



# Tech Info Library

## Serial Cables: Extreme Length Can Generate Noise (11/94)

Revised: 11/21/94  
Security: Everyone

Serial Cables: Extreme Length Can Generate Noise (11/94)

=====  
Article Created: 15 August 1990  
Article Reviewed/Updated: 21 November 1994

TOPIC -----

I've connected a Macintosh SE to my MV15000 (Data General host) through the serial port using a cable wired according to the pinouts documented in the Tech Info Library.

When a terminal line is enabled, the host sends a "welcome" message to the terminal. If the Macintosh is not already in the terminal emulation program, the host receives arbitrary noise back on the line, causing the operating system to disable that port.

Can you shed any light on why this may be occurring, and where I could look for a solution?

DISCUSSION -----

When a Macintosh system is turned on and the System software is loaded, the transmit lines of the serial ports are in a high-impedance mode. This does not change until a terminal program, such as MacTerminal, is run.

Arbitrary noise back on the Macintosh transmit line could result if the cable is too long. The maximum serial cable length that the Macintosh supports is 50 feet. If the cable is longer than this, you may want to use short-haul modems.

You did not provide us with the pinouts that you're using. We are providing the following as a reference:

### RS-422 and RS-232 Equivalent

Pin	RS-422 name	RS-232 equivalent
1	HSKo (handshake out)	DTR (data terminal ready)
2	HSKi (handshake in)	CTS (clear to send)

3	TXD- (transmit data negative)	TXD (transmit data)
4	GND (signal ground)	GND (signal ground)
5	RXD- (receive data negative)	RXD (receive data)
6	TXD+ (transmit data positive)	leave unconnected
7	not connected	not connected
8	RXD+ (receive data positive)	must be grounded to pin 4 (on Macintosh RS-422 connector)

Article Change History:

21 Nov 1994 - Reviewed for technical accuracy.

Support Information Services

Copyright 1990-94, Apple Computer, Inc.

Tech Info Library Article Number:6006