What do the different "local oscillator frequencies" mean on LNBs?

A satellite broadcasts TV and radio signals on a very high frequency. Although this frequency travels well through the air, it does not travel very well down ordinary coax cable, in fact it is usually lost completely in a very short cable run.

To overcome this problem a local oscillator (L.O.) is used at the LNB. This local oscillator, when mixed with the incoming signals from the satellite, produces 3 main frequencies.

1. The satellite broadcast frequency
2. The L.O. frequency
3. The difference between the two. Called the Intermediate Frequency (IF)

The 1st and 2nd frequencies are filtered out and the 3rd frequency is the one that is used by satellite receivers, this IF frequency will travel very well down quality RG6 or RG11 coax cable.

The different L.O. frequencies of a LNB allow reception of different satellite broadcasts, though most broadcasts over New Zealand can be received on any of the three main L.O. frequencies.

This is of particular interest to satellite installers because they need to set their professional test meters to the IF frequency – not the L.O. frequency nor the satellite broadcast frequency. Many technicians have made this mistake in the past.

A table for the usual KU and C Band LNBs is found below.

LNB L.O. Frequency	Broadcast Frequency	IF frequency Professional satellite meters need to be set to this for aligning a dish. The SF95 meter does not need to be set.
Ku Band 11300 L.O.	**13350 – 12270MHz**	**2050 – 950MHz**
Ku Band 10750 L.O.	**12800 – 11700MHz**	**2050 – 950MHz**
Ku Band 9750 – 10600 L.O. Also known as a universal LNB		
9750MHz with 22khz OFF	**12650 – 11550MHz**	**2050 – 950MHz**
10600MHz with 22khz ON	**11800 – 10700MHz**	**2050 – 950MHz**

An example of how to use this table is given below:

Consider the current FreeView transponder 12483MHz. By subtracting the L.O. frequency from this broadcast frequency we know what to set a professional satellite meter (like the SF3000) to.

Example LNB L.O.	Example Broadcast Frequency	Example IF frequency Professional satellite meters need to be set to this for aligning a dish. The SF95 meter does not need to be set.
Ku Band 11300 L.O.	**12483MHz**	**1183MHz**
Ku Band 10750 L.O.	**12483MHz**	**1733MHz**
Ku Band 9750 – 10600 L.O. Also known as a universal LNB		
9750MHz with 22khz OFF	**12483MHz**	**2733MHz**
10600MHz with 22khz ON	**12483MHz**	**1883MHz**