

VIDEO DISK INTERFACE COMMAND SET 10/21/82

The video disk interface is designed to run with an 800 system that includes an 850 serial interface. it interfaces to the Pioneer VP-1000 video disk player and provides computer control over the disk.

@ - Should precede command- indicates beginning of command

<u>CMD</u>	<u>ARG</u>	<u>Response</u>	<u>Description</u>
SRC	frm#	A=ack Y=cmd err Z=srch timeout X=Disk failure	Search for frame # in the quickest manner Note: Y error can be returned on any command. See notes P.2 Note: See P.2 for more details on X & Z
PLY	frm# THEN	D=done	Play to frame #, then execute command specified by THEN. (No arguments)
STL			Put disk in still mode on current frame
PSE			Put disk in pause mode
FR#	frm#	X=disk failure	Return current frame # to computer
DSK		A=ack	Select video disk
ATR		A=ack	Select Atari video
TIM	time	E=timer done	General purpose Timer "time" is a 5 digit decimal argument (0-99999 seconds)
CHP			Toggle chapter on/off on screen
FRM			Toggle frame number on/off screen
SNS		C=someone near B=no one near	Check status of proximity sensor latch Latch is reset each time SNS is issued.
AUL			Select Left audio on disk
AUR			" Right "
SLF			slow forward
STF			step fwd
SLR			slow rev
STR			step rev
SCF			scan forward- auto-repeats until next char.
FSF			fast forward " " " " "
SCR			scan rev " " " " "
FSR			fast rev. " " " " "
SCH	frm#		Dumb Search- intended for debugging
ATB		A=ack	Select Atari video black
DSB		A=ack	Select Disk video black
CHK		A=ack R=Rom error M=Ram error	Do ROM/RAM check
LCK			Lock disk player keyboard
UNL			Unlock disk player keyboard
ENW			Enable watchdog functions- See notes P. 2
DSW			Disable watchdog
RET			Reboot system- See notes P.2
DW0			Test disk watchdog circuit off
DW1			" " " " on
AW0			Test Atari watchdog circuit off
AW1			" " " " on
FA0			Proximity control output A off
FA1			" " " " on
FE0			" " " " B off
FE1			" " " " on

NOTES:

X & Z errors- The X error is returned if the interface cannot read any frame number. This is usually caused by the disk head crashing or the unit being off or disconnected. If the watchdog is enabled, the X error will reboot the system. The Z error is a non-fatal error that results from either a search out of range of the disk or from an un-readable frame. It will not reboot the system.

Both errors take as long as 45 seconds to be returned due the time it can take to do a long search plus retry.

Y error- returned on any sequence of characters that the interface cannot interpret. Causes no other action other than aborting the sequence of characters just sent.

Watchdog- with this enabled, any X error will cause the Atari power to be cycled and the disk to be "Rejected" (reboot). Additionally, the Atari must send a character at least every 30 seconds to reset a timer. If the timer times out (about 35-45 seconds), only the Atari power is cycled. The Atari can send @ signs or FR# commands if no actions are desired to keep this timer reset.

The default condition on power up or X reboot is with the watchdog disabled.

Additionally, there is a hardware watchdog on the interface.

Reboot- Performs same function as X error.

Search- The normal search command (SRC) will find the fastest way of getting to a frame. If the frame is within 10 frames it will step to the frame, if 10-75 frames, it will fast motion to it; if over over 75 frames it does a regular search. In all cases, the frame number is checked after the search and the ack returned. Note that valid frame numbers accepted are the frame +3 frames.

Play- A play sequence will play to a frame number and then execute a three letter command such as "ATR". Only a "D" is returned when the play sequence is finished. A search can be performed inside the limits of the play. The ack will be returned for the search & the disk will continue playing immediately. If the search goes beyond the limit of the play, the play sequence will be aborted and only the "a" from the search is returned (no "D"). The disk is stopped.

Buffering- The interface can buffer one command while executing another. This can be useful if a play should start right after a search for example. Commands with no "ack" return are executed as fast as they are sent. However, care should be taken to send no more than 1 extra command if a variable time command was just sent. Wait for the ack.

Power up notes: When the disk is first started, it can take a variable time before it is ready. This period should be treated just as a search, play or check command. It is recommended that a "CHK" be the first command issued. The host then waits for the "ACK" before sending any other commands. This should prevent any errors from occurring.

Pause Mode- This mode is somewhat useless and does not allow frame number reading no does it provide sync to the TV. The interface will switch to the still mode if a frame # is to be read. A better method is to use the still and black commands

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Use of Atari Basic to control disk

The following BASIC commands are used to initialize the 850:

```
XIO 36,#1,10+0+0,0,"R1:"  
XIO 38,#1,0,0,"R1:"  
OPEN #1,13,0,"R1:"  
XIO 40,#1,0,0,"R1:"
```

The following is a sample command transmission sequence to the interface:

```
START$="19321";STOP$="19500"  
PRINT #1;"@SRC";START$;  
GET #1,ACK  
IF ACK<>65 THEN ERROR  
PRINT #1;"@PLY";STOP$;"ATR";  
GET #1,DONE;REM ATR doesn't ACK on play  
GOTO TOP
```

Note that a semicolon is placed at the end of each PRINT statement to prevent erroneous tabs & EOL characters from being transmitted to the interface.

The interface always expects 5 digits whenever a frame number is sent. A BASIC program should always use strings rather than numbers as numbers below 10000 won't transmit 5 digits.

Be careful handling the "ack's" and other return characters. The 850 buffers all return characters.

Note that the use of the Atari 800 sound circuits requires that the concurrent I/O mode be closed & reopened.