

Application Note

To: **ALL USERS OF Q680 AND Q4120 SYSTEMS**

From: **J. M. Steim**

CC:

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Re: **NEW MODEMS FOR DIAL-UP ACCESS**

Background

The Telebit family (T2500 and Worldblazer) modems used on Quanterra, Inc. systems for many years are now out of production. These modems were selected originally because of their ability to handle efficient transfers using the kermit protocol to Unix hosts. Telebit's current products no longer support kermit protocol "spoofing", and so offer no advantage less expensive recent alternatives.

US Robotics 56000bps X2 modems

A new modem configuration file "cm_usr56k" has been developed that permits use of new advanced 56kbps US Robotics "Sportster" modems with "X2" technology.

Limitations

Although the USR modems are capable of transfer rates up to 56000 bps, the standard /s1b serial ports on Q680 systems are capable only of DTE transfer rates of 19200 bps because of the high capacitance of the stringent surge protection. Special modifications that may permit operation at higher DTE rates are under investigation. Most international telephone circuits, however, rarely permit modem-to-modem rates exceeding 19200 bps.

The /t2 and /t3 ports on Q4120 systems have lower-capacitance surge protection, and will operate up to 38400 baud DTE rates.

Installation

The modem configuration files are stored on disk in the directory */h0/SHEAR/TMON* in a system running SHEAR 34/02-R1231 (earlier versions of SHEAR will not support the USR56k) or in directory */h0/USHEAR/TMON* in a system equipped with UltraSHEAR. At system startup, the secondary *startup* file in the directory appropriate for the hardware configuration family (such as */h0/USHEAR/CFG/Q80/DV*, */h0/USHEAR/CFG/Q80/LV*, */h0/USHEAR/CFG/Q80/LX*, or */h0/USHEAR/CFG/Q80/4120* - see the sections entitled Understanding the Configuration, Software Configuration, and Configuration directory organization in the Operation manual for your system) copies one of the files named, for example, *cm_telebit*, to a working copy, called *config_modem*, on the ram disk, */r0*. These lines may appear something like:

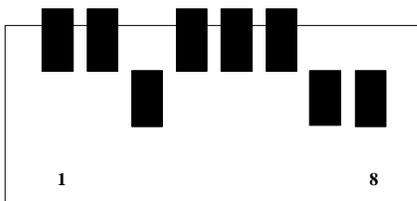
```
* start modem monitor
*
* only one of the following modem configuration files should be copied
*
copy -r USHEAR/TMON/ cm_telebit /r0/config_modem
* copy -r USHEAR/TMON/ cm_microcom /r0/config_modem
* copy -r USHEAR/TMON/ cm_hayespocket /r0/config_modem
*
```

The new configuration for the USR56k should be placed into the appropriate directory where your modem configuration is stored now in a file called *cm_usr56k*. The contents of this file are attached. After creating this file, modify the appropriate startup file to make the working copy at boot time:

```
* start modem monitor
*
* only one of the following modem configuration files should be copied
*
copy -r USHEAR/TMON/cm_usr56k /r0/config_modem
* copy -r USHEAR/TMON/ cm_telebit /r0/config_modem
* copy -r USHEAR/TMON/ cm_microcom /r0/config_modem
* copy -r USHEAR/TMON/ cm_telebit /r0/config_modem
*
```

DIP Switch Settings

The DIP switch is viewed from the REAR of the modem



```

% **** US Robotics 56K ERROR CORRECTING MODEM CONFIGURATION FILE ****
%
% first value following the 'start of data' line is the max online time
% the next value is the timeout (both values are seconds)
% *****
% edit          why
% 95/11/28      x0 permits connection at speeds other than mon knows
% 97/10/03      created USR 56K configuration
%
# start of data
3600
60
% set the re-initialization cycle time to be sufficiently often
% to guarantee access within that time.default is 300 seconds.
TCMDCYCLE=300
% attempt several times to get modem's attention, but require no
% command echo.the command delay is in milliseconds, default 2000.
TCMDDELAY=40
TCMDNOECHO
AT
AT
AT
% initialize modem, wait 1 sec to stabilize.sometimes no OK follows,
% so don't wait for it.
TCMDDELAY=1000
% reset using factory default 2 parameter set for software flow control
% this sets &D2 &B1 &H2
ATZ5
% now require echoes on further commands, and process them quickly
TCMDECHO
% switch off automatic baud rate adjustment
TCMDNOADJUST
% note: the cmd delay must be 150 minimum, so the delay is doubled
TCMDDELAY=300
% disable auto answer on first ring
% disable +++
% ignores dial tone and busy.sends plain connect result
% disable protocol result codes
% XON/XOFF sent to modem and remote system
% modem ignores RTS
% reset (and hang up) on DTR drop; non MNP connection uses 128b buffer
% run in "software compatibility" mode, always showing 9600 connect speed
% enable "fail safe" 250 minute on timer
% extend carrier drop
% enable auto answer on first ring
ATS0=0 S2=255 X0 &A0 &I1 &R1 S13=3 S27=136 S19=250 S10=20 S0=1

```