Streaming Media Screen Development Guide

Ver 2.3

1. Introduction

Steaming Media Screen is the Multimedia series products based on Dwin Self-developed ASIC with DGUS II system. The product provides SD card interface for storing video and audio files. The USB interface can also be connected to USB camera to realize the camera function.

Main feature including below :

Complete with DGUS II System all feature

Through simple Settings, video, camera support display at any active area.

Support SD card to display audio and video files;

Can be directly connected to the speaker, realize voice display;

2. System Variable Interface

VP	Definition	length	Type of command	Description
0500	Data_Transfer	12	Control	Display Area Setting D23:D22=display page D21:D14=Xs, Ys）+（Xe, Ye） D13:D12=0x5AA5 D11:D10: if setting= 0101It means that the video will play automatically when you switch to the page, otherwise it will not play automatically If setting= 0x2020 Means Play files in a specific directory D9:D0=Reserved
050C	Camera_Control	1	Control	Camera_Co ntrol D1=Camera channel number D0=1 Turn on the camera ;D0=2 turn off the camera
050D	Video_Init	1	Control	Video_Init D1= 1 SD card Play; D1=2, USB flash drive; D1=3, Internal FLASH play D0= 0 Play the video;

				D0= 1: play music; D0=FF Turn off the player
050E	File_Open	1	Control	File_Open D1: D0 The number of turn on music and video; 1-50
0510	Video_Control	1	Control	Video_Control D1=0x5A D0: control command type 0x00: normal play 0x01: pause playing 0x02: stop playing 0x03: fast forward 0x04: fast backward 0x05: Resume play 0x06: Previous file 0x07: Next file 0x09: Rotate from the current file 0x0A: Stop file rotation and play only the current file 0x0D:Current single video rotation，0x0A: trigger, Then Play the current video only once
0511	Voice_COntrol	1	Control	Voice_Control D1: 0x5A D0: control command type 0-0x64:The sound volume（0-100） 0xFF: Sound increase 1 0xFE: Voice down 1
0512	Lightness _Control	11	Control	Lightness _Control D1:0x5A D0: control command type 0-0x64: Backlight brightness value （0-100） 0xFF: Brightness increased 1 0xFE: Brightness to reduce 1
0513	Read_Sts	1	Read	Read_Sts D1: 0x5A start D0: 0x0F Read_Sts
0514	Read_File info	1	Read	Read_File info D1: The first file number that needs to be read（0x00-0xfe） D0: Total number of files to read （0-32,maximum 32 files）

				Attention: D1-D0 =0xFFFF Means read all Number of files.
0520	Video_Status	2	DISPLAY	Displays the state saved location D3=0x00 Video; D3=0x01 audio D2-D1: The file number currently being played D0: playing state， 0x01: Normal, 0x02: Pause; 0x03: Stop;
0521	Reserved			
0522	Total_Fil enum	1	DISPLAY	D1:D0The number of all video or audio files (in conjunction with the address 0514 operation command)
0523	Capture	1	Control	D1:D0 0x5A01 （operate first E110 、E130、0528， then 0523）
0524	Play Picture 1	1	Control	D1=0x5A D0=0x01: Play Picture 1
0525	Play Picture 2	1	Control	D1=0x5A D0=0x01: Play Picture 2
0526	Enlarge Image 1	1	Control	D1=0x5A D0=0x01
0527	Enlarge Image 2	1	Control	D1=0x5A D0=0x01
0528	Enter screenshot number	1	Input display	Data variable input shows someone's data screenshot number
0529	Beauty screen display name of folder (Registered)	1	Control	0x5A01（Use with E110 address）
052A	The beauty screen shows the data folder	1	Control	D1:0x5A D0:0x01- 0x0A（ Use with D800-D84F）
052B	The beauty screen shows the corresponding picture 1	1	Control	D1:0x5A D0:0x01- 0x0A（Use together with D860-D8AF ）
052C	The beauty screen displays customer information	1	Control	0x5A01
052D	Beauty screen client gender	3	Input display	GBK input the Gender "Male" or "Female"

0530	Beauty screen customer call	7	Input display	ASCII input customer phone number 11 bits
0537	Beauty screen customer information written in (Registration)	1	Control	0x5A01
0538	Beauty screen to delete the specified file (photo)	1	Control	0x5A01
0539	Specify the beauty screen to delete the customer data folder	1	Control	D1:0x5A D0:0x01-0x0A（**Control** D800-D84F ）
0540	Specify the beauty screen to delete the customer folder	1	Control	D1=0x5A D0=0x01
0541	Verify that the specified folder is deleted	1	Control	D1=0x5A D0=0x01
0542	Data_Transfer	12	Control	Data_Transfer D23:D22 reserved D21:D14 =（Xs,Ys）+ (Xe, Ye) D13:D12= 0x5AA5 D11:D0 reserved
054E	The beauty screen shows the corresponding picture 2	1	Control	D1=0x5A D0:0x01- 0x0A（use with D860-D8AF）
054F	Customer file management	1	Control	0x5A01
0550	Customer profile management delete the corresponding customer information	1	Control	The value starts at 0x0001 and increments 1 each time, For example: 0x0001,0x0002,0x0003...... (Refer to the 0x8000 address to start the customer, each increment by 1)
0551	Zoom out Picture 1	1	Control	0x5A01
0552	Zoom out Picture	1	Control	0x5A01

	2			
0553	Intelligent screenshot with one key (automatic generation of data directory and number with RTC)	1	Control	0x5A01
0554	Before numbered screenshot	1	Control	0x5A01-0x5A04
0555	After numbered screenshot	1	Control	0x5A01-0x5A04
0556	Play Before numbered screenshot	1	Control	0x5A01-0x5A04
0557	Play after numbered screenshot	1	Control	0x5A01-0x5A04
0558	User management confirms deletion	1	Control	0x5A01
0559	Turn on the webcam	1	Control	0x5A01
055A	Turn off the webcam	1	Control	0x5A01
055B	Send the webcam IP address	1	Control	0x5A01
055C	Export all customer information	1	Control	0x5A01
0562	Customer gender click select	1	Control	0x5A01: Male 0x5A02:Female
0563	Beauty screen empty picture display	1	Control	0x5A01
0564	Set up or read the network card information	1	Control	D1=0x5A D0=The network status 0x00=turn off 0x01=turn on 0xFF The network status（USE WITH E140,E170,E180,E190,E1A0 ）
0565	Turn on the specified IP or domain name	1	Control	D1=0x5A D0: Switch state 0x00=turn off

	camera to the specified location or close the camera			0x01=turn on （use with 0500，E1B0 together ）
0566	Search customer name by first English character or Chinese character	1	Control	0x5A01
0567	Select the search name to log in	1	Control	D1=0x5A D0:0x01-0x14 (Up to 20)
0568	Before numbered Screenshot with RTC	1	Control	D1:0x5A D0:0x01-0x04
0569	After numbered Screenshot with RTC	1	Control	D1:0x5A D0:0x01-0x04
056A	Displays the selected customer information	1	Control	D1:D0 0x0001 start ...... 1 increment at a time
056B	Play with RTC Before under screenshots	1	Control	0x5A01
056C	Play with RTC after under screenshots	1	Control	0x5A01
056D	Figure management broadcast pictures specified by the client	1	Control	D1:0x5A D0:0x01-0xFF （Use together with 6000-67FF ）
	Red line (for testing)	1	Control	0x5A01
0571	Erase the red line (for testing)	1	Control	0x5A01
3000	RTC time setting	1	Control	D1=0x5A D0=0x01 Set RTC time confirmation
3001	RTC Year input	1	Input display	Data variable input display Year ,for example 2009

3002	RTC Month input	1	Input display	Data variable input display Month（0x01- 0x0C）
3003	RTC Day input	1	Input display	Data variable input display Day（0x01-0x1F）
3004	RTC Hour input	1	Input display	Data variable input display Hour（0x01-0x17）
3005	RTC Minute input	1	Input display	Data variable input display Minute（0x01-0x3B）
3006	RTC second input	1	Input display	Data variable input display Second（0x01-0x3B）
6000-67FF	Displays all images in the customer Before and After directories	1	Display	ASCII displays the name of the picture, with 16 words for every 2 display addresses
6800-6FFF	Display the length information of all images in the customer Before and After directories	1	Display	ASCII displays the length information corresponding to the picture, and there is a difference of 20 words between every 2 display addresses
7000-7800	Single letter or Chinese character matching customer name display	6	Display	GBK displays the name of each customer that matches, up to 20
8006-CFFF	Customer profile gender starting address	Two words per 1	Display	GBK displays the name of each customer that matches, up to 20
8008-CFFFF	Customer profile telephone starting address	Six words per 1	Display	GBK displays the gender of the customer profile (from 8006, the difference between every two customers is 0x20)
8010-CFFF	Customer profile birthday starting address	8 words per 1	Display	ASCII displays customer profile phone Numbers (starting from 8008, the difference between every two customers is 0x20)
D000-D7BF	Display the file information	32*64	display	Use with the address 0514's

				command together, Displays N (N is the number of files read) file names starting from a file number, starting from D000 to D7C0, with a maximum of 32 file names displayed simultaneously. For example: DOOO shows the first file name D040 displays the second file name. D7C0 displays the 32nd file name
D800- D84F	Beauty screen level 2 data directory display	10*8	display	Displays the data directory under the person's name
D860- D8FF	Beauty screen third level photo display	10*16	display	Displays photos in the data directory
D900	The beauty screen displays customer information	32	Display	GBK displays customer information (used together with 052C address)
D930	The beauty screen displays client folder results	8	Display	ASCII displays the result of client folder: "OK" or "NONE", the result is after 0529 address operation
E010	Name	16	Display	When playing pictures, GBK input names, up to 16 Chinese characters, For example: Mr Wang Notice that when playing pictures, we should first operate E010, E030, E050, Then operate 0524 or 0525
E030	Play_picture_data1	16	Display	Display the data 1 folder, such as 2019.03.01, use with address 0524 operation command
E050	Play_picture_data2	16	Display	Display the data 2 folder, such as 2019.05.01, use with the address 0525 operation command
E110	Name	16	Display	USB camera screenshot or input name directory information, GBK input name, up to 16 Chinese

				characters
E130	Caputre_picture	16	Input display	ASCII input screenshot date，for example 2019.03.01 note:when screenshot，need to operate E110 、E130、0528 first, then operate 0523
E140	Network camera IP address	10	Input display	ASCII input display IP string ，for example 192.168.1.123
E150	Customer telephone	7	Input display	ASCII input beauty customer phone#
E160	Customer birthday input	8	Input display	ASCII input customer's birthday data, For example : 1996.02.03
E170	Sub net mask	10	Input display	ASCII input display sub net mask string, 255.255.255.0
E180	The gateway	10	Input display	ASCII input display gateway string
E190	DNS1	10	Input display	ASCII entry displays the DNS1 string
E1A0	DNS2	10	Input display	ASCII input displays THE DNS2 string
E1B0	RTSP address information	40	Input display	ASCII input displays RTSP address information
E1E0	Scale information	1	Input display	Data variable input displays the ruler length
E1E1	Before AB operation	1	Control	D1=0x5A D0=0x01: To calculate
E1E2	Before AB Length display	1	Display	The data variable shows the length of Before AB
E1E3	Before CD control	1	Control	D1=0x5A D0=0x01: To calculate
E1E4	Before CD Length display	1	Display	The data variable shows the length of Before CD
E1E5	After AB Control	1	Control	D1=0x5A D0=0x01: To calculate
E1E6	After AB	1	display	The data variable shows the length

	Length display			of After AB
E1E7	After CD Control	1	Control	D1=0x5A D0=0x01:To calculate
E1E8	After CD Length display	1	display	The data variable shows the length of After CD
E1E9	Before actual size calculation	1	Control	0x5A01
E1EA	Before actual size display	1	display	The data variable displays the actual size of Before
E1EB	After actual size calculation	1	Control	0x5A01
E1EC	After actual size display	1	display	The data variable displays the actual size of After
E1ED	The starting point of the line starts recording	1	Control	0x5A01
E1EE	The end of the line starts recording	1	Control	0x5A01
E1F0	When the time with RTC Before screenshot is displayed	16	Display	Displays the time display with RTC Before screenshot
E200	When the time with RTC After screenshot is displayed	16	Display	Display the time of RTC After screenshot
E210	Display the selected customer's name	16	Display	GBK displays the selected customer name
E220	Select picture data and other information to display	16	Display	GBK displays the selected picture's data and other information
E230	Display length information of Selected picture	**20**	Display	GBK displays the selected picture's length information

3、 Serial Communication Protocol

1. Serial Port Setting: 115200, 8, N, 1

Baud rate: 115200, could set, needs to be modified the configuration file when as 0

Data bits: 8

Stop bit: 1

Check digit: NULL

2. Communication data frame:

Address	0x00	0x02	0x03	0x04
Definition	0x5AA5	LEN	CMD	DATA_Pack
Description	frame header	The following data length, including command, data	command(0x82/0x83)	data

3. Interface instruction description

Command	Data	Description
0x82	Issued by: The first address of the variable space (0x1000-0xFFFF) + the data to be written Reply: 0 0 x4b x4f	Specifies the address to write data to the variable space.
0x83	Issued by: Variable space first address (0x1000-0xFFFF) + read data byte length (0x01-0x7D) Reply: Variable space first address + variable data word length + read variable data	Reads the specified length word data from the specified variable space address.

4. For example:

Set stop playing: The variable address to stop playing is 0x0510, issued command is 5A A5 05 82 0510 5A 02, and the return command is 5A A5 03 82 4F 4B

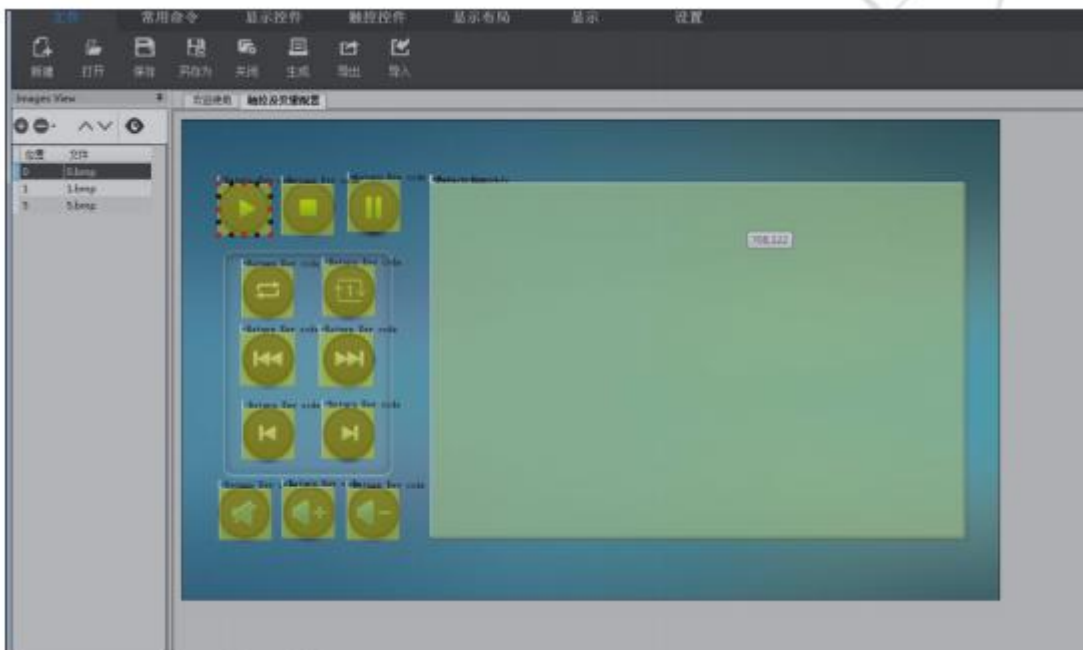Read the current playing state: the variable space address of the state variable is 0x0520,

issued command is: 5A A5 04 83 05 20 02, and the return command is: 5A A5 07 83 05 20 00 00 01 01,

Take the last four bytes, where 00: represents the video,

0001 means #1 video is playing (starting from zero), and 01 means normal playback.

4. Use examples for DGUS II

The following example provides a brief explanation of how to develop streaming media screens using DGUS 2.

The default user has some knowledge of the DGUS TOOL development environment.

1. Open the DGUS TOOL, build the project according to the screen resolution, and add the pictures designed in advance.
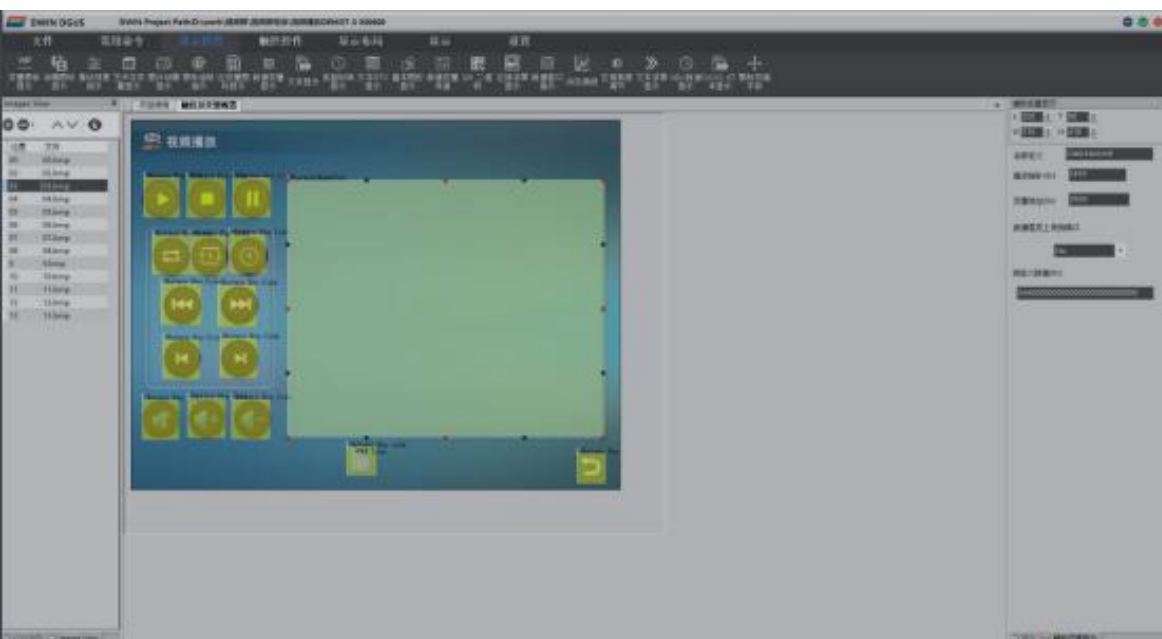

2. On the page of 0.bMP, select [Key Return] in the touch control and select the location to play in the figure. In the property setting, the variable address is: 0510 and the key value is: 5A00.Complete the playback control Settings.

3. On the page of 0.bMP, select [Data variable transfer] in the display control and select the location where the video needs to be displayed. In the property setting, the variable address is: 0500(it can only be this value). Pre-defined data, write 5AA5, complete the setting of the display area, and can set the corresponding display area in any other interface.

Note: The width and height of the control should be multiples of 2.

4. Save the project and generate the configuration file.

5. Control the process of video playback through serial port. The default is to play the first video, as follows:

        050D: Turn on video or audio

        0500: Set the display range of the playback

0510: To control the video playback, first send 5A00 playback instructions, and then

Send other playback controls

Please follow the above procedure, otherwise it may cause abnormal video and audio playback.

6. Note: When playing videos, the maximum video file format standard is 720P.The video is saved to the SD card root directory. The video sort is the order in which it is copied from other locations to the SD card.

The filename should be no more than 30 Chinese characters if it is all Chinese, and no more than 100 non-Chinese characters if it is all Chinese. In short, the better. The maximum number of video or audio files is 50.

7. SD card upgrade software and boot logo replacement

Streaming media screen support SD card upgrade, T5L and video playback chip support SD card upgrade.

7.1 T5L Upgrade:

1) Create DWIN_SET folder in SD card root directory, copy the upgrade files into this folder;

2) When the screen is powered off, the SD card is inserted into the Slot T5L SD card. After a period of power on, you can see the upgrade interface and wait for the end of the upgrade;

7.2 Software upgrade of video player chip:

1) Create a new UPDATA folder in SD Card root directory and copy the software to be upgraded into this folder

2) When the screen is powered off, the SD card will be inserted into the SD card slot of the video player chip. When it is powered on, it will enter the upgrade process. There will be two restarts during the upgrade process without human intervention.

5. Startup logo replacement

1. Create a new DWIN_VIDEO folder in SD card root directory, copy the startup logo image into the folder, save the name of start up logo as 0_logo***, *** could be any character, startup LOGO image format is BMP format, ARGB_8888 attribute.

2. When the screen is powered off, insert the SD card into the SD card slot of the video player chip, and then power on, the screen will be black first, then light up again. After the system is stabilized, the new start up logo can be seen by restarting.

6. Internal FLASH playback audio and video file copy method

1.

1) SD card root directory new DWIN_VIDEO folder, copy audio and video files into the folder, video files named as: 0_VIDEO***, 1_VIDEO***...The audio file name is 0_AUDIO***, 1_AUDIO***...;

2) Screen off electricity, insert the SD card video playback chip card slot, power on, boot interface, such as stability, said audio and video is copy, copy video file first, then copy audio files, adding up to 32 m, the largest copy files from 0 to N file sum is greater than 32 m, only 0 to N - 1 copy files, if greater than 32 m 0 file, do not copy.

7. USB screenshot and play pictures

USB camera screenshot, the captured image is under the name and data of SD Card root directory,

For example, / Wang someone /2019.09.09/

On the contrary, also plays images under the name and data of the SD card root directory.

Appendix I: Modification record

Data	Modify content	The version number
2019.1.1	First release	V1.0
2019.3.11	Fixed variable space address definition	V1.1
2019.5.27	Fixed variable space address definition	V1.2
2019.6.17	Add serial port operation sequence definition	V1.3
2019.7．7	Add internal FLASH play, play notes	V1.4
2019.7.29	Add read file instructions, SD card upgrade and boot logo replacement	V1.5
2019.9.6	Modified file transfer instructions, added to switch pages automatically play	V1.6
2019.9.9	Added usb camera screenshot to SD card and the sd card to play the corresponding picture	V1.7
2019.10.12	Changed the screenshot and playback address	V1.8
2020.1.05	Added beauty screen command address	V1.9
2020.2.25	The address of each function of beauty screen is modified and confirmed	V2.0
2020.3.24	Added beauty screen to export all customer information and other addresses	V2.1