

CXD8591, Sony Corporation

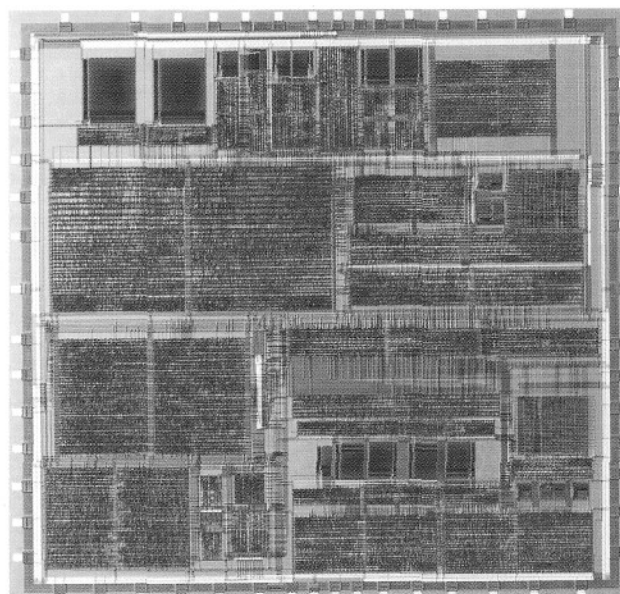
Frontier
↑↑↑↑ Design

Sony Japan designs a High Quality Sampling Rate Converter IC for its award winning MDS-JA50ES MiniDisc Player using DSP Station™

Major Product Features

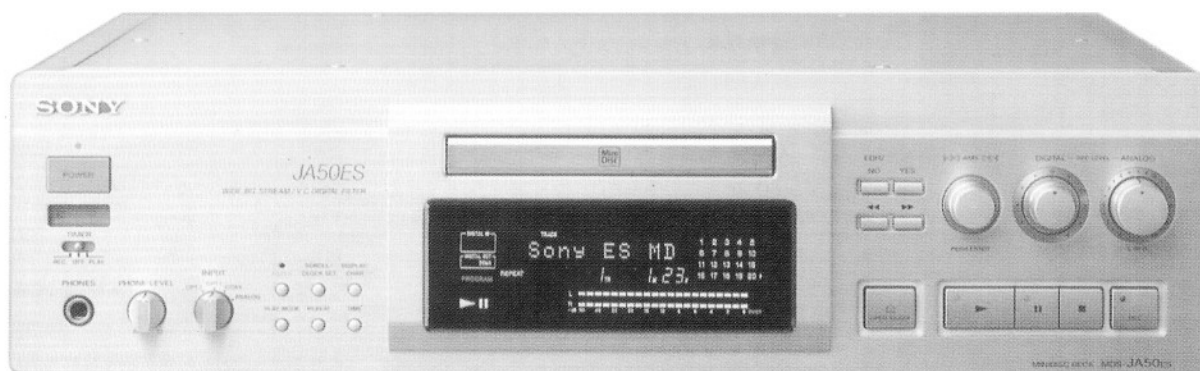
- Variable sampling rate converter which allows to convert an input signal with sampling frequency $F_{s_{in}}$ into an output signal with sampling frequency $F_{s_{out}}$ where $1/4 \leq F_{s_{in}}/F_{s_{out}} \leq 4$.
- High accuracy. Performs 20 bit accurate conversion.
- Targeted at high quality audio market, and used as a sampling rate converter between MD, CD, Broadcast Satellite, DAT,...
- 680K transistors, including memory.
- Digital filter generation from user specifications for FIR, IIR and advanced Lattice Wave Digital Filters.

SONY



Development Facts

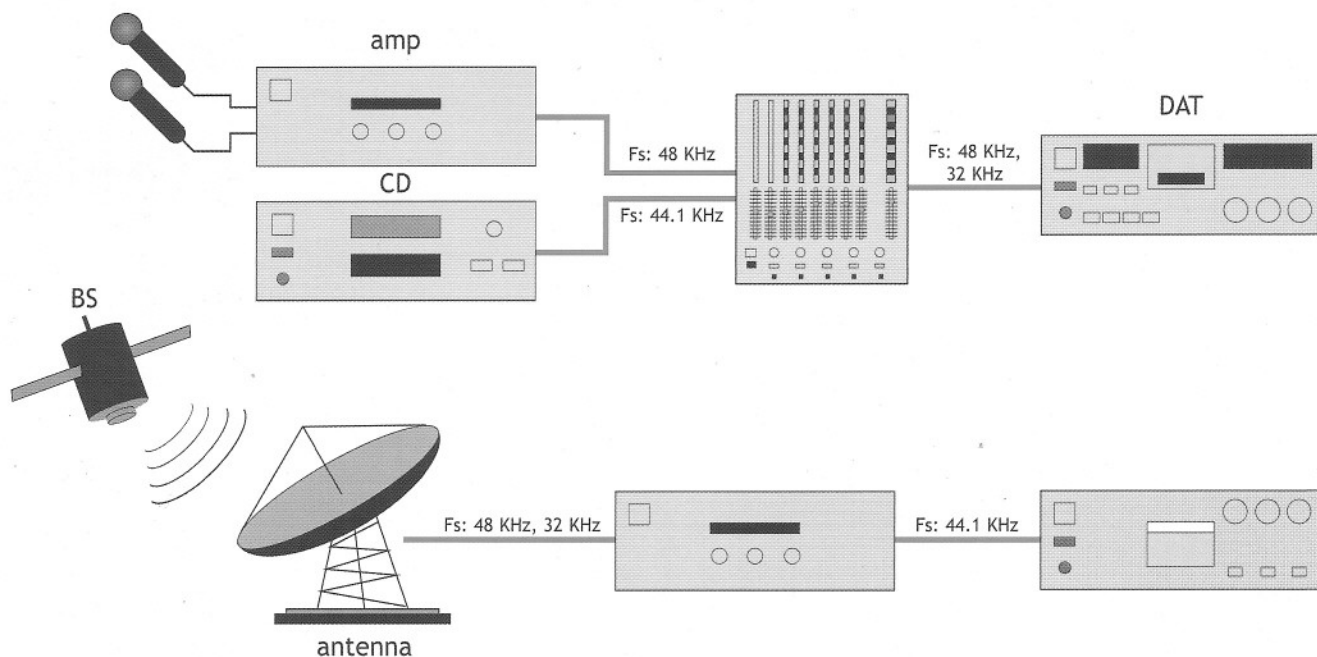
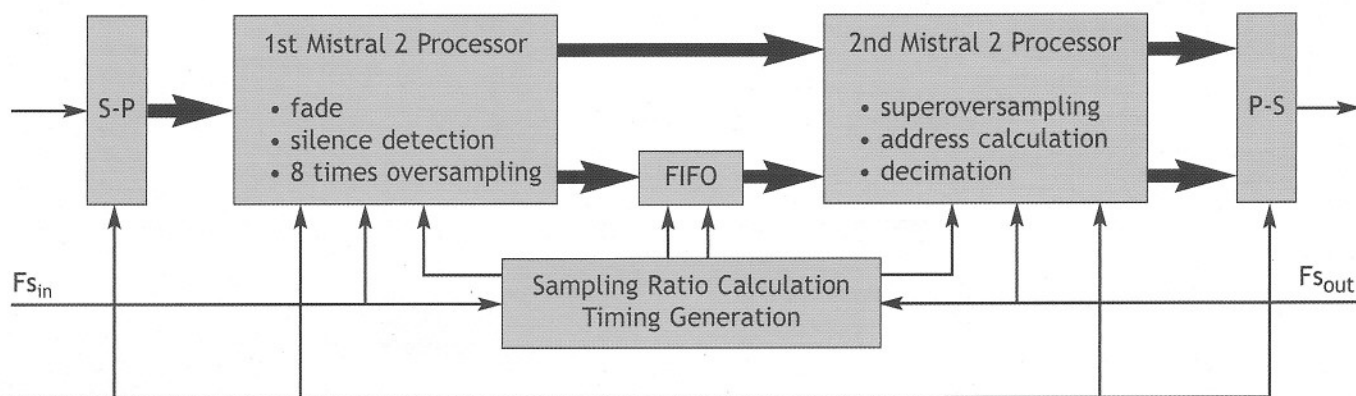
- Extensive use of DFL to model and simulate the fixed point effects of the complete algorithm.
- 2 cooperating dedicated DSP processors, designed with Mistral™ 2 behavioral synthesis tool.



"We recently designed a new sampling rate converter for our high-end Mini-Disc recorders, using Frontier Design's DSP Station. We used the Mistral 2 synthesis tool to design 2 cooperating custom DSP processor cores, starting from our asynchronous sampling rate conversion algorithm. The design flow was instrumental in finding the most optimal decimation and interpolation filters and

allowed us to accurately simulate the fixed point behavior of our algorithms before going to the RT-level. Mistral 2 allowed us to find the most optimal architecture in terms of arithmetic resources, schedule and memory".

Nobuyuki Yasuda, Senior Engineer, Home A&V Products Company, Sony Corporation, Japan.



The CXD8591 IC has been used so far in the MDS-JA50ES Minidisc Player, which was recently awarded the (EISA) European Imaging and Sound Association award.

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