
Porting the G4GUO Modem to the Analog Devices 21xx DSP Processor

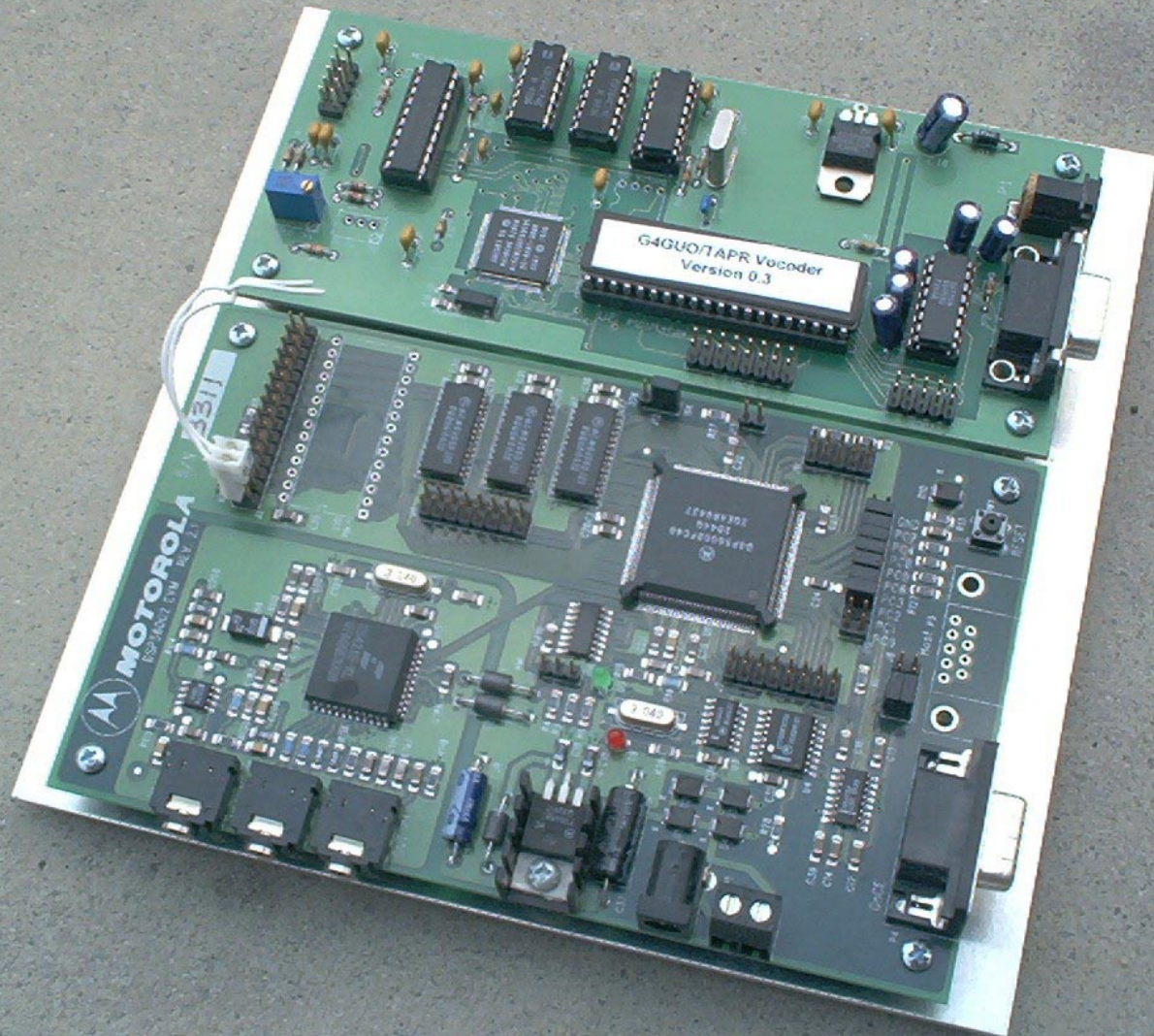
Motorola 56K EVM

- Large program and data memory
- 32 bit data memory
- Built-in serial UART
- instructions allow indirection
- auto-increment registers

Motorola's Bad News

- Original EVM discontinued
- 56K parts can be expensive

Motorola 56K EVM



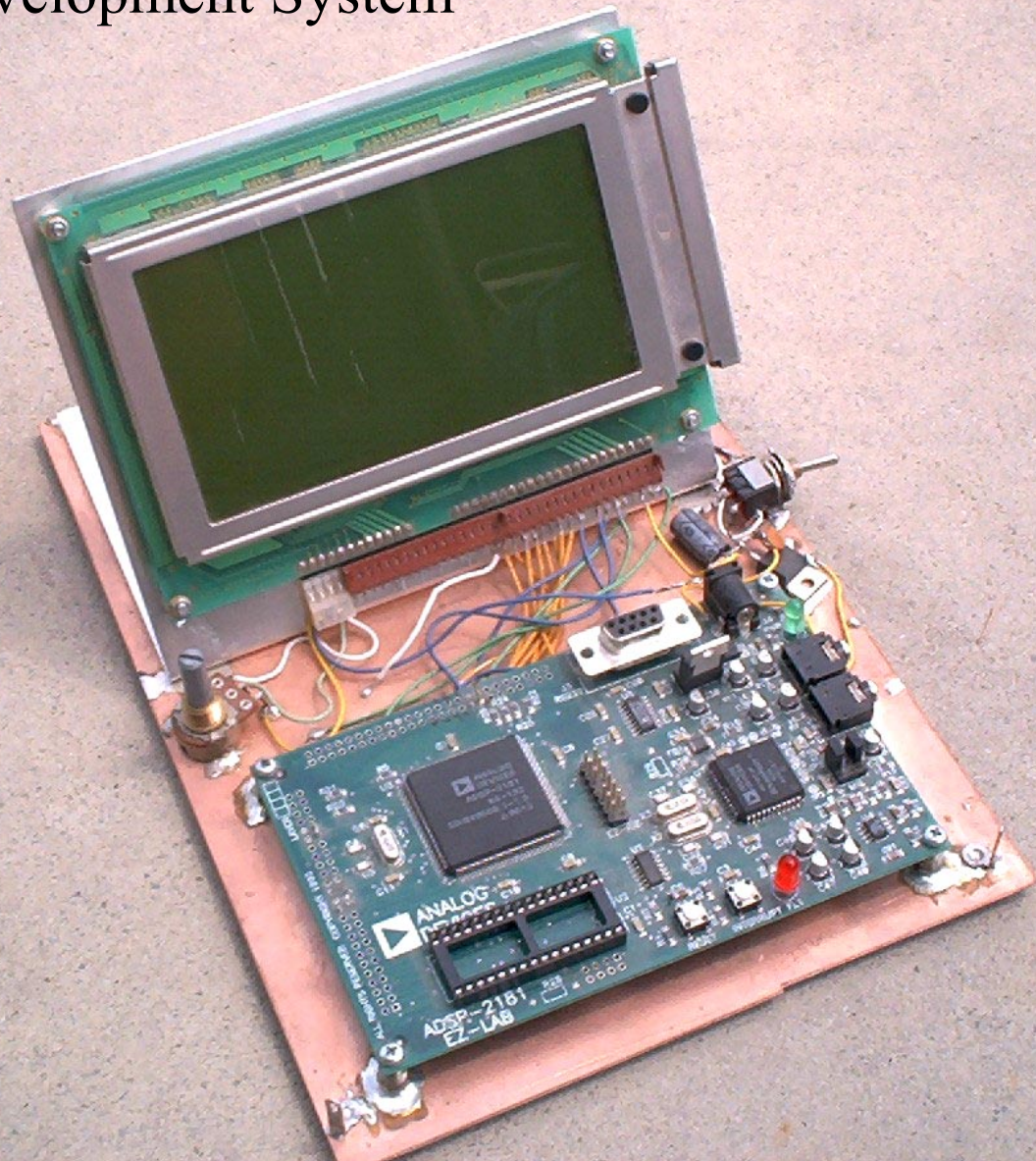
ADI 21xx Advantages

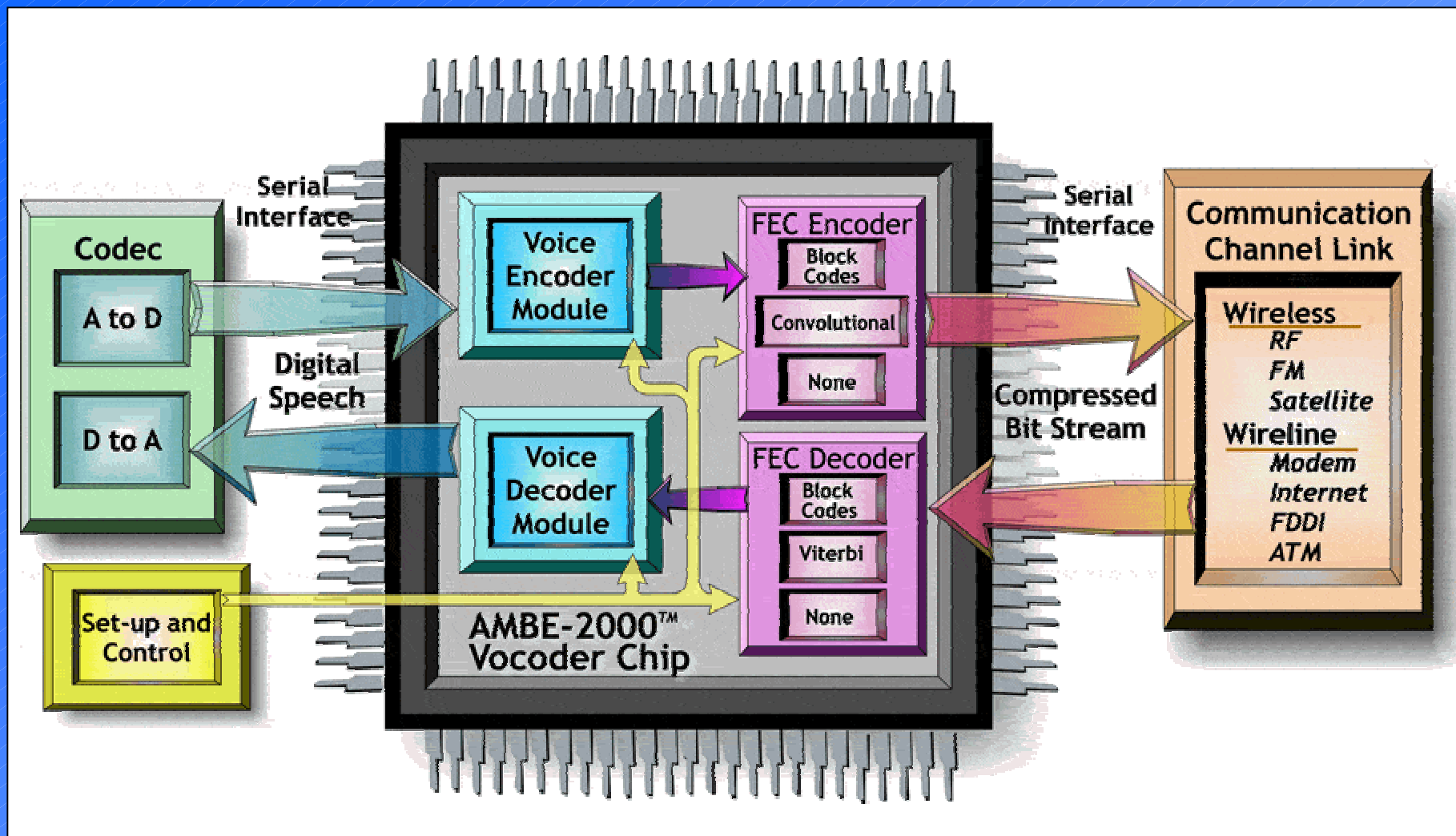
- Compact Architecture
- Easy hardware interfacing
- Low cost even in low volumes
- Easy to program

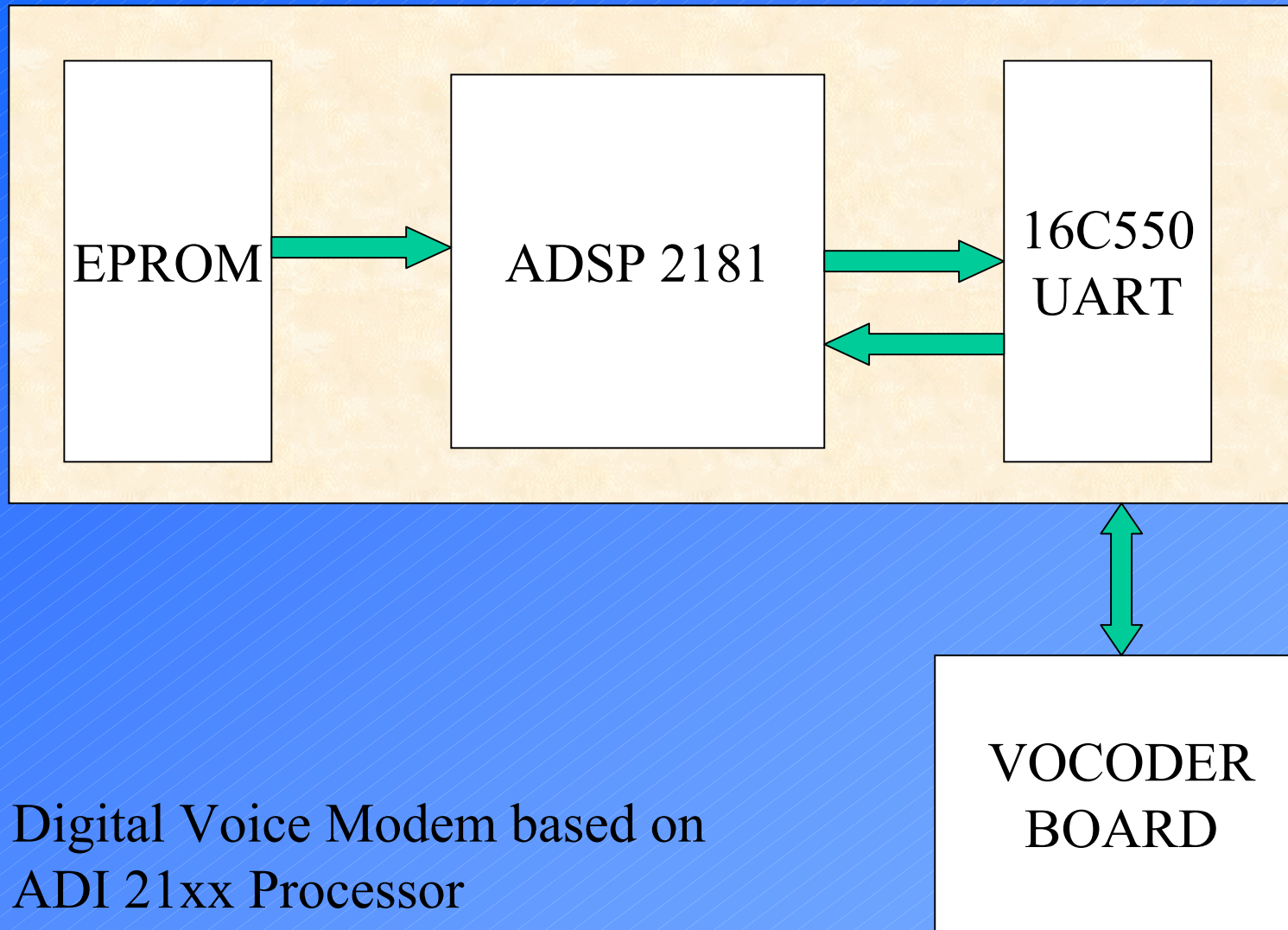
ADI 21xx Bad News

- Small program and data memory
- 16 bit data memory
- No UART
- few instructions allow indirection
- limited number of DAG registers

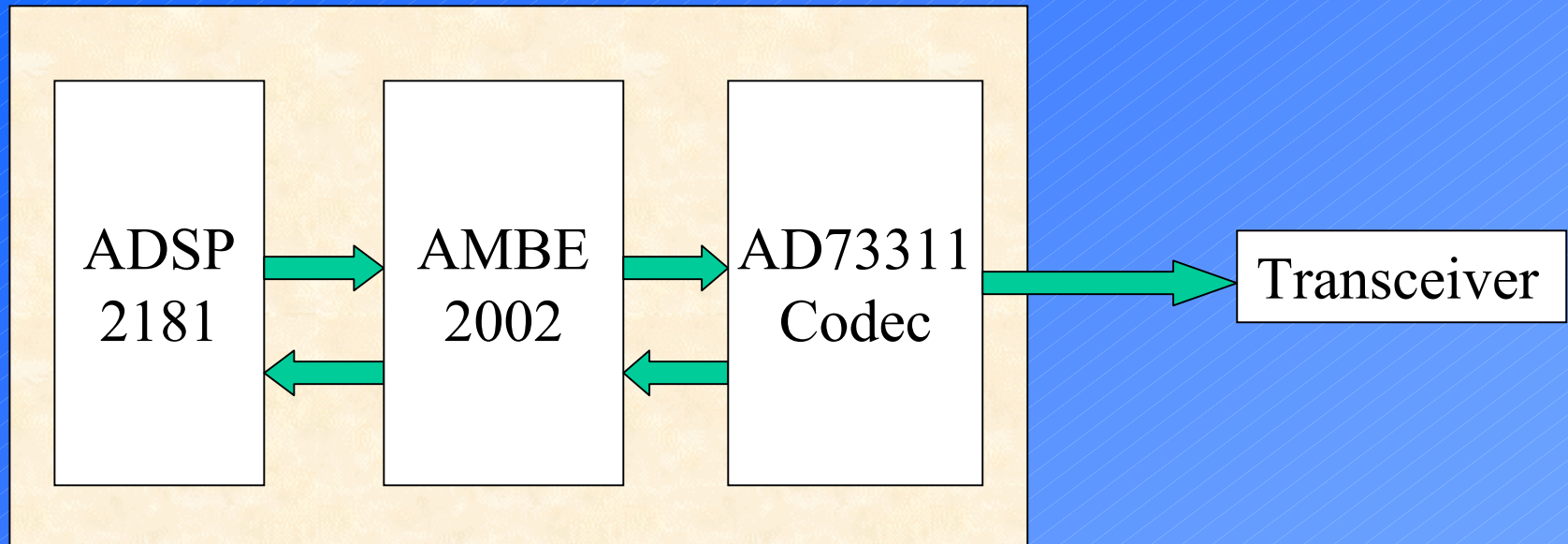
My DV Development System



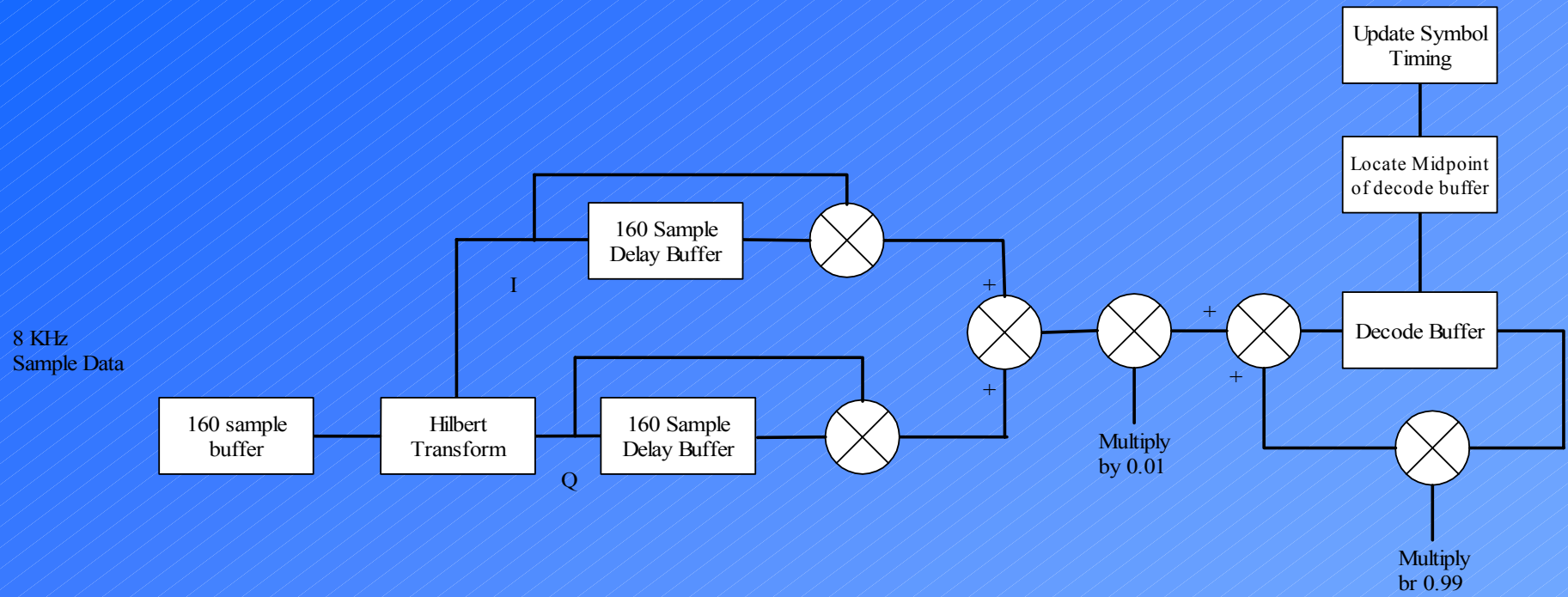




Digital Voice Modem based on
ADI 21xx Processor

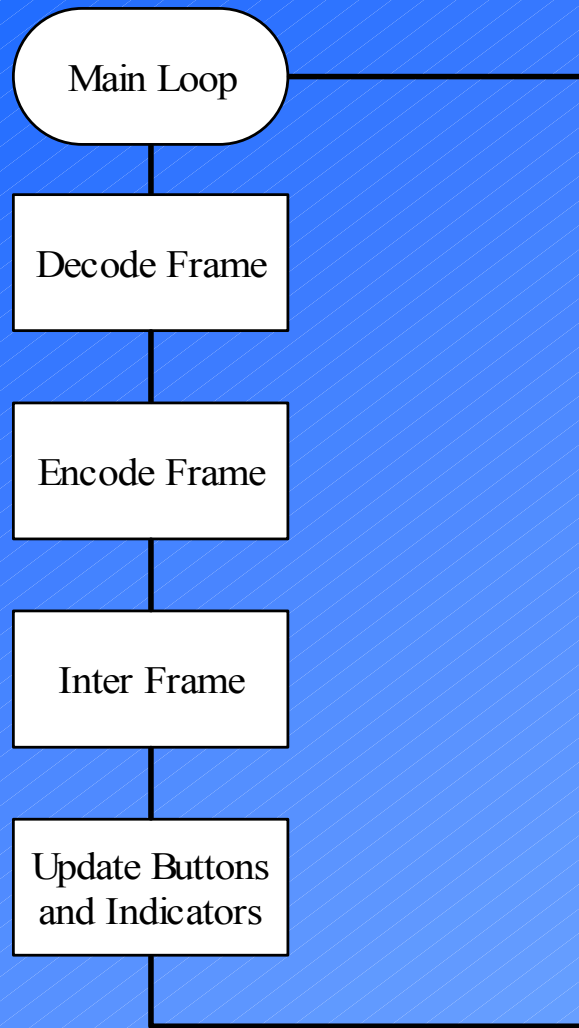


Digital Voice System based on ADI 21xx Processor

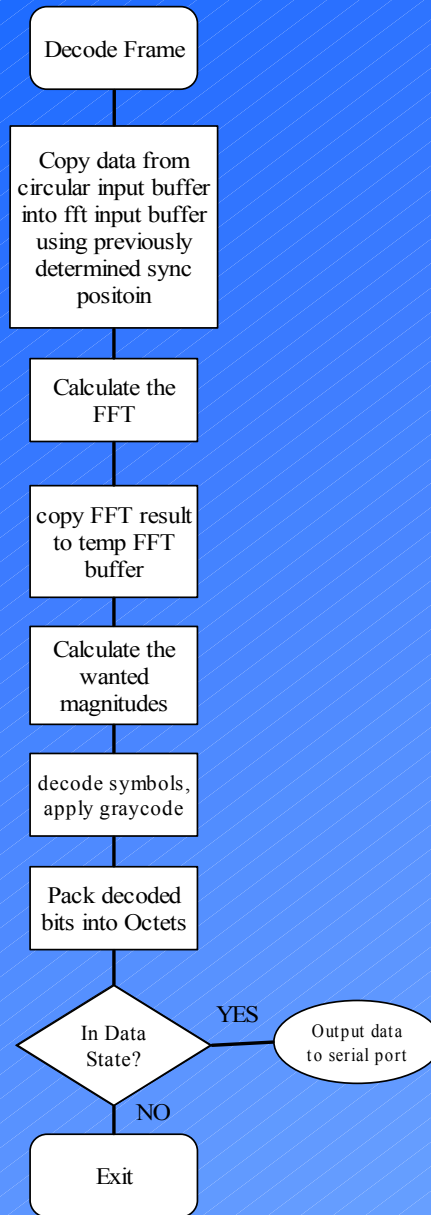


Preamble and Symbol Timing Detection Diagram

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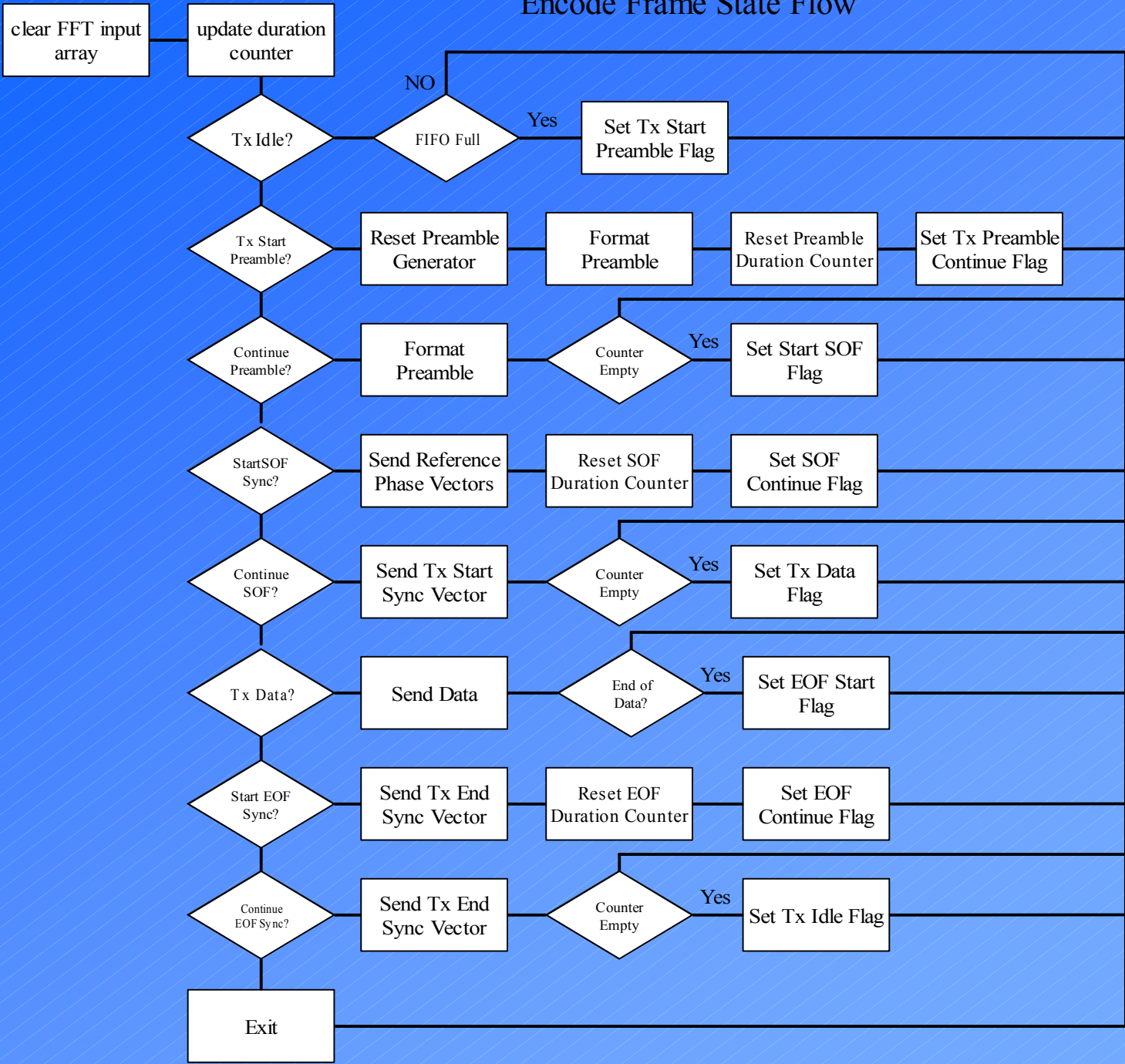


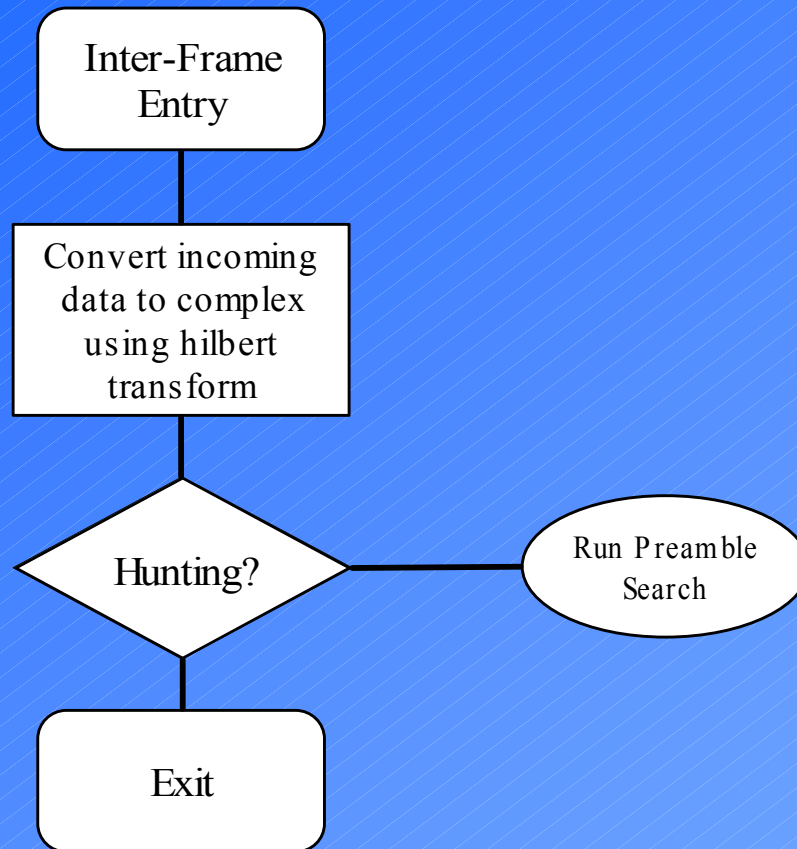
Main System Loop



Decode Frame

Encode Frame State Flow





INTER-FRAME PROCESSING