



Why RF meters/satfinders are inadequate tools for installations of satellite dishes in the Indian market

With the booming DTH market and the lack of bandwidth, this has caused additional problems for the DTH provider apart from the rain fade problems during the monsoon period.

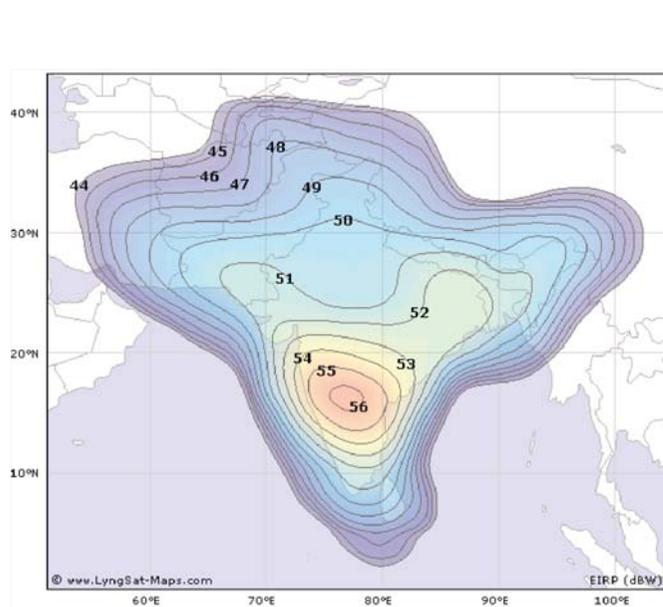
As more and more DTH providers are launching satellites service in India, the lack of available bandwidth is causing big problems in aligning the small DTH dishes to receive the satellites. In addition to the normal problem with dish installations, like rain fade during monsoon period, it is difficult in India to simply find the right satellite during installation.

Currently we have the main DTH satellites placed only 3.5 degs apart, making the traditional methods of finding the satellites and aligning them, virtually impossible.

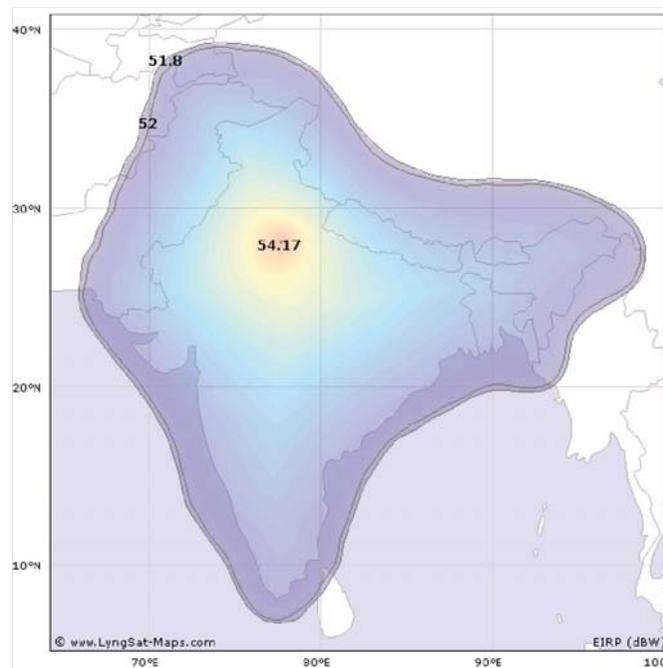
Dish TV is using NSS6 at 95.5 deg East, Both SUN Direct and DD Direct is using Insat 4B at 93,5 deg East and BIG Tv is using Measat 3 at 91,5 deg East. It means that the actual installer will find these satellites / services simply by moving the dish 5 mm. This is an extremely small movement to identify these satellites. So if he is using a RF meter or a simple satfinder he will pick up a signal for all three together rather than 3 distinctive signals. Thus he will not easily be able to identify them. He will have to verify the satellite by hooking up a set top box. Then he might discover if he is on the right satellite or not. Even if he does this, he will not be able to peak the dish for trouble free reception during the monsoon period. If he, on the other hand, the installer is using a costly spectrum analyzer, he again will have trouble identifying the individual satellite or peaking them. It is possible with a spectrum with built in NIT (Network Identification Table) reader, to identify the satellite but the three signals of equal high strength will interfere with each other.

It's the same as with a radio. At some places there might be two or three very close stations. It's difficult to tune to them and we might not know which station it is until we can hear news or announcements.

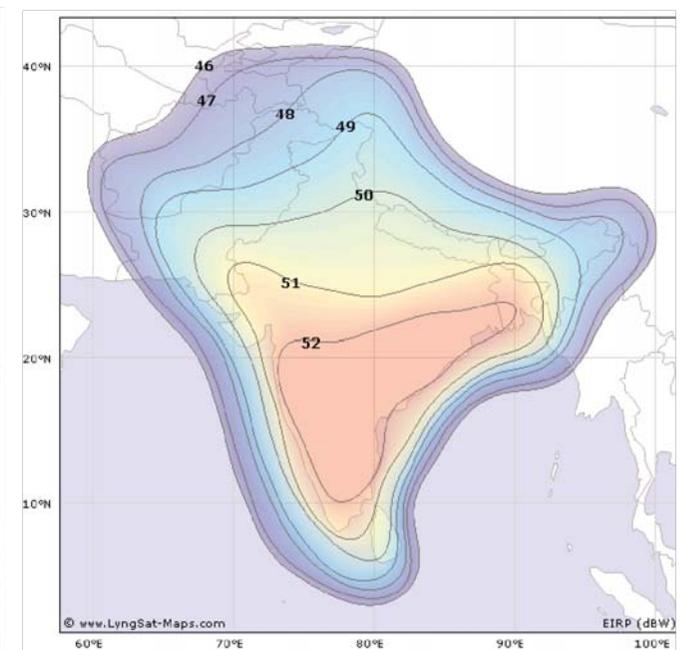
If we look at the different footprint with their radiated EIRP.



Above is the footprint for NSS 6 @ 95 deg East.
Typically over India the EIRP is 50 dBW.



Above is the footprint for Insat 4B @ 93,5 deg East.
Typically over India the EIRP is 54 dBW.



Above is the footprint for Measat 3 @ 91,5 deg East.
Typically over India the EIRP is 50 dBW.



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As can be seen above, each DTH provider wants as high signal as possible (EIRP). This means the RF interference is high between each satellite. This is all that's read by simple meters, RF meters and spectrum Analyzers.

What can be done to easily find the correct satellite, and peak it for least problems during the monsoon period ?

Maxpeak, manufacture a unique range of Satmeters, SAM and SAM-lite. Our approach is simply to quickly and easily indentify the correct satellite and then enable simple and quick peaking of the dish.

Both Satmeters are preprogrammed for the correct satellite data streams and will only lock onto the correct satellite. I.e. it identifies the correct satellite. As both have built in MPEG receivers they will read the digital signals rather than RF level. This means that when they have correctly locked onto the correct satellite, we can measure Carrie Noise, Modulated Error Rate and most significantly pre Bit Error Rate (before Forward Error Correction). The advantages of peaking the pre BER, is that it's extremely fast and responsive. Moreover, if there is modulated errors and / or noise, these are picked up quicker and with a greater range by the pre BER. We then simplify the whole process by reversing the preBER into a Quality bargraph to peak the dish. This is done in % and 98 % means there is 2 % of errors in the digital signal.

SAM is the full version and SAM-lite has been especially designed for emerging markets like India. Both are the same in ease of use and accuracy but SAM-lite has a lower cost and less features. Both have been designed for Indian conditions, like higher ambient temperatures, high humidity and more demanding mains voltage conditions. In addition we have open our own subsidiary in New Delhi, to provide local technical support and sales and marketing.

Patrik Lagerstedt

Maxpeak Ltd