

FTP 10G Server Demo Instruction

Rev2.0 22-Jul-20

This document describes the instruction to run FTP 10G Server demo on FPGA development board. NVMe SSD is applied as the storage, and transferring files through 10 Gb Ethernet. The demo is designed to run as FTP Server, connecting with TestPC by using FileZilla version 3.45.1 as FTP client. User sets the test parameters on FPGA and monitors the hardware status through FPGA console.

1 PC Setup

Before running demo, please check the network setting on PC. The example for setting 10Gb Ethernet card is described as follows.

1.1 IP Setting

📮 Local Area Connection 2 Properties 💽	Internet Protocol Version 4 (TCP/IPv4) Properties	? 💌
Networking Sharing	General	
Connect using: 10-Gb LAN connection	You can get IP settings assigned automatically if your network su this capability. Otherwise, you need to ask your network adminis for the appropriate IP settings.	
<u>C</u> onfigure	Obtain an IP address automatically	
This connection uses the following items:	Use the following IP address:	
Client for Microsoft Networks	IP address: 192 . 168 . 7 . 25	3
Research Packet Driver (NPCAP)	Subnet mask: 255 . 255 . 255 . 0	
 QoS Packet Scheduler File and Printer Sharing for Microsoft Networks 	Default gateway:	
 Internet Protocol Version 6 (TCP/IPv6) Internet Protocol Version 4 (TCP/IPv4) 	Obtain DNS server address automatically	
< III. •	Use the following DNS server addresses:	
Install Uninstall Properties	Preferred DNS server:	
Description	Alternate DNS server:	
Transmission Control Protocol/Internet Protocol. The default wide area network protocol that provides communication across diverse interconnected networks.	Validate settings upon exit	nced
OK Cancel	ОК	Cancel

Figure 1-1 Setting IP address for PC

- 1) Open Local Area Connection Properties of 10-Gb connection, as shown in the left window of Figure 1-1.
- 2) Select "TCP/IPv4" and then click Properties.
- 3) Set IP address = 192.168.7.25 and Subnet mask = 255.255.255.0, as shown in the right window of Figure 1-1.



1.2 Speed and Frame Setting

Local Area Connection 2 Properties	Local Area Connection 2
Connect using: Intel(R) Ethernet Server Adapter X520-2 1 Configure This connection uses the following items: Image: Client for Microsoft Networks Image: Npcap Packet Driver (NPCAP) (Wi-Fi) Image: Npcap Packet Driver (NPCAP)	You have made changes to the properties of this connection. If you proceed your changes will be lost. Do you wish to proceed? <u>Yes No</u>
Image: Second	Intel(R) Ethernet Server Adapter X5280 erties
OK Cancel	Settings: Value: Interrupt Moderation 2 Rumbo Packet Disabled Large Send Offload V2 (IPv6) E Locally Administered Address S014 Bytes Log Link State Event 0ffload 02 (IPv6) Umbo Packet Use Default Jumbo Packet Use Default Jumbo Packet Enables Jumbo Packet capability for TCP/IP packets. In situations where large packets make up the majority of traffic and additional latency can be tolerated, Jumbo Packets can reduce CPU utilization and improve wire efficiency. W NOTE: Changing this setting may cause a momentary loss of connectivity. Usage Considerations Texations

Figure 1-2 Set frame size = jumbo frame

- On Local Area Connection Properties window, click "Configure" as shown in Figure 1-2.
 On Advanced Tab, select "Jumbo Packet". Set Value to "9014 Bytes" for Jumbo Frame support or set value to "Disabled" for non-Jumbo Frame support, as shown in the bottom window of Figure 1-2.



3) On Link Speed, select "10 Gbps Full Duplex" for running 10-Gigabit transfer test, as shown in Figure 1-3.

el(R) Ethernet	Server Adapte	er X520-2 Propertie	25	
Teaming	VLANs	Boot Options	Driver	Details
General	Advanced	Link Speed	PROSet.	Advanced
Link Status Speed:	Intel(R) PRO:	nd Duplex Settings Set Version: 25.0.0.1 Sbps Full Duplex	1000	
Speed and Du 10 Gbps Full		3	<u>D</u> iagnostics	
			Identify Adapt	er
to automatic A setting of advertises of Inform This icon is	ally detect and her than Auto N during auto-neg mation icon displayed w her	ng: By default, Intel negotiate speed an legotiation restricts otiation. n the device is not li that case, if your o	d duplex settir w hat the adap nked at its	ngs. ∋ter ≡
			OK	Cance
Figure	e 1-3 Set	t link speed	d = 10 G	ibos



- 4) On PROSet Advanced Tab, select "Performance Options" and click "Properties" button.
- 5) Set "Interrupt Moderation Rate" = OFF.

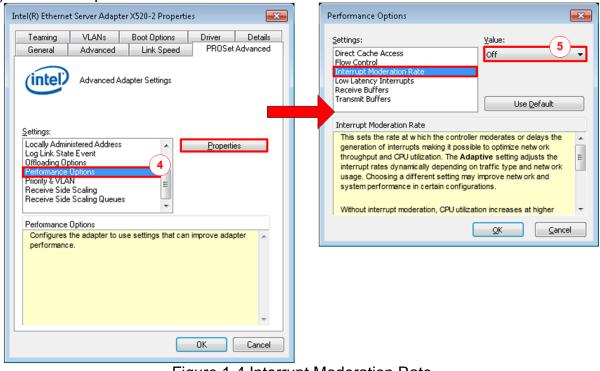


Figure 1-4 Interrupt Moderation Rate

- 6) Select "Low Latency Interrupts" and click "Properties" button.
- On "Low Latency Interrupts" window, select "Use Low Latency Interrupts" and click "OK" button.
- 8) Click "OK" button to save and exit all setting windows.

Performance Options	Low Latency Interrupts	×
Settings: Direct Cache Access Flow Control Interrupt Moderation Rate Cow Latency Interrupts Receive Buffers Low Latency Interrupts Enables adapters to bypass interrupt moderation and immediately generate an interrupt when certain TCP packets arrive, allow ing the system to handle the packet more quickly. Certain applications will have faster access to network data because of the reduced data latency.	Remove	
NOTES: If this ontion is enabled system CPI Lutilization OK Cancel	Configures which packets bypass interrupt moderation and trigger immediate interrupts. Use for packets with TCP Any incoming packet with the PSH flag: TCP PSH flag will trigger an immediate interrupt. The PSH flag is set by the sending	•
	device. Use for these TCP ports: Every packet received on the OK Cancel	•
Figure 1-5 Use	E Low Latency Interrupts	



1.3 Power Option Setting

- 1) Open Control Panel and select Power Options as shown in the left window of Figure 1-6.
- 2) Change setting to High Performance as shown in the right window of Figure 1-6.

😋 🔾 🗢 🞯 🕨 Control Panel 🕨 All Contro	ol Panel Items 🕨 👻 🍫 Search Contr	🕢 🗢 😻 « All Control Panel	Items > Power Options - 4 Search Control Panel			
Adjust your computer's settings	View by:	Control Panel Home	Select a power plan			
Power Options	Programs and Features	Require a password on wakeup Choose what the power buttons do	Power plans can help you maximize your computer's performance or conserve energy. Make a plan active by selecting it, or choose a plan and customize it by changing its power settings. <u>Tell me more about power plans</u>			
Recovery	Region and Language	Create a power plan	Preferred plans Balanced (recommended) Change plan settings			
RemoteApp and Desktop Connections	Sound	Coose when to turn off the	Automatically balances performance with energy consumption on capable hardware.			
Speech Recognition	Sync Center		Favors performance, but may use more energy.			
System	Taskbar and Start Menu		Show additional plans 🛛 🛞			
Troubleshooting	🝇 User Accounts					
Windows Anytime Upgrade	Windows CardSpace	See also Personalization User Accounts				
起日 Windows Defender		USE ACCOUNTS				
Figure 1-6 Power options						



1.4 FileZilla Setting

The reference design supports only one connection for transferring data through 10 Gb Ethernet. Therefore, FileZilla must be configured to transfer data by using one connection as shown in Figure 1-7.

- 1) On FileZilla application, select Edit -> Settings.
- 2) In Transfers page, set "Maximum simultaneous transfer" = 1 (Default value is 2) and click "OK" button to confirm the setting.

E	FileZilla				
<u>F</u> ile	Edit View Transfer Server Bookmarks Help				
111	Network configuration wizard				
	Clear private data				
Host					
	<u>Settings</u>				
Settings		×			
Select page:	Concurrent transfers (2b)				
Connection	Maximum simultaneous transfers: 1 (1-10)				
FTP	Limit for concurrent downloads: 0 (0 for no limit)				
Active mode					
Passive mode FTP Proxy	Limit for concurrent uploads: 0 (0 for no limit)				
SFTP	Speed limits				
Gene 2a xy	Enable speed limits				
Transfers	Download limit: 1000 (in KiB/s)				
- File exists action	Upload limit: 100 (in KiB/s)				
- Interface	<u>B</u> urst tolerance: Normal ~				
Themes	Filter invalid characters in filenames				
Date/time format	Enable invalid character <u>f</u> iltering				
Filesize format	When enabled, characters that are not supported by the local operating system in filenames are replaced if downloading such a file.				
Language	Replace invalid characters with:				
- File editing	The following characters will be replaced: \/:*?" < >				
Filetype associations Updates					
Logging	Preallocation Preallocate space before downloading				
Debug					
ОК	2c)				
<u>C</u> ancel					

Figure 1-7 FileZilla Setting



2 Main menu

+++ Start FTP Server 10G Demo +++	
> exFATNUMeIP(EUALUATION) [IPUer = > NUMeIP(EUALUATION) [IPUer = 4.2] > TOE10GIP(EUALUATION) [IPUer = 1. > TENGEMACIP(EUALUATION) [IPUer =	14]
Waiting exFAT-IP initialization exFAT-IP initialization complete	Display to confirm format disk
The disk must be formatted by exFAT- Press 'y' to confirm format disk	

Figure 2-1 Message after system boot-up

After FPGA programming is finished, the console displays the boot message as shown in Figure 2-1.

- "Waiting exFAT-IP initialization" is displayed during running initialization.
- "exFAT-IP initialization complete" is displayed when finishing initialization and IP is idle.

Next, the console waits the input for user selecting the test option. The example steps for running the test are shown as follows.

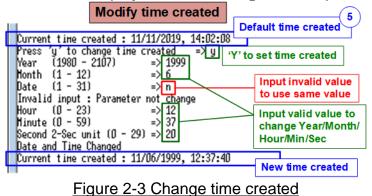
Format without modifying time created	
The disk nust be formatted by exFAT-IP Enter 'Y' to confirm to format disk Press 'y' to confirm format disk $=>y$	1
Current time created : 11/11/2019, 14:02:08 Press 'y' to change time created => n Other keys ('n') to use default created time and date for Format operation (1):32 HB (1):128 HB (2):512 HB (3):2 GB (41:8 GB (5):32 GB (61:128 GB Format Disk complete File size in disk : 8.589 [GB] Maximum file in disk : 59 File Total file in disk : 0 File	2

Figure 2-2 Format the disk

- 1) If the disk is not formatted by exFAT-IP, "The disk must be formatted by exFAT-IP" is displayed. In this condition, user must enter 'y' to format the disk. Otherwise, the user can select to enter 'y' to confirm format operation for clearing the data in the disk or enter other keys to skip format process and start running at step 5).
- 2) When running Format disk, the message for setting created time and date are asked. The created time and date are the input for Format command to create the empty directory in the SSD. More details about the empty directory are described in exFAT-IP documents.



- 3) Under Format operation, user must set file size for using in the SSD. This file size must be matched to the file size in Test PC for loading the file to the SSD by FTP client application.
- 4) After finishing file size setting, Format operation is operated. "Format Disk complete" and file system information are displayed after finishing Format operation.



- 5) "Current time created" is displayed to show default time. User enters 'y' to change time created or other keys (not 'y') to use the default value. The time created is applied to be the input when running FTP server operation. To set time created, there are six parameters for setting created date and time.
 - Year –Year of created date. Valid range is 1980 2107.
 - Month Month of created date. Valid range is 1 12.
 - Date Date of created date. Valid range is 1 31.
 - Hour Hour of created time. Valid range is 0 23.
 - Minute Minute of created time. Valid range is 0 59.
 - Second $-x^2$ second of created time. Valid range is 0 29.

All inputs are received as decimal unit. User can add "0x" as a prefix for hexadecimal input. When the input is invalid, the parameter is not updated and the same value is used. After setting the new created date and time, "Date and Time changed" with the updated value are displayed on the console.

<u>Note</u>: Time created value is applied for two functions.

First, the new file which is uploaded from Test PC to the SSD by using FTP client software uses the created time/date as created time/date of the file in the SSD.

Second, when user reads the file list in the SSD via FTP client software, the created time/date of all files in the device is equal to this value. As a result, the modified time/date displayed on FTP client software may be different from the created date/time of the file in the device, as shown in Figure 2-4.

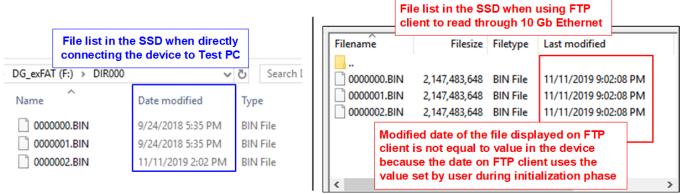


Figure 2-4 Time created of the SSD comparing between on the window and FTP client



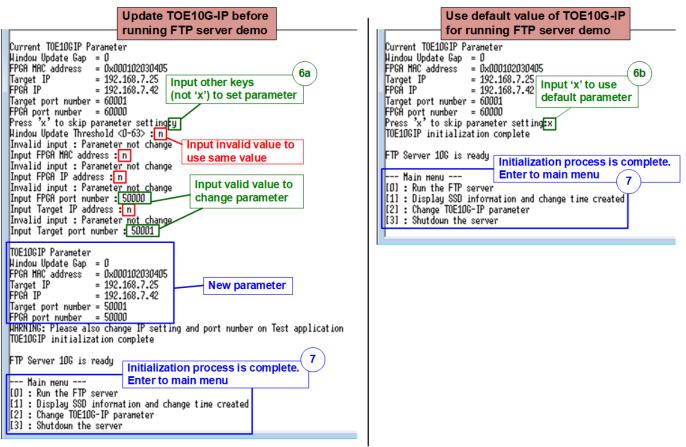


Figure 2-5 Set TOE10G-IP parameter before running demo

6) The menu to set network parameters are displayed. Enter 'x' to skip parameter setting by using default parameters for system initialization or other keys to change parameters. Seven parameters can be changed by the user. The details for changing parameters are as follows.

User can set the invalid value such as 'n' to the parameter for using the same value. After finishing parameter setting, TOE10G-IP is reset and begins initialization process.

- Window Update Gap: Set threshold value to transmit window update packet. Valid value is 0x00 0x3F (0-63). The unit size of threshold value is 1 Kbyte. Default value is 0 (disable window update feature).
- FPGA MAC address: Input 12-digit of hex value. Add "0x" as a prefix for hexadecimal input.
- FPGA IP address: A set of four decimal digits is separated by ".". The valid range of each decimal digit is 0-255.
- FPGA port number: Valid range is 0-65535, except 21 which is control port number.
- Target IP address: A set of four decimals like FPGA IP address. This value is IP address of Test PC.
- Target port number: Valid range is 0-65535, except 21 which is control port number.
- 7) After finishing system initialization, main menu is displayed with four operations which are described in more details as follows.



Menu [0]: Run the FTP server

Hain menu [0] : Rum the FTP server [1] : Display SSD information and	Menu[0] change time created
[2] : Change TOE10G-IP parameter [3] : Shutdown the server	Ready to connect with FTP client. Display Host IP, user name, and password
Open FileZilla Host-IP : 192.168.7 USER NAME : dgftp PASSHORD : admin User can press 'x' to disconnect F	

Figure 2-6 Run the FTP server

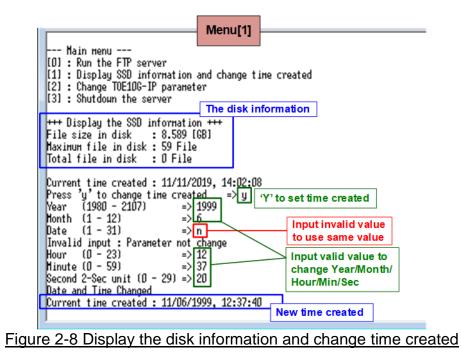
• Select '0' to run the FTP server. After that, three parameters for setting in FTP client application, i.e. Host IP, User name, and password are displayed. Now the user can open FTP client application on Test PC to connect with FTP server hardware.

	Menu[0]			
+++ Run the FTP server +++				
Open FileZilla Host-IP : 192 USER NAME : dqftp	.168.7.42	Confirmation	massaga	
PASSHORD : admin User can press 'x' to discon	most ETD slig	L	messaye	
Are you sure you want to dis		Lient ?	s 'y' to confirm	n
Press 'y' to confirm : y FTP client is disconnected			7	
Hain menu		nnected and to main menu		
[0] : Run the FTP server [1] : Display SSD informatio		time created		
[2] : Change TOE1DG-IP param [3] : Shutdown the server	leter			
ļ ļ				
Figure 2-7 Di	isconnect	the FTP cl	<u>ient</u>	

• When there is no operation on FTP client application, the user can press 'x' to disconnect the FTP client and return to main menu, as shown in Figure 2-7 for running other operations.



Menu [1]: Display SSD information and change time created



- Select '1' to display the SSD information and change file created time. System information in SSD is displayed.
- Enter 'y' to change time created in the test system or other keys to use the same value.



Menu [2]: Change TOE10G-IP parameter

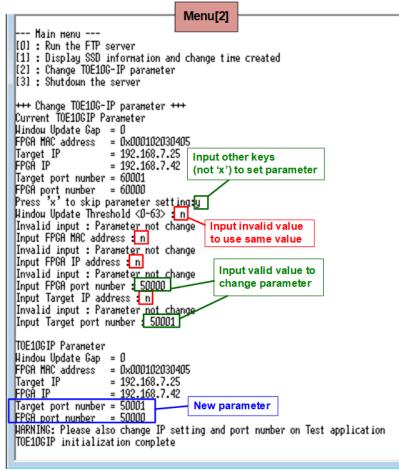
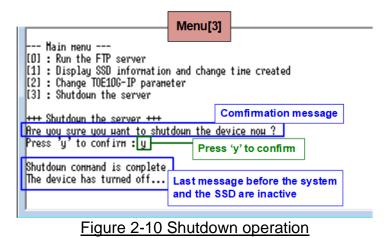


Figure 2-9 Change the TOE10G-IP parameter

• Select '2' to change the TOE10G-IP parameters. When user needs to change the FTP client to other PCs, the network parameters of the new PC must be set to reconnect the connection between FTP server and FTP client.



Menu [3]: Shutdown the server



- Select '3' to shutdown the server.
- Confirmation message is displayed on the console. User enters 'y' to confirm the operation or other keys to cancel the operation.
- After finishing shutdown the server, "Shutdown command is complete" is displayed on the console. It is the last message on the console and the system takes no response to any inputs from user. User needs to power off/on test system to restart the test operation.



3 FTP Client

This topic describes the details when running FTP server with FTP client software on PC.

3.1 Login FTP Server

To login FTP Server by FileZilla, the step is as follows.

- 1. Input server parameters following parameter recommended on the console.
 - a. Host IP : FPGA IP, set during initialization. Default value is 192.168.7.42.
 - b. Username : dgftp
 - c. Password : admin
- 2. Click "Quickconnect" button.

1a. Input Host IP = FPGA IP, displayed on the console								
🛃 dgftp@192.168.7.42 - FileZil	lla	1b. Input Userna	me : dgftp	1				×
<u>File Edit View Transfer</u>	Server Bookm	arks <u>H</u> elp <u>N</u> ew v	1c. Input Pass	word : admin				
<u>H</u> ost: 192.168.7.42 U	<u>l</u> sername: dgftp	p Pas	ss <u>w</u> ord:	<u>P</u> ort:	Quickconne	t 🔻		
	o 192.168.7.42:21							*
		ng for welcome mes	sage					
	er, it does not sup ot support non-A	pport FTP over TLS. ASCII characters.						
Status: Logged in	or support non y	sea characters.						
	ectory listing							
Status: Directory listin	ng of "/F008GB" :							
		Login Succes	is		Current direct			
l					Size III FTF Se	Iver sto	nage	Ŧ
Local site: E:\DIR000\			•	Remote site /F008GE	}			-
] DIR000] DIR001] DIR002								
DIR002			-				Display files in	ן ר
							FTP Server storage	
Filename	Filesize	Filetype	Last modifi 📤	Filename	Filesize	Filetype	Last modified	Permiss
🍑 🛺			E	퉲				
000000.BIN	8,589,934,5	BIN File	24/9/2561 1	000000.BIN	8,589,934,	BIN File	11/11/2562 21:	
0000001.BIN	8,589,934,5	BIN File	24/9/2561 1	0000001.BIN	8,589,934,	BIN File	11/11/2562 21:	
0000002.BIN	8,589,934,5	BIN File	24/9/2561 1					
0000003.BIN	8,589,934,5	BIN File	24/9/2561 1					
0000004.BIN	8,589,934,5	BIN File	24/9/2561 1					
0000005.BIN	8,589,934,5	BIN File	24/9/2561 1 👻					
•			4	•	111			•
32 files. Total size: 274,877,906,9	944 bytes			2 files. Total size: 17,179	9,869,184 bytes			
						۵ 🕸	Queue: empty	ی ک

Figure 3-1 Login FTP server

After finishing setting server parameter, the console shows logged in successful. Directory name shows file size set in the storage. For example, File size is 8 GB when directory name is F008GB. If FTP storage is not empty, file lists in the storage are displayed. The modified date and time of the file is equal to time created, set before running FTP server menu. <u>Note</u>: FTP client reads time zone from FTP server as UTC+0 time zone, but the time displayed on FTP client is adjusted to be user's time zone. For example, when created time before running FTP server menu is 14:02, modified time on FTP client is 21:02 in UTC+7 time zone.



3.2 Upload file

To upload file to FTP Server from Test PC by using FileZilla, user must prepare the uploaded file on Test PC. The status during uploading can be monitored on FileZilla for FTP client side and FPGA console for FTP server side. The step for uploading file is as follows.

Local site: E:\DIR000\		•	Remote site: /F008GB 🗸
		.	□
DIR003		-	
	Ellesize Filetype	Last modifie ▲	Filename The latest file is 0000001.BIN, so the next file must be 0000002.BIN which has 8 GB size.
000000.BIN	FTP server	24/9/2561 1	0000000.BIN 0,509,954, BIN FILE 11/11/2562 21: 0000001.BIN 8,589,934 BIN File 11/11/2562 21:
0000001.BIN	8,589,934,5 BIN File	24/9/2561 1	0000001.BIN 8,589,934, BIN File 11/11/2562 21:
0000002.BIN 0000003.BIN	8,589,934,5 BIN File 8,589,934,5 BIN File		Upload
0000004.BIN	8,589,934,5 BIN File	_	Add files to queue (2)
	8,589,934,5 BIN File	24/9/256	Open Click Upload
Selected 1 file. Total size: 8,5			Edit
			Create directory
Server/Local file	Direction Remote file		Create directory and enter it
		1	Refresh
		1	Delete
			Rename
Queued files Failed	transfers Successful transfers (2)		
			🔕 🞯 Queue: empty 🛛 🔍 🖉

Figure 3-2 Upload file

- 1. Select the uploaded file in Test PC. The limitation of the uploaded file is as follows.
 - a. File name is XXXXXX.BIN (X is hex value). The value of uploaded file name must be equal or less than the next value of the latest file in FTP server storage. In Figure 3-2, the latest file is 0000001.BIN, so, the uploaded file must be 0000002.BIN or less.
 - b. File size of the uploaded file name must be equal to FTP server directory name. In the example, F008GB supports only 8 GiB (1024x1024x1024 byte) file.

<u>Note:</u> (1) File size can be changed by format operation only.

(2) For the new disk, the 1st file name must be 0000000.BIN.

2. Right-click on the selected file and select "Upload", as shown in Figure 3-2.

<u>Note</u>: User can select multiple files on Test PC to upload to FTP server, but only one file is transferred at a time.



FPGA console				
	Display transfer size every second Display performance afte finishing file transferring	r		
[STOR] File 0000002.BIN Complete Total = 8.589 [GB] , Time = 7806[ns] , Transfer speed = 110 9	DOLHB/s]	-		
🛃 dgftp@192.168.7.42 - FileZilla	FileZilla			
File Edit View Iransfer Server Bookmarks H	elp <u>N</u> ew version available!			
<u>H</u> ost: 192.168.7.42 <u>U</u> sername: dgftp	Password:	Port: Quickconnec	t	
Status: Logged in Status: Retrieving directory listing Status: Directory listing of "/F008GB" successfi Status: Insecure server, it does not support FTF Status: Server does not support non-ASCII cha Status: Logged in Status: Logged in Status: Starting upload of E:\DIR000\0000002.E Status: File transfer successful, transferred 8,58 Status: Directory listing of "/F008GB" successful Status: Directory listing of "/F008GB" successful Local site: E:\DIR000\	P over TLS. iracters. 39,934,592 bytes in 11 seconds " ul c	a message e site: 770005B / / F008GB		
Filename Filesize Filetype	e Last modifie 🔶 Filenar	me Filesize	Filetype Last modified	Permiss
0000000.BIN 8,589,934,5 BIN File 0000001.BIN 8,589,934,5 BIN File 0000002.BIN 8,589,934,5 BIN File 0000003.BIN 8,589,934,5 BIN File 0000004.BIN 8,589,934,5 BIN File 0000004.BIN 8,589,934,5 BIN File 0000004.BIN 8,589,934,5 BIN File	24/9/2561 1: 24/9/2561 1: 24		BIN File 11/11/2562 21:	
Selected 1 file. Total size: 8,589,934,592 bytes	3 files.	"" Total size: 25,769,803,776 bytes		+
			🕼 🕜 Queue: empty	•

Figure 3-3 Status message during uploading file

- 3. During uploading process, user can monitor the progress on FileZilla or FPGA console.
 - a. Current transfer size of each file is displayed on the console every second.
 - b. After finishing uploading file, transfer speed is displayed on the console. *Note:*
 - (1) Transfer speed is limited by 10Gb Ethernet speed, FTP client storage performance, and data allocation of the file in the FTP client storage.
 - (2) The best performance is achieved when the test file on FTP client storage is created by exFAT-IP. More details of exFAT-IP demo are described in following document.

https://dgway.com/products/IP/NVMe-IP/dg_exfatip_nvme_instruction_en.pdf

- c. On FileZilla, total time and successful message are displayed as test status.
- d. The new uploaded file is available on FTP server storage. In the example, 0000002.BIN is available in the storage.



	Current t. Press 'y'	іме created : <u>11/11/2</u> to change time create	019, 14:02:08 ed => n
Organize	New C	Dpen Se	lect
> DG_exFAT (F:) > DIR000	\sim (ර Search DIR000	م
Name	Date modified	Туре	Size
0000000.BIN	9/24/2018 5:35 PM	BIN File	2,097,152 KB
0000001.BIN	9/24/2018 5:35 PM	BIN File	2,097,152 KB
0000002.BIN		BIN File	2,097,152 KB
equa	is stored complete al to time created, s re 3-4 Uploaded	ly and modified of set during initialized	zation

e. Figure 3-4 shows when directly connecting FTP server SSD to the PC, modified date of the new file is the same as the value set during disk initialization in Figure 2-3.



3.3 Download file

To download file from FTP Server to Test PC, user selects the downloaded file on FTP server through FileZilla for storing the file to the destination folder on Test PC. The step for downloading file is as follows.

<mark>))</mark> D <mark>))</mark> D	nload\ JIR1FD JIR1FE JIR1FF Download		- 		•
Filename 0000000.BIN 0000001.BIN	8,589,934,5	ze Filetype BIN File BIN File	Last modified 24/9/2561 17:3 24/9/2561 17:3	Select File to download in the from FTP server to Test PC is a server to the server to Test PC is a server to the s)ern
✓2 files. Total size: 17,	1179,869,184 bytes		4		+
Server/Local file	Direction	Remote file		Size Priority Status Create directory and enter it Create new file Refresh	
				Delete Rename Copy URL(s) to clipboard File permissions	
Queued files	Failed transfers Suc	cessful transfers (1)		🔯 🕜 Queue: empty 🛛 👄	

Figure 3-5 Download file

- 1. Select the downloaded file from FTP Server storage.
- 2. Right-click on the selected file and select "Download", as shown in Figure 3-5. <u>Note</u>: User can select multiple files for downloading from FTP server, but only one file is transferred at a time.



Serial console						
	Display transfer ize every second Display performant finishing file transf					
[RETR] File 0000002.BIN Complete Total = 8.589 [68] , Tine = 8725[ns] , Transfer speed = 984[\checkmark					
	FileZill	la				
dgftp@192.168.7.42 - FileZilla <u>File Edit View Transfer Server Bookmarks H</u>	elp <u>N</u> ew version available!					×
Host: 192.168.7.42 Username: dgftp	Password:	Port:	Quickconnect	-		
Status: Disconnected from server Status: Retrieving directory listing of "/F008GB" Status: Directory listing of "/F008GB" successfu Status: Directory listing of "/F008GB" successfu Status: Connecting to 192.168.7.42:21 Status: Connection established, waiting for we Status: Insecure server, it does not support FTF Status: Server does not support non-ASCII cha Status: Logged in Status: File transfer successful, transferred 8,58 Local site: E:\Download\	ul lcome message P over TL FileZilla message .BIN 9,934,592 bytes in 11 seconds) Remote site: /F008GB				* •
UIR1FD UIR1FE UIR1FF DOwnload	•	⊡ 2 /]} F008GB				
Filename Filesize Filetype	Last modified	Filename	Filesize	Filetype	Last modified	Pern
000000.BIN 8,589,934,5 BIN File 0000001.BIN 8,589,934,5 BIN File 0000002.BIN 8,589,934,5 BIN File 0000002.BIN 8,589,934,5 BIN File 0000002.BIN 8,589,934,5 BIN File 0000002.BIN 8,589,934,5 BIN File	24/9/2561 17:3 11/3/2563 15:2	 000000.BIN 000001.BIN 0000002.BIN	8,589,934,592 8,589,934,592 8,589,934,592	BIN File	11/11/2562 21: 11/11/2562 21: 11/11/2562 21:	
<			III 8 580 024 502 hi taa			Þ
3 files. Total size: 25,769,803,776 bytes		Selected 1 file. Total size:		🕽 🕜 Queue	e: empty 🔍	•

Figure 3-6 Downloading File

- 3. During downloading file, user can monitor the progress on FileZilla or FPGA console like uploading process.
 - a. Current transfer size of each file is displayed on the console every second.
 - b. After finishing downloading file, transfer speed is displayed on the console. <u>Note</u>: Transfer speed is limited by 10Gb Ethernet speed and FTP client storage performance.
 - c. On FileZilla, total time and successful message are displayed as status.
 - d. The new downloaded file is available on Test PC. For example, 0000002.BIN is the new file downloaded from FTP server.



4 Revision History

Revision	Date	Description
1.0	4-Apr-20	Initial version release
2.0	22-Jul-20	Remove FPGA setup from the document