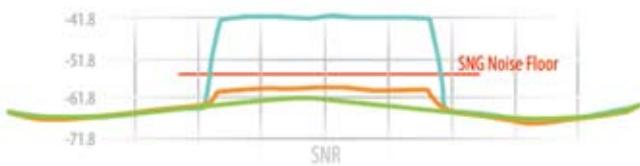# NovelSat FreeBand

Free satellite bandwidth for video contribution

The NovelSat FreeBand modem gives broadcasters free satellite bandwidth for video contribution. With NovelSat FreeBand, broadcasters use the same bandwidth, transmitting at the same frequency, both to send video to the point-to-multipoint distribution network and to receive video or data from DSNGs, flyaways, remote studios and other remote data and video contribution units.

In essence, with NovelSat FreeBand, broadcasters no longer have to pay for satellite bandwidth every time they deploy a remote contribution unit within the footprint of their satellite distribution network. This translates into huge savings in operational costs. If you consider that satellite bandwidth for a DSNG can cost $250 per hour, NovelSat FreeBand can pay for itself in a matter of weeks.

Flyaway Freedom

Another benefit of NovelSat FreeBand is unique to setting up a contribution site with a flyaway in a remote location. With NovelSat FreeBand, not only is the contribution bandwidth available at no additional cost, it is available without the hassle of having to coordinate satellite time and configuration details. That lets the remote team get up and running more quickly.

Flexibility: DVB-S2 or NovelSat NS3

NovelSat FreeBand can work with both DVB-S2 and NovelSat NS3 technologies at the hub and remote terminals and is powered by NovelSat DUET band-reuse technology. By transmitting video below the noise floor of the distribution hub, the remote transmissions can be received by the NovelSat modem without interfering with outbound video transmission to the distribution network.

NovelSat AUPC (Automatic Uplink Power Control) at the Hub automatically adjusts power to compensate for uplink fade, effectively adding around 2dB to the link margin. NovelSat AUPC can also be implemented as an option at the remote terminals to further improve the link margin there, as well.

Broadcast quality signals

NovelSat FreeBand causes no significant signal degradation and no additional delay to either downlink or uplink signals. In fact, when NovelSat NS3 satellite transmission technology is implemented in the NovelSat FreeBand modems,

the signals benefit additionally from superior resilience to interference and jamming, weather fluctuations and phase noise.

A prerequisite for NovelSat FreeBand is that the antenna at the distribution hub be larger than the antennas at the remote sites. For example, a 7m hub antenna with 2.4m remote antennas are supported along with wider antenna ratios.

The NovelSat FreeBand modem offers the world's most bandwidth efficient and fastest satellite transmission technology, capable of delivering from 100Kbps up to 425Mbps in each direction on a single modem.

Transmission Security

NovelSat FreeBand also offers numerous levels of signal security. In Full-Duplex communication facilitated by NovelSat DUET band-reuse software, very low SNR signals from remote terminals links are treated as noise by any other modem and will not be intercepted.

For applications such as FreeBand, when NovelSat NS3 is used, signals can be transmitted at SNR as low as -3dB. At such low SNRs, most modems cannot even lock-on to the signal.

Additionally, NovelSat modems can switch among 262,144 different scrambling codes for each transmission, making interception very difficult.

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www.novelsat.com • 25 Tanglewood Rd. Newton, MA 02459 • info@novelsat.com