K_Command.doc

I. Purpose of this document:

To provide an authorized standard, quality document detailing remote use of the clock command. This document details what our remote software products **in the field** expect (what the developers think the software expects) and how it behaves in response to an incoming data stream with embedded clock commands.

These documents will be used to design tests of the remote software. Product deviation from these documents (verified by the developers either by test or by analysis of code) will initiate an ECR to update this document to reflect the deviation of the product.

Prevue BackOffice transmission Specifications are beyond the scope of this document.

II. Current code bases (remote Products) that use this command:

1.	Atari	all atari EPG codebases
2	Amiga EPG	EPG (includes all Amiga EPG)
3	Amiga Prevue	ESQ (includes prevue laser, laserguide and international versions)
4	Amiga Sneak Prevue	VD (includes international versions)
5	PC Prevue (PC Prevue Laser and PC Prevue Junior)	Pcepg (includes international versions)
6	Interactive server (Quikvue)	Not used.

III.   Clock Command overview:

CommandType = legacy EPG (55aa / body / xor checksum)

Function: A realtime command used to send the c.g. the correct current time standard for display as the onscreen clock. This time standard follows Central time and thus shifts with DST twice a year (Central Standard Time (CST) during the winter / Central Daylight Time (CDT) during the summer). This command is used to sync the remote c. g. with "realtime" (i.e. the clock standard) which is then converted into the local box time at display as a function of the local timezone and the observance of DST (see related commands below). The current time is required to compute a Julian date that is needed for the reception of several data commands (C,P, v etc.). In the older products (Atari and Amiga EPG), the K.DST field (see below) was also used to determine data conversion (of P commands) from the data standard (Central time) to local display time.

This command is normally sent in all transmissions. The state of the remote c.g. addressing must be 'BOXON' (i.e. must have received a valid address command) to process this command. The c.g. should process the information immediately and update all pertinent displays upon reception of a single valid K command.

Command Template:

<Command_Header><Command_ID>
< K.Clock_String >
<term> <XOR_CheckSum>

K command template (Binary|Fixed)

Seq	Tag	Field Type	Description	Validation range	Min bytes	Max bytes	Offset
1	Command_Hdr	Binary|Fixed	Standard Header	55h AAh	2	2	1-2
2	Command_ID	Ascii|Fixed		'K'	1	1	3
3	K.Clock_String	Binary|Fixed | Multi	Subfield	See below	8	8	4-11
4	Term	Binary|Fixed	Terminator	00h	1	1	12
5	XOR_CheckSum	Binary|Fixed		00-FFh	1	1	13

KClock_String (Binary|Fixed)

Seq	Tag	Field Type	Description	Validation range	Min bytes	Max bytes	Offset
1	K.Day_of_week	Integer_Data |Fixed	0h = Sunday 06h = Saturday	0-6	1	1	1
2	K.Month	Integer_Data |Fixed	0h = January 0Bh = Dec.	0-11	1	1	2
3	K.Date	Integer_Data	0h = 1	0-30	1	1	3

		|Fixed	1Eh = 31				
4	K.Year	Integer_Data |Fixed	00 = 1900 63h = 1999	By product	1	1	4
5	K.Hour	Integer_Data |Fixed	00h = midnight (or 00:00 military) 17h = 11:00 PM (or 23:00 military).	0-23	1	1	5
6	K.Min	Integer_Data |Fixed	00h = 0 3Bh = 59	0-59	1	1	6
7	K.Sec	Integer_Data |Fixed	00h = 0 3Bh = 59	0-59	1	1	7
8	K.DST	Boolean_Data |Fixed	00h = CST 01h = CDT.	By product	1	1	8

Example clock command (in hex): 55 AA 4B 01 08 1B 57 0B 3B 38 01 00 F8

This command is the same for all 6 members of the code bases (listed in section II above) with the exception of their interaction with other commands and the way the K.Year and K.DST fields are interpreted. These differences are outlined below.

IV. Product Variations of command

A. Clock Command for Atari and EPG codebases: (codebase 1 & 2 in section II above)

Related commands: Used in conjunction with the F (configuration) command which sets the timezone, Observe DST flag and minute offset (TZ Adjust). Both of these commands are required to display a correct time on these products. The K.DST field is also used to determine data conversion (of P commands) from the data standard (Central time) to local display time.

The command is exactly as described in section III above with the exception of the following 2 fields.

KClock_String

Seq	Tag	Field Type	Description	Validation range	Min bytes	Max bytes	Offset
4	K.Year	Integer_Data |Fixed	00 = 1900 5Bh = 1991 64h = 2000	* 0-199	1	1	4
8	K.DST	Boolean_Data |Fixed	00h = CST 01h = CDT	0-1	1	1	8

*Note: Strictly speaking, since the year is never displayed in this product, this byte functions only to compute the existence of a leap year which in turn is used to compute the Julian date needed for other data commands. This computation involves dividing the year by 4 and looking at the remainder. Thus the year 2000 can be sent as x00 or x04 or 100 without affecting the Julian date computation. If year 2000 = 100 then year 2100 = 200. Year 2100 does not follow this simple rule.

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B. Clock Command for Amiga Sneak Prevue & PC Prevue codebases: (codebases 4 & 5 in section II above)

Related commands: Used in conduction with the:
F (configuration) command which sets the timezone, Observe DST flag and minute offset.
⚧g2 (local DST range) command
⚧⚧g3 (global DST range) command - takes the place of the K.DTS field

All of these commands are required to display a correct time on these products.

The command is exactly as described in section III above with the exception of the following 2 fields.

KClock_String

Seq	Tag	Field Type	Description	Validation range	Min bytes	Max bytes	Offset
4	K.Year	Integer_Data |Fixed	46h = 1970 5Bh = 1991 64h = 2000	70-138	1	1	4
8	K.DST	Boolean_Data |Fixed	Unused	Unused	1	1	8

⚧ Currently the international versions that need this command are not released to the field. Only the domestic PrimeStar version uses this command.
⚧⚧ The PC does not currently use this information. It is supplied by the operating system clock which means that PC codebases are required to receive a K command on global transition days to correctly display the time.

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C. Clock Command for Amiga Prevue codebases: (codebase 3 in section II above)

Related commands: Used in conjunction with the:

F (configuration) command which sets the timezone, Observe DST flag and minute offset.

g2 (local DST range) command

g3 (global DST range) command

All of these commands are required to display a correct time on these products.

The interpretation of the clock command is different in this codebase.

The clock ('K') command tells the CG what time it is. The K.DST field in this command specifies the time standard (CDT or CST) for the data in the clock command. The K.DST field has no meaning outside the scope of the currently received command. This codebase unlike any other, allows the same clock to be sent in either CDT or CST at any time of the year. The clock data is converted internally to CST according tothe state of the K.DST flag in the command.

The behavior of the code handles 2 operational possibilities on DST transition time / date in a more sophisticated way than previous code bases.

1. At the entry time specified by the g2 command on DST transition day the c.g. automatically adjusts the displayed time (Sets clock ahead in the on entry, back on exit). Whether or not clock commands are sent, the correct time is displayed.
2. If global DST transition is ignored (The clock standard is not shifted and the K.DST field is not changed), the correct time is displayed. The c.g. will correct the clock command to the appropriate time and K.DST setting by using the g3 range. This eliminates the need to have an operator change the time and DST setting on the XGATE machine at the exact moment of the transition.

The command is exactly as described in section III above with the exception of the following 2 fields.

K.Clock_String

Seq	Tag	Field Type	Description	Validation range	Min bytes	Max bytes	Offset
4	K.Year	Integer_Data |Fixed	46h = 1970 5Bh = 1991 64h = 2000	70-138	1	1	4
8	K.DST	Boolean_Data |Fixed	00h = CST 01h = CDT	0-1	1	1	8

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