



FDS-PRO-Ethernet-CDU

New for **2020**, the FDS-Pro-Ethernet-CDU comes with HDMI compatibility. With most of the latest Graphics cards (GFX) providing DVI-D and HDMI and DisplayPort.

This newest version lets you use the latest GFX cards. As VGA GFX cards are rare these days. Using a DVI-I – HDMI cable will work as well.

*Minimum requirement for GFX cards and Avionics Suites is a 2 GIG card.

FEATURES:

- Full-Color LCD Display
- HDMI Input
- All Metal Construction (Bezel and Structural Components)
- Desktop Stand with rubber feet
- Rubberized keyboard with dome type switches. The switches offer millions of cycles and tactical feel matching real aircraft CDU's.
- Third-Party integration using a simple TCP protocol
- Compatible with Sim-Avionics, ProSim 737, PSX and PMDG NGX/NGXu *Zibo Mod via the X-Plane Forum (See page 18)
- Dimmable Key Brightness
- Brightness Keys for Avionics software screen dimming (Subject to Avionics vendors software integration)
- Includes Power Supply and Network Cable (HDMI Cable required)
- Dimensions: 8.95" x 5.75" Footprint (DZUS Compliant)

– **SOLUTIONS** —

Connecting the CDU to your Network:

The ethernet version of the CDU requires a network cable connected to a **Network Switch**. The Network switch needs to be <u>connected to a **Router** to provide the IP Address required to assign</u> <u>the CDU in software</u>. **Router** must have the **DHCP** enabled to provide the IP Address. (Default is ON). If your **Router/Modem** allows you connect network cables you can omit the **Network Switch.** Some basic networking knowledge is required.



– SOLUTIONS —

Ethernet Connection Information:

Doing a factory reset using the reset switch. See #4 on page 8

To reset:

- Power off CDU (Disconnect power plug)
- Push and hold the reset switch (you will feel it click when pressed)
- Power on the device
- Hold the reset switch in for 20 seconds
- Release the reset switch and it will factory reset the networking configuration and reboot.

During boot the device will:

- Assign a static IP address (192.168.1.200)
- Request a DHCP address and listen for an answer
- When an answer is received it will switch to the DHCP assigned address and monitor for changes.

If you have the CDU plugged directly into a **Network Switch** without **DHCP** the CDU will use a default network configuration of IP: 192.168.1.200 GW:192.168.1.1 Mask: 255.255.255.0. This will allow a computer on the same subnet to be able to talk to the CDU without a DHCP server.

Having a Router to provide the DHCP server in your environment (network router does this as you know) makes life easier.

- S O L U T I O N S ——

No Router/DHCP Info

If you don't have a DHCP server then you need to connect to the CDU and set a static IP on it. To connect the device, you will get 192.168.1.200 as a default address and then you will need to configure the computer to be on the same subnet.

(192.168.1.XXX and 255.255.255.0) and have a unique address like 192.168.1.100. All this is done using Properties and selecting the IPV4 settings.

Ethernet Status X	Ethernet Properties X	Internet Protocol Version 4 (TCP/IPv4) Properties
eneral	Networking Sharing	General
Connection IPv4 Connectivity: No Internet access IPv6 Connectivity: No network access IPv6 Connectivity: No network access	Connect using:	You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.
Duration: 01:02:14	This connection uses the following items:	Obtain an IP address automatically
Speed: 100.0 Mbps Details		IP address: Subnet mask: Default gateway:
Sent — Received	Microsoft LLDP Protocol Driver Microsoft LLDP Protocol Driver Internet Protocol Version 6 (TCP/IPv6) <	Obtain DNS server address automatically OUse the following DNS server addresses:
Bytes: 789,168,796 8,654,513,144	Install Uninstall Properties	Preferred DNS server:
Properties Disable Diagnose	Transmission Control Protocol/Internet Protocol. The default wide area network protocol that provides communication across diverse interconnected networks.	Validate settings upon exit Advanced
Close	OK Canad	OK Canc

You will then be able to talk to the CDU and set the IP to something you want. If you have 2 CDU's, you will need to open the web-based browser and disable the DHCP then change the IP address to something else (IE: 192168.1.201) then the second one can be the default

Hostname: IIT682719E18BBB				FDS-CDU-E
HOME DEVICE INFO	SUB BO	ARDS SETT	INGS	ADMIN
	Device Info	ormation		
	Board Name:	IIT682719E18BBB		
	Serial Number:	682719E18BBB		
	Board Type:	FDS-CDU-E		
E	Board Location:	1		
	Board Usage:	1		
В	oard Firmware:	v2.6.2		
	Build Date:	Jul 20 2020		
	Stack Version:	v5.42		
	IP Address:	192.168.1.200		
i ii	nterfaceIT Port:	10346		
Currer	nt Connections:	0		
Conn	ected Devices:	1		
Copyright ©	2012 - 2020 TEKWo	rx Limited. All rights reserve	d.	

Hostname: IIT682719E18BE	В			FDS-CDU-E
HOME D	EVICE INFO	SUB BOARDS	SETTINGS	ADMIN
CAUTION: Inc	orrect settings r	nay cause the device	to lose network conne	ectivity.
	Network		Miscellane	ous
Host Name	IIT682719E18	BBB	Board Location:	1 🗸
MAC Address	68:27:19:E1:8	BB:BB	Board Usage:	1 •
Enable DHC	Р			
IP Address	192.168.1.20	D		
Gateway	192.168.1.1			
Subnet Mask	255.255.255.	0		
Primary DNS	192.168.1.1			
Secondary DNS	0.0.0.0			
	Copyright © 2012	Save Configuration	rights reserved.	

– SOLUTIONS ——



Sim-Avionics shown on the screen

_____ S O L U T I O N S _____

	E Z ALT DDD ON SPD 7 /0. 798 D TRANS 0 /1 0000 D RESTR - /	CON	CLB 	1/ -/ TRAN 1800 MAX 21	3 AT S ALT DØ ANGLE	00000
DU	AL FMC 0	P RES	STORE	D		•
INIT REF	RTE	DEP ARR	ATC	VNAV	-BRT+	G
FIX	LEGS	HOLD	FMC COMM	PROG	EXEC	In
MENU	LIMIT		B	C	DE	21
PREV PAGE	NEXT PAGE	E	G	•		MS
	2 3	K	0	M [G
	5 6	P	Q	R	S T	FST
07	8 9	U	v	W	X Y	0
90	0 7	Z	SP	DEL	/ CLR	ſ



Left to right:

L Position – IBL constantly ON (*set to maximum*) Used on a desktop C Position – External IBL from PWM dimmer.

R Position - External IBL from DC voltage regulated dimmer.

For IBL with LED lights FDS uses PWM dimmers > B787 and B777 for example.

FDS MX series that have LEDs IBL panels will use it too.

For IBL with incandescent bulbs we are using voltage regulators as dimmers. Their output provides constant voltage that can be adjusted from 0 to 5V trough the dimming pot.

- S O L U T I O N S -





- 1. HDMI port
- 2. Screen switches w/indicator LED
- 3. Ethernet jack
- 4. Reset switch
- 5. Power jack (12VDC)
- 6. Backlighting mode switch
- 7. Backlighting remote IBL jack (keyboard lighting)

- S O L U T I O N S ——



Wires connected to the back of the CDU

Note: Screen buttons are only for the LCD and the power button doesn't control the whole CDU.



бнтреск

Pin1 – DC voltage from "0 to 5V" from voltage regulated dimmer **OR** "PWM" from PWM dimmer.

Pin2 – GROUND

<u>NOTE:</u> There are several versions of Dimmers and applications, please follow the instructions on the following pages based on your set-up.

— SOLUTIONS ——

Original IBL Dist Boards Only (Includes Expansion Board)



— SOLUTIONS ———

Original IBL Dist Boards Only (Includes Expansion Board)



Note the orientation of the wires.

White to GND Gray to 5V



*Green Connector is attached to the CDU when shipped.



Remove the White wire from the 4 Pin Connector and strip the wire and connect to the G (GND) on the DIST Board.

This will control the CDU Backlighting when the Selector is on the "C" position.



- SOLUTIONS ------

New 12V IBL Dist Boards (Includes Expansion Board)



— SOLUTIONS ——

New 12V IBL Dist Boards (Includes Expansion Board)



Note the orientation of the wires.

Gray to GND White to 5V



*Green Connector is attached to the CDU when shipped.



Connect the 4 Pin Connector to the DIST Board. (Pedestal IBL Dimmer)

This will control the CDU Backlighting when the Selector is on the "R" position.



Stand-Alone CDU Backlighting



Includes: PMDG PSX

When using as a desktop Trainer.

Allows the CDU key backlighting to be on all the time (No dimming) This will control the CDU Backlighting when the Selector is on the "L" position. Turn off the power to the CDU when not using the CDU.



- S O L U T I O N S -



Desktop feature with rubber feet allowing easy access to the CDU for desk use. 6 x DZUS fasteners for DZUS rail mounting in FDS MIP and Pedestal products.



Power Supply with adapters, Ethernet Cable supplied along with an IBL Cable for CDU Key Backlighting.

SOLUTIONS-

Test Module

Drivers located <u>here</u> for the InterfaceIT Module Manager





Check the TEKWorx Website for updates and other FDS related drivers <u>here</u>

We offer limited support for PMDG software, the following software is designed to use with P3D and at this time it is <u>NOT</u> available for MS2020.

Please refer to the FDS Forum/Interface Products here

The CDU Module has a test module that will provide a graphic showing switch presses and LED's. Screen will show up once plugged into a PC and will turn on and then off unless the PC is turned on. You will see your Desktop on the screen.

Download and install the InterfaceIT Module Manager, leave the Folder location as selected by the installer. You will want to locate the folder and create a shortcut to your Desktop for easy access. Once started (After configuration) it shows up in the "Hidden Icons" in the Taskbar. Left –click then right-click on the icon. See page 6 and 7.

interfaceIT Module Manager		-	-		×
Welcome to the interface Wizard	IT Module N	Manager Se	tup T	сî) ЕКW	ORX
The installer will guide you through the s computer.	teps required to inst	all interfaceIT Moc	lule M	anager oi	1 your
WARNING: This computer program is p Unauthorized duplication or distribution or criminal penalties, and will be prosec	rotected by copyrig of this program, or a uted to the maximun	ht law and internati ny portion of it, may n extent possible u	onal tı / resu nder t	reaties. It in se∨eri he law.	e civil

🞲 interfaceIT Module Manager	- 🗆 X
Select Installation Folder	<tekworx< th=""></tekworx<>
The installer will install interfaceIT Module Manager to the following folder.	
To install in this folder, click "Next". To install to a different folder, enter it belo	ow or click "Browse".
Eolder:	
C:\Program Files (x8b)\TEKWorx Limited\interfaceIT Module Manager	Browse
	Disk Cost
< Back Next >	Cancel

Default Folder installation location in Program Files (x86)

Once started it shows up in the "Hidden Icons" in the Taskbar. Left – click then right-click on the icon.



Interfacel™ Module Manager Configuration

CDU Settings			₽
Available Modules		✓ Configure	
Devices			
Device	Туре	Assignment	
NOTE: Double click item assignment to		Add Remove	
		Save Can	rel

 \times



This allows you to access the following pages in the Module:

- Status
- Configure
- About
- Exit

interfacelT[™] Module Manager Configuration

ailable Modules Fest Module - Ethernet CDU Controller		✓ Configure
vices		
Device	Туре	Assignment
IIT801F12889B17	Ethernet	Not Assigned V
		Not Assigned
		CDU 1
		CDU 2 CDU 2
		0005
OTE: Double click item assignment to		Add Remove

Test Module feature of the software

Devices	Test Module Configuration X	
Device IIT801F12889B17	Show switch press only (leave switch green in GUI)	
	OK Cancel	
NOTE: Double click item	assignment to Add Remo	ove

Checkbox will leave the switch that is pressed Green ON in the CDU GUI. All the switches will be Green when testing the keyboard.

Unchecked will only show the switch that is pressed (will flash)

📴 Ethernet CDU Test Module - Device 8952599 - Typ	—
---	---



📴 Ethernet CDU Test Module - Device 8952599 - Typ... 🛛 —



 \times

interfaceIT[™] Module Manager Configuration

4 CDU Settings			₽
Show Status Page on Launch			
Load Delay (sec): 0			
Enable Logging (requires a restart)			
Open Location			
		_	
	Save		Cancel

Advanced Test settings including Load Delay and logging

 \times

There are separate manuals available for the following Avionics Suites:

- Sim-Avionics
- ProSim B737
- PMDG

More expected as they become available:

- ProSim A320
- PSX (Same as the USB Version)

Link to the X-Plane B737NG Zibo Mod

Link in the Forum is <u>here</u>

*Support is only in the X-Plane Forum with the Zibo Mod Team.

Setting up Static IP Addresses:

When you connect to the web interface of the device you can configure a static IP address. You just need to boot the device and connect with a computer that is on a 192.168.1.0/24 network (ie 192.168.1.10). CDU defaults to 192.168.1.200

Uncheck the Enable DHCP box

Enter the IP Address you wish to use.

*Note be aware that conflicts are possible if the new IP Address is already in use.



Accessing the CDU in the Web Interface:

Enter the IP Address of the CDU in a web browser.





Multiple Tabs:

Home	Device Info	Sub Boards	Setting	Admin
nome	Device into	Jub Dourus	Jetting	Admin

Device Info shows:

- IP Address
- Board Firmware (Can be updated by the customer if required)
- Board Serial Number

Settings:

 Device name can be renamed (NO spaces IE: CA_CDU) to simplify device names. Click "Save Configuration". A power reboot of the device is required. Unplug power.

Terminology

CDU	Computer Display Unit
LSK	Line Select Key
FDS	Flightdeck Solutions Ltd
GFX	Video Graphics Card
IBL	Integrated Back Lighting for FDS Panels
MIP	Main Instrument Panel
ОН	O ver h ead
PED	Center Aisle Stand or Pedestal
SBC	SYSBoard Controller
TQ	Throttle Quadrant
Ethernet	Technology that connects wired local area networks (LANs) and enables the device to communicate with each other through a protocol which is the common network language. Devices are connected to a Network Switch and each device will have its own IP Address.

Check that you are using the latest version of the manual, version and date are located below at the bottom of the manual pages.