CISCO
The bridge to possible

Cisco FM3200 Base

5 GHz Wireless Base Station
(formerly Fluidmesh)

Contents

The Cisco FM3200 Base is part of the Cisco Ultra-Reliable Wireless Backhaul portfolio.
It is a high-performance radio transceiver, designed for fast, reliable backhaul of
mission-critical video, voice and data.

The FM3200 Base is used to create point-to-point, point-to-multipoint, mesh and mobility networks with a throughput of up to 150 Mbps. Its was specifically designed to work as a base station within point-to-multipoint network architectures. However, it can also connect to networks in point-to-point or mesh modes, if greater area coverage is needed.

Vertical markets in which the FM3200 Base can be exploited include - but are not limited to - smart cities, schools, government organizations and universities, highly reliable emergency voice communications, and video surveillance. The FM3200 Base can also be used as a distribution-layer base station in mining applications, and as a video-surveillance backbone in intermodal yards.

Reduce the cost of network ownership by selecting the amount of throughput you need

Limit the cost of network ownership with FluidThrottle by selecting only the amount of throughput required. More throughput can be easily achieved by upgrading the system with software plug-ins when traffic requirements increase.

Prodigy 2.0 for reliable mission-critical applications

Our Multiprotocol Label Switching (MPLS)-based transmission protocol is built to overcome the limits of standard wireless protocols and to deliver an infrastructure with a higher level of reliability. At the base of our innovative transmission protocol is a traffic optimization algorithm that allows every Cisco FM radio to assign a specific level of priority and reliability to every packet transmitted. The result is a better, more reliable, multiservice wireless infrastructure.

Web interface configures, monitors, and troubleshoots the wireless network

The Cisco FM3200 Base includes the FMQuadro web interface, which allows you to configure, monitor, and troubleshoot the wireless network in real time, without any additional software. To simplify the configuration of the wireless network, the radio has a built-in spectrum analyzer and a real-time bandwidth monitoring tool.

Your investment is protected

Your investment is safe when business needs change. With FluidMAX, you don't have to replace your radios when you change the network's architecture from point-to-point to point-to-multipoint or mesh. The Cisco FM3200 Base can operate in CSMA or TDMA.

Works with FLUIDITY, our unique mobility solution

The Cisco FM3200 Base supports FLUIDITY, the ultimate broadband connectivity solution for high-speed vehicles and trains. Providing up to 100 Mbps of usable throughput to vehicles traveling up to 225 mph/360 kmh is now a reality.

There is no handoff time with FLUIDITY: thanks to the seamless "make before break" handoff, it maintains persistent network sessions and streams for any type of traffic.

Easy installation

The Cisco FM3200 Base has a compact form factor to minimize the impact of the installation.

To facilitate installation, it has an easy NPT-1 thread for conduit. The screws, located at the bottom, are self-retaining. The visible LEDs help you monitor the LAN activity and the strength of the radio. The PoE injector enables easy setup.

Quick peek

Rugged die-cast aluminum housing

Specific for harsh environments and long-lasting performance. Co-location interference protection shroud

FluidThrottle

Select only the throughput you need

Prodigy 2.0

MPLS transmission protocol with intelligent QoS

FMQuadro

Web-based interface to easily configure, monitor, and troubleshoot the network

FluidMAX

Change the network's architecture, not the radios

FLUIDITY

Connectivity solution for high-speed vehicles and trains

Multiple frequencies

4.9 GHz and 5.1 to 5.8 GHz

Ethernet port

802.3af PoE Gigabit

Easy install

NPT-1 threaded cable gland for conduit direct mounting

System		
Chipset	CPU	600 MHz MIPS Network processor
	RF	MIMO 2x2
Interfaces		1x 10/100/1000 Tx-RJ45
		1x 10/100 Base Tx-RJ45
		1x Reset button for factory default
LED		1x Power
		1x Ethernet 1
		1x Ethernet 2
		4x RSSI
Weight/dimensions		80 oz / 2.2 kg
		16(H) x 7(W) x 8(D) in.
		400 (H) x 180(W) x 200(D) mm

Radio	
Operating frequencies	5150 to 5350 / 5470 to 5850 MHz
	4940 to 4990 MHz
Data rate	6/9/12/18/24/36/48/54 Mbps
	30/60/90/120/180/240/270/300 Mbps
Modulation	OFDM (BPSK,QPSK,16QAM,64QAM)

Radio	
Channel width	5/10/20/40 MHz
Output power*(dBm)	Up to 27
Antenna type	Sector 2x2 MIMO
Antenna gain	18 dBi
Horizontal beamwidth coverage	120 deg
Vertical beamwidth coverage	10 deg

Electrical	
Power method	48V active 802.3af PoE 48V passive PoE
Power supply (included)	48V/0.5A PoE
Max power consumption	8W

Environmental	
IP rating	IP 66
Enclosure	Die-cast metal aluminum
Mounting	Pole mounting kit included
Operating temperature	-40° to 75°C -40° to 167°F
Shock and vibration	ETSI300-019-1.4
Operating humidity	5% to 95% noncondensing
Wind survivability	216 kmh (134 mph)

Expected throughput**		
Throughput (Mbps)	Max distance (miles)	Max distance (km)
150	1	1.6
120	1.5	2
100	2	3

Expected throughput**		
Throughput (Mbps)	Max distance (miles)	Max distance (km)
60	2.5	4
30	3	5

Communication protocols	
Prodigy 1.0 and 2.0	Yes

Regulatory compliance	
Approvals	FCCPart 15.B, FCC Part 15.C, FCC Part 15.E, NII/RSS-210 Annex 9, FCC Part 90y, OET 65 MPE/RSS102, EN893+DFS, EN301189-1 EN5502224, EN 62311, EN 60950, IC RS2010, CE, ROHS

Security	
VPN / L2TP	AES optional
Full compatibility with AES, 3DES, RSA, HTTPS, SSL	Yes
AES link-level encryption	Yes

Network	
Protocols	UTP, TCP, IP, RTP, RTCP,RTSP, HTTP, HTTPS, ICMP, ARP
Web-based interface	Yes
Multicast support	Yes
UPnP support	Yes
SNMP support	Yes
802.1Q VLAN support	Yes

Warranty	
2 years	Limited on parts and labor
3 years	Optional
5 years	Optional

* Depends on configuration and regulations

** Usable throughput can vary based on environmental conditions.

Plug-Ins and Licenses

FM3200B (Base)

- Base radios come pre-configured with PtP or PtMP throughput support up to 15Mbps

- Can be upgraded once purchased between PtP, PtMP, and Fluidity Licensing as detailed below:

Type of Plugin or License	Fluidmesh Part Numbers	Cisco FM3200 Base: Plugin and License Summary		
		Cisco PIDs	Description	
Hardware P/N	FM3200B-HW	FLMESH-HW-3200-1	Cisco FM3200 Base, single MIMO radio device, up to 15 Mbit/s Ethernet Throughput, 4.9-5.8 GHz with integrated 120 deg sector antenna. Two (2) Ethernet Ports. **Does not include fluidcare support plan.**	
		FLMESH-HW-3200-1NA	NAM/LAM version	
		FLMESH-HW-3200-1UK	UK version	
		FLMESH-HW-3200-1	Rest of the World version	
Point-to-Multipoint (PtMP) Master	FM3200-30	L-FLMESH-3200-13	Enable up to 30 Mbit/s ethernet througput in FM3200 Devices for fix backhaul	
	FM3200-60	L-FLMESH-3200-1	Enable up to 60 Mbit/s ethernet througput in FM3200 Devices for fix backhaul	
	FM3200-UN	L-FLMESH-3200-12	Enable up to UNLIMITED ethernet throughput (up to 150 Mbit/sec) in FM3200 Devices	
Point-to-Point (PtP)	FM3200-PTP-UN	L-FLMESH-3200-19	Enable up to UNLIMITED (up to 150 Mbit/s) Ethernet throughput in FM3200 for Point to Point ONLY	

Type of Plugin or License	Fluidmesh Part Numbers	Cisco FM3200 Base: Plugin and License Summary	
		Cisco PIDs	Description
Point-to-Multipoint (PtMP) Client	FM3200-PMCL-30	L-FLMESH-3200-16	Enable up to 30 Mbps Ethernet throughput in FM3200 for Point to Multipoint Client Use ONLY
	FM3200-PMCL-60	L-FLMESH-3200-17	Enable up to 60 Mbps Ethernet throughput in FM3200 for Point to Multipoint Client Use ONLY
	FM3200-PMCL-UN	L-FLMESH-3200-18	Enable UNLIMITED (Up to 150 Mbps) Ethernet throughput in FM3200 for Point to Multipoint Client Use ONLY
Fluidity Licensing: Mobile	FM3200-MOB-MOB-5	L-FLMESH-3200-6	Fluidity Plug-in enable FLUIDITY Fast-roaming Option Mobile-Unit-Mode up to 5 Mbit/sec
	FM3200-MOB-MOB-10	L-FLMESH-3200-2	Fluidity Plug-in enable FLUIDITY Fast-roaming Option Mobile-Unit-Mode up to 10 Mbit/sec
	FM3200-MOB-MOB-15	L-FLMESH-3200-3	Fluidity Plug-in enable FLUIDITY Fast-roaming Option Mobile-Unit-Mode up to 15 Mbit/sec
	FM3200-MOB-MOB-20	L-FLMESH-3200-4	Fluidity Plug-in enable FLUIDITY Fast-roaming Option Mobile-Unit-Mode up to 20 Mbit/sec
	FM3200-MOB-MOB-30	L-FLMESH-3200-5	Fluidity Plug-in enable FLUIDITY Fast-roaming Option Mobile-Unit-Mode up to 30 Mbit/sec
	FM3200-MOB-MOB-60	L-FLMESH-3200-14	Fluidity Plug-in enable FLUIDITY Fast-roaming Option Mobile-Unit-Mode up to 60 Mbit/sec
	FM3200-MOB-MOB-UN	L-FLMESH-3200-7	Fluidity Plug-in enable FLUIDITY Fast-roaming Option Mobile-Unit-Mode Unlimited (Up to 100 Mbit/sec)
Fluidity Licensing: Trackside	FM3200-MOB-TRK-15	L-FLMESH-3200-8	Fluidity Plug-in enable FLUIDITY Fast-roaming Option Infrastructure Mode up to 15 Mbit/sec
	FM3200-MOB-TRK-20	L-FLMESH-3200-9	Fluidity Plug-in enable FLUIDITY Fast-roaming Option Infrastructure Mode up to 15 Mbit/sec
	FM3200-MOB-TRK-30	L-FLMESH-3200-10	Fluidity Plug-in enable FLUIDITY Fast-roaming Option Infrastructure Mode up to 30 Mbit/sec
	FM3200-MOB-TRK-60	L-FLMESH-3200-15	Fluidity Plug-in enable FLUIDITY Fast-roaming Option Infrastructure Mode up to 60 Mbit/sec
	FM3200-MOB-TRK-UN	L-FLMESH-3200-11	Fluidity Plug-in enable FLUIDITY Fast-roaming Option Infrastructure Mode Unlimited (up to 100 Mbit/sec)

| Type of Plugin or License | Fluidmesh Part Numbers | Cisco FM3200 Base: Plugin and License Summary | |
		Cisco PIDs	Description
General Licenses	FM-AES	L-FLMESH-ENCR-1	AES Plug-in. Enables One plug-in is required for each hardware device where encryption is desired. ECCN 5D002 (Export Licensed Required to be exported in certain countries; no license required to be sold in North America and in the European Union).
	FM-TITAN	L-FLMESH-TITAN-1	TITAN Plug-in. Enables Fast Failover in case of network, radio or power failure on a single Fluidmesh product. All Fluidmesh devices in a network mush have a plugin-in to operate.
	FM-PROFINET	L-FLMESH-PROFINET	PROFINET Plug-in. Enables support to Layer 2 ethertype 0x8892 on one Fluidmesh product. It requires also QoS support and the VLAN plug-in. All Fluidmesh hardware devices in a network must have these plug-ins to operate.
	FM-VLAN	L-FLMESH-VLAN-1	VLAN Plug-in. Enables port-based and MAC address-based VLANs on a single Fluidmesh product. All Fluidmesh hardware devices in a network must have a plug-in for VLAN to operate.
	FM-QNET	L-FLMESH-QNET	QNET Plug-in. Enables support to Layer 2 ethertype 0x8204 on one Fluidmesh product. All Fluidmesh hardware devices in a network must a plug-ins to operate.
	FM-CANBUS	L-FLMESH-CANBUS	CANBUS Plug-in. Enables CANBUS Support on Fluidmesh radios. All Fluidmesh devices in a network must have these plugin-ins to operate.

Product sustainability

Information about Cisco's Environmental, Social and Governance (ESG) initiatives and performance is provided in Cisco's CSR and sustainability reporting.

Table 1.   Cisco environmental sustainability information

Sustainability Topic		Reference
General	Information on product-material-content laws and regulations	Materials
	Sustainability Inquiries	Contact: csr_inquiries@cisco.com
	Countries and Regions Supported	Table: Regulatory compliance
Power	Power (Including Pluggable)	Table : Electrical
Material	Product packaging weight and materials	Contact: environment@cisco.com
	Weight	Table: Physical

Sustainability Topic			Reference
Recycled Content	Pre-consumer	0.57%	Contact: csr_inquiries@cisco.com
	Post-consumer	1.87%	

Cisco Capital

Flexible payment solutions to help you achieve your objectives

Cisco Capital makes it easier to get the right technology to achieve your objectives, enable business transformation and help you stay competitive. We can help you reduce the total cost of ownership, conserve capital, and accelerate growth. In more than 100 countries, our flexible payment solutions can help you acquire hardware, software, services and complementary third-party equipment in easy, predictable payments. Learn more.

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