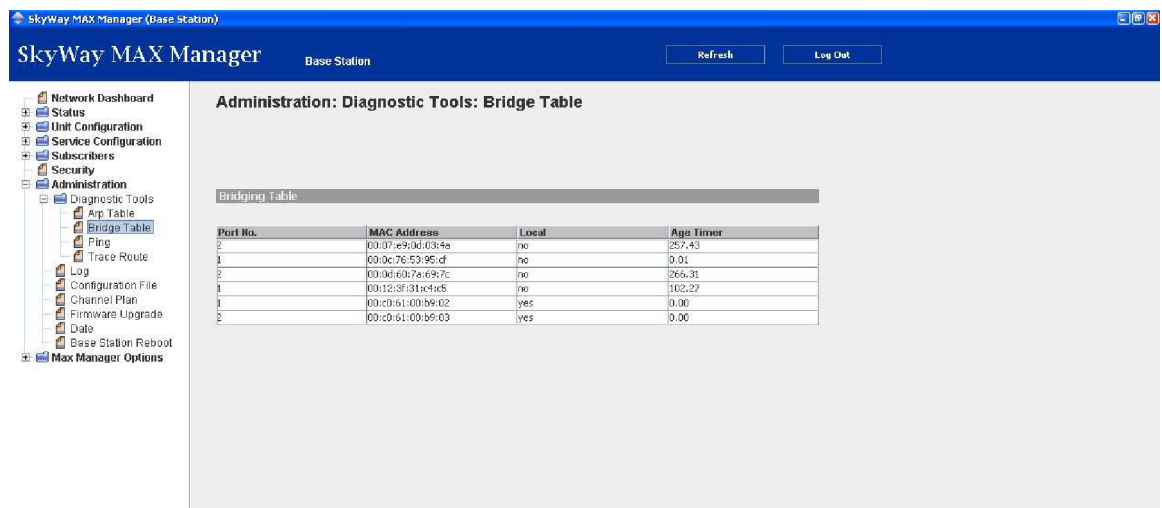## G. Diagnostic Tools

The BSU contains a number of embedded network tools to assist with the debug and verification of network operation.

These tools include:
*   Ping
*   TraceRt
*   ARP Table
*   Bridge Table

Usage and syntax of these tools is similar to those of standard networking appliances. Access to these tools on the Manager Application is via **Administration : Diagnostic Tools**.

VII. Appendix A – System Defaults

A. Default Configuration

BSU	
Login	admin
Password	admin
IP Address	192.168.0.1
Netmask	255.255.255.0
Default Gateway	192.168.0.10
FTP Address	<blank>
FTP User	<blank>
FTP Password	<blank>
RF Channel Plan	Default.cc
RF Power	36 dBm
Optimal RSSI	-70 dBm
Uplink Modulation	Auto
Downlink Modulation	Auto
BSID	00000B:xxxxxx, where x is last 3 octets of RF MAC
Security	
• X.509 Certificates	Disabled
• Access Control List	Disabled
• Encryption	Clear
Administrative Services	None
User Services	None
Name	<blank>
Location	<blank>
GPS Coordinates	<blank>
Antenna Bearing	<blank>
Antenna Beamwidth	<blank>
SS	
Login	admin
Password	admin

SS (cont'd)	
IP Address	192.168.0.2
Netmask	255.255.255.0
Default Gateway	192.168.0.10
FTP Address	<blank>
FTP User	<blank>
FTP Password	<blank>
BSID Verification	Disabled
BSID table	<none>
RF Channel Plan	Default.cc
SS Name	<blank>
SS Location	<blank>
GPS Coordinates	<blank>

B. Default Channel Plan File (3.4 – 3.6 GHz operation)

For coverage of the 3.4-3.6 GHz frequency range, the SkyWay MAX system uses a default channel plan which is a subset of the CEPT/ERC/REC 14-03E channel plan.

Operators may use the default channel plan file, as-is, or may use it as template to create custom .cc files. These files can be uploaded to the same directory in the BSU and SS and activated in the system through the management system.

Filename: default.cc
Path: /etc/umac/cc.d

```
#/etc/umac/cc.d/default.cc-----------------------------
#
# Contains default channel centers for 3.4-3.6 GHz operation
#
# Valid Entries are:
#
# name CHANNEL_PLAN_NAME
#   CHANNEL_PLAN_NAME is a string for name of the plan
#
# abbrev ABBREVIATION
#   ABBREVIATION of plan name up to 4 symbols
#
# channel FREQ  BW
#   FREQ - channel frequency in kHz
#   BW   - channel bandwidth in MHz
#------------------------------------------------------
#
# This section is for common channel plan properties
#
name            Default
abbrev          DB
cyclic_prefix   32


#------------------------------------------------------
# Channels are listed below this line.
#
#----------- Freq ----- BW ----------------------------
channel     3411750     3500
channel     3418750     3500
channel     3411750     3500
channel     3418750     3500
channel     3425750     3500
channel     3432750     3500
channel     3439750     3500
channel     3461750     3500
channel     3468750     3500
channel     3475750     3500
channel     3482750     3500
channel     3489750     3500
```

```
channel     3501750    3500
channel     3508750    3500
channel     3515750    3500
channel     3522750    3500
channel     3529750    3500
channel     3536750    3500
channel     3543750    3500
channel     3551750    3500
channel     3558750    3500
channel     3565750    3500
channel     3572750    3500
channel     3579750    3500
channel     3586750    3500
channel     3593750    3500
# 7 MHz channels
channel     3420500    7000
channel     3434500    7000
channel     3463500    7000
channel     3477500    7000
channel     3491500    7000
channel     3510500    7000
channel     3524500    7000
channel     3538500    7000
channel     3553500    7000
channel     3567500    7000
channel     3581500    7000
channel     3595500    7000
#end
```

VIII. Appendix B Management Systems

A. Manager Application – Expanded Navigation Bar
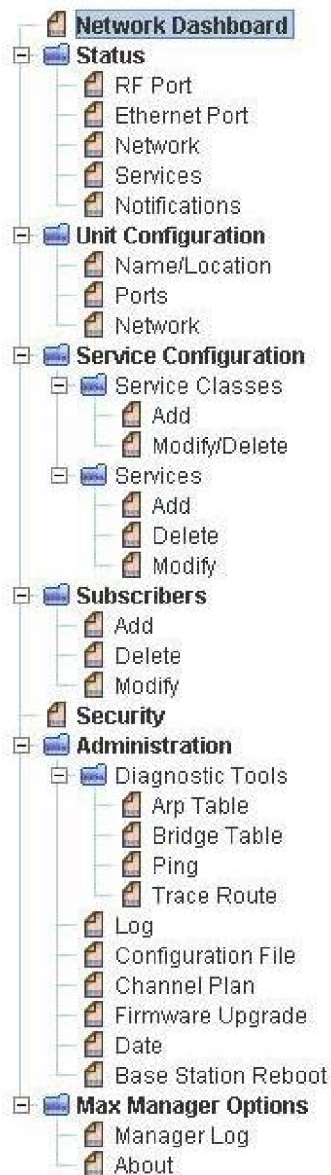
B. Telnet / Console Commands

IX. Appendix C Services - Advanced

A. Available Classifiers

The following Classifier Types are supported on the SkyWay MAX system

- **802.3**
  - Source MAC Address
  - Destination MAC Address
  - Ethertype

- **802.1p/q**
  - VLAN ID
  - VLAN Priority Range

- **Ipv4**
  - Protocol + Port Range
  - Source Address, with bit mask
  - Destination Address, with bit mask
  - ToS Value, with bit mask

B. QoS Scheduling Parameters

Available Parameters, by Scheduling Type

Scheduling Type	Supported Parameters
UGS	Grant Size Grant Interval Maximum Sustained Traffic Rate Minimum Reserved Traffic Rate Maximum Latency Traffic Priority
rtPS	Grant Interval Maximum Sustained Traffic Rate Minimum Reserved Traffic Rate Maximum Latency Traffic Priority
nrtPS	Maximum Sustained Traffic Rate Minimum Reserved Traffic Rate Traffic Priority
BE	Maximum Sustained Traffic Rate Traffic Priority

Parameter Definitions

Parameter	Description	Default Value
1. Grant Size:	The size of each UGS grant in bytes.	--
2. Grant Interval.	The period between UGS grants, or rtPS polls, in mS	20
3. Max Sustained Traffic Rate	Upper limit, or ceiling, of traffic rate, in bits/second A setting of zero means unlimited.	0
4. Min Reserved Traffic Rate	Lower limit of traffic rate reserved per Service, in bits/sec	250
5. Max Latency	Upper latency limit per Service, in mS. Only applies when actual traffic rate is < Min Reserved Rate (ie - the Service is not overloading the reservation.	1200
6.Traffic Priority		
Defines priority when packet matches	0 (Administrative and Open IP Services)	
classification on multiple Services.	7 (User Services)	
Range is 0-7, with 7 as the highest priority.		

C. Recommended Service Class configurations

1. Open IP
2. Internet Data
3. Voice
4. IPTV