

A low cost solution* for DVB-T distribution via DTH satellite

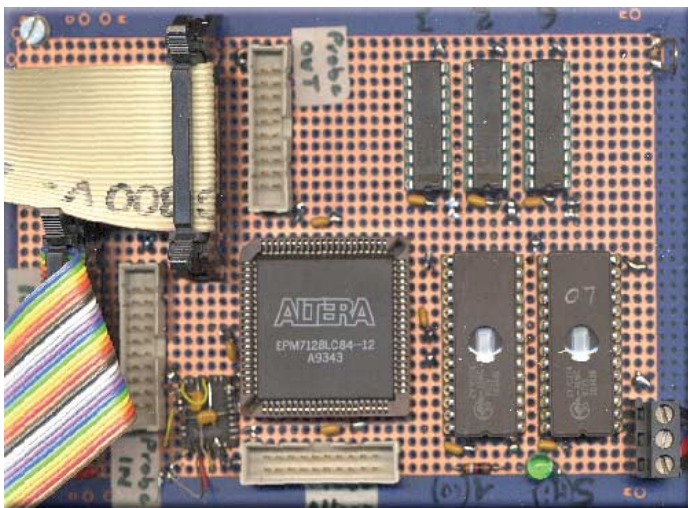
The distribution of the DVB-T signal to the transmitter sites, whenever the DTT bouquet consists of a subset of the DTH satellite bouquet, can be conveniently done by means of the already used satellite transponders. However, the installation of a remux in many DTT sites may be expensive.

The Rai - Centre for Research and Technological Innovation (CRIT) developed and patented a solution allowing to replace the remux in each TX site with a simple and inexpensive equipment able to define and extract a virtual bouquet embedded in the complete DTH bouquet.

In the multiplexing chain, an MFN adapter hides the original DTT PSI/SI tables in ghost PIDs that are not reserved for other services and, optionally, tags the DTT packets. The resulting DTH bouquet is a valid Transport Stream compatible with DVB-S receivers. At the DTT TX site, a MOD adapter substitutes the valid PSI/SI DTH tables with the retrieved original PSI/SI DTT tables and replaces with Null packets the additive DTH services. This operation leaves unchanged the gross bit rate while reducing the useful one so that neither re-stamping nor clock conversion/recovery are needed. The DTT modulator rate adapter removes the null packets overhead.

The MFN Adapter can be implemented in software in the Mux; the Mod Adapter, thanks to its simplicity, can be conveniently inserted in the DVB-T modulator.

An example of application is shown in the figure in the next page.



Hardware prototype of the low cost ModAdapter

The prototype

In the IBC2002 live demonstration the MFN adapter and both Multiplexers have been implemented in software on a commercially available PC-based Mux. The Mod Adapter has been implemented in hardware as a simple prototype board (see figure) and inserted ahead a conventional DVB-T modulator.

Example of application

