

## Interfacing an iDirect Modem to an RC1500B or RC2000C Inclined Orbit Tracking Antenna Controller

iDirect modems can produce an analog voltage suitable for input to an ACU tracking an inclined orbit satellite. To enable the voltage output, include ...

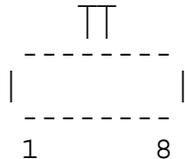
```
tx_handshake_enabled = 1
```

... in the modem options file.

The modem console port is an RJ45 receptacle on the back panel of the modem. Here are the connections between the modem and the ACU.

Modem RJ-45 Console Port Terminal	ACU Terminal	Description
Console Port RJ45-4	ACU AGC RTN, J1-1 (ACU Chassis Potential)	Analog return
Console Port RJ45-8	ACU AGC 2, J1-3	Analog voltage, varies with received signal strength (RSS). 0 to 2.5 volts when modem is unlocked, 2.6 to 5 volts when modem is locked.

### RJ-45 Plug Pinout (*Front View*)



### ACU Configuration

The ACU has two analog input channels. In this case, it is recommended to use AGC2. Each AGC channel has a gain and offset potentiometer adjustment accessible via openings in the back panel.

The AGC2 Gain and Offset pots should be adjusted so that when 0 volts is presented to the controller on the AGC2 the displayed signal strength value is approximately 0 *and* when 5 volts is input on AGC2 the displayed signal strength reading is around 950. The displayed signal strength value should vary as the input voltage changes from 0 to 5 volts.

There is an AGC tuneup procedure (applicable to both the RC1500B and RC2000C ACU's) in the RC2000C manual.

Both ACU's maintain user defined 'AGC Threshold' configuration items. When the AGC input signal strength value is greater than this value, the ACU assumes that a satellite signal is present and antenna peaking can occur. When the AGC2 Gain and Offset pots are configured as specified above, an appropriate value for the AGC Threshold is '500'. A signal strength value of 500 corresponds to an analog input voltage of approximately 2.5 volts. When the signal strength input level is above 2.5 volts the modem is locked and peaking can occur.

### iDirect Documentation

Quick Reference Document for Installing and Commissioning iDirect iFiniti series 3000, 5000, 7000  
Satellite Routers, Sept 14, 2005, Release 6.x  
(Remote Install iNFINITI Quick Reference 09\_14\_2005final.pdf)

Appendix B of the document describes Pointing the Antenna Through the Console Port. According to the document, the modem can be configured via a console (serial port) command to output a DC voltage that varies with received signal strength. The voltage can also be enabled by placing ...

`tx_handshake_enabled = 1`

... in the modem options file.

Appendix D of the document describes the signals available at the iDirect Console Port.