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Question

A526856500 (/s/profile/00516000006TSkoAAG) (-) asked a question.

February 10, 2016 at 1:32 PM (/s/question/0D51M00007xeICqSAM/doubt-about-wds-configuration-file-vradioinit-and-si4455configurationinit)

Doubt about WDS configuration file, vRadio_Init and si4455_configuration_init

Hi all,

I'm testing Si4455 on a small board I've designed, SPI works fine @1Mbit and I get a correct CTS 0xff when I send commands, but now I am missing something really stupid. I have used WDS to generate a configuration and I'm integrating this configuration in my GNU C/C++ project. Looking at the code, I see that the empty framework project calls the following functions:

vRadio_Init (radio.c) → si4455_configuration_init(pRadioConfiguration→Radio_ConfigurationArray) (si4455_api_lib.c)

The latter calls si4455_write_ezconfig_array when a long configuration string (>16 bytes) is found in the Radio_ConfigurationArray, or the simple radio_comm_SendCmdGetResp for shorter (<= 16 bytes) strings.

The beginning of the Radio_ConfigurationArray consists of a patch sequence (in fact I see a #define RF_POWER_UP 0×02, 0×81, 0×00, 0×01, 0xC9, 0xC3, 0×80, where 0×81 means that a patch is expected). The patch sequence starts like this:

#include <compiler_defs.h>

#define SI446X_PATCH_ROMID 00

#define SI446X_PATCH_ID   00

#define SI446X_PATCH_CMDS   \

0×08,0×04,0×21,0×71,0×4B,0×00,0×00,0xBA,0×9E, \

0×08,0×05,0×48,0×23,0×2E,0×2B,0×90,0xB1,0×4E, \
...

The first byte is the length of the string, then data follow: 0×08 < 16, so the string

0×04,0×21,0×71,0×4B,0×00,0×00,0×BA,0×9E is sent to the Si4455 with the radio_comm_SendCmdGetResp

command, that is in turn expecting a CTS that is never received (0×04 is not a command, following the official docs), and the FW is stuck in radio_comm.c, function radio_comm_GetResp, in the timeout loop:

if (errCnt == 0)

 {

    while(1)

    {

      /* ERROR!!!! CTS should never take this long. */

      #ifdef RADIO_COMM_ERROR_CALLBACK

        RADIO_COMM_ERROR_CALLBACK();

      #endif

    }

 }

In case it's useful, I've defined macros RADIO_DRIVER_EXTENDED_SUPPORT and SILABS_RADIO_SI4455.

Did some of you see the same behaviour? What am I missing? And sorry if it's duplicated, I've looked around but haven't found something about this.

Thanks in advance

Andrea

PROPRIETARY
(/S/TOPIC/0TO1M000000QHAKWAU/)

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A526856500 (/s/profile/00516000006TSkoAAG) (-)   ▼
7 years ago

Further investigation, since I couldn't find any info about patching the Si4455 in AN692 (Si4455 programming guide), I've run through EZRadioPro programming guide (AN633) for the Si4×6x and found that patching for these transceivers is done before the wake up and return a CTS.

Now my question is, why is the WDS generating a patch file and a patch sequence for my Si4455? Is the

patching correct for my Si4455? I'm copying the file here below (attachment dont work), thanks for any hint.

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Andrea

// COPYRIGHT=2014 Silicon Laboratories, Inc.

// GENERATED=16:43 October 16 2014

// ROMID=0×06

// FUNCTION=TEST

// MAJOR=0

// MINOR=0

// BUILD=0

// PATCHID=0×311A

// REQUIRES=NONE

// SIZE=448

// CRCT=0×714b

#include <compiler_defs.h>

#define SI446X_PATCH_ROMID 00

#define SI446X_PATCH_ID   00

#define SI446X_PATCH_CMDS   \

0×08,0×04,0×21,0×71,0×4B,0×00,0×00,0xBA,0×9E, \

0×08,0×05,0×48,0×23,0×2E,0×2B,0×90,0xB1,0×4E, \

0×08,0xEA,0×3F,0xB9,0xE8,0×8B,0xA9,0xCA,0xD6, \

0×08,0×05,0xD2,0xE5,0xBE,0xD1,0×27,0×55,0×82, \

0×08,0xE5,0×56,0×2A,0×3B,0×76,0×76,0×96,0×48, \

0×08,0×05,0×8E,0×26,0xD8,0×5D,0×91,0×A7,0×88, \

0×08,0xE2,0×89,0xCC,0×63,0×79,0×95,0×00,0×4B, \

0×08,0×05,0xE0,0×75,0xCD,0xA4,0xB9,0×46,0xBC, \

0×08,0xEA,0xD3,0×37,0xD2,0×9A,0×89,0×82,0xEA, \

0×08,0×05,0×0C,0xAE,0×4C,0xF5,0xF6,0×3C,0xB3, \

0×08,0xE9,0xA7,0×70,0xDF,0xF1,0×14,0×4F,0×04, \

0×08,0×05,0xFE,0×5B,0xDF,0×47,0×0A,0×7C,0×5B, \

0×08,0xE2,0xFB,0×3E,0×21,0xA2,0×1B,0xAA,0×93, \

0×08,0×05,0xBF,0xFD,0xAB,0×69,0×6C,0xA8,0×5A, \

0×08,0xE2,0×66,0xB7,0×2E,0×2C,0×45,0×2D,0xFB, \

0×08,0×05,0×0D,0×55,0xBD,0xC2,0×37,0×00,0×72, \

0×08,0xE2,0xFF,0×57,0×4D,0×7C,0×6C,0×00,0×2C, \

0×08,0×05,0×9E,0xF2,0×46,0xFD,0xD3,0×16,0×1B, \

0×08,0xEA,0×16,0×7F,0×67,0×4D,0xE5,0xE2,0xC8, \

0×08,0×05,0×37,0×33,0×1C,0xFA,0xBB,0xEE,0xEF, \

0×08,0xEA,0×00,0×5F,0xBE,0xA4,0xFC,0xBF,0xC1, \

0×08,0×05,0×95,0×12,0×2F,0×0A,0xCF,0×55,0×8C, \

0×08,0xE7,0×70,0xC2,0xD4,0xF0,0×81,0×95,0xC8, \

0×08,0xE7,0×72,0×00,0xF9,0×8D,0×15,0×01,0xA3, \

0×08,0xE7,0×18,0xE5,0×6C,0×51,0×1F,0×86,0×9F, \

0×08,0xE7,0xDD,0×37,0×59,0×4B,0xAD,0xB0,0×9C, \

0×08,0xE7,0xC8,0xE8,0×84,0xCD,0×55,0×41,0×83, \

0×08,0xEF,0×4F,0×8E,0×38,0xCB,0×37,0×02,0×87, \

0×08,0xE7,0xF5,0×00,0×88,0×4C,0×09,0×65,0xCE, \

0×08,0xEF,0xDD,0xBC,0×65,0×62,0xAC,0×75,0×62, \

0x08,0xE7,0xC0,0xF1,0x5D,0x98,0xB9,0xDD,0x43, \

0x08,0xE7,0x19,0xB4,0xF8,0x9F,0x6D,0x8C,0xCB, \

0x08,0xE1,0xDE,0x63,0xC2,0x32,0xC6,0xE4,0x2F, \

0x08,0x05,0xF4,0x33,0xB7,0x2E,0x72,0x9A,0xF9, \

0x08,0xE7,0x65,0xD9,0x38,0xB8,0xFE,0x31,0x16, \

0x08,0xE7,0xF3,0x06,0x2D,0xF5,0xFE,0x0C,0x38, \

0x08,0xE7,0x70,0x4F,0xE7,0x49,0xB4,0x58,0x39, \

0x08,0xEF,0xF1,0x46,0xA9,0x23,0x38,0x64,0xC0, \

0x08,0xE7,0x09,0x4E,0x04,0xD3,0x46,0x15,0x02, \

0x08,0xEF,0x8D,0xC7,0x20,0xC3,0x90,0x87,0x4D, \

0x08,0xEF,0x00,0xAB,0x7F,0x27,0x02,0xC6,0xA0, \

0x08,0xE7,0x23,0xA6,0xA6,0xA4,0x27,0x11,0x7D, \

0x08,0xEF,0xB3,0xF1,0x9E,0x6A,0xB3,0x19,0xAF, \

0x08,0xE7,0xAB,0xF5,0x15,0x78,0x5E,0x48,0xF8, \

0x08,0xEF,0x5B,0xB1,0x2E,0xAF,0x2A,0xFF,0x16, \

0x08,0xE7,0x30,0x62,0x5C,0x82,0x7A,0x3F,0x83, \

0x08,0xEF,0x91,0xA7,0xD3,0x1B,0x64,0x85,0xBE, \

0x08,0xE7,0x4D,0x81,0x94,0xE4,0xAA,0xE8,0xDB, \

0x08,0xEF,0xA0,0xCC,0x4A,0x23,0xA5,0x7E,0x36, \

0x08,0xEF,0x0C,0x72,0x4C,0xFB,0x26,0x5A,0xEC, \

0x08,0xEF,0x0E,0x42,0xFA,0xAF,0x49,0xA0,0xA8, \

0x08,0xE7,0x6D,0x12,0xDF,0x2B,0x0C,0x61,0x58, \

0x08,0xEA,0xB6,0x9B,0xDE,0x81,0xB9,0xFF,0xFF, \

0x08,0x05,0x04,0xEB,0xD8,0x12,0xD6,0x8D,0xE0, \

0x08,0xEC,0x29,0x66,0x4B,0xDE,0xB7,0xDE,0x36, \

0×08,0×05,0×0D,0×28,0xB9,0×0A,0×90,0×37,0×1A   Home (/s/)   Forums (/s/topiccatalog)   Projects (/s/projects)

A526856500 (/s/profile/00516000006TSkoAAG) (-)

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7 years ago

Ok, I've loaded the patch, looks like it was a timing issue, now I can see packets transmitted and received, still have to figure out what is the frequency used by Si4455 (!) will check with RF analyzer and try to modify using available APIs. Thanks to shruthisaras for confirming the patch is required.

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J708956520 (/s/profile/0051M000007kcPMQAY) (Marshall)

3 years ago

Hi Andream, what solution you found or proposed, I could not understand well.. My understanding is, patch is already being applied in rev C2 A board at initialiations.
Thanks, .

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