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GSM PROTOCOL STACK

G23

LT-LIGHT

DRIVER INTERFACE

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1. Initial version
2. API conform with GDI (8415.026.99.012)
3. New document template/English check
4. Consistency check
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- [ISO 9000:2000] International Organization for Standardization. Quality management systems - Fundamentals and vocabulary. December 2000

1.1 References

- [C_8415.0026] 8415.026.99.012; March 19, 1999
Generic Driver Interface – Functional Specification; Condat

2 Introduction

G23 is a software package implementing Layers 2 and 3 of the ETSI-defined GSM air interface signaling protocol, and as such represents the part of a GSM mobile station's protocol software which is both, platform and manufacturer independent. Therefore, G23 can be viewed as a building block providing standardized functionality through generic interfaces for easy integration.

The G23 suite of products consists of the following items:

- Layers 2 and 3 for speech & short message services,
- Layers 2 and 3 for fax & data services,
- Application Control Interface,
- Slim MMI [02.30] and
- Test and integration support tools.

This document describes the functional interface of the G23 Light driver interface. This driver is used to control all light emitting devices of the mobile. Each device is addressed using a device ID. This driver specification defines numerous device IDs that are to be used when this kind of device is supported. The range of device IDs may be extended for individual driver implementations. Examples of light emitting devices in a mobile are the backlight of the LCD display and the keyboard or an LED indicating the mobile status "service available". The exact meaning of the status value is device dependent. In the case of a display backlight device, the status may be on or off or may be interpreted as the brightness; in the case of a dual color LED the value may be interpreted as a color value (0 = OFF, 1 = green, 128 = orange, 256 = red). Because of the number and kinds of different light emitting devices of a specific mobile, only a few standard status values have been defined.

3 Interface description of the LT driver

3.1 Data types

Name	Description
-	-

3.2 Constants

Name	Description
LIGHT_DEVICE_BACKLIGHT	Display/Keyboard backlight device
LIGHT_DEVICE_INSERVICELED	Device indicating the in-service status
LIGHT_STATUS_OFF	Device is switched off
LIGHT_STATUS_ON	Device is switched on
LIGHT_STATUS_DIMMED	Brightness of the device is low
LIGHT_STATUS_INTERMEDIATE	Brightness of the device is intermediate
LIGHT_STATUS_BRIGHT	Brightness is bright
LIGHT_STATUS_GREEN	Device emits a green light
LIGHT_STATUS_ORANGE	Device emits an orange light
LIGHT_STATUS_RED	Device emits a red light

3.3 Functions

Name	Description
light_Init	Initialization of EMI
light_Exit	Termination of EMI
light_SetStatus	Change the status of a light emitting device
light_GetStatus	Retrieve the status of a light emitting device

3.3.1 light_Init – Driver initialization

Definition:

```
UBYTE light_Init  
(  
    void  
);
```

Parameters:

Name	Description
-	-

Return values:

Name	Description
DRV_OK	Initialization successful
DRV_INITIALIZED	Driver already initialized
DRV_INITFAILURE	Initialization failed

Description

The function initializes the internal data of the driver. The function returns DRV_INITIALIZED if the driver has already been initialized and is ready to be used or is already in use. In case of an initialization failure, i.e. the driver cannot be used, the function returns DRV_INITFAILURE.

3.3.2 light_Exit – De-initialization of the driver

Definition:

```
void light_Exit  
(  
    void  
);
```

Parameters:

Name	Description
-	-

Return values:

Name	Description
-	-

Description

The function is called when the driver functionality is no longer needed. The function de-allocates the resources.

3.3.3 light_SetStatus – Change the status of a light emitting device

Definition:

```

    UBYTE light_SetStatus
    (
        UBYTE          in_DeviceID
        UBYTE          in_NewStatus
    );
    
```

Parameters:

Name	Description
in_DeviceID	Value identifying a special light emitting device
in_NewStatus	New status of the specified device

Return values:

Name	Description
DRV_OK	Function successful
DRV_INVALID_PARAMS	One or more parameters are out of range or not valid

Description

This function is used to change the status of a specific light emitting device supported by this driver. The device is identified by the parameter in_DeviceID. Depending on the capabilities of the device, the parameter in_NewStatus has different meanings. The following table shows the relationship between predefined devices a possible status values.

DeviceID	Status Values
LIGHT_DEVICE_BACKLIGHT	LIGHT_STATUS_OFF LIGHT_STATUS_DIMMED LIGHT_STATUS_INTERMEDIATE LIGHT_STATUS_BRIGHT
LIGHT_DEVICE_INSERTED	LIGHT_STATUS_OFF LIGHT_STATUS_GREEN LIGHT_STATUS_ORANGE LIGHT_STATUS_RED

As mentioned in the Introduction chapter, this list is a predefined selection of devices and status values. The list may be extended in a per mobile specific driver specification/implementation.

In any case, if the function succeeds, the driver returns DRV_OK. If the driver does not accept the new status value, it returns DRV_INVALID_PARAMS.

3.3.4 light_GetStatus – Retrieve the status of the light emitting device

Definition:

```
UBYTE light_GetStatus
(
    UBYTE          in_DeviceID
    UBYTE *        in_StatusPtr
);
```

Parameters:

Name	Description
in_DeviceID	Value identifying the light emitting device of which the status is to be retrieved
in_StatusPtr	Pointer to the buffer used to store the status

Return values:

Name	Description
DRV_OK	Function successful
DRV_INVALID_PARAMS	One or more parameters are out of range or not valid

Description

This function retrieves the status of a specific light emitting device supported by the driver. A list of device identifiers and status values can be found in Chapter 3.2.

If the status of the specified device could be retrieved, the function returns DRV_OK.

If the specified device is unknown, the function returns DRV_INVALID_PARAMS.

Appendices

A. Acronyms

DS-WCDMA Direct Sequence/Spread Wideband Code Division Multiple Access

B. Glossary

International Mobile Telecommunication 2000 (IMT-2000/ITU-2000) Formerly referred to as FPLMTS (Future Public Land-Mobile Telephone System), this is the ITU's specification/family of standards for 3G. This initiative provides a global infrastructure through both satellite and terrestrial systems, for fixed and mobile phone users. The family of standards is a framework comprising a mix/blend of systems providing global roaming. <URL: <http://www.imt-2000.org/>>