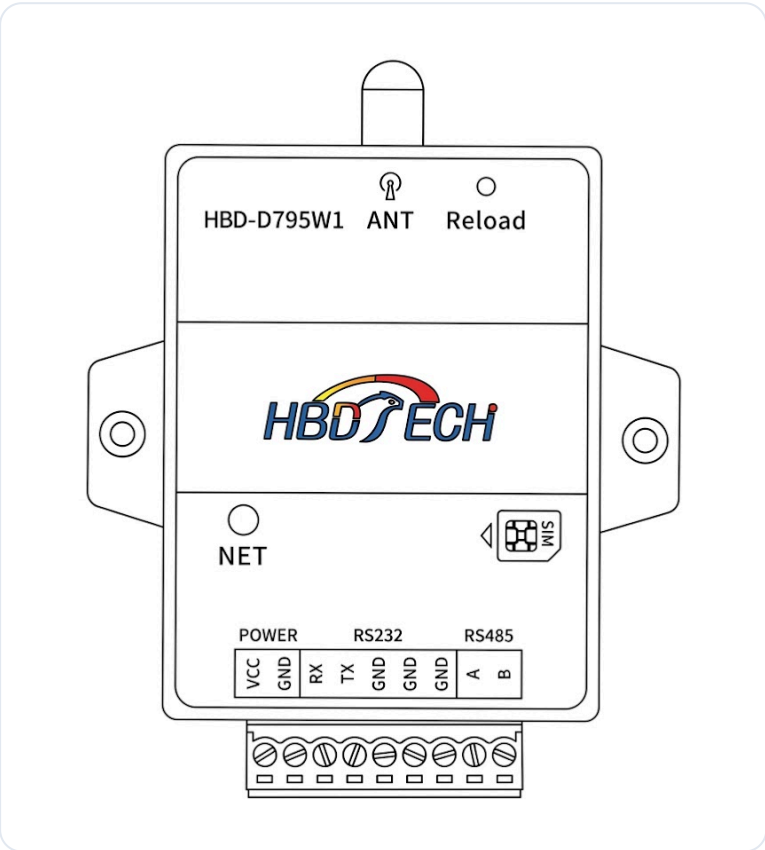
HBD-D795W1

Global 4G Remote Monitoring Module

User Manual · For 550 series inverters · Cloud VFD platform



V0.8 (English) · 2026-09-14

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1 Safety Precautions

Read this section carefully before use. Improper operation may damage the equipment or cause injury.

1. **Wire with power off**: all wiring and SIM card insertion/removal must be done with the power disconnected.
2. **Power supply**: the supply voltage must stay within **DC 5~36V**. Maximum power consumption is about **10W** — the power supply must have sufficient headroom. **Do not power the module from a computer USB port (5V/0.5A) or other low-power sources**; insufficient power causes repeated reboots or failure to register on the network.
3. **Antenna**: connect the 4G antenna before powering on. Keep the antenna away from metal objects and strong interference sources; never transmit for extended periods without an antenna.
4. **ESD protection**: the interfaces withstand contact discharge ±8kV and air discharge ±15kV, but avoid direct static discharge to the terminals.
5. **Environment**: operating temperature -35°C ~ +75°C, humidity 5%~95%RH (non-condensing). Avoid damp, corrosive, strongly vibrating or explosive locations.
6. **No disassembly**: there are no user-serviceable parts inside. Unauthorized disassembly voids the warranty. Operations other than the Reload key and USB port must follow HBDTECH guidance.

2 Product Introduction

The HBD-D795W1 (hereinafter "the module") is a **4G remote monitoring module for 550 series inverters**. It connects to the inverter via **RS485** and accesses the **Cloud VFD platform** over **4G global bands**. From a phone or PC web browser, you can view inverter live data (running status, output frequency, output current, output voltage, etc.) from anywhere, and remotely **start / stop / set the frequency / reset faults**.

All parameters (server address, serial settings, etc.) are configured at the factory. On site, you only need to **wire it up, insert a SIM card and attach the antenna** — no configuration is needed.

```
[Phone / PC · Cloud VFD] ←—Internet over 4G (TLS encrypted)—→ [Cloud server] ←—4G—→ [HBD-D795W1] —RS485 9600/8/N/2—→ [550 series inverter]
```

3 Model Naming

Model	Network	Market
HBD-D795W1	4G Cat1 global (4G + 2G)	Overseas / worldwide (check local carrier bands, see Section 5)

Naming rule: **HBD** (brand) - **D795** (remote monitoring module series) - **W1** (**W**orldwide version).

4 Key Features

1. **Global 4G + 2G bands**: LTE-FDD / LTE-TDD / GSM full-band coverage for major overseas carriers;
2. **Cloud VFD ready**: log in from a phone or PC browser to view data and control the inverter remotely, with **7 UI languages**;
3. **Factory pre-configured**: serial and server parameters are fixed at the factory — zero configuration on site;
4. **Wide voltage input**: DC 5~36V, tolerant of field supply fluctuations;
5. **Industrial protection & temperature**: ESD contact ±8kV / air ±15kV, -35°C ~ +75°C operation;
6. **Hardware watchdog**: automatic recovery from abnormal states — stable for unattended sites;
7. **Easy maintenance**: hold the Reload key for 7 seconds to restore factory settings.

5 Technical Specifications

Category	Item	Specification
Wireless	Network standard	Cat1 global 4G + 2G
Wireless	LTE-FDD bands	B1 / B2 / B3 / B4 / B5 / B7 / B8 / B12 / B13 / B17 / B18 / B19 / B20 / B25 / B26 / B28 / B66
Wireless	LTE-TDD bands	B38 / B40 / B41
Wireless	GSM bands	850 / 900 / 1800 / 1900 MHz
Power	Supply voltage	DC 5~36V (about 10W max; power supply must have headroom)
Serial	RS485	1 port, **fixed at 9600bps / 8 / N / 2** (matches 550 series inverters, slave address 1); not user-configurable
Serial	RS232	Terminals reserved; not used in the standard application
Reliability	ESD protection	Contact discharge ±8kV, air discharge ±15kV
Reliability	Hardware watchdog	Supported
Environment	Operating temperature	-35°C ~ +75°C
Environment	Operating humidity	5%~95%RH (non-condensing)
Mechanical	Mounting	M3 screws through the two mounting wings
Mechanical	Dimensions	73 × 88 × 20 mm
Antenna	4G antenna	SMA external antenna connector
SIM	Card type	External SIM card slot (plug-in)

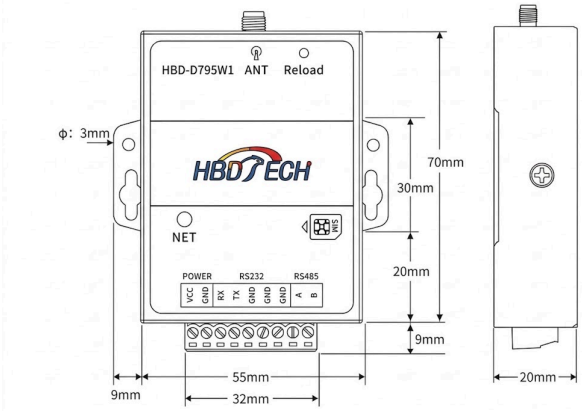
Band reference: Europe mainly uses B1/B3/B7/B8/B20/B28; the Americas mainly B2/B4/B5/B12/B13/B25/B26/B66/B28; Asia-Pacific mainly B1/B3/B5/B8/B40/B41. Actual availability depends on local carriers — verify the bands of your target country before purchase.

6 Appearance & Interfaces

Two enclosure options are available under the same HBD-D795W1 model (same PCB, interfaces and firmware):



Plastic enclosure — for standard environments with low interference



Metal enclosure — for complex industrial environments (dimensions in mm)

> **Enclosure selection**: the plastic enclosure suits standard environments with low interference; the **metal enclosure** is recommended for complex industrial sites with strong electromagnetic interference (e.g. inverter cabinets, motor rooms). Both versions share the same dimensions (73 × 88 × 20 mm) and Φ3mm mounting holes for M3 screws.

Location	Label	Description
Top	SMA antenna connector	Attach the 4G antenna; tighten before power-on
Front, upper	ANT / Reload	Antenna port marking and the **Reload key** (hold 7 seconds to restore factory settings)
Front, middle	HBDTECH	Brand logo; **mounting wings** on both sides (M3 screw holes)
Front, lower	NET	Status LED (see Section 7)
Front, lower	SIM slot	Insert the SIM card (see 8.2)
Bottom terminal block	POWER: VCC GND	DC 5~36V power input; VCC positive, GND negative
Bottom terminal block	RS232: RX TX GND	Reserved terminals; not used in the standard application. The two additional GND terminals on the silkscreen are spare grounds.
Bottom terminal block	RS485: A B	To the 550 series inverter RS485 terminals: **A to A, B to B**

7 LED Indicators

The blinking pattern of the status LED shows the device state:

Device state	LED pattern	Action
SIM card not detected	On 5000ms → off 5000ms (very slow)	Power off and re-insert the SIM card; make sure the card is active
SIM OK, but cannot register to the network	Fast blink, 100ms	Check the local carrier bands; tighten the antenna; make sure the card is activated
Registered, but not connected to the platform	Slow blink, 500ms period	Wait and retry; if it persists, contact HBDTECH support
Connected to the Cloud VFD platform	Slow blink, 1000ms period	Normal operation

Quick check: a slow blink about once per second means the module is connected to the platform; a 100ms fast blink means network registration has not completed — check the antenna and SIM card first.

8 Installation

8.1 Mounting

Fix the module to a mounting plate or inside a cabinet with **M3 screws through the mounting wings on both sides**. Keep it away from strong interference sources such as inverter power circuits and contactors. Inside a metal cabinet, lead the antenna outside to a location with good signal.

8.2 SIM Card

1. Insert the SIM card with the power **off**, in the correct orientation, pressed fully into place;
2. Make sure the IoT card / local carrier card is activated, with a valid plan and no overdue suspension;
3. Power on and watch the status LED complete the network registration process.

8.3 Antenna

Screw the supplied SMA antenna onto the connector and tighten it. Keep the antenna away from metal objects; inside a cabinet, lead it outside.

8.4 Wiring

Terminal	Connect to	Notes
VCC GND	DC 5~36V supply + / −	Mind the polarity; the supply must deliver ≥10W — do not power from a computer USB port
A B	550 series inverter RS485 terminals	**A to A, B to B**; if there is no response, try swapping A/B
RX TX GND (RS232)	—	Reserved terminals; not used in the standard application

> The inverter-side communication settings are fixed for this series (RS485 9600/8/N/2, slave address 1) and the module is pre-configured to match — **no settings are required on either side**.

9 Using the Cloud VFD Platform (Six Steps)

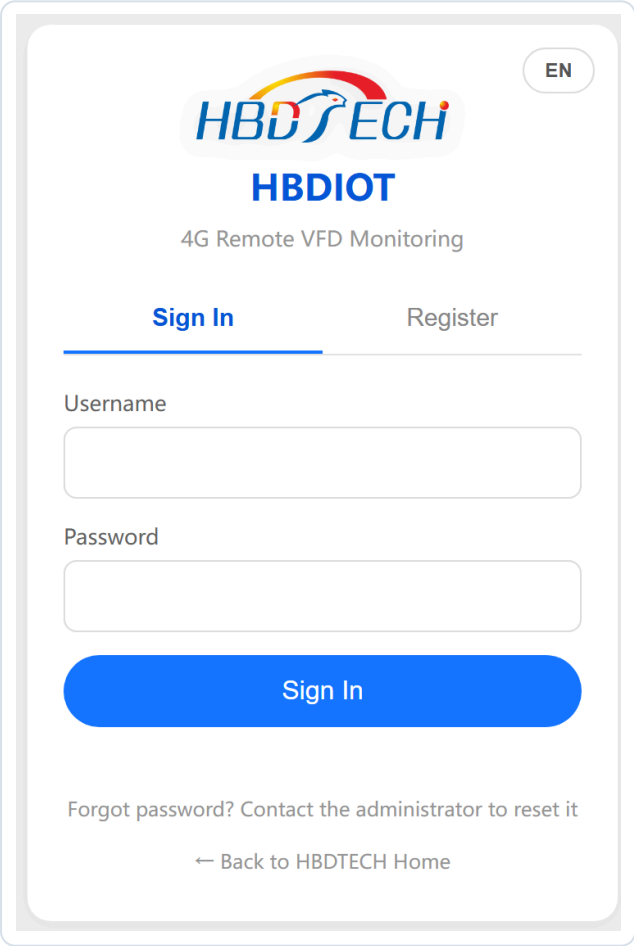
Your device has been registered on the platform by HBDTECH. You only need an account — obtained from HBDTECH / your distributor, or self-registered via the **Register** tab on the sign-in page (see 9.1) — then follow the steps below.

9.1 Log In

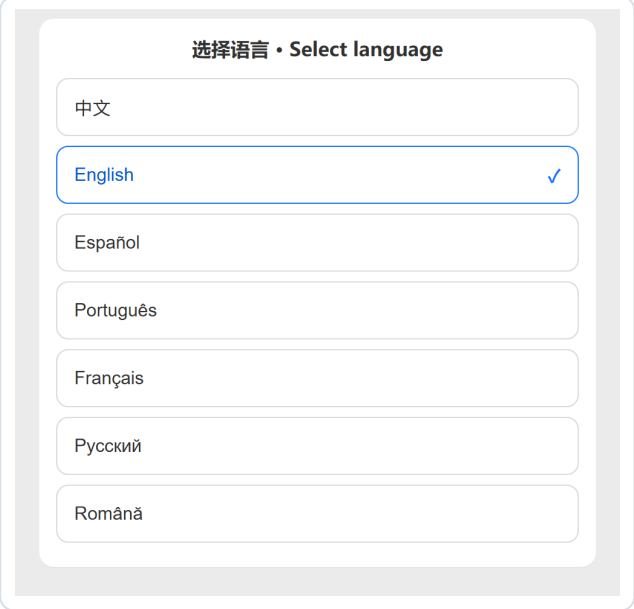
Open **https://www.hbdiot.com** in your browser (English site: **https://www.hbdiot.com/en**). Enter your **username** and **password**, then tap **Sign In**.

9.2 Choose Your Language

Tap the round language button at the **top-right corner** and pick your language (中文 / English / Español / Português / Français / Русский / Română — 7 languages). It takes effect immediately and is remembered.



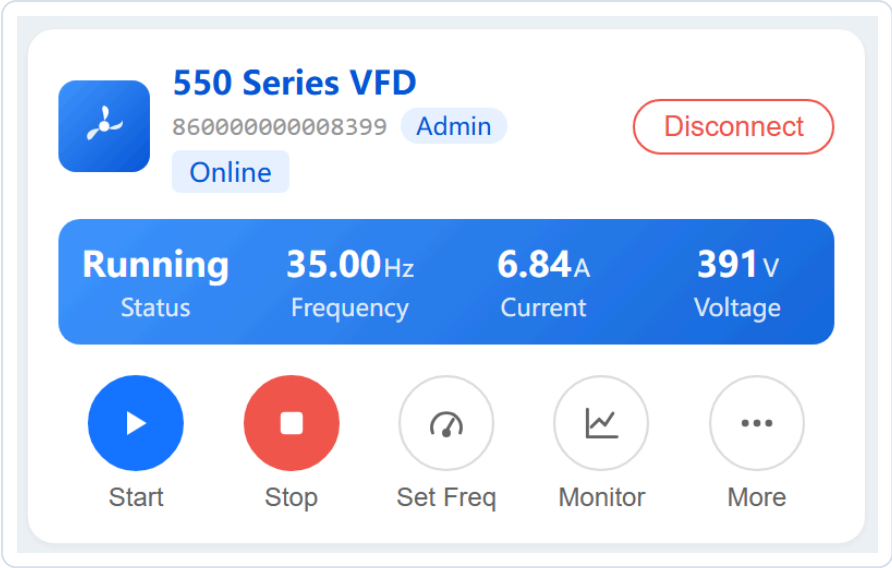
9.1 Sign-in page



9.2 Language selection (7 languages)

9.3 Connect the Inverter

On your device card, tap **Connect**. Once the badge shows **Online**, live data refreshes every 2 seconds: **status · frequency · current · voltage**.



9.3 Device card: live data and the Online badge after connecting

9.4 Start / Stop

Tap **Start** on the device card — the inverter starts and the status changes to running. Tap **Stop** — the inverter stops.

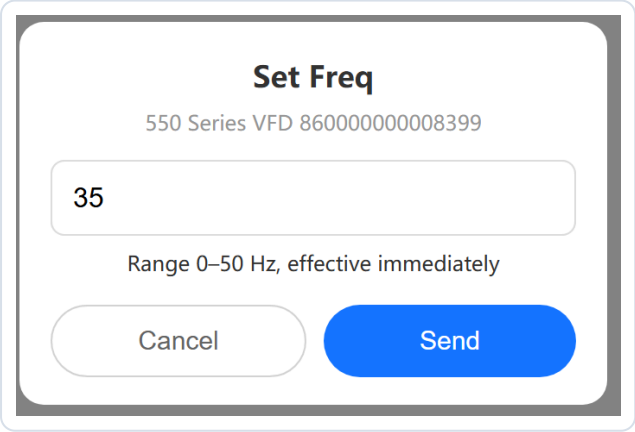
> ⚠ **Safety notice**: remote commands act immediately, just like the panel keys. Always make sure it is safe to start / stop the machine.

9.5 Set the Frequency

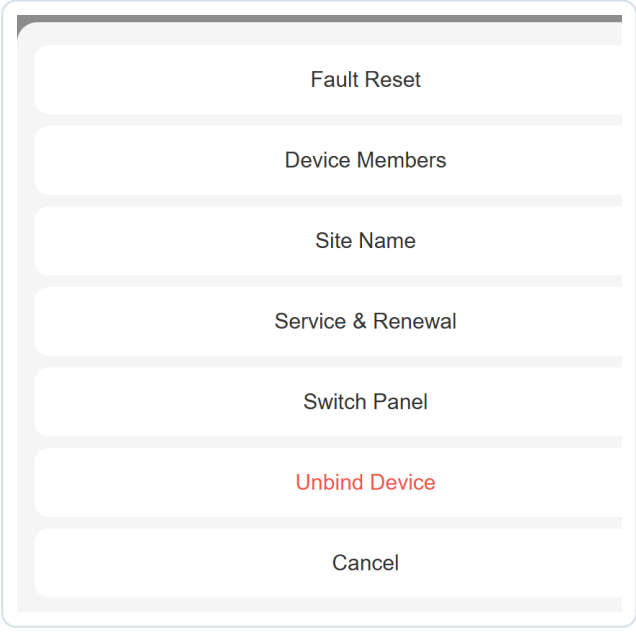
Tap **Set Freq**, enter a number from **0 to 50** (Hz), then tap **Send**. It takes effect **immediately**.

9.6 More Operations

Tap **More** on the device card: **Fault Reset** (clear the inverter fault after the cause is fixed), **Device Members** / **Site Name**, and **Unbind Device**. Tap **Monitor** for detailed data (DC bus voltage, set frequency) and the communication log. The password change is in **Profile** at the top-right corner.



9.5 Set the frequency (0~50 Hz)



9.6 More menu: Fault Reset / Unbind Device

10 Factory Reset & Upgrade

Operation	Method	Notes
Restore factory settings	**Hold the Reload key for 7 seconds**	Restores factory parameters (server and serial settings are factory-fixed); the module reconnects to the platform automatically
Firmware upgrade	USB pin header + BOOT key	Only with HBDTECH guidance; not required in normal operation

11 Troubleshooting (FAQ)

Symptom	Possible cause	Action
No response at power-on / repeated reboots	Insufficient power or voltage outside 5~36V	Use a supply rated ≥10W; do not power from a computer USB port
LED very slow blink (5s on / 5s off)	SIM card not detected	Power off and re-insert the SIM; check that the card is active
LED fast blink (100ms)	Cannot register to the network	Check local carrier bands; tighten the antenna; make sure the card is activated
LED 500ms slow blink, cannot reach the platform	Platform-side issue	Wait and retry; if it persists, contact HBDTECH
Device shows "Offline" on the platform	Power lost on site, or poor 4G signal	Check the on-site power supply and antenna; the badge recovers automatically
Inverter does not respond	RS485 A/B swapped	Try swapping A/B
Start has no effect	Inverter is in fault state	Use "Fault Reset" on the platform; if it persists, check the inverter wiring

If the problem persists, contact HBDTECH support (**support@hbdiot.com** · **www.hbdiot.com**) with: the device IMEI (on the label), the SIM card ICCID, the symptom, and the LED blinking pattern.

12 Certification & Compliance

Item	Content
Overseas certification	CE certification in progress

> ⚠ This device contains a radio transmitter. Do not change the transmitting frequency or increase the transmission power (including external antennas); do not change the intended use or environment. Dispose of the device according to local e-waste regulations.

13 Packing List

Item	Qty
HBD-D795W1 global 4G remote monitoring module	1
SMA 4G antenna	1
User manual / certificate of conformity	1
Power adapter (optional)	Per order

Appendix Version History

Version	Date	Changes
V0.1	2026-09-03	Initial draft based on the global-version hardware documentation
V0.3	2026-09-03	Rewritten for the 550 series application: HBD-D795W1 silkscreen product photo; DTU generic configuration and customization scenarios removed; factory-fixed serial parameters clarified (9600/8/N/2, not configurable); W1 = Worldwide confirmed; CE certified; platform usage rewritten as the six-step Cloud VFD guide
V0.4	2026-09-14	Launch revision: product photos updated to the current ANT-silkscreen hardware; sign-in address changed to the production HTTPS site www.hbdiot.com; SMS-alert mention removed (international SMS not yet supported); interface table corrected (ANT marking, spare GND terminals); support contact added; platform screenshots retaken on the current UI
V0.5	2026-09-14	Hardware specification table verified line-by-line against the official datasheet (network bands, power, environment, serial ports); product dimensions 73 × 88 × 20 mm added; certification status corrected to "CE certification in progress" (certificate not yet issued)
V0.6	2026-09-14	Metal enclosure option added to Section 6: same HBD-D795W1 model in two enclosures — plastic for standard low-interference environments, metal for complex industrial environments; HBD-branded metal-enclosure dimension drawing and enclosure selection guidance added
V0.7	2026-09-14	Cover page now uses the HBD-branded product line drawing (dimension drawing); no technical content changes
V0.8	2026-09-14	Cover line drawing replaced with the front-view product line art; no technical content changes (the dimension drawing remains in Section 6)

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