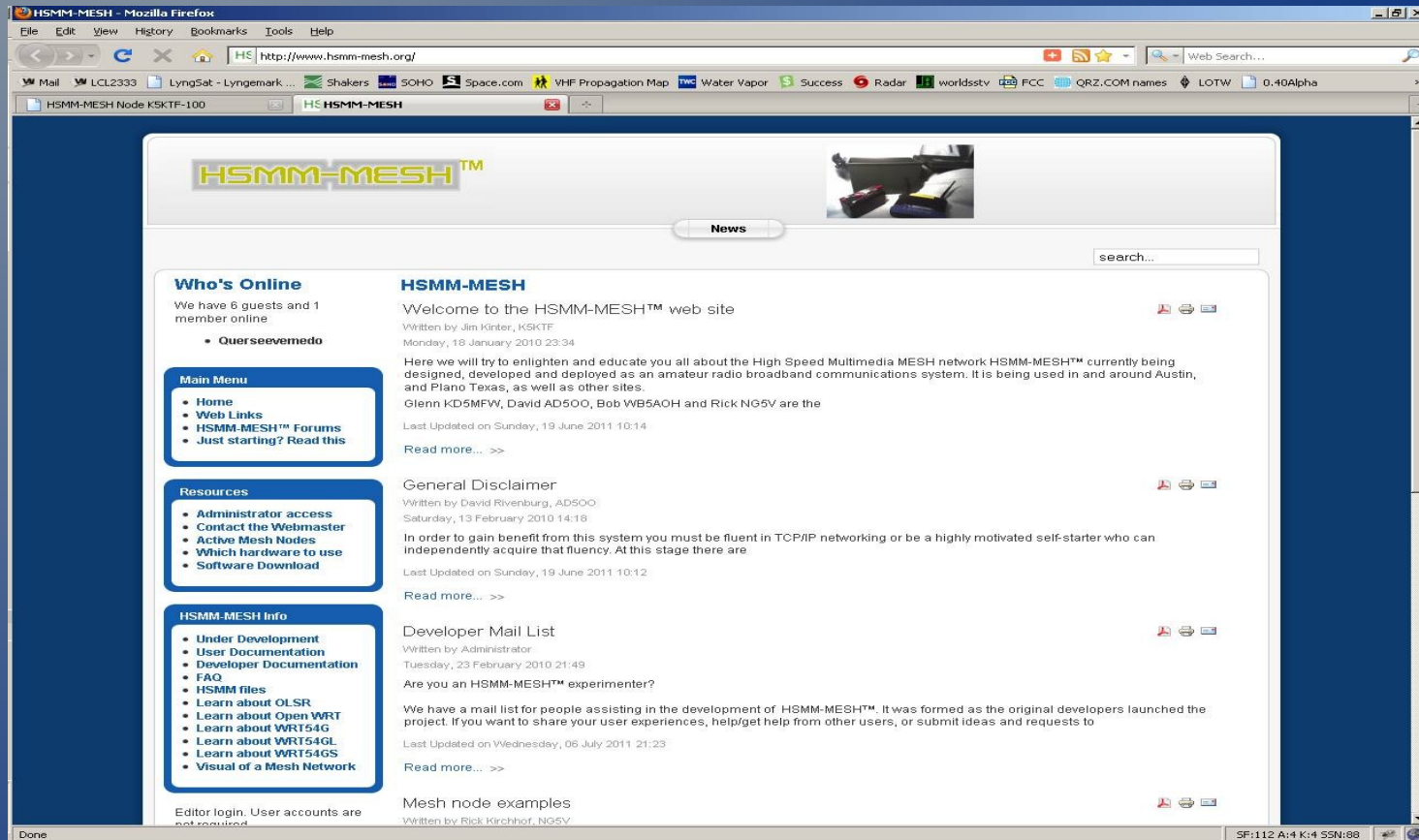


Step-by-step

Here is how simple it is to get on the Mesh...

www.HSMM-MESH.org

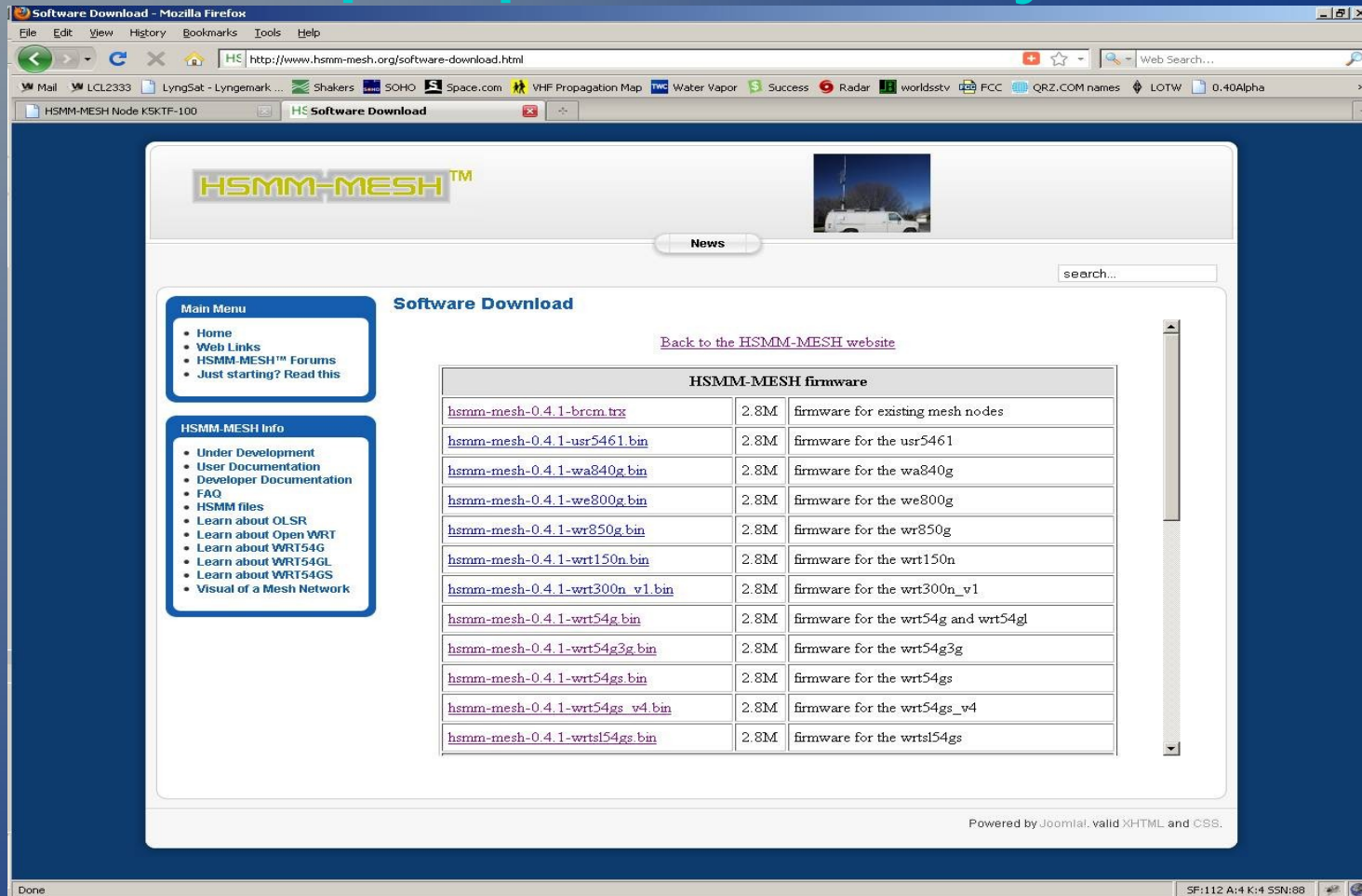
Go to HSMM-MESH website – Software Download page



The screenshot shows a Mozilla Firefox browser window displaying the HSMM-MESH website. The browser's address bar shows the URL <http://www.hsmm-mesh.org/>. The website has a dark blue header with the HSMM-MESH logo and a navigation menu. The main content area is white and features several sections:

- Who's Online:** A section indicating that there are 6 guests and 1 member online, with a list of users including Quersevevemedo.
- Main Menu:** A blue-bordered box containing links for Home, Web Links, HSMM-MESH™ Forums, and Just starting? Read this.
- Resources:** A blue-bordered box containing links for Administrator access, Contact the Webmaster, Active Mesh Nodes, Which hardware to use, and Software Download.
- HSMM-MESH Info:** A blue-bordered box containing links for Under Development, User Documentation, Developer Documentation, FAQ, HSMM files, Learn about OLSR, Learn about WRT54G, Learn about WRT54GL, Learn about WRT54GS, and Visual of a Mesh Network.
- News:** A section with a search bar and several news items:
 - HSMM-MESH:** A welcome message to the website, written by Jim Kinter, KSKTF, dated Monday, 18 January 2010 23:34. It describes the network and lists other sites.
 - General Disclaimer:** A disclaimer written by David Rivenburg, AD500, dated Saturday, 13 February 2010 14:18, regarding the use of the system.
 - Developer Mail List:** A section for a developer mail list, written by Administrator, dated Tuesday, 23 February 2010 21:49.
 - Mesh node examples:** A section for mesh node examples, written by Rick Kirchoff, NGSV.

Save the proper file for your model



The screenshot shows a Mozilla Firefox browser window displaying the HSM-MESH website. The page title is "Software Download - Mozilla Firefox" and the URL is "http://www.hsmm-mesh.org/software-download.html". The website header features the "HSMM-MESH™" logo and a "News" button. A search bar is located on the right side of the page. The main content area is titled "Software Download" and includes a link to "Back to the HSMM-MESH website". Below this, there is a table titled "HSMM-MESH firmware" with three columns: filename, size, and description. The table lists various firmware files for different mesh nodes, all with a size of 2.8M. On the left side of the page, there are two menu sections: "Main Menu" and "HSMM-MESH Info". The "Main Menu" section includes links for Home, Web Links, HSMM-MESH™ Forums, and Just starting? Read this. The "HSMM-MESH Info" section includes links for Under Development, User Documentation, Developer Documentation, FAQ, HSMM files, Learn about OLSR, Learn about Open WRT, Learn about WRT54G, Learn about WRT54GL, Learn about WRT54GS, and Visual of a Mesh Network. The footer of the page indicates it is "Powered by Joomla!, valid XHTML and CSS." and the browser status bar shows "Done" and "5F:112 A:4 K:4 SSN:88".

HSMM-MESH™

News

search...

Software Download

[Back to the HSMM-MESH website](#)

HSMM-MESH firmware		
hsmm-mesh-0.4.1-brcm trx	2.8M	firmware for existing mesh nodes
hsmm-mesh-0.4.1-usr5461 bin	2.8M	firmware for the usr5461
hsmm-mesh-0.4.1-wa840g bin	2.8M	firmware for the wa840g
hsmm-mesh-0.4.1-we800g bin	2.8M	firmware for the we800g
hsmm-mesh-0.4.1-wr850g bin	2.8M	firmware for the wr850g
hsmm-mesh-0.4.1-wrt150n bin	2.8M	firmware for the wrt150n
hsmm-mesh-0.4.1-wrt300n v1 bin	2.8M	firmware for the wrt300n_v1
hsmm-mesh-0.4.1-wrt54g bin	2.8M	firmware for the wrt54g and wrt54gl
hsmm-mesh-0.4.1-wrt54g3g bin	2.8M	firmware for the wrt54g3g
hsmm-mesh-0.4.1-wrt54gs bin	2.8M	firmware for the wrt54gs
hsmm-mesh-0.4.1-wrt54gs v4 bin	2.8M	firmware for the wrt54gs_v4
hsmm-mesh-0.4.1-wrt54gs bin	2.8M	firmware for the wrt54gs

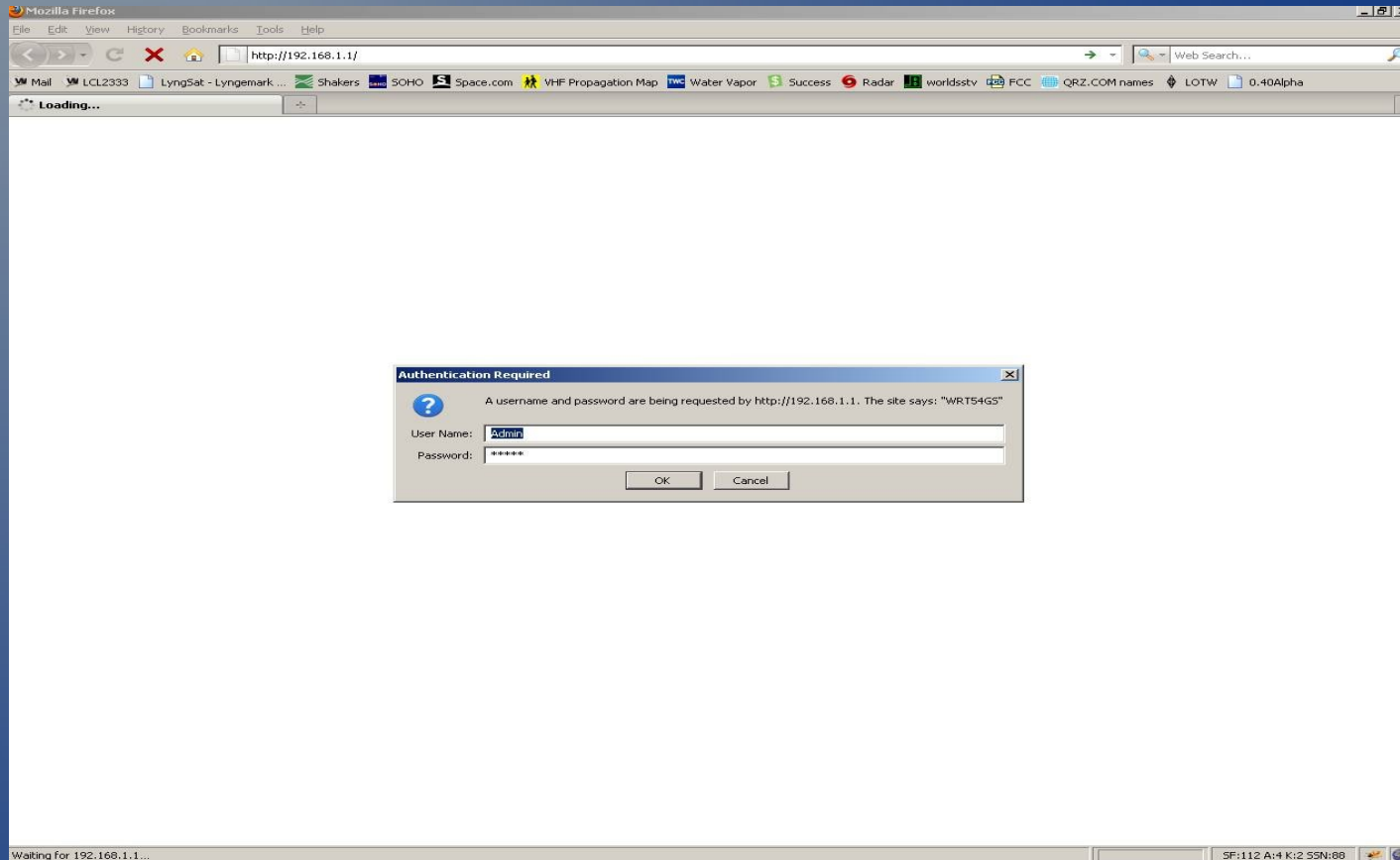
Powered by Joomla!, valid XHTML and CSS.

Done 5F:112 A:4 K:4 SSN:88

If purchased used, push and hold the reset button on the back with a pen or similar object for 10 seconds



Connect PC to router, boot PC, open favorite browser, and log in to router administration page (no username, pass: admin)



Go to Administration page

The screenshot shows the Linksys WRT54GS administration page in Mozilla Firefox. The browser address bar shows `http://192.168.1.1/`. The page title is "Basic Setup - Mozilla Firefox". The Linksys logo is at the top left, and the firmware version is v4.71-4. The main navigation bar includes "Setup", "Wireless", "Security", "Access Restrictions", "Applications & Gaming", "Administration", and "Status". The "Administration" tab is selected, and the "Automatic Configuration - DHCP" sub-tab is active. The main content area shows the DHCP configuration form with the following fields and values:

- Router Name: WRT54GS
- Host Name: (empty)
- Domain Name: (empty)
- MTU: Auto
- Size: 1500
- Local IP Address: 192.168.1.1
- Subnet Mask: 255.255.255.0
- DHCP Server: Enable Disable
- Starting IP Address: 192.168.1.100
- Maximum Number of DHCP Users: 50
- IP Address Range: 192.168.1.100 to 149
- Client Lease Time: 0 minutes (0 means one day)
- Static DNS 1: 0.0.0.0
- Static DNS 2: 0.0.0.0
- Static DNS 3: 0.0.0.0
- WINS: 0.0.0.0
- Time Zone: (GMT-08:00) Pacific Time (USA & Canada)
- Automatically adjust clock for daylight saving changes

The right-hand sidebar contains explanatory text for the DHCP settings:

- Automatic Configuration - DHCP:** This setting is most commonly used by Cable operators.
- Host Name:** Enter the host name provided by your ISP.
- Domain Name:** Enter the domain name provided by your ISP.
- More...**
- Local IP Address:** This is the address of the router.
- Subnet Mask:** This is the subnet mask of the router.
- DHCP Server:** Allows the router to manage your IP addresses.
- Starting IP Address:** The address you would like to start with.
- Maximum number of DHCP Users:** You may limit the number of addresses your router hands out.
- More...**
- Time Setting:** Choose the time zone you are in. The router can also adjust automatically for daylight savings time.

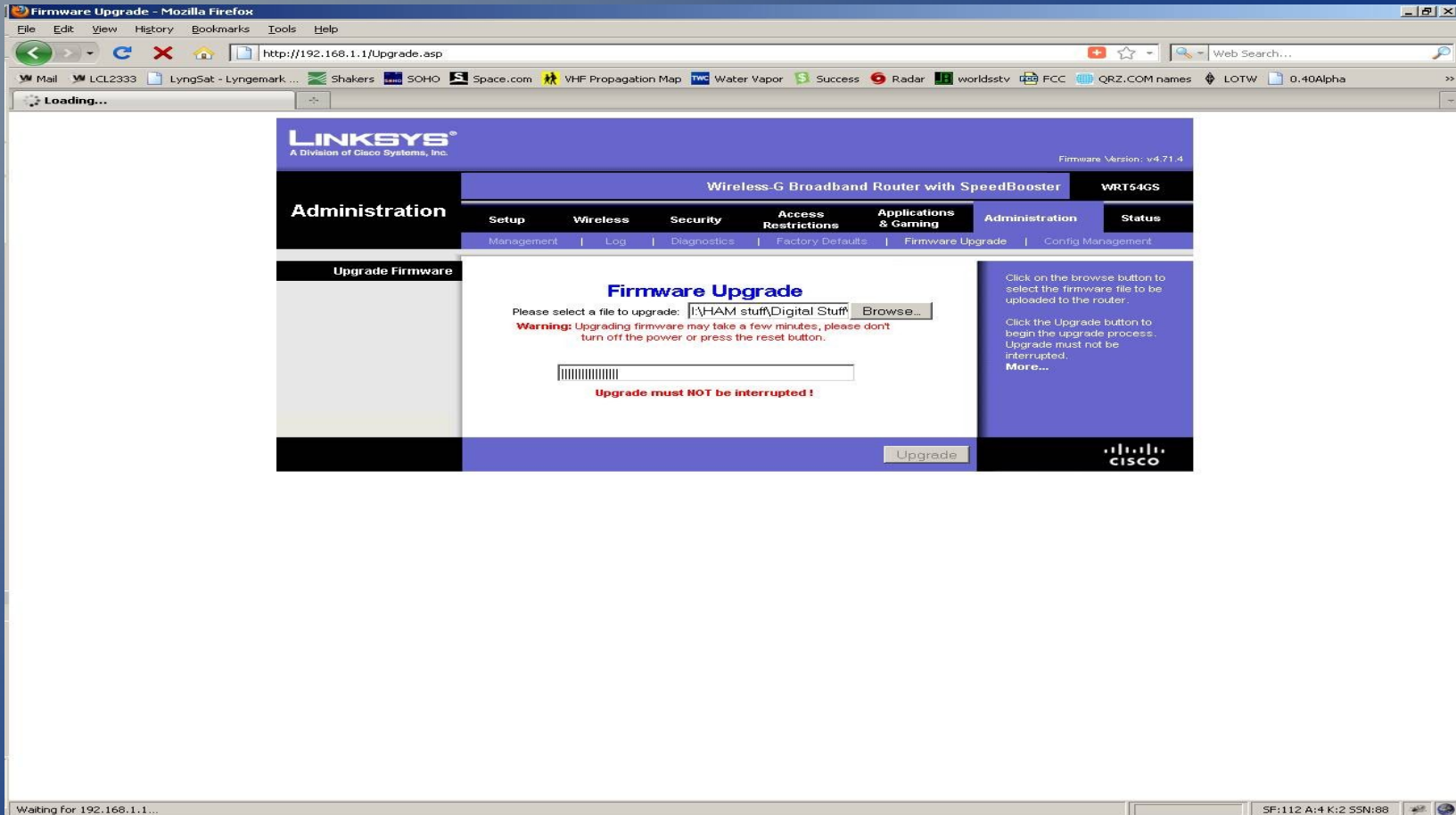
The browser status bar at the bottom shows `http://192.168.1.1/Management.asp` and `SF:112 A:4 K:2 SSN:88`.

Go to firmware update tab, click browse and select the file you saved earlier

The screenshot shows a web browser window titled "Firmware Upgrade - Mozilla Firefox" with the address bar displaying "http://192.168.1.1/Upgrade.asp". The browser's toolbar includes navigation buttons and a search field. The page content is for a Linksys router, identified as a "Wireless-G Broadband Router with SpeedBooster WRT54GS". The "Administration" menu is active, and the "Firmware Upgrade" tab is selected. The main content area prompts the user to "Please select a file to upgrade:" with a "Browse..." button. A warning message states: "Warning: Upgrading firmware may take a few minutes, please don't turn off the power or press the reset button." Below this is a red exclamation mark and the text "Upgrade must NOT be interrupted!". An "Upgrade" button is visible at the bottom right of the page. A "File Upload" dialog box is open in the foreground, showing the "hsmm-mesh" folder. The file list includes various files, with "hsmm-mesh-0.4.1-wrt54gs.bin" selected. The dialog box also shows the file name and type fields.

Name	Size	Type	Modifi
asf2011-hsmmesh-intro.ppt	453 KB	Microsoft PowerPo...	7/30/
lock.asf2011-hsmmesh-int...	1 KB	PPT# File	7/30/
setup-screen.jpg	54 KB	Paint Shop Pro 5 Im...	7/30/
VoipPhone.gif	19 KB	GIF File	7/30/
wrt54g.gif	16 KB	GIF File	7/30/
KSKTF-100 Port-services.pdf	147 KB	Adobe Acrobat Doc...	7/17/
KSKTF-100 basic-setup.pdf	86 KB	Adobe Acrobat Doc...	7/17/
plano-2011.jpg	30 KB	Paint Shop Pro 5 Im...	6/11/
kSktf-keSrs-water-tower.jpg	17 KB	Paint Shop Pro 5 Im...	5/14/
hsmm-mesh-0.4.1-wrt54gs.bin	2,821 KB	VLC media file (.bin)	5/6/2
DesktopActa.jpg	18 KB	Paint Shop Pro 5 Im...	1/21/

DO NOT remove power while it is updating



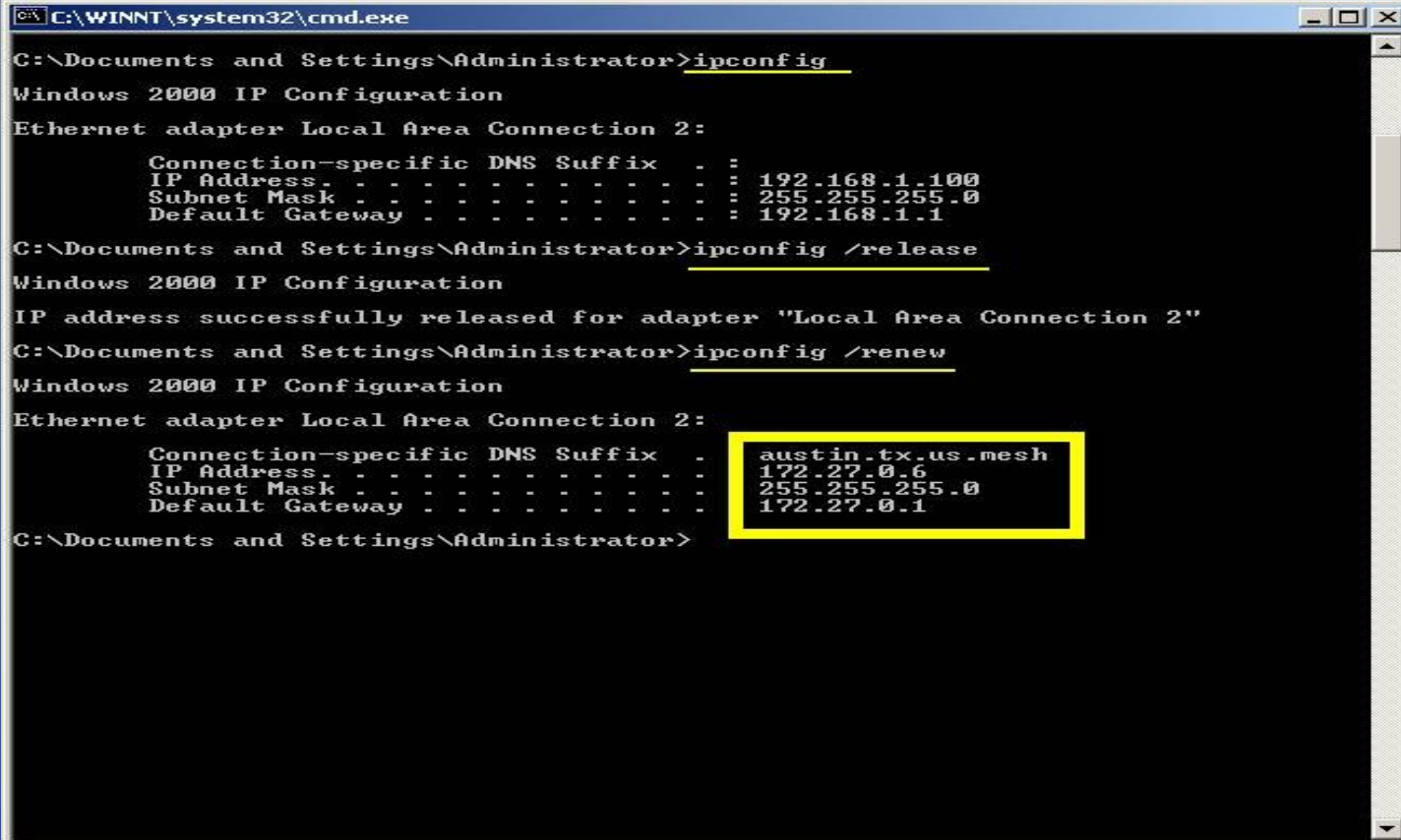
SUCCESS ! Router will reboot and become an HSMM-MESH node



Need to refresh your computer's IP address. Click START and Run, type in CMD and hit OK



Type `IPCONFIG /release` <enter> and then `IPCONFIG /renew` <enter>. It should then show like the text in the yellow box below.



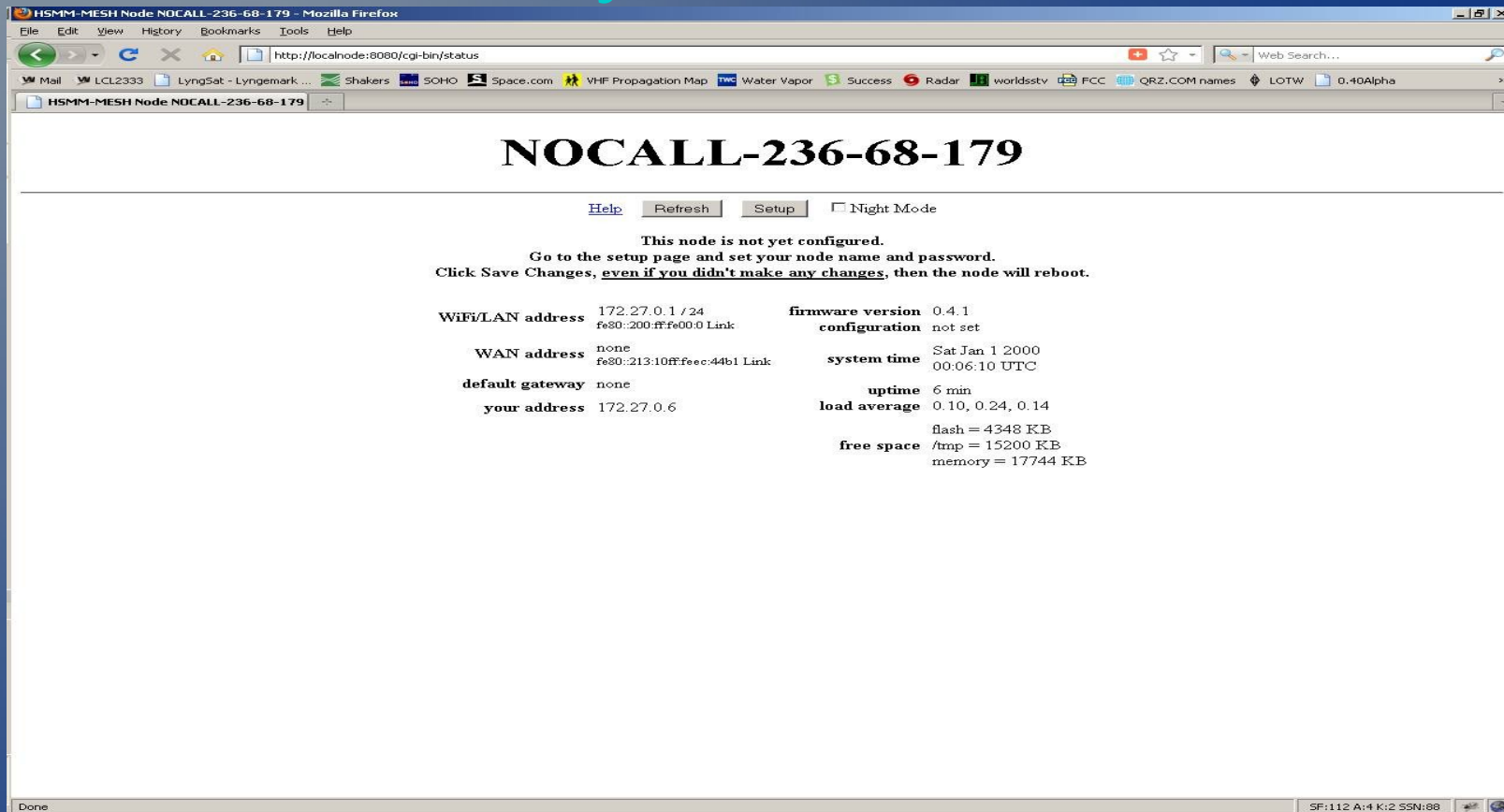
```
C:\WINNT\system32\cmd.exe
C:\Documents and Settings\Administrator>ipconfig
Windows 2000 IP Configuration
Ethernet adapter Local Area Connection 2:
    Connection-specific DNS Suffix  . : 
    IP Address . . . . . : 192.168.1.100
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . : 192.168.1.1

C:\Documents and Settings\Administrator>ipconfig /release
Windows 2000 IP Configuration
IP address successfully released for adapter "Local Area Connection 2"

C:\Documents and Settings\Administrator>ipconfig /renew
Windows 2000 IP Configuration
Ethernet adapter Local Area Connection 2:
    Connection-specific DNS Suffix  . : austin.tx.us.mesh
    IP Address . . . . . : 172.27.0.6
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . : 172.27.0.1

C:\Documents and Settings\Administrator>
```

In your browser, go to
<http://localnode:8080> .
It should show you a screen like below



The screenshot shows a Mozilla Firefox browser window with the address bar set to <http://localnode:8080/cgi-bin/status>. The page title is "HSM-MESH Node NOCALL-236-68-179". The main heading is "NOCALL-236-68-179". Below the heading are buttons for "Help", "Refresh", "Setup", and a checkbox for "Night Mode". A message states: "This node is not yet configured. Go to the setup page and set your node name and password. Click Save Changes, even if you didn't make any changes, then the node will reboot." The system information is displayed in two columns:

WiFi/LAN address	172.27.0.1 /24 fe80::200:ff:fe00:0 Link	firmware version	0.4.1
		configuration	not set
WAN address	none fe80::213:10ff:feec:44b1 Link	system time	Sat Jan 1 2000 00:06:10 UTC
default gateway	none	uptime	6 min
your address	172.27.0.6	load average	0.10, 0.24, 0.14
			flash = 4348 KB
		free space	/tmp = 15200 KB memory = 17744 KB

The browser's status bar at the bottom shows "Done" and "SF:112 A:4 K:2 SSN:88".

Click the SETUP button and login.
The default is root and hsmm

HSMM-MESH Node NOCALL-236-68-179 - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://localnode:8080/cgi-bin/status

Mail LCL2333 LyngSat - Lyngemark ... Shakers SOHO Space.com VHF Propagation Map Water Vapor Success Radar worldsstv FCC QRZ.COM names LOTW 0.40Alpha

Loading...

NOCALL-236-68-179

[Help](#) Refresh Setup Night Mode

This node is not yet configured.
Go to the setup page and set your node name and password.
Click Save Changes, even if you didn't make any changes, then the node will reboot.

WiFi/LAN address 172.27.0.1 / 24 firmware version 0.4.1
fe80::200:f:fe00:0 Link configuration not set

Authentication Required

A username and password are being requested by http://localnode:8080. The site says: "OpenWrt"

User Name: root

Password: *****

OK Cancel

Waiting for localnode...

SF:112 A:4 K:2 55N:88

Minimally, you need to set the node name and change the password. Your callsign must be in the node name (like K5KTF-100). Click SAVE

NOCALL-236-68-179 setup - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://localhost:8080/cgi-bin/setup

Mail LCL2333 LyngSat - Lyngemark... Shakers SOHO Space.com VHF Propagation Map Water Vapor Success Radar worldsstv FCC QRZ.COM names LOTW 0.40Alpha

NOCALL-236-68-179 setup

[Node Status](#) **Basic Setup** [Port Forwarding, DHCP, and Services](#) [Administration](#)

[Help](#) [Save Changes](#) [Reset Values](#) [Default Values](#) [Reboot](#)

Node Name: Password:

Node Type: Verify Password:

WiFi	LAN	WAN
Protocol: <input type="text" value="Static"/>	LAN Mode: <input type="text" value="NAT"/>	Protocol: <input type="text" value="DHCP"/>
IP Address: <input type="text" value="10.236.68.179"/>	IP Address: <input type="text" value="172.27.0.1"/>	DNS 1: <input type="text" value="8.8.8.8"/>
Netmask: <input type="text" value="255.0.0.0"/>	Netmask: <input type="text" value="255.255.255.0"/>	DNS 2: <input type="text" value="8.8.4.4"/>
SSID: <input type="text" value="HSMM-MESH"/>	DHCP Server: <input checked="" type="checkbox"/>	Mesh Gateway: <input type="checkbox"/>
Mode: <input type="text" value="Ad-Hoc"/>	DHCP Start: <input type="text" value="5"/>	
Channel: <input type="text" value="1"/>	DHCP End: <input type="text" value="25"/>	

Active Settings

Rx Antenna:

Tx Antenna:

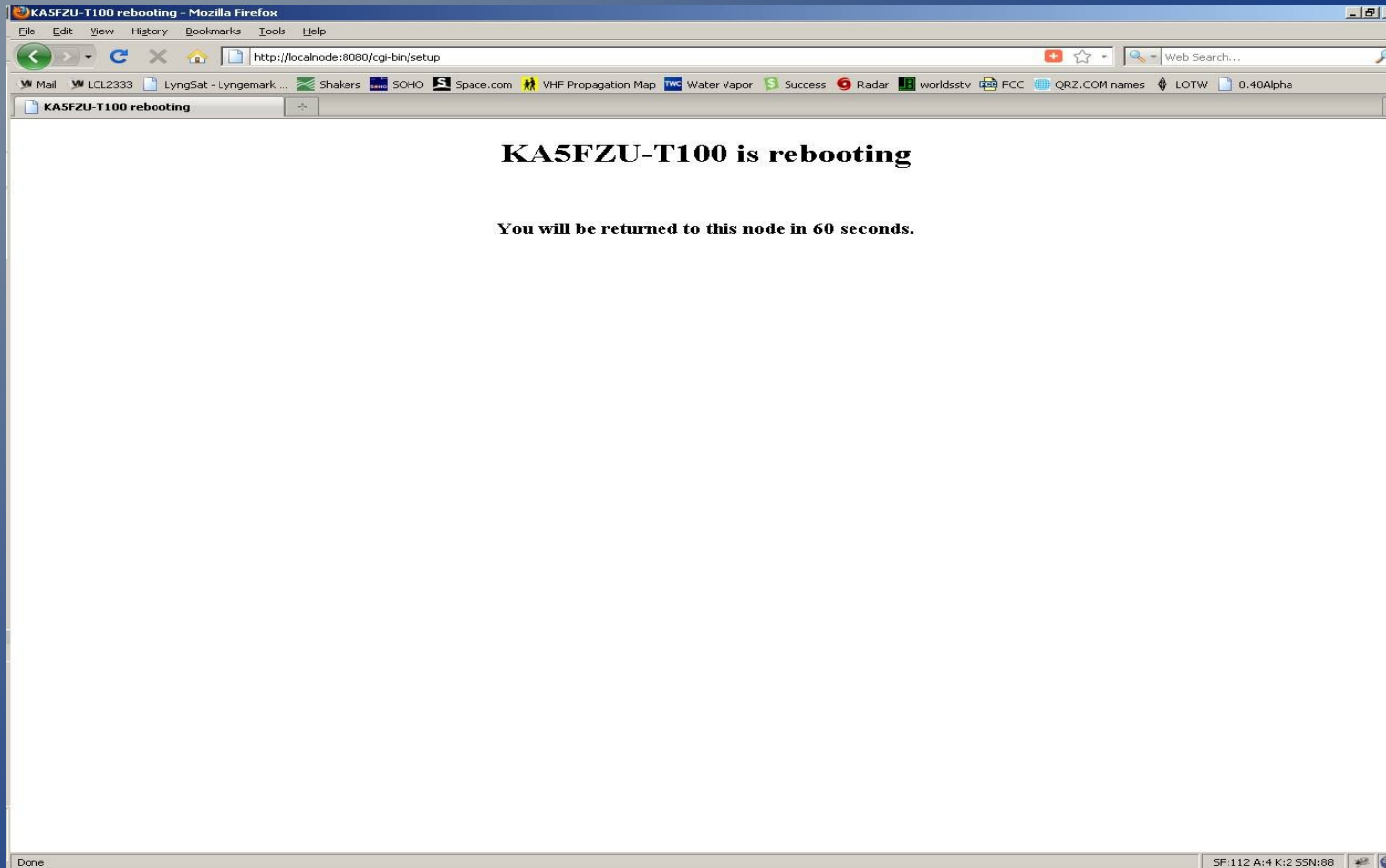
Tx Power:

Distance:

[Apply](#)

Done SF:112 A:4 K:2 SSN:88

When you click SAVE, it will reboot.



After about 60 seconds, it will refresh and show the main status page

KA5FZU-T100

[Help](#) [Refresh](#) [Mesh Status](#) [OLSR Status](#) [WiFi Scan](#) [Setup](#) Night Mode

WiFi address	10.236.68.179 / 8 fe80::213:10ff:feec:44b3 Link	Signal/Noise/Ratio	-28 / -93 / 65 dB Auto
LAN address	172.27.0.1 / 24 fe80::213:10ff:feec:44b1 Link	firmware version	0.4.2-beta (r220)
WAN address	none fe80::213:10ff:feec:44b1 Link	configuration	mesh
default gateway	10.244.112.228 K5KTF-TunnelHost	system time	Sat Jul 30 2011 16:22:44 UTC
your address	172.27.0.6	uptime	5 min
		load average	0.53, 0.24, 0.10
			flash = 4284 KB
		free space	/tmp = 15168 KB memory = 15580 KB

Done SF:112 A:4 K:2 55N:88

Clicking MESH STATUS will show you any nodes it may be connected to.

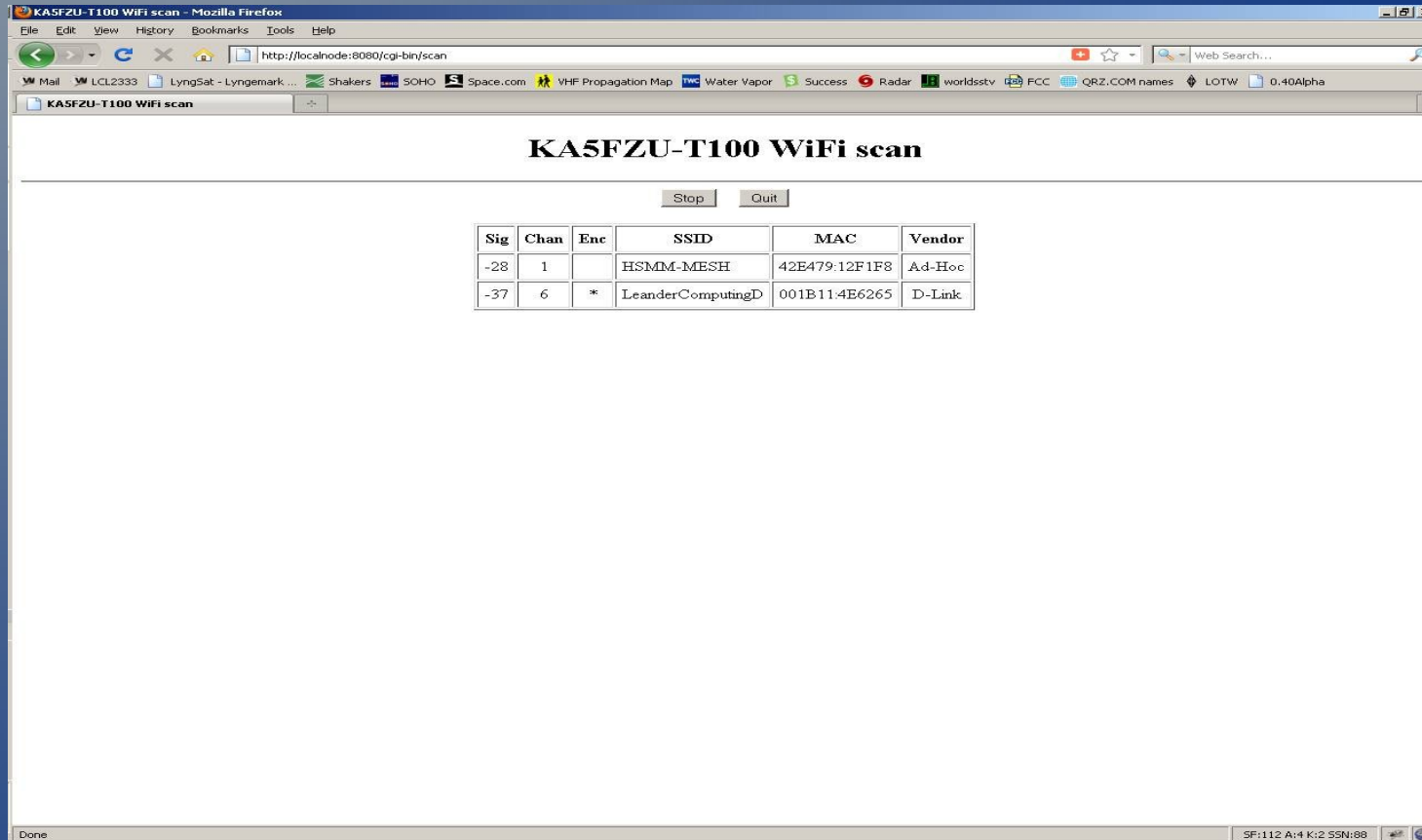
KA5FZU-T100 mesh status

Stop Quit

Local Hosts	Services	Current Neighbors	LQ	Services
KA5FZU-T100		K5KTF-101	42%	CoolerCam
		K5KTF-102	86%	Cam2

Remote Nodes	ETX	Services	Previous Neighbors	When
AE5IB-Tunnel (mid)	6.38		K5KTF-100	1 minute ago
K5KTF-100	4.43	AGW/RMS Packet (8000) Email (25/110/587) Web Server	K5KTF-TunnelHost	1 minute ago
K5KTF-TunnelHost (mid*6)	4.38			
KD5MFW-401-WSKA-tun (mid*5)	5.38			
KB5IBJ-N1	7.50			
N5SSH-1	9.37	Website		
N5SSH-2	8.16			
N5SSH-4	9.15			
N5SSH-5	9.28			
N5SSH-vtun (mid)	6.38			
N5YC-001-tunnel (mid)	6.38			
WSKA-001-kd5mfw22 (mid)	6.38			
WSKA-003SB-kd5mfw19 (mid)	6.38			
W5OEM-12-SAMC-kd5mfw31	7.51			
WB5AOH-29-54GS-vtun (mid*8)	5.38			
WB5AOH-31	6.38			
WB6YOK-000-TUNNEL (mid)	5.38			

From the Main page, clicking the WIFI SCAN button will show you any other Wifi access points it may see



The screenshot shows a Mozilla Firefox browser window with the title "KA5FZU-T100 WiFi scan". The address bar shows the URL "http://localhost:8080/cgi-bin/scan". The page content includes a title "KA5FZU-T100 WiFi scan", two buttons labeled "Stop" and "Quit", and a table of scan results.

Sig	Chan	Enc	SSID	MAC	Vendor
-28	1		HSMM-MESH	42E479:12F1F8	Ad-Hoc
-37	6	*	LeanderComputingD	001B11:4E6265	D-Link