



DataStorm D2 Appendix

v.1

 **MotoSAT**
LM-04.21.05

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DiRECWAY Satellite Information

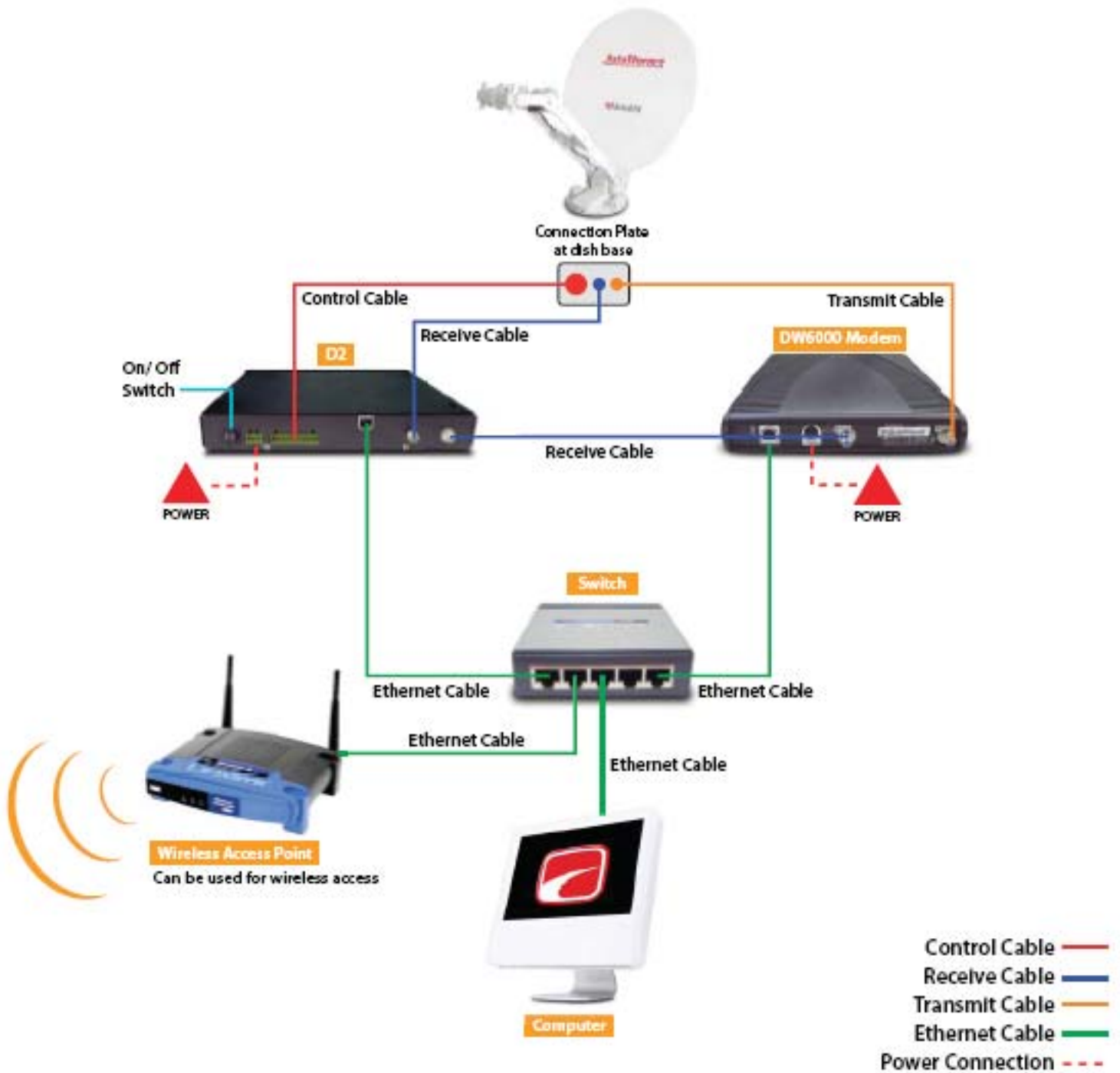
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Telnet Commands & Information

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Coming Soon ...
| Error Code Definitions
| How To's: NVCLEAR, Product Registration, etc.

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

DW6000 NAT

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

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

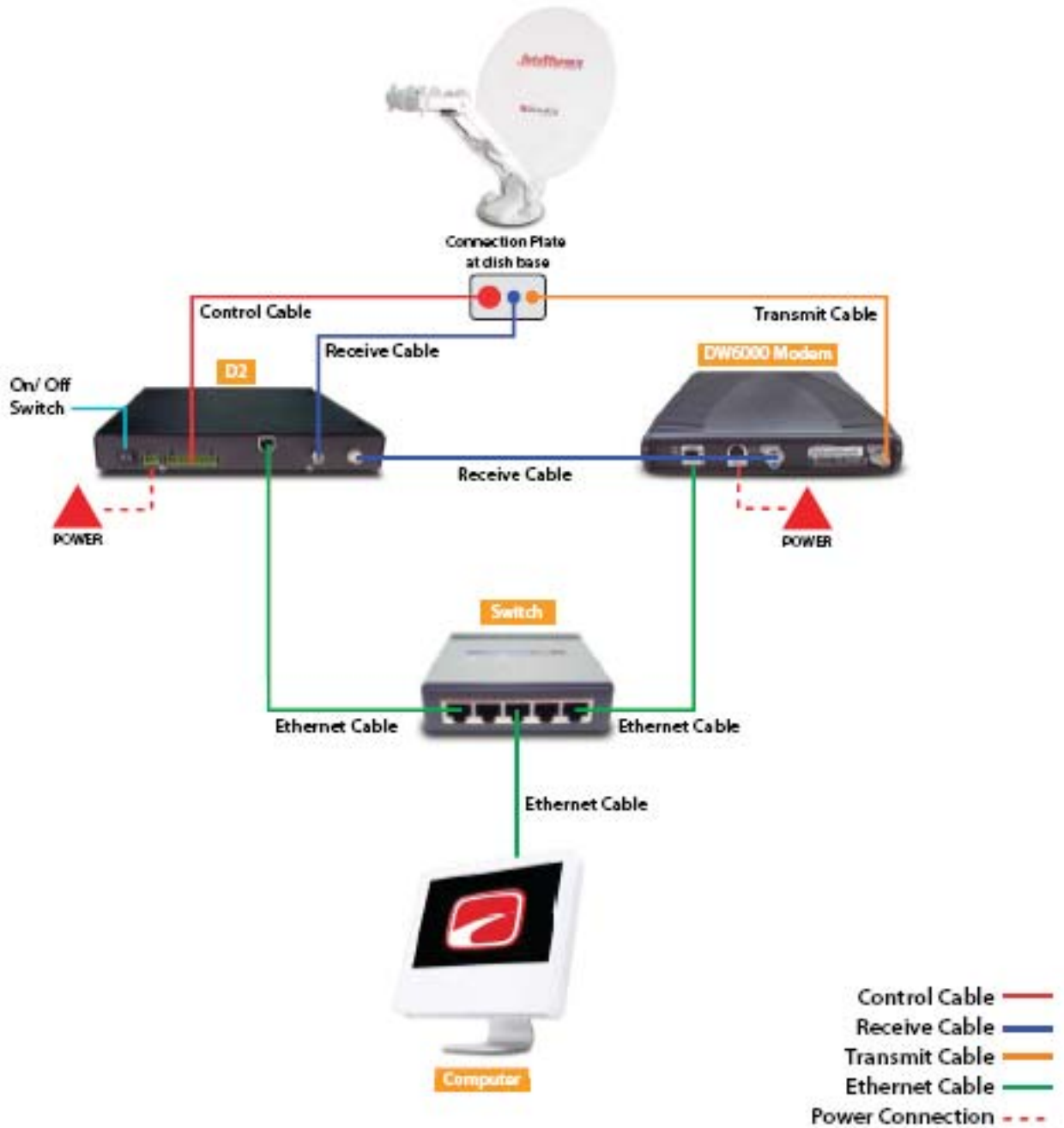
2-66.82.4.12

LAN Configuration

IP-DHCP [Default is usually 192.168.1.1]

SUBNET-DHCP [Default is usually 255.255.255.0]

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]:

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.

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

DW6000 5 Static IP w/ Router

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

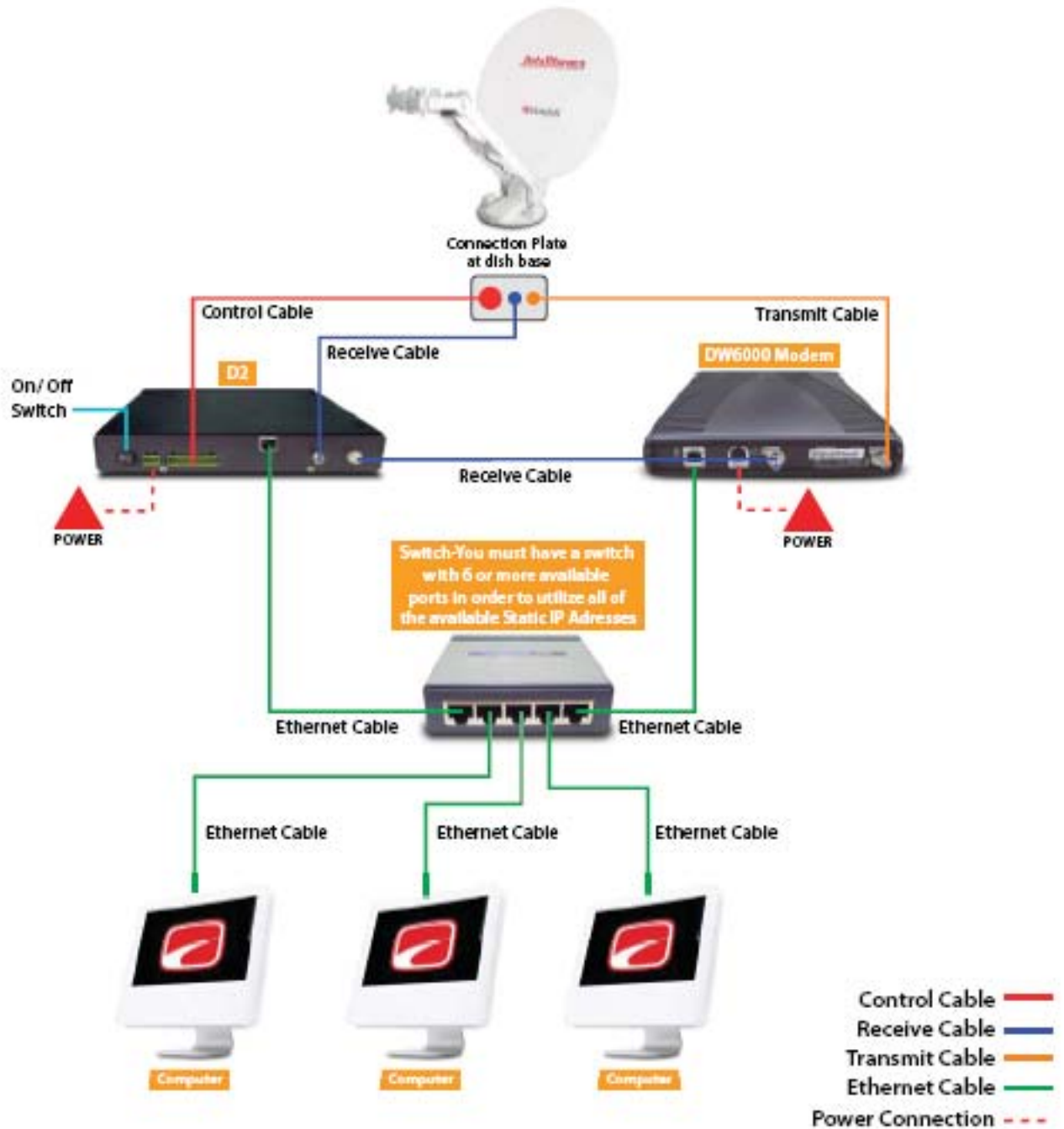
GATEWAY-66.88.44.32

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

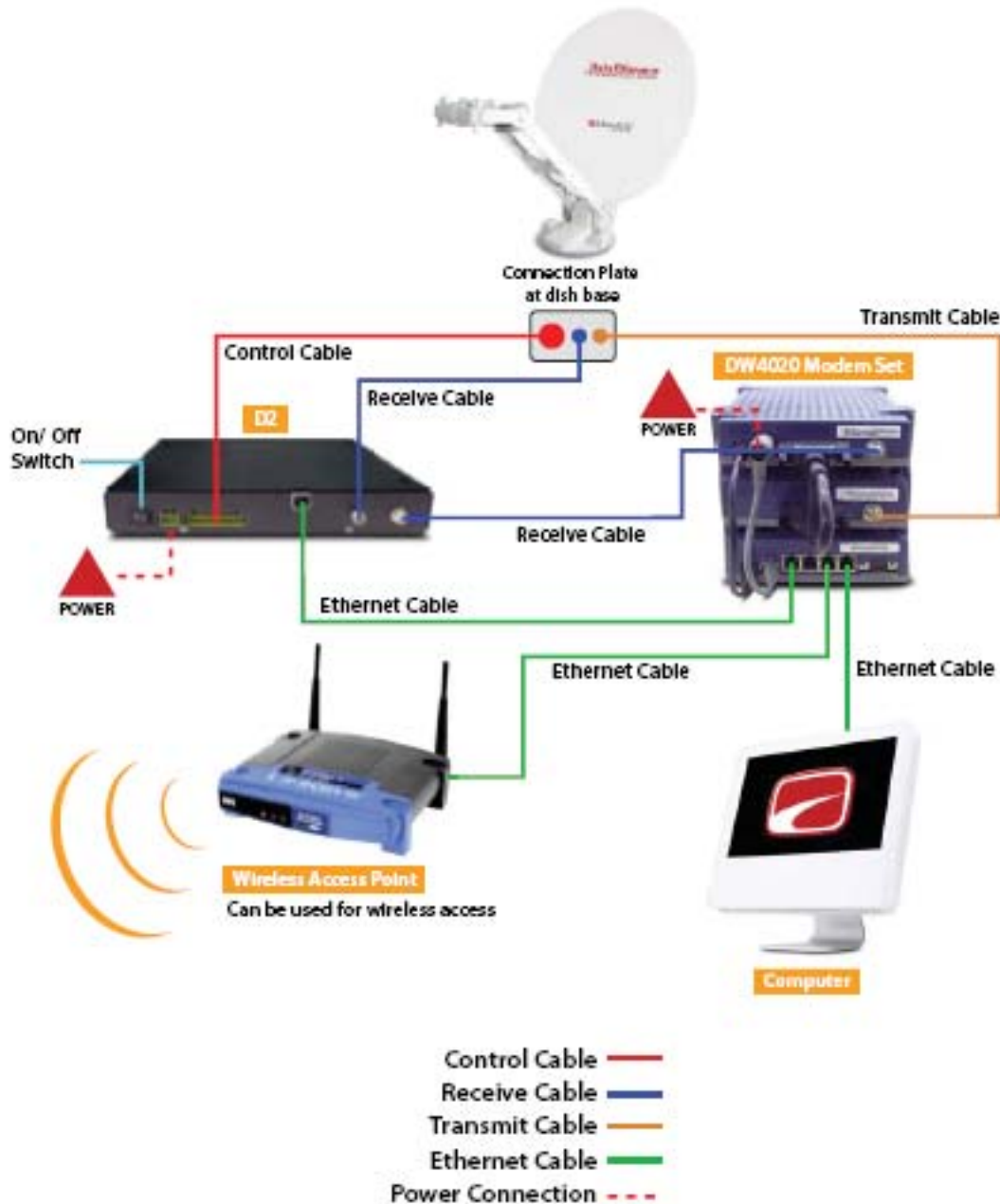
1st See attached configuration sheet	3rd See attached configuration sheet
2nd See attached configuration sheet	4th See attached configuration sheet

DW6000 5 Static IP No Router

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

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:

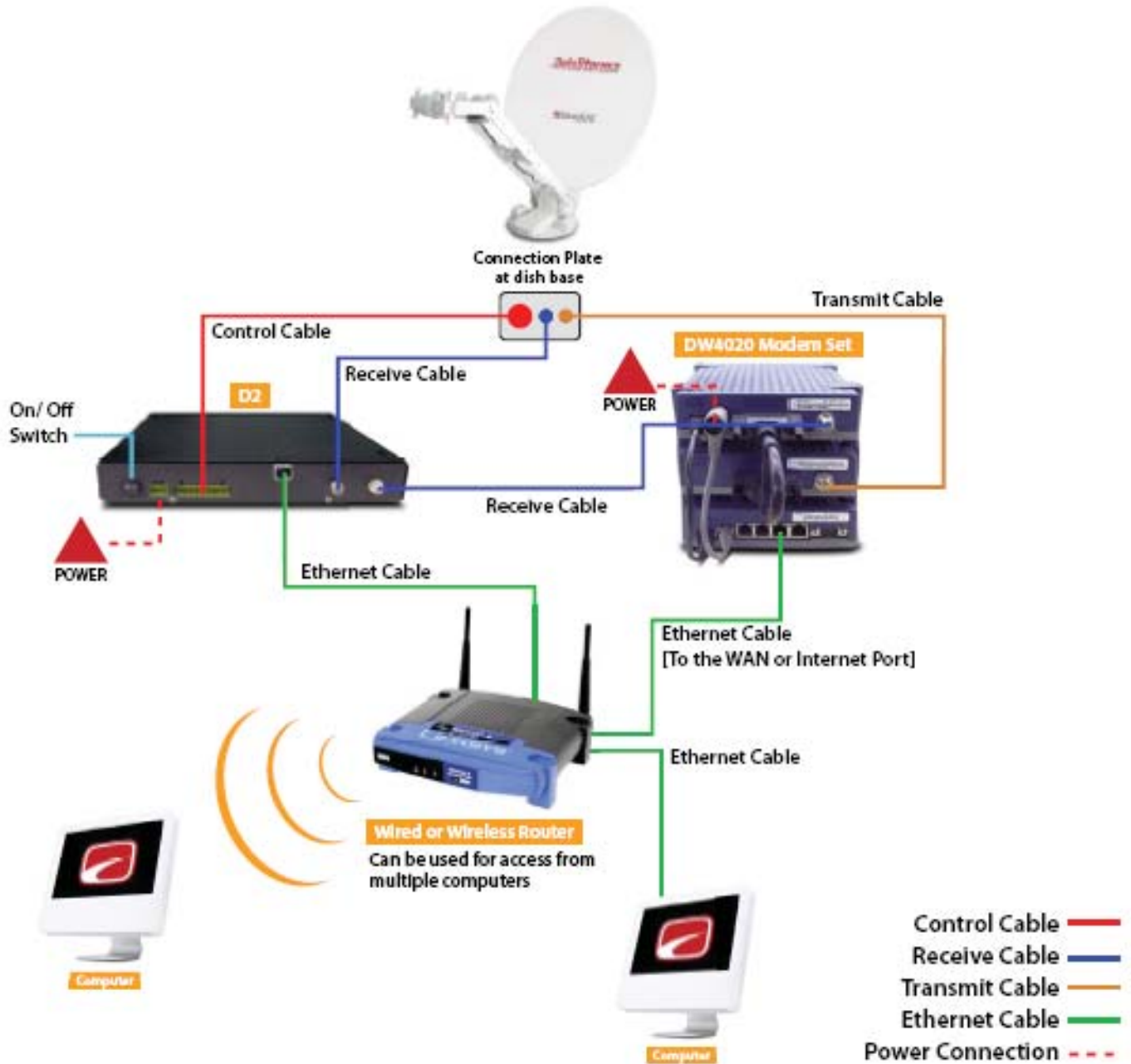
- Obtain IP Address Automatically
- Obtain DNS Server Automatically

DW4020 NAT

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

**Linksys Router Default Configuration

Computer(s) Settings

-Obtain IP Address Automatically
 -Obtain DNS Automatically

Router Settings [WAN Address are an example*]

WAN-66.88.44.33 LAN IP-192.168.1.1** [or DHCP]
 Subnet-255.255.255.252 Subnet-255.255.255.0
 Gateway-66.88.44.32 Gateway-NONE
 DNS-66.82.4.8, 66.82.4.12

*WAN IP given via modem commissioning

**Linksys Router Default Configuration

DW4020 1 Static IP w/ Router

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

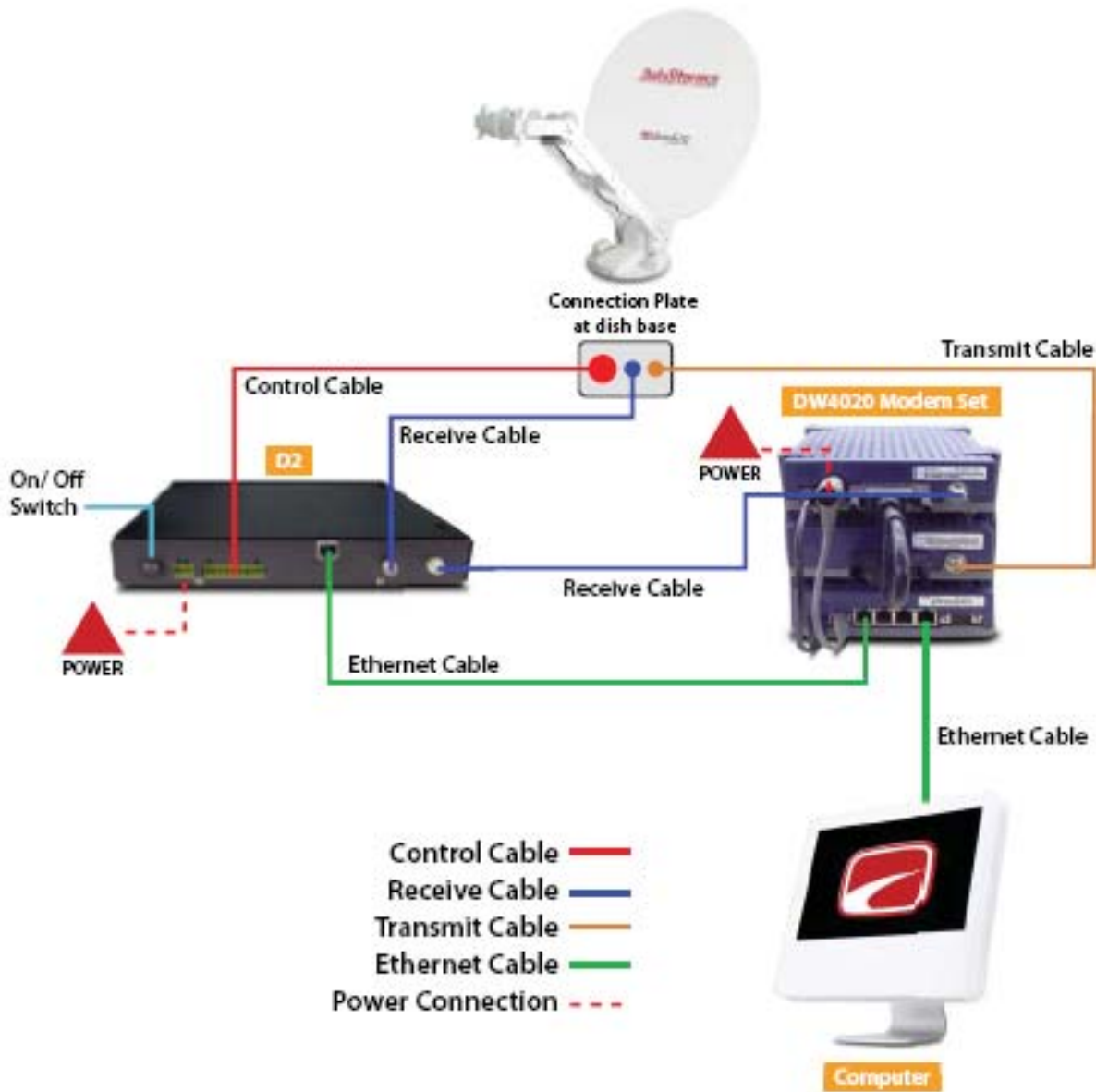
2-66.82.4.12

LAN Configuration

IP-DHCP [Default is usually 192.168.1.1]

SUBNET-DHCP [Default is usually 255.255.255.0]

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.

DW4020 1 Static IP No Router

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

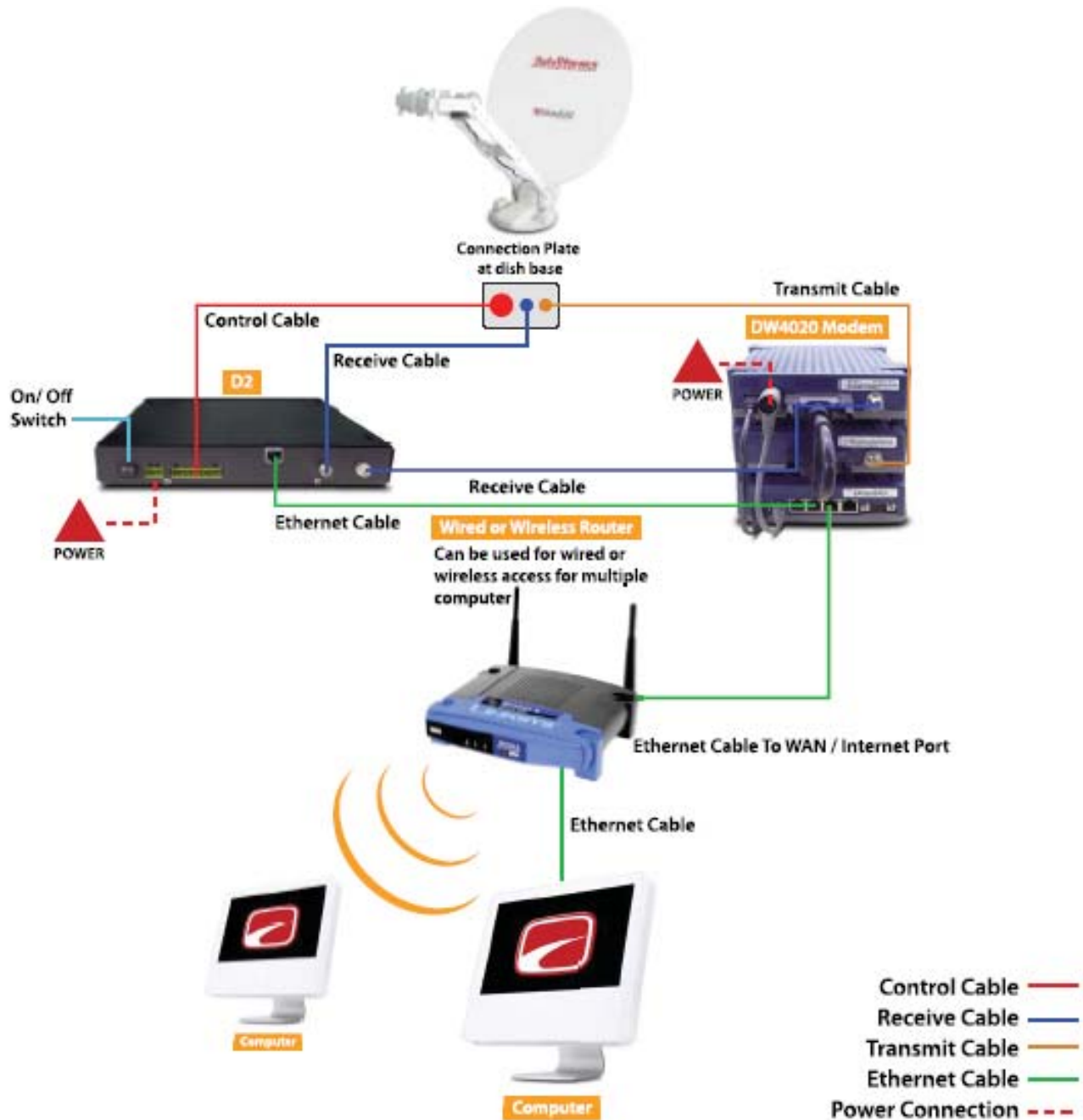
2-66.82.4.12

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

**Linksys Router Default Configuration

Computer(s) Settings

-Obtain IP Address Automatically
-Obtain DNS Automatically

Router Settings [WAN Address are an example*]

WAN IP-66.88.44.33 **LAN IP**-192.168.1.1** [or DHCP]
Subnet-255.255.255.252 **Subnet**-255.255.255.0
Gateway-66.88.44.32 **Gateway**-NONE
DNS-66.82.4.8, 66.82.4.12

*WAN IP given via modem commissioning

**Linksys Router Default Configuration

DW4020 5 Static IP's w/ Router

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

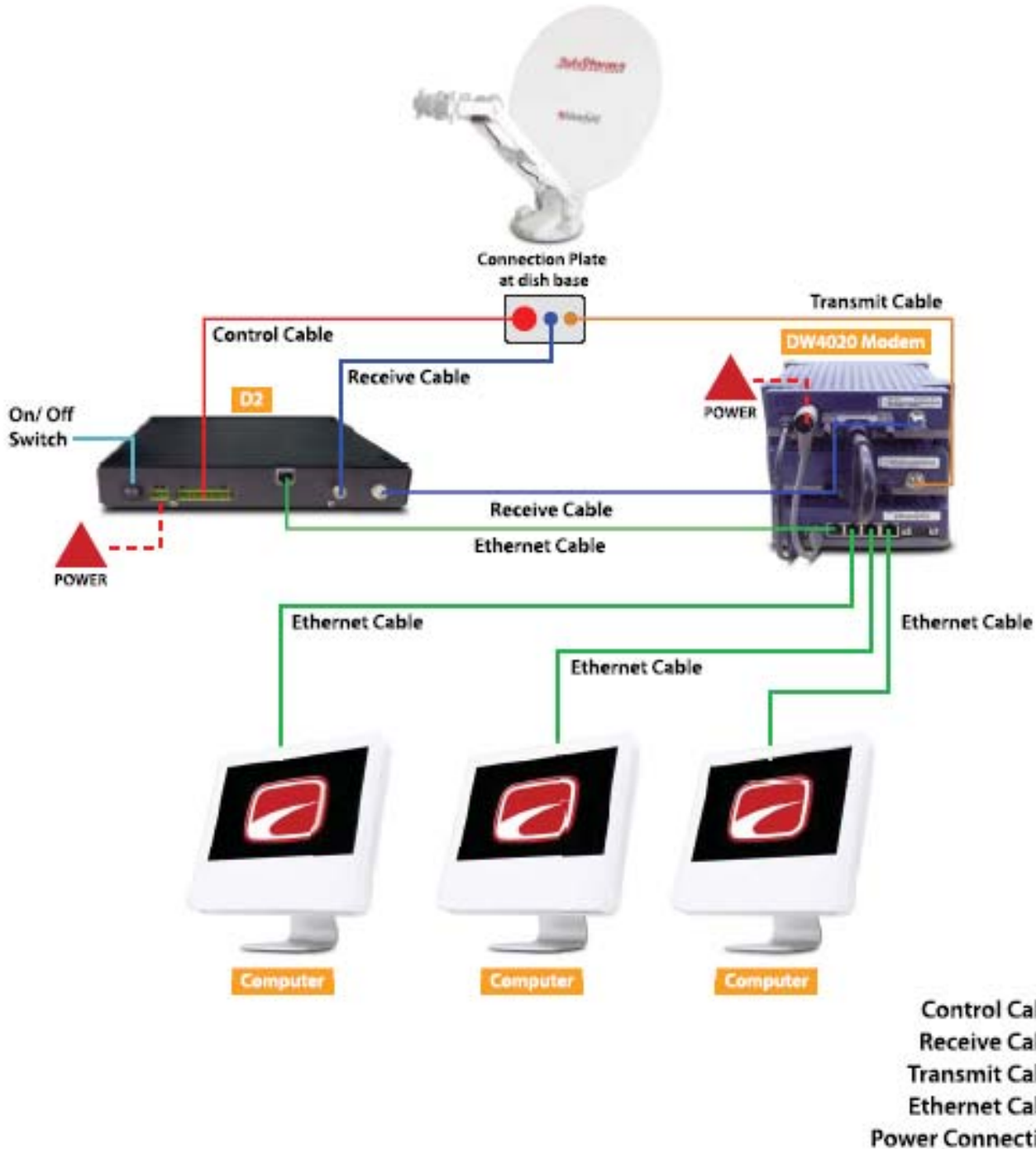
IP-66.88.44.33
SUBNET-255.255.255.248
GATEWAY-66.88.44.32

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

DW4020 5 Static IP's 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

DW4020 5 Static IP's No Router

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

Satellite - Longitude	Frequency	Rx Polarization	Tx Polarization	Transponder	Information
G11 - 91W	990 Mhz	Vertical	Horizontal	2	General
	1350 Mhz	Vertical	Horizontal	20	Mobile
	1370 Mhz	Horizontal	Horizontal	21	General
	1410 Mhz	Horizontal	Horizontal	21	General
G4R - 99W	970 Mhz	Horizontal	Horizontal	1	General
	1110 Mhz	Vertical	Horizontal	8	Mobile
	1201 Mhz	Vertical	Horizontal		High-Speed Mobile
	1250 Mhz	Horizontal	Horizontal	15	General
	1350 Mhz	Vertical	Horizontal	20	Mobile
	1370 Mhz	Horizontal	Horizontal	21	General
SatMex 5 - 117W	990 Mhz	Vertical	Horizontal	2	Mobile
	1050 Mhz	Horizontal	Horizontal	5	Mobile
	1070 Mhz	Vertical	Horizontal	6	General
	1090 Mhz	Horizontal	Horizontal	7	General
	1130 Mhz	Horizontal	Horizontal	9	Mobile
	1227 Mhz	Vertical	Horizontal	14	General
	1250 Mhz	Horizontal	Horizontal	15	High-Speed Mobile
	1257 Mhz	Vertical	Horizontal	16	General
1270 Mhz	Vertical	Horizontal		General	
Horizons 1 - 127W	1390 Mhz	Vertical	Horizontal	22	High-Speed Mobile
AMC 9 - 83W	1430 Mhz	Vertical	Horizontal		General

DiRECWAY Satellite Commissioning Information

Satellite - Long	Frequency	Rx Polarization	Tx Polarization	Transponder
G11 - 91W	990 Mhz	Vertical	Horizontal	2
	1350 Mhz	Vertical	Horizontal	20
G4R - 99W	1230 Mhz	Vertical	Horizontal	1
	1350 Mhz	Vertical	Horizontal	20
SatMex 5 - 117W	1070 Mhz	Vertical	Horizontal	2
	1230 Mhz	Vertical	Horizontal	15
Horizons 1 - 127W	1390 Mhz	Vertical	Horizontal	22
AMC9 - 83W	1430 Mhz	Vertical	Horizontal	

Telnet Commands & Information

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

Inboff
DATASTORM%-DVB
Switches the LNB power from the DVB off.
-USAGE:
Inboff

Inbon
DATASTORM%-DVB
Switches the LNB power from the DVB on.
-USAGE:
Inbon

Involts
DATASTORM%-DVB
Shows the current voltage on the LNB.
-USAGE:
Involts

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.

Telnet Commands & Information Cont.

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

Telnet Commands & Information Cont.

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

Telnet Commands & Information Cont.

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 'Stoe' 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

D2Boot%

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