

点读笔采集点读简述

V1.1.0

1.1 接口简述

采集和解码部分的代码以目标文件的形式提供：capinterface.o、find_point.o、i2s_camera.o、i2s_cam_get_data.o，对外提供六个接口，它们是 cam_init、cam_get_frame、cam_get_code、cam_get_adj_param、cam_set_adj_param 和 cam_reg_audio_cb。

cam_init，初始化笔头；

cam_get_frame，从笔头中采集一帧数据；

cam_get_code，从上一次采集的数据中识别出码值；

cam_get_adj_param，出厂时校准笔头；

cam_set_adj_param，系统起动时，将校准参数写进笔头中。

cam_reg_audio_cb，注册回调函数，曝光时间内可以执行回调函数。

1.1.1 cam_init

原 型	T_BOOL cam_init(E_DRVPDMA_CHANNEL_INDEX I2S_PDMA_channel);	
功能概述	Initialize the I2S controller and the camera sensor, and will show the version of the camera lib.	
参数说明	I2S_PDMA_channel	The index of PDMA channel used for I2S interface.
返回值说明	AK_TRUE	success to initialize the camera
	AK_FALSE	fail to initialize the camera
注意事项	This function should be called just once after system boot up, but it's not matter is you call it again. The I2S interface is working at 24Mhz divided from OSC48M, so OSC48M should be enable.	
调用模块		

1.1.2 cam_get_frame

原 型	T_U32 cam_get_frame (T_U32 *wbuf_1, T_U16 wbuf_1_len, T_U8 *bbuf_2, T_U8 bbuf_2_len, T_U8 *bbuf_3, T_U8 bbuf_3_len)	
功能概述	Get a new frame from the camera sensor.	
参数说明	wbuf_1	The temporary buffer 1 for the data sampling. The start address of the buffer must be aligned by 4 bytes. The buffer size must be 304 bytes. The buffer can be released after exiting this function..
	wbuf_1_len	The length of buf_1, in bytes. the value must be 304;
	bbuf_2	The temporary buffer 2 for the data sampling. The buffer size must be 50 bytes. The buffer can be released after exiting this function.
	bbuf_2_len	The length of buf_2, in bytes. the value must be 50.
	bbuf_3	The temporary buffer 3 for the data sampling. The buffer size must be 50 bytes. The buffer can be released after exiting this function.
	bbuf_3_len	The length of buf_3, in bytes. the value must be 50.
返回值说明	Return the sum of the light-dot number.	
注意事项	<p>Because a lot of data to be processed within the prescribed time, CPU should be performed at the 49Mhz.And the interrupt whose routine occupancy more than 50uS should be disable.</p> <p>After finishing this function, CPU can run on other frequencies,and the interrupt should be enable.</p> <p>The temporary buffer(buf_1, buf_2 and buf_3) can be released after exiting this function.</p>	
调用模块		

1.1.3 cam_get_code

原 型	T_S32 cam_get_code(void);	
功能概述	Get a code from the latest frame.	
参数说明	T_VOID	
返回值说明	If the function succeeds, the return value is the code;	
	If the function fails, the return value is -1;	
注意事项		
调用模块		

1.1.4 cam_get_adj_param

原 型	T_BOOL cam_get_adj_param(T_U32 *wbuf, T_U16 wbuf_len, T_S32 *pParam1, T_S32 *pParam2, T_S32 *pParam3, T_S32 *pParam4, T_S32 *pParam5);	
功能概述	Retrieve the settings for adjusting the camera. The return value which can be used by function cam_set_adj_param.	
参数说明	wbuf	The temporary buffer for the data sampling. the start address of the buffer must be aligned by 4 bytes. The buffer size must be 3K bytes. The buffer can be released after exiting this function.
	wbuf_len	the length of wbuf, in bytes. the value must be 3072 (3K bytes).
	pParam	Pointer to a T_S32 variable that receives the settings information..
返回值说明	AK_TRUE successful	
	AK_FALSE failed, means there is trouble with the pen point.	
注意事项	If this function will be called, cam_init must be called first. The temporary buffer(wbuf) can be released after exiting this function..	
调用模块	Use for factory adjust mode.	

1.1.5 cam_set_adj_param

原 型	T_VOID cam_set_adj_param(T_S32 param1, T_S32 param2, T_S32 param3, T_S32 param4, T_S32 param5);	
功能概述	Adjust the camera	
参数说明	param	Set the information of the camera.
返回值说明	T_VOID	
注意事项	If this function will be called, cam_init must be called first.	
调用模块		

1.1.6 cam_reg_audio_cb

原 型	T_VOID cam_reg_audio_cb(void (*audio_codec)(void));	
功能概述	Register the callback function which will be running when sampling. and all the time consumed on the function can't exceed 9ms.	
参数说明	audio_codec	The address of the callback function.
返回值说明	T_VOID	
注意事项	The callback function can't consume more than 9ms.	
调用模块		