GPSView 2003 User Manual for CXD2951

SONY

GPSView 2003 User Manual *for CXD2951*

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GPSView 2003 User Manual for CXD2951

1 System Requirements

- Windows 98, Windows 2000, or Windows XP
- 1.0MB of available hard-disk space
- One available serial port

2 Overview

GPSView enables evaluation and development with the *CXD2951* GPS Receiver. Serial communications (UART) connect a PC running GPSView to a *CXD2951* evaluation board. GPS status—including latitude, longitude, altitude, speed, and azimuth—can be downloaded to GPSView in real time. Other GPS information, such as acquisition assistance data, can be uploaded or downloaded through GPSView. Finally, commands can be transmitted to control *CXD2951* itself.

Fig. 2-1 shows the main window of GPSView, from which the main functions of GPSView are accessible. This document describes each of these functions in turn.



Fig. 2-1 GPSView main window

2.1 Connecting to CXD2951 GPS Receiver

GPSView must establish communication with *CXD2951* before any GPSView functions can be activated. Communication occurs using the NMEA (National Marine Electronics Association) format.

The window shown in **Fig. 2-2** is accessible through the *Tools/Configure COM port* menu. Settings should correspond to **Table 2-1**. Once the COM port settings have changed, use the *Disconnect* and *Connect* commands in the *Communications* menu to re-initialize communication (see section 3.1).

If communication has successfully been initialized, and if *CXD2951* is active, *CXD2951* will continuously report its system operations. This report (in raw NMEA format) can be viewed through the *Console* function on the main window. If no output is displayed in the *Console*, either communications have not been initialized successfully, or *CXD2951* is not active. If the displayed output is not composed of standard ASCII characters, then the COM settings (most probably the baud rate) are incorrect.



Baud Rate	9600 (NMEA)
Parity	None
Data Bit	8
Stop Bit	1
Flow Control	XON/XOFF

Table 2-1 CXD2951 COM Settings

Fig. 2-2 Configure COM port Dialog

3 User Interface

3.1 Communications Menu

The *Communications* Menu is accessible through the main window (**Fig. 3-1**). It is used to reset the COM port and to log data transmitted from *CXD2951*. Generally, after a reset or change in communication parameters (such as baud rate or format) it is advisable to select *Disconnect* and then *Connect* to reinitialize the COM port.



Fig. 3-1 Communications Menu

3.1.1 Connect

Select *Connect* to establish communication between *CXD2951* and GPSView. Before connecting, ensure the COM settings are correct (see section 2.1), and that another application is not currently accessing the COM port.

3.1.2 Disconnect

Select Disconnect to break communication with CXD2951 and free the COM port.

3.1.3 Log Console

Use Log Console to record CXD2951 output.

A checkmark beside *Log Console* indicates that *CXD2951* output is currently being recorded. Upon selecting *Log Console*, the Dialog Box in will appear. The default file name is "GPS_MDUMP.DAT."

ファイルを開く				? ×
ファイルの場所型: 	C TEST	•	(† 🖻 🖻	* 💷 -
ファイル名(<u>N</u>):	GPS_MDUMP.DAT			開(((<u>0</u>)
ファイルの種類(工):			•	キャンセル

Fig. 3-2 Log Console Dialog Box

3.1.4 Stop Logging Console

A checkmark beside *Stop Logging Console* indicates that *CXD2951* output is not currently being recorded. Chose this item to stop recording data.

3.2 View Menu

There are 9 items in the *View* menu. (**Fig. 3-3**) Select each item for the corresponding position and satellite information.



Fig. 3-3 View Menu

3.2.1 General Information

Select *General Information* to open the window shown in **Fig. 3-4**. Latitude, longitude, altitude, speed, azimuth and satellite information are displayed.



Fig. 3-4 General Information Window

3.2.2 Satellite Constellation

Select *Satellite Constellation* to open the window shown in **Fig. 3-5**. On the left, the signal reception strength is shown for each satellite currently being tracked. On the right, the satellite constellation is shown for each satellite currently in view.



Fig. 3-5 Satellite Constellation Window

3.2.3 Position Plot

Select *Position Plot* to open the window shown in **Fig. 3-6**. This window plots the position history of the *CXD2951* receiver.



Fig. 3-6 Position Plot Window

3.2.4 Console

Select *Console* to open the window shown in **Fig. 3-7**. This window displays the data sequences transmitted from *CXD2951*. If a key is pressed when the window is active, the dialog box shown in **Fig. 3-7** appears. Commands input through this dialog box will be transmitted verbatim to *CXD2951*. The *CXD2951* command format is detailed in *CXD2951 Communication Command Specifications*.

Output data sequence from		
CXD2951	Command input dialog box	
😴 Console		
\$GPGSA,A,3,06 08,09,10,17,23,2	24,26,29,,,,,1.6,01.6,01.2*09	
\$GPGSV,3,1,11,4,16,165,49,15,	21,317,00,11,35,310,45,10,52,095,50*78	
\$GPGSV,3,2,11,08,18,041,51,06,	,U5,250,38,28,14,081,00,26,68,329,50*76	
\$GPGSV,3,3,11,09,24,202,51,29,	67,000,51,23,65,345,51,,,,*48	
\$GPVIG,3U4.3,1,,M,UUU.U,N,UUU.	.U,K,A*U9	
\$GPZDA,UU2904,17,09,2002,,*48		
Command	ls 📉 🔀	
Input con	nmand String (hit return to send)	
	Cancel	

Fig. 3-7 Console Window

3.2.5 Software Reset

Select *Software Reset* to open the window shown in **Fig. 3-8**. Use this window to test the various start modes—Cold, Warm, Hot—of *CXD2951*.



Fig. 3-8 Software Reset Window

3.2.6 Velocity

Select *Velocity* to open the window shown in **Fig. 3-9**. This window graphs the speed and heading history.



Fig. 3-9 Velocity Window

3.3 Tools Menu

There are 7 items in the *Tools* Menu(**Fig. 3-10**). Select each item to initialize *CXD2951*, input or output almanac and ephemeris data, or setup communications. Refer to section 2.1 for the *Configure COM port* menu item.



Fig. 3-10 Tools Menu

3.3.1 Acquire almanac Data from Receiver

When *Acquire almanac Data from Receiver* is selected, almanac data will be read from *CXD2951* and saved to the file "AL.DAT." (**Fig. 3-11**)

			Almanac data	
		ALMANAC/EPHEMERIS data		×
Acquire Almanac/Ephemris Data from Receiver Create/Update Almanac Data. Press OK to Proceed OK チャンセル	X	File:C:¥¥デスクトップ¥AL.D BB028055258440AAAAAAAAAAAAAAAAA 00028048468741239F631215FD3300 0002804848937426683637586F04600 00028048485431CF963F31967D1800 0002804850854520C063FBCCFD4400 00028048538446388F63F51501FD2200 00028048558547658A63FF21FD2500 00028048558547658A63FF21FD2500 000280481584845FEF680308F04700 000280481584465FEF680308F04700 000280481584465FEF680308F04700 00028048128440289E631912FD6100 0002804812844078063EE83FD2C00 0002804815884478252045DE200 0005855168A4D0F546314D6F343740	AT (AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA A10C423C057AB9A41039C5E A10C058CF30EB2B3D311A19 A10D1D88CAD8135D21895E8 A10DB7E6DD4DF3B12416F76 A10C98B0E40180D440822F A10C686555A4807A0388E0 A10D29899463B1786C8E079 A10C6A6667217A53F2D44346 A10C686660237C562D219 A10C686650237C562D219 A10C68650237C562D219 A10C8810860330612858E032 A10C882F5C1DE58517284019 A10D903837E113A78A74956	AAF 4DC 4DC C05 D04 000 636 A3E AFE 802 012 3FF
			e	

Fig. 3-11 Acquire almanac Data from Receiver

3.3.2 Acquire Ephemeris Data from Receiver

When *Acquire Ephemeris Data from Receiver* is selected, ephemeris data will be read from *CXD2951* and saved to the file "EP.DAT." (**Fig. 3-12**)

			Ephemeris data	
		ALMANAC/EPHEMERIS data		X
Acquire Almanac/Ephemris Data from Receiver Create/Update Ephemeris Data. Press OK to Proceed OK ギャンセル	X	File:C:¥¥ F ス ク ト ッ ブ ¥EP. P 00028046802472811004DE381E sC 00028046802982F6D032F0FE5568F 00028048502EFFF43C1566FDFFFF27 000280485643811004DE5381E989C 000280485672CFFF8002D17F013426 00028048572CFFF8002D17F013426 0002804856A9281000458E381E989C 00028048572CFFF80806018001525 000675E5A388FEE330826558090A6D 008F32CC7798965B0283165DEF1A08 008574BF36203478C34F8081B1233 00028038F6242812020A05211E988C 00028038F6642270385388R024942374	AF 20E81DDFF9F982367E00001 F8360299E2530691A10C891 87BA64286AB39FCE0FFFA36 20E81DDFF9FD8B367E00FFC 050B0867D86E1158A10D348 00ED801A5EB2AC0611FFA20 20E81DDFF97F2838700001 FFDF01CED9630B35A10DA12 FFDF01CED9630B35A10DA12 FFDF01CED9630B35A10DA12 81F66B8225F37781F802883 B2AA7CC74070742155697C6 81F66B8225F37781F802883 B2AA7CC74070742155697C6 4551D22595BBB8E8428000 02E81DDFF9F727227F600000 02E30204F54010C241001f	12C 03C :A82 :A0D 103C :CBE 1005 :536 :11E6 :B9f :F5C 123f 1004 :C23f
		(UTos	e	

Fig. 3-12 Acquire Ephemeris Data from Receiver

3.3.3 Acquire and Transmit Assistance Data

Select *Acquire and Transmit Assistance Data* to open the window shown in **Fig. 3-13**. This window allows acquisition assistance data to be transmitted to and received from *CXD2951*.

(a) Acquire assistance data

Assistance data will be read from CXD2951 and saved to the file "AS.DAT."

(b) Transmit assistance data

Assistance data will be read from the file "AS.DAT" and transmitted to CXD2951.

Acquire and Transmit Assistar	nce Data 📃 🗖 🗙
Acquire assistance data	Transmit assistance data
Clos	se

Fig. 3-13 Acquire and Transmit Assistance Data

3.3.4 Transmit Almanac Data to Receiver

When *Transmit Almanac Data to Receiver* is selected, the almanac data saved in file "AL.DAT" will be transmitted to *CXD2951*.

3.3.5 Transmit Ephemeris Data to Receiver

When *Transmit Ephemeris Data to Receiver* is selected, the ephemeris data saved in file "EP.DAT" will be transmitted to *CXD2951*.

3.3.6 Transmit Almanac and Ephemeris Data to Receiver

When *Transmit Almanac and Ephemeris Data to Receiver* is selected, ephemeris and almanac data saved in files "EP.DAT" and "AL.DAT", respectively, will be transmitted to *CXD2951*.

3.4 Help

Display version and copyright information.

3.5 TTFF Window

When Main Window, General Information Window, Satellite Constellation Window, Velocity Window is active, TTFF Window opens to press "t" (see **Fig. 3-14**)

TTFF Window			Log Window
Start Mode HOT	Count	- Average	
Max Count 100 💌			
Time 5min 💌			
	🔽 Rec_Log		
START STOP	CLEAR	CLOSE	
Fig.	3-14 TTFF Window	To Clear Lo	og Window

It can log the position data at First fix issued by specified reset command (Cold, Warm, Hot) and specified interval.

3.5.1 Measurement of TTFF

It should be set below 4 items.

Start Mode : It should be selected an issued reset command from among Hot, Warm and Cold.

MaxCount	:	It should be assigned the number of times for issued rest command
Time	:	It is time until next reset command issue after the position fix.
Rec Log	:	It should be checked this box when it records the Log.

It starts to issue the reset command to push Start button after inputting these 4 items.

3.5.2 TTFF Log File

The TTFF*MODE_mmdd*.dat file regarding **Table 3-1** should be made to check Rec_Log box on the same folder with GPSView_for_CXD2951.exe. MODE means StartMode and mmdd gives its date (For example: Hot start and August22th should be TTFFHOT_0822.dat).

Count	Count of Send Reset Commnad
Year	The year of sending command (UTC of logger PC)
Month	The month of sending command (UTC of logger PC)
Day	The day to send command (UTC of logger PC)
StartTime	The time to send command (UTC of logger PC)
TTFF(s)	Time To First Fix (sec)
Ave(s)	Average of Time To First Fix (sec)
LatDir	East or West (Latitude)
LatDeg	Degree of Latitude
LatMin	Minute of Latitude
LonDir	North or South (Longitude)
LonDeg	Degree of Longitude
LonMin	Minute of Longitude
Alt	Mean Sea Level (m)

Table 3-1 Contents of TTFF Log File

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Sony Corporation

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