

# Multi-Satellite Antenna Upgrade Kit Installation Guide

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# Getting Started

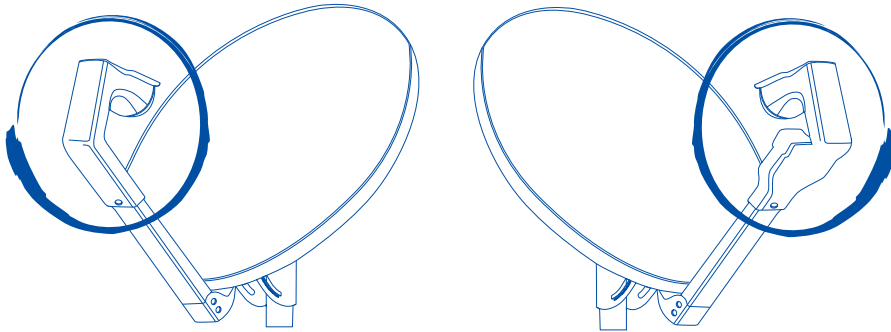
Before proceeding, please refer to your satellite system's "Installation Instructions/User Manual" for detailed Safety Instructions.

- Do not locate the satellite dish antenna near overhead power lines or electric lights.
- Do not install the satellite dish or its components in high winds or when there is a danger of a lightning strike.
- Use safety glasses and avoid wearing loose clothing during installation.
- Use caution with ladders.
- Use caution when working on your roof. Wear shoes with good tread to ensure good traction on the roof surface and be sure that your work path is clear and dry. Use of a safety harness is recommended.
- Ground your satellite system as outlined in the original instructions, and as prescribed by local electrical codes.

With the launch of a second satellite, certain **Bell ExpressVu** customers will have to upgrade their satellite system dish equipment to ensure they are capable of receiving television signals from both **Bell ExpressVu** satellites, Nimiq 1 and Nimiq 2. If you subscribe to one of **Bell ExpressVu**'s 'specialty' TV services such as High Definition TV or international programming then you will have to complete this Multi-Satellite Antenna Upgrade in order to watch these specialty channels.

This Multi-Satellite Antenna Upgrade Kit Installation Guide was developed as an easy-to-use companion to the Installation Instructions and User Guide originally provided with your satellite receiver and it outlines the necessary changes that must be made to your current satellite dish antenna.

First, you must identify which satellite dish you currently have. Of the two satellite dishes shown below, identify the one that resembles the satellite dish you have based on its overall SIZE, and the LIKENESS of the satellite dish arm.



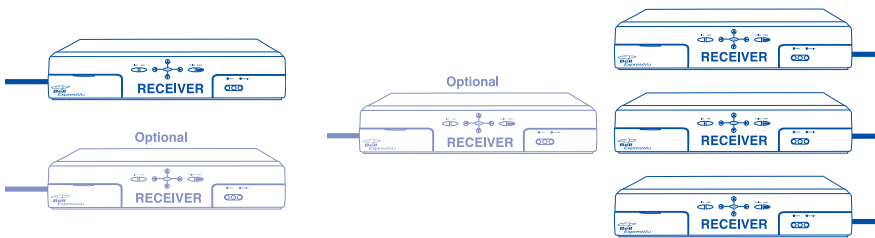
46 centimetre Satellite Dish with one LNBF  
(available before October, 2002)

*Dish Upgrade instructions begin on page 3*

51 centimetre Satellite Dish with one LNBF and expansion slot  
(available after September, 2002)

*Dish Upgrade instructions begin on page 9*

Next, determine how many satellite receivers will be connected to the satellite dish.



Up-to-two receiver set-up

*After completing Dish Upgrade, consult page 11 for wiring instructions*

Three-to-four receiver set-up

*After completing Dish Upgrade, consult page 13 for wiring instructions*

If you encounter any problems when installing your **Bell ExpressVu** Multi-Satellite Dish Antenna Upgrade Kit, or have any questions regarding these new satellite dish components, you are welcome to contact **Bell ExpressVu** directly at **1 888 SKY-DISH (759-3474)**.

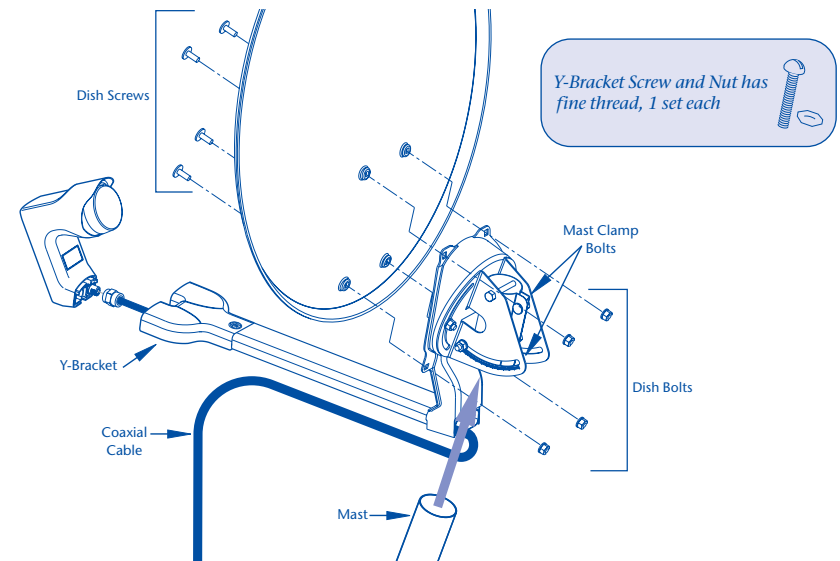
## Upgrade of original 46 cm Satellite dish with new 51 cm Multi-Satellite dish

The components in your Upgrade Kit which will you use in this section are:

- a 51 centimetre satellite dish
- satellite dish arm with Y-adapter
- one LNBF (low noise amplifier)
- coaxial cables

1. Remove original 46 cm satellite dish by completing the following steps:

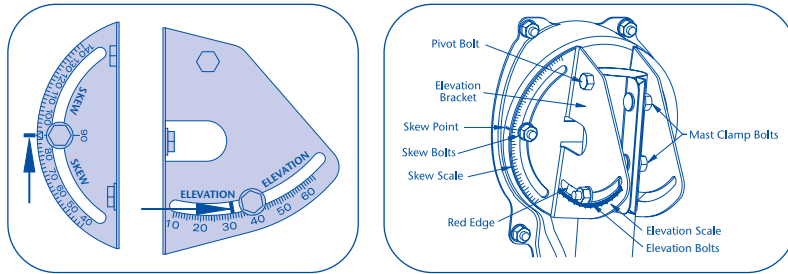
- Detach LNBF from satellite dish arm by loosening LNBF screw
- Disconnect LNBF from the coaxial cable located in satellite dish arm and set the LNBF aside for now, you will need it for later for the upgrade installation
- Loosen mast clamp bolts located on the back of the satellite dish.
- Dismount satellite dish from mast by lifting it upwards, taking care that the coaxial cable pulls away from the dish arm and is left protruding out the top of the dish mast.



2. Assemble new 51 cm Multi-Satellite Dish by attaching mount plate bracket to the back of the satellite dish with supplied screws and bolts. Attach Y-adapter bracket to dish support arm using Y-bracket screw and nut.

## Upgrade of original 46 cm Satellite dish with new 51 cm Multi-Satellite dish

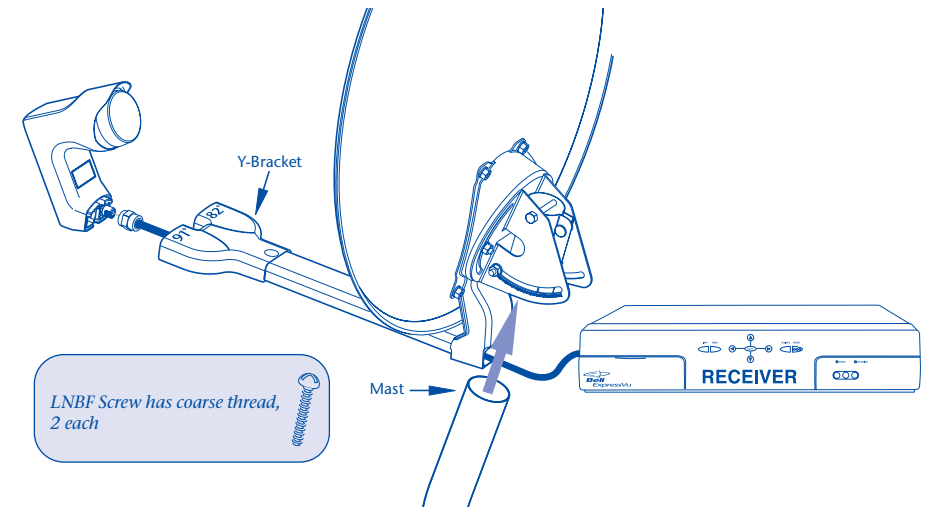
- Loosen both skew bolts and set the skew by rotating the dish mounting bracket to align the red mark with the required angle on the skew scale. Consult the 'Look Angles' section at the back of this guide to for the skew setting in your area. Once adjusted, tighten the skew bolts securely to keep the dish from rotating. Once the skew is set, do not try to fine-tune the skew angle when aiming the dish.
- Set the elevation by tilting the dish mounting bracket to align the red edge with the required angle on the elevation scale. Consult the 'Look Angles' section at the back of this guide to for the elevation setting in your area. Tighten the elevation bolts, but do not tighten the pivot bolt at this time.



- Slide the satellite dish down over the mast and secure it by tightening the mast clamp bolts.
- Position the satellite dish to the appropriate azimuth setting (compass direction). Consult the 'Look Angles' section at the back of this guide for the azimuth setting in your area.

## Upgrade of original 46 cm Satellite dish with new 51 cm Multi-Satellite dish

- Starting from the back of the dish assembly, take the main coaxial cable which is connected your satellite receiver inside the home and slowly thread the cable end through the inside of the satellite dish arm until it protrudes through the opening of the Y-adapter labeled 91°.
- Connect end of coaxial cable to the original LNBF that had been set aside earlier. Attach the LNBF to the Y-adapter and secure it with the LNBF screw and bolt.



## Upgrade of original 46 cm Satellite dish with new 51 cm Multi-Satellite dish

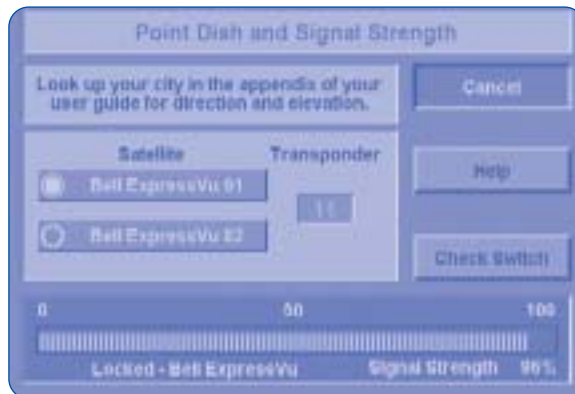
9. Power on one of your satellite receivers and display the 'Point Dish' screen on the TV by pressing 'Menu' on the remote and selecting the 'System Set-up' option, then 'Installation' and finally select 'Point Dish/Signal'. You will see one of the two screens displayed below.

'Single satellite' screen



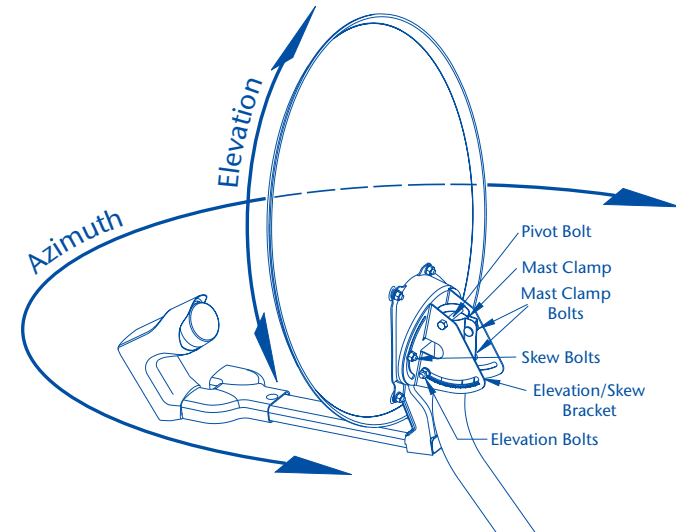
Ensure 'Satellite' is set to Nimiq 91- message will indicate "Wrong Satellite"

'Dual satellite' screen



Ensure 'Satellite' is set to 'Bell ExpressVu 82'

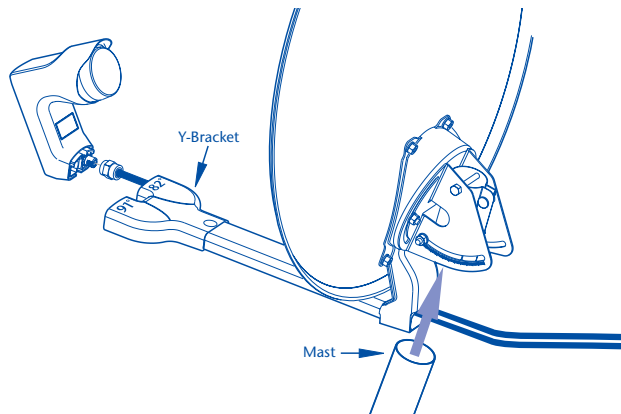
## Upgrade of original 46 cm Satellite dish with new 51 cm Multi-Satellite dish



10. Turn the dish assembly back and forth very slowly, until the signal strength bar turns green to indicate the signal. Ensure that your body is not blocking the signal path between the dish and the satellite! Note: If you cannot find the signal, turn the dish assembly back to the original azimuth setting (compass direction). Loosen the elevation bolts and increase the elevation angle by two degrees. Tighten the elevation bolts and try turning the dish assembly slowly back and forth. Repeat these steps, raising and lowering the elevation, until you find the satellite signal.
11. Once you have the signal, turn the dish assembly back and forth very slightly until the signal strength bar displays the maximum signal strength. Tighten the mast clamp bolts. Then, loosen the elevation bolts and adjust the elevation of the dish up and down slightly until the signal strength bar displays the maximum signal. Do not adjust the skew setting! Tighten all the bolts in the satellite dish assembly so that the dish cannot be moved.

## Upgrade of original 46 cm Satellite dish with new 51 cm Multi-Satellite dish

12. Detach the LNBF from the Y-adapter and disconnect the coaxial cable. Thread the cable through the satellite dish arm so that it protrudes through the opening of the Y-adapter labeled 82°.
13. Connect end of coaxial cable to the new LNBF that was packed in your Upgrade Kit. Attach the LNBF to the Y-adapter and secure it with the LNBF screw and bolt.



14. Using the 'Point Dish' screen, confirm that a signal is being received by the satellite dish. On the 'Single Satellite' screen you will see a message indicating 'Wrong satellite!' which is perfectly acceptable. On the 'Dual Satellite' screen select 'Bell ExpressVu 82' to indicate the signal strength.

You have now completed the 'Dish Upgrade' and can now proceed to the 'Wiring Upgrade':

- If you are wiring your satellite system for up to two receivers, go to page 11
- If you are wiring your satellite system for three-to-four receivers, go to page 13

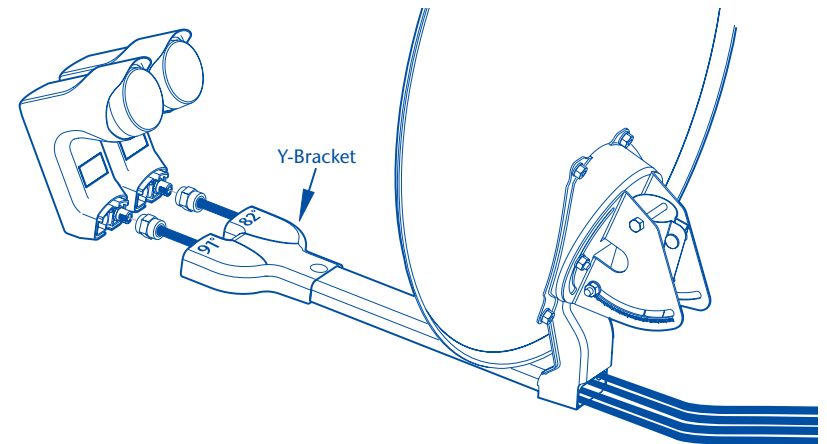
## Upgrading current 51 cm Multi-Satellite dish with second LNBF

The components in your Upgrade Kit which will you use in this section are:

- one LNBF (low noise amplifier)

To upgrade your 51 cm Multi-Satellite Antenna Dish to enable it to receive two satellite signals, you must perform the following steps:

1. Remove expansion slot cover on the Y-adapter located at the end of the satellite dish arm.
2. Detach the LNBF from the Y-adapter and disconnect the coaxial cable. Thread the cable through the satellite dish arm so that it protrudes through the opening of the Y-adapter labeled 82°.

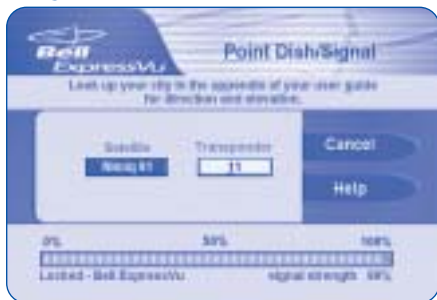


3. Connect end of coaxial cable to the new LNBF that was packed in your Upgrade Kit. Attach the LNBF to the Y-adapter and secure it with the LNBF screw and bolt.

## Upgrading current 51 cm Multi-Satellite dish with second LNBF

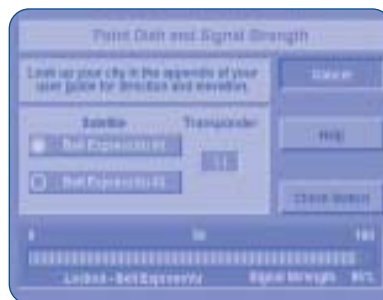
4. Power on one of your satellite receivers and display the 'Point Dish' screen on the TV by pressing 'Menu' on the remote and selecting the 'System Set-up' option, then 'Installation' and finally select 'Point Dish/Signal'. You will see one of the two screens displayed below.

'Single satellite' screen



Ensure 'Satellite' is set to Nimiq 91- message will indicate "Wrong Satellite"

'Dual satellite' screen



Ensure 'Satellite' is set to 'Bell ExpressVu 82'

You have now completed the 'Dish Upgrade' and can now proceed to the 'Wiring Upgrade':

- If you are wiring your satellite system for up to two receivers, go to page 11
- If you are wiring your satellite system for three-to-four receivers, go to page 13

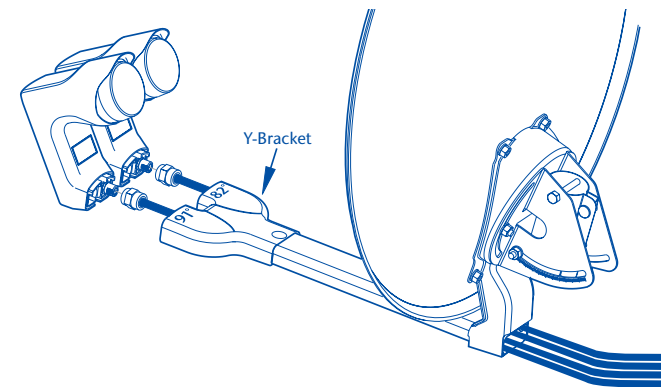
## Wiring for up to two receivers

At this stage, you should already have a 51 cm Multi-Satellite dish mounted the top of your mast with two LNBF's attached to the Y-adapter located at the end of the dish arm. Also, you should have conducted tests to ensure the satellite dish is aimed in the proper direction to receive both **Bell ExpressVu** satellite signals at optimum strength. If this is not the case, do not proceed with these 'Wiring Upgrade' instructions until you complete the 'Dish Upgrade' section.

The components in your Upgrade Kit which will you use in this section are:

- Two 2:1 multi-switches (SW21)
- Four coaxial cables

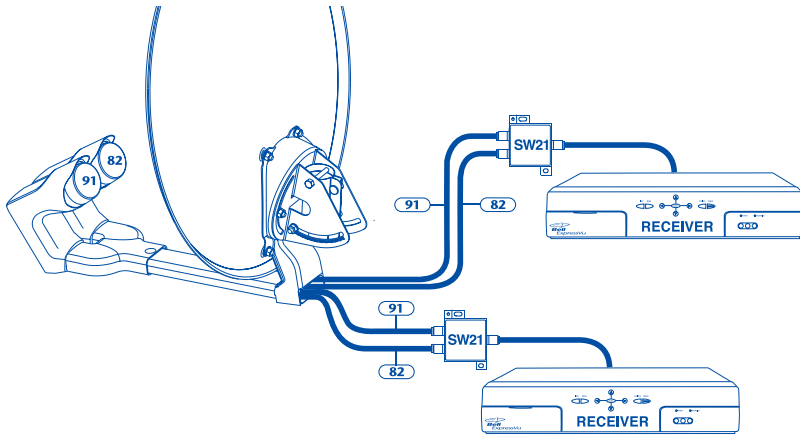
1. Remove both LNBF's from the Y-adapter at the end of the satellite dish arm.
2. Starting from the back of the dish assembly, slowly thread two coaxial cables (not included) through the inside of the satellite dish arm until the cables protrude through the opening of the Y-adapter labeled 91°. Label these cables at 91° to help identify them when connecting them later.
3. Take either LNBF, connect the cables to each of its outputs and insert the LNBF into 91° slot on the Y-adapter. Tighten LNBF screw and bolt.



4. At the back of the dish assembly, thread the other two coaxial cables through the inside of the satellite dish arm until the cables protrude through the opening of the Y-adapter labeled 91°. Label these cables at 91° to help identify them when connecting them later.

## Wiring for up to two receivers

5. Connect cables to each output of the remaining LNBF and insert it into 82° slot on the Y-adapter. Tighten LNBF screw and bolt.
6. Take the cables leading from the LNBF in the 91° Y-adapter slot and connect each one to the 'Dish 1' input of each 2:1 multi-switch.
7. Take the cables from the 82° LNBF and connect each one to the 'Dish 2' input of each 2:1 multi-switch.



8. Connect the cable(s) that will go inside the home to the output(s) of each 2:1 multi-switch
9. Mount each 2:1 switch to the brackets and attach the brackets to the back of the dish assembly.
10. You have now completed the 'Wiring Upgrade' and can now proceed to the 'System Set-up' section on page 15.

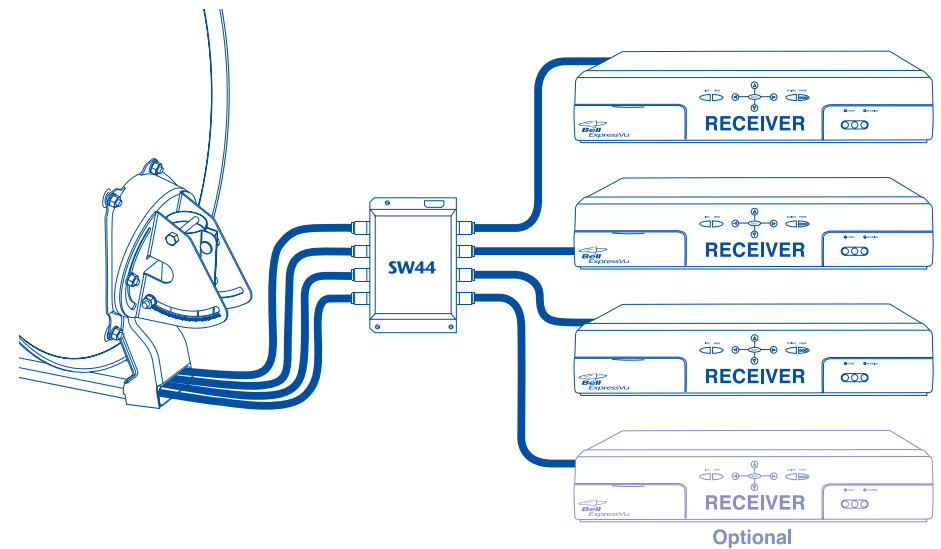
## Wiring for three-to-four receivers

At this stage, you should already have a 51 cm Multi-Satellite dish mounted top of your mast with two LNBF's attached to the Y-adapter located at the end of the dish arm. Also, you should have conducted tests to ensure the satellite dish is pointed in the proper direction to receive both **Bell ExpressVu** satellite signals at optimum strength. If this is not the case, do not proceed with these 'Wiring' instructions until you return and complete the Multi-Satellite dish upgrade section.

The components in your Upgrade Kit which will you use in this section are:

- one 4:4 multi-switch (SW44)

1. Remove both LNBF's from the end of the satellite dish arm.
2. Starting from the back of the dish assembly, slowly thread two coaxial cables (not included) through the inside of the satellite dish arm until the cables protrude through the opening of the Y-adapter labeled 91°. Label these cables at 91° to help identify them when connecting them later.
3. Take either LNBF, connect the cables to each of its outputs and insert the LNBF into 91° slot on the Y-adapter. Tighten LNBF screw and bolt.



## Wiring for three-to-four receivers

- At the back of the dish assembly, thread the other two coaxial cables (not included) through the inside of the satellite dish arm until the cables protrude through the opening of the Y-adapter labeled 82°.
- Connect cables to each input of the remaining LNBF and insert it into 82° slot on the Y-adapter. Tighten LNBF screw and bolt.
- Take the cables leading from the LNBF in the 91° Y-adapter slot and connect them to the '1A' and '1B' inputs on the 4:4 multi-switch.
- Take the cables leading from the LNBF in the 82° Y-adapter slot and connect them to the '2A' and '2B' inputs on the 4:4 multi-switch.
- Connect the cable(s) that will go inside the home to the output(s) of the 4:4 multi-switch.
- You must ensure the power inserter is connected to the output labeled '1' on the 4:4 switch. Furthermore, the power inserter must be located indoors.
- You have now completed the 'Wiring Upgrade' and can now proceed to the 'System Set-up' section on page 15.

**WARNING!** The SW44 Multi-Satellite switch MUST use a power inserter which MUST be located indoors. Connect the power inserter to PORT 1 as per the instructions provided with the SW44 switch.

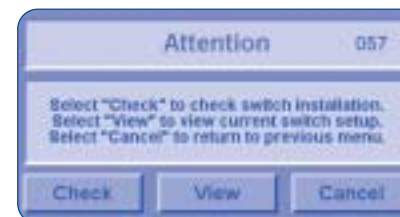
## Finalizing the Upgrade With Multi-Satellite 'Point Dish' Set-up

At this stage, you should already have a 51 cm Multi-Satellite dish installed with two LNBF's. Coaxial cables leading from each LNBF are connected to the multi-switch(es), which then supply signal(s) to the satellite receiver(s) inside the home. If this is not the case, you must complete the 'Dish Upgrade' and 'Wiring' sections before embarking upon these 'System Set-up' instructions.

- Power on one of your satellite receivers and display the 'Point Dish' screen on the TV by pressing 'Menu' on the remote and selecting the 'System Set-up' option, then 'Installation' and finally select 'Point Dish/Signal'.
- Verify that the display shows 'Dual Satellite' reception from both 91° and 82°. (If the 'Point Dish' screen is displaying single satellite only, power off the satellite receiver so it can begin to download the new Multi-Satellite software. Ensure the receiver is set to "Without my permission" via the System Upgrades menu. Once you have the Dual satellite software, you may proceed to step three.
- Using the remote, confirm the signal strength by selecting one satellite then the other.



- Next, perform a test on the satellite system switches by selecting the 'Check Switch' option on the screen. On the following display, select 'Check' to initiate the switch test.



### Finalizing the Upgrade With Multi-Satellite 'Point Dish' Set-up

- Once the test is completed, an 'Installation Summary' screen will appear and indicate the various settings for each switch output and also verify proper satellite reception.



**Congratulations! The installation of your new Bell ExpressVu Multi-Satellite System is complete!**

If you are an existing subscriber, just relax and enjoy all the added 'specialty' programming you'll be watching on your television from now on.

If you are a new customer, you must take one final step before you can start enjoying your new **Bell ExpressVu** Multi-Satellite system. Simply call **1 888 SKY-DISH (759-3474)** to activate your satellite receiver(s).

#### Community

	Compass Direction	Vertical Elevation	Skew
<b>Alberta</b>			
Athabasca	130.7	23.8	72.2
Banff	126.0	25.4	68.4
Brooks	132.3	27.8	70.3
Calgary	129.2	26.1	69.7
Camrose	132.4	25.0	72.2
Drumheller	130.7	26.5	70.3
Edmonton	130.7	23.8	72.2
Fort McMurray	133.8	21.6	75.1
Fort Vermilion	125.2	19.3	73.1
Grande Prairie	121.4	20.8	69.6
Grimshaw	122.7	20.3	70.8
Hanna	132.4	26.9	70.9
Jasper	123.1	22.9	68.7
Lethbridge	130.6	27.4	69.6
Lloydminster	135.8	25.7	73.4
Meander River	123.4	18.1	73.2
Medicine Hat	134.0	28.1	71.0
Peace River	124.2	20.7	71.3
Red Deer	129.2	25.2	70.3
Slave Lake	127.4	22.2	71.7

#### British Columbia

Campbell River	114.2	22.2	62.7
Chilliwack	117.8	24.4	63.4
Cranbrook	125.9	27.1	67.0
Dawson Creek	120.1	20.4	69.1
Dease Lake	108.1	13.2	68.9
Fort Nelson	115.2	16.1	70.5
Fort St. John	118.5	19.2	69.3
Kamloops	120.4	23.7	66.1
Kelowna	121.8	25.0	65.9
Kitimat	109.5	17.4	64.1
Nanaimo	115.3	23.4	62.3
Penticton	121.7	25.8	65.2
Port Alice	111.9	21.2	61.7
Prince George	116.4	20.0	66.8
Prince Rupert	108.3	16.9	63.7
Quesnel	117.7	21.2	66.6
Revelstoke	123.1	24.6	67.3
Valemount	121.7	22.5	68.2
Vancouver	116.6	23.9	62.7
Vernon	121.8	25.0	65.9
Victoria	116.5	24.6	62.1
Williams Lake	117.7	22.0	65.8

#### Manitoba

Brandon	155.2	31.3	79.0
Churchill	172.9	22.7	85.6
Dauphin	153.3	30.0	78.6
Grand Rapids	158.2	28.3	80.8
Gypsumville	159.8	30.6	80.9
Hodgson	162.2	30.8	81.7
Lynn Lake	154.5	23.9	80.8
Portage La Prairie	159.6	31.7	80.6
The Pas	153.9	26.9	79.8
Thompson	161.3	25.4	82.4
Winnipeg	161.9	31.8	81.4

#### Community

	Compass Direction	Vertical Elevation	Skew
<b>New Brunswick</b>			
Bath	225.2	33.7	107.7
Bathurst	227.0	31.4	107.4
Dalhousie	227.0	31.4	107.4
Edmundston	223.7	33.0	106.4
Fredericton	225.2	33.7	107.7
Grand Falls	184.2	36.0	89.5
Moncton	228.3	33.0	109.3
Oromocto	226.9	33.3	108.5
Saint John	226.8	34.3	109.2
Woodstock	226.9	33.3	108.5
<b>Newfoundland</b>			
Bonavista	243.1	26.1	116.2
Corner Brook	237.8	27.5	112.3
Gander	241.3	26.2	114.2
Grand Bank	240.0	28.3	115.1
Springdale	240.2	25.8	112.9
St. Anthony	240.4	25.0	112.2
St. Johns	243.1	26.1	116.2

#### Northwest Territories

Fort McPherson	101.6	7.6	73.0
Fort Simpson	118.6	15.7	75.0
Fort Smith	134.4	19.7	78.0
Hay River	127.3	18.1	76.0
Inuvik	101.9	7.3	75.0
Norman Wells	109.9	11.4	75.0
Yellowknife	128.5	16.8	78.0

#### Nova Scotia

Cape Breton Island	234.0	31.4	112.4
Halifax	229.9	33.6	110.8
Port Hawkesbury	234.1	32.3	113.1
Springhill	229.8	32.6	110.0
Sydney	235.4	31.0	113.1
Trenton	203.9	38.6	98.6
Truro	231.3	32.6	111.6
Wedgeport	226.8	36.2	110.4
Yarmouth	226.8	35.3	109.8

#### Nunavut

Arctic Bay	239.6	8.4	92.0
Baker Lake	174.9	17.3	87.5
Broughton Island	252.3	11.5	101.0
Cambridge Bay	144.8	11.8	85.0
Cape Dorset	223.9	17.0	97.0
Clyde River	253.6	9.5	97.5
Coppermine	122.5	11.7	80.5
Eureka	262.6	2.0	91.0
Gjoa Haven	181.8	12.9	88.0

# Look Angles for Bell ExpressVu Multi-Satellite Dish (82° & 91°)

## Community

	Compass Direction	Vertical Elevation	Skew
<b>Nunavut (cont'd)</b>			
Grise Fiord	251.6	5.1	92.0
Hall Beach	231.5	12.5	94.0
Iqualuit	241.6	15.8	101.0
Lake Harbour	238.5	16.9	101.0
Pond Inlet	249.5	8.4	99.5
Rankin Inlet	186.4	19.0	89.5
Repulse Bay	212.2	15.1	92.0
Resolute Bay	217.8	6.8	89.0

## Ontario

Bancroft	204.1	37.5	98.3
Barrie	199.5	38.9	96.6
Belleville	206.1	38.4	99.6
Bradford	201.7	38.7	97.6
Brockville	208.4	37.1	100.3
Burlington	201.6	39.8	97.9
Cobalt	200.4	35.6	96.0
Collingwood	199.5	38.9	96.6
Cornwall	212.5	36.7	102.1
Elliot Lake	195.5	36.9	94.3
Fort Frances	170.7	33.4	84.4
Fort Severn	186.3	26.2	89.0
Geraldton	185.3	32.7	89.6
Goderich	195.0	39.1	94.6
Guelph	199.4	40.0	96.9
Haliburton	204.0	37.5	98.3
Hanover	197.3	39.0	95.6
Hearst	192.5	32.7	91.2
Huntsville	201.9	37.8	97.4
Kenora	168.7	32.2	83.8
Kingston	206.1	38.4	99.6
Kirkland Lake	200.6	34.5	95.8
Kitchener	199.4	40.0	96.9
London	197.0	40.1	95.8
Mattawa	204.4	36.4	98.1
Moosonee	199.8	31.4	94.4
Nipigon	182.6	33.8	88.7
North Bay	202.3	36.6	97.1
Ottawa	208.4	37.1	100.3
Owen Sound	197.6	37.8	95.4
Parry Sound	199.8	37.8	96.4
Pembroke	206.5	36.2	99.0
Perth	208.4	37.1	100.3
Sarnia	194.8	40.2	94.8
Peterborough	203.9	38.6	98.6
Sault St Marie	191.1	37.0	92.4
Sioux Lookout	173.4	32.6	85.4
Sudbury	198.1	35.7	95.1
Thunder Bay	179.8	34.8	87.8
Timmins	198.9	33.5	94.7
Tobermory	195.3	38.0	94.5
Toronto	199.8	37.8	96.4
Welland	201.6	39.8	97.9
Windsor	192.2	41.4	93.9

## Community

	Compass Direction	Vertical Elevation	Skew
<b>Prince Edward Island</b>			
Charlottetown	231.4	32.2	110.9
Summerside	231.4	32.2	110.9

## Quebec

Chibougamau	213.8	31.5	100.2
Chicoutimi	218.8	32.9	103.3
Drummondville	214.6	35.6	102.6
Gaspe	228.8	30.1	107.5
La Tuque	214.8	34.4	102.2
Mont-Laurier	208.8	35.0	99.6
Montreal	212.6	35.7	101.7
Quebec	218.5	33.9	103.9
Rimouski	222.2	32.3	105.0
Rouyn	202.8	34.4	96.7
Sept-Îles	225.9	29.8	105.5
Sherbrooke	216.4	36.2	104.0
Trois-Rivieres	214.6	35.4	102.6
Val d'Or	205.0	34.3	97.5

## Saskatchewan

Estevan	148.7	31.6	76.2
Hudson Bay	151.6	27.8	78.8
Kindersley	137.5	27.9	72.9
La Ronge	145.5	25.1	77.6
Moose Jaw	143.0	29.8	74.5
Moosomin	135.7	28.5	71.7
North Battleford	139.4	26.3	74.7
Prince Albert	143.3	26.8	76.0
Regina	145.1	29.1	75.7
Saskatoon	141.3	27.5	74.8
Stony Rapids	159.8	22.1	82.7
Swift Current	141.1	29.5	73.8
Uranium City	137.0	19.1	77.2
Yorkton	151.2	29.8	77.9

## Yukon

Carmacks	103.6	10.8	69.0
Dawson	100.6	8.5	70.0
Haines Junction	103.1	11.2	68.0
Ross River	106.8	12.2	70.0
Watson Lake	111.1	14.8	70.5
Whitehorse	105.1	12.2	68.5