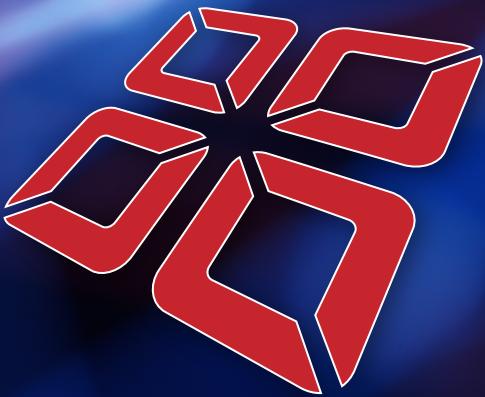


RFMATRIX

Modular 5.8GHz FPV Event Receiver System



rapidFIRE
with ANALOG
PLUS

RF MATRIX

System Overview

The RF Matrix is a unique product, designed by ImmersionRC, based on the incredibly successful rapidFIRE module.

The Matrix is a receiver network, a network which enables camera-equipped FPV Race, and Freestyle drones to fly around more complex arenas than ever before, including flight out of line-of-sight.

Racing on all floors of a multi-story parking garage is now possible. Into the basements of buildings, through tunnels, centuries-old castle grounds, TV studios, limits are removed.

Key Features

- 5.8GHz Analog Video, compatible with all standard transmitters
- **Zero added latency**
- Arbitrary channel assignments, 1MHz steps from 5200MHz-6000MHz
- Incredibly simple wiring, two CAT6 cables per 4 pilots, per satellite receiver
- Integrated high-performance 8dBi Antennas with LHCP/RHCP options
- Independent Pilot, and DVR/Live Feed BNC outputs
- ImmersionRC's **rapidFIRE** diversity receiver technology in every receiver, with best-in-class multipathing rejection, and video signal regeneration
- Central management, Ethernet/Wifi or USB controlled, via the Video Hub
- Dynamic equalization and attenuation correction for cable runs up to 1.5km
- Expandable from 1 to 4 satellites per hub (up to 8 by special order)
- Modular system, with integrated self-diagnostics, and the ability to swap out parts of the system without event down-time

How Does it Work?

One or more Satellite receivers are connected to a central 'Hub' using low-cost, and readily available Cat6 cabling. Each satellite serves 4 pilots (double up to serve 8).

Satellites transmit video down the Cat6 cabling, and are also powered, and communicate with the hub down the same cable. 50V POE centrally-distributed power is used, allowing up to 1.5km of Cat6 cable between the hub and each satellite (eliminating any on-site ground noise).

Video levels are dynamically corrected, and equalized over a wide range of frequencies regardless of cable length.

The Satellite receivers each contain 4 complete diversity receivers, with ImmersionRC's rapidFIRE technology, ensuring best-in-class multipathing rejection, and high quality directional 8dBi antennas built right onto the PCB. No SMAs to worry about tightening, no chance of a 'bad channel' because they weren't correctly tightened, and no losses at 5.8GHz due to poor quality SMA adapters.

As quads move between satellites (which can be mounted out of sight of each other) the system automatically switches to the next satellite, ensuring that solid video is present on the next satellite before switching.

Buffered composite video is supplied through high-quality BNC connectors, one for each pilot, and one for each DVR/Live-feed.



Benefits of Central Management

The entire matrix is centrally managed, using either an Ethernet, or USB connection from a Windows PC¹

Connecting the Ethernet port to an event management network with a Wifi access point, and smart phones or tablets may be used to manage the system.

When faced with RF noise on race-day, the matrix can present a live spectrum analysis of the 5.8GHz band, as seen by each of the satellites, allowing noise sources to be pin-pointed.

The frequency of each pilot's channel may be changed between races. ImmersionRC™ TNR technology (Tramp HV + TNR Wand) allows these frequencies to be quickly and transparently programmed into quads on the starting pads, without wasting precious time.

¹ API is available, and may be used to develop custom management applications, or integrate into existing race control systems.

Competitive Comparison

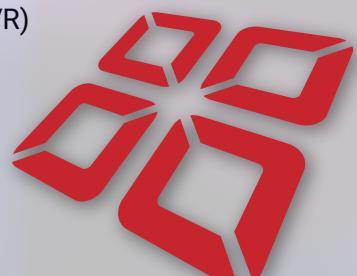
No similar products currently on the market.

Part Numbers

MTXSAT4ALT	4 Pilot satellite Rx with Alternating LHCP/RHCP Polarization
MTXSAT4RHCP	4 Pilot satellite Rx with RHCP Polarization
MTXSAT4LHCP	4 Pilot satellite Rx with LHCP Polarization
MTXHUB1	Single-Satellite Hub for 4 pilots
MTXHUB2	Dual-Satellite Hub for 4 pilots
MTXHUB4	Quad-Satellite Hub for 4 pilots
MTXPSU	External power supply, 50V, 100-240V, UL/CE certified

Replacement Parts

MTXRX2RH	Dual-Antenna Satellite Receiver, with RapidFire, RHCP 8dBi Patch version
MTXRX2LH	Dual-Antenna Satellite Receiver, with RapidFire, LHCP 8dBi Patch version
MTXSATIF	Satellite Interface card, two RJ45 jacks, OLED status display
MTX4EQ300	Quad equalizer PCB with two RJ45 jacks. 300m version
MTX4EQ1500	Quad equalizer PCB with two RJ45 jacks. 1.5km version
MTXHUBCPU	Hub CPU board, with Ethernet Interface, Monitor Output
MTXHUBBNC	Hub BNC connector board. 2 BNCs for each of 4 pilot outputs (Pilot + DVR)
MTXCABSET	Cable Set, 5x FlatFlex Rx->SatIF cables, 5x EQ->Hub cables.





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