

**Installation Guide**  
**DIRECTV® Approved "B Band Converter (BBC) Module"**  
**(for Ka-Lo band up-conversion)**  
**SUP-2400**

**ZINWELL**

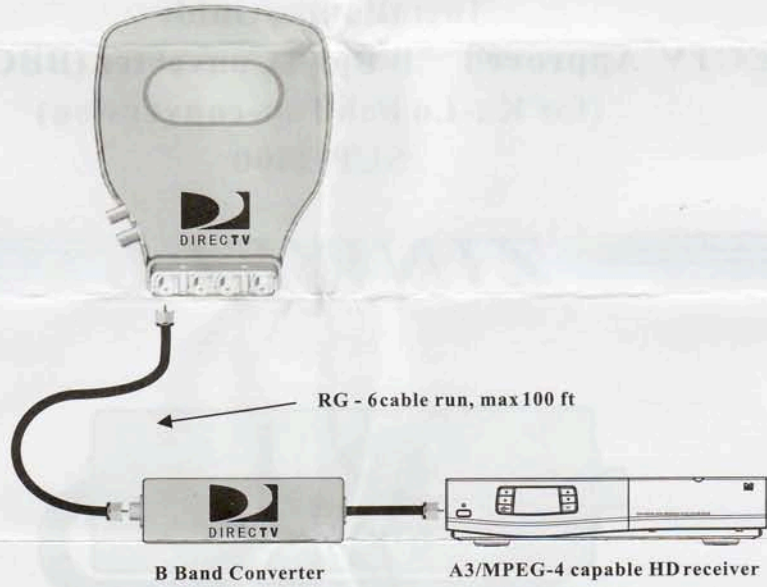


### **BBC Module Functional Description**

The BBC Module is to be used in conjunction with the Ka/Ku Out-Door Unit (ODU) and the A3/MPEG-4 capable satellite receiver, hereafter to be called "the IRD". The Ka/Ku ODU output will consist of a three-way stacked signal: a Ka Lo-band (B Band) at 250 - 750 MHz, a Ku band at 950 - 1450 MHz and a Ka Hi-band (A Band) at 1650 - 2150 MHz. The IRD has an input range of 950 - 2150 MHz so an up-converter must be used in order to access the 250 - 750 MHz spectrum. Failure to install a BBC Module at the back of the IRD prevents the IRD from receiving Ka Lo-band. For clarity, a BBC Module must be used with each A3/MPEG-4 capable IRD in the home system. As a further clarification, a BBC Module must never be used in a system that contains a Frequency Translation Module (FTM) as the equivalent function is already contained in the FTM.

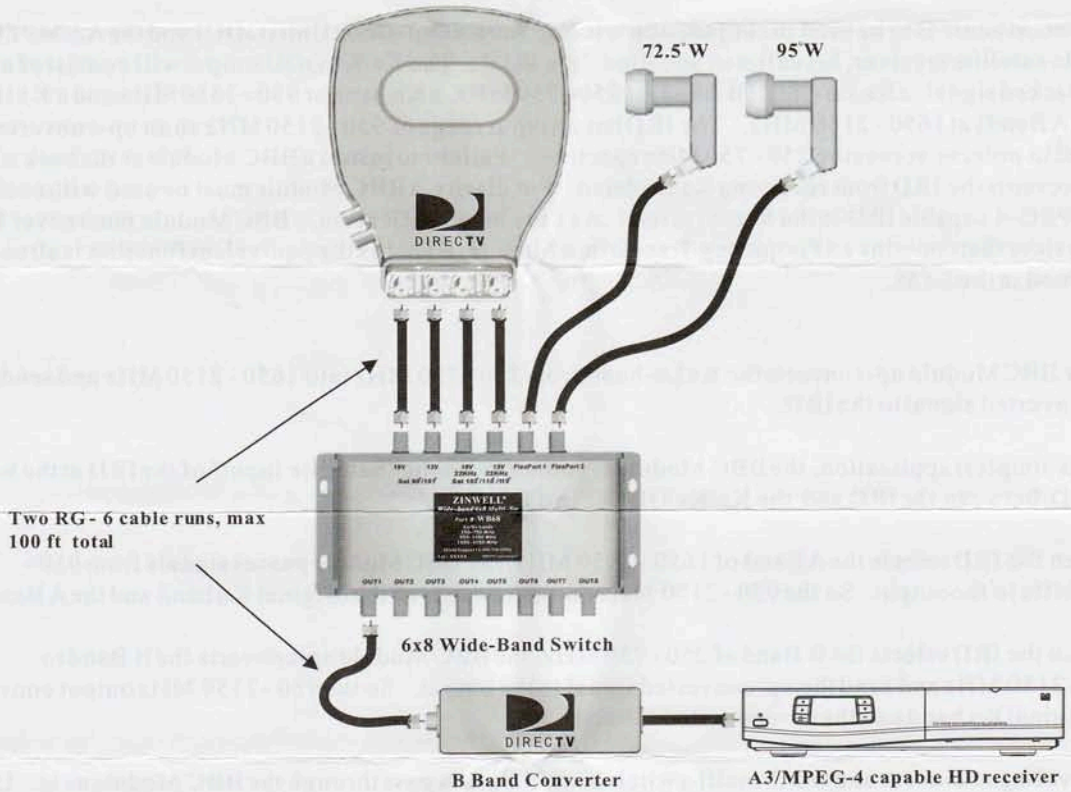
- The BBC Module up-converts the Ka Lo-band from 250 - 750 MHz into 1650 - 2150 MHz and sends the up-converted signal to the IRD.
- In its simplest application, the BBC Module is connected to the "Satellite Input" of the IRD at the back of the IRD, between the IRD and the Ka/Ku ODU (Fig.1).
- When the IRD selects the A Band of 1650 - 2150 MHz, the BBC Module passes signals from 950 - 2150 MHz to the output. So the 950 - 2150 MHz output consists of the original Ku band and the A Band.
- When the IRD selects the B Band of 250 - 750 MHz, the BBC Module up-converts the B Band to 1650 - 2150 MHz and send the up-converted signal to the output. So the 950 - 2150 MHz output consists of the original Ku band and the up-converted B Band.
- DC voltages/current and ODU/multi-switch control signals pass through the BBC Module as is. Upon power up, the BBC Module is always in the A Band mode (un-switched mode).
- If a 250 - 2150 MHz wide-band 6x8 multi-switch (WB68) is used. It will be located between the BBC Module and the Ka/Ku ODU (Fig.2).

**Ka/Ku LNB (Ka/101° W LNB)**  
(dish antenna and 110°/119° W Ku LNBs not shown)



**Fig. 1**

**Ka/Ku LNB (Ka/101° W LNB)**  
(dish antenna and 110°/119° W Ku LNBs not shown)



**Fig. 2**