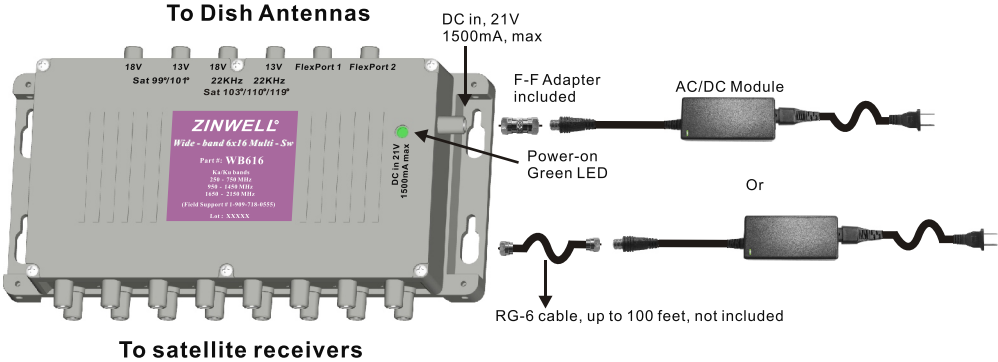




**Indoor/Outdoor
Wideband 6x16 Multi-Switch
Model # WB616
Installation Guide**

For technical support,
Please call Zinwell Corp.
(909) 718-0555



This wideband 6x16 Multi-Switch is designed to expand the new Ka/Ku Out-Door Unit (ODU) from 4 outputs to 16 outputs, supporting up to 16 independently operating receivers. The Ka/Ku ODU is designed to support the latest DIRECTV MPEG4-capable HD receivers but is compatible with all previous generations of DIRECTV receivers as well. The Ka/Ku ODU has the traditional 101°/110°/119°W.L. LNBs and two additional Ka LNBs for 99.2°W.L. and 102.8°W.L. satellite, respectively, hereby called 99°W.L. and 103°W.L. LNB for simplicity. The stacked signal at each output of the ODU or the 6x16 follows the frequency plan below. The actual signal availability varies depending on user location and DIRECTV satellite deployment data:

Stack Plan	Ka-Lo, 99° RHCP Ku, 101° RHCP Ka-Hi, 99° RHCP	Ka-Lo, 99° LHCP Ku, 101° LHCP Ka-Hi, 99° LHCP	Ka-Lo, 103° RHCP Ku, 119° RHCP Ka-Hi, 103° RHCP	Ka-Lo, 103° LHCP Ku, 110°/119° LHCP Ka-Hi, 103° LHCP
Output IF Frequencies	Ka-Lo: 250 - 750 MHz Ku: 950 - 1450 MHz Ka-Hi: 1650 - 2150 MHz	Ka-Lo: 250 - 750 MHz Ku: 950 - 1450 MHz Ka-Hi: 1650 - 2150 MHz	Ka-Lo: 250 - 750 MHz Ku: 950 - 1450 MHz Ka-Hi: 1650 - 2150 MHz	Ka-Lo: 250 - 750 MHz Ku: 950 - 1450 MHz Ka-Hi: 1650 - 2150 MHz

- The wideband 6x16 multi-switch (250 - 2150 MHz) WB616 will be used for applications where the wideband 6x8 multi-switch WB68 (250 - 2150 MHz) or the narrowband 6x8 multi-switch SAM-6802 (950-1450MHz) has been used.
- The FlexPorts can only be accessed with the APG (Advanced Program Guide) satellite receiver or the MPEG4-capable HD receiver. The FlexPorts are used to interface with the dish antennas of two additional DIRECTV satellites, at locations such as 95°W.L. and 72.5°W.L.
- Consult the APG satellite receiver or the MPEG4-capable HD receiver user's manuals for 6x16 setup procedures. There are differences as only the APG satellite receiver has the "Auto Configure" for detecting dish setups.
- With the APG satellite receiver, if you do not have any FlexPort connected, always use manual dish set option instead of "Auto Configure" to speed up the installation process.
- With the APG satellite receiver, if you have either 72.5°W.L. or 95°W.L. inputs, always use FlexPort 1. If you have both 72.5°W.L. and 95°W.L. inputs, use FlexPort 1 for 72.5°W.L. and FlexPort 2 for 95°W.L. In multi APG IRD environment, you should run one auto-configure at a time; and before auto-configur is running make sure the other APG IRD's are on 101°W.L. (Channel 100 is suggested). This will reduce system acquisition time and minimize error.
- The WB616 is active, powered only by an external AC/DC power module. There is no off-the-shelf equivalent multi-switch. The FlexPorts require selection codes unique to DIRECTV; other ports can be accessed with either tone / voltages or selection codes.
- Use RG-6 with solid-copper center conductor is required to reduce cable DC drop. Use RG-6 cables with proper exterior waterproof connectors, preferably mounting/orienting the 6x16 where it is shielded from rain. Use F-Connectors rated to at least 2150 MHz and minimize the number of F connections used to reduce reflection and signal strength drop.
- The wideband 6x16 multi-switch WB616 or the narrowband 6x8 multi-switch SAM-6802 must never be used in a system containing a Frequency Translation Module (FTM) since the equivalent function is already contained in the FTM.
- Diplexing of the off-air signals shall not be used with BBC Module and MPEG4-capable HD receivers when connected to a Ka/Ku ODU, since the Ka-Lo band of 250 - 750 MHz occupies that frequency band.
- The WB616 is not a cascable multi-switch.

Connecting with no WB616

(Dish not shown. Appearance of LNB may vary depending on brand.)

Ka/Ku LNB (99°/101°/103° W.L. LNB)

110°/119° W.L. Ku LNBs

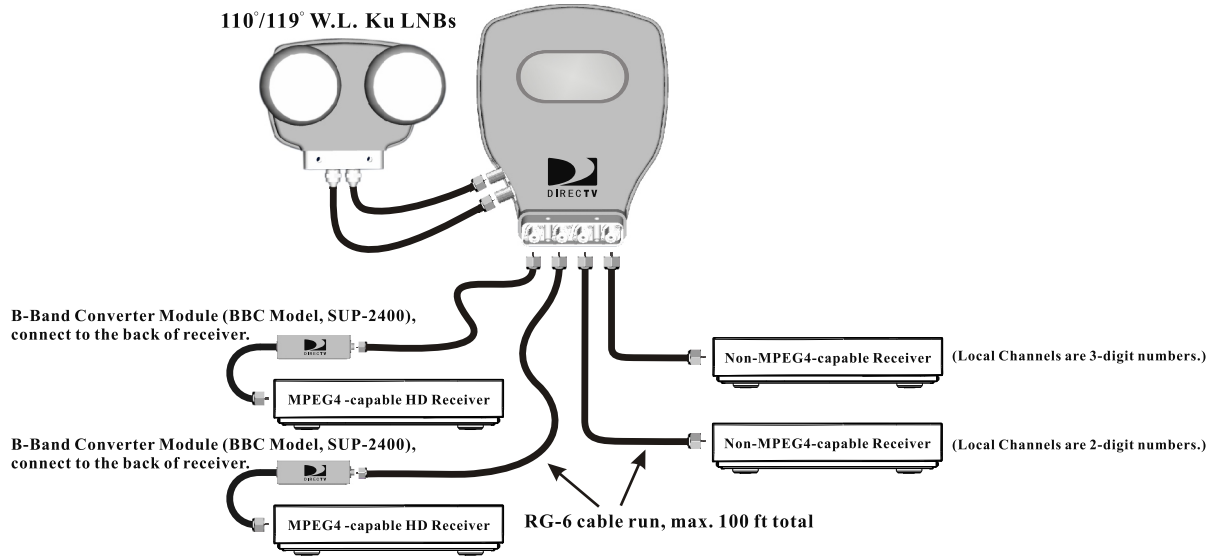


Fig 1

Connecting with WB616

(Ka/Ku dish not shown. Appearance of LNB may vary depending on brand)

Ka/Ku LNB (99°/101°/103° W.L. LNBs)

110°/119° W.L. Ku LNBs

75° W.L. 95° W.L.

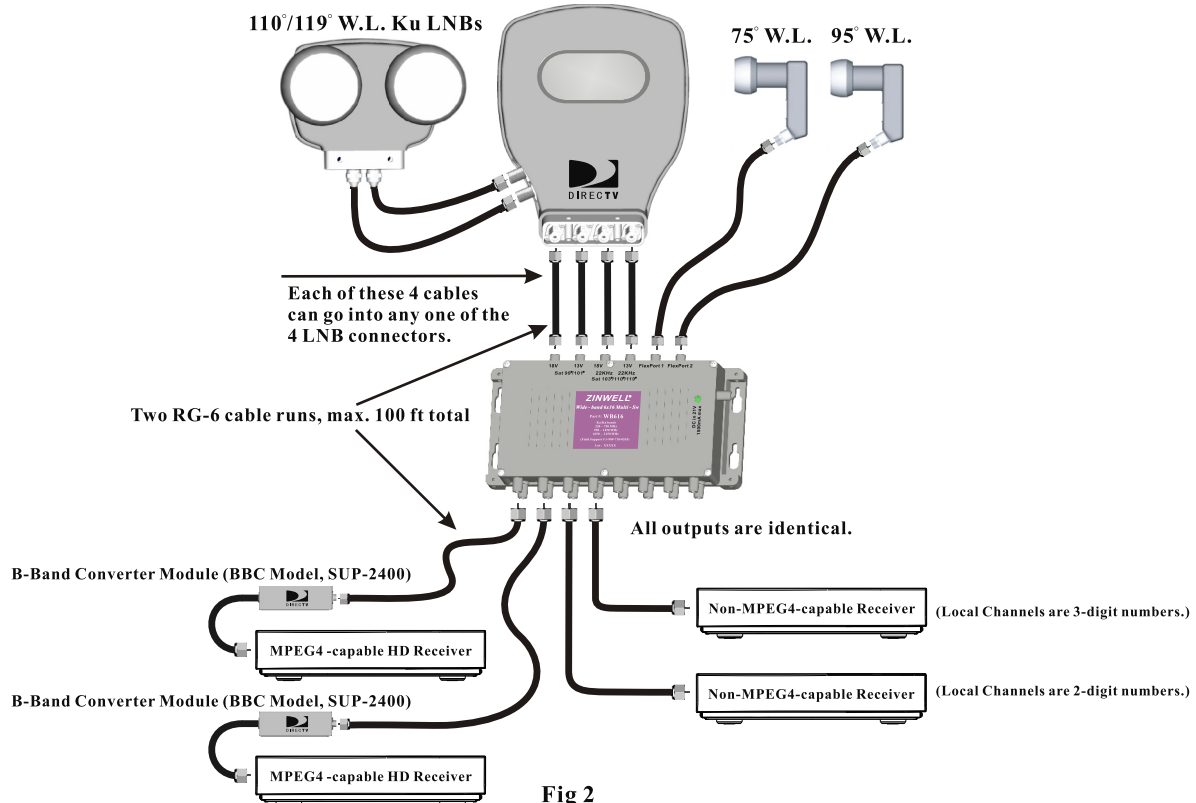


Fig 2

Using WB616 on Applications where Narrowband 6x8 Multi-switch (SAM-6802) or Wideband (WB68) was used

**With Phase III, 18"x 20"
DIRECTV Multi-Satellite Dish Antenna System
(dishes not shown)**

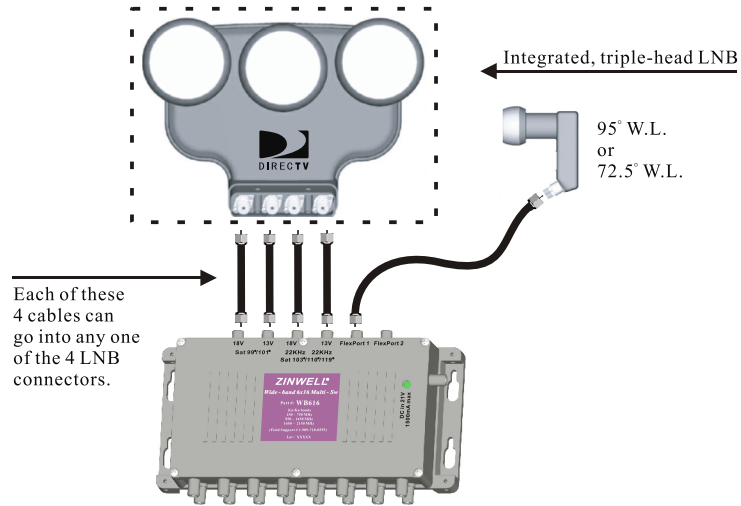


Fig 3

With 18" Round DIRECTV Dish Antenna System (dishes not shown)

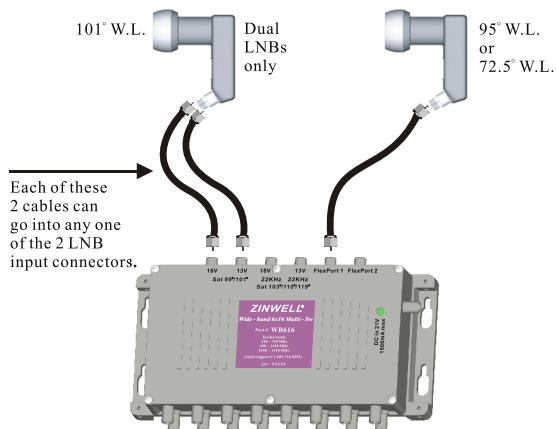


Fig 4

Low-loss Addition of Terrestrial HD Signal or Off-Air Signal to Satellite Signal (For Non-MPEG4-capable Receivers Only)

NOTE: Do not duplex off-air signals for H20/MPEG4-capable HD receivers or BBC Modules when connected to a Ka/Ku Dish, since Ka-Lo band of 250 - 750 MHz occupies the same frequency range as the off-air signal.

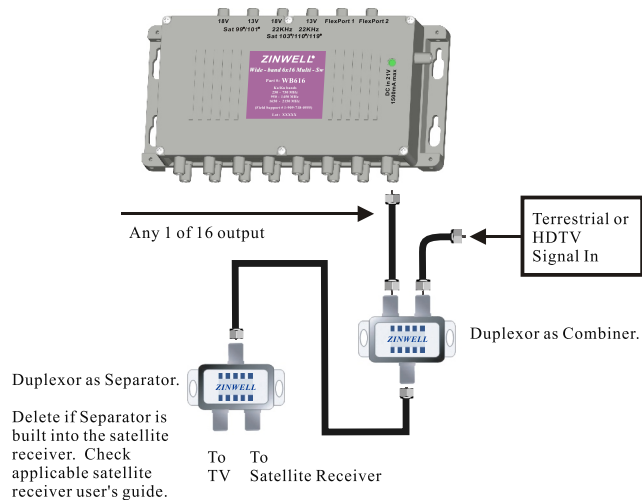


Fig 5