

## 14. SPECIFICATION

All specifications in this section assume a PVF of 0.667.  
1 meter is equivalent to 3.28 feet or 10 nanoseconds.

### RESOLUTION AND RANGES:

RANGE (Nominal)	RESOLUTION	
	FULL	ZOOM
25 m	0.10 m	0.10 m
50 m	0.20 m	0.10 m
75 m	0.30 m	0.10 m
150 m	0.60 m	0.20 m
300 m	1.25 m	0.30 m
600 m	2.50 m	0.60 m
1,200 m	5.00 m	1.25 m
2,400 m	10.00 m	2.50 m
4,800 m	20.00 m	5.00 m
9,600 m	40.00 m	10.00 m
19,200 m	80.00 m	20.00 m

<b>Sampling Accuracy</b>	±0.9 m (all ranges)
<b>Fault Location Accuracy</b>	25 m ±1.30% of range
	50 m ±0.64% of range
	75 m ±0.43% of range
	150 m ±0.35% of range
	All other ranges: ±0.24% of range
<b>Dielectric Setting</b>	0.300 to 0.999 (PVF)
<b>Cursor</b>	Single vertical line
<b>Pulse Amplitude</b>	Nominally 20 V into 100 Ω
<b>Output Impedance</b>	100 Ω

00901221 - 1

00901221 - 1

### TRANSMIT PULSE WIDTH:

RANGE	PULSE WIDTH	
	SHORT	LONG
25 m	24 ns	24 ns
50 m	68 ns	24 ns
75 m	68 ns	24 ns
150 m	136 ns	68 ns
300 m	280 ns	68 ns
600 m	630 ns	136 ns
1,200 m	1320 ns	280 ns
2,400 m	1320 ns	280 ns
4,800 m	2250 ns	630 ns
9,600 m	2250 ns	630 ns
19,200 m	2250 ns	630 ns

**SENSITIVITY:**

GAIN RANGE	APPROX. SIGNAL FOR FULL SCALE DEFLECTION
A1	72 V
A2	36 V
A3	18 V
A4	8.6 V
A5	4.3 V
A6	2.1 V
A7	1.1 V
A8	540 mV
A9	270 mV
Aa	135 mV
Ab	68 mV
Ac	34 mV
Ad	17 mV
Ae	8 mV
Af	4 mV

<b>Balance</b>	220 $\Omega$
<b>Line Connections</b>	0.166 in (4.22 mm) banana sockets, 0.75 in (19.05 mm) spacing
<b>Input Protection</b>	300 V RMS or 300 V DC 0 to 60 Hz

00901221 - 1

00901221 - 1

<b>DISPLAY MODES</b>	<b>Direct:</b> L1 L2 L1 & L2 (Display of both lines) L1 - L2 (Difference between two lines) XTALK (Transmit on L1, receive on L2) <b>Memory:</b> M L1 & M L1 - M
<b>Memories</b>	12
<b>Memory Storage</b>	Storage of the displayed trace in modes L1, L2, L1 - L2, XTALK Storage of L1 trace in mode L1 & L2 PVF VALUE, RANGE, GAIN, PULSE WIDTH, SHIFT POSITION, saved with trace and restored on recall.

<b>Display</b>	240 X 128 pixel LCD (Waveform Area = 240 x 100 pixel)																		
<b>RS232</b>	<p>Configuration: 4800 baud, no parity, 8 bits Connector 9 pin D male</p> <table border="1"> <thead> <tr> <th>PIN</th> <th>FUNCTION</th> <th>DIRECTION (with respect to 535B)</th> </tr> </thead> <tbody> <tr> <td>2</td> <td>Received Data (RXD)</td> <td>Input</td> </tr> <tr> <td>3</td> <td>Transmit Data (TXD)</td> <td>Output</td> </tr> <tr> <td>5</td> <td>Ground</td> <td></td> </tr> <tr> <td>6</td> <td>Data Set Ready (DSR)</td> <td>Input</td> </tr> <tr> <td>7</td> <td>Request To Send (RTS)</td> <td>Output</td> </tr> </tbody> </table>	PIN	FUNCTION	DIRECTION (with respect to 535B)	2	Received Data (RXD)	Input	3	Transmit Data (TXD)	Output	5	Ground		6	Data Set Ready (DSR)	Input	7	Request To Send (RTS)	Output
PIN	FUNCTION	DIRECTION (with respect to 535B)																	
2	Received Data (RXD)	Input																	
3	Transmit Data (TXD)	Output																	
5	Ground																		
6	Data Set Ready (DSR)	Input																	
7	Request To Send (RTS)	Output																	

00901221 - 1

00901221 - 1

<b>External DC</b>	<p>Operating 12 V to 20 V, 0.25 A Battery Charging 15 V to 20 V, 0.25 A Connector: 0.082 x 0.216 x 0.374 in (2.1 x 5.5 x 9.5 mm) DC Plug Center positive</p> <p>If internal batteries are used note the following:</p> <ol style="list-style-type: none"> <li>When operating the 535B, some power may be drawn from the batteries if the external DC is below 15 V.</li> <li>Battery recharging will take place only when the 535B is turned off and external DC above 15 V is applied.</li> </ol> <p>Reverse polarity protection: Yes</p>
<b>Battery</b>	<p>Quantity: 8 Size: R14 Capacity: 2 amp hour Type: Nicad Recommended cell type: Varta RSH2K</p>
<b>Battery Life</b>	12 hours from full charge, without display backlight

<b>Fuses</b>	2 fuses are located on the PSU PCB within the 535B: FH1 1A Quick Blow (F) (external DC fuse) FH2 1A Quick Blow (F) (battery fuse)
<b>Backlight</b>	LED backlight with auto switch off (5 mins)
<b>Keyboard</b>	Sealed membrane
<b>Dimensions (Main Unit)</b>	11.8 x 7.1 x 3 in (300 x 180 x 75 mm)
<b>Weight</b>	6.4 lbs (2.9 kg) including batteries
<b>Environmental &amp; Safety (Excluding Test Leads)  Safety</b>	IEC 1010-1 : 1990 and Amendment 1 : 1992 (Approval Pending) Over voltage Category II Pollution Degree 2 Double insulated
<b>Environmental Temperature</b>	Operating temperature: Including batteries : 0°C to +50°C Excluding batteries:- -5°C to +50°C  Storage temperature: Including batteries: -20°C to +50°C Excluding batteries: -20°C to +65°C

00901221 - 1

00901221 - 1

<b>Recommended temperature limits to maximise battery life (for Varta RSH2K batteries)</b>	Charging: +10°C to +35°C Discharging: -5°C to +45°C Storage: 0°C to +45°C
<b>Damp Heat, Steady State</b>	BS 2011, part 2.1 Ca : 1977 (IEC 68-2-3 : 1969) 40°C, 93% RH, 4 days
<b>Damp Heat, Cyclic</b>	BS 2011, part 2.1 Db : 1981 (IEC 68-2-30 : 1980) 25°C, 95% RH, 12 hr 55°C, 93% RH, 12 hr 6 cycles
<b>Low Air Pressure</b>	BS 2011 part 2.1 M : 1984 (IEC 68-2-13 : 1983) Non operational: 150 mb 16 hours Operational: 533 mb 30 minutes
<b>Random Vibration</b>	BS 2011 part 2.1 Fdb : 1973 5 to 150 Hz, 0.005g <sup>2</sup> /Hz 2 hours in each of 3 planes (in soft carry case)
<b>Shock</b>	BS EN 60068-2-27 : 1993 part 2, test Ea (IEC 68-2-27 : 1987) 50g, 11ms (in soft carry case)
<b>Bump</b>	BS EN 60068-2-29 : 1993 part 2, test Eb (IEC 68-2-29 : 1987) 40g, 6ms, 1000 bumps in each of 3 axes (in soft carry case)

<b>Free Fall</b>	BS EN 60068-2-32 : 1993 part 2.1, test Ed (IEC 68-2-32 : 1975) 1 m (in soft carry case)
<b>Water and Dust Protection</b>	BS EN 60529 (IEC 529 : 1989) To IP54
<b>Optional Printer</b>	Seiko DPU 411 040 Type 21BE, supplied with printer cable
<b>Environmental &amp; Safety</b>	See printer manual for environmental and safety specifications
<b>AC Line Adaptor</b>	Supplied with soft carrying case which can be attached to the main carrying case strap Operating temperature: 14° to 113°F (-10 to 45°C) Storage temperature: -40° to 158°F (-40 to 70°C) Input: 120 V 10% 60 Hz, 19 VA Output: 15 V DC, 550 mA Conforms to UL1950