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Coming Soon ...
- Error Code Definitions
- How To’s: NVCLEAR, Product Registration, etc.
**DataStorm D2**

**Appendix v.1**

**DW6000 NAT**

---

**D2 Settings:**
- IP: Leave as is
- Subnet: Leave as is
- Modem Gateway: Leave as is
- Router Gateway: Leave as is
- DNS: Leave as is

**Computer(s) Settings:**
- Obtain IP Address Automatically
- Obtain DNS Server Automatically
Required Hardware: Hub/Switch with optional Wireless Access Point

- DW6000 Settings [NAT Enabled]
  IP Configuration
  IP-192.168.0.1
  SUBNET-255.255.255.0

- D2 Settings
  IP Configuration
  Leave all the network settings as default

- Your Computer’s Settings
  IP Configuration
  Obtain IP Address Automatically
  Obtain DNS Server Automatically
DW6000 1 Static IP w/ Router

**D2 Settings:**
- **IP**: 192.168.1.250
- **Subnet**: Leave as is
- **Modem Gateway**: 192.168.0.1
- **Router Gateway**: 192.168.1.1
- **DNS**: Leave as is

**Computer(s) Settings**
- Obtain IP Address Automatically
- Obtain DNS Automatically

**Router Settings [WAN Address are an example**]**
- **WAN IP**: 66.88.44.33
- **Subnet**: 255.255.255.252
- **Gateway**: 66.88.44.32
- **DNS**: 66.82.4.8, 66.82.4.12

*The static IP is given at the time of commissioning. Refer to your commissioning documentation for actual IP settings.*
**Required Hardware: Router**

- **DW6000 Settings [1 Static IP] [See your SAN confirmation sheet for actual IP's]**
  - IP Configuration
    - **WAN**
      - IP-i.e. 66.88.44.32
      - SUBNET-255.255.255.252
    - **LAN**
      - IP-192.168.0.1
      - SUBNET-255.255.255.252

- **D2 Settings**
  - IP Configuration
    - IP-192.168.1.250
    - Subnet-255.255.255.0
    - Modem Gateway-192.168.0.1
    - Router Gateway-192.168.1.1
    - DNS-Leave as is

- **Your Computer(s) Settings**
  - IP Configuration
    - Obtain IP Address Automatically
    - Obtain DNS Server Automatically

- **Router Settings**
  - **WAN/Internet Configuration**
    - IP-66.88.44.33 [One IP Address above the 6000's address]
    - SUBNET-255.255.255.252
    - GATEWAY-66.88.44.32 [The 4020's IP Address]
    - DNS-1-66.82.4.8
      - 2-66.82.4.12

  - **LAN Configuration**
    - IP-DHCP [Default is usually 192.168.1.1]
    - SUBNET-DHCP [Default is usually 255.255.255.0]
**DataStorm D2  Appendix**

**DW6000 1 Static IP No Router**

### D2 Settings:
- IP: 192.168.0.2
- Subnet: Leave as is
- Modem Gateway: Leave as is
- Router Gateway: Leave as is
- DNS: Leave as is

### Computer(s) Settings [Example Static IP** used]:

<table>
<thead>
<tr>
<th>Computer</th>
<th>IP</th>
<th>Subnet</th>
<th>Gateway</th>
<th>DNS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st</td>
<td>66.88.44.33</td>
<td>255.255.255.252</td>
<td>66.88.44.32</td>
<td>66.82.4.8, 66.82.4.12</td>
</tr>
<tr>
<td>2nd</td>
<td>192.168.0.10</td>
<td>255.255.255.0</td>
<td>None</td>
<td></td>
</tr>
</tbody>
</table>

**The static IP is given at the time of commissioning. Refer to your commissioning documentation for actual IP settings.**
**DataStorm D2 | Appendix**

**DW6000 1 Static IP No Router**

**Required Hardware: Hub/Switch**

- DW6000 Settings [1 Static IP] [See your SAN confirmation sheet for actual IP’s]
  - IP Configuration
    - WAN
      - IP-i.e. 66.88.44.32
      - SUBNET-255.255.255.252
    - LAN
      - IP-192.168.0.1
      - SUBNET-255.255.255.252

- D2 Settings
  - IP Configuration
    - IP-192.168.0.2
    - Subnet-Leave as is
    - Modem Gateway- Leave as is
    - Router Gateway-Leave as is
    - DNS-Leave as is

- Your Computer’s Settings
  - 1st IP Configuration [for Internet access and DW6000 access]
    - IP-i.e. 66.88.44.33 [One IP Above the DW6000 Address; See your SAN confirmation sheet for actual IP’s]
    - SUBNET-255.255.255.252
    - GATEWAY-i.e. 66.88.44.32 [the WAN IP of the DW6000]
    - DNS-1-66.82.4.8
    - 2-66.82.4.12
  - 2nd [Advanced] IP Configuration [for D2 access]
    - IP-192.168.0.10
    - SUBNET-255.255.255.0
D2 Settings:
- IP: 66.88.44.34
- Subnet: Leave as is
- Modem Gateway: 66.88.44.32
- Router Gateway: Leave as is
- DNS: Leave as is

Computer(s) Settings
See attached configuration sheet

Router Settings [WAN Address are an example**]
- WAN IP: 66.88.44.33
- Subnet: 255.255.255.248
- Gateway: 66.88.44.32
- DNS: 66.82.4.8
- 66.82.4.12
- LAN IP: 192.168.1.1 (or DHCP)
- Subnet: 255.255.255.0
- Gateway: NONE

**The static IP is given at the time of commissioning. Refer to your commissioning documentation for actual IP settings.
Required Hardware: Router, Hub/Switch

- DW6000 Settings [See your SAN confirmation sheet for actual IP's]
  IP Configuration
  IP-i.e. 66.88.44.32
  SUBNET-255.255.255.248

- D2 Settings
  IP Configuration
  IP-66.88.44.34
  SUBNET-255.255.255.0
  MODEM GATEWAY-66.88.44.32
  ROUTER GATEWAY- Leave as is
  DNS-Leave as is

- Your Computer’s Settings
  1st IP Configuration [a direct link via the switch]
  IP-i.e. 66.88.44.35
  SUBNET-255.255.255.248
  GATEWAY-i.e. 66.88.44.32 [the IP of the DW6000]
  DNS-1-66.82.4.8
  2-66.82.4.12

OR [Either or is used, not BOTH for the same computer]

  2nd IP Configuration [a wired or wireless link via the router]
  -Obtain IP Address Automatically
  -Obtain DNS Automatically

- Router Settings
  WAN/Internet Configuration
  IP-66.88.44.33
  SUBNET-255.255.255.248
  GATEWAY-66.88.44.32

  LAN Configuration
  DHCP [Usually will be under the 192.168.1.1 domain]

- The 2 Static IP address you have remaining can be used on other network devices as you see fit
DW6000 5 Static IP No Router

D2 Settings:
- IP: 66.88.44.34
- Subnet: Leave as is
- Modem Gateway: 66.88.44.32
- Router Gateway: Leave as is
- DNS: Leave as is

Computers Settings:
1st: See attached configuration sheet
2nd: See attached configuration sheet
3rd: See attached configuration sheet
4th: See attached configuration sheet
Required Hardware: Hub/Switch

- DW6000 Settings [See your SAN confirmation sheet for actual IP's]
  IP Configuration
  IP-i.e. 66.88.44.32
  SUBNET-255.255.255.248

- D2 Settings
  IP Configuration
  IP-66.88.44.34
  SUBNET-255.255.255.0
  MODEM GATEWAY-66.88.44.32
  ROUTER GATEWAY- Leave as is
  DNS-Leave as is

- All Your Computers Settings
  IP Configuration
  Obtain IP Address Automatically
  Obtain DNS Server Automatically
DataStorm D2 | Appendix

DW4020 NAT

**D2 Settings:**
- IP: Leave as is
- Subnet: Leave as is
- Modem Gateway: Leave as is
- Router Gateway: Leave as is
- DNS: Leave as is

**Computer(s) Settings:**
- Obtain IP Address Automatically
- Obtain DNS Server Automatically
Required Hardware: None

• DW4020 Settings [NAT Enabled]
  IP Configuration
  IP-192.168.0.1
  SUBNET-255.255.255.0

• D2 Settings
  IP Configuration
  Leave all the network settings as default

• Your Computer’s Settings
  IP Configuration
  Obtain IP Address Automatically
  Obtain DNS Server Automatically
DW4020 1 Static IP w/ Router

**D2 Settings:**
- IP: 192.168.1.250
- Subnet: Leave as is
- Modem Gateway: 192.168.0.1
- Router Gateway: 192.168.1.1**
- DNS: Leave as is

**Computer(s) Settings**
- Obtain IP Address
- Obtain DNS

**Router Settings [WAN Address are an example*]**
- IP: 192.168.1.1** [or DHCP]
- Subnet: 255.255.255.252
- Gateway: 66.88.44.32
- DNS: 66.82.4.8, 66.82.4.12

*WAN IP given via modem commissioning
**Linksys Router Default Configuration
Required Hardware: Router

- DW4020 Settings [1 Static IP] [See your SAN confirmation sheet for actual IP’s]
  IP Configuration
  WAN
  IP-i.e. 66.88.44.32
  SUBNET-255.255.255.252
  LAN
  IP-192.168.0.1
  SUBNET-255.255.255.252

- D2 Settings
  IP Configuration
  IP-192.168.1.250
  Subnet-255.255.255.0
  Modem Gateway-192.168.0.1
  Router Gateway-192.168.1.1
  DNS-Leave as is

- Your Computer(s) Settings
  IP Configuration
  Obtain IP Address Automatically
  Obtain DNS Server Automatically

- Router Settings
  WAN/Internet Configuration
  IP-66.88.44.33 [One IP Address above the 4020’s address]
  SUBNET-255.255.255.252
  GATEWAY-66.88.44.32 [The 4020’s IP Address]
  DNS-1-66.82.4.8
  2-66.82.4.12

  LAN Configuration
  IP-DHCP [Default is usually 192.168.1.1]
  SUBNET-DHCP [Default is usually 255.255.255.0]
**DataStorm D2 Appendix**

**DW4020 1 Static IP No Router**

**D2 Settings:**
- IP: 192.168.0.2
- Subnet: Leave as is
- Modem Gateway: Leave as is
- Router Gateway: Leave as is
- DNS: Leave as is

**Computer(s) Settings [Example Static IP** used]:

1st:
- IP: 66.88.44.33
- Subnet: 255.255.255.252
- Gateway: 66.88.44.32
- DNS: 66.82.4.8
  - 66.82.4.12

2nd:
- IP: 192.168.0.10
- Subnet: 255.255.255.0
- Gateway: NONE

**The static IP is given at the time of commissioning. Refer to your commissioning documentation for actual IP settings.**
Required Hardware: None

- DW4020 Settings [1 Static IP] [See your SAN confirmation sheet for actual IP’s]
  IP Configuration
  WAN
    IP-i.e. 66.88.44.32
    SUBNET-255.255.255.252
  LAN
    IP-192.168.0.1
    SUBNET-255.255.255.252

- D2 Settings
  IP Configuration
  IP-192.168.0.2
  Subnet-Leave as is
  Modem Gateway- Leave as is
  Router Gateway-Leave as is
  DNS-Leave as is

- Your Computer’s Settings
  1st IP Configuration [for Internet access and DW4020 access]
    IP-i.e. 66.88.44.33 [One IP Above the DW4020 Address; See your SAN confirmation sheet for actual IP’s]
    SUBNET-255.255.255.252
    GATEWAY-i.e. 66.88.44.32 [the WAN IP of the DW4020]
    DNS-1-66.82.4.8
    2-66.82.4.12
  2nd [Advanced] IP Configuration [for D2 access]
    IP-192.168.0.10
    SUBNET-255.255.255.0
** DW4020 5 Static IP’s w/ Router **

**D2 Settings:**
- IP: 192.168.1.250
- Subnet: Leave as is
- Modem Gateway: 192.168.0.1
- Router Gateway: 192.168.1.1**
- DNS: Leave as is

**Computer(s) Settings**
- Obtain IP Address: Automatically

**Router Settings** [WAN Address are an example*]
- WAN: 66.88.44.33
- LAN: 192.168.1.1** [or DHCP]
- Subnet: 255.255.255.252
- Gateway: 66.88.44.32
- DNS: 66.82.4.8, 66.82.4.12

---

*WAN IP given via modem commissioning
**Linksys Router Default Configuration
Required Hardware: Router

- DW4020 Settings [See your SAN confirmation sheet for actual IP’s]
  IP Configuration
  IP-i.e. 66.88.44.32
  SUBNET-255.255.255.248

- D2 Settings
  IP Configuration
  IP-66.88.44.34
  SUBNET-255.255.255.0
  MODEM GATEWAY-66.88.44.32
  ROUTER GATEWAY- Leave as is
  DNS-Leave as is

- Your Computer’s Settings
  1st IP Configuration [a direct link via the switch]
  IP-i.e. 66.88.44.35
  SUBNET-255.255.255.248
  GATEWAY-i.e. 66.88.44.32 [the IP of the DW4020]
  DNS-1-66.82.4.8
  2-66.82.4.12

OR [Either or is used, not BOTH for the same computer]

  2nd IP Configuration [a wired or wireless link via the router]
  -Obtain IP Address Automatically
  -Obtain DNS Automatically

- Router Settings
  WAN/Internet Configuration
  IP-66.88.44.33
  SUBNET-255.255.255.248
  GATEWAY-66.88.44.32

  LAN Configuration
  DHCP [Usually will be under the 192.168.1.1 domain]

- The 2 Static IP address you have remaining can be used on other network devices as you see fit
D2 Settings:
- IP: 66.88.44.34
- Subnet: Leave as is
- Modem Gateway: 66.88.44.32
- Router Gateway: Leave as is
- DNS: Leave as is

Computers Settings:
1st: See attached configuration sheet
2nd: See attached configuration sheet
3rd: See attached configuration sheet
**Required Hardware: None**

- DW4020 Settings [See your SAN confirmation sheet for actual IP’s]
  
  **IP Configuration**
  
  IP-i.e. 66.88.44.32
  SUBNET-255.255.255.248

- D2 Settings
  
  **IP Configuration**
  
  IP-66.88.44.34
  SUBNET-255.255.255.0
  MODEM GATEWAY-66.88.44.32
  ROUTER GATEWAY- Leave as is
  DNS-Leave as is

- All Your Computers Settings
  
  **IP Configuration**
  
  Obtain IP Address Automatically
  Obtain DNS Server Automatically
## DiRECWAY Satellite Mobile Information

<table>
<thead>
<tr>
<th>Satellite - Longitude</th>
<th>Frequency</th>
<th>Rx Polarization</th>
<th>Tx Polarization</th>
<th>Transponder</th>
<th>Information</th>
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<td>1201 Mhz</td>
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<td>Horizontal</td>
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<td>High-Speed Mobile</td>
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<td>1250 Mhz</td>
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<td>Horizontal</td>
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</tr>
<tr>
<td></td>
<td>1370 Mhz</td>
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<td>General</td>
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<td>SatMex 5 - 117W</td>
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<td>Horizontal</td>
<td>2</td>
<td>Mobile</td>
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<td>Horizontal</td>
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<td></td>
<td>1070 Mhz</td>
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<td>High-Speed Mobile</td>
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<td>Horizontal</td>
<td></td>
<td>General</td>
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</table>

## DiRECWAY Satellite Commissioning Information

<table>
<thead>
<tr>
<th>Satellite - Long</th>
<th>Frequency</th>
<th>Rx Polarization</th>
<th>Tx Polarization</th>
<th>Transponder</th>
</tr>
</thead>
<tbody>
<tr>
<td>G11 - 91W</td>
<td>990 Mhz</td>
<td>Vertical</td>
<td>Horizontal</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>1350 Mhz</td>
<td>Vertical</td>
<td>Horizontal</td>
<td>20</td>
</tr>
<tr>
<td>G4R - 99W</td>
<td>1230 Mhz</td>
<td>Vertical</td>
<td>Horizontal</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>1350 Mhz</td>
<td>Vertical</td>
<td>Horizontal</td>
<td>20</td>
</tr>
<tr>
<td>SatMex 5 - 117W</td>
<td>1070 Mhz</td>
<td>Vertical</td>
<td>Horizontal</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>1230 Mhz</td>
<td>Vertical</td>
<td>Horizontal</td>
<td>15</td>
</tr>
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<td>Horizons 1 - 127W</td>
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<td>Vertical</td>
<td>Horizontal</td>
<td>22</td>
</tr>
<tr>
<td>AMC9 - 83W</td>
<td>1430 Mhz</td>
<td>Vertical</td>
<td>Horizontal</td>
<td></td>
</tr>
</tbody>
</table>
DataStorm D2 Telnet Commands

BOTH=In the DATASTORM% and D2Boot% Telnet Help prompts
DATASTORM%=Command found in the DATASTORM% prompt
D2Boot%=Command found in the D2Boot% prompt
-INTERNAL=Commands used for internal purposes only
-DVB=Commands used only with a DVB D2

____________________
?
BOTH
Shows all available D2 telnet commands for the current session.

____________________
13volts
DATASTORM%-DVB
Toggles LNB power on DVB of 13 volts.
 -USAGE:
   13volts

____________________
18volts
DATASTORM%-DVB
Toggles LNB power on DVB of 18 volts.
 -USAGE:
   18volts

____________________
arp
BOTH
Shows the status of the address resolution protocol
 [used to resolve IP address to the corresponding Ethernet address]
 -USAGE:
   arp

____________________
autocompasscal
DATASTORM%
Command used to calibrate the DataStorm's compass without moving the
vehicle. The dish automatically raises up and calibrates on preset points.
 -USAGE:
   autocompasscal 4 4
This will calibrate the compass of the DataStorm 4 degrees off of zero azimuth and take compass readings on 4 equilateral points of a compass circle then stow back down.
Telnet Commands & Information Cont.

**bpool**
BOTH-INTERNAL

**calibrate**
DATASTORM%-INTERNAL

**clearlastpos**
DATASTORM%
Clears the memory of where the satellite was previously found. Must be done after a successful find satellite. Upon its usage no 'searching last known position' will appear on the system status and the D2 will search its search window. The dish will also perform a 'Stowing dish for sensor read' operation.
- **USAGE:**
  clearlastpos

**conf**
BOTH
Shows zilog versioning, IP address information, Table sizes, and network information.
- **USAGE:**
  conf

**date**
BOTH
Shows the current date set in the D2 [used to resolve IP address to the corresponding Ethernet address]
- **USAGE:**
  date

**devs**
BOTH-INTERNAL

**dg**
BOTH

**dvboff**
DATASTORM%-DVB
Turns off the internal DVB.
- **USAGE:**
dvboff
Telnet Commands & Information Cont.

---
dvbon
DATASTORM%-DVB
Turns on the internal DVB.
-USAGE:
dvboff

---
echo
BOTH-INTERNAL

---
exit
BOTH
Closes the telnet session.
-USAGE:
exit
'Connection lost to Host.' will then appear.

---
findsat
DATASTORM%
Like clicking the 'Find Satellite' button, or pressing the Search button; The DataStorm will attempt to find the satellite based on its internal settings.
-USAGE:
findsat

---
getvalue
DATASTORM%-INTERNAL

---
hang
BOTH-INTERNAL
*Do not use this command under any circumstance; it will lock up the D2 and a physical reset will have to be done

---
help
BOTH
Shows all available D2 telnet commands for the current session.

---
ifstat
BOTH
Displays current interface statistics.
-USAGE:
ifstat
Telnet Commands & Information Cont.

__igmp__
**BOTH-INTERNAL**

__kill__
**BOTH-INTERNAL**

__lnboff__
**DATASTORM%-DVB**
Switches the LNB power from the DVB off.
**-USAGE:**
lnboff

__lnbon__
**DATASTORM%-DVB**
Switches the LNB power from the DVB on.
**-USAGE:**
lnbon

__lnbvolts__
**DATASTORM%-DVB**
Shows the current voltage on the LNB.
**-USAGE:**
lnbvolts

__mem__
**BOTH-INTERNAL**

__moveaz__
**DATASTORM%**
Moves the DataStorm in counts on azimuth.
**-USAGE:**
moveaz 30 [or -30]
Will move the DataStorm clockwise 30 counts.

__moveazang__
**DATASTORM%**
Moves the DataStorm in degrees on azimuth.
**-USAGE:**
moveazang 30 [or -30]
Will move the DataStorm clockwise 30 degrees.
moveel
DATASTORM%
Moves the DataStorm in counts on elevation.
-USAGE:
  moveel 30 [or -30]
  Will move the DataStorm up 30 counts.

moveelang
DATASTORM%
Moves the DataStorm in degrees on elevation.
-USAGE:
  moveelang 30 [or -30]
  Will move the DataStorm up 30 degrees.

movesk
DATASTORM%
Moves the DataStorm in counts on skew.
-USAGE:
  movesk 30 [or -30]
  Will skew the DataStorm 30 counts.

moveskang
DATASTORM%
Moves the DataStorm in degrees on skew.
-USAGE:
  moveskang 30 [or -30]
  Will skew the DataStorm 30 degrees.

netstat
BOTH
Shows local network information.
-USAGE:
  netstat

ns
BOTH
nvclear  
D2Boot%  
Clears the D2's non-volatile memory. This will reset everything to the D2's default parameters.  
-USAGE:  
nvclear

picregs  
DATASTORM%-INTERNAL

picsend  
DATASTORM%-INTERNAL

ping  
BOTH  
A typical ping routine from the D2. Can be used to see if the D2 can communicate with other devices on the network like a modem, or a computer by IP address.  
-USAGE:  
  ping 192.168.1.1  
  This will send out a packet to this specific IP address and the D2 will receive an answer or timeout.

port  
BOTH-INTERNAL

ps  
BOTH  
Shows all current running processes on the D2.  
-USAGE:  
  ps

readdvb  
DATASTORM%-DVB  
If on satellite, with dvb on, Lnb on, and there is voltage to the LNB, the D2's DVB will read the DVB ID of the current satellite.  
-USAGE:  
  readdvb
Telnet Commands & Information Cont.

____________________
reboot
BOTH
Resets the D2 without having to toggle power.
-USAGE:
  reboot

____________________
route
BOTH-INTERNAL

____________________
routes
BOTH
Shows the current routing table of the D2.
-USAGE:
  routes

____________________
sem
BOTH-INTERNAL

____________________
sensors
DATASTORM%
Shows sensor information from the upper control board such as:
hardware version [can be used to determine compass and upper
control board style], GPS & Compass info [number of acquired GPS
satellites, current lat/long, etc.], tilt information, etc.
-USAGE:
  sensors 10
  This usage will display the sensor information once a second
  for 10 seconds. This can be used to show continuous heading
  or for upper control board communication.

____________________
setserial
DATASTORM%-INTERNAL

____________________
setvalue
DATASTORM%-INTERNAL

____________________
showserial
D2Boot%-INTERNAL
sleep
BOTH-INTERNAL

stopdish
DATASTORM%
Same functioning as pushing the 'Stop' button in the D2 main system status page. This will stop and dish motor movement from continuing.
   -USAGE:
   stopdish

stowdish
DATASTORM%
Same functioning as pushing the 'Stow' button in the D2 main system status page. This will stow the dish when not in the folded down stow position.
   -USAGE:
   stowdish

testdish
DATASTORM%
This will run a dish motor test on the DataStorm by moving all directions to their maximum physical limits. Can be used to troubleshoot motor issues.
   -USAGE:
   testdish

time
BOTH
Displays the internal time of the D2.
   -USAGE:
   time

timerq
DATASTORM%-INTERNAL
Telnet Commands & Information Cont.

ucbupdate
DATASTORM%
This will force an upper control board software update. An update is done automatically when new software is loaded to the D2. However this command can be used to force this update if certain issues are perceived.

-USAGE:
  ucbupdate
  The following not will appear:
  *** You must turn off the D2 and turn it back on to update
  the Upper Control Board. ***
  You then must toggle power to the D2 or type the 'reboot' command and press enter.

udplisten
BOTH-INTERNAL

udpping
BOTH-INTERNAL

ver
D2Boot%
Displays information on the installed version of DataStorm bootloader, MotoSAT copyright information, and Zilog information. Note: Bootloader version 3 and higher has the fast loading software features. If the Bootloader is previous to version 3, an update can only be done at the factory at this time.

-USAGE:
  ver