

***SC532 9-Pin Peripheral
to
RS232 Interface***

User Guide

Issued 3.2.93

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Campbell Scientific Ltd,
Campbell Park, 80 Hathern Road,
Shepshed, Loughborough, LE12 9GX, UK
Tel: +44 (0) 1509 601141
Fax: +44 (0) 1509 601091
Email: support@campbellsci.co.uk
www.campbellsci.co.uk

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SC532 9-Pin Peripheral to RS232 Interface

The SC532 Peripheral Interface connects an IBM PC/XT/AT or IBM PS/2 compatible computer to certain Campbell Scientific datalogger peripherals. These peripherals include the SM192/716 Storage Modules, the CSM1 Card Storage Module and the MD9 Multidrop Interface.

The SC532 provides a +5V DC power supply to the peripheral, and requires a supply voltage of 6 to 17V DC.

1. Physical Description

The SC532 has a 9-pin connector for the Campbell Scientific peripheral and a 25-pin connector for the computer. An AC adaptor provides the input power (see Figure 1).



Figure 1 SC532 Case Top

2. Specifications

Supply voltage in:	+6V DC to 17V DC; factory-installed AC to 7.5V DC adaptor
Output voltage to Campbell Scientific peripheral:	5V DC \pm 0.2V DC
Current available to Campbell Scientific peripheral on 5V output:	100mA maximum at 25°C; derate 4mA/V for each volt above 9V DC on the supply voltage at 25°C
RS232 output levels:	+10V DC \pm 1V DC -10V DC \pm 1V DC Maximum output impedance = 1100 Ω
RS232 input levels:	\pm 30V maximum Low threshold \leq 0.8V High threshold \geq 3.5V Input impedance at least 3000 Ω
9-pin inputs:	Low \leq 1V; High \geq 3.5V
9-pin outputs:	Low \leq 0.5V; High \geq 3.5V

Current drain:	5mA typical quiescent 10mA maximum quiescent
Port Configuration:	25-pin D-type female configured as DCE. 9-pin D-type female connects to Campbell Scientific peripheral through the SC12 Two Peripheral Cable supplied with the SC532.
Size / Weight:	125 x 74 x 24mm / 0.2kg

3. Hardware Connections

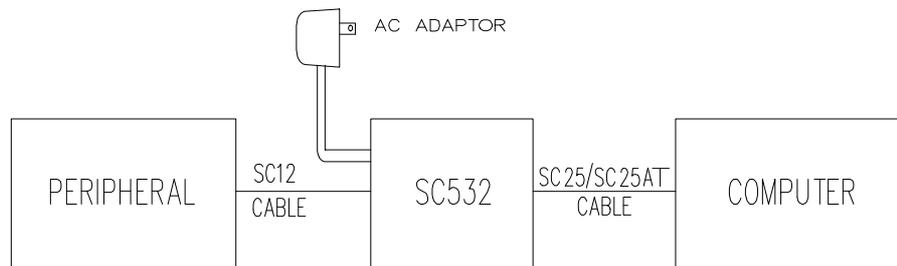


Figure 2 Connection Block Diagram

The block diagram in Figure 2 shows the connection from a Campbell Scientific peripheral to a 25-pin RS232 Asynchronous Communication Adaptor via the SC532 and an SC12 cable.

If you have an AT computer with a 9-pin serial port, you will need a 9-pin to 25-pin cable (such as the Campbell Scientific SC25AT) for connection to the SC532 Interface.

4. Operation

The SC532 converts a Campbell Scientific peripheral’s CMOS logic levels (0V logic low, 5V logic high) to RS232 levels (-10V and +10V respectively). It also supplies +5V DC power to the peripheral. The factory-installed AC adaptor must be plugged into a 220/240V AC socket.

You will need to write your own software if you are not using Campbell Scientific’s PC208 Datalogger Support Software. Read the specific peripheral manual for the necessary control sequence.

Appendix A gives the SC532 and the DTE computer pin descriptions.

5. Use of SC532 Without Mains Power

If the SC532 is being used in a portable application with battery power such as collecting data on-site from a Storage Module, the AC adaptor wire can be cut, split and spliced to connectors. The SC532 may then be used either with a battery or with the AC adaptor.

To connect the SC532 to a battery, connect the black wire with the white stripe to the positive battery terminal and the solid black wire to the negative terminal. The battery voltage can be +6 to 17V DC. See Table 1 for the maximum current required for selected Campbell Scientific peripherals.

**Table 1 Campbell Scientific Peripherals and their
Maximum Current Requirements**

Peripheral	Maximum Current
MD9 Multidrop Interface	<90mA
SM192/716 Storage Module	<20mA
CSM1 Card Storage Module	<20mA

Appendix A. Pin Description

The SC532 25-pin female port is configured as Data Communications Equipment (DCE) for direct cable connection to Data Terminal Equipment (DTE) such as an IBM-PC serial port. The pin descriptions of the SC532 25-pin female connector and 9-pin female connector are given in table A-1.

Table A-1 SC532 Pin Description					
PIN = Pin number					
I = Signal Into the SC532					
O = Signal Out of the SC532					
25-Pin Female Connector			9-Pin Female Connector		
Pin#	I/O	Description	Pin#	I/O	Description
1,7		GROUND	1	O	+5V SUPPLY
2	I	TX	2		GROUND
3	O	RX	3	I	RING
4	I	RTS	4	I	RX
20	I	DTR	5	O	ME
22	O	RING	6	O	PE
			7	O	CLK/HS
			9	O	TX

A computer configured as DTE, such as an IBM-PC, will follow the description given in Table A-2.

Table A-2 DTE Pin Configuration			
PIN = Pin number			
ABR = Abbreviation for the function name			
I = Signal Into the computer			
O = Signal Out of the computer			
Pin	Abr	I/O	Function
1			Frame Ground
2	TX	O	Transmit Data: Characters are transmitted from the computer on this line.
3	RX	I	Receive Data: Characters transmitted by a peripheral are received on this line.
4	RTS	O	Request To Send: The computer uses this line to control the peripheral's PE lines.
20	DTR	O	Data Terminal Ready: The computer uses this line to control the peripheral's ME and CLK/HS lines.
22	RING	I	Ring Indicator: Raised to get the attention of the computer.
7	SG		Signal Ground: Voltages are measured relative to this point.

Appendix B. Circuit Diagram and Component Location

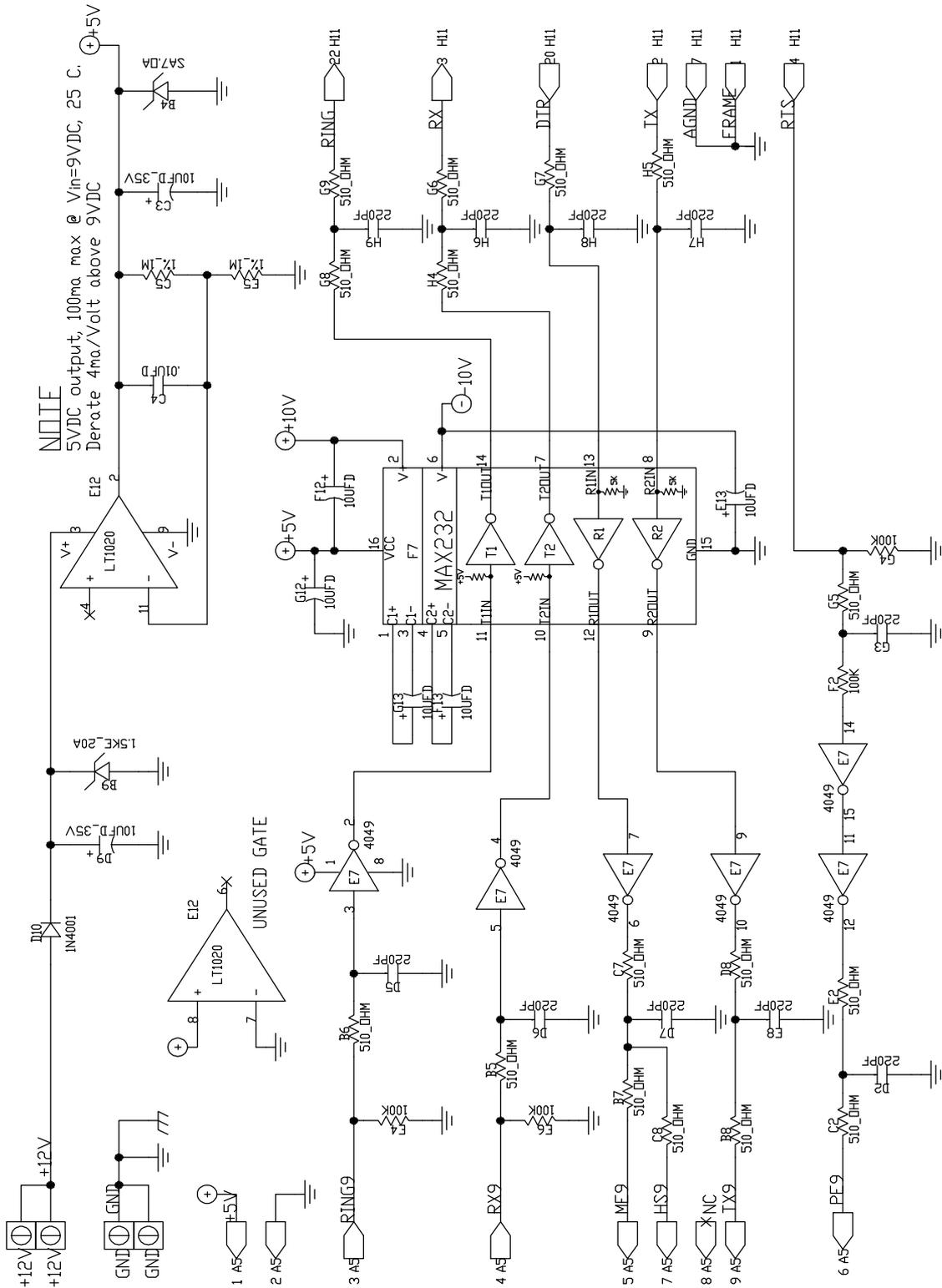


Figure B-1 Circuit Diagram

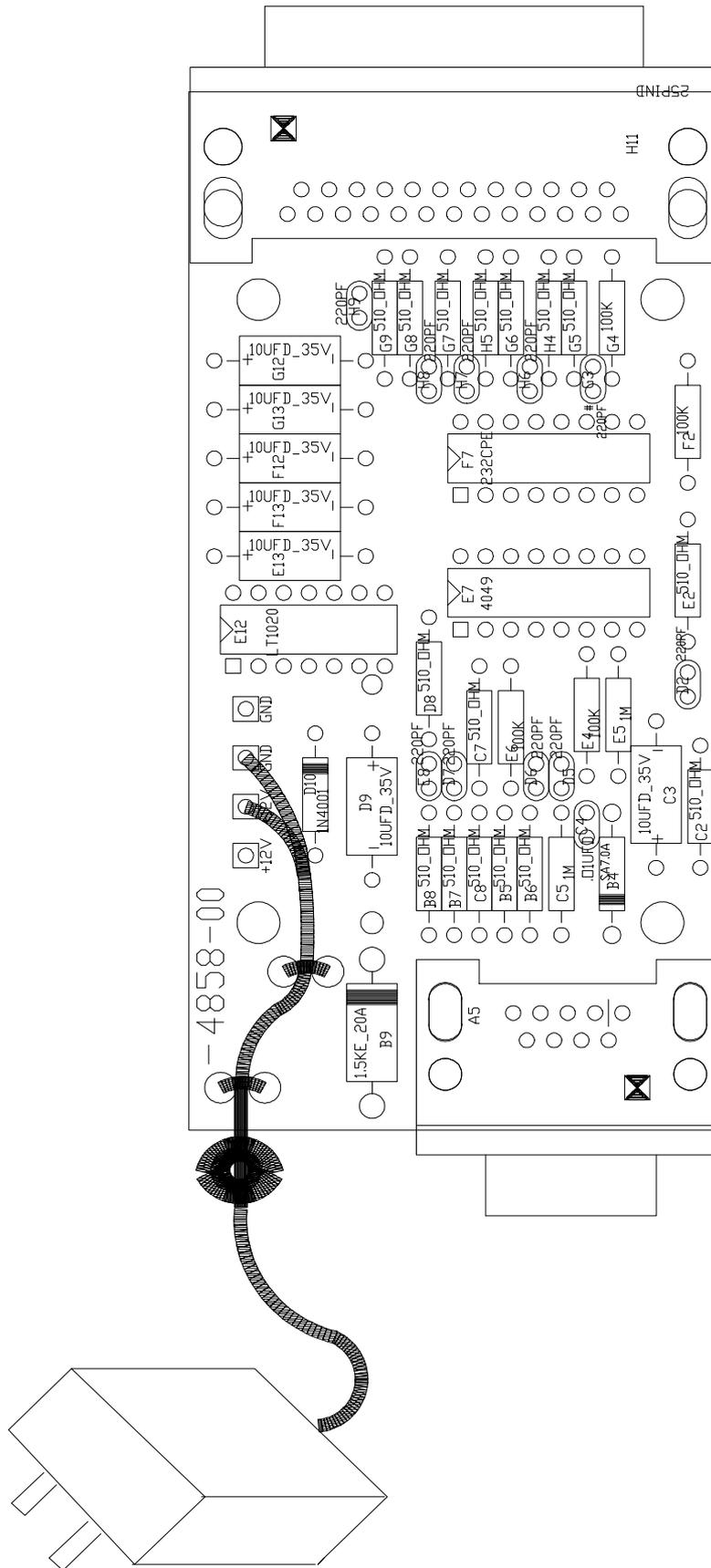


Figure B-2 Component Location