5G Module

SIMCom has launched SIM8200EA-M2,SIM8200G,SIM8300G-M2,SIM8202X-M2,SIM8262G-M2,SIM8282G-M2,SIM8210C and SIM8210C-M2, forming a quite comprehensive product line. SIMCom 5G modules cover all frequency bands of major network carriers worldwide, and are compatible with a variety of communication protocols, which are quite suitable for high-rate scenarios such as telemedicine and distance education, etc.

SIM8210C and SIM8210C-M2 support the 5G independent networking (SA) mode. The two modules specialized for data application scenarios with higher cost performance will better empower thousands of industries.

		SIM8200EA-M2	SIM8200G	SIM8300G-M2	SIM8202X-M2
Platform		SDX55	SDX55	SDX55	SDX55
Size		30.0*52.0*2.3 mm	41.0*43.6*2.8 mm	30.0*52.0*3.65 mm	30.0*42.0*2.3 mm
Band	5G NR	n1,n3,n5,n7,n8,n28,n38,n40,n41,n48,n77,n78,n79	n1,n2,n3,n5,n7,n8,n12,n20,n25,n28,n40,n41,n66,n71,n77,n78,n79		n1,n2,n3,n5,n7,n8,n12,n20,n28,n38,n40,n41,n66,n71,n77,n78,n79
	LTE - TDD	B34/B38/B39/B40/B41/B42/B43/B48			
	LTE - FDD	B1/B2/B3/B4/B5/B7/B8/B12/B13/B14/B17/B18/B19/B20/B25/B26/B28/B29/B30/B32/B66/B71			
	WCDMA	B1/B2/B3/B4/B5/B8			
	mmWave	n257/n258/n260/261			
Data Transmission	Sub-6G	2.4Gbps(DL)/ 1Gbps(UL)	4Gbps(DL)/ 450Mbps(UL)	4Gbps(DL)/450Mbps(UL) mmWave6 Gbps(DL)	2.4Gbps(DL)/ 500Mbps(UL)
	LTE CAT22	1Gbps(DL)/ 200Mbps (UL)	2.4Gbps(DL)/ 200Mbps(UL)	2.4Gbps(DL)/ 200Mbps(UL)	1Gbps(DL)/ 200Mbps(UL)
	HSPA+				42Mbps (DL)/ 5.76Mbps(UL)
Certification		RoHS Compliant/ CCC/ CTA/ SRRC/ REACH/ CE/ FCC/ GCF			
Application Scenarios		AR / VR / CPE / 5G Drone / 5G Robot / Remote control			

5G Module

SIM8202X-M2 is a small-size multi-band 5G module with a new four-antenna design. Its package dimensions are 30*42mm, which can better meet the needs of terminal products with higher requirements on size.

SIM8262G-M2 supports R16 which is equipped with Qualcomm SDX62; SIM8282G-M2 is equipped with Qualcomm SDX62 and is oriented to the global market.

		SIM8262G-M2	SIM8282G-M2	SIM8210C	SIM8210C-M2
Platform		SDX62	SDX62	QCX315	QCX315
Size		30.0*42.0*2.3 mm	30.0*42.0*2.3 mm	41.0*43.6*2.8 mm	52.0*30.0*2.3 mm
Band	5G NR	n1,n2,n3,n5,n7,n8,n12,n20,n28,n38,n40,n41,n66,n71,n77,n78,n79		n1,n3,n5,n7,n8,n20,n28,n38,n40,n41,n77,n78,n79	
	LTE - TDD				
	LTE - FDD			B1/B3/B5/B7/B8/B20/B28	
	WCDMA				
	mmWave				
Data Transmission	Sub-6G	2.8Gbps(DL)/ 600Mbps(UL)	2.4Gbps(DL)(optional up to 4.8Gbps)/1Gbps(UL)	1.5Gbps(DL)/1Gbps(UL)	
	LTE CAT22	1.6Gbps(DL)/ 200Mbps(UL)	1Gbps(DL)(optional up to 2Gbps)/200Mbps(UL)	400Mbps(DL)/100Mbps(UL)	
	HSPA+	42Mbps (DL)/ 5.76Mbps(UL)	42Mbps (DL)/ 5.76Mbps(UL)		
Certification				CCC*/JATE*/TELEC*/CE(RED)*/SRRC*/CTA*/RoHS*/REACH*/RCM*	
Application Scenarios					

Helping to achieve a more convenient world

Smart Industry

In some special situation such as explosion and earthquake scene, it's not easy for people to do the conduct as there are various uncertain factors, so robot can be a good choice. However, robot had to rely on a Wi-Fi connection to perform its tasks, which meant its range was limited. Once the distance between robot and its operator exceeds 30 meters, the operator will lose control of robot due to disconnection. With the arrival of the 5G era, the large bandwidth, low latency and countless connections brought by 5G will lead to a wider range of applications for robot.

In a recent experiment, Boston Dynamics dog Spot with 5G equipment using a SIMCom 5G module to achieve the operation of Spot from a longer distance away with a 5G network. The experimenters deployed Spot at Hans Christian Anderson Airport in Denmark to patrol the perimeter fence. Spot, connected to a 5G network, patrolled the airport's perimeter fence every day. In addition, deep learning was also used in the experiment to make Spot check the perimeter fence for signs of damage in real time.

The SIMCom 5G module supports ENDC B20+ N28 low band under 5G NSA. It can ensure good signal coverage in open fields and mountains. At the same time, networking costs are lower. This means that even if Spot leaves the city for its exploration missions in the suburbs, it still can send back information and data accurately.

With a 5G network, the experimenters were able to control Spot remotely. The SIMCom 5G module can quickly send back the data and images collected by Spot, making it convenient for the staff to check in the background. In the long term, it will help make robots like Spot more useful and valuable in areas such as inspection, safety and emergency preparedness.

5G Robot Dog

Module: SIM8300G-M2

Industry: Robot

Application: Explosion Earthquake scene

Advantages: High bandwidth Massive connectivity High Speed

Reducing risk and improving efficiency

Smart Industry

5G CPE

Module: SIM8200EA-M2

Industry: Mines

Application: Underground places

Advantages: Stable internet connection

Easy to connect

Real mobile data

Due to the complex operating environment, underground coal mines are one of the workplaces with the most hazards. In the 4G era, there are several of difficulties for underground equipment to access the network. Regarding Wi-Fi Transmission, it has poor anti-interference performance、limited coverage and weak penetration. Besides, the connection between equipment is easy to disrupt. If we use Wired Connections, the underground topography is too complex to make wiring.

In the 5G era, the extensive connectivity, large bandwidth and ultra-low latency of 5G networks meet the safety and performance requirements of underground coal mines. Now coal mine 5G has officially gone commercial.

Coal mine 5G communication system adopts the 5G CPE with the SIMCom 5G module SIM8200EA-M2, which helps many underground devices connect to the 5G base stations and realize stable data connections. Many underground devices like intelligent patrol robots, coal mine robots, automatic driving, fully mechanized mining equipment and other coal mine equipment systems can get high-speed 5G connections. Underground voice, video and data are carried by one network and various intelligent operating system information is transmitted by one network. Data on underground operations can be transmitted back to the dispatching center on the ground in real time. The dispatchers can watch the underground excavation, transportation and maintenance in real time on the big screen. Real-time communication between the staff underground and the staff on the ground is realized, effectively improving safety and production efficiency.

Changing Traditional Industry

Smart Industry

In the 5G era, smart homes, smart cities, smart transport and smart manufacturing will be more operable and no longer only exist in spoken or written words. We can never achieve these revolutions without the development of network technology, including the router tech. Routers, which provide easy connectivity, have become essential devices in network nodes.

Industry router is a fundamental staff in the wireless communication. SIMCom 5G module SIM8200EA-M2 has been used in the 5G industry router, it can use public 3G/4G/5G networks to provide users with long-range wireless big data transmission. The 5G industrial router adopts high-performance industrial 32-bit communication processors and industrial wireless modules and an embedded real-time OS is operating as its software support platform. With a RS232 (or RS485/RS422), 4 Ethernet LANs, an Ethernet WAN and a WIFI interface, it can connect to serial port devices, Ethernet devices and WIFI devices simultaneously, realizing transparent data transmission and routing functions.

5G Industry Router

Module：SIM8200EA-M2

Industry: Router

Application: Factory Transportation

Advantages: Higher Speed Higher stability Multi-scene applications

Making 5G Connection Everywhere

Smart Industry

5G MMW CPE

Module：SIM8300G-M2

Industry: 5G CPE

Application: Indoor connection

Advantages: Access to 4G Full signal coverage Multiservice access

The residential network is an important part of the network layout. How to realize fast Internet access in dense residential buildings is a big problem.

Kansai Electric Power Company conducted a FWA experiment in Osaka. FWA CPE with SIMCom 5G MMW module SIM8300G-M2 was used in the experiment. The experiment was carried out in a four-storey apartment building in Japan. A small 5G MMW base station was installed on a telegraph pole about 6 meters high near the apartment building. 5G CPE for receiving signals was placed in the apartment building about 10 meters away. In the experiment, at the frequency of 28G Hz and the bandwidth of 100MHz, communication speed of the CPE near the wireless station reached 700Mbps~800Mbps maximum and 150Mbps minimum under extreme and good conditions. This 5G CPE has passed various MMW tests in Japan.

5G MMW CPE will become a star product along with the construction of 5G base stations and the use of 4G across Japan. It will be widely used in residential communities and all sectors in Japan to effectively improve the last mile Internet access problem.

The new-generation 5G CPE products are equipped with SIMCom 5G modules capable of fast data transmission and powerful data processing and computing.

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Improving the effiency of operations

Smart Industry

In the fight against the epidemic, the drones equipped with the 5G communication module of Hubble-1 gave full play to the advantages of 5G networked drones. Featuring large scale, multiple points, multiple flights and multiple scenes, the anti epidemic work by 5G networked drones was carried out in many places during the epidemic prevention and control. Through street patrol, prevention and control call, and publicity on epidemic prevention and control, human and material resources were greatly saved, while contact between people was minimized, reducing the risk of virus transmission. Hubble-1 is the first 5G communication module for drones developed by China Mobile (Chengdu) Industrial Research Institute. The module takes the lead in adopting the SIM8200EA module of SIMCom, which features multiple interfaces, strong network access capability, integrated multiple protocol stacks, safety and reliability, lightweight design, and more. With the remote scheduling and video connection of China Mobile' s Link-Cloud drone management platform, the visuals can be sent back clearly and quickly, so that the commander can clearly see the real-time situation on the ground, so as to carry out strategic deployment. When the drone finds that someone on the ground goes out without a mask, it can timely dissuade the person by calling at high altitude. In addition, it can also carry out large-area disinfection operation by accurate, intelligent and flexible spraying.

With the help of 5G drone , the working group has completed operations within 3 days in 60 areas, including 52 residential areas, 6 towns and 2 agricultural product trading centers, involving a population of 144,000 and a flight area of 210 square kilometers. The operations include street patrols, prevention and control calls, and publicity on epidemic prevention and control. The efforts enhanced the determination and confidence of the local residents to block and defeat the epidemic, and gained full affirmation and high praise from the local residents and government leaders.

5G Drone

Module: SIM8200EA-M2

Industry: 5G Drone

Application: Agriculture Epidemic prevention and control

Advantages: High bandwidth Massive connectivity High Speed

Working at anytime and anywhere

Smart Life

5G Laptop

Module: SIM8202G-M2

Industry: Laptop

Application: Office Coffee bar Campus

Advantages: Real mobile cloud office Faster Stable connection

Previously, Laptops require Wi-Fi/ hot spots or a network cable for Internet access, and Internet speed is seriously affected by the signal, which is not convenient to surf the Internet outdoors. Meanwhile, It' s hard to combine ultrathin laptops with gaming laptops. Ultrathin laptops can satisfy people's need to carry computers around for work, but their performance is compromised, which results in limited loading for large games.

Together with a famous partner, SIMCom developed a 5G Laptop solution which allows 5G laptops to connect to the Internet on their own, so people can work anywhere, enjoying real mobile cloud office. The 5G laptop is equiped wit a 5G module SIM8202G-M2, an ultra-small size 5G module.

The low latency and high bandwidth brought by 5G technology can greatly promote the popularity of cloud office. Some functions of laptops will move to the cloud, further reducing the size of laptops and making them easier to carry around. Meanwhile, a lot of computing will be done in the cloud over 5G networks, so laptops will become thinner. Higher laptop efficiency will also extend the battery life, allowing you to work all day on with an uninterruptible power supply for real.

The low latency of 5G means that the time needed for a laptop to communicate with another device over the network will be greatly reduced, which improves the program response speed and gaming experience, particularly large games.

Achieving a higher quality transmitted Image

Smart Life

In 4G era, the signal available is limited in live broadcasts, especially live broadcasts of large galas or sports events. The content needs to be sent to the broadcasting van from the camera, and then sent to the studio control room through the signal transmission system after technical processing. When the signal is interrupted, the picture is jammed. Satellite broadcasting vans require lying fiber-optic cables on site, which is very costly and manpower consuming.

A 5G live broadcasting box has been developed by SIMCom 5G modules SIM8200EA-M2. Thanks to the high bandwidth and low latency of 5G, live broadcast images can be quickly transmitted through the 5G module, reducing the latency time to the level of milliseconds. No need to lay fiber-optic cables on site. The live broadcasting box can easily upload data through the module and broadcast 4K or even 8K HD videos. Meanwhile, it is small in size, so it can be used in areas that couldn' t be reached by satellite broadcasting vans before, thereby broadcasting anytime and anywhere.

5G live broadcasting box

Module: SIM8200EA-M2

Industry: Broad cast

Application: Sporting Event
Outdoor Event

Advantages: 4K/8K HD video Lower latency
Multi-scene applications

Empowering remote medical diagnosis

Smart Hospital

4K/8K HD Videos

Module: SIM8200EA-M2

Industry: 4K/8K vedio

Application: Smart Hospital Industrial Manufacturing Video Conferencing

Advantages: Lower latency Multi-scene application 4K/8K HD Videos

Limited by function, it' s hard for traditional medical communication systems to realize all-round remote communication and diagnosis and treatment, making advanced medical knowledge unable to be quickly spread and medical resources unable to serve more patients. Therefore, telemedicine, videoconferencing, distance academic communication and teaching videos have become a trend direction for medical informatization and function improvement.

The HD video transmission product DS8000 5G+4K/8K ULTRA using SIMCom 5G module SIM8200EA-M2 has been launched. This product combines 4G, 5G, Wi-Fi 6, H.265/VP9, AI and other technologies. Depending on the millisecond end-to-end latency, 10 Gbit/s throughput and a million connections per square kilometer of 5G, it can be used in not only medical service, but also ULTRA-HD live streaming, education and training, intelligent transportation, industrial manufacturing, videoconferencing, and outdoor screens.

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SIMCom 5G
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