



FM RADIO DRIVER

FM RADIO DRIVER PRESENTATION

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AGENDA

- BP30 Globe 6 Block Diagram
- Phone tool audio interface
- FM Radio Driver Overview
- FM Radio State Machine
- FM Radio Driver Files
- Interface Description
- Structure and Enum Used

The diagram illustrates the signal flow in a Philips TEA5761 FM radio receiver system. The main components and their connections are as follows:

- FM Radio Philips TEA5761:** The central processing unit, represented by a yellow box.
- Headset amplifier:** A grey box that receives signals from the radio and drives two external speakers.
- synth (Synthesizer):** A pink box containing a **MA3** (Monolithic Amplifier 3) block, which drives a speaker.
- From Baseband Analog Output:** An input signal source.

Signal Flow:

- The **From Baseband Analog Output** signal is split into two paths:
 - One path goes through a summing junction (indicated by a circle with a plus sign) and then to the **FM Radio Philips TEA5761**.
 - The other path goes through a summing junction and then to the **synth** block.
- The **FM Radio Philips TEA5761** outputs a signal to the **Headset amplifier**.
- The **FM Radio Philips TEA5761** also outputs a signal to the **synth** block.
- The **synth** block outputs a signal to the **MA3** amplifier, which drives a speaker.

Phone tool audio interface

The screenshot shows a software window titled "Phone tool audio interface". At the top, there is a toolbar with icons for file operations and a status bar showing "AT on" and "AT off". Below the toolbar are "Start" and "Stop" buttons. The main interface is divided into two panels. The left panel, titled "Configurations Parameters", contains several dropdown menus: "Search Stop Level" (Level 5), "High / Low side injection" (Low), "Mono / stereo" (Stereo), "Mute left audio channel" (Not muted), "Mute right audio channel" (Not muted), "High cut control" (Off), and "Area" (Europa / US). Below these are "Write", "Read", "Get", and "Set" buttons. The right panel, titled "Scan", contains checkboxes for "Mute" and "Poll Current statu", a "Signal level indicator" showing a green bar at 100% and the word "Stereo", a frequency display showing "91,5 Mhz" with a "Set Freq" button, and four navigation buttons (Previous, Stop, Play, Next).

Start Stop

Configurations Parameters

Search Stop Level: Level 5

High / Low side injection: Low

Mono / stereo: Stereo

Mute left audio channel: Not muted

Mute right audio channel: Not muted

High cut control: Off

Area: Europa / US

Write Read Get Set

Scan

☐ Mute

☐ Poll Current statu

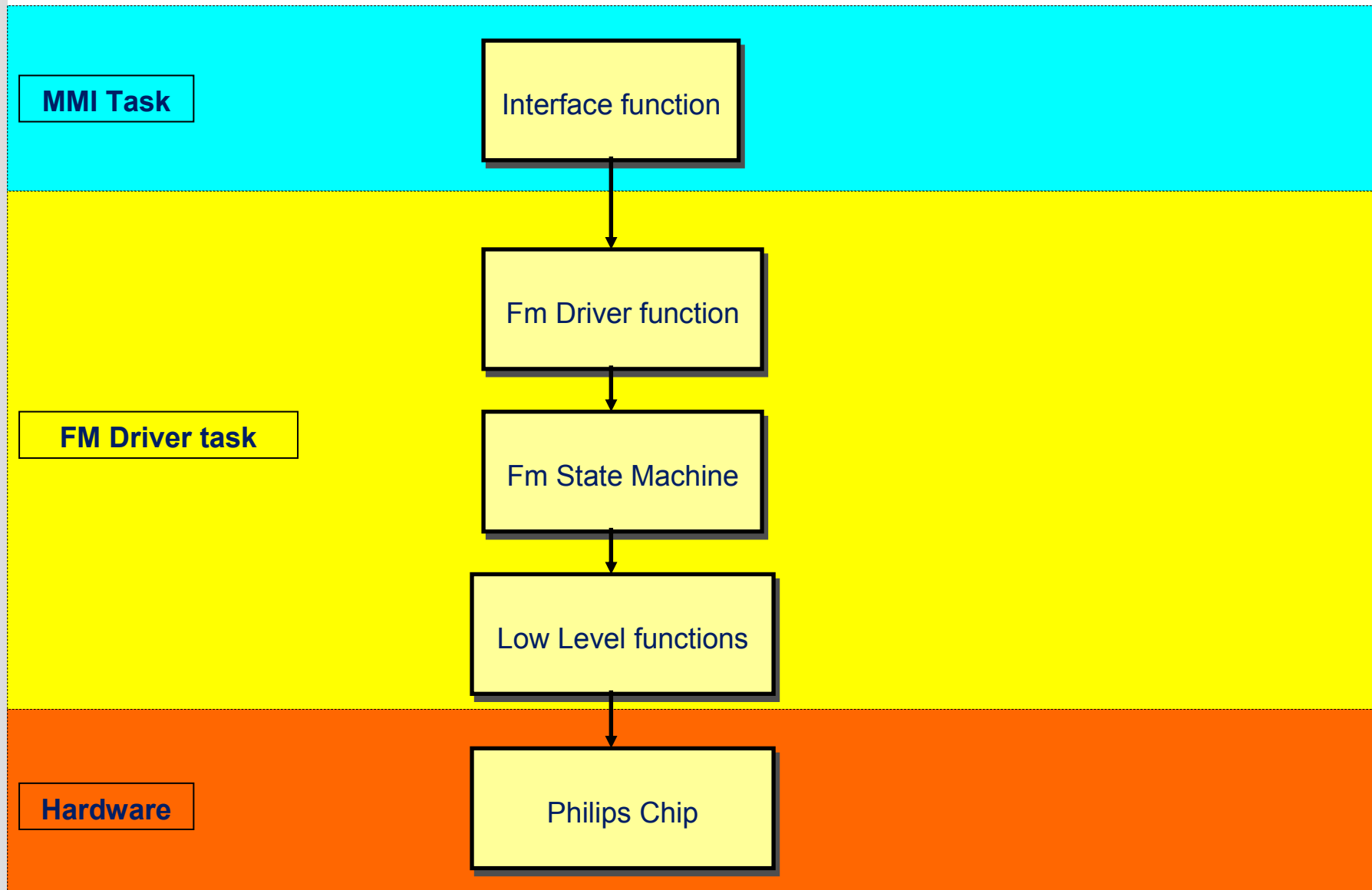
Signal level indicator

100% Stereo

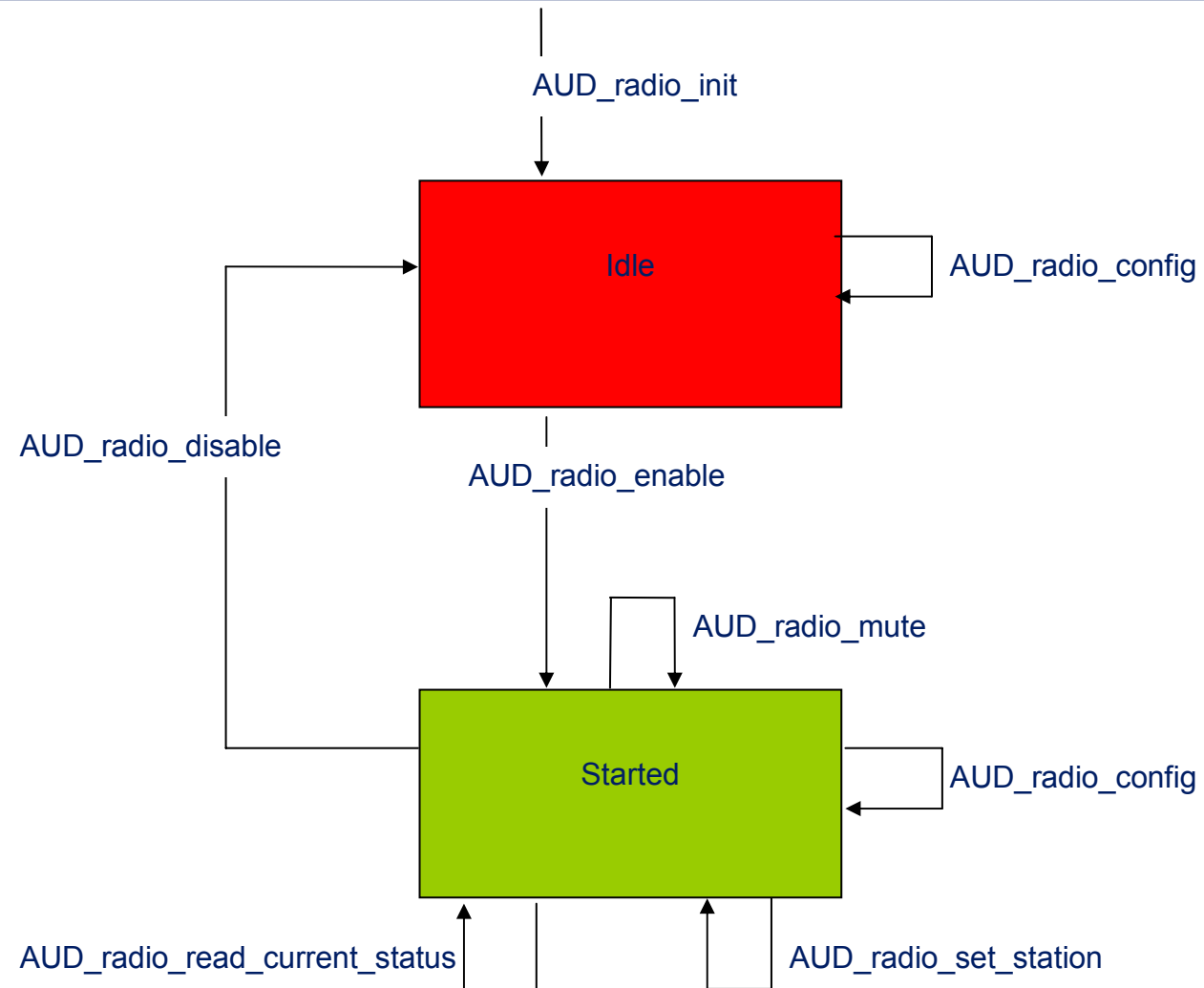
91,5 Mhz Set Freq

Previous Stop Play Next

FM Radio Driver Overview



FM Radio State Machine



FM Radio Driver Files

- Fm_radio_bp2.c - Interface, low level functions and State Machine
- I2c_driver.c - I2C function for FM Radio programming
- fm_radio_bp2.h - Header file

Interface Description

■ MMI

- SINT8 AUD_radio_init (UINT8 handle)
- SINT8 AUD_radio_config (UINT8 handle, AUD_radio_config_data_type* AUD_radio_config_data)
- SINT8 AUD_radio_enable (UINT8 handle)
- SINT8 AUD_radio_disable (UINT8 handle)
- SINT8 AUD_radio_mute (UINT8 handle, UINT8 mute)
- AUD_radio_set_station (UINT8 handle, AUD_radio_seek_mode_enum seekmode, UINT32 frequency)
- SINT8 AUD_radio_read_current_status (UINT8 handle)
- SINT8 AUD_radio_volume (UINT8 handle, aud_volume_enum volume)

Structure and Enum Used

■ Struct: AUD_radio_config_data_type

- SSL Search Stop Level enum
- HLSI HIGH/LOW Side Injection
- MS Mono/Stereo
- ML Mute Left
- MR Mute Right
- BL Band Limits (Japan or US/Europe FM band)
- HCC High Cut Control

■ Enum: AUD_radio_search_stop_level_enum

- Not_allowed not allowed in search mode
- level_5 low; level ADC output = 5
- level_7 mid; level ADC output = 7
- level_10 high; level ADC output = 10

Structure and Enum Used

■ Enum: AUD_radio_seek_mode_enum

- Off Auto seek disabled
- manualUp Manual seek one frequency step up
- manualDown Manual seek one frequency step down
- autoUp Auto station seek up
- autoDown Auto station seek down

■ Enum: AUD_radio_return_code

- aud_rc_handle_not_used Returned when calling AUD_radio_disable and radio not started
- aud_rc_resource_in_use Returned when calling AUD_radio_enable and radio not stopped
- aud_rc_no_hw_support
- aud_rc_ok success