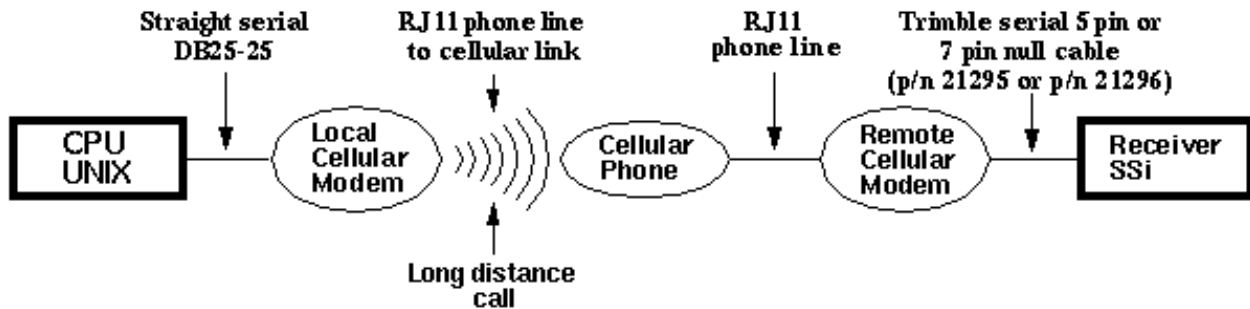


Comms Example: GPS Receiver--Cellular Modem--Cellular Phone--Cellular Modem--CPU

361 Beth Bartel July 8, 2009 [Comms and Networking Examples \(Diagrams\), Zyxel](#) 972

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>