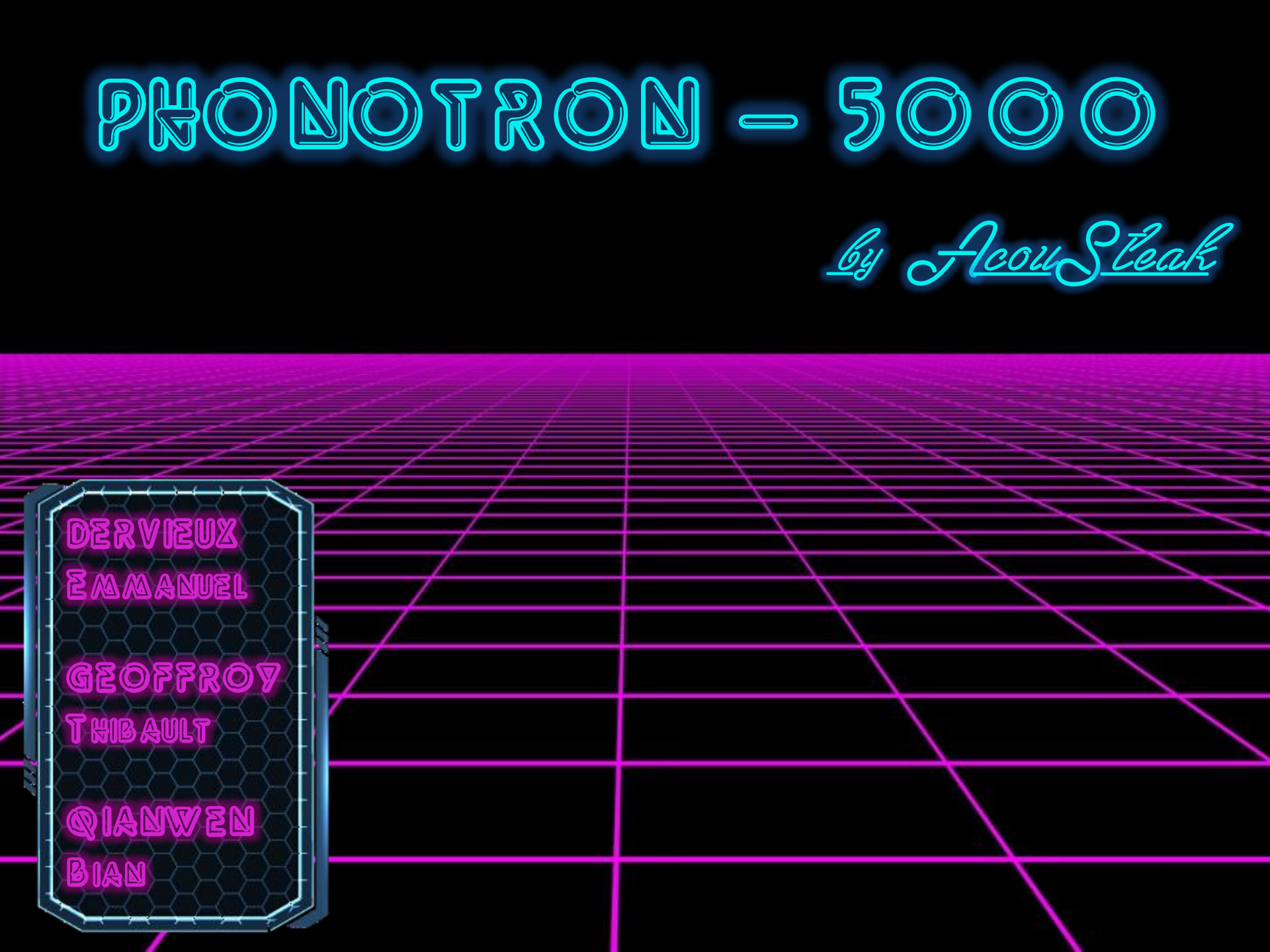
PHONOTRON - 5000

by AcouSteak

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PLAN :

1000 – Introduction

2000 – Architecture Générale

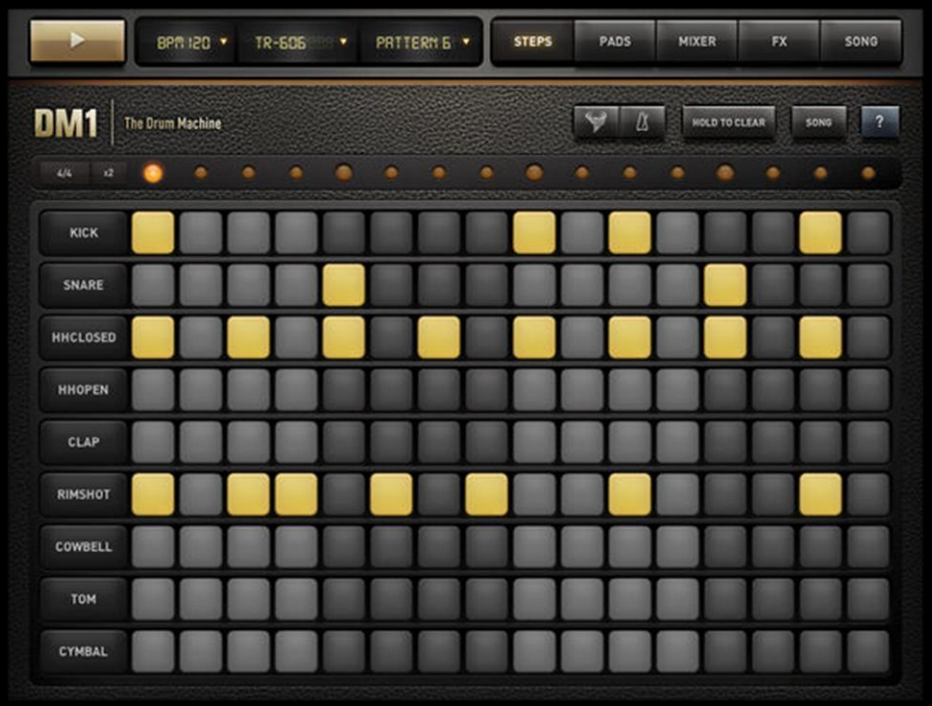
3000 – Blocs VHDL et NIOS II

4000 – Code C

5000 – Conclusion

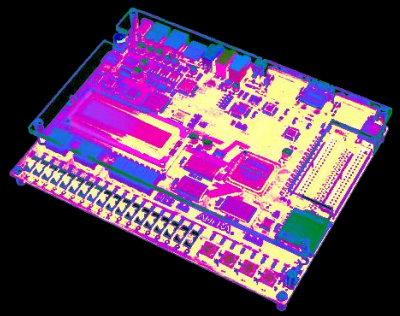
5000.0revB – Démonstration

1000 – Introduction



Conception d'une Drum-Machine

sur Altera DE2



Cyclone II

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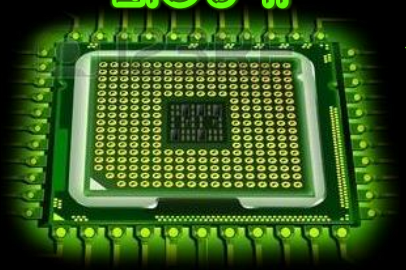
2000 - Architecture Générale

DAC

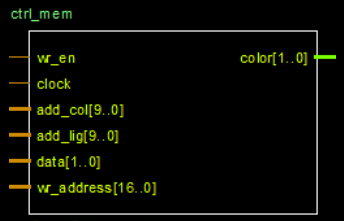
Casque Audio

DAC_FIFO



Nios II

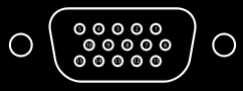
screen



RAM 2-ports

color

address



VGA

4 x sheets

play_inst_IRQ

Séquenceur

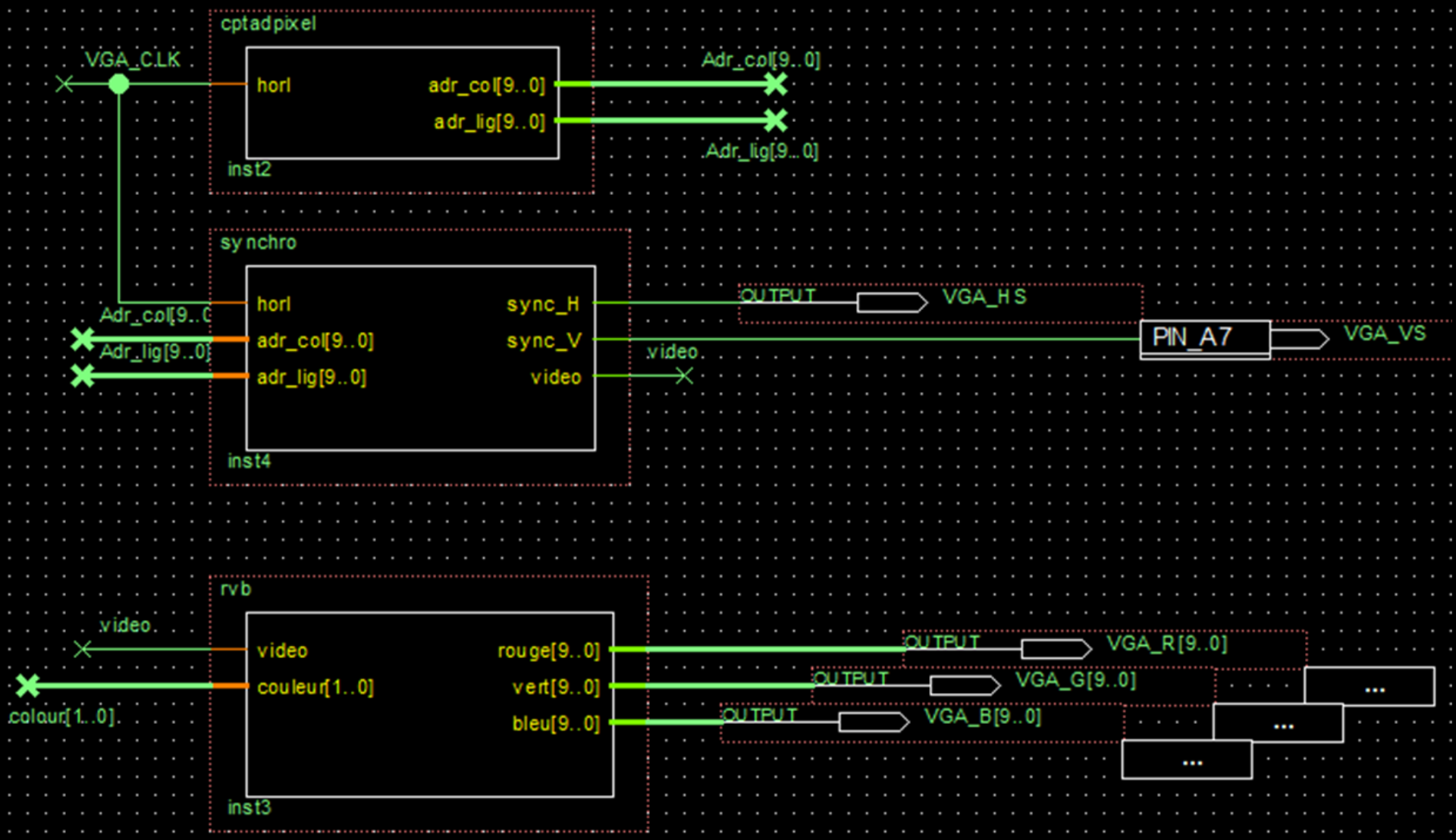
KB_IRQ

KB_DATA

Écran

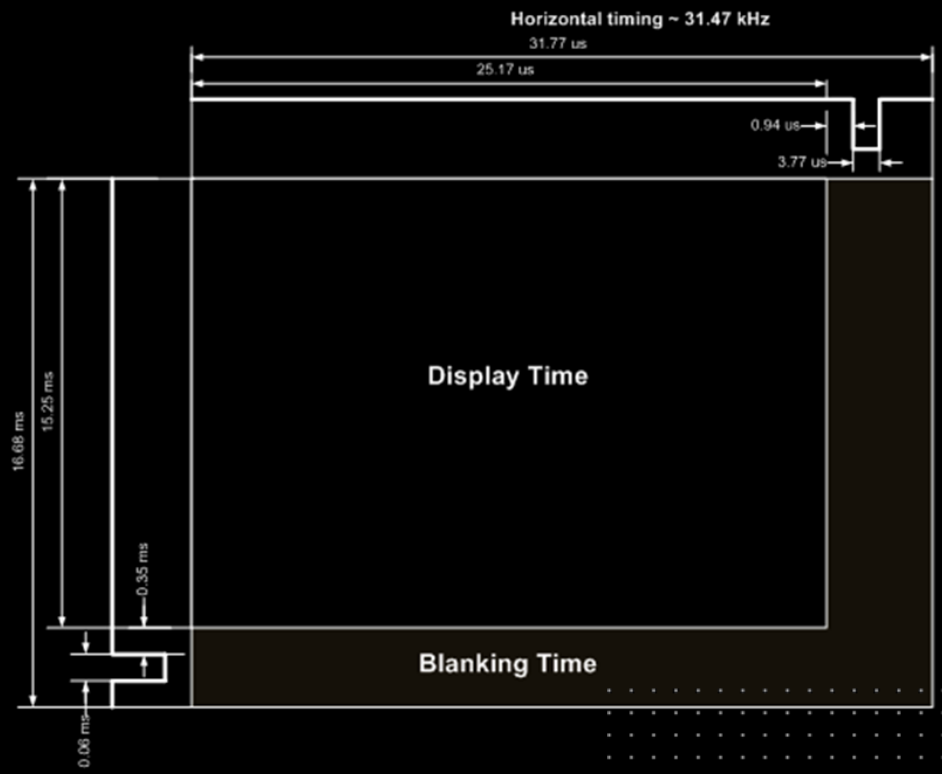
3000 – Blocs VHDL Et NIOS II

VGA



3000 – Blocs VHDL et NIOS II

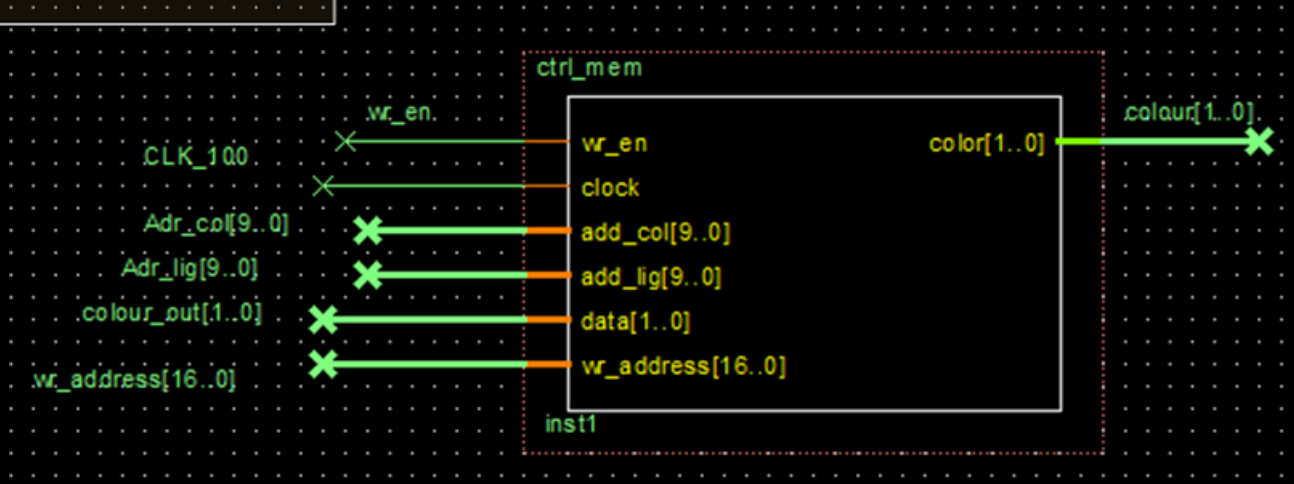
RAM 2-ports



UN PROBLÈME DE TIMING
ET DE TAILLE

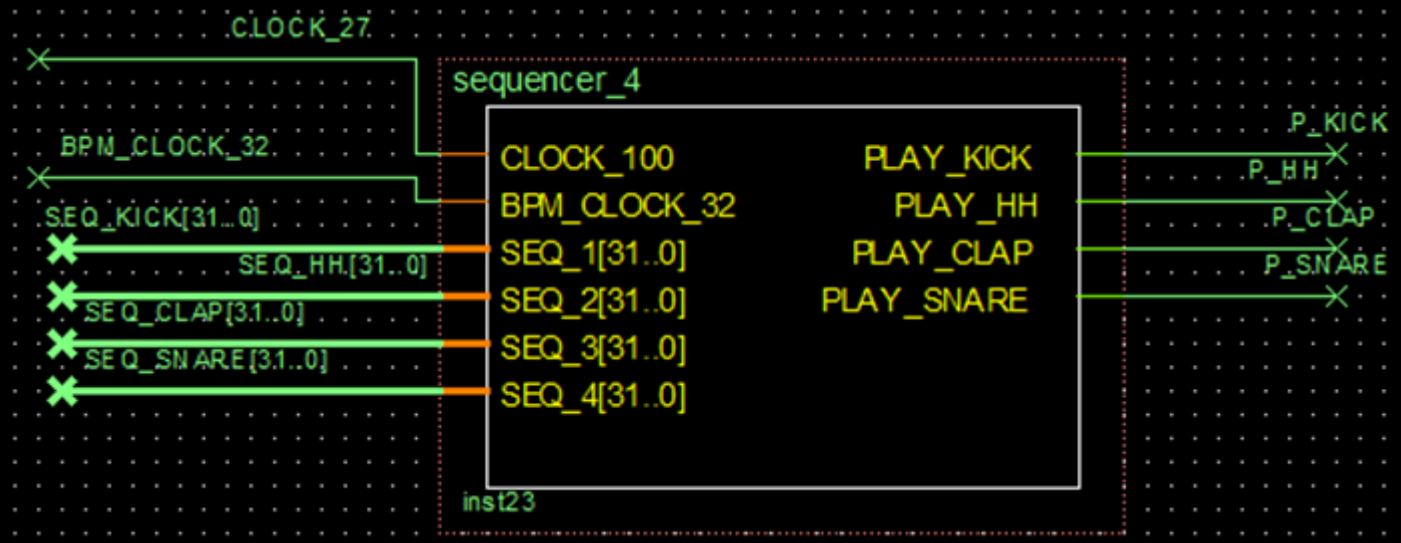
640X480 -> 320X240

30BITS -> 2BITS



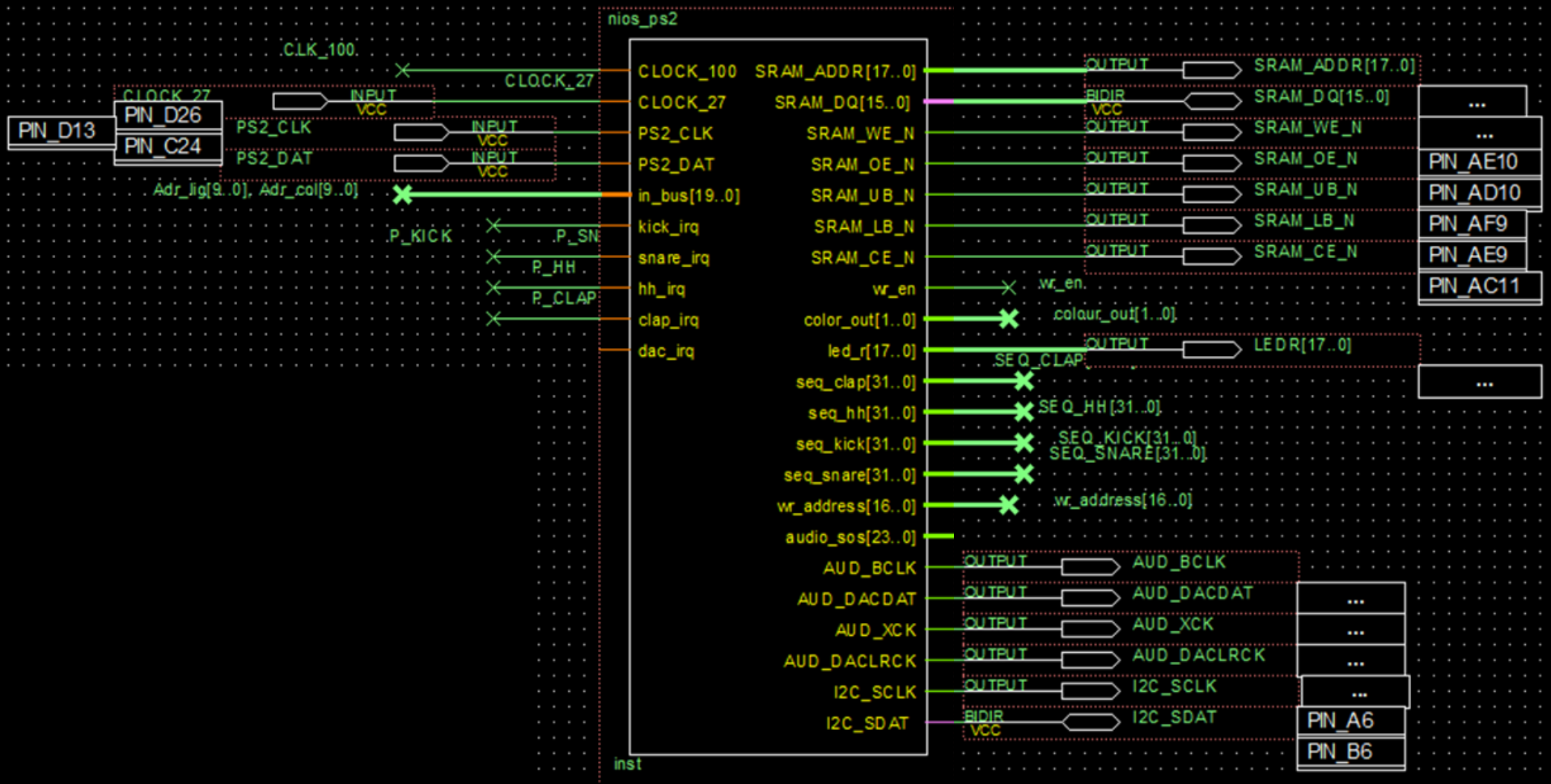
3000 – Blocs VHDL et Nios II

Séquenceur



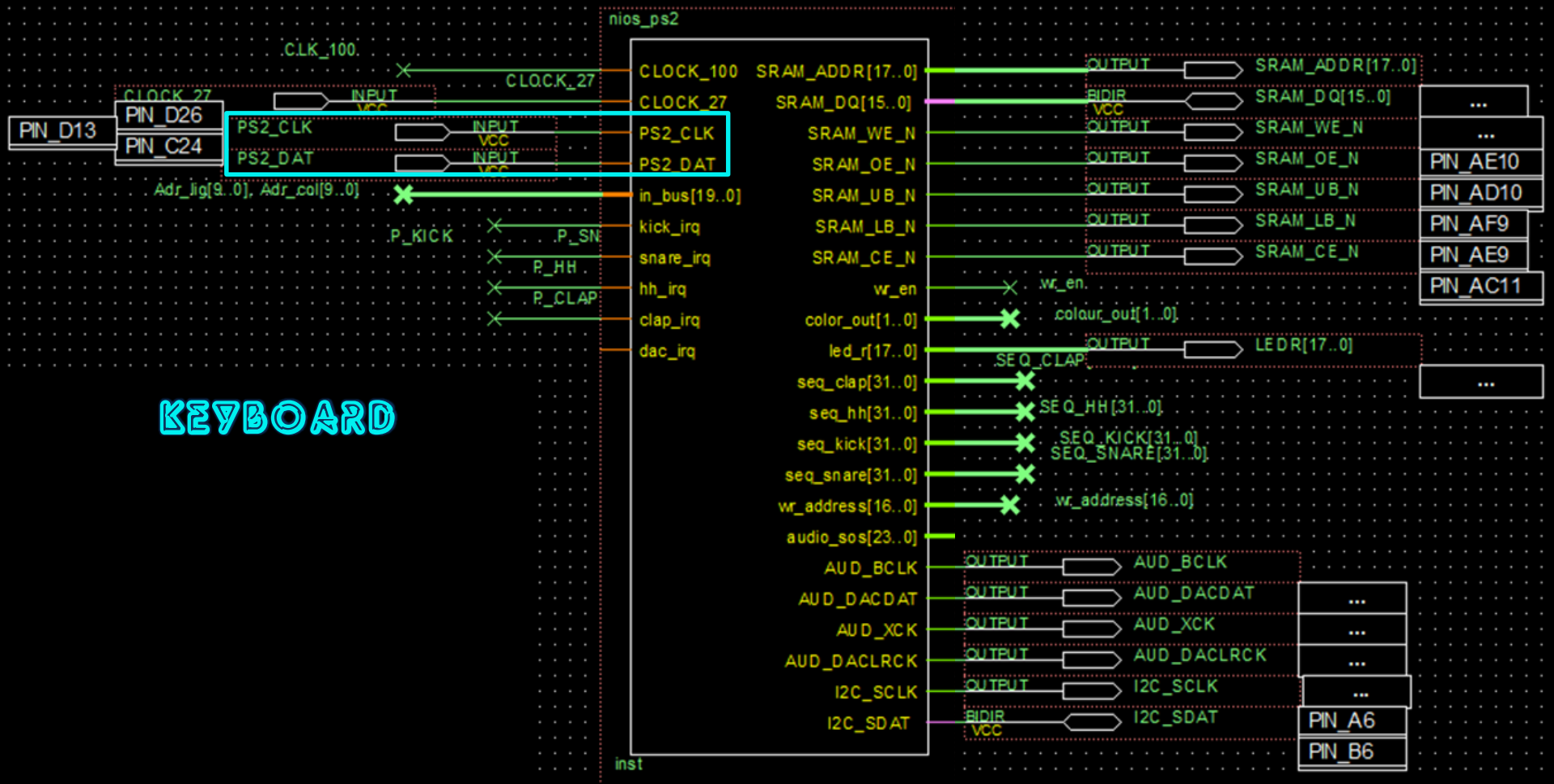
3000 – Blocs VHDL Et NIOS II

NIOS II



3000 – Blocs VHDL Et NIOS II

NIOS II



KEYBOARD

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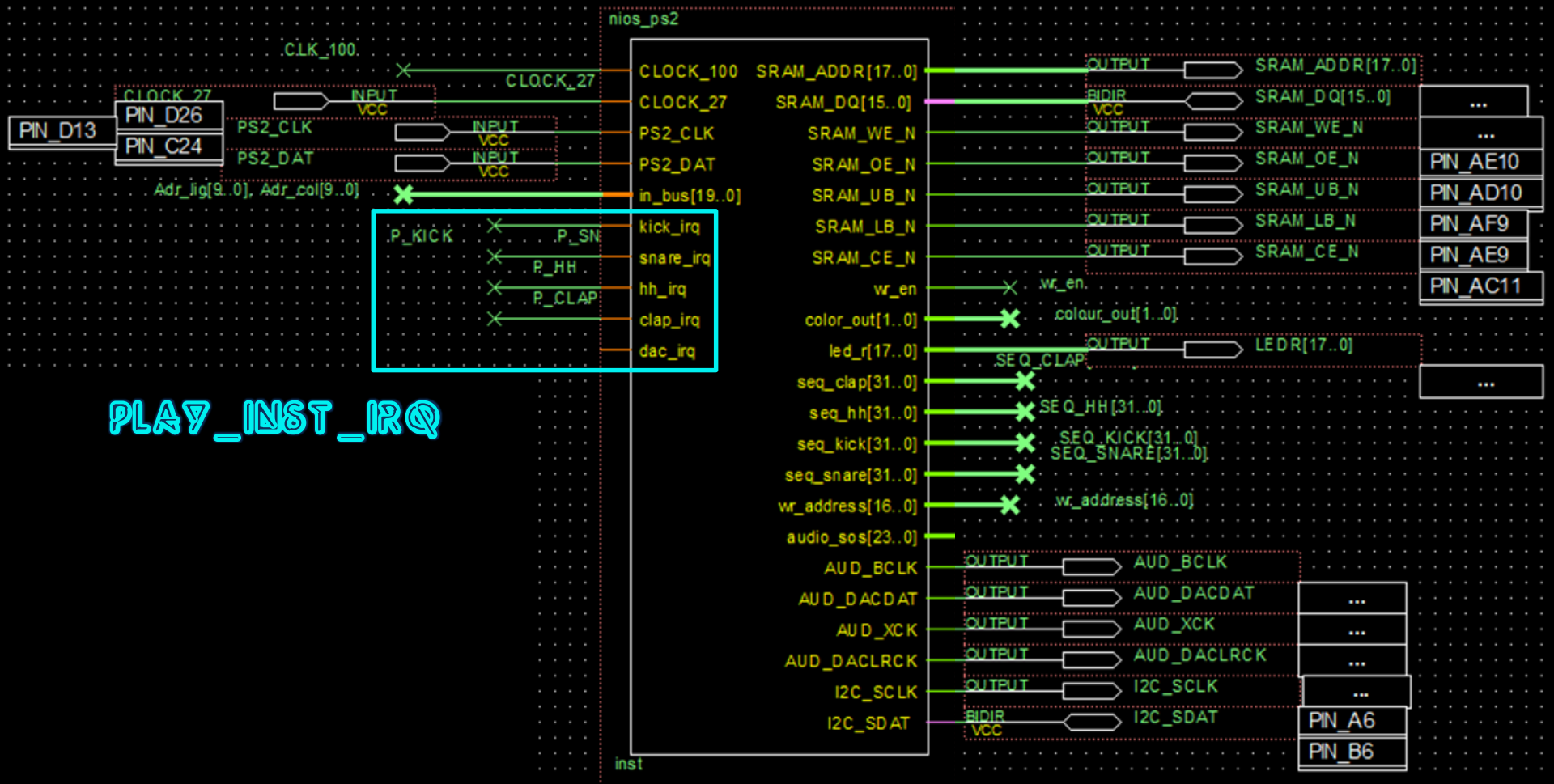
3000 – Blocs VHDL Et NIOS II

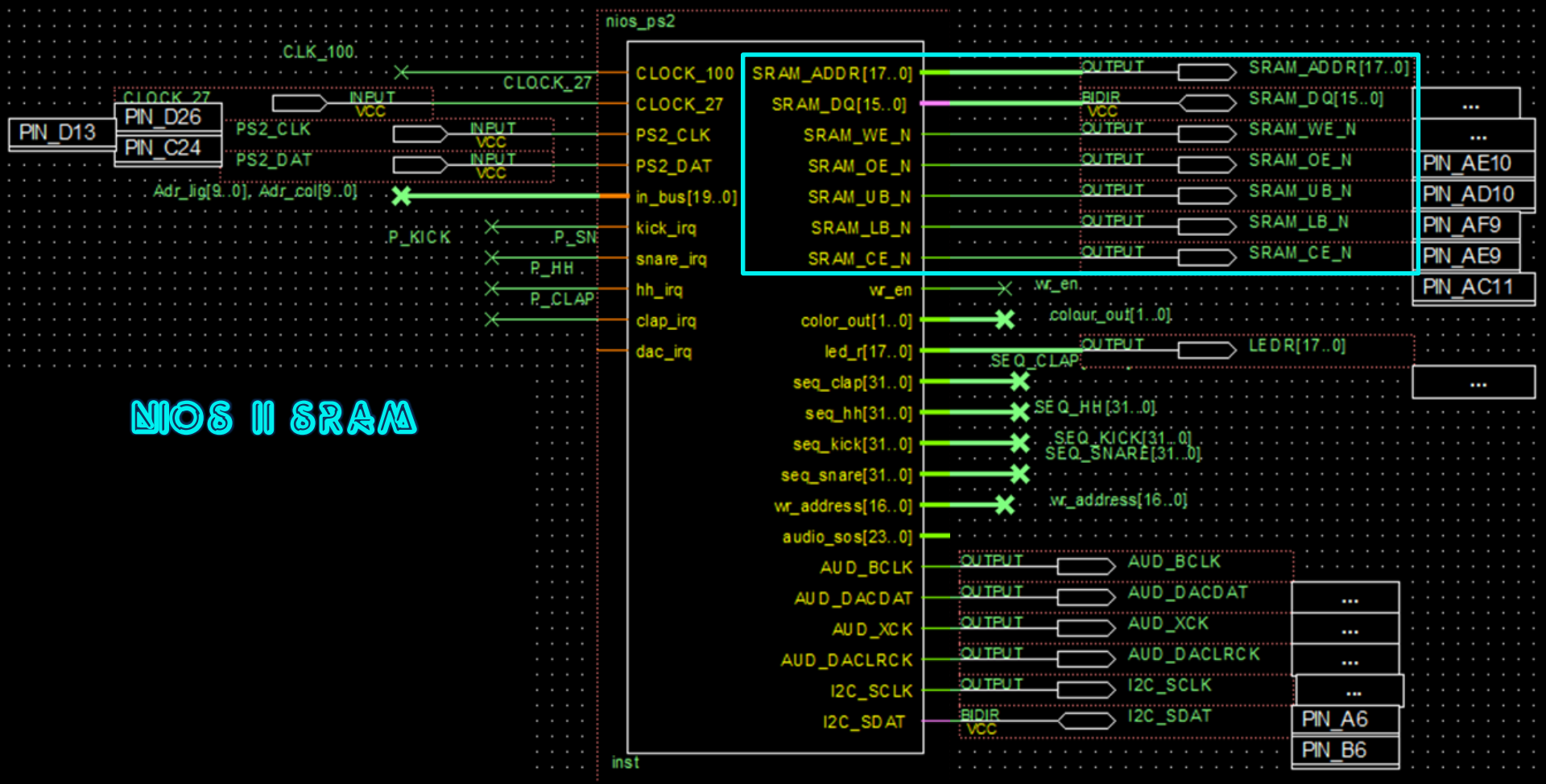
NIOS II



PLAY_INST_IRQ

3000 – Blocs VHDL Et NIOS II

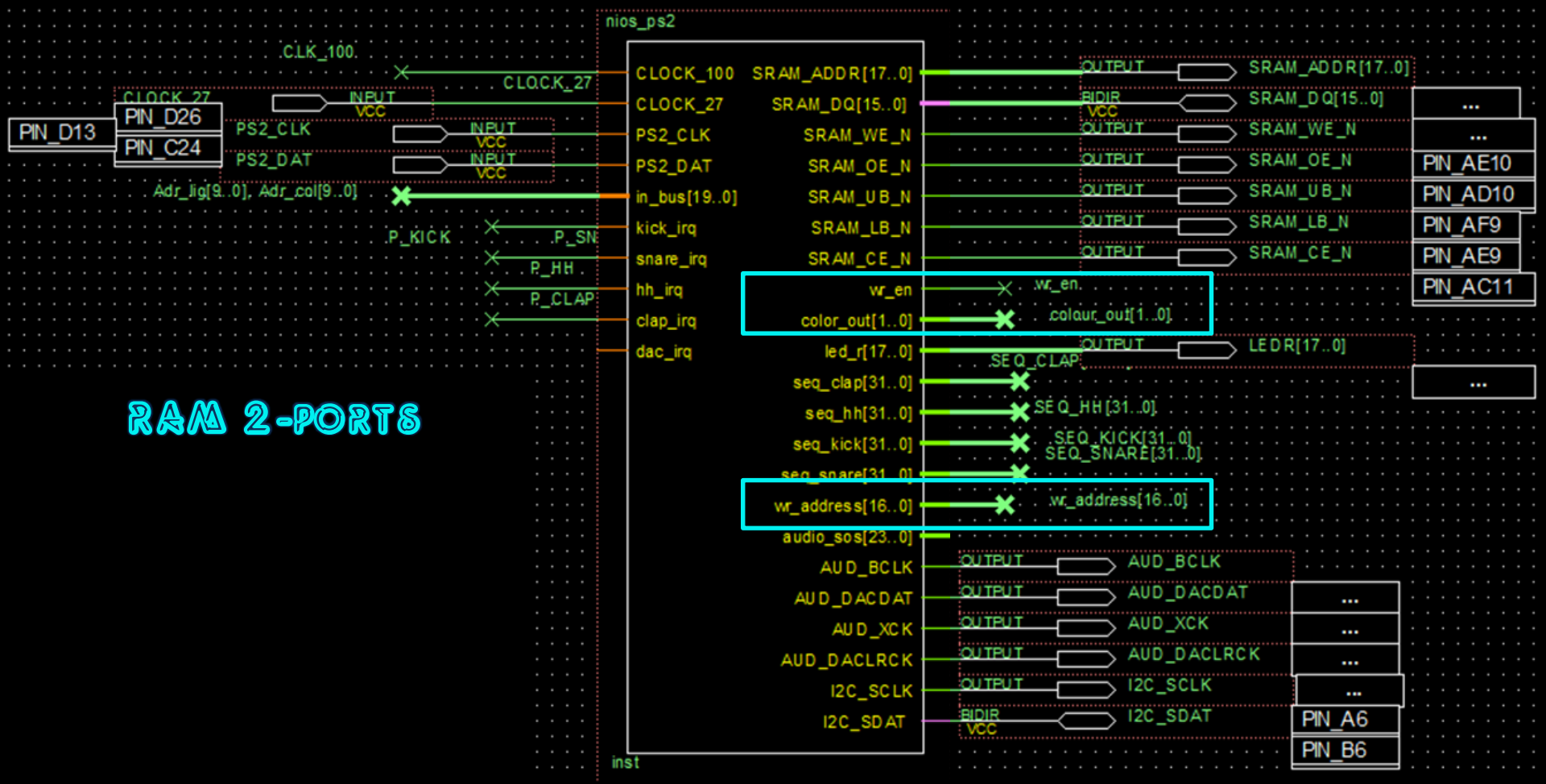
NIOS II



NIOS II SRAM

3000 – Blocs VHDL Et NIOS II

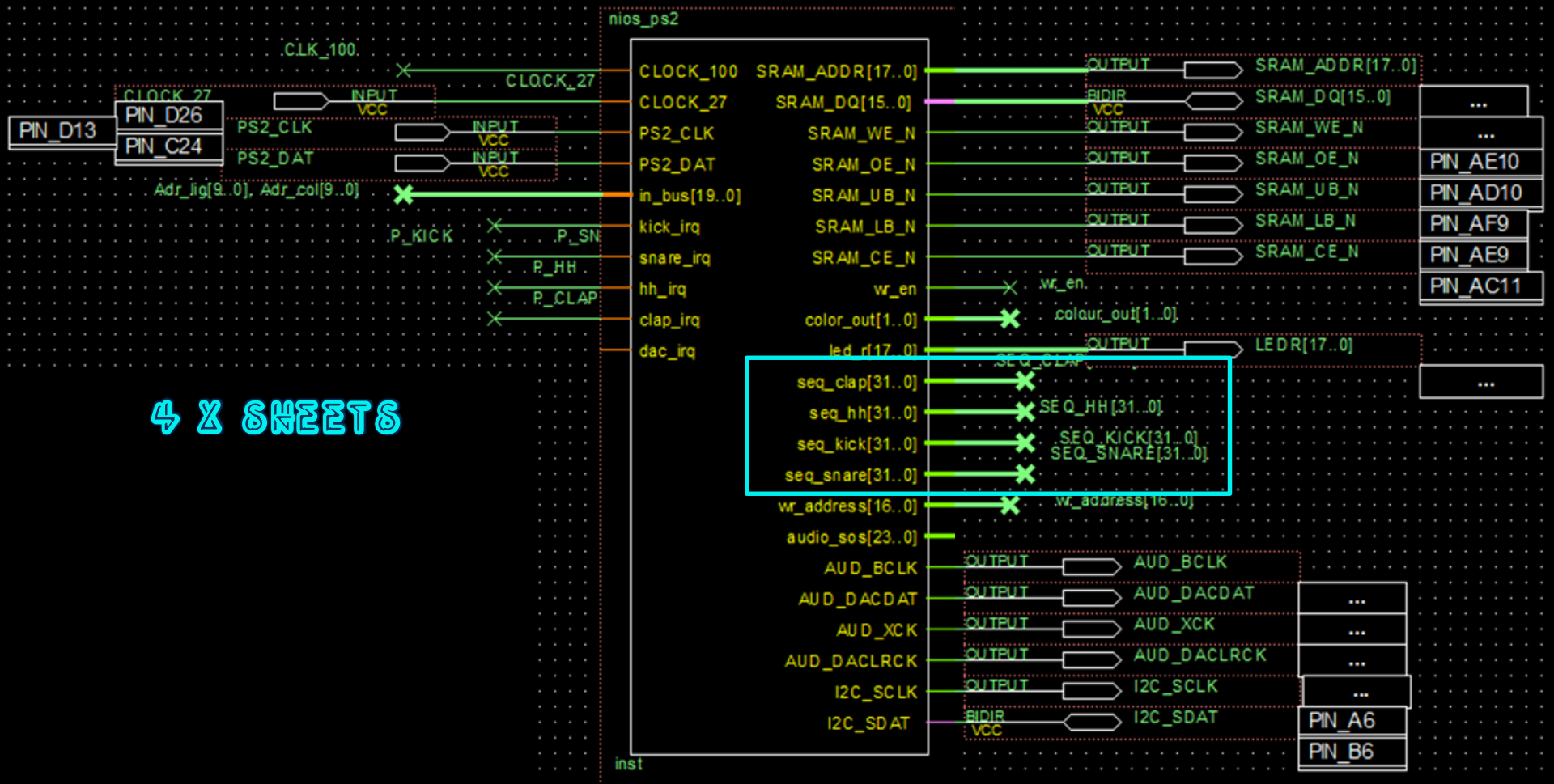
NIOS II



RAM 2-PORTS

3000 – Blocs VHDL Et NIOS II

NIOS II



4 X SHEETS

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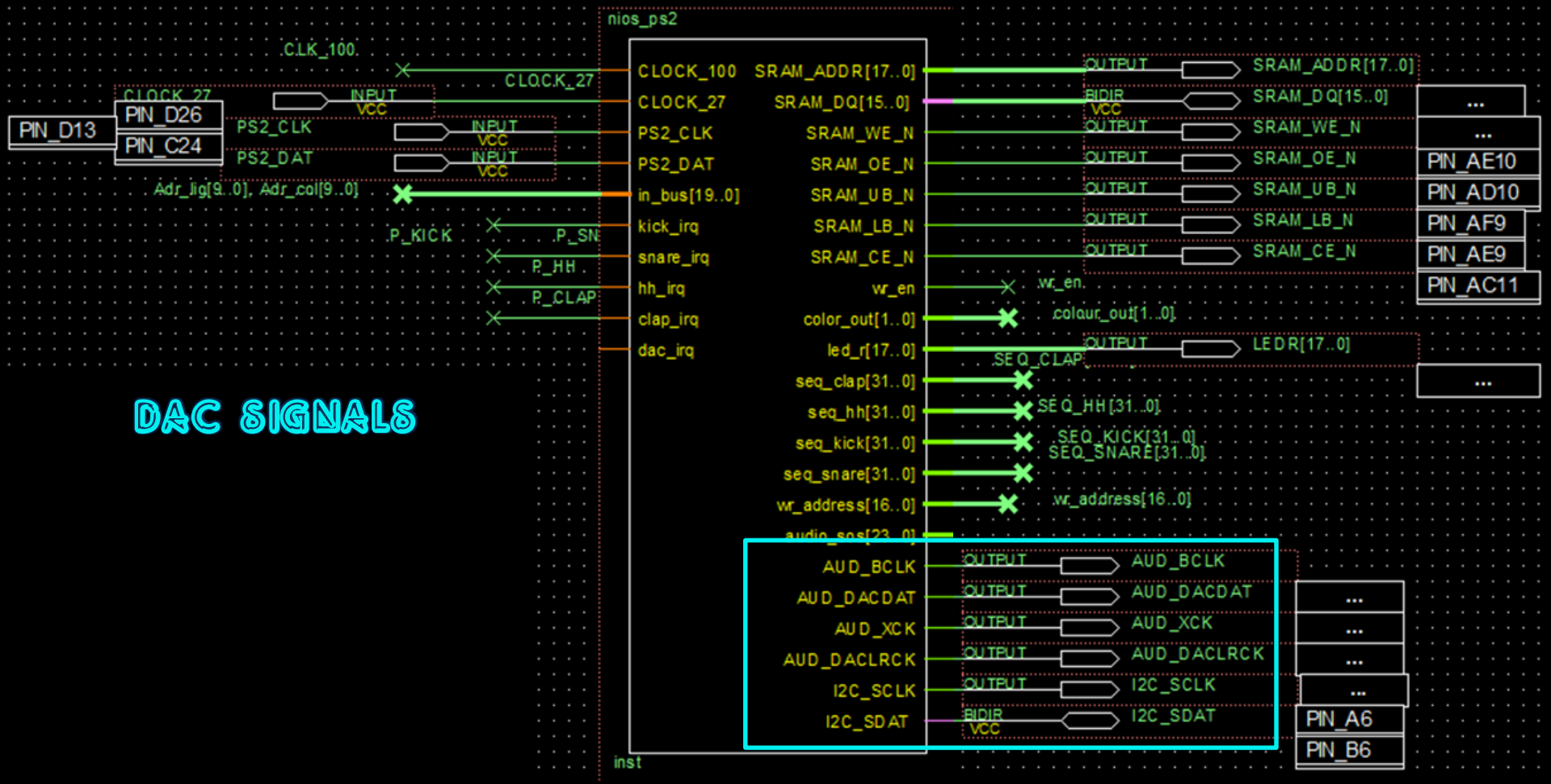
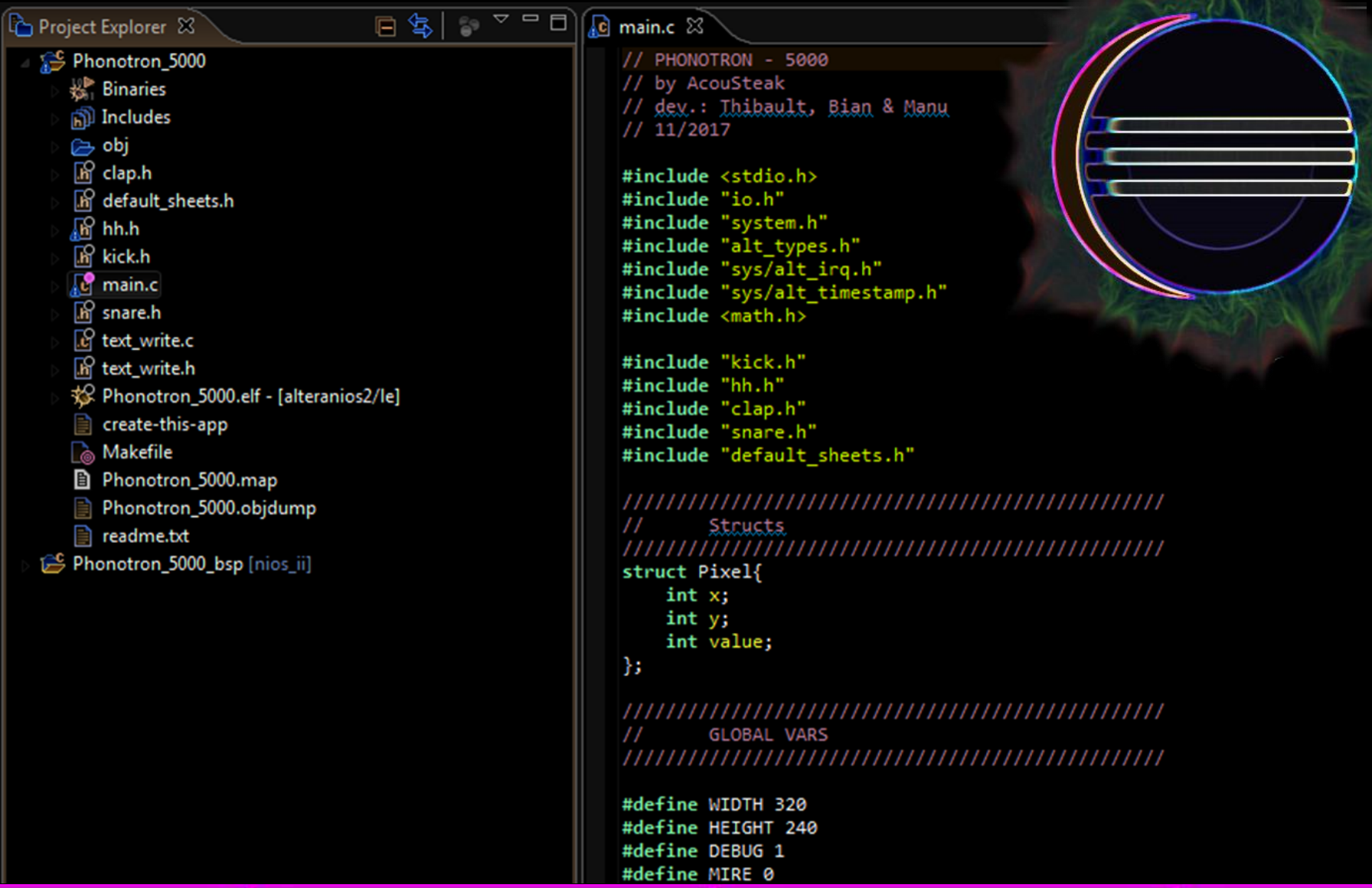
3000 – Blocs VHDL Et NIOS II

NIOS II



DAC SIGNALS

4000 – Code C



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4000 – Code C

// IOs functions //

// Interruption handlers //

// Drawing functions //

// Process functions //

```
static void enableWrite();
static void disableWrite();
static void write(unsigned long address, int colour);
static void sheets_output();

static void handle_KICK_interrupt(void* context, alt_
static void handle_SNARE_interrupt(void* context, alt
static void handle_CLAP_interrupt(void* context, alt_
static void handle_HH_interrupt(void* context, alt_u3
static void handle_KEYBOARD_interrupt(void* context,

static void cleanScreen();
static void drawMire();
static void drawHLine(int x, int y, int length, int c
static void drawVLine(int x, int y, int length, int c
static void drawEmptySquare(int x, int y, int length,
static void drawEmptySquareRow(int x, int y, int leng
static void drawOneSheet(int y);
static void drawSheets();

static void init();
static unsigned long makeAddress(int x, int y);
static void setActive();
static void reset_sheets();
static void move(int x, int y);
unsigned long vectorCast32Bits(int n_inst);
static void set_volume(int modifier);
static void load_sheet(int sheet_number);
static void copy_sheet(int sheet_tocopy[]);
static void write_message(int x, int y, char message[
static int write_letter(int x, int y, char lettre, in
```

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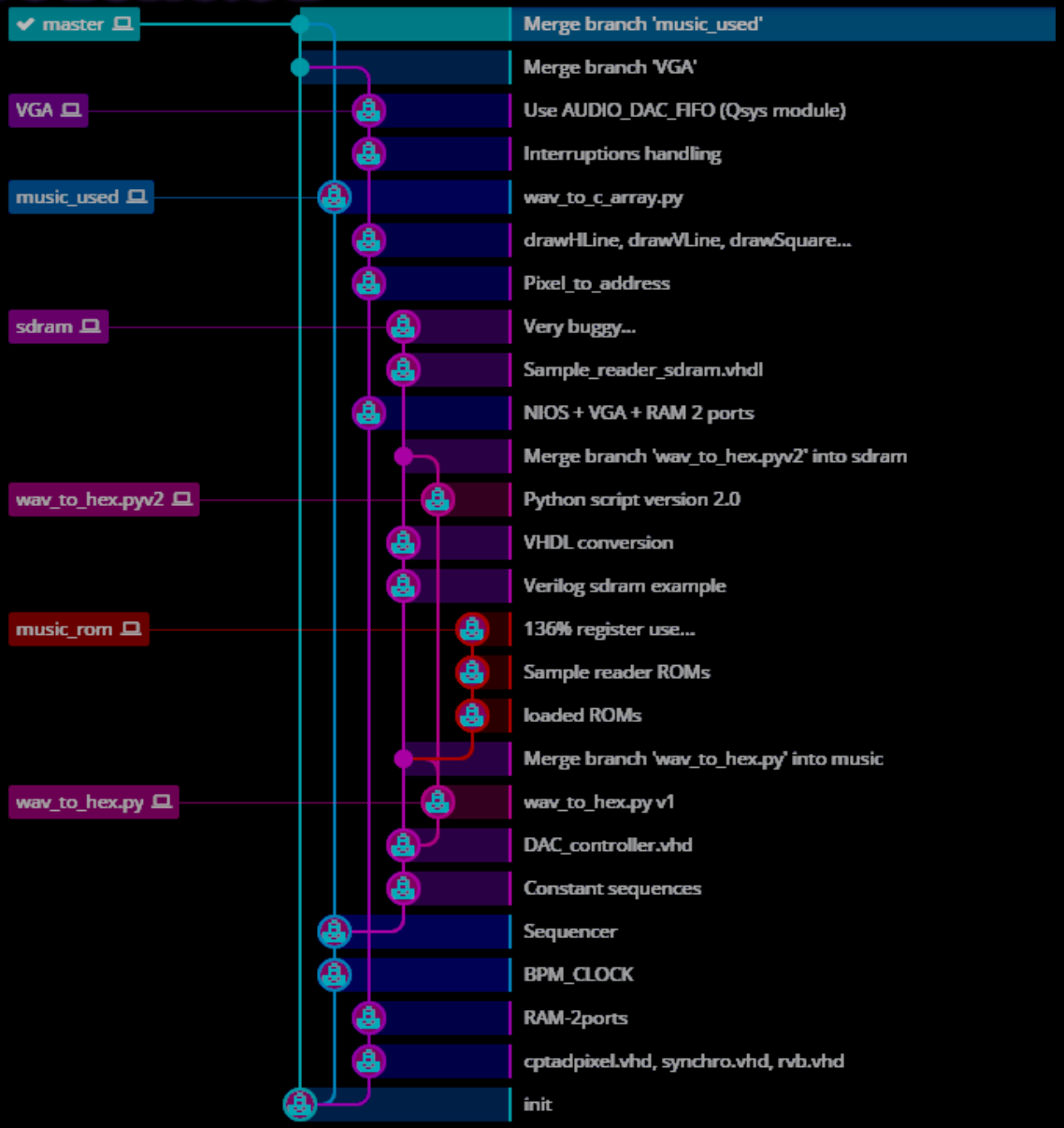
5000 – Conclusion



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5000 – Conclusion

Special Thanks to

AMOR NAFKHA

ALEXANDRE MARMIGNON

PIERRE CHAUVET

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DÉMONSTRATION