

Easy HD Expressway!

FV-800 Long-Range FPV Link Solution

COFDM Full-HD Video & C2 Data Links · 300+ KM Long-Range Link for UAV / USV



Overview

The FV-800 is a highly cost-effective solution for long-range HD video transmission in First-Person-View (FPV) applications. Built on advanced COFDM (Coded Orthogonal Frequency Division Multiplexing) technology, it delivers reliable, stable video even in challenging and dynamic environments.

Engineered for long-distance, high-speed mobile scenarios, the FV-800 maintains consistent, high-quality video performance — making it an ideal choice for both professional and hobbyist users who demand dependable operation under demanding conditions.

Beyond video, the FV-800 integrates a dedicated telemetry radio channel for full-duplex command and control (C2). It can be configured and controlled via AT commands and UDP through its UART or Ethernet port, offering flexible integration options.

Its video-broadcast capability makes the FV-800 an excellent Remote Video Terminal (RVT) source: an unlimited number of receivers can view the live feed simultaneously without causing network congestion — for example, the widely used ATAK terminal for real-time UAV video sharing.

Key Features

- ▶ **Wide Frequency Range** — Tunable across more than 400 MHz of operating range with professional-grade Modulation Error Ratio (MER).
- ▶ **Dynamic Channel Switching** — Remotely change the operating frequency on-the-fly to avoid interference or jamming.
- ▶ **Flexible Bandwidth** — Selectable channel bandwidth from 2 MHz to 8 MHz.
- ▶ **Versatile Interfaces** — Transparent UART, S-bus, RS-232 / RS-485 and Ethernet.
- ▶ **Anti-Eavesdropping Security** — Both AES-128 and AES-256 encryption supported.
- ▶ **Friendly Control & Configuration** — AT commands and UDP through the UART or Ethernet port.
- ▶ **Standard Video Interface** — RTSP / RTP unicast and multicast over Ethernet.
- ▶ **Mesh Network Support** — More than 16 nodes (IPs) for swarm-UAV applications.

Ordering Information

Model	Video Frequency	C2 Channel	PA (Video / C2)	Compatible C2 Radio
FV-800-2025A470B	2000–2500 MHz	470–490 MHz	1W / 2W	HV-380 / HV-130 / HRM-110
FV-800-2025B470E	2000–2500 MHz	470–490 MHz	2W / 5W	HV-380 / HV-130 / HRM-110
FV-800-2225H470E	2250–2500 MHz	470–490 MHz	8W / 5W	HV-380 / HV-130 / HRM-110
FV-810-2127A470B	2100–2700 MHz	470–490 MHz	1W / 2W	HV-390 / HV-130 / HRM-110
FV-810-2127A1200B	2100–2700 MHz	1200–1300 MHz	1W / 2W	HV-390 / HV-130 / HRM-120

Notes

- Higher-power amplifiers are available for ultra-long-range applications.
- PA code: A = 1W, B = 2W, E = 5W, H = 8W.

General Specifications

Parameter	Variant / Item	Value
Interface	Ethernet RJ-45 · UART / RS-232 / RS-485 / S-bus	
Power Consumption	FV-800-XXYYA470B (1W+2W)	Aloft 600 mA @ 24V (peak) Ground 325 mA @ 24V (peak)
	FV-800-XXYYB470E (2W+5W)	Aloft 1000 mA @ 24V (peak) Ground 325 mA @ 24V (peak)
	FV-800-XXYYH470E (8W+5W)	TBD
Dimensions (W × D × H)	FV-800-XXYYA470B (1W+2W)	Aloft — PCBA 100 × 70 × 12 mm (PA 38 × 38 × 12 mm); Enclosure* 160 × 110 × 35 mm Ground — PCBA 85 × 60 × 12 mm; Enclosure* 145 × 90 × 35 mm
	FV-800-XXYYB470E (2W+5W)	Aloft — PCBA 100 × 70 × 12 mm; Enclosure* 160 × 110 × 35 mm; External 2W PA 90.5 × 50 × 15 mm Ground — PCBA 85 × 60 × 12 mm; Enclosure* 145 × 90 × 35 mm
	FV-800-XXYYH470E (8W+5W)	Aloft — PCBA 100 × 70 × 12 mm; Enclosure 160 × 110 × 35 mm; External 8W PA 150 × 120 × 22 mm Ground — PCBA 85 × 60 × 12 mm; Enclosure* 145 × 90 × 35 mm
	Fan	80 × 80 × 20 mm
	Heatsink	80 × 80 × 7 mm
Weight	FV-800-XXYYA470B (1W+2W)	Aloft 280 g · Ground 240 g
	FV-800-XXYYB470E (2W+5W)	Aloft 370 g · Ground 240 g
	FV-800-XXYYH470E (8W+5W)	Aloft 850 g · Ground 240 g
	Fan	63 g
	Heatsink	63 g
Operating Temperature	-10 °C ~ 60 °C	

Weights exclude antenna and cable. * Enclosure dimensions exclude heatsink and fan.

COFDM RF Transmitter Specifications

Parameter	Value
RF Connector	50-Ω SMA connector
Bandwidth	2 / 3 / 4 / 5 / 6 / 7 / 8 MHz
FFT	2K, 4K, 8K
Code Rate	1/2, 2/3, 3/4, 5/6, 7/8
Guard Interval	1/4, 1/8, 1/16 or 1/32
Frequency Range	FV-800-2025: 2000–2500 MHz, 1 KHz step FV-800-2225: 2250–2500 MHz, 1 KHz step FV-810-2127: 2100–2700 MHz, 1 KHz step Customization available in the 400 MHz – 2700 MHz range.

Specifications are subject to change without prior notice. * MER loss may occur at high gain / attenuation levels.

C2 Data-Link RF Specifications

Parameter	Value
RF Connector	50-Ω SMA connector
Frequency Range	HRM-110-470: 470–490 MHz HRM-110-500: 500–520 MHz HRM-120-1200: 1200–1300 MHz Customization available in the 400 MHz – 2700 MHz range.
Bandwidth	150 KHz for 115200 bps air rate (FEC disabled) 250 KHz for 230400 bps air rate (FEC disabled)
Modulation	2/4 (G)FSK, OQPSK DSSS, (G)MSK, OOK
Output Power	Up to 37 dBm (5W) *

Range Performance

Estimated line-of-sight range by antenna type and power-amplifier setting.

