Introducing the emnify IoT eSIM

Unlock the power of the emnify IoT SuperNetwork

Providing flexible global and local coverage across more than 540 networks in over 180 countries, enhancing connectivity options for IoT deployments, and substantially reducing the costs and complexities of multi-network deployments.

The emnify IoT eSIM uniquely combines a multi-IMSI (Multiple International Mobile Subscriber Identities) applet with the eUICC (Embedded Universal Integrated Circuit Card) standard to reliably connect your IoT devices to hundreds of networks globally.

This combination offers seamless Over-The-Air (OTA) updates and remote SIM provisioning (RSP), essential for future-proofing your deployments. With eUICC, devices benefit from comprehensive remote management capabilities, eliminating the need for physical SIM changes. This advanced approach consolidates reliable network access into a single, fully configurable profile, simplifying connectivity across diverse geographies.

Features and benefits

The emnify IoT eSIM is available in diverse form factors, including traditional plastic SIM cards and the embedded MFF2 format, catering to a wide range of IoT devices.

✓ **Global connectivity:** Ensure your devices are always connected, no matter where they are via global coverage to more than 540 networks in over 180+ countries

✓ **Single profile with multi-IMSI capability:** Streamline connectivity management with a single profile that intelligently stores and transitions between multiple subscriber identities.

✓ **Cross border network optimization and selection:** the emnify eSIM applet is optimized to adapt rapidly when crossing international borders, accelerating network selection, enhancing battery life, and increasing operational efficiency regardless of location.

✓ **RSP and OTA updates:** Streamline large-scale device management and reduce operational costs via efficient OTA reconfigurations and profile updates. Enhance business continuity through automated network optimization, ensuring adaptability to evolving technologies like LPWAN, 5G, and satellite.

✓ **Converged cellular and satellite:** IoT Connectivity now available with the emnify IoT SuperNetwork + Skylo satellite coverage, assuring that your critical devices remain connected when traveling outside of cellular range.

✓ **Security and privacy:** Embedded stringent encryption and authentication mechanisms aligned with GSMA standards safeguard data integrity and device security. The OTA management system is protected against unauthorized access, ensuring compliance with global data privacy regulations.

Ensure uninterrupted connectivity

- **Automated IMSI switching:** Automatically switch between cellular provider identities (IMSI), similar to dual-SIM technology but with enhanced automation.
- **Country-specific IMSI selection:** The SIM applet selects the optimal set of IMSIs for each country, ensuring compliance with local regulations, such as mandatory local IMSIs in Brazil.
- **Expanded coverage and cost savings benefits:** Leveraging over 400 direct roaming agreements and additional partnerships, emnify offers extensive coverage and competitive pricing.
- **Dynamic connectivity management:** In the event of connectivity issues, the eSIM promptly switches to an alternate IMSI, maintaining continuous network access.

Remotely manage and futureproof your devices

- **Comprehensive remote management:** eUICC functionality allows for complete remote management, including profile, network preferences, and RAN selections, significantly reducing the need for physical SIM swaps.
- **Adaptability to emerging technologies:** Designed to be future-ready, easily updating to support new technologies like satellite, NB-IoT, LTE-M, and 5G, ensuring device relevance as older technologies phase out.
- **Regulatory compliance:** Facilitating adherence to local telecom regulations, crucial in regions where permanent roaming is prohibited, enhancing legal compliance.

2G, 3G, 4G, 5G, LTE-M, NB-IoT, and satellite

Secure and uninterrupted global connectivity
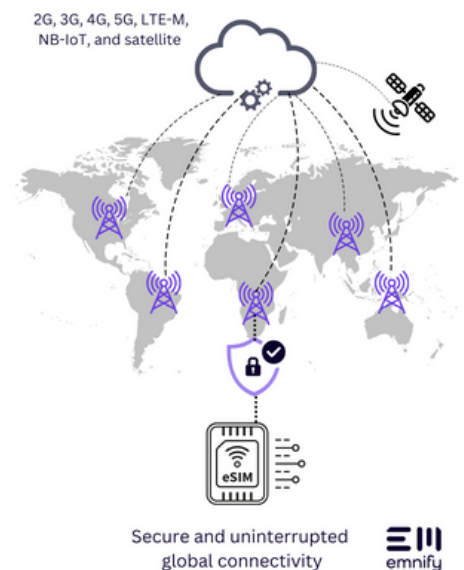
One profile, hundreds of networks

- **Single profile approach:** emnify streamlines connectivity with a single, adaptable profile, moving away from traditional multi-profile systems.
- **Customizable sub-profiles:** Tailor sub-profiles to specific device and application needs, ensuring optimized global connectivity without complexity.
- **Seamless global transition:** A single profile across all regions simplifies operations, eliminating manual swaps and network shifts for devices moving internationally.

Available in the form factors you need

The emnify IoT eSIM is available in multiple form factors to accommodate a range of device types and requirements.

Form factor	Dimensions
2FF (Mini SIM)	25 x 15 x 0.76 mm
3FF (Micro SIM)	15 x 12 x 0.76 mm
4FF (Nano SIM)	12.3 x 8.8 x 0.67 mm
MFF2 (eSIM)	6 x 5 x 0.8 mm, 8 pin
iSIM	(in development)

emnify IoT eSIM technical specifications

			Commercial eUICC	Industrial eUICC	MFF2
Hardware Characteristics	Form Factor	Embedded/ solderable	-	-	MFF2
		Removable Card	Triple-cut or Dual-Cut −25°C to +85°C (JESD22-A104)	2FF or 3FF	-
	Chip Type	Operational and storage temperature	-	−40°C to +105°C (JESD22-A104	
		Operating voltage	1.62V to 5.5V		
		Interface	ISO-7816, T=0		
		Chipset NVM size	704 Kbytes		
		Chipset RAM size	20 Kbytes		
	NVRAM Characteristics	Write Endurance	500k erase per page 10M cycles with OS High Endurance		
		Data retention	15 years @85°C		
		Moisture/Reflow conditions	-	MSL3 (J-STD020)	
		Humidity	-	HA as per ETSI TS 102.671 / (JESD22-A101D)	
		Corrosion	-	-	CX as per ETSI TS 102.671 (JESD22-A107) VX as per ETSI TS 102.671
		Vibration	-	JESD22-B103)	-
		Shock	-	-	SX as per ETSI TS 102.671 (JESD22-B104)
		ommon Criteria Certificate	CCN-CC-5/2019		

emnify eUICC Compliance	GSMA	SGP.01 Embedded SIM Remote Provisioning Architecture	1.1
		SGP.02 Embedded UICC Technical Specification	3.2
		SGP.16 M2M Compliance Process	1.1
	TCA	eUICC Profile Package Interoperable Format Technical Specification	2.1

Software Features	Embedded Universal Integrated Circuit Card (eUICC)	Maximum number of profiles	10
		ISD-P and ISD-R system applets	Supported
		EAP-SIM and EAP-AKA authentication protocols	Supported
	LPWAN features	Suspend and resume SIM state ETSI TS 102 221 Poll Interval Negotiation ETSI TS 102 221	Supported
	OTA Capabilities on ISD-P: Remote file management - RFM Remote applet management - RAM	HT TPS	Supported
		TLS 1.2	Supported
		AES algorithm (128-bit, 192-bit, and 256-bit keys)	Supported
	GlobalPlatform	All Secure Channel Protocols	Supported
	Java Card	Standard Java Card APIs	Supported
		GlobalPlatform API	Supported

	Compliance	ROHS	Yes
		REACH	Yes

Note: compliance test reports can be provided upon request.

Get connected.

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