DataStorm D2 | Appendix

v.1

MotoSAT

LM-04.21.05

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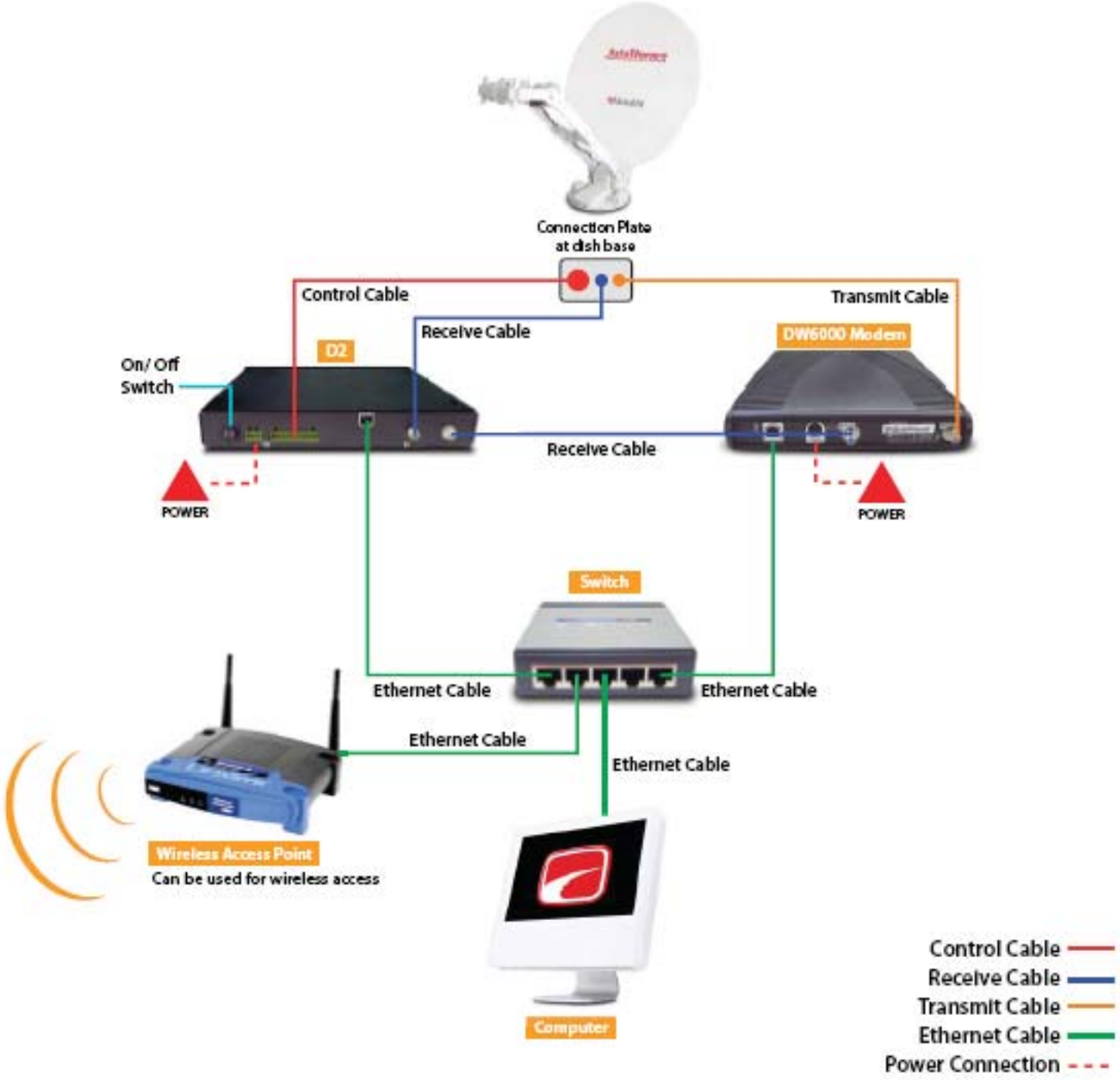
Coming Soon ...
| Error Code Definitions
| How To's: NVCLEAR, Product Registration, etc.

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

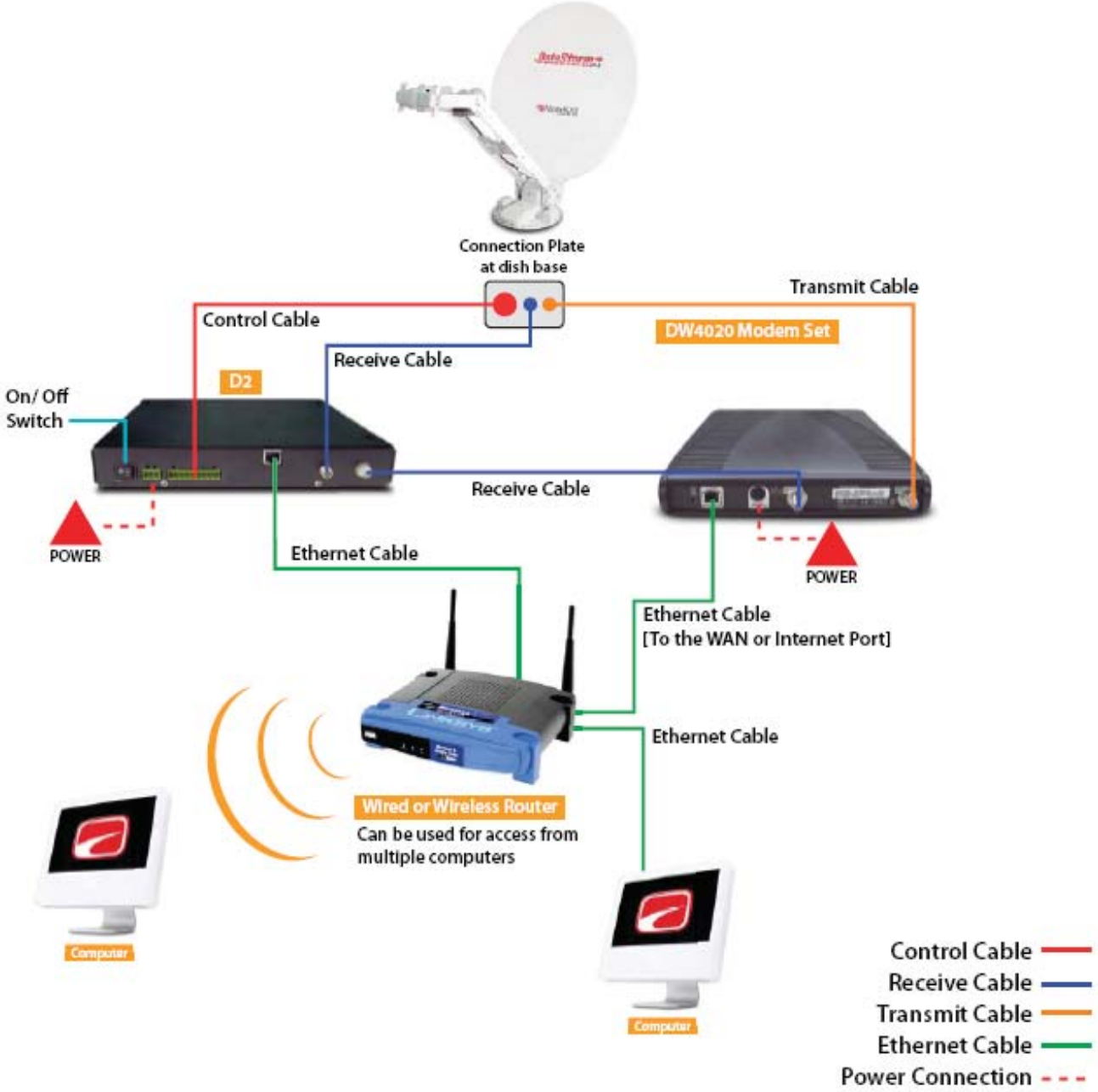
Required Hardware: Hub/Switch with optional Wireless Access Point

- 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



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

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.

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

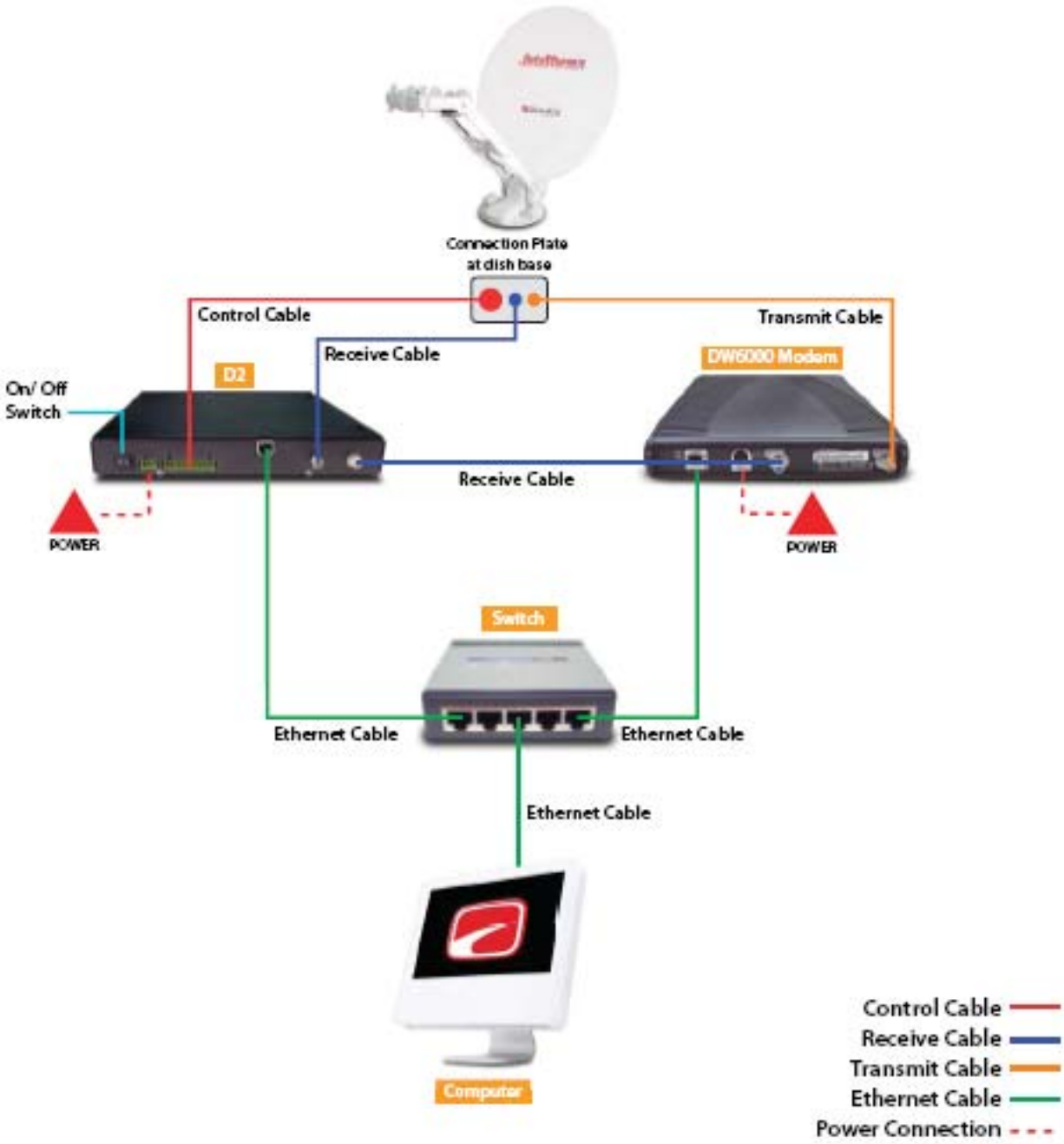
- D2 Settings
    - IP Configuration
        - IP-192.168.1.250
        - Subnet-255.255.255.0
        - Modem Gateway-192.168.0.1
        - Router Gateway-192.168.1.1
        - DNS-Leave as is

- 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

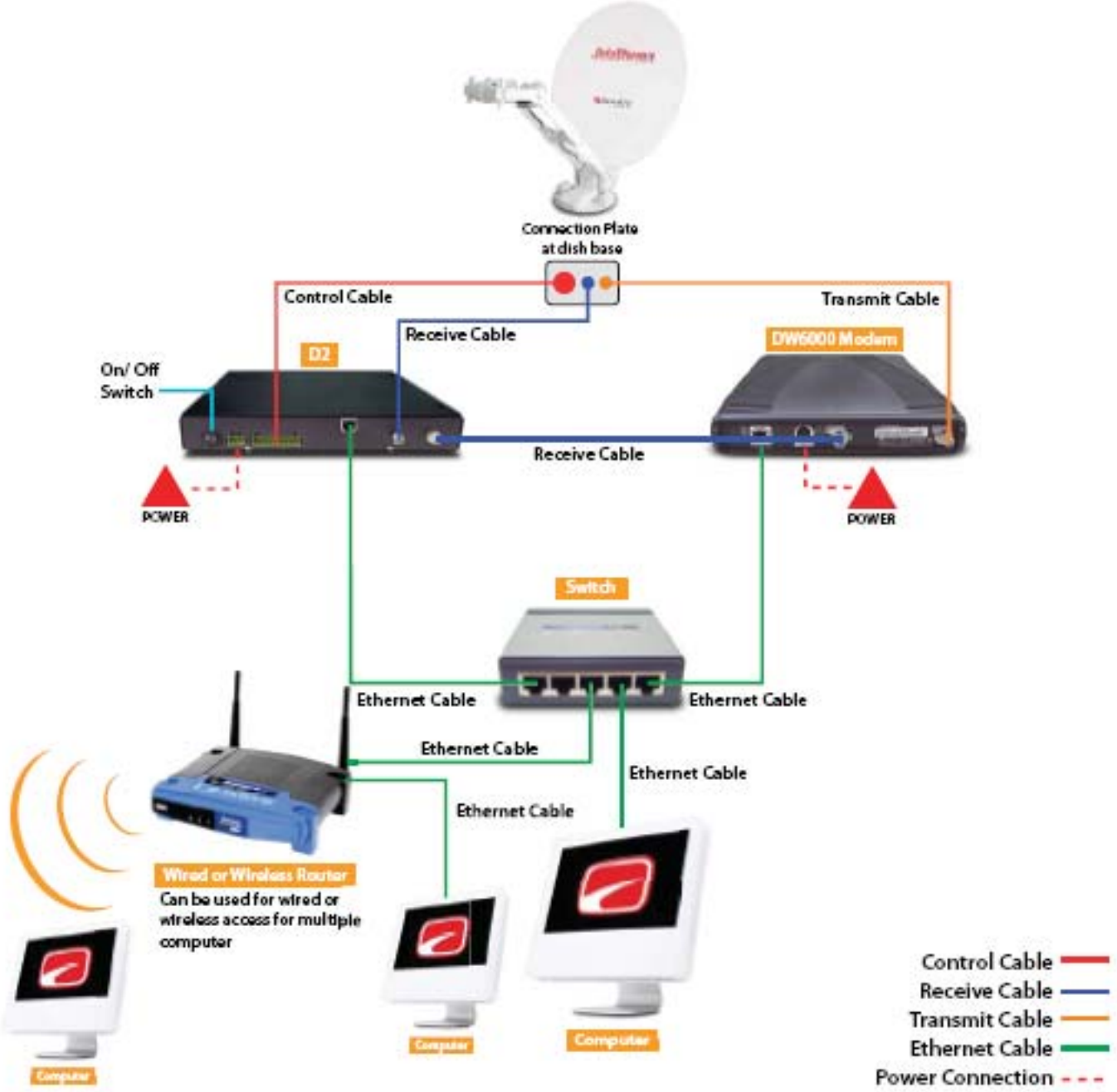
Required Hardware: Hub/Switch

- 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



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.

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]

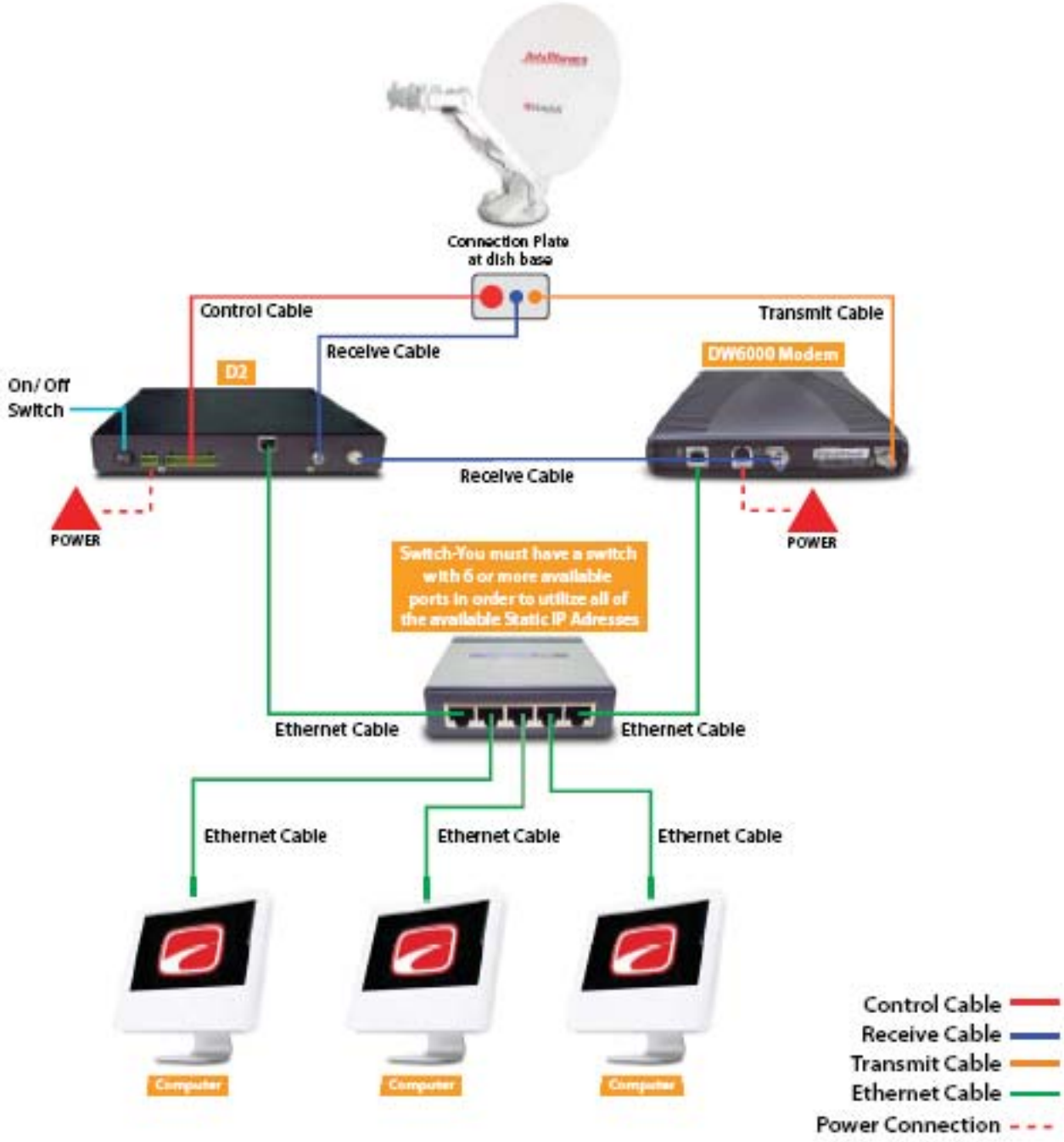
2nd IP Configuration [a wired or wireless link via the router]
-Obtain IP Address Automatically
-Obtain DNS Automatically

• 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

2nd See attached configuration sheet

3rd See attached configuration sheet

4th See attached configuration sheet

DW6000 5 Static IP No Router

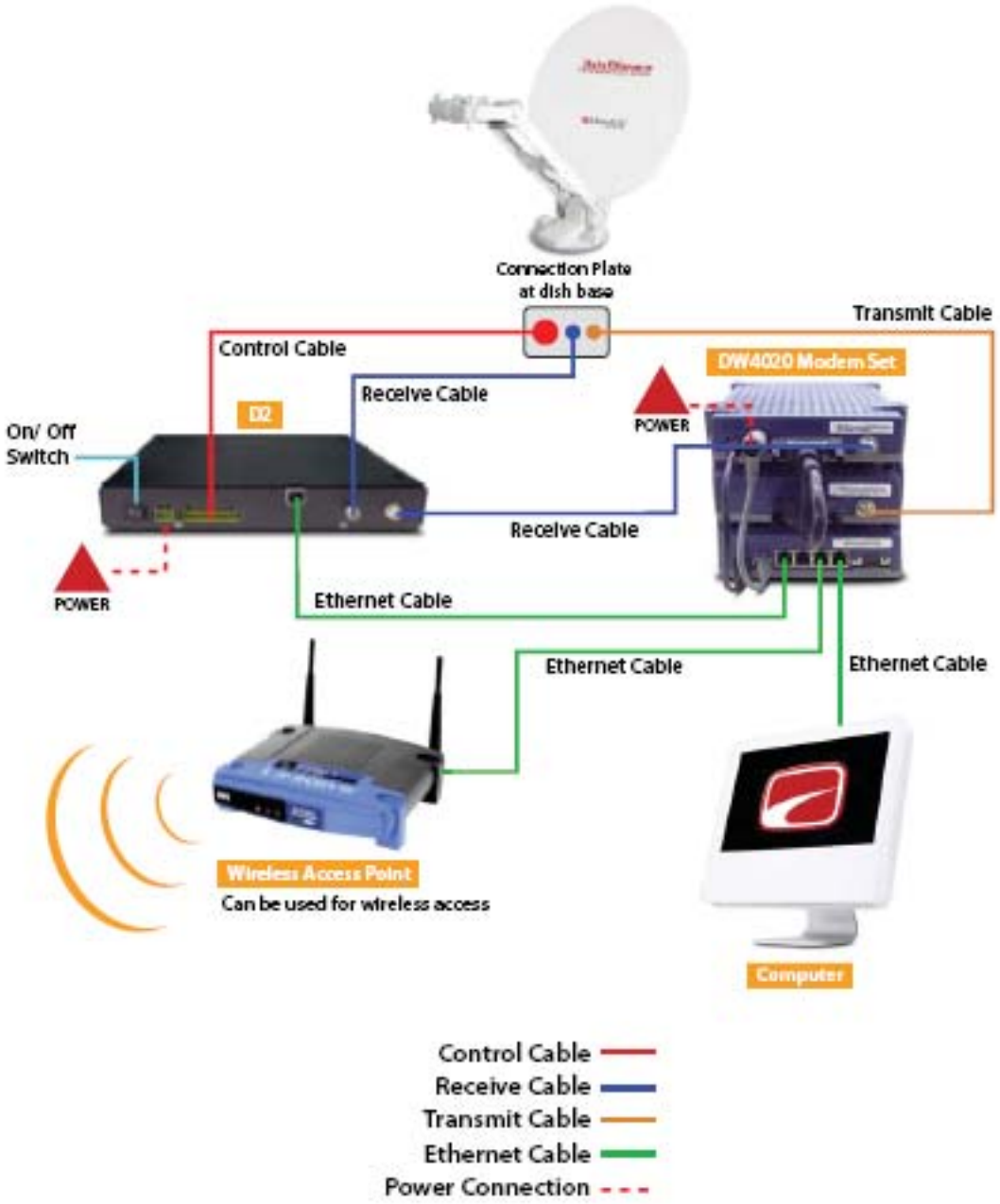
Required Hardware: Hub/Switch

- 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

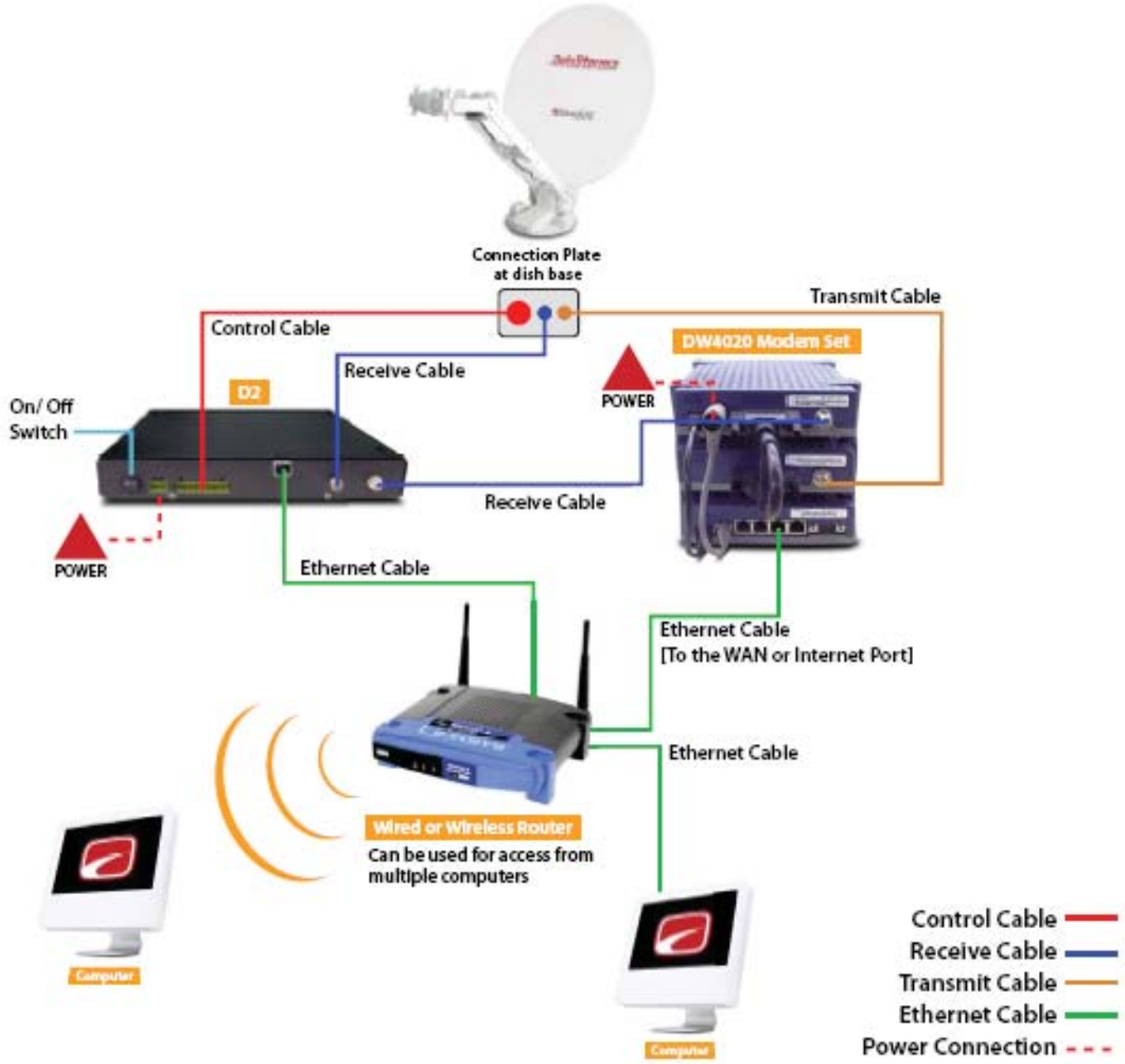
Required Hardware: None

- 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 **IP**-66.88.44.33
Subnet-255.255.255.252
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

*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

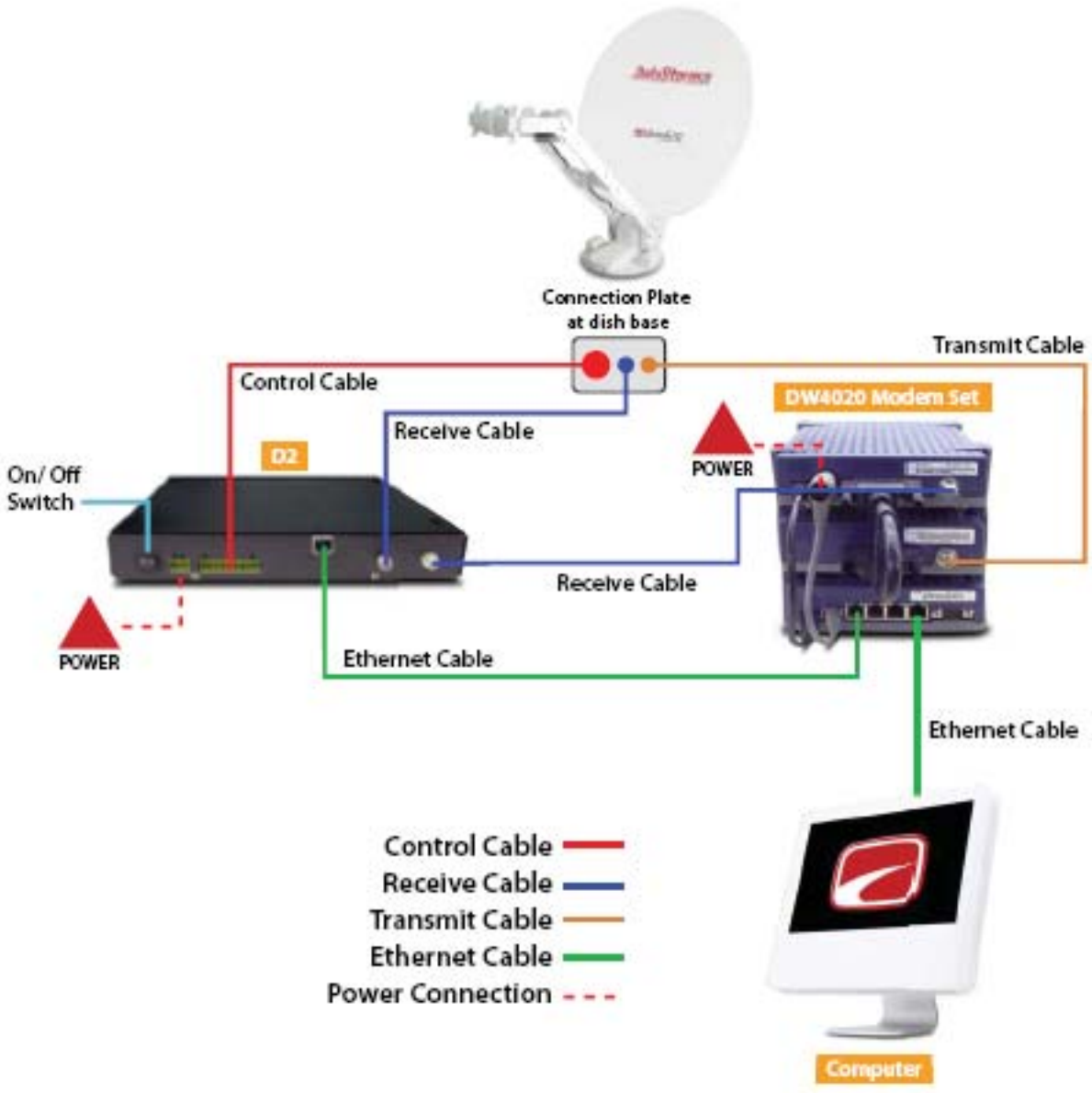
- D2 Settings
  - IP Configuration
    - IP-192.168.1.250
    - Subnet-255.255.255.0
    - Modem Gateway-192.168.0.1
    - Router Gateway-192.168.1.1
    - DNS-Leave as is

- 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

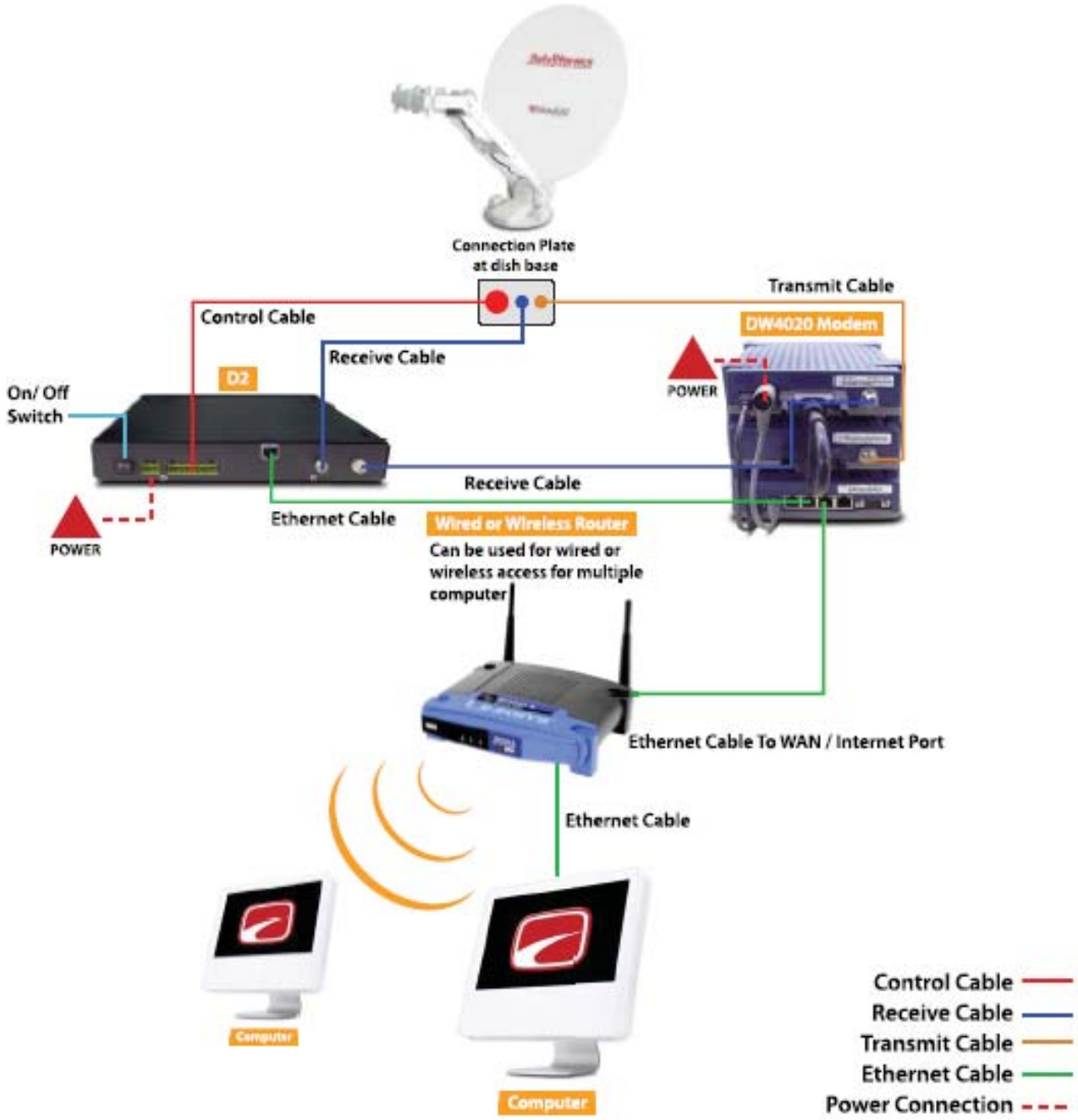
Required Hardware: None

- 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

**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

LAN **IP**-192.168.1.1** [or DHCP]
Subnet-255.255.255.0
Gateway-NONE

**Linksys Router Default Configuration

*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]

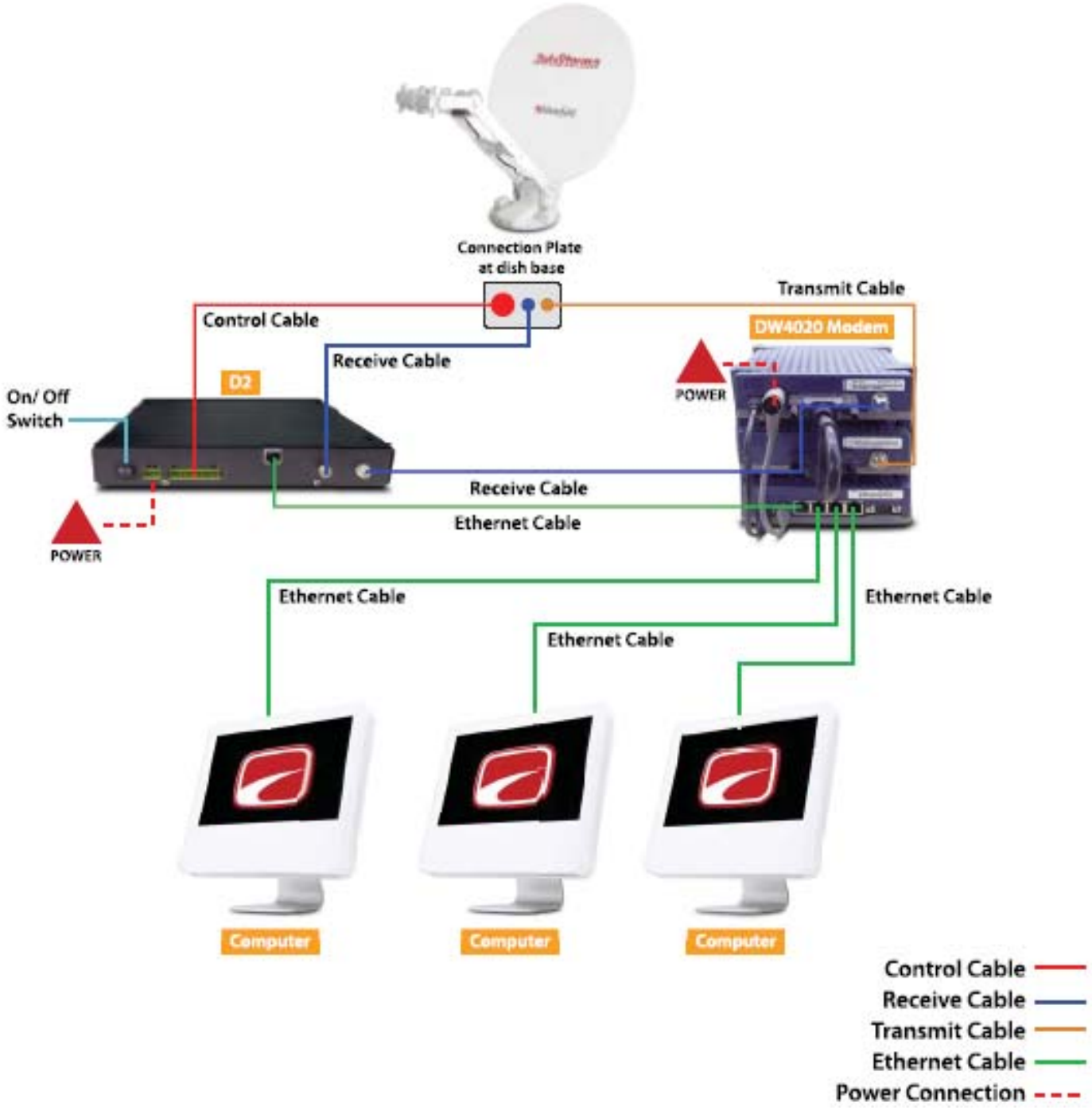
2nd IP Configuration [a wired or wireless link via the router]
-Obtain IP Address Automatically
-Obtain DNS Automatically

• 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 sucessful 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
Swtiches the LNB power from the DVB off.
-USAGE:
lnboff

---

lnbon
DATASTORM%-DVB
Swtiches 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.

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-volitle 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 teh netowrk
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
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 follwing 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