

DPM SERIES MM-WAVE POWER METER



WEB INTERFACE User reference

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While every effort has been made to verify operation of this product with many different mm-wave products and communication networks, ELVA-1 makes no claim of compatibility between its products and other vendors' equipment. It is assumed that users have thoroughly evaluated this product's performance in the communications and other engineering environment in which it will be used.



2. USER REFERENCE

2.1 CONNECTING TO DPM SERIES POWER METER

The DPM could be connected to a local network using a network cable with an RJ-45 connector. A default IP address is pre-configured for the DPM (192.168.127.191), and this IP address can be modified later within the web interface.

1. To connect to the DPM device, enter the DPM's IP address into the browser's address bar [refer to marker #1 in Fig. 1].

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$\leftarrow \ \ \rightarrow \ \ C$	○ <u>8</u> 192.168.127.191		☆	© එ ≡
DELY Millimeter Wave D	A-1 Division	PowerMete	er	2 Version:0.0.9
PowerMeter Settings	Status	Disconnected	Connect	-
	Range, GHz	50.00 - 51.00		
	Frequency, GHz	50 0	Set	
	Units	mW/uW v	3	
	Power:		Start	
	Power meter		/	
	cmd Read Clear Save	Send CMD		
				~

Fig.1 Web interface start page

The software version is indicated in the upper right corner [marker #2, Fig.1]

Please note that not the all buttons are active after the page loads [marker #3, Fig.1]



2.2 POWERMETER TAB

 Click the 'Connect' button to proceed. The 'Disconnect' status will change to 'Connect' [refer to marker #1 in Fig. 2], the operating frequency range will be displayed [refer to marker #2 in Fig. 2], and all DPM functions will become available.

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DELVA Millimeter Wave Div	1-1 ision	PowerMete	r	Version:0.0.9
PowerMeter	Status	Connected 1	Disconnect	-
Settings	Range, GHz	50.00 - 51.00 2		
	Frequency, GHz	50	Set	-
	Units	mW/uW ~ 3 4		
	Power:		Start 5	-
	Power meter			
	cmd	Send CMD		_
	Read Clear Save			

- Fig. 2. Web interface after the 'Connect' button has been pressed
- 3. Set the frequency [marker #3, Fig. 2]. There are two ways to do this:
 - a. Use the arrows to change the frequency by the step specified in Settings [marker #4, Fig. 2].
 - b. Enter the desired frequency value in the 'Frequency' field and press 'Enter' on the keyboard or click the 'Set' button in the web interface.
- 4. You can change the units of power measurement by selecting from the dropdown list [marker #1, Fig. 3].
- 5. Click the 'Start' button to begin displaying the measured power [marker #5, Fig. 2].
- 6. Click the 'Stop' button to end the measurements [marker #1, Fig. 4].
- You can send a command from the User Manual Appendix list without requiring a line ending symbol. After entering the command in the 'cmd' field [marker #1, Fig. 5], click the 'Send CMD' button [marker #2, Fig. 5].
- 8. The command response will be displayed below [marker #1, Fig. 6].



Mm-Wave HS Power	Meters × +			~	101	3	X
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DELIA- Millimeter Wave Divisi	on	PowerMeter			Vers	ion:0.(0.9
PowerMeter	Status	Connected					
Settings		Disconnect					
	Range, GHz	50.00 - 51.00					
	Frequency, GHz	50.3 Set					
	Units	mW/uW ~ mW/uW 1					
	Power:	- Stop					
	Power meter						
	cmd	Send CMD					
	Read Clear Save						~

Fig.3. Changing the units of power measurement

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	4-1	Power	Meter		Version 0.0.9
PowerMeter	Status	Connected	Disconnect		-
Settings	Range, GHz	50.00 - 51.00	Constant State		-
	Frequency, GHz	50.3	Set		- 1
	Units	mW/uW ~			
	Power	73.70 uW	Stop 1]	-
	Power meter				
	cmd	Serv	d CMD		_
	Read Clear Save				

Fig.4. Power measurement during operation



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DELV Millimeter Wave D	4-1 ivision	PowerMeter	•	Version 0.0.9
PowerMeter	Status	Connected	Disconnect	-
Settings	Range, GHz	50.00 - 51.00		-
	Frequency, GHz	50.3	Set	
	Units	(mW/uW v)		
	Power.	49.89 uW	Start	·
	Power meter			
	read?	Send CMD	2	
	Read Clear Save			J

Fig.5. Using command line (CMD)

	// II			- 0
		PowerMet	ter	Version 0.0
ewert teter				version 0.0.
ettings	Status	Connected	Disconnect	
	Range, GHz	50.00 - 51.00		
	Frequency, GHz	50.3	Set	
	Units	mW/uW v		
	Power:	49.89 uW	Start	
	Power meter			
	read?	Send CMD		
	27.21 UW 1			
	Read Clear Save			
				Î

Fig.6. Command response

9. Read/Clear/Save buttons and measurement result textarea:

The following functions are assigned to the buttons below,

- **Clea**r: This option clears the contents of the measurement result textarea. Note that this textarea may not be empty at first start; this is not an error and is associated with testing and configuring the device. For correct operation, click the 'Clear' button [marker #1, Fig. 7].
- **Read**: To display the set frequency and measured power value in the textarea, click 'Read' [marker #2, Fig. 7]. To display multiple measurements, simply press the 'Read' button successively.
- **Save**: Values displayed in the measurement result textarea can be saved to a file using the 'Save' button [marker #3, Fig. 7]. Refer to the dialog box shown in Fig. 8 for further details.

😻 🚺 Mm-Wave HS Power N	Aeters × +			~	0	ð	×
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PowerMeter	Status	Connected	Disconnect				^
Schurgs	Range, GHz	50.00 - 51.00					
	Frequency, GHz	50.5	Set				
	Units	mwww v					
	Power:	49.89 uW	Start				
		~488/888-8932).	Stan				
	Power meter						
	read?	Send CME					
2	27.21 UW						
	Read Clear Save						
	50.300 GHz 44.22 UW 50.400 GHz 32.88 UW						
	50.500 GHz 41.95 UW						
							~

Fig.7. Read/Clear/Save buttons



Organize 🔻 Ne	w folder		•	0
🚖 Favorites	Name	~	Date modified	3
		No items match you	r search.	
📃 Desktop				
	learning and the second s			
	•			
File <u>n</u> ame:	DPM_results.txt			÷
File <u>n</u> ame: Save as type:	OPM_results.txt Text Document (* txt)			•

Fig.8. File Save dialog box

2.3 SETTINGS TAB

The following controls are available at the 'Settings' tab:

1. **IP** [marker #1, Fig. 9]:

- The default DPM IP address is 192.168.127.191. To change the IP address on your choice, enter the desired value from the keyboard [marker #2, Fig. 9] and press the 'Set' button [marker #3, Fig. 9]. An error dialog box will appear [Fig. 10].

Enter the new DPM IP address in the browser address bar [marker #1, Fig. 1].

2. Step:

- This setting determines the frequency tuning step using arrows [marker #4, Fig. 2]. You can select values from the dropdown list [Fig. 11].

3. Average Count:

- This parameter represents the number of measurement averages used in power calculations. The range of values is 1-250, with a default value of 50, and a recommended value of 50 [Fig. 12].

4. FECC Table 1/2 [marker #4, Fig. 11]

- These tables contain calibration coefficients used to account for frequency-dependent sensitivity of the detector. Usually, one mode (Tab1=Tab2) is provided in the DPM, while the other mode is used in DPMs with or without additional attenuators and couplers.



5. **Beeper** [marker #5, Fig. 11]:

- When switched ON, the device emits a beep sound each time it requests an action.

6. Software Update [marker #6, Fig. 11]:

- To perform a software update, press the 'Browse' button [marker #7, Fig. 11] to select the update file.

- In the software update dialog box, select the file [marker #1, Fig. 13], and click the 'Open' button [marker #2, Fig. 13]. The file must be named "dpm.zip."

- Then, click the 'Submit Query' button [marker #8, Fig. 11]. Subsequently, an information page will appear [Fig. 14]. Please wait until DPM device restarts.

- The end of the update process is indicated by a blinking symbol '*' on the DPM display [Fig. 15] (if there was no connection with the DPM) or its disappearance (if the connect button was pressed).

Note: There is a 'Connect' button on the PowerMeter tab. The firmware can be updated with or without this button pressed. If 'Connect' is pressed, the DPM display shows an '*' indicating remote operation mode. Option: if the DPM has been placed in remote mode by pressing the 'Connect' button on the PowerMeter tab, the end of the update process is indicated by the disappearance of the '*' symbol on the display. If the DPM has been in Manual mode, the end of update is indicated by the appearance of the '*' symbol and its continued disappearance.

-	Afterward,	reload	the	web	page	by	entering	the	DPM	IP i	n the	address	bar	[marker	#1,
Fig.	1].														

Settings IP 192.168.127.191 2 1 NetMask 255.255.255.0 1 1 Seti 3 0 0 1 Step, GHz 0.1 v 100 Set 1	1
NetMask 255.255.0	
Set 3 DPM Step, GHz 0.1 ~ Average count 100 Set	
DPM Step, GHz 0.1 v Average count 100 Set	
Step, GHz 0.1 V Average count 100 Set	
Step, GHz 0.1 v Average count 100	
Average count 100 Set	
FECC Table 1	
FECC Table 2	
Beeper 5	

Fig.9. Settings tab controls



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$\leftrightarrow \rightarrow c$	0 192.168.127.191/#			ជ	ල එ ≡
Settings				-	^
	IP		192,168,127,191		
	NetMask		255.255.255.0		
	Set				
	DPM				
	Step, GHz 192.168.	127.191			
	Average count	tion refused			
	FECC Table 1				
	FECC Table 2	0			
	Beeper				
	Software update				
	Browse No file selected.				
	1	Submit Query			
					~

Fig.10. Connection error message

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$\leftrightarrow \rightarrow G$	○ 👌 192.168.127.191/#				© ฏ ≡
DEL/	A-1	P	owerMeter		Version:0.0.9
PowerMeter	Network				
Settings	IP		192.168.127.191		-
	NetMask		255.255.255.0		_
	Set DPM				
	Step, GHz Average count	0.1 ~	P. Pat		-
	FECC Table 1	0.05 0.1 0.2			
	FECC Table 2 Beeper	0.5 0			
		5			~

Fig.11. Frequency tuning step values



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Millimeter Wave I	A-I Division	P	owerMeter		Version:0.0.9
PowerMeter	Network				
Settings	IP		192.168.127.191		-
	NetMask		255.255.255.0		
	Set				
	DPM				
	Step, GHz	0.1 🗸			-
	Average count	 1-250	Set Set		
	FECC Table 1	۲			
	FECC Table 2	0			
	Beeper				

Fig.12. Average count setup

 Sile Upload Sile Upload Sile Upload Sile Upload 	TA (E:) ► DPM ► v0.0.9 ►	 ✓ ✓ ✓ Search v0.0.9 	2
Organize 🔻 New	folder	₩ • 🗅	0
🚖 Favorites	Name	Date modified 2023-09-05 10:05	Si
	File <u>n</u> ame: Thumbs.db	✓ All Files (*,*)	

Fig.13. Software update dialog box





Fig.14. Information page after software update

090.00	GHz	*	1
0.000 i	, WL		
	/		

Fig.15. Check for symbol * on the DPM display

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