SkyWire Quick Start Procedure

Quick Start Guide

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SkyWire Quick Start Procedure AN213 - Record of Revisions

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Revision Level	Date	Reason for Change
1.0	Nov. 14, 2007	Initial Release
1.1	Dec 12, 2007	Reformatted
1.2	Jan 23, 2008	Update procedure to reflect changes in the configurator screens
1.3	Mar 31, 2008	Updated Configurator Screens

Revision	Engineering Approval	Production Approval
Level	Printed Name, Date, and Signature	Printed Name, Date, and Signature
1.3		

SkyWire Quick Start Procedure

1.0 Introduction

The purpose of this document is to provide simple instructions to quickly configure a SkyWire Gateway. This is not a replacement to the SkyWire specifications manual. This is a help document to leverage the GUI capabilities of the SkyWire Configuration Controller. Refer to the SkyWire manual (TM131) for operational instruction and descriptions.

2.0 Required Items

SkyWire MDX420 Satellite Network Gateway PC or Laptop with the SkyWire Configuration Controller installed

3.0 Login

Login					X
	Destination	172.18.1	00.165 V3]
SNMP v2					
	Read Co	mmunity	public		
	Rd/WR Co	mmunity	public		
SNMP v3	-				
	Use	er Profile	Administrator	*	
	Authentication P	assword	•••••		
	Privacy P	assword	•••••		
			Show Password		Ok Cancel

Figure 3-1 Login Screen – Gateway IP Address Auto-Detected



The gateway IP address is automatically detected by the application. Click on the **under** to configure and save the gateway destination profile. Select the desired polling interval along with the SNMP protocol version to use, then click on the Save button to store the destination profile for easy future access.

Destination Configuration					
Destination Name	172.18.100.165	Save			
IP Address	172 . 18 . 100 . 165	Delete			
Polling Interval	1	Cancel			
	○ SNMPv2				

Figure 3-2 Destination Configuration

On the Login screen, specify the Read and Read/Write communities (defaults to "public") then press the OK button to connect to the SkyWire Gateway. The community settings have to match the settings inside the gateway.

Once the user is authenticated, a quick summary of the demodulator and network status, event logs, and summary faults are displayed. A SkyWire system that has never been configured and is not part of a network looks as follows.

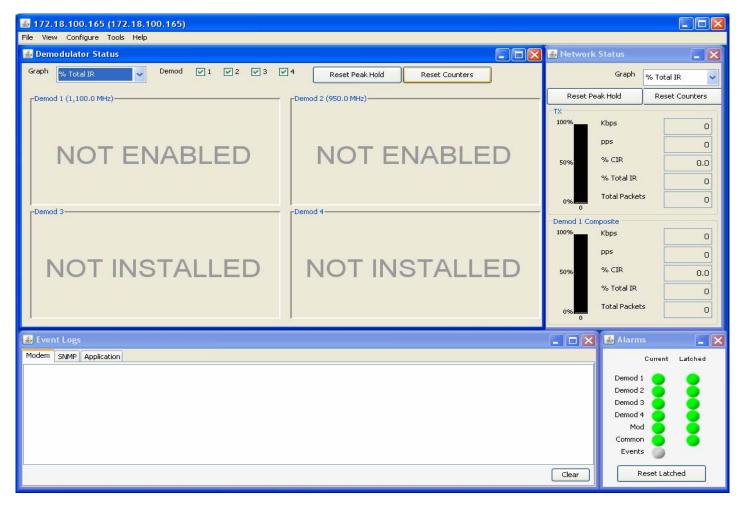


Figure 3-3 SkyWire Configuration Controller

The user gets to see which demodulators are installed and/or enabled. No remotes are active at this point.

4.0 SkyWire Modem Configuration

Using the SkyWire top-level menu system, select the Configure / Satellite Link / Modulator menu.

Configure Tools Help	
Satellite Link 🔹 🕨	BUC
Terrestrial Interface	Modulator
Network Configuration 🕨	LNB
System	Demodulator 1
Alarms	Demodulator 2

Figure 4-1 MDI Modulator Menu Selection

The satellite link configuration window groups all modem system components in one area through the use of tabs. Select a tab then press the Edit button to make modifications. It is that simple.

🕌 Satellite Link Configuration						
Modulator Demod 1 Demod 2 Demod 3 Demod 4 BUC LNB						
Tx Enable			Auto Start			
Network Spec	RADYNE MESH	~	Spectral Polarity	Normal		
RF (MHz)	1100,000000		Carrier Level	-5.8		
IF (MHz)	1100:000000		Selected Demod	15		
Modulation	QPSK	~	Selected Remote	2		
Inner FEC	TPC 0.793	~	Gateway ID	13012c19b2010ce		
Data Rate (bps)	755,393			·		
Symbol Rate (sps)	512,000					
	Edit	Reset	Ok	Cancel		
					_	

Figure 4-2 Modulator Tab Satellite Link Configuration

4.1 Modulator Configuration

To setup the modulator, simply enable the transmitter and select the carrier and bandwidth as you would a normal SCPC modem. See Figure 4-3 for Example Settings.

Once satisfied with the new settings, click on the Apply button to have them take effect.

NOTE
y Identification number, this is unique to every product and later during network configuration.

🛃 Satellite Link Configuration						
Modulator Demod 1 Demod 2 Demod 3 Demod 4 BUC LNB						
Tx Enable			Auto Start			
Network Spec	RADYNE MESH	~	Spectral Polarity	Normal		
RF (MHz)	1100;000000		Carrier Level	-5.0		
IF (MHz)	1100.000000		Selected Demod	1		
Modulation	QPSK	*	Selected Remote	2		
Inner FEC	TPC 0.793	*	Gateway ID	13012c19b2010ce		
Data Rate (bps)	755,393			1		
Symbol Rate (sps)	512,000					
	Apply	Res	et Ok	Cancel		

Figure 4-3 Modulator Tab Edit Mode

4.2 Demodulator Configuration

There are up to four demodulators that may be installed in the SkyWire Gateway. To configure any of the installed demodulators, select the corresponding demod tab and click on the Enable button. Then select the carrier and bandwidth as you would a normal SCPC modem. See Figure 4-4 for Example Settings.

Once satisfied with the new settings, click on the Apply button to have them take effect.

Repeat the above process for all the demodulators that are installed in the SkyWire Gateway.

🛃 Satellite Link Configuration						
Modulator Demod 1 Demod	d 2 Demod 3 Demod 4 BU	JC LNB				-
Rx Enable			CRC Control			
Network Spec	RADYNE MESH	~	Spectral Polarity	Normal	~	
RF (MHz)	1010.000000					
IF (MHz)	1100.000000					
Modulation	QPSK	~				
Inner FEC	TPC 0.793	~				
Data Rate (bps)	885,226					
Symbol Rate (sps)	500,000					
Apply Reset Ok Cancel						

Figure 4-4 Demodulator 1 Tab Edit Mode

4.3 BUC and LNB Configuration

To setup the BUC and/or LNB, select the corresponding tab on the satellite link configuration window. Enter the LO and LO Mix. Click on the Enable button to activate the DC Supply and Frequency Reference to the BUC or LNB. They are individually controlled with Checked meaning that they are enabled, unchecked meaning that they are disabled.

Once satisfied with the new settings, click on the Apply button to have them take effect.



🕌 Satellite Link Configurati	on	
Modulator Demod 1 Demod 2	Demod 3 Demod 4 BUC LNB	
LO Frequency (MHz)	0	
LO Mix	Low side 🗸	
DC Supply Enable		
Freq. Reference Enable		
	Apply Reset Ok Cancel	

Figure 4-5 BUC Tab Edit Mode

🕌 Satellite Link Configurati	on	
Modulator Demod 1 Demod 2	Demod 3 Demod 4 BUC LNB	
LO Frequency (MHz)	0	
LO Mix	Low side 🗸	
DC Supply Enable		
Freq. Reference Enable		
	Apply Reset Ok Cancel	

Figure 4-6 LNB Tab Edit Mode

4.4 Terrestrial Interface

Daisy chain, flow control, and quality of service are all accessible from the terrestrial interface window. Select Fair Weighted traffic to insure even the lowest priority traffic gets some bandwidth

Default settings for the terrestrial interface are:

M&C Control Port

In-Band Control :	Disabled
Daisy Chain :	Disabled
-	

Ethernet Data Port

Flow Control	:	Enabled
Daisy Chain	:	Disabled

Quality of Service

Туре	:	Normal
Queuing	:	Fair Weighted

🅌 Terrestrial I	nterface 📃 🔀
M&C Control Port	
	Enable
In-Band	Control 🔽
Ethernet Data Po	rt
	Enable
Flow	Control 🔽
Dais	sy Chain 🔽
Quality of Serv	ice
Туре	Port Based 🛛 💌
Queuing	Strict Priority
Reset A	ply Ok Cancel

Figure 4-7 Terrestrial Interface Edit Mode

5.0 SkyWire Network Configuration

From the main menu, select Network Configuration and click on an installed demodulator. If only one demodulator is installed, click on "Demod1" selection. The following window will appear.

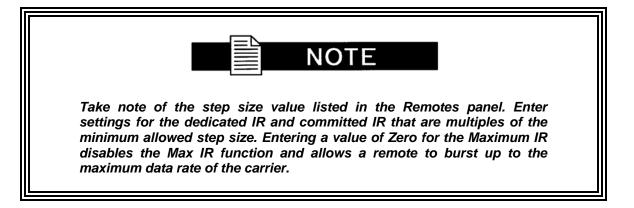
🕌 Network (Configuration				
Demod 1 Dem	nod 2 Demod 3 Demod 4				
Channel					
Demod	1	Modulation	QPSK	Start Network	
RF (MHz)	1100.000000	Inner FEC	TPC 0.793		
IF (MHz)	1100.000000	Data Rate (Kbps)	738		
Remotes					
	Step Size (Kbps)	46 46	46		
	Enabled	Dedicated IR Com	mitted IR Maximum IF	Elevation Anale Access Cod	e Circuit Name
Create					
Create	Edit 2				
Create					
Create	Edit 4				
Create	Edit 5				
Create	Edit 6				
Create	Edit 7				
Create	Edit 8				
	Total	0	0	0	
				Reset	OK Cancel

Figure 5-1 Network Configuration – Brand New Network

To configure the local SkyWire Gateway to join the network as remote 1 for example, click on the "Create" button to the left of remote 1 then click on the "Edit" button.

	Enabled	Dedicated IR	Committed IR	Maximum IR	Elevation Angle	Access Code	Circuit Name
Create Edit	1						

Figure 5-2 Remote Network Configuration



The following range checks are performed on the values.

Dedicated IR <= Committed IR <= Maximum IR

In section 4.1, we took note of the Gateway Identification number. Please enter that value in the "Access Code" field.

To complete the configuration, specify the antenna elevation angle, circuit name, and then apply the new settings. The circuit name will allow you to easily track remotes on the Demodulator Summary Status screen. The circuit name will appear as a tooltip when the mouse is hovered over a remote's graphics bar.

An elevation angle of 270° should be used when performing tests in the laboratory.

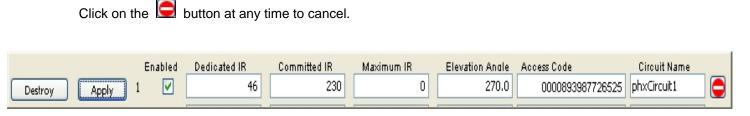


Figure 5-3 Remote Network Configuration Edit Mode

Repeat the process for all SkyWire Gateways that need to join this network. Figure 5-4 shows a fully loaded network and figure 5-5 shows a summary status view of a configured network.

Once configured, click the Start Network button to form the Mesh Network.

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🕌 Network (Configuration	D						
Demod 1 Dem	nod 2 Demod 3	Demod 4						
Channel				11.0	7	<i>c</i>		
Demod	1		Mo	dulation QPSK		Start Netwo	rk	
RF (MHz)	1100.000000		In	ner FEC TPC 0.793				
IF (MHz)	Data Rate (Kbps)		e (Kbps) 738	5) 738				
Remotes								
	Step) Size (Kbps)	46	46	46			
		Enabled	Dedicated IR	Committed IR	Maximum IR	Elevation Anole	Access Code	Circuit Name
Destroy	Edit	1 🗹	46	230	0	270,0	0000893987726525	phxCircuit1
Destroy	Edit	2	46	46	184	270.0	01121be1832012e5	phxCircuit2
Destroy	Edit	3 🗹	46	46	0	270,0	000000882772662	phxCircuit3
Destroy	Edit	4 🗹	46	46	0	270,0	0000087243242992	phxCircuit4
Destroy	Edit	5 🗹	46	46	0	270.0	0000634574266566	phxCircuit5
Destroy	Edit	6 🗹	46	92	184	270.0	5649498747737700	phxCircuit6
Destroy	Edit	7 🗹	46	92	184	270:0	0324578998334678	phxCircuit7
Destroy	Edit	8 🗹	46	46	0	270.0	000000000000000000000000000000000000000	phxCircuit8
		Total	368	644	552			
						Res	et OK	Cancel

Figure 5-4 Configured Network – Remotes Created and Enabled

Skywire Controller				
🛃 Demodulator Status		Setwork S	Status	
Graph % Max IR 🔽 Demod 🔽 1 🔽 2 🔽 3	4 Reset Peak Hold Reset Counters		Graph	bps 🗸
Demod 1 (9800.0 MH2) 100% 50% 66 65 55 69 58 9 12 8 Demod 3 Demod 3 Composite Status Carrier (dBm) 40.27 Eb/No (dB) 4.88 PPS 1413.0 % Total IR 95.06 PER 1.29e-06 Packet Errors 26.0 Total Packets 2.01e+07 Demod 3	Demod 2 (9000.0 MH2) 100% 50% 50% 56 21 39 49 25 31 57 56 Demod 4 NOT INSTALLED	iei iel ie2 Demod 1 ie3 ie1	k Hold Kbps pps % CIR % Total IR Total Packets Kbps pps % CIR % Total IR Total Packets	176.63 1413.0 178.0 95.06
🔹 Event Logs		🛛	🕌 Alarms	
Modem SNMP Application			Demod 1 Demod 2 Demod 3 Demod 4 Mod Common Events	
		Clear	Re	eset Latched

Figure 5-5 Configured Network – Summary View