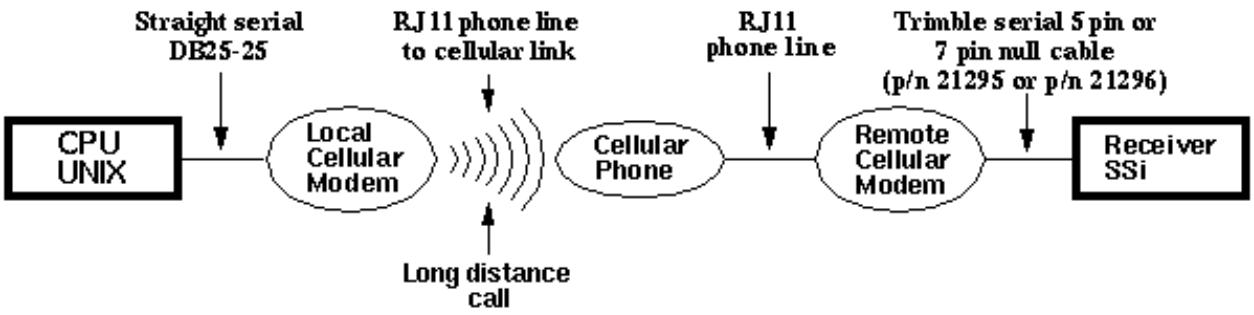
Comms Example: GPS Receiver--Cellular Modem--Cellular Phone--Cellular Modem--CPU

361 Beth Bartel July 8, 2009 Comms and Networking Examples (Diagrams), Zyxel 2644

GPS Receiver--Cellular Modem--Cellular Phone--Cellular Modem--CPU



Equipment

Cellular modem: ZyXel U-1496P

Cellular phone: Motorola SUN 1908AC *(no longer in production)*

Antenna: Directional Yagi antenna

CPU: UNIX (Sun OS 2.3)

Receiver: Trimble 4000SSi

Possible Substitutions (based on site parameters)

Cellular modem: Any modem which meets the suggested minimum requirements on our Cellular Modem page.

Cellular phone: Since the Motorola SUN 1908AC is no longer supported, we suggest you contact cellular phone companies and describe your needs, or contact the Equipment Services unavco.org).

CPU: UNAVCO currently supports UNIX or LINUX systems.

Connections

1=Straight serial DB25-25

2=RJ11 phone line to cellular link

3=RJ11 phone line

4=Trimble serial 5 pin or 7 pin null cable (p/n 21295 or p/n 21296)

Equipment Configuration

Cellular Modems

Local (UNIX) modem:

V.32 (4800) protocol

4800 bps DTE speed

10 (characters)N1

DSR always on

DTR always assumed on

CTS/RTS HW flow control

v.42 with MNP4

Remote modem: as local, except modem set to pick up after one ring.

Recommended local (at CPU) Zyxel cellular modem register settings:

```
Current   Settings.............

 B0   E0   L7   M1   N5   Q0   V1   X5
&B1  &C0  &D0  &G0  &H3  &J0  &K3  &L0  &M0  &N5  &P0  &R1  &S0  &X0  &Y1
*B0  *C0  *D0  *E0  *F0  *G0  *I0  *L0  *M0  *P9  *Q2  *S0

S00=001   S01=000   S02=043   S03=013   S04=010
S05=008   S06=003   S07=090   S08=002   S09=006
S10=200   S11=070   S12=000   S13=000   S14=002
S15=002   S16=000   S17=018   S18=009   S19=005
S20=009   S21=034   S22=080   S23=104   S24=234
S25=000   S26=000   S27=155   S28=068   S29=000
S30=000   S31=017   S32=019   S33=255   S34=030
S35=034   S36=000   S37=000   S38=000   S39=000
S40=000   S41=000   S42=000   S43=000   S44=000
S45=100   S46=028   S47=064   S48=000   S49=006
S50=002   S51=000   S52=000   S53=000   S54=000
S55=000   S56=000   S57=000   S58=000   S59=000

OK
```

Recommended remote (at receiver) Zyxel cellular modem register settings:

```
Current   Settings.............

 B0   E0   L7   M1   N5   Q0   V1   X5
&B1  &C0  &D0  &G0  &H3  &J0  &K3  &L0  &M0  &N5  &P0  &R1  &S0  &X0  &Y1
*B0  *C0  *D0  *E0  *F0  *G0  *I0  *L0  *M0  *P9  *Q2  *S0

S00=001   S01=000   S02=043   S03=013   S04=010
S05=008   S06=003   S07=090   S08=002   S09=006
S10=200   S11=070   S12=000   S13=000   S14=002
S15=002   S16=000   S17=018   S18=009   S19=005
S20=009   S21=034   S22=080   S23=104   S24=234
S25=000   S26=000   S27=155   S28=068   S29=000
S30=000   S31=017   S32=019   S33=255   S34=030
S35=034   S36=000   S37=000   S38=000   S39=000
S40=000   S41=000   S42=000   S43=000   S44=000
S45=100   S46=028   S47=064   S48=000   S49=006
S50=002   S51=000   S52=000   S53=000   S54=000
S55=000   S56=000   S57=000   S58=000   S59=000

OK
```

Receiver

Confirm these settings in the receiver's CONTROL menu:

BAUD RATE/FORMAT: I/O port 1 or 2, 4800 bps, 8-None-1, no HW flow control.

REMOTE PROTOCOL: Data Collector Compatible.

Download Specifications

Download software: Trimble Remote Control version 2.201 (15 MAY 1996) for UNIX. All functions of Remote Control software work. Effective receiver file download speed: 4300 bps. *[**Note:** Download rates will vary depending upon site location, local interference, phone line quality, and cellular service.]*

This product is used to perform remote control of 4000SSE/SSi - RC receivers. The programs are available for HP-UX, DOS, SunOS 4.1.x, and Sun Solaris 2.x. The following summarizes the functions and utilities provided by the Remote control programs. Refer to the Trimble Remote Control documentation for details on these programs.

Function/Utility	Program
Modem link control	rconn, rdisconn
Station/session programming	rstation, rsession
Survey control	rsurvey
Global control	rcontrol
File/download control	rfile
File conversion (r00 to DAT)	runpkr00
Receiver status	rstatus
Receiver reset	rreset
Remote firmware update	rupdate
DAT file naming utility	rdatname

Online URL:
https://kb.unavco.org/article/comms-example-gps-receiver-cellular-modem-cellular-phone-cellular-modem-cpu-361.html