

THE TORUS ANTENNA

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ABSTRACT

Today there are 16 satellites in orbit in the 70-143° arc, three Canadian domsats and thirteen U.S. domsats. Only two U.S. domsats operate at 12/14 GHz. Within the next three years the number of satellites in the 70-143° arc could be increased to 27, more than doubling in-orbit satellite transponder capacity. Presently, six 12/14 GHz satellites and four dual C/Ku-Band satellites have been approved by the FCC.

By 1985 the total U.S. domsat capacity in orbit will probably exceed 400 transponders as compared to the present approximately 250 transponders. The prudent earth station owner should consider a satellite earth station antenna capable of interfacing with multiple satellites in multiple frequency bands. Simultaneous accessing of these satellites will become more important as more and more services and programming sources are available from a number of satellites.

Several multibeam antenna configurations are available which can access multiple satellites. This paper will provide a technical treatise of the multiple beam Torus antenna. It includes technical details, specifications and test data on the SatCom Technologies 4.5 meter Torus antenna.