

How-to PROFIBUS capture with xxGate-PB/PA/DP

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1) Prerequisites

1. Update firmware to the newest version. Old firmware has no 'Capture' function. (below is a table with the current firmware versions 12.07.2023)

pnGate	V1.30
mbGate	V1.20
epGate	V1.10

pnGate PB	Information	Settings	Diagnosis	PROFINET IO	PROFIBUS
Views	Device / Syste	m			
System	Serial Number	182600101			
	Firmware Versio	on l			1.30.00.11588
License	Bootloader Vers	ion			1.04.01.5345
	Factory Version				1.03.00.5345
About	Hardware Version	on			1.00

 A license is required to enable the capture feature on the gateway. Without a license the "Capture" button will not be visible. Product development can create the license for you. (provide them the Host ID of the gateway) The license remains "hidden" after import, meaning that to verify if it was installed or not, check if the "Capture" button is visible (login as diagnosis user).



3.

mbGate PB	Information	Settings	Diagnosis	MODBUS TO	CP PROFIBUS
Views	Capture				
Settings	Interface		Actio	ons	Running
Logfile	PA Channel 0		start	stop	
Threads	PA Channel 1		start	stop	
Status	DP Channel 0		start	stop	
Capture					

Example screenshot with Capture button visible.

Example screenshot of where to find Host ID.

mbGate DP	Information	Settings	* •	Restart Device	Logout administrator	}	logout in 9	
Views	De	evice / System	1					
		rial Number		190500114				
System		Firmware Version		1.20.00.8756				
Licence	Bo	otloader Versio	n	1.04.01.3556				
License	Fa	ctory Version		1.03.00.6284				
About	Ha	Hardware Version		1.00				
	Sy	stem ID		mbGate DF	þ			
		Host ID						

4. Login as the diagnostics user. Otherwise the capture feature and "Capture" button will not be visible.
User name: diagnosis
Password: ?<fJ#\/\$eB2qtGd*



	and the second s	
administrator (Administrator)	config (Maintenance)	view (Observer)
User name:	diagnosis	
Password:	Login	

2) mbGate and epGate

• On mbGate and epGate the PROFIBUS side goes active directly after the PROFIBUS parameters are applied. Therefore, it is possible to start capturing as soon as the prerequisites mentioned above are met.

3) pnGate

The pnGate is controlled from PROFINET side and will not go active on PROFIBUS side unless it
has a working project and was configured correctly by the PROFINET controller. The capture file
*.rpb would be created anyway, but the file might be "empty" containing no datagrams (only a
header structure).

4) Capturing

1. Select which Channel to capture the datagrams from.





Example screenshot in which DP Channel 0 is selected for capture by clicking "start".

Example screenshot below where a capture is running. Click "stop" and a dialog box should appear where you can select where to save the created capture file. This might differ between some web browsers, otherwise check your computers "Download" folder for the file.





The recordfile (*.rpb) can be found in the windows download section.

Example pop-up from Edge web browser.

Downloads	>
PROFIBUS-capture.rpb	

5) Analyzing the capture file

- 1. Install the Softing "PROFIBUS Diagnostics Suite" which is available free of charge. The captured file will be in *.rpb format which is recognized by the software and can be opened with the Diagnostics Suite.
- 2. Example of a record file:

This example shows a negative response of slave "18" to the INITIATE of Master "0". Probably the slave supports one C2 connection only.

∕ ⁹⁹⁹ / ₉₉₉ 6435Initiate-neg.RS.rpb								
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Frames Protocol								
No.	Time Stamp	Address	Protocol	Primitive	Service	Data		
3,375	0	1.50 -> 18.48	DP	Request	C2 IDLE	48		
3,376	0	1.50 <- 18.48	FDL	Response	SC			
3,384	804	1.50 -> 18.48	DP	Request	C2 DATA TRANS			
3,385	0	1.50 <- 18.48	FDL	Response	SC			
3,392	672	1.50 -> 18.48	DP	Request	C2 DATA TRANS			
3,393	0	1.50 <- 18.48	DP	Response	C2 IDLE	48		
5,441	195629	1.50 -> 18.48	DP	Request	C2 WRITE	5F 01 6C 09 82 97 01 4A 5D 03 03 00 03		
5,442	0	1.50 <- 18.48	FDL	Response	SC			
5,450	803	1.50 -> 18.48	DP	Request	C2 POLL			
5,451	0	1.50 <- 18.48	DP	Response	C2 WRITE	5F 01 6C 09		
6,025	54578	1.50 -> 18.48	DP	Request	C2 READ	5E 01 6C 80		
6,026	0	1.50 <- 18.48	FDL	Response	SC			
6,031	558	1.50 -> 18.48	DP	Request	C2 DATA TRANS			
6,032	0	1.50 <- 18.48	FDL	Response	SC			
6,042	893	1.50 -> 18.48	DP	Request	C2 DATA TRANS			
6,043	0	1.50 <- 18.48	DP	Response	C2 READ	DE 80 F2 00		
6,435	37553	0.50 -> 18.49	DP	Request	C2 INITIATE	57 00 00 00 27 10 01 00 00 00 00 00 00 02		
6,436	0	0 <- 18	FDL	Response	ACK NEG RS			
6,610	16661	1.50 -> 18.48	DP	Request	C2 READ	5E 01 6C 80		
6,611	0	1.50 <- 18.48	FDL	Response	SC			