC6!	100	9.20	0.03	9.15	9.26	50.80	0.02	50.78	50.83	0
ORC7!	100	9.20	0.03	9.15	9.26	50.80	0.02	50.78	50.83	0
ORC8!	100	9.21	0.03	9.15	9.26	50.80	0.02	50.78	50.83	0
ORC9!	100	9.20	0.03	9.15	9.26	50.80	0.02	50.78	50.83	0