

C6810

JPEG 压缩 w/UART 接口模块

用户手册

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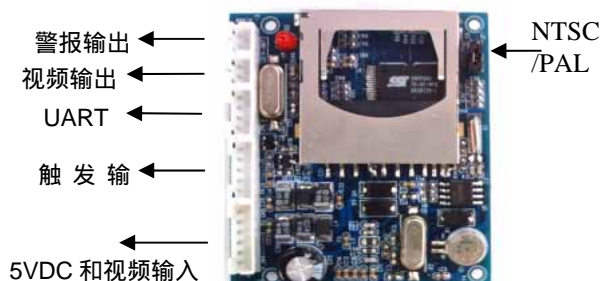


硬件

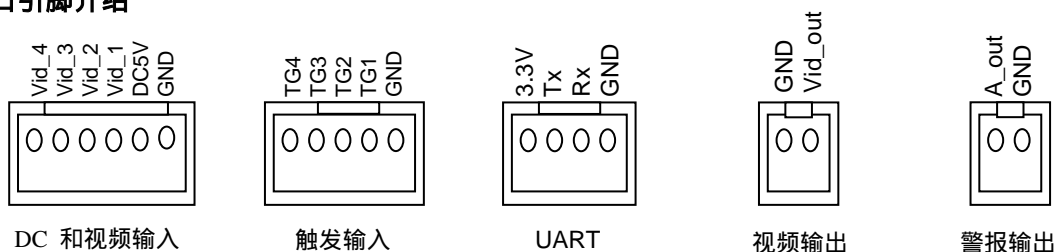
1. 接口介绍

- J2- 视频输出：2 个引脚，连接 TV 输入
- J3- 视频和 DC 输入：6 个引脚，4 个引脚为 4 通道视频输入，其余 2 个为 5V DC 输入和 GND
- J4- 触发输入：5 个引脚，4 通道触发，低电平有效，另一为 GND
- J5- UART：4 个引脚，分别为 3.3VDC, Tx, Rx, GND
- J6- 警报输出：2 个引脚，低电平输出有效

注意：滑动开关选择 NTSC/PAL TV 制式，需在开机前选择。



1.1 接口引脚介绍



2. 模块规格

自带存储容量	64 Mb (8 Mbytes)
SD 卡	支持 2GB SD 卡
显示器接口	复合视频信号输出
视频格式	320 x 240 (15fps)
图像分辨率	640 x 480 JPEG 格式
UART 波特率	9600 bps
视频输入	4 通道, 复合视频信号 1V p-p
触发输入	4 通道, 低电平有效
警报输出	低电平有效
电源输入	DC 5V, 500mA
模块大小	55 x 47 mm

2.1 电子参数 (5V DC)

条件	最小值	标准值	最大值	单位
预览	264	267	270	毫安(mA)
JPG (照相时峰值)	268	273	282	毫安(mA)
AVI (录像时峰值)	295	298	312	毫安(mA)
回放 JPG	312	270	272	毫安(mA)
回放 AVI	278	280	282	毫安(mA)
数据传送	265	270	275	毫安(mA)

注意：若使用 SD 卡，电流会变大，约在 10-20mA，使用不同容量和牌子 SD 卡时电流大小有所不同。



软体

3. 指令发送

首先，需要在主控设备和模块之间建立好通信连接。请按照如下的格式来发送指令，否则，模块不会正确回复。

3.1 指令定义

指令为 16 进制字符串，包含了 synchronization bit 和 check bit。主要有 2 种指令：ID Command 和 ACK Command。

Synchronization byte (0xaa)：位于指令最前面，用于让主控设备和模块进行同步。

Checksum byte：是指令中其它字节的最低 8bit 的总和。用于检验指令是否正确。

3.1.1 ID Command 是一个可变字长的指令。包含了 sync byte, length of the command, command ID 和 Checksum。ID command 的格式如下所示。

格式	Sync Byte (8 bits)	Length of the command (8 bits)	Command ID in HEX (8 bits)	Parameter N (8 bits x N)	Checksum (8 bits)
示例(display ch3)	0xaa	0x03	0x12	0x03	0xc2

说明：

Sync Byte：0xaa，位于指令最前面，用于让主控设备和模块进行同步。

Length of the command：告诉模块接下来需传输的字节总数。如例子中，在第 2 个字节后有 3 个字节，所以我们指派 0x03 这个指令来告诉模块接下来有 3 个字节要传输。

Command ID：参阅手册里的指令清单。示例，command ID 0x12 用于通道选择。

Parameter：每个指令都会有不同的参数，也许是 0 也许更多。在这个示例中，只有一个参数，Channel #3。如果有更多的参数，第二个字节，指令字长会不一样。

Checksum：示例的这个指令的 sum 为 AA+03+12+03=c2，所以 Checksum 为 0xc2。

3.1.2 ACK Command 是一个可变字长的指令。包含了 ID Command 的应答和结果返回。类似于 ID Command，它也包含了 length of the result 和验证的 check bit。ACK Command 的格式如下所示。

格式	Sync Byte (8 bits)	Length of the command (8 bits)	Return (variable)	Checksum (8 bits)
示例 (Request the system clock)	0xaa	0x08	0x07 0xd5 0x04 0x0c 0x11 0x36 0x00 (2005-04-12 11:54:00)	0xe5

若收到了正确的 ID command 然后执行下一个行动，模块会发送 0xaa 30 回复给主控设备。意味着模块已经收到指令，告诉主机等待下一个 ACK command。

这里有 3 类模块返回的失败信息：

1. 如果 ID command 的 checksum 没有正确接受，模块会回复失败信息 0xaa 02 01 ad。这时，在回复前不会发送 0xaa 30。
2. 如果 ID command 正确接收但模块却没有正确执行，将会在发送错误码 0xaa 02 01 之前发送 0xaa 30。
3. 如果指令正确但代表的操作不合法，将会回复模式错误 0xaa 50 给主控设备。例如，在回放模式下，若发送照相指令，这时就会回复模式错误。
4. 最糟糕的情况，如果指令格式不正确或者指令不存在，将不会回复任何信息。

注意：有一些命令需要一些时间来执行，所以，需要在发送前确认指令是否合法避免因不合法指令



引起死机。如果开启了动态监测，在发送指令前请关闭，否则发送的指令不会有任何回应。

4. 从模块获取数据

在获取模块发送的数据前，需要得到相关的文件信息：总共的文件数和那些文件需要下载。然后 set the desired file to current，得到文件的相关信息，例如文件名，文件大小等。在这之后，设置包裹大小并计算 no of packet to get the data accordingly。

操作流程如下，注意这个操作只有在回放模式下才有效。

<u>Host</u>	<u>Module</u>
Get system file information → 0xaa 02 30 dc	← 0xaa 30 aa 05 p1p2 p3p4 checksum (p1p2= total no of file, p3p4= no of current file)
Get current file information → 0xaa 02 31 dd	
Set Packet size → 0xaa 04 35 p1 p2 checksum	← 0xaa 30 aa 12 p1...p17 checksum (p1..p13=file name in ASCII, p14..17=file size)
Download 1 st packet → 0xaa 04 36 00 00 e4	← 0xaa 30 aa 02 00 ac (ack)
Download 2 nd packet → 0xaa 04 36 00 01 e5	← 0xaa 30 aa 00 00 d0....dn checksum aa (d0..dn=data, aa after checksum is sync bit)
Download n th packet → 0xaa 04 36 nn nn checksum	← 0xaa 30 aa 00 01 d0...dn checksum aa
	← 0xaa 30 aa nn nn d0..dn checksum aa

详细的指令说明和模块相应的回复请参照下页的指令列表。



5. 指令总结

System Configurations		
ID in Dec	ID in Hex	Function 功能
00	00	Get module status 获取模块状态
01	01	Set the system clock 设置系统时钟
02	02	Request the system time 要求获得系统时间
03	03	Select the TV Standard – NTSC/PAL 选择 TV 制式
04	04	Format the storage media 格式化存储媒介
05	05	Motion Detect set – on or off 动态侦测设置
06	06	MD sensitivity set – HML 动态侦测敏感度设置-HML
07	07	GPIO Input – enable or disable GPIO 输入-有效或无效
08	08	GPIO Output – enable or disable GPIO 输出-有效或无效
10	0a	Get Version 获取版本
Operation		
16	10	Set operation mode – preview or playback 设置工作模式-预览或回放
17	11	Request current mode 要求当前模式
18	12	Channel select – select ch1 to 4 通道选择-通道 1 到 4
19	13	Manual capture – JPG or AVI 手动照相或者手动录像
JPG Capture		
32	20	Set the compression ratio – HML 设置压缩率-HML
33	21	Set Intervals between MD – 1-99 sec 设施动态监测时照相间隔
34	22	Set number of shot per trigger – 1-9 设置触发后照相数目-1-9
AVI Capture		
37	25	Set the compression ratio of the AVI recorded 设置 AVI 压缩率
38	26	Set the duration of AVI capture – 1-99sec 设置录像时间-1-99 秒
39	27	Set frame rate : 1-15fps 设置帧速率
File Management		
48	30	Get current file information 获取当前文件信息
49	31	Get current file content 获取当前文件内容
50	32	Select a particular file 选择所需文件
51	33	Select the Previous / Next file 选择前一个/下一个文件
52	34	Playback the current AVI 回放当前录像
53	35	Set packet size 设置数据包大小
54	36	Download current file from the Module 从模块上下载当前文件
55	37	Delete file –current or ALL 删除文件-当前或所有



6. 指令列表

0 – 0x00 – Get status of the module

ID	0x00
Description	Get status of the module
ID Command	0xaa 02 00 ac
Operation Mode	Preview/playback mode
Parameter	N/A
Return from the Module	0xaa 0d p1 p2 p3 p4 p5 p6 p7 p8, p9, p11, p12 checksum P1: motion detect on (1), off(0) P2: MD sensitivity Hi(2), Mid(1), Low(0) P3: GPIO Input on(1), off(0) P4: GPIO Output on(1), off(0) P5: Channel Select:ch1(1), ch2(2), ch3(3), ch4(4) P6: Jpeg Ratio Hi(2), Mid(1), Low(0) P7: Interval P8: Capture Num P9: AVI Ratio Hi(2), Mid(1), Low(0) P10: Frame Rate P11: Duration P12: Set TV standard NTSC(0), PAL(1) 0xaa 01: Failed /
Example : Get status of the module Host: Module: 0xaa 02 00 ac 0xaa 0d 00 02 01 01 01 00 05 03 01 05 05 01 d3 Wait for reply	

1 – 0x01 – Set the system clock

ID	0x01
Description	Set the system clock
ID Command	0xaa 09 01 P1 P2 P3 P4 P5 P6 P7 Checksum
Operation Mode	Preview mode
Parameter	P1,P2: Y ₃ Y ₂ Y ₁ Y ₀ : Year (in hex) P3: M ₁ M ₀ : Month (in hex) P4: D ₁ D ₀ : Day (in hex) P5: H ₁ H ₀ : Hour (in hex) P6: Mi ₁ Mi ₀ : Minutes (in hex) P7: S ₁ S ₀ : Second (in hex)
Return from Module	0x00: OK / 0x01: Failed / 0x50: Mode error /
Example : Set the system clock to 2004/11/19 18:10:00 Host: Module: 0xaa 09 01 07 d4 0b 13 12 0a 00 c9 0xaa 30 aa 02 00 ac ;OK Wait for OK	



2 – 0x02 – Request the system time

ID	0x02		
Description	Request the system time		
ID Command	0xaa 02 02 ae		
Parameter	N/A		
Operation Mode	Preview mode		
Return from Module	0xaa 08 P1 P2 P3 P4 P5 P6 P7 Checksum P1 P2: Y ₃ Y ₂ Y ₁ Y ₀ : Year (in hex) P3: M ₁ M ₀ : Month (in hex) P4: D ₁ D ₀ : Day (in hex) P5: H ₁ H ₀ : Hour (in hex) P6: Mi ₁ Mi ₀ : Minutes (in hex) P7: S ₁ S ₀ : Second (in hex) / 0xaa 01 : Failed		
<p>Example : Request the system time</p> <table> <tr> <td>Host: 0xaa 02 02 ae Wait for Response</td> <td>Module: 0xaa 30 0xaa 08 07 d5 04 0f 17 1e 05 db aa 02 00 ac # Length of the command = 8 bytes; Return = 0x07d5 (Year: 2005), 0x04 (Month: 04), 0x0f (Day: 15), 0x17 (Hour: 23), 0x1e (Minute: 30); 0x05 (Second: 05) (2005/04/15 23:30:05); Checksum= 0xdb</td> </tr> </table>		Host: 0xaa 02 02 ae Wait for Response	Module: 0xaa 30 0xaa 08 07 d5 04 0f 17 1e 05 db aa 02 00 ac # Length of the command = 8 bytes; Return = 0x07d5 (Year: 2005), 0x04 (Month: 04), 0x0f (Day: 15), 0x17 (Hour: 23), 0x1e (Minute: 30); 0x05 (Second: 05) (2005/04/15 23:30:05); Checksum= 0xdb
Host: 0xaa 02 02 ae Wait for Response	Module: 0xaa 30 0xaa 08 07 d5 04 0f 17 1e 05 db aa 02 00 ac # Length of the command = 8 bytes; Return = 0x07d5 (Year: 2005), 0x04 (Month: 04), 0x0f (Day: 15), 0x17 (Hour: 23), 0x1e (Minute: 30); 0x05 (Second: 05) (2005/04/15 23:30:05); Checksum= 0xdb		

3 – 0x03 – Select the TV Standard

ID	0x03		
Description	Select the TV Standard Parameter: NTSC / PAL		
ID Command	0xaa 03 03 p1 Checksum		
Parameter	P1: 0x00: NTSC, 0x01: PAL (Default)		
Operation Mode	Preview mode		
Return from Module	0x00: OK / 0x01: Failed / 0x50: Mode error /		
<p>Example : Select NTSC as the TV standard</p> <table> <tr> <td>Host: 0xaa 03 03 00 b0 Wait for OK</td> <td>Module: 0xaa 30 aa 02 00 ac ;OK</td> </tr> </table>		Host: 0xaa 03 03 00 b0 Wait for OK	Module: 0xaa 30 aa 02 00 ac ;OK
Host: 0xaa 03 03 00 b0 Wait for OK	Module: 0xaa 30 aa 02 00 ac ;OK		



4. – 0x04 – Format the storage media

ID	0x04
Description	Format the storage media
ID Command	0xaa 02 04 b0
Parameter	N/A
Operation Mode	Preview mode
Return from Module	0x00: OK / 0x01: Failed / 0x50: Mode error / 0x03: External memory card write-protect
<p>Example : Format the external memory Host: Module: 0xaa 02 04 b0 0xaa 30 aa 02 00 ac ;OK Wait for OK</p>	

4 – 0x05 – Motion Detect Set

ID	0x05
Description	Enable or disable Motion detect
ID Command	0xaa 03 05 p1 checksum
Parameter	P1: 0x00 –off, 0x01 - on
Operation Mode	Preview mode
Return from Module	0x00: OK / 0x01: Failed / 0x50: Mode error /
<p>Example : Enable the motion detect Host: Module: 0xaa 03 05 01 b3 0xaa 30 aa 02 00 ac ;OK Wait for OK</p>	

6- 0x06 – Motion Sensitivity Set

ID	0x06
Description	Set sensitivity for Motion detect
ID Command	0xaa 03 06 p1 checksum
Parameter	P1: 0x00 - low 0x01 – medium 0x02 – high
Operation Mode	Preview mode
Return from Module	0x00: OK / 0x01: Failed / 0x50: Mode error /



Example : Set sensitivity to High

Host: 0xaa 03 06 02 b5
 Wait for OK

Module: 0xaa 30 aa 02 00 ac ;OK

7- 0x07 – GPIO input

ID	0x07
Description	Enable or disable GPIO input GPIO
ID Command	0xaa 03 07 p1 checksum
Parameter	P1: 0x00 –off, 0x01 - on
Operation Mode	Preview mode
Return from Module	0x00: OK / 0x01: Failed / 0x50: Mode error /

Example : Enable GPIO input

Host: 0xaa 03 07 01 b5
 Wait for OK

Module: 0xaa 30 aa 02 00 ac ;OK

8 – 0x08 – GPIO output

ID	0x08
Description	Enable or disable GPIO output, If the active channel has a motion detected, it will output an active low signal to Alarm Out, user can connect it to trigger external device such as siren. Note, this feature is only active at motion detect on 。 GPIO 输出有效或无效。如果正在监测的通道开启了动态监测，将会向报警输出发送低电平触发，用户可以连接外部触发装置，例如警报器。注意，只有在动态监测开启的时候菜有效。
ID Command	0xaa 03 08 p1 checksum
Parameter	P1: 0x00 –off, 0x01 - on
Operation Mode	Preview mode
Return from Module	0x00: OK / 0x01: Failed / 0x50: Mode error /

Example : Enable GPIO output

Host: 0xaa 03 08 01 b6
 Wait for OK

Module: 0xaa 30 aa 02 00 ac ;OK



10 – 0x0a – Get Version

ID	0x0a
Description	Get the firmware version of the module
ID Command	0xaa 02 0a b6
Parameter	N/A
Operation Mode	Preview mode
Return from Module	0xaa 0a p1... p9 checksum(p1...p9 is the version of the module in ASCII)

Example : Get the version

Host:	Camera:
0xaa 02 0a b6	0xaa 30
Wait for Response	aa 0a 36 38 31 30 20 76 31 30 31 f7
	Command Length : 0a
	36 38 31 30 20 76 31 30 31 version of the module
	f7 checksum

16 – 0x10 – Select the operation mode

ID	0x10
Description	Select the operation mode, preview or playback Note: all system configuration and capture function is operated within preview mode. File management is operated under playback mode. If operate under wrong working mode, it will feed back by mode error. 选择工作模式，预览或回放 注意：所有的系统构设置和照相/录像功能都只能在预览的模式下操作。文件管理只能在回放模式下操作。如果不在正确的模式里操作，模块会回复模式错误。
ID Command	0xaa 03 10 p1 checksum
Parameter	P1: 0x10 – preview 0x11 - playback
Operation Mode	Preview/playback mode
Return from Module	0x00: OK / 0x01: Failed

Example : Select Playback as the operation mode

Host:	Module:
0xaa 03 10 11 ce	0xaa 30 aa 02 00 ac; OK
Wait for OK	

17 – 0x11 – Request the current operation mode

ID	0x11
Description	Request the current operation mode
ID Command	0xaa 02 11 bd
Parameter	N/A



Operation Mode	Preview/playback mode
Return from Module	0x10 : preview mode / 0x11: playback Mode Follow the status 0x00: OK / 0x01: Failed
Example : Request the current operation mode Host: 0xaa 02 11 bd Module: 0xaa 30 aa 02 10 bc Wait for Response (10: preview/ 11:playback Mode) aa 02 00 ac ;OK	

18 – 0x12 – Channel Select

ID	0x12
Description	Set channel # as operation channel
ID Command	0xaa 03 12 p1 checksum
Parameter	P1: 0x01 – ch1 0x02 – ch2 0x03 – ch3 0x04 – ch4
Operation Mode	Preview mode
Return from Module	0x00: OK / 0x01: Failed / 0x50: Mode error /
Example : Set channel to #3 Host: 0xaa 03 12 03 c2 Module: 0xaa 30 aa 02 00 ac ;OK Wait for Response	

19 – 0x13 – Manual Capture

ID	0x13
Description	Snap shot a JPG or Capture AVI as per setting
ID Command	0xaa 03 13 p1 checksum
Parameter	P1: 0x00 – JPG 0x01 – AVI
Operation Mode	Preview mode
Return from Module	0x00: OK / 0x01: Failed / 0x50: Mode error /
Example : Perform a snap shot Host: 0xaa 03 13 00 c0 Module: 0xaa 30 aa 02 00 ac ;OK Wait for Response	



32 – 0x20 – Set compression ratio for JPG

ID	0x20
Description	Set compression ratio for photos
ID Command	0xaa 03 20 p1 checksum
Parameter	P1: 0x00 – low 0x01 – medium 0x02 – high Note: compression ratio low means better image quality and bigger file size. 注意：低压缩率时图像质量较高和，图像大小也较大。
Operation Mode	Preview mode
Return from Module	0x00 : ok/ 0x01: failed 0x50: Mode error
<p>Example : Set compression ratio to High</p> <p>Host: Module:</p> <p>0xaa 03 20 02 cf 0xaa 30 aa 02 00 ac ;OK</p> <p>Wait for Response</p>	

33 – 0x21 – Set interval between MD

ID	0x21
Description	Set interval between triggers by motion detected when MD enabled. It means during this period, the trigger is ignored. Note: this is only effective for the still picture capture, not for video recording. 设置动态监测的触发照相间隔(动态监测开启)。此时，触发功能无效。 注意：只有在照相模式下才有效，录像模式无效。
ID Command	0xaa 03 21 p1 checksum
Parameter	P1: 0xnn nn= 1-99sec in hex
Operation Mode	Preview mode
Return from Module	0x00: OK / 0x01: Failed / 0x50: Mode error /
<p>Example : Set interval to 5 sec</p> <p>Host: Module:</p> <p>0xaa 03 21 05 d3 0xaa 30 aa 02 00 ac ;OK</p> <p>Wait for Response</p>	



34 – 0x22 – Set no of shots per trigger

ID	0x22
Description	Set number of snap shots per trigger when motion detection. It can do multi shots when it is activated by MD. 触发照相时设置连拍的数量 (动态监测开启)。动态监测触发照相时也可以设置最大的连拍数。
ID Command	0xaa 03 22 p1 checksum
Parameter	P1: 0xnn nn= 1-9 (default is 1)
Operation Mode	Preview mode
Return from Module	0x00: OK / 0x01: Failed / 0x50: Mode error /
<p>Example : Set 5 shots per trigger</p> <p>Host: Module: 0xaa 03 22 05 d4 0xaa 30 aa 02 00 ac ;OK Wait for Response</p>	

37 – 0x25 – Set compression ratio for AVI

ID	0x25
Description	Set compression ratio for video clip
ID Command	0xaa 03 25 p1 checksum
Parameter	P1: 0x00 – low 0x01 – medium 0x02 – high Note: compression ratio low means better image quality but bigger file size. 注意：低压缩率时图像质量较高和，图像大小也较大。
Operation Mode	Preview mode
Return from Module	0x00 : ok/ 0x01: failed 0x50: Mode error
<p>Example : Set compression ratio to High</p> <p>Host: Module: 0xaa 03 25 02 d4 0xaa 30 aa 02 00 ac ;OK Wait for Response</p>	



38 – 0x26 – Set Duration of recording AVI

ID	0x26
Description	Set duration of video clip per trigger.
ID Command	0xaa 03 26 p1 checksum
Parameter	P1: 0xnn nn= 1-99sec in hex
Operation Mode	Preview mode
Return from Module	0x00: OK / 0x01: Failed / 0x50: Mode error /
<p>Example : Set duration to 15 sec</p> <p>Host: Module:</p> <p>0xaa 03 26 0f e2 0xaa 30 aa 02 00 ac ;OK</p> <p>Wait for Response</p>	

39 – 0x27 – Set frame rate of AVI

ID	0x27
Description	Set frame rate of video clip
ID Command	0xaa 03 27 p1 checksum
Parameter	P1: 0xnn nn= 1-15 in hex (default is 5) note: there is the limitation for the frame rate to duration of recording
Operation Mode	Preview mode
Return from Module	0x00: OK / 0x01: Failed / 0x50: Mode error /
<p>Example : Set frame rate to 15fps</p> <p>Host: Module:</p> <p>0xaa 03 27 0f e3 0xaa 30 aa 02 00 ac ;OK</p> <p>Wait for Response</p>	

48 - 0x30 – Request System File information

ID	0x30
Description	Get system file information, which includes total no of files and number of current file 获取系统文件信息，包含了总共的文件数目和当前的文件序号。
ID Command	0xaa 02 30 checksum
Parameter Command	N/A
Operation Mode	Preview/Playback mode



Return from Module	Preview: 0xaa 03 p1 p2 checksum Playback: 0xaa 05 p1 p2 q1 q2 checksum p1 p2 : total no of file q1 q2 : the number of current file follow with the status: 0x00: OK / 0x01: Failed
Example : in the playback mode get current files in memory Host: Module: 0xaa 02 30 dc 0xaa 30 aa 05 00 04 00 04 b7 Wait for Response (total file is 4, current file is 4) aa 02 00 ac ; OK	

49 - 0x31 – Get Current File information

ID	0x31
Description	Get current file information, which includes file's name and file size in of particular file. Note: this command MUST send before Download current file. 获取当前文件信息，包含了文件名和文件的大小。注意：此指令必须在下载当前文件前发送。
ID Command	0xaa 02 31 dd
Parameter Command	N/A
Operation Mode	Playback mode
Return from Module	0xaa 12 P1 P2 P3 P4 P5 P6 P7 P8 P9 P10 P11 P12 P13 P14 P15 P16 P17 checksum (P1 P2 P3 P4 P5 P6 P7 P8 P9 P10 P11 P12 P13:file name in ASCII; P14 P15 P16 P17:file size) Follow the status: 0x00: OK / 0x01: Failed / 0x50: Mode error /
Example : Get current files in memory Host: Module: 0xaa 02 31 dd 0xaa 30 aa 12 49 4D 47 30 30 30 31 2E 4A 50 47 00 00 Wait for Response 00 06 0A AB 24 (49 4D 47 30 30 30 31 2E 4A 50 47 00 00 :file name) (00 06 0A AB: file size395947) aa 02 00 ac ; OK	

50 – 0x32 – Select a particular file



ID	0x32
Description	Select a particular file as current file
ID Command	0xaa 04 32 p1 p2 checksum
Parameter	P1: higher byte of file no P2: lower byte of file no Note : max no of file is 1024 if SD card is existed
Operation Mode	Playback mode
Return from Module	0x00: OK / 0x01: Failed / 0x50: Mode error /
Example : Select the file of that the ID is 01 (1 st file) Host: Module: 0xaa 04 32 00 01 e1 0xaa 30 aa 02 00 ac ;OK Wait for OK	

51 – 0x33 – Select the Previous / Next file

ID	0x33
Description	Select the Previous / Next file
ID Command	0xaa 03 33 p1 checksum
Parameter	P1: 0x00: Previous, 0x01: Next
Operation Mode	Playback mode
Return from Module	0x00: OK / 0x01: Failed / 0x50: Mode error /
Example : Select the next file Host: Module: 0xaa 03 33 01 e1 0xaa 30 aa 02 00 ac ;OK Wait for OK	

52 – 0x34 – Playback the current AVI

ID	0x34
Description	Playback the current AVI, if current file is AVI
ID Command	0xaa 02 34 e0
Parameter	N/A
Operation Mode	Playback mode and the current file is AVI
Return from Module	0x00: OK / 0x01: Failed / 0x50: Mode error /
Example : Play the current AVI Host: Module: 0xaa 02 34 e0 0xaa 30 aa 02 00 ac ;OK Wait for OK	



53 – 0x35 – Set the packet size

ID	0x35
Description	Set the packet size before Download current file. It can be any size, but note the connection should be affordable, if the size is too big. 设置数据包大小是在下载文件前完成。大小可随意设置,但是如果太大的话,需要确认当前的连接能否支持。
ID Command	0xaa 04 35 p1 p2 checksum
Parameter	p1p2: packet size
Operation Mode	Playback mode
Return from Module	0x00: OK / 0x01: Failed / 0x50: Mode error
<p>Example : Set packet size :61000</p> <p>Host: 0xaa 30 aa 02 00 ac ;OK</p> <p>0xaa 04 35 ee 48 19</p> <p>Wait for OK</p>	

54 – 0x36 – Download Current File

ID	0x36
Description	Down load current file.
ID Command	0xaa 04 36 p1 p2 checksum
Parameter	p1p2 : package number
Operation Mode	Playback mode
Return from Module	0xaa p1 p2 d0...dn checksum(16bit), 0xaa p1p2 packet number, d0...dn is image data. Note there is the sync byte 0xaa follow the checksum, to indicate the end of data return. Also note that d0..dn is one packet data, equal to the packet size set in 0x35 0x01: Failed / 0x50: Mode error /
<p>Example : Download first packet of current file</p> <p>Download package 1</p> <p>Host: Module:</p> <p>0xaa 04 36 00 00 e4 0xaa 30 aa 00 00 ff d8.....20 43 4f 2e aa</p> <p>Wait for OK (note last aa is the sync byte)</p>	

55 – 0x37 – Delete file

ID	0x37
Description	Delete file(s)



ID Command	0xaa 03 37 p1 df										
Parameter	P1: 0x00 current file 0x01 all files										
Operation Mode	Playback mode										
Return from Module	0xaa 05 p1 p2 q1 q2 checksum (p1 p2:the current file's number; q1 q2:the total file's number) Follow the status: 0x00: OK / 0x01: Failed / 0x50: Mode error										
<p>Example : Delete all files</p> <table border="0"> <tr> <td>Host:</td> <td>Module:</td> </tr> <tr> <td>0xaa 03 37 01 e5</td> <td>0xaa 30 aa 05 00 00 00 00 b1</td> </tr> <tr> <td>Wait for OK</td> <td>(00 00,the current file's number)</td> </tr> <tr> <td></td> <td>(00 00,the total file number)</td> </tr> <tr> <td></td> <td>aa 02 00 ac ; OK</td> </tr> </table>		Host:	Module:	0xaa 03 37 01 e5	0xaa 30 aa 05 00 00 00 00 b1	Wait for OK	(00 00,the current file's number)		(00 00,the total file number)		aa 02 00 ac ; OK
Host:	Module:										
0xaa 03 37 01 e5	0xaa 30 aa 05 00 00 00 00 b1										
Wait for OK	(00 00,the current file's number)										
	(00 00,the total file number)										
	aa 02 00 ac ; OK										



附录: ASCII 码表

032	020	SP	063	03F	?	094	05E	^
033	021	!	064	040	@	095	05F	_
034	022	"	065	041	A	096	060	`
035	023	#	066	042	B	097	061	a
036	024	\$	067	043	C	098	062	b
037	025	%	068	044	D	099	063	c
038	026	&	069	045	E	100	064	d
039	027	'	070	046	F	101	065	e
040	028	(	071	047	G	102	066	f
041	029	)	072	048	H	103	067	g
042	02A	*	073	049	I	104	068	h
043	02B	+	074	04A	J	105	069	i
044	02C	,	075	04B	K	106	06A	j
045	02D	-	076	04C	L	107	06B	k
046	02E	.	077	04D	M	108	06C	l
047	02F	/	078	04E	N	109	06D	m
048	030	0	079	04F	O	110	06E	n
049	031	1	080	050	P	111	06F	o
050	032	2	081	051	Q	112	070	p
051	033	3	082	052	R	113	071	q
052	034	4	083	053	S	114	072	r
053	035	5	084	054	T	115	073	s
054	036	6	085	055	U	116	074	t
055	037	7	086	056	V	117	075	u
056	038	8	087	057	W	118	076	v
057	039	9	088	058	X	119	077	w
058	03A	:	089	059	Y	120	078	x
059	03B	;	090	05A	Z	121	079	y
060	03C	<	091	05B	[	122	07A	z
061	03D	=	092	05C	\			