BOARDCONFIG.C

```
/******************************************************************************/
/*                    Novatek MicroElectronics Corp.                          */
/*      6F, No. 1-2, Innovation Road I, Science-Based Industrial Park,        */
/*                    HsinChu 300, Taiwan, R.O.C.                             */
/*              TEL:886-3-567-0889      FAX:886-3-577-0132                    */
/*                    All Rights Reserved                                     */
/******************************************************************************/
#ifndef __BOARD_CONFIG_H__
#define __BOARD_CONFIG_H__

//*****************************************************************************
// I N C L U D E  F I L E S
//*****************************************************************************
#include "McuAPI.h"
#include "Scaler.h"
#include "Typedef.h"

//*****************************************************************************
// G L O B A L  D E F I N I T I O N S
//*****************************************************************************
//Crystal Clock
#define REF_CLK                 12000000

//Scaler
#define PCBA_SCALER             NT68857

//Combine 8 bits into 1 byte
#define BitsToByte(b7,b6,b5,b4,b3,b2,b1,b0) ((b7<<7)|(b6<<6)|(b5<<5)|(b4<<4)|(b3<<3)|(b2<<2)|(b1<<1)
|b0)

//Mcu I/O port default output          bit:  7    6    5    4    3    2    1    0
#define PORT_A_DEFAULT_OUT      BitsToByte(HIGH, HIGH, HIGH, HIGH,  LOW, HIGH, HIGH,
HIGH)
#define PORT_B_DEFAULT_OUT      BitsToByte(HIGH, HIGH, HIGH, HIGH, HIGH, HIGH, HIGH,
HIGH)
#define PORT_C_DEFAULT_OUT      BitsToByte( LOW, HIGH, HIGH, HIGH, HIGH,  LOW,  LOW,
HIGH)
#define PORT_D_DEFAULT_OUT      BitsToByte(HIGH, HIGH, HIGH,  LOW, HIGH, HIGH, HIGH,
HIGH)
#define PORT_E_DEFAULT_OUT      BitsToByte(HIGH, HIGH, HIGH, HIGH, HIGH, HIGH, HIGH,
HIGH)
#define PORT_3_DEFAULT_OUT      BitsToByte(HIGH, HIGH, HIGH, HIGH, HIGH, HIGH,  LOW,
LOW)

//Mcu I/O port default direction       bit:  7    6    5    4    3    2    1    0
#define PORT_A_DEFAULT_DIR      BitsToByte(  IN,   IN,  OUT,  OUT,  OUT,  OUT,   IN,   IN)
#define PORT_B_DEFAULT_DIR      BitsToByte( OUT,  OUT,  OUT,  OUT,   IN,   IN,   IN,   IN)
#define PORT_C_DEFAULT_DIR      BitsToByte( OUT,  OUT,   IN,  OUT,  OUT,  OUT,  OUT,  OUT)
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#define PORT_D_DEFAULT_DIR      BitsToByte( OUT,  OUT,  OUT,  OUT,  OUT,  OUT,  OUT,  OUT)
#define PORT_E_DEFAULT_DIR      BitsToByte(  IN,   IN,   IN,   IN,   IN,  OUT,   IN,  OUT)

//Mcu I/O port Push-Pull Configuration bit:  7    6    5    4    3    2    1    0
#define PORT_A_DEFAULT_PP       BitsToByte( LOW,  LOW,  LOW,  LOW,  LOW,  LOW,  LOW,
HIGH)
#define PORT_B_DEFAULT_PP       BitsToByte( LOW,  LOW,  LOW,  LOW,  LOW,  LOW,  LOW,
LOW)
#define PORT_C_DEFAULT_PP       BitsToByte( LOW,  LOW,  LOW,  LOW,  LOW, HIGH,  LOW,
LOW)
#define PORT_D_DEFAULT_PP       BitsToByte( LOW,  LOW,  LOW, HIGH,  LOW,  LOW,  LOW,
LOW)
#define PORT_E_DEFAULT_PP       BitsToByte( LOW,  LOW,  LOW,  LOW,  LOW,  LOW,  LOW,
LOW)
#define PORT_3_DEFAULT_PP       BitsToByte( LOW,  LOW,  LOW,  LOW,  LOW,  LOW,  LOW,
LOW)

//Mcu I/O port Pull-Up Configuration   bit:  7    6    5    4    3    2    1    0
#define PORT_A_DEFAULT_PU       BitsToByte( LOW,  LOW,  LOW,  LOW,  LOW,  LOW,  LOW,
HIGH)
#define PORT_B_DEFAULT_PU       BitsToByte( LOW,  LOW,  LOW,  LOW,  LOW,  LOW,  LOW,
LOW)
#define PORT_C_DEFAULT_PU       BitsToByte( LOW,  LOW,  LOW,  LOW,  LOW, HIGH,  LOW,
LOW)
#define PORT_D_DEFAULT_PU       BitsToByte(HIGH, HIGH,  LOW, HIGH, HIGH, HIGH, HIGH,
HIGH)
#define PORT_E_DEFAULT_PU       BitsToByte( LOW,  LOW,  LOW,  LOW,  LOW,  LOW,  LOW,
LOW)
#define PORT_3_DEFAULT_PU       BitsToByte( LOW,  LOW,  LOW,  LOW,  LOW,  LOW,  LOW,
LOW)

//Each bit indicates one ADC channel,      ADC7  ADC6  ADC5  ADC4  ADC3  ADC2  ADC1  ADC0
#define MCU_ADC_CON_DEFAULT     BitsToByte( LOW, LOW,  LOW,  LOW, HIGH, LOW, HIGH,
HIGH)
//AC 5V detection
#define POWER_DETEC_ADC         MCU_ADC_3
#define POWER_THRESHOLD         0x40
#define LPD_INPUT_PIN           0 //0/1
#define LPD_THRESHOLD           0xDB

//Each bit indicates one PWM channel,      NONE  NONE  NONE  NONE PWM11 PWM10  PWM9
PWM8
#define MCU_PWM_CON_DEFAULT     BitsToByte( LOW,  LOW,  LOW,  LOW,  LOW,  LOW,  LOW,
LOW)<<8 | \
                        BitsToByte( LOW,  LOW,  LOW,  LOW,  LOW,  LOW,  LOW,  LOW)
                              //PWM7  PWM6  PWM5  PWM4  PWM3  PWM2  PWM1  PWM0
//PWM default values
#define MCU_PWM_0_DEFAULT       0x00
#define MCU_PWM_1_DEFAULT       0x00
#define MCU_PWM_2_DEFAULT       0x00
#define MCU_PWM_3_DEFAULT       0x00
#define MCU_PWM_4_DEFAULT       0x00
#define MCU_PWM_5_DEFAULT       0x00
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#define MCU_PWM_6_DEFAULT       0x00
#define MCU_PWM_7_DEFAULT       0x00
#define MCU_PWM_8_DEFAULT       0x00
#define MCU_PWM_9_DEFAULT       0x00
#define MCU_PWM_10_DEFAULT      0x00
#define MCU_PWM_11_DEFAULT      0x00

//Each bit indicates one DDC channel,      NONE  NONE  NONE  NONE  DDC3  DDC2  DDC1  DDC0
#define MCU_DDC_CON_DEFAULT     BitsToByte( LOW,  LOW,  LOW,  LOW, LOW,  LOW, HIGH,
HIGH)
//DDC I2C slave address
#define MCU_DDC0_ADDRESS        0xA0 //Same as 24C02
#define MCU_DDC0_EDIDLEN        0    //EDID Length: 0:128 bytes, 1:256 bytes
#define MCU_DDC1_ADDRESS        0xA0
#define MCU_DDC1_EDIDLEN        0
#define MCU_DDC2_ADDRESS        0xA0
#define MCU_DDC2_EDIDLEN        1
#define MCU_DDC3_ADDRESS        0xA0
#define MCU_DDC3_EDIDLEN        0

//Each bit indicates one IIC channel,      NONE  NONE  NONE  NONE  IIC3  IIC2  IIC1  IIC0
#define MCU_IIC_CON_DEFAULT     BitsToByte( LOW,  LOW,  LOW,  LOW, HIGH, HIGH, HIGH,
HIGH)
//I2C slave address, for DDCCI communication
#define MCU_IIC0_ADDRESS        0x6E
#define MCU_IIC1_ADDRESS        0x6E
#define MCU_IIC2_ADDRESS        0x6E
#define MCU_IIC3_ADDRESS        0x6E

//Use internal EDID
#define USE_INTERNAL_EDID       1
#define VGA_DDC_CHANNEL         0x00 // Channel from 0 ~ 3
#define DVI_DDC_CHANNEL         0x01 // 0xFF means no use
#define HDMI_DDC_CHANNEL        0xFF
#define DP_DDC_CHANNEL          0x02
#define MHL_DDC_CHANNEL         0x03

//Backlight control
#define BACKLIGHT_PORT          MCU_PORT_A  //C   //FEFANJACKY
FOR TATUNG 1280X242 PANEL
#define BACKLIGHT_BIT           BIT2                //1
#define BACKLIGHT_ACTIVE        LOW                 //HIGH
//LED green control
#define LED_GREEN_PORT          MCU_PORT_3
#define LED_GREEN_BIT           BIT1
#define LED_GREEN_ACTIVE        HIGH
//LED red control
#define LED_RED_PORT            MCU_PORT_3
#define LED_RED_BIT             BIT0
#define LED_RED_ACTIVE          HIGH
//Panel power control
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#define PANEL_POWER_PORT        MCU_PORT_C
#define PANEL_POWER_BIT         BIT7
#define PANEL_POWER_ACTIVE      HIGH
//VGA cable connection
#define VGA_CABLE_PORT          MCU_PORT_A
#define VGA_CABLE_BIT           BIT1
#define VGA_CABLE_ACTIVE        LOW
//Digital interface 0 cable connection
#define DIGI0_CABLE_PORT        MCU_PORT_NULL
#define DIGI0_CABLE_BIT         BIT7
#define DIGI0_CABLE_ACTIVE      LOW
//Digital interface 1 cable connection
#define DIGI1_CABLE_PORT        MCU_PORT_E
#define DIGI1_CABLE_BIT         BIT3
#define DIGI1_CABLE_ACTIVE      LOW
//DP interface cable connection
#define DP_CABLE_PORT           MCU_PORT_C
#define DP_CABLE_BIT            BIT5
#define DP_CABLE_ACTIVE         LOW
//NVRAM configuration
#define NVRAM_SDA_PORT          MCU_PORT_3
#define NVRAM_SDA_BIT           BIT5
#define NVRAM_SCL_PORT          MCU_PORT_3
#define NVRAM_SCL_BIT           BIT4
#define NVRAM_WP_PORT           MCU_PORT_C
#define NVRAM_WP_BIT            BIT0
#define NVRAM_WP_ACTIVE         HIGH
//FLASH
#define FLASH_WP_PORT           MCU_PORT_A
#define FLASH_WP_BIT            BIT3
#define FLASH_WP_ACTIVE         LOW
//EDID 24C02
#define EDID_WP_PORT            MCU_PORT_E
#define EDID_WP_BIT             BIT2
#define EDID_WP_ACTIVE          HIGH
//Audio configuration
#define AUDIO_LINE_IN           LINE_IN1 //(LINE_IN1/LINE_IN2)
#define AUDIO_OUT               LINE_OUT //(LINE_OUT/IIS_OUT)
//Volume control
#define VOLUME_PWM_PORT         PWM_A //(PWM_A,PWM_B,PWM_MCU,PRE_AMP)
#define VOLUME_PWM_POL          HIGH
#define VOLUME_PWM_OUTPUT_PIN   PWMA_PIN_67
//Audio mute control
#define AMP_MUTE_PORT           MCU_PORT_C
#define AMP_MUTE_BIT            BIT6
#define AMP_MUTE_ACTIVE         HIGH
//Audio power control
#define AMP_PWR_PORT            MCU_PORT_NULL
#define AMP_PWR_BIT             BIT1
#define AMP_PWR_ACTIVE          LOW
//DIM configuration
#define BKL_PWM_PORT                PWM_A               //PWM_D
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//FEFANJACKY FOR TATUNG 1280X242 PANEL
#define BKL_PWM_POL                    HIGH
//FEFANJACKY FOR INVERTER-ADJ
#define BKL_PWM_OUTPUT_PIN      PWMA_PIN_67    //PWMD_PIN_
125 //FEFANJACKY FOR TATUNG 1280X242 PANEL
//Hotplug configuration
#define DIG0_HPD_PORT          MCU_PORT_NULL
#define DIG0_HPD_BIT           BIT5
#define DIG0_HPD_ACTIVE        HIGH
#define DIG1_HPD_PORT          MCU_PORT_C
#define DIG1_HPD_BIT           BIT2
#define DIG1_HPD_ACTIVE        HIGH
#define DP_HPD_PORT            MCU_PORT_D
#define DP_HPD_BIT             BIT4
#define DP_HPD_ACTIVE          HIGH
//POWER MOS configuration
#define POWER_MOS_PORT         MCU_PORT_NULL
#define POWER_MOS_BIT          BIT1
#define POWER_MOS_ACTIVE       HIGH
//FPGA configuration
#if (INPUT_INTERFACE&INPUT_DP)
#define FPGA_SDA_PORT          MCU_PORT_C
#define FPGA_SDA_BIT           BIT2
#define FPGA_SCL_PORT          MCU_PORT_C
#define FPGA_SCL_BIT           BIT3
#else
#define FPGA_SDA_PORT          MCU_PORT_3
#define FPGA_SDA_BIT           BIT4
#define FPGA_SCL_PORT          MCU_PORT_3
#define FPGA_SCL_BIT           BIT5
#endif

//Panel power extra delay (This is an extra delay according to the PCB)
#define PANEL_POWER_DELAY      200

//R1 / R2 setting for OVP
#define OVP_RLOWER             1
#define OVP_RUPPER             30

/*****************************************************************************
            HDCP-related and digital(HDMI) interface Setting
*****************************************************************************/
//HDCP MUX
#define DIGITAL_INPUT0_HDCP_MUX 2
#define DIGITAL_INPUT1_HDCP_MUX 1

//AUDIO INPUT
#define DIGITAL_INPUT0_HDMI_AUDIO 1
#define DIGITAL_INPUT1_HDMI_AUDIO 1

//DIGITAL RX0/RX2 SWAP (NT68674 series only)
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#define DIGITAL0_CHANNEL_SWAP   0
#define DIGITAL1_CHANNEL_SWAP   0

//CEC Channel
#define HDMI_CEC_CHANNEL        0

//LVDS
#define ENABLE_LVDS_POL_SWAP    OFF

//MHL
#define SET_IO_VBUS_ACTIVE  HIGH /*!< VBus set high/low to charge. */

/*****************************************************************************
                    Keypad interface setting
*****************************************************************************/
// Specific AD port of AD key
#define KEY_GROUP1_ADC          MCU_ADC_0
#define KEY_GROUP2_ADC          MCU_ADC_1

// Specific IO port of IO key
#define IOBTN_1_PORT          MCU_PORT_A
#define IOBTN_1_BIT           BIT0
#define IOBTN_1_ACTIVE          LOW
#define IOBTN_2_PORT          MCU_PORT_NULL
#define IOBTN_2_BIT           BIT4
#define IOBTN_2_ACTIVE          LOW
#define IOBTN_3_PORT          MCU_PORT_NULL
#define IOBTN_3_BIT           BIT5
#define IOBTN_3_ACTIVE          LOW
#define IOBTN_4_PORT          MCU_PORT_NULL
#define IOBTN_4_BIT           BIT6
#define IOBTN_4_ACTIVE          LOW
#define IOBTN_5_PORT          MCU_PORT_NULL
#define IOBTN_5_BIT           BIT7
#define IOBTN_5_ACTIVE          LOW
#define IOBTN_6_PORT          MCU_PORT_NULL
#define IOBTN_6_BIT           BIT1
#define IOBTN_6_ACTIVE          LOW
#define IOBTN_7_PORT          MCU_PORT_NULL
#define IOBTN_7_BIT           BIT1
#define IOBTN_7_ACTIVE          LOW
#define IOBTN_8_PORT          MCU_PORT_NULL
#define IOBTN_8_BIT           BIT1
#define IOBTN_8_ACTIVE          LOW

/*****************************************************************************
                    LED String Define
*****************************************************************************/
#define PCBA_LEDSTR_PARALLEL    0
#define PCBA_LEDSTR_EN          BitsToByte(LOW, LOW, LOW, LOW, LOW, LOW, LOW, LOW)

//*****************************************************************************
// G L O B A L   V A R I A B L E S
```

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//*****************************************************************************

//*****************************************************************************
//STATIC VARIABLES
//*****************************************************************************

//*****************************************************************************
//EXTERNAL VARIABLE PROTOTYPES
//*****************************************************************************

//*****************************************************************************
//STATIC FUNCTION PROTOTYPES
//*****************************************************************************

//*****************************************************************************
//EXTERNAL FUNCTION PROTOTYPES
//*****************************************************************************

#endif //__BOARD_CONFIG_H__
```