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 FEBRUARY 2004



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INDIA'S LARGEST MAGAZINE EXCLUSIVELY FOR SATELLITE & CABLE TV

USA TO LAUNCH KU BAND MMDS

*MMDS Service Is Normally Implemented In On The S Band, Around 2.5 GHz.
 The USA Plans To Be The First Country To License MMDS Operating In The Ku Band.*

MMDS or Multi point Microwave Distribution Systems have been in use, in many countries around the world in the past. Though MMDS is not freely permitted in India, MMDS has been used by Shangrila TV in neighbouring Nepal.



MMDS BASICS

Essentially, MMDS is a terrestrial transmission, centrally beamed out from a TV tower, much like Doordarshan's VHF and UHF transmissions. The primary difference is that the MMDS transmission is at approximately 2,500 MHz, which is the S Band, in the microwave spectrum.

Compared to VHF or even UHF transmissions, MMDS requires a much smaller antenna. The microwave transmissions are also more directional, and like satellite transmissions, can only be received in a "line-of-sight".

In the earlier days, before the advent of MPEG-2 DVB compression, the spectrum typically allocated for MMDS could support approximately 25 television channels. This was not a lot, but enough to provide a service that could compete in a limited way, to cable TV. Because of this MMDS has sometimes been referred to as "Wireless Cable TV".

DIGITAL COMPRESSION

Today, MPEG-2-DVB digital compression can squeeze in a minimum of 6 digital channels per analog channel. Infact, using the latest technology and statistical multiplexing, 12 to 16 digital channels can be squeezed into the bandwidth, earlier allocated for a single analog TV channel.



Using this digital multiplier, typical S Band MMDS spectrum allocation can today support over 375 TV channels !

On the other hand, cost of cabling, specially using optical fibre cable has dramatically reduced plant cost.

Most countries also charge a substantial spectrum fee (often auctioned) for allocating MMDS spectrum.

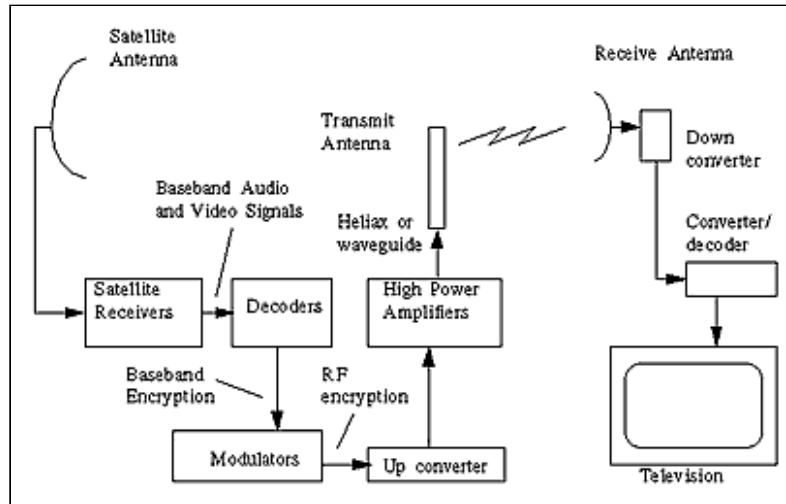
SPECTRUM SQUEEZE

The RF and microwave spectrum is a depletable asset which, under existing technologies can typically be allocated only to one player or application at a time. Hence if the 2.5 GHz spectrum has already been allocated to S-band satellite reception or for military applications, it is unlikely that it will be offered for MMDS.

SHARED SPECTRUM

Interestingly, for more than 3 years, several US companies have claimed that they can utilise the KU band spectrum for terrestrial broadcasts, without interfering with existing satellite based DTH transmissions in the same frequency band. The intention here is to utilise the 12.2 GHz to 12.7 GHz band, currently used by US DTH platforms, for a simultaneous ground based MMDS service.

This means that in addition to Cable TV, DTH and DSL services, that today offer television and internet to US customers, there will now be one more player vying for a piece of the same pie from consumers.



The FCC calls the new service - Multichannel Video Distribution and Data Service (MVDDS).

OPPOSITION

Not unexpectedly, the proposed service has been vehemently opposed by existing players. The strongest opposition comes from US DTH platform DirecTV. DirecTV states that the MMDS transmissions at 12.2 GHz to 12.7 GHz will certainly interfere with its DTH reception. DirecTV believes that the interference would be particularly severe in densely populated urban areas which have large high rise buildings. These large high rise buildings could bounce the Ku band signals repeatedly, creating polarisation shifts to the original MMDS signals. This in turn would cause them to interfere with DTH reception.

"We have serious concerns that the end result of this auction will be that terrestrial services will begin to operate in our frequency band and interfere with millions of satellite TV customers' television service," said DirecTV spokesman Robert Mercer.

NOT TRUE?

Companies planning to bid for the KU band MMDS service insists that there will be no interference.

Very surprisingly, USA's second largest DTH platform - EchoStar is infact aggressively bidding for spectrum rights to start the Ku band MMDS service! Clearly, EchoStar does not believe that the KU band MMDS service will interfere with its exiting DTH transmissions, at the same frequency.

GOOD OPTION ?

Experts in the field say that the new system could provide a lower-cost way to bring hundreds of channels of programming, including interactive and high definition television, as well as high speed Internet connections, into homes. That in turn could provide competition needed to put downward pressure on cable and satellite television rates.



"It's a tremendous opportunity," said Richard Doherty research director Envisioneering Group, a technology consulting firm which is not working with any of the bidders. "There's no lower cost, high bandwidth way to reach consumers."

Doherty and others in the field say the new service requires much smaller antennas in customers' homes than a satellite dish. It also does not need to be precisely pointed at a satellite's coordinates, meaning the equipment can be self-installed by customer.

MOBILE APPLICATIONS TOO

The property that the Ku Band MMDS transmissions will not be very directional, make it useful for mobile devices.

It also opens the possibility of far more affordable mobile systems, giving consumers the chance to have a full range of cable channels and high-speed Internet connections in their cars or even hand-held devices, perhaps by the end of the decade.

QUICK START UP

Stationary television and Internet service could start as soon as the end of this year, with close to full US coverage within 2 to 3 years, according to some experts.

TOWERS & CELL SITES



The system will use towers, such as television antennas and cell phone towers, to send and receive signals to homes in about a 10-mile radius. Its close proximity eliminates the half second delay, per satellite hop, in Internet connections, video on demand or voice communication, which its advocates say make it superior to satellite services.

For wider coverage, in metro areas, a distribution concept similar to cell sites, repeated every 10 miles, will be used.

NOT EXPENSIVE

The cost to build the systems would be relatively modest - about \$500 million to provide national coverage, according to Kirk Kirkpatrick, CEO of MDS America, one of the bidders for licenses as well as a provider of the equipment expected to be used by many of the new service's providers.

Kirkpatrick says the MVDDS start up cost at US \$ 0.5 Billion is much lower than that compares to about \$7 billion in equipment costs spent by the two major DTH operators - News Corp.'s DirecTV and EchoStar's Dish Network.



"Their equipment has to be hardened for space and launched on a rocket," he said. "Our equipment you put up on mast, carried on someone's back."

CATV & DTH NOT WORRIED

Cable and DTH say that they are not overly worried. The new service will certainly not drop prices to consumers substantially. They point out that the cost of programming, more than technology, is the major driver in pay television rates paid by consumers.

"We have been and will be competitive with any pay TV provider," said Mercer. "We're spreading our costs over a wide customer base.... It's unlikely another competitor in the market place will have an effect (on rates)."

FCC GOING AHEAD

The FCC has decided to go ahead and invite bids for selling the 12.2 GHz to 12.7 GHz spectrum.

SPECTRUM REVENUES

For taxpayers, the FCC's auction could raise hundreds of millions of dollars. The minimum bid for a license in one of the nation's 214 markets is \$14.3 million, but bids to 20 times that are expected, especially in the largest markets. As a result, the MVDDS spectrum auctions could net well over 500 Million dollars.



Unlike the cell phone spectrum licenses, which allowed competition, the winning bidder will have

exclusive rights in the markets they win.

That exclusivity, plus the relatively cheap cost of the technology involved, means the licenses will be aggressively bid for. Some observers even speculate that the bids for all 214 markets could exceed US \$1 billion although the outcome is very tough to determine before the bidding starts.

"Folks (at the FCC) are rubbing their hands as to how wild it could go and at the same time popping aspirins as to how disappointing it could be," said Doherty. ■

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