

# INSTALLATION WARNINGS

**!** Always power off the RCST (and External Power Supply if used) whenever connecting or disconnecting IFL cables. Failure to do so can result in damage to the RCST power supply.

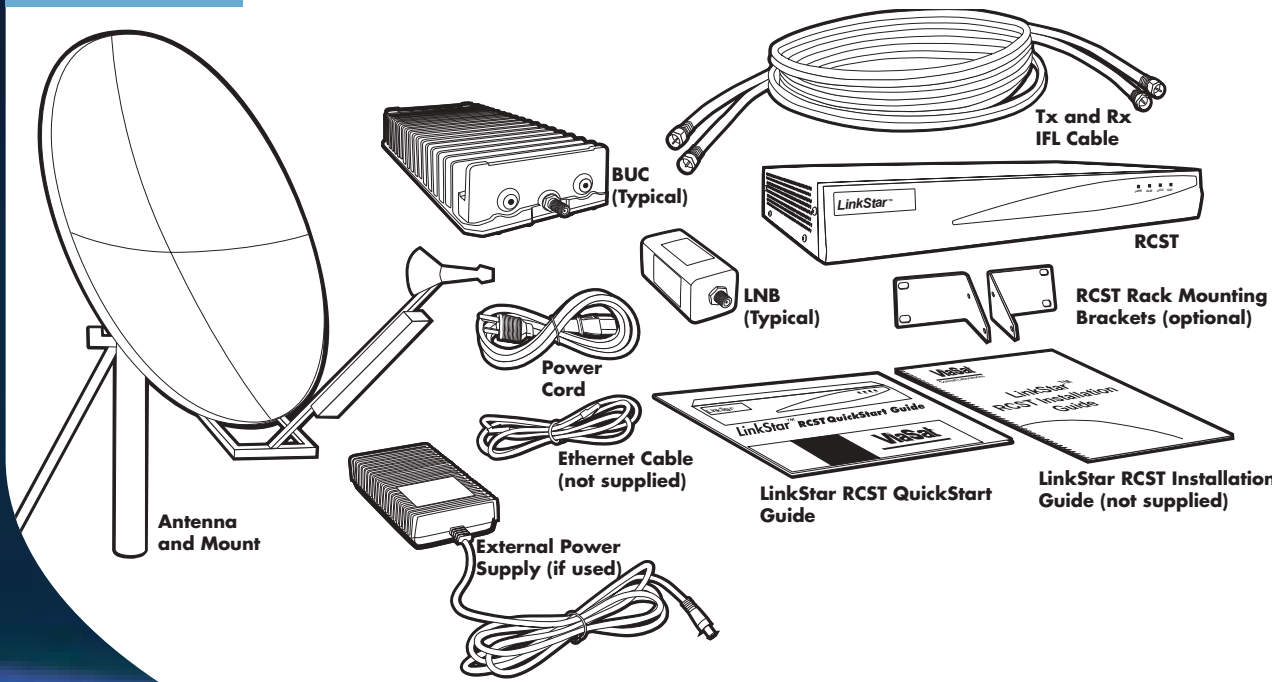
**!** Do not connect the transmit IFL to the RCST receive IF port. The BUC will pull excessive current and damage the power supply. Obtain receive synchronization before connecting the transmit IFL cable to the BUC.

**!** Do not short the center pin of the receive IF connector or receive IFL cable to ground. This will cause excessive current and will damage both the power supply and the RCST.

**!** If an External Power Supply is installed with the RCST, ensure the RCST boot parameter is set for "External." If this boot parameter is not set correctly, the internal power supply could fail after a few hours of operation due to excessive current drain.

**!** Verify IFL cable type, length, and need for External Power Supply as defined in the *LinkStar RCST Installation Guide*, Section 6, IFL Requirements. Failure to comply with these requirements can cause the RCST power supply to fail or shorten the life of the supply.

## 1. Inventory



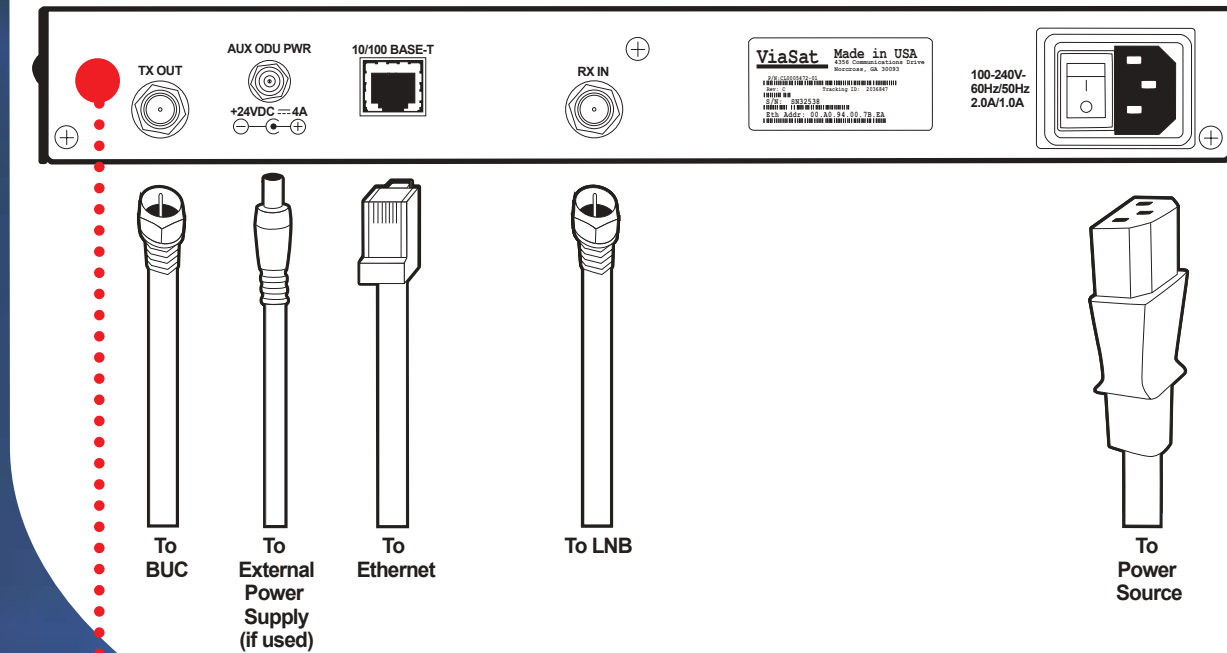
1a. Verify all equipment has been received and is of the correct type. (Refer to Section 4, *LinkStar Remote Site Components*, and Section 6, IFL Requirements, of the *LinkStar RCST Installation Guide*):

- Antenna
- Antenna Mount
- BUC
- External Power Supply (if used)
- LNB
- Return Channel Satellite Terminal (RCST)
- RCST Rack Mounting Brackets (optional)
- Tx/Rx IFL Cable(s)

Required Items (Not supplied with RCST):

- *LinkStar RCST Installation Guide* (one per installation team; also available at [www.viasat.com/skynet](http://www.viasat.com/skynet))
- Ethernet Cable (Crossover or Straight, if using hub)
- Windows® PC

## 2. Installation



**! WARNING!!**  
Before connecting or disconnecting any IFL cables, the power to the RCST and External Power Supply **MUST BE TURNED OFF.**

- 2a. Install the RCST on a table top or in a rack. DO NOT block the side air vents or the unit will overheat.
- 2b. Make sure power is OFF to RCST (and to External Power Supply, if used).
- 2c. Install antenna, LNB, BUC (and External Power Supply, if used).

**! CAUTION!!**  
**TO AVOID DAMAGING THE UNIT**  
DO NOT short center pin of RCST Rx connector or center pin of Rx IFL cable to ground.  
DO NOT connect the Tx IFL cable to the BUC until receive synchronization is established.

- 2d. Connect the Rx IFL cable from the LNB to the RCST Rx In, using the unlabeled cable of the Siamese cable pair.



# LinkStar™ RCST QuickStart Guide



## 3. RCST Setup

**Note:** The default IP address is always 10.0 plus the last two hex octets converted to decimal. In this example, 7B.EA hex converted to decimal is 123.234, therefore this RCST's default IP address is 10.0.123.234. The subnet is 255.255.255.0.

Ethernet address 00.A0.94.00.7B.EA

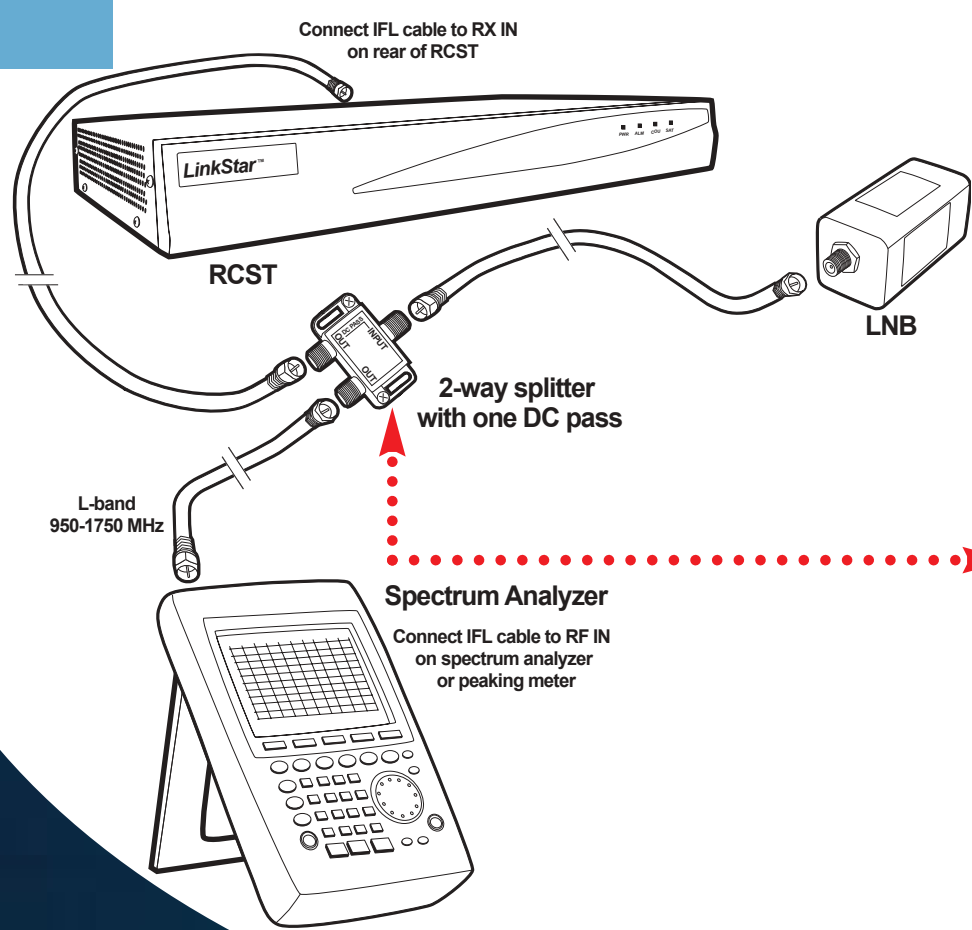
```

C:\WINNT\System32\cmd.exe - telnet 10.254.2.1
Password:
Logged in as root
dlux bootconf
MSET BootConf
Item 1: Addr: cfc8, Key 0 0x0 ItemMark 1 ArrayPos 0
connid 0x72e5 portID 0x11e0001
cIPID 0x1229 portID 0x345
TDMCarrierFreq 12700000 SymbolRate 50700000
Latititude 0 Longitude 0
TxPower -55 ODUStatus OFF
UCKOPar1 0x0 UCKOPar2 0x0
TimingLoopBU 0x0 Signature 0x0
    
```

Ethernet Crossover cable, or straight cable through a hub.

- 3a. Power ON RCST.
- 3b. Connect crossover cable (or straight cable through a hub) to 10/100 base-T port. Telnet to the RCST default IP address (see note at the left).
- 3c. Set boot parameters with `save` command:  
`save -t (Tx power (1/2 dB steps)) -c (control PID) -f (TDM carrier (in KHz)) -pcr (PCR PID) -pop (population ID) -o (ODU status) -s (symbol rate)`  
 Example: `save -t -60 -c 0x1029 -f 125000 -pcr 0x365 -pop 0x11e0004 -o 2 -s 27500000`  
 ODU status parameters  
 -o 1 If the RCST will power the BUC.  
 -o 2 If using an External Power Supply.
- 3d. Enter `dbpr bootconf` to check parameters.
- 3e. Enter `hw` to reboot terminal.

# 4. Antenna Pointing



- 4a. Power OFF RCST (and External Power Supply, if used).
- 4b. Connect cables, spectrum analyzer (or peaking meter), and DC block/splitter, as shown.
- 4c. Turn ON power to RCST (and plug in External Power Supply, if used).
- 4d. Point antenna to elevation and azimuth specified for satellite.
- 4e. Perform azimuth sweeps at different elevations until satellite beacon is found. Call the satellite operator to verify the polarization adjustment. If satellite beacon is not found, refer to Troubleshooting, Item B in this QuickStart Guide.

**CAUTION!!**

**DC VOLTAGE IS PRESENT ON THE IFL CABLES**

To prevent damage to the spectrum analyzer, be sure to use a splitter that blocks the DC to the spectrum analyzer.



# 5. Receive Synchronization



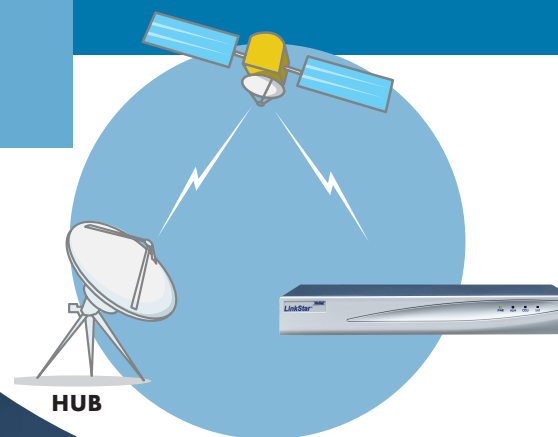
- 5a. Turn OFF power to RCST (and unplug External Power Supply, if used).
- 5b. Disconnect cables from spectrum analyzer and DC block/splitter.
- 5c. Connect the Rx IFL cable from the LNB to the RCST Rx In. DO NOT connect the Tx IFL cable from the BUC to Tx Out.
- 5d. Turn ON power to RCST (and plug in power cord for External Power Supply, if used).
- 5e. Check SAT LED:  
Blinking slowly indicates Rx sync.  
Blinking quickly indicates NCR sync (1.0.8 and later). If Rx sync is not acquired, refer to Troubleshooting, Item B in this QuickStart Guide.

# 6. Transmit Synchronization



- 6a. Turn OFF power to RCST (and unplug the External Power Supply, if used).
- 6b. Connect Tx IFL cable from BUC to RCST Tx Out.
- 6c. Turn ON power to RCST. ODU LED should be steady ON. After 5 minutes, SAT LED should be steady ON to indicate Tx sync. If SAT LED is OFF or blinking, refer to Troubleshooting, Item D in this QuickStart Guide.

# 7. Final Check



- 7a. Contact the Hub operator to verify:
  - RCST status (**ps**, **tcmp** commands).
  - Ping from Hub to RCST.
  - Software version (**lmp** command).
- 7b. If the ping fails, refer to Troubleshooting, Item F in this QuickStart Guide.

If the ping was successful, congratulations! You have installed your RCST!



# Troubleshooting

Problem	Things You Should Check	For more detail, refer to the <i>LinkStar RCST Installation Guide (Item No. ING00076)</i> , Section...
<b>A.</b> RCST does not power on	<ol style="list-style-type: none"> <li>AC power wired to 110/220 VAC.</li> <li>Blown fuse.</li> <li>Bad AC power cable.</li> </ol> If the RCST still does not power ON, replace the RCST.	13.3 RCST Power ON Failure " "
<b>B.</b> No Receive Synchronization (SAT LED is not blinking.)	<ol style="list-style-type: none"> <li>Boot parameters:                             <ul style="list-style-type: none"> <li>TDM frequency.</li> <li>TDM symbol rate.</li> </ul> </li> <li>IFL cable connectors.</li> <li>Receive IFL cable type, length.</li> <li>LNB frequency.</li> <li>TDM signal level.</li> <li>Noise level.</li> <li>Interfering signal.</li> <li>Obstructions.</li> <li>Antenna polarization.</li> <li>Antenna pointing.</li> </ol>	13.5.5 TDM Frequency and Symbol Rate " " 13.5.3 Receive IFL Cable " 13.5.2 LNB 13.5.1 Receive TDM Signal 13.5.4 Antenna " " "
<b>C.</b> High Receive BER	<ol style="list-style-type: none"> <li>Weather conditions.</li> <li>TDM signal level.</li> <li>Cable attenuation.</li> <li>Antenna polarization.</li> <li>Antenna pointing.</li> <li>Interference.</li> </ol>	13.6 Receive TDM BER " " " " "
<b>D.</b> No Transmit Synchronization (LED is not solid steady green.)	<ol style="list-style-type: none"> <li>Boot parameters:                             <ul style="list-style-type: none"> <li>Terminal ID.</li> <li>Population ID.</li> <li>Control PID.</li> <li>Tx power.</li> </ul> </li> <li>Transmit IFL Cable type, length.</li> <li>BUC output power.</li> </ol>	13.7.2 RCST Boot Parameters " " " " 13.7.4 TDMA Transmit Level "
<b>E.</b> High RCST Transmit BER	<ol style="list-style-type: none"> <li>Weather conditions.</li> <li>TDMA signal level at GCU.</li> <li>BUC output power.</li> <li>Antenna polarization.</li> </ol>	13.8 RCST Transmit BER " " "
<b>F.</b> No IP Traffic	<ol style="list-style-type: none"> <li>Allocated bandwidth.</li> <li>IP Status.</li> </ol>	13.9 Traffic Test "

© 2003 ViaSat, Inc. All rights reserved.  
LinkStar™ is a trademark of ViaSat, Inc.

ViaSat Proprietary.  
No part of this document may be reproduced or transmitted in any form or by any means, electronic or mechanical, for any purpose, without the express written permission of ViaSat, Inc.

## How to Contact Us

e-mail  
noc-support@viasat.com

24/7 customer support  
+1 (888)272-7232 (U.S.)  
+1 (760)476-2600 (Outside U.S.)

Reorder Information:  
Item No. 1004772 Rev.001

web  
www.viasat.com/skynet