

Communications

When planning a SeaSonde installation, one item that is often overlooked, but essential to a successful installation, is good data communications with remote SeaSonde sites. There are several reasons for choosing fast and reliable communications:

- Government agencies like the U.S. FCC require users to maintain control of RF devices.
- Customers save time and money and reduce potential data loss by performing routine maintenance from home or office.
- Customers benefit from better remote support and troubleshooting from Codar engineers.

Since it is most often up to the customer to determine which communications packages are available and within budgetary constraints at the chosen sites, we at Codar have provided the following descriptions of the levels of support possible based on some commonly available options:

High Speed DSL or Equivalent (128 kbps or better): Full Support Possible

- Real time screen control and mirroring is possible so operators can perform tasks from their office or home as if they were sitting in front of the computer running the radar.
- All stages of signal processing from analog input to Doppler spectrum output can be monitored in real time allowing more thorough troubleshooting.
- All stages of data from digitized analog input to the current vector end product can be transferred back to Codar for further troubleshooting by Codar engineers, if needed.
- Customers can remotely install the most up-to-date tools and applications as needed.
- Most problems can be diagnosed within minutes or hours and most can be corrected without sending any data or equipment to Codar, saving time and money and reducing data loss.
- VPN connections are supported to allow "piggy-backing" at established facilities and for increased security.

Telephone Modem (19.2 kbps or better): Partial Support Possible

- Screen control and mirroring available for limited purposes only, like checking settings, verifying applications are running and visually inspecting late-stage spectral data.
- Limited or no real time signal processing troubleshooting.
- Limited remote analysis of spectral data - most analysis must be done remotely leaving data on the site which takes longer and may affect real time processing.

Telephone Modem (less than 19.2 kbps): Minimal Support Possible

- No screen control or mirroring possible.
- Only ASCII data (radial vector files and log files) can be remotely transferred.
- Spectral data must be manually downloaded and returned for troubleshooting.
- Simple problems can take days to resolve instead of hours or minutes.

*If none of the above match the communications package available to you, use the bps rates as a comparison and consult a Codar engineer.

**Support via remote access is not possible for sites where a 9600 bps (or slower) connection is all that is available.

Communications Suggestions

Any external communications device or network must be compatible with Mac OS X version 10.3 (Panther) and must support data transfer rates as outlined above.

Available Communications Ports at Radar Site and Central Data Combining Station:

1. 10/100/1000BASE-T Ethernet network card
2. Wireless 802.11b or 802.11g network card (additional fee approx. \$100US per site)
3. Internal 56K V.92 analog phone modem
4. USB 1.1 and/or USB 2.0 ports - can support USB-to-serial adapters (approx. additional \$100US from Keyspan per site) for use with external serial devices (cell, analog phone, or radio modems)
5. Internal Bluetooth 1.1 module (approx. additional \$50 per site) (compatible with Bluetooth enabled cell phones)

Communications solutions that have been implemented by Codar customers:

- Computer to computer radio serial modem (e.g. Freewave®)
- Extend phone connection using radio modems to place analog modem at the closest phone jack at 20+ miles from the remote computer
- Serial communications via cell phones
- Wireless ethernet bridge extending TCP/IP connection from LAN up to 10+ km away (e.g. Apple Airport®)
- Extend phone connection using ppp dial-up to wireless ethernet bridge
- Satellite DSL providing TCP/IP link