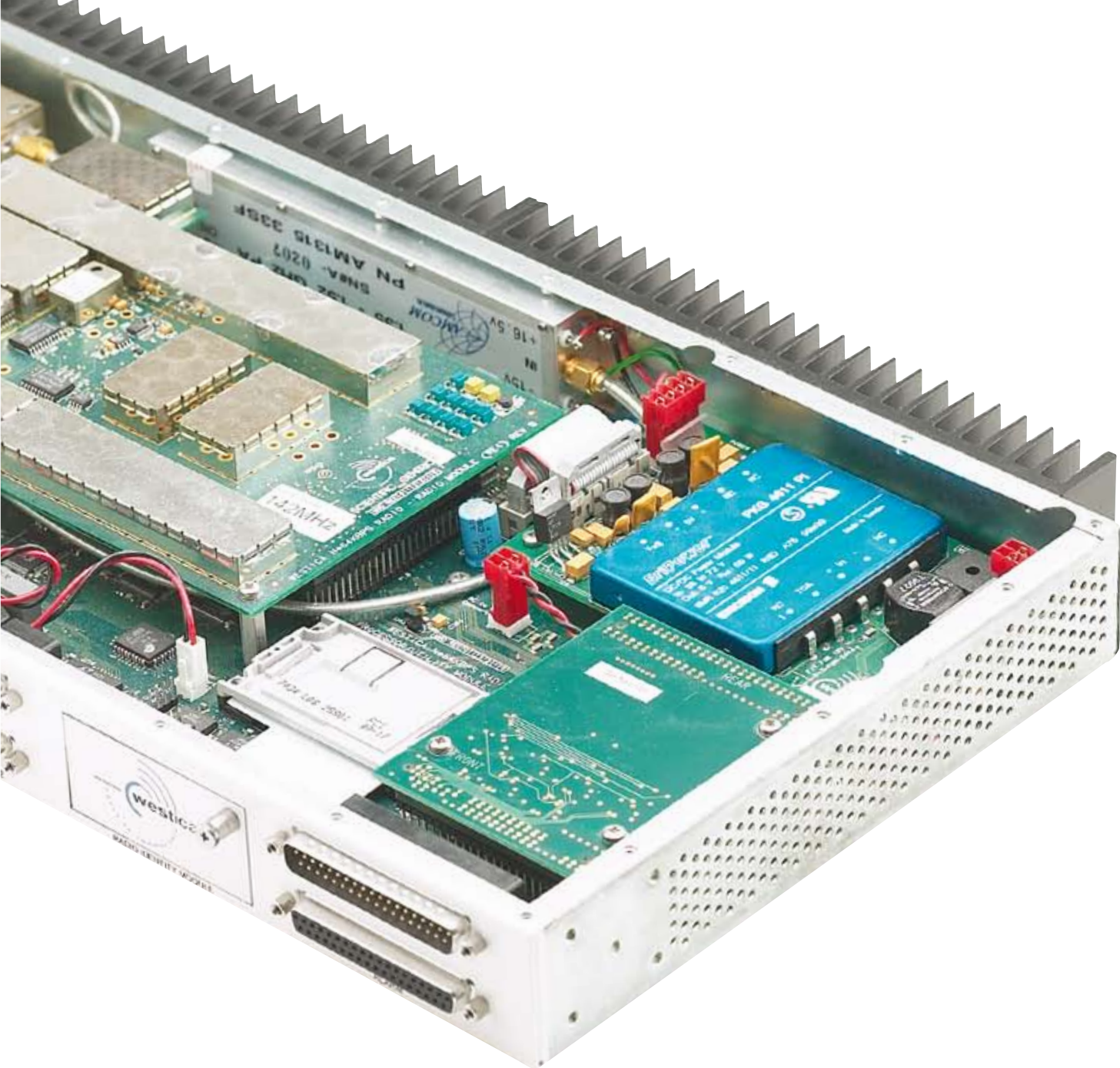


# Digital Microwave Link

Low-cost flexible  
microwave radio for Westica

SAGENTIA



**Westica, a supplier of microwave radio products to the telecoms industry, identified a global market opportunity for a multi-rate (n x 64kbps) microwave link product. With our track record in designing digital radios, Westica approached us for help with design and development.**

We assembled a multi-skilled team comprising engineers experienced in radio system RF, DSP digital hardware and software and mechanical design.

With our in-house knowledge, we used software radio techniques to design a flexible low-cost product which also included cutting edge features such as:

- a wide tuning range, with low-phase noise Fractional-N synthesisers, employing Sigma-Delta reference spur reduction techniques – implemented on FPGAs
- re-programmable digital IF software in both transmitter and receiver, allowing for variable bit and symbol rates
- digital baseband filters which allowed software-variable channel bandwidth

- a modem implemented on a FPGA, allowing software-variable modulation constellation
- variable error correction/parity, with re-configurable software
- an external data interface implemented on a FPGA, allowing remote upgrade

By using software radio techniques we were able to go from concept to a professional standard radio product in just 14 months. All of the software re-configurable features can be remotely upgraded with the conventional software, so that a complete radio upgrade can be achieved without a site visit. The microwave radio is type approved to ETS 300 630 and MPT 1717.

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