

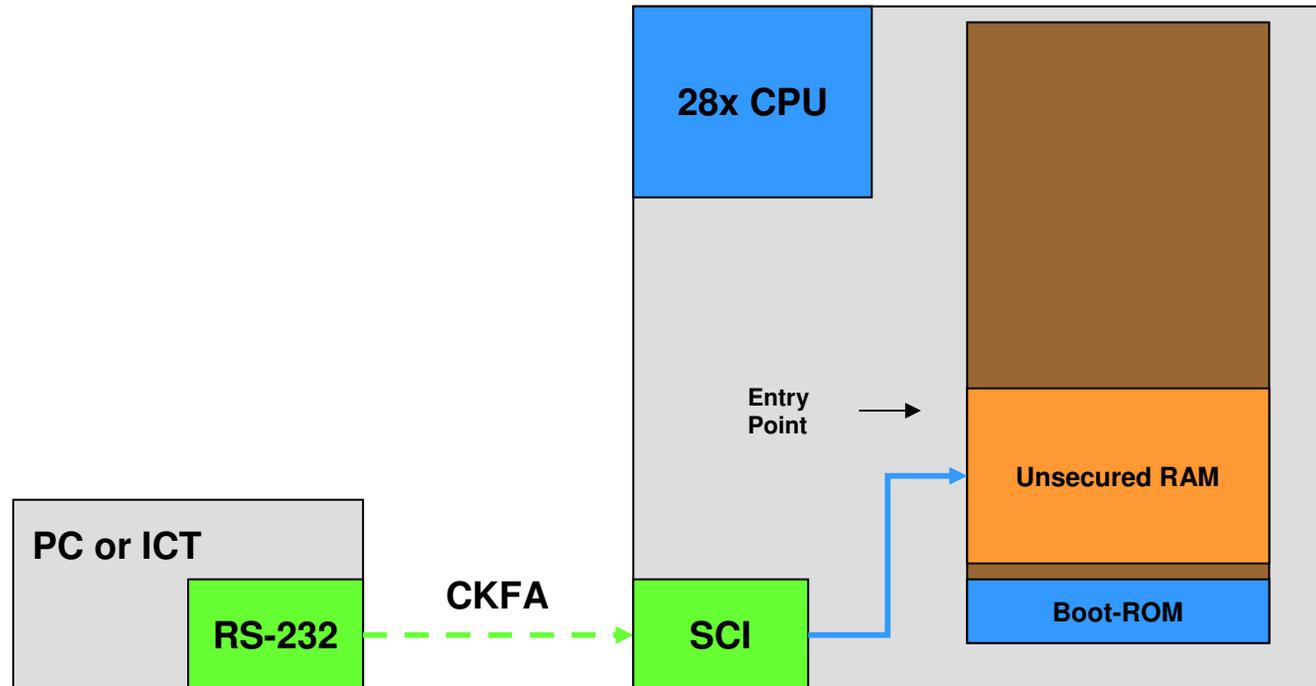
F281x Boot-SCIA Flash Programming

Jeff Stafford

Application Report

Step 1

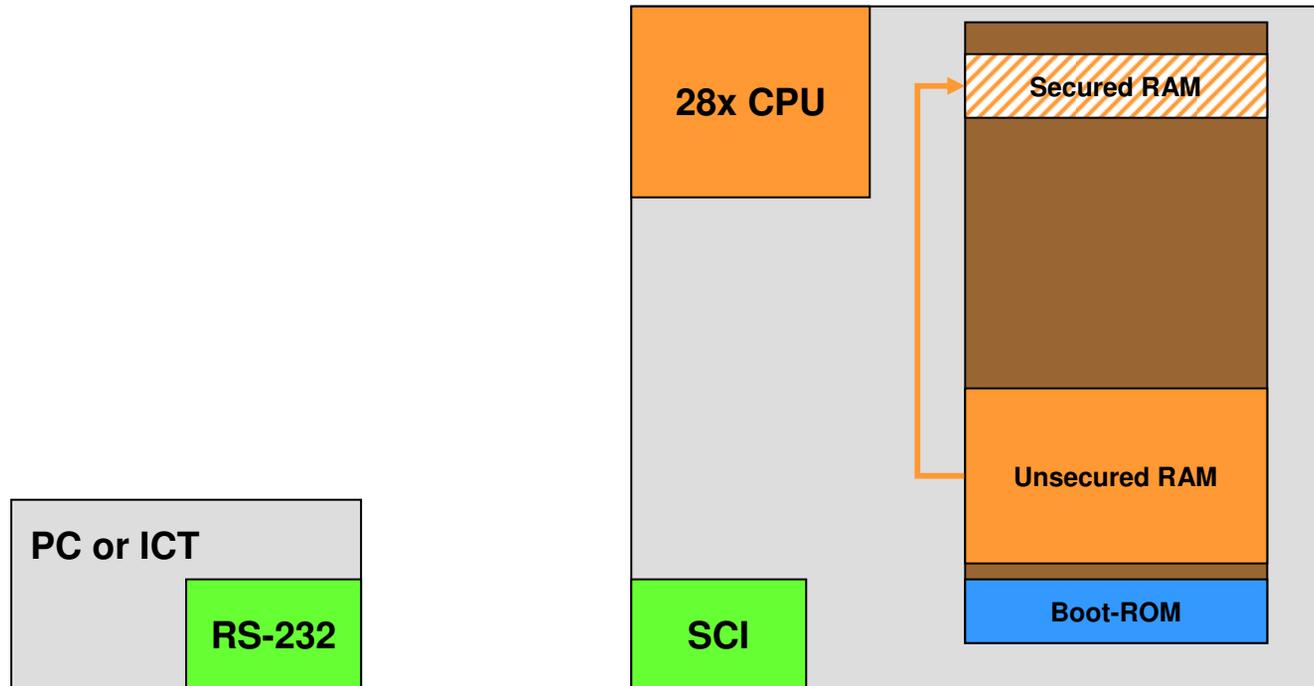
Transfer CKFA to Unsecured RAM LOAD Addresses



- ◆ Boot-ROM code controls 28x CPU
- ◆ Boot-ROM SCI-A code transfers CKFA to LOAD addresses in unsecured RAM
- ◆ Program Counter set to CKFA entry point when transfer is complete

Step 2

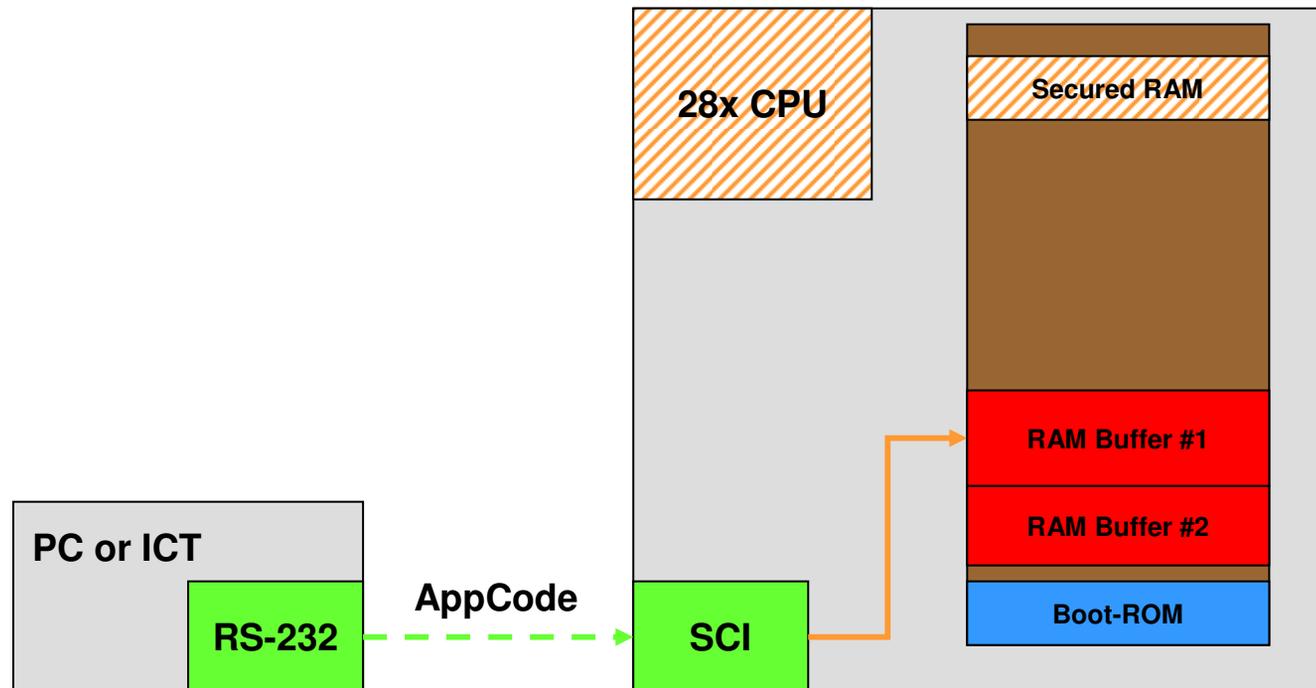
CKFA Unlocks CSM and Transfers to RAM RUN Addresses



- ◆ CKFA in unsecured RAM controls 28x CPU
- ◆ CKFA unlocks CSM
- ◆ CKFA copies itself from LOAD addresses to RUN addresses in secured RAM

Step 3

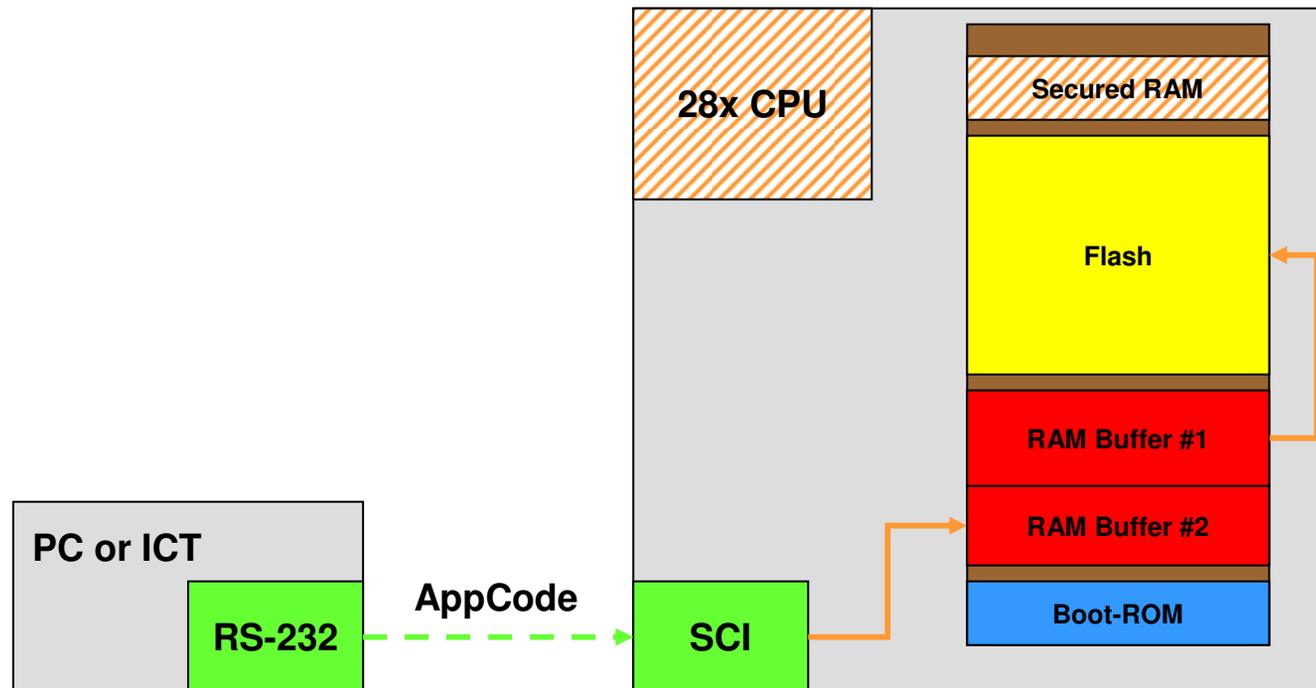
CKFA Transfers AppCode to RAM Buffer #1



- ◆ CKFA in secured RAM controls 28x CPU
- ◆ CKFA uses SCI-A to transfer 4KW of AppCode to RAM Buffer #1

Step 4

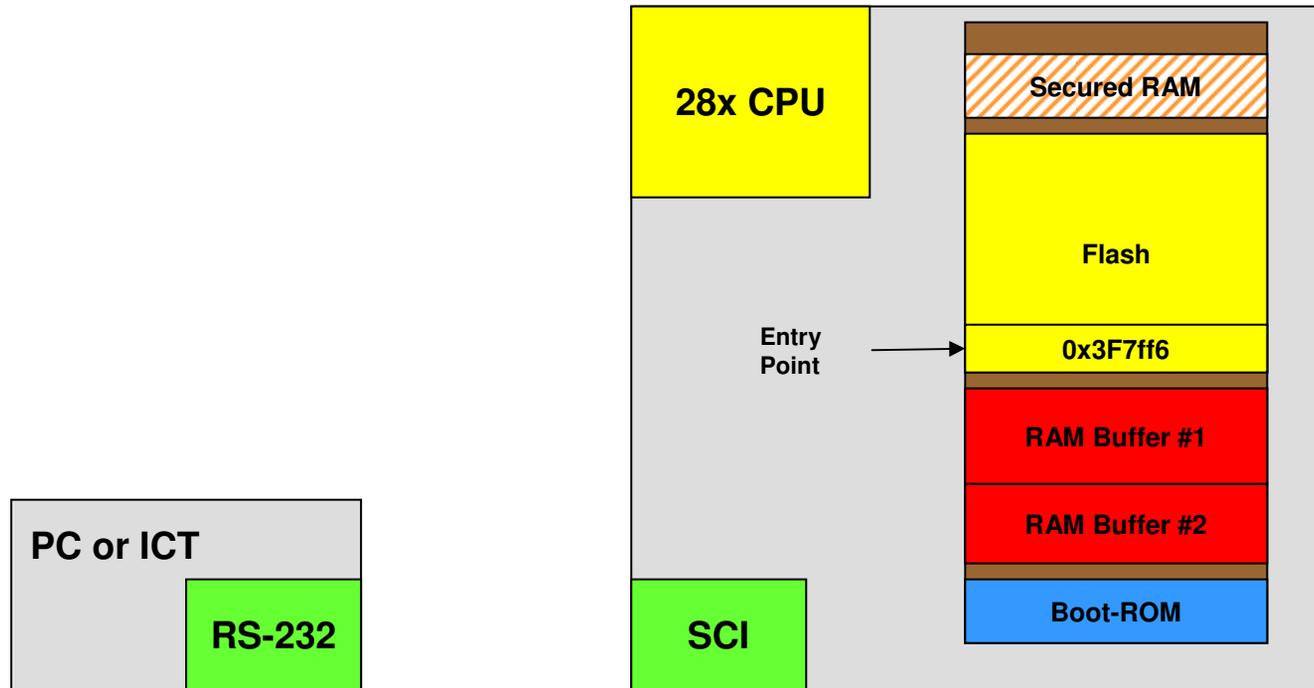
CKFA Starts Programming Flash



- ◆ CKFA in secured RAM controls 28x CPU
- ◆ CKFA programs flash with RAM Buffer #1 contents
- ◆ CKFA transfers next 4KW of AppCode to RAM Buffer #2

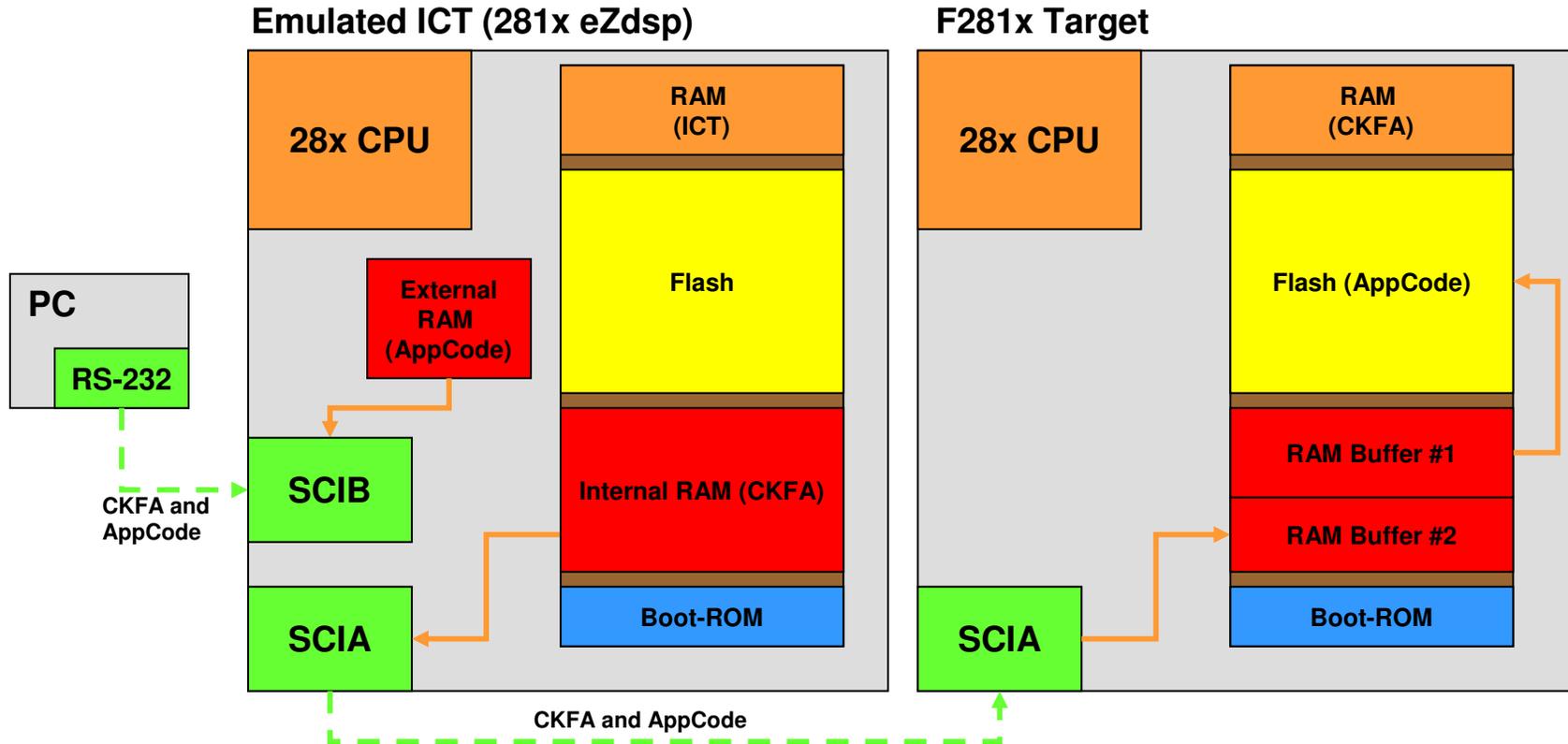
Step 5

Flash Programming Completed



- ◆ Device is reset, setting program counter = 0x3F7FF6
- ◆ AppCode in flash controls 28x CPU
- ◆ All RAM available for AppCode use
- ◆ At 57600 bps, 64 KW program time = 24 sec

Emulated ICT Flash Programming



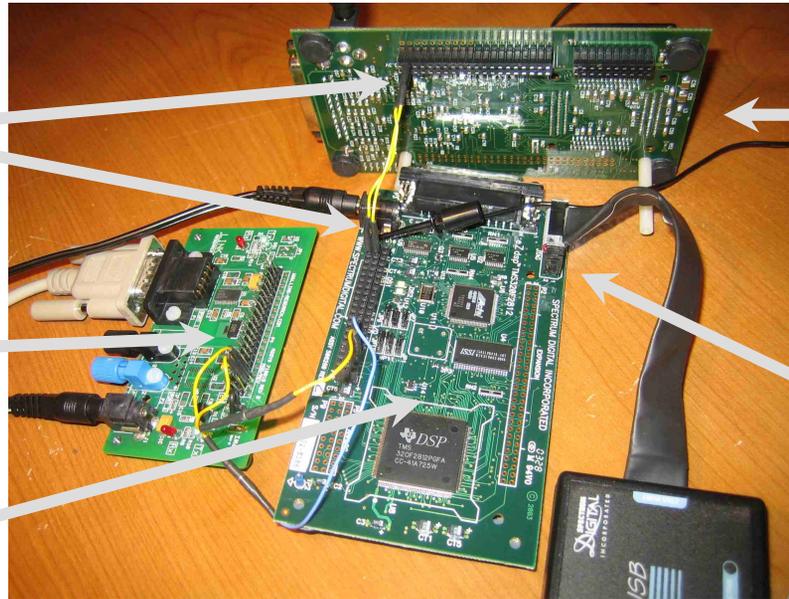
- ◆ CKFA and AppCode Transfer to Emulated ICT RAM by RS-232
- ◆ CKFA Transfer to Target RAM by Boot-ROM Controlled SCI
- ◆ AppCode Transfer to Target Flash by CKFA Controlled SCI
- ◆ At 1.875 Mbps, 64 KW program time = 1.4 sec

Emulated ICT - HW

EICT - Target
Direct SCI
Connection

PC RS-232
Interface

Emulated
ICT (EICT)



F281x Target

CCS JTAG
Interface

Hardware:

- ◆ (2) F2812 eZdsp From Spectrum Digital
- ◆ RS-232 Interface from Link Research
- ◆ JTAG Emulator from Spectrum Digital

Software:

- ◆ PC = HyperTerminal
- ◆ EICT = Application Report EICT SW
- ◆ Target = Application Report CKFA SW