

The Private LTE & 5G Network Ecosystem: 2024 – 2030 – Opportunities, Challenges, Strategies, Industry Verticals & Forecasts

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Abstracts

Historically a niche segment of the wider wireless telecommunications industry, private cellular networks – also referred to as NPNs (Non-Public Networks) in 3GPP terminology – have rapidly gained popularity in recent years due to privacy, security, reliability and performance advantages over public mobile networks and competing wireless technologies as well as their potential to replace hardwired connections with non-obstructive wireless links. With the 3GPP-led standardization of features such as MCX (Mission-Critical PTT, Video & Data), URLLC (Ultra-Reliable, Low-Latency Communications), TSC (Time-Sensitive Communications), RedCap (Reduced Capability) for IIoT (Industrial IoT), NTN (Non-Terrestrial Network) connectivity, SNPNs (Standalone NPNs), PNI-NPNs (Public Network-Integrated NPNs) and network slicing, private networks based on LTE and 5G technologies have gained recognition as an all-inclusive connectivity platform for critical communications, Industry 4.0 and enterprise transformation-related applications. Traditionally, these sectors have been dominated by LMR (Land Mobile Radio), Wi-Fi, industrial Ethernet, fiber and other disparate networks.

The liberalization of spectrum is another factor that is accelerating the adoption of private LTE and 5G networks. National regulators across the globe have released or are in the process of granting access to shared and local area licensed spectrum. Examples include the three-tiered CBRS (Citizens Broadband Radio Service) spectrum sharing scheme in the United States, Canada's NCL (Non-Competitive Local) licensing framework, Germany's 3.7-3.8 GHz and 28 GHz licenses for 5G campus networks, United Kingdom's shared and local access licensing model, Ireland's planned licensing regime for local area WBB (Wireless Broadband) systems, France's vertical spectrum and sub-letting arrangements, Spain's reservation of the 26 GHz band for self-

provisioned local networks, Netherlands' 3.5 GHz licenses for plot-based networks, Switzerland's NPN spectrum assignment in the 3.4-3.5 GHz band, Finland's 2.3 GHz and 26 GHz licenses for local 4G/5G networks, Sweden's 3.7 GHz and 26 GHz permits, Norway's regulation of local networks in the 3.8-4.2 GHz band, Poland's spectrum assignment for local government units and enterprises, Bahrain's private 5G network licenses, Japan's 4.6-4.9 GHz and 28 GHz local 5G network licenses, South Korea's e-Um 5G allocations in the 4.7 GHz and 28 GHz bands, Taiwan's provision of 4.8-4.9 GHz spectrum for private 5G networks, Hong Kong's LWBS (Localized Wireless Broadband System) licenses, Australia's apparatus licensing approach and Brazil's SLP (Private Limited Service) licenses. Vast swaths of globally and regionally harmonized license-exempt spectrum are also available worldwide that can be used for the operation of unlicensed LTE and 5G NR-U equipment for private networks. In addition, dedicated national spectrum in sub-1 GHz and higher frequencies has been allocated for specific critical communications-related applications in many countries.

LTE and 5G-based private cellular networks come in many different shapes and sizes, including isolated end-to-end NPNs in industrial and enterprise settings, local RAN equipment for targeted cellular coverage, dedicated on-premise core network functions, virtual sliced private networks, secure MVNO (Mobile Virtual Network Operator) platforms for critical communications, and wide area networks for application scenarios such as PPDR (Public Protection & Disaster Relief) broadband, smart utility grids, railway communications and A2G (Air-to-Ground) connectivity. However, it is important to note that equipment suppliers, system integrators, private network specialists, mobile operators and other ecosystem players have slightly different perceptions as to what exactly constitutes a private cellular network. While there is near universal consensus that private LTE and 5G networks refer to purpose-built cellular communications systems intended for the exclusive use of vertical industries and enterprises, some industry participants extend this definition to also include other market segments – for example, 3GPP-based community and residential broadband networks deployed by non-traditional service providers. Another closely related segment is neutral host infrastructure for shared or multi-operator coverage enhancement in indoor environments or underserved outdoor areas.

Despite the somewhat differing views on market definition, one thing is clear – private LTE and 5G networks are continuing their upward trajectory with deployments targeting a multitude of use cases across various industries. These range from localized wireless systems for dedicated connectivity in factories, warehouses, mines, power plants, substations, offshore wind farms, oil and gas facilities, construction sites, maritime ports, airports, hospitals, stadiums, office buildings and university campuses to regional

and nationwide sub-1 GHz private wireless broadband networks for utilities, FRMCS (Future Railway Mobile Communication System)-ready networks for train-to-ground communications and hybrid government-commercial public safety LTE networks. Custom-built cellular networks have also been implemented in locations as remote as Antarctica, and there are even plans for installations on the moon's surface and outer space.

The expanding influence of the private LTE and 5G network market is evident from the recent use of rapidly deployable private cellular network-in-a-box systems for professional TV broadcasting, enhanced fan engagement and gameplay operations at major sports events, including Paris 2024 Olympics, 2024 UEFA European Football Championship, North West 200 Motorcycle Race, 2024 World Rowing Cup III, New York Sail Grand Prix, 2024 PGA Championship, 2024 UFL Championship Game and 2024 NFL International Games, as well as the Republican and Democratic national conventions in the run up to the 2024 United States presidential election.

Other examples of high-impact private LTE/5G engagements include but are not limited to multi-site, multi-national private cellular deployments at the industrial facilities of Airbus, BMW, Chevron, John Deere, LG Electronics, Midea, Tesla, Toyota, Volkswagen, Walmart and several other household brand names; Aramco's (Saudi Arabian Oil Company) 450 MHz 3GPP network project and ADNOC's (Abu Dhabi National Oil Company) 11,000-square kilometer private 5G network for connecting thousands of remote wells and pipelines; defense sector 5G programs for the adoption of tactical cellular systems and permanent private 5G networks at military bases in the United States, Germany, Spain, Norway, Japan and South Korea; service territory-wide private wireless projects of 450connect, Ameren, CPFL Energia, ESB Networks, Evergy, Neoenergia, PGE (Polish Energy Group), SDG&E (San Diego Gas & Electric), Tampa Electric, Xcel Energy and other utility companies; and the recent implementation of a private 5G network at Belgium's Nobelwind offshore wind farm as part of a broader European effort to secure critical infrastructure in the North Sea.

There has also been a surge in the adoption of private wireless small cells as a cost-effective alternative to DAS (Distributed Antenna Systems) for delivering neutral host public cellular coverage in carpeted enterprise spaces, public venues, hospitals, hotels, higher education campuses and schools. This trend is particularly prevalent in the United States due to the open accessibility of the license-exempt GAA (General Authorized Access) tier of 3.5 GHz CBRS spectrum. Some examples of private network deployments supporting neutral host connectivity to one or more national mobile operators include Meta's corporate offices, City of Hope Hospital, SHC (Stanford Health

Care), Sound Hotel, Gale South Beach Hotel, Nobu Hotel, ASU (Arizona State University), Cal Poly (California Polytechnic State University), University of Virginia, Duke University and Parkside Elementary School.

SNS Telecom & IT estimates that global spending on private LTE and 5G network infrastructure for vertical industries will grow at a CAGR of approximately 20% between 2024 and 2027, eventually accounting for more than \$6 Billion by the end of 2027. Close to 60% of these investments – an estimated \$3.5 Billion – will be directed towards the buildout of standalone private 5G networks, which will become the predominant wireless communications medium to support the ongoing Industry 4.0 revolution for the digitization and automation of manufacturing and process industries. This unprecedented level of growth is likely to transform private LTE and 5G networks into an almost parallel equipment ecosystem to public mobile operator infrastructure in terms of market size by the late 2020s. By 2030, private networks could account for as much as a fifth of all mobile network infrastructure spending.

The “Private LTE & 5G Network Ecosystem: 2024 – 2030 – Opportunities, Challenges, Strategies, Industry Verticals & Forecasts” report presents an in-depth assessment of the private LTE and 5G network ecosystem, including the value chain, market drivers, barriers to uptake, enabling technologies, operational and business models, vertical industries, application scenarios, key trends, future roadmap, standardization, spectrum availability and allocation, regulatory landscape, case studies, ecosystem player profiles and strategies. The report also presents global and regional market size forecasts from 2024 to 2030. The forecasts cover three infrastructure submarkets, two technology generations, four spectrum licensing models, 16 vertical industries and five regional markets.

The report comes with an associated Excel datasheet suite covering quantitative data from all numeric forecasts presented in the report, as well as a database of over 7,300 global private LTE/5G engagements – as of Q4’2024.

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 - 3.7.11.2 UE-to-Network & UE-to-UE Relays
 - 3.7.11.3 Indoor & Outdoor Small Cells
 - 3.7.11.4 DAS (Distributed Antenna Systems)
 - 3.7.11.5 IAB (Integrated Access & Backhaul)
 - 3.7.11.6 Mobile IAB: VMRs (Vehicle-Mounted Relays)
 - 3.7.11.7 NCRs (Network-Controlled Repeaters)
 - 3.7.11.8 NTN (Non-Terrestrial Networks)
 - 3.7.11.9 ATG/A2G (Air-to-Ground) Connectivity
- 3.7.12 Cloud-Native, Software-Driven & Open Networking
 - 3.7.12.1 Cloud-Native Technologies
 - 3.7.12.2 Microservices & SBA (Service-Based Architecture)
 - 3.7.12.3 Containerization of Network Functions
 - 3.7.12.4 NFV (Network Functions Virtualization)
 - 3.7.12.5 SDN (Software-Defined Networking)
 - 3.7.12.6 Cloud Compute, Storage & Networking Infrastructure
 - 3.7.12.7 APIs (Application Programming Interfaces)

- 3.7.12.8 Open RAN & Core Architectures
- 3.7.13 Network Intelligence & Automation
 - 3.7.13.1 AI (Artificial Intelligence)
 - 3.7.13.2 Machine & Deep Learning
 - 3.7.13.3 Big Data & Advanced Analytics
 - 3.7.13.4 SON (Self-Organizing Networks)
 - 3.7.13.5 Intelligent Control, Management & Orchestration
 - 3.7.13.6 Support for Network Intelligence & Automation in 3GPP Standards

4 CHAPTER 4: KEY VERTICAL INDUSTRIES & APPLICATIONS

- 4.1 Cross-Sector & Enterprise Application Capabilities
 - 4.1.1 Mobile Broadband
 - 4.1.2 FWA (Fixed Wireless Access)
 - 4.1.3 Voice & Messaging Services
 - 4.1.4 High-Definition Video Transmission
 - 4.1.5 Telepresence & Video Conferencing
 - 4.1.6 Multimedia Broadcasting & Multicasting
 - 4.1.7 IoT (Internet of Things) Networking
 - 4.1.8 Wireless Connectivity for Wearables
 - 4.1.9 Untethered AR/VR/MR (Augmented, Virtual & Mixed Reality)
 - 4.1.10 Real-Time Holographic Projections
 - 4.1.11 Tactile Internet & Haptic Feedback
 - 4.1.12 Precise Positioning & Tracking
 - 4.1.13 Industrial Automation
 - 4.1.14 Remote Control of Machines
 - 4.1.15 Connected Mobile Robotics
 - 4.1.16 Unmanned & Autonomous Vehicles
 - 4.1.17 BVLOS (Beyond Visual Line-of-Sight) Operation of Drones
 - 4.1.18 Data-Driven Analytics & Insights
 - 4.1.19 Sensor-Equipped Digital Twins
 - 4.1.20 Predictive Maintenance of Assets
- 4.2 Vertical Industries & Specific Application Scenarios
 - 4.2.1 Agriculture
 - 4.2.1.1 Intelligent Monitoring of Crop, Soil & Weather Conditions
 - 4.2.1.2 IoT & Advanced Analytics-Driven Yield Optimization
 - 4.2.1.3 Sensor-Based Smart Irrigation Control Systems
 - 4.2.1.4 Real-Time Tracking & Geofencing in Farms
 - 4.2.1.5 Livestock & Aquaculture Health Management

4.2.1.6 Video-Based Remote Veterinary Inspections

4.2.1.7 Unmanned Autonomous Tractors & Farm Vehicles

4.2.1.8 Robots for Planting, Weeding & Harvesting

4.2.1.9 5G-Equipped Agricultural Drones

4.2.1.10 Connected Greenhouses & Vertical Farms

4.2.2 Aviation

4.2.2.1 Inflight Connectivity for Passengers & Cabin Crew

4.2.2.2 Connected Airports for Enhanced Traveler & Visitor Experience

4.2.2.3 Coordination of Ground Support Equipment, Vehicles & Personnel

4.2.2.4 ATM (Air Traffic Management) for Drones & Urban Air Mobility Vehicles

4.2.2.5 Wireless Upload of EFB (Electronic Flight Bag) & IFE (In-Flight

Entertainment) Updates

4.2.2.6 Aircraft Data Offload for Operational & Maintenance Purposes

4.2.2.7 Video Surveillance of Airport Surface & Terminal Areas

4.2.2.8 5G-Enabled Remote Inspection & Repair of Aircraft

4.2.2.9 Navigation, Weather & Other IoT Sensors

4.2.2.10 Smart Baggage Handling

4.2.2.11 Asset Awareness & Tracking

4.2.2.12 Passenger Flow & Resource Management

4.2.2.13 Automation of Check-In & Boarding Procedures

4.2.2.14 Intelligent Airport Service Robots

4.2.3 Broadcasting

4.2.3.1 3GPP-Based PMSE (Program Making & Special Events)

4.2.3.2 Live AV (Audio-Visual) Media Production Using NPNs

4.2.3.3 Private 5G-Enabled Production in Remote Locations

4.2.3.4 Network Slicing for Contribution Feeds

4.2.3.5 Wire-Free Cameras & Microphones

4.2.3.6 Multicast & Broadcast Content Distribution

4.2.4 Construction

4.2.4.1 Wireless Connectivity for Construction Sites & Field Offices

4.2.4.2 Instantaneous Access to Business-Critical Applications

4.2.4.3 5G-Based Remote Control of Heavy Machinery

4.2.4.4 Autonomous Mobile Robots for Construction

4.2.4.5 IoT Sensor-Driven Maintenance of Equipment

4.2.4.6 Video Surveillance & Analytics for Site Security

4.2.4.7 Real-Time Visibility of Personnel, Assets & Materials

4.2.4.8 Aerial Surveying & Monitoring of Construction Sites

4.2.5 Education

4.2.5.1 Remote & Distance Learning Services

- 4.2.5.2 Mobile Access to Academic Resources
- 4.2.5.3 5G-Connected Smart Classrooms
- 4.2.5.4 Automation of Administrative Tasks
- 4.2.5.5 Personalized & Engaging Learning
- 4.2.5.6 AR/VR-Based Immersive Lessons
- 4.2.5.7 5G-Enabled Virtual Field Trips
- 4.2.5.8 Educational Telepresence Robots
- 4.2.6 Forestry
 - 4.2.6.1 Wireless Connectivity for Forestry Operations & Recreation
 - 4.2.6.2 5G-Facilitated Teleoperation of Forestry Equipment
 - 4.2.6.3 Autonomous Harvesting & Milling Machinery
 - 4.2.6.4 Real-Time Tracking of Equipment, Vehicles & Personnel
 - 4.2.6.5 Cellular IoT Sensors for Biological & Environmental Monitoring
 - 4.2.6.6 Wireless Cameras for Wildlife Observation, Conservation & Security
 - 4.2.6.7 Early Wildfire Detection & Containment Systems
 - 4.2.6.8 Drones for Search & Rescue Operations
- 4.2.7 Healthcare
 - 4.2.7.1 5G-Connected Smart Hospitals & Healthcare Facilities
 - 4.2.7.2 Wireless Transmission of Medical Imagery & Rich Datasets
 - 4.2.7.3 Real-Time Monitoring of Patients in Acute & Intensive Care
 - 4.2.7.4 Telehealth Video Consultations for Visual Assessment
 - 4.2.7.5 Connectivity for AI-Based Healthcare Applications
 - 4.2.7.6 AR Systems for Complex Medical Procedures
 - 4.2.7.7 Remote-Controlled Surgery & Examination
 - 4.2.7.8 Assisted Living & Rehabilitation Robotics
 - 4.2.7.9 Immersive VR-Based Medical & Surgical Training
 - 4.2.7.10 Connected Ambulances for EMS (Emergency Medical Services)
- 4.2.8 Manufacturing
 - 4.2.8.1 Untethered Connectivity for Production & Process Automation
 - 4.2.8.2 Wireless Motion Control & C2C (Control-to-Control) Communications
 - 4.2.8.3 Cellular-Equipped Mobile Control Panels
 - 4.2.8.4 Mobile Robots & AGVs (Automated Guided Vehicles)
 - 4.2.8.5 Autonomous Forklifts & Warehouse Robotics
 - 4.2.8.6 AR-Facilitated Factory Floor Operations
 - 4.2.8.7 Machine Vision-Based Quality Inspection
 - 4.2.8.8 Closed-Loop Process Control
 - 4.2.8.9 Process & Environmental Monitoring
 - 4.2.8.10 Precise Indoor Positioning for Asset Management
 - 4.2.8.11 Remote Access & Maintenance of Equipment

4.2.9 Military

- 4.2.9.1 5G-Based Tactical Battlefield Communications
- 4.2.9.2 Smart Military Bases & Command Posts
- 4.2.9.3 ISR (Intelligence, Surveillance & Reconnaissance)
- 4.2.9.4 Command & Control of Weapon Systems
- 4.2.9.5 Remote Operation of Robotics & Unmanned Assets
- 4.2.9.6 AR HUD (Heads-Up Display) Systems
- 4.2.9.7 Wireless VR/MR-Based Military Training
- 4.2.9.8 Perimeter Security & Force Protection

4.2.10 Mining

- 4.2.10.1 Safety-Critical Communications in Remote Mining Environments
- 4.2.10.2 Wireless Control of Drilling, Excavation & Related Equipment
- 4.2.10.3 Automated Loading, Haulage & Train Operations
- 4.2.10.4 Video-Based Monitoring of Personnel & Assets
- 4.2.10.5 Underground Positioning & Geofencing
- 4.2.10.6 Smart Ventilation & Water Management
- 4.2.10.7 Real-Time Operational Intelligence
- 4.2.10.8 AR & VR for Mining Operations

4.2.11 Oil & Gas

- 4.2.11.1 Wireless Connectivity for Remote Exploration & Production Sites
- 4.2.11.2 Critical Voice & Data-Based Mobile Workforce Communications
- 4.2.11.3 Push-to-Video & Telepresence Conferencing for Field Operations
- 4.2.11.4 Cellular-Equipped Surveillance Cameras for Situational Awareness
- 4.2.11.5 IoT Sensor-Enabled Remote Monitoring & Automation of Processes
- 4.2.11.6 SCADA (Supervisory Control & Data Acquisition) Communications
- 4.2.11.7 Location Services for Worker Safety & Asset Tracking
- 4.2.11.8 AR Smart Helmets for Hands-Free Remote Assistance
- 4.2.11.9 Predictive Maintenance of Oil & Gas Facilities
- 4.2.11.10 Mobile Robots for Safety Hazard Inspections

4.2.12 Ports & Maritime Transport

- 4.2.12.1 Critical Communications for Port Workers
- 4.2.12.2 Automation of Port & Terminal Operations
- 4.2.12.3 5G-Connected AGVs for Container Transport
- 4.2.12.4 Remote-Controlled Cranes & Terminal Tractors
- 4.2.12.5 Video Analytics for Operational Purposes
- 4.2.12.6 Environmental & Condition Monitoring
- 4.2.12.7 Port Traffic Management & Control
- 4.2.12.8 AR & VR Applications for Port Digitization
- 4.2.12.9 Unmanned Aerial Inspections of Port Facilities

- 4.2.12.10 Private Cellular-Enabled Maritime Communications
- 4.2.12.11 Wireless Ship-to-Shore Connectivity in Nearshore Waters
- 4.2.12.12 5G-Facilitated Remote Steering of Unmanned Vessels
- 4.2.13 Public Safety
 - 4.2.13.1 Mission-Critical PTT Voice Communications
 - 4.2.13.2 Real-Time Video & High-Resolution Imagery
 - 4.2.13.3 Messaging, File Transfer & Presence Services
 - 4.2.13.4 Secure & Seamless Mobile Broadband Access
 - 4.2.13.5 Location-Based Services & Enhanced Mapping
 - 4.2.13.6 Multimedia CAD (Computer-Aided Dispatch)
 - 4.2.13.7 Massive-Scale Video Surveillance & Analytics
 - 4.2.13.8 Smart Glasses & AR Headgear for First Responders
 - 4.2.13.9 5G-Equipped Police, Firefighting & Rescue Robots
 - 4.2.13.10 5G MBS/5MBS in High-Density Environments
 - 4.2.13.11 Sidelink-Based Direct Mode Communications
- 4.2.14 Railways
 - 4.2.14.1 FRMCS (Future Railway Mobile Communication System)
 - 4.2.14.2 Train-to-Ground & Train-to-Train Connectivity
 - 4.2.14.3 Wireless Intra-Train Communications
 - 4.2.14.4 Rail Operations-Critical Voice, Data & Video Services
 - 4.2.14.5 ATO (Automatic Train Operation) & Traffic Management
 - 4.2.14.6 Video Surveillance for Operational Safety & Security
 - 4.2.14.7 Smart Maintenance of Railway Infrastructure
 - 4.2.14.8 Intelligent Management of Logistics Facilities
 - 4.2.14.9 Onboard Broadband Internet Access
 - 4.2.14.10 PIS (Passenger Information Systems)
 - 4.2.14.11 Smart Rail & Metro Station Services
- 4.2.15 Utilities
 - 4.2.15.1 Multi-Service FANs (Field Area Networks)
 - 4.2.15.2 Critical Applications for Field Workforce Communications
 - 4.2.15.3 AMI (Advanced Metering Infrastructure)
 - 4.2.15.4 DA (Distribution Automation) Systems
 - 4.2.15.5 Microgrid & DER (Distributed Energy Resource) Integration
 - 4.2.15.6 5G-Enabled VPPs (Virtual Power Plants)
 - 4.2.15.7 Low-Latency SCADA Applications for Utilities
 - 4.2.15.8 Teleprotection of Transmission & Distribution Grids
 - 4.2.15.9 Video Monitoring for Critical Infrastructure Protection
 - 4.2.15.10 Sensor-Based Detection of Water & Gas Leaks
 - 4.2.15.11 AR Information Overlays for Repairs & Maintenance

- 4.2.15.12 Drone & Robot-Assisted Inspections of Utility Assets
- 4.2.15.13 Local Wireless Connectivity for Remote & Offshore Facilities
- 4.2.16 Warehousing & Other Verticals

5 CHAPTER 5: SPECTRUM AVAILABILITY, ALLOCATION & USAGE

5.1 National & Local Area Licensed Spectrum

5.1.1 Low-Band (Sub-1 GHz)

- 5.1.1.1 200 400 MHz
- 5.1.1.2 410 & 450 MHz
- 5.1.1.3 600 MHz
- 5.1.1.4 700 MHz
- 5.1.1.5 800 MHz
- 5.1.1.6 900 MHz

5.1.2 Mid-Band (1.6 GHz)

- 5.1.2.1 1.4 GHz
- 5.1.2.2 1.6 GHz
- 5.1.2.3 1.8 GHz
- 5.1.2.4 1.9 GHz
- 5.1.2.5 2.1 GHz
- 5.1.2.6 2.3 GHz
- 5.1.2.7 2.4 GHz
- 5.1.2.8 2.5 GHz
- 5.1.2.9 2.6 GHz
- 5.1.2.10 3.4 GHz
- 5.1.2.11 3.5 GHz CBRS PAL Tier
- 5.1.2.12 3.7 3.8 GHz
- 5.1.2.13 3.8 4.2 GHz
- 5.1.2.14 4.6 4.9 GHz
- 5.1.2.15 Other Bands

5.1.3 High-Band mmWave (Millimeter Wave)

- 5.1.3.1 26 GHz
- 5.1.3.2 28 GHz
- 5.1.3.3 37 GHz
- 5.1.3.4 Other Bands

5.2 License-Exempt (Unlicensed) Spectrum

- 5.2.1 Sub-1 GHz Bands (470 790/800/900 MHz)
- 5.2.2 1.8 GHz DECT Guard Band
- 5.2.3 1.9 GHz sXGP Band

5.2.4 2.4 GHz (2,400 2,483.5 MHz)

5.2.5 3.5 GHz CBRS GAA Tier

5.2.6 5 GHz (5,150 5,925 MHz)

5.2.7 6 GHz (5,925 7,125 MHz)

5.2.8 60 GHz (57 71 GHz)

5.2.9 Other Bands

5.3 North America

5.3.1 United States

5.3.2 Canada

5.4 Asia Pacific

5.4.1 Australia

5.4.2 New Zealand

5.4.3 China

5.4.4 Hong Kong

5.4.5 Taiwan

5.4.6 Japan

5.4.7 South Korea

5.4.8 Singapore

5.4.9 Malaysia

5.4.10 Indonesia

5.4.11 Philippines

5.4.12 Thailand

5.4.13 Vietnam

5.4.14 Laos

5.4.15 Myanmar

5.4.16 India

5.4.17 Pakistan

5.4.18 Rest of Asia Pacific

5.5 Europe

5.5.1 United Kingdom

5.5.1.1 Great Britain

5.5.1.2 Northern Ireland

5.5.2 Republic of Ireland

5.5.3 France

5.5.4 Germany

5.5.5 Belgium

5.5.6 Netherlands

5.5.7 Switzerland

5.5.8 Austria

- 5.5.9 Italy
- 5.5.10 Spain
- 5.5.11 Portugal
- 5.5.12 Sweden
- 5.5.13 Norway
- 5.5.14 Denmark
- 5.5.15 Finland
- 5.5.16 Estonia
- 5.5.17 Czech Republic
- 5.5.18 Poland
- 5.5.19 Ukraine
- 5.5.20 Turkiye
- 5.5.21 Cyprus
- 5.5.22 Greece
- 5.5.23 Bulgaria
- 5.5.24 Romania
- 5.5.25 Hungary
- 5.5.26 Slovenia
- 5.5.27 Croatia
- 5.5.28 Russia
- 5.5.29 Belarus
- 5.5.30 Rest of Europe
- 5.6 Middle East & Africa
 - 5.6.1 Saudi Arabia
 - 5.6.2 United Arab Emirates
 - 5.6.3 Qatar
 - 5.6.4 Oman
 - 5.6.5 Bahrain
 - 5.6.6 Kuwait
 - 5.6.7 Iraq
 - 5.6.8 Jordan
 - 5.6.9 Israel
 - 5.6.10 Egypt
 - 5.6.11 Algeria
 - 5.6.12 Morocco
 - 5.6.13 Tunisia
 - 5.6.14 South Africa
 - 5.6.15 Botswana
 - 5.6.16 Zambia

- 5.6.17 Kenya
- 5.6.18 Ethiopia
- 5.6.19 Angola
- 5.6.20 Republic of the Congo
- 5.6.21 Gabon
- 5.6.22 Nigeria
- 5.6.23 Uganda
- 5.6.24 Ghana
- 5.6.25 Senegal
- 5.6.26 Rest of the Middle East & Africa

5.7 Latin & Central America

- 5.7.1 Brazil
- 5.7.2 Mexico
- 5.7.3 Argentina
- 5.7.4 Colombia
- 5.7.5 Chile
- 5.7.6 Peru
- 5.7.7 Ecuador
- 5.7.8 Bolivia
- 5.7.9 Dominican Republic
- 5.7.10 Barbados
- 5.7.11 Trinidad & Tobago
- 5.7.12 Suriname
- 5.7.13 Rest of Latin & Central America

6 CHAPTER 6: STANDARDIZATION, REGULATORY & COLLABORATIVE INITIATIVES

6.1 3GPP (Third Generation Partnership Project)

6.1.1 Releases 11-14: 3GPP-Based Critical Communications Features

6.1.2 Release 15: 5G eMBB, Network Slicing, Improvements for MTC/IoT & MCX Extensions

6.1.3 Release 16: 3GPP Support for NPNs, 5G URLLC, TSN, NR-U & Vertical Application Enablers

6.1.4 Release 17: NPN Enhancements, Edge Computing, TSC, Expansion of IIoT Features, RedCap & NTN Connectivity

6.1.5 Release 18: 5G-Advanced, Further NPN Refinements, DetNet, Intelligent Automation, Spectrum Flexibility & XR Services

6.1.6 Releases 19, 20, 21 & Beyond: Succession From 5G-Advanced to the 6G

Evolution

6.2 450 MHz Alliance

6.2.1 Promoting 3GPP Technologies in the 380 470 MHz Frequency Range

6.3 5G-ACIA (5G Alliance for Connected Industries and Automation)

6.3.1 Maximizing the Applicability of 5G Technology in the Industrial Domain

6.4 5GAIA (5G Applications Industry Array)

6.4.1 Advancing the Development of China's 5G Applications Industry

6.5 5G Campus Network Alliance

6.5.1 Supporting the Market Development of 5G Campus Networks in Germany

6.6 5GDNA (5G Deterministic Networking Alliance)

6.6.1 Industry Collaboration & Promotion of 5GDN (5G Deterministic Networking)

6.7 5GFF (5G Future Forum)

6.7.1 Accelerating the Delivery of 5G MEC (Multi-Access Edge Computing) Solutions

6.8 5G Forum (South Korea)

6.8.1 Expanding Convergence Between 5G Technology & Vertical Industries

6.9 5G Health Association

6.9.1 Interfacing 5G-Based Connectivity & Healthcare Applications

6.10 5G-MAG (5G Media Action Group)

6.10.1 5G-Based NPNs in Media Production

6.11 5GMF (Fifth Generation Mobile Communication Promotion Forum, Japan)

6.11.1 Initiatives Related to Local 5G Networks in Japan

6.12 5GSA (5G Slicing Association)

6.12.1 Addressing Vertical Industry Requirements for 5G Network Slicing

6.13 6G-IA (6G Smart Networks and Services Industry Association)

6.13.1 Private 5G-Related Projects & Activities

6.14 AGURRE (Association of Major Users of Operational Radio Networks, France)

6.14.1 Spectrum Access, Regulatory Framework & Industrial Ecosystem for Private Mobile Networks

6.15 APCO (Association of Public-Safety Communications Officials) International

6.15.1 Public Safety LTE/5G-Related Advocacy Efforts

6.16 ATIS (Alliance for Telecommunications Industry Solutions)

6.16.1 Deployment & Operational Requirements of 5G-Based NPNs

6.16.2 Shared HNI & IBN Administration for CBRS Spectrum

6.16.3 Other Private LTE & 5G-Related Initiatives

6.17 BTG (Dutch Association of Large-Scale ICT & Telecommunications Users)

6.17.1 KMBG (Dutch Critical Mobile Broadband Users) Expert Group

6.18 B-TrunC (Broadband Trunking Communication) Industry Alliance

6.18.1 B-TrunC Standard for LTE-Based Critical Communications

6.19 CAMET (China Association of Metros)

- 6.19.1 Adoption of 3GPP Networks for Urban Rail Transit Systems
- 6.20 CEPT (European Conference of Postal and Telecommunications Administrations)
 - 6.20.1 Common Spectrum Policies for Local 4G/5G, PPDR Broadband & FRMCS
- 6.21 DSA (Dynamic Spectrum Alliance)
 - 6.21.1 Promoting Unlicensed & Dynamic Access to Spectrum
- 6.22 Electricity Canada (Canadian Electricity Association)
 - 6.22.1 PVNO & Dedicated Spectrum for Smart Grid Communications
- 6.23 ENTELEC (Energy Telecommunications and Electrical Association)
 - 6.23.1 Policy Advocacy & Other Private LTE/5G-Related Activities
- 6.24 EPRI (Electric Power Research Institute)
 - 6.24.1 Research & Guidelines in Support of 3GPP-Based Utility Communications
- 6.25 ERA (European Union Agency for Railways)
 - 6.25.1 Evolution of Railway Radio Communication Project
- 6.26 ETSI (European Telecommunications Standards Institute)
 - 6.26.1 Technical Specifications for FRMCS, PPDR Broadband, MCX & TETRA-3GPP Interworking
 - 6.26.2 Other Work Relevant to Private LTE & 5G Networks
- 6.27 EU-Rail (Europe's Rail Joint Undertaking)
 - 6.27.1 FRMCS-Related Research & Innovation Activities
- 6.28 EUTC (European Utilities Telecom Council)
 - 6.28.1 Addressing LTE & 5G-Related Requirements for European Utilities
- 6.29 EUWENA (European Users of Enterprise Wireless Networks Association)
 - 6.29.1 Catalyzing the Wider Adoption of 3GPP-Based Private Networks
- 6.30 EWA (Enterprise Wireless Alliance)
 - 6.30.1 Supporting the Private Wireless Industry in the United States
- 6.31 free5GC
 - 6.31.1 Open-Source 5GC Software
- 6.32 GSA (Global Mobile Suppliers Association)
 - 6.32.1 Advocacy for Private Mobile Networks
- 6.33 GSMA (GSM Association)
 - 6.33.1 Guidelines for 5G Private & Dedicated Networks
- 6.34 GUTMA (Global UTM Association)
 - 6.34.1 ACJA (Aerial Connectivity Joint Activity) Initiative
- 6.35 ITU (International Telecommunication Union)
 - 6.35.1 International & Regional Harmonization of LTE/5G Spectrum
 - 6.35.2 Defining the Role of IMT-2020 to Support Vertical Applications
- 6.36 JOTS (Joint Operators Technical Specification) Forum
 - 6.36.1 NHIB (Neutral Host In-Building) Specification
- 6.37 JRC (Joint Radio Company)

- 6.37.1 Supporting LTE/5G-Based Smart Grid Initiatives
- 6.38 KRRRI (Korea Railroad Research Institute)
 - 6.38.1 Functional Testing & Certification of LTE-R (LTE-Based Railway Communications)
- 6.39 LF (Linux Foundation)
 - 6.39.1 Magma Mobile Core Software Platform
 - 6.39.2 LF Networking's 5G Super Blueprint
 - 6.39.3 LF Edge's Akraino Private LTE/5G ICN (Integrated Cloud-Native) Blueprint
 - 6.39.4 Other Projects Relevant to Private LTE & 5G Networks
- 6.40 MFA (Alliance for Private Networks)
 - 6.40.1 Uni5G Technology Blueprints for Private 5G Networks
 - 6.40.2 Network Identifier Program Supporting Private & Neutral Host Networks
 - 6.40.3 MulteFire Specifications: LTE Operation in Unlicensed Spectrum
 - 6.40.4 Certification Program for MulteFire Equipment
 - 6.40.5 MulteFire OSU (Online Sign-Up) System
- 6.41 MSSA (Mobile Satellite Services Association)
 - 6.41.1 Advancing the Global Direct-to-Device NTN Ecosystem
- 6.42 NGA (Next G Alliance)
 - 6.42.1 Building the Foundation for North American Leadership in 6G
- 6.43 NGMN (Next-Generation Mobile Networks) Alliance
 - 6.43.1 Work Related to Private 5G & Network Slicing
- 6.44 NSC (National Spectrum Consortium)
 - 6.44.1 Enhancing Spectrum Superiority & 5G Capabilities for Federal Users
- 6.45 OCP (Open Compute Project) Foundation
 - 6.45.1 Initiatives Aimed at Open Designs for Telco Hardware
- 6.46 one6G Association
 - 6.46.1 Driving 6G Innovation & Development Across Vertical Industries
- 6.47 ONF (Open Networking Foundation)
 - 6.47.1 Aether Private 5G Connected Edge Platform
 - 6.47.2 SD-RAN, SD-Core, OMEC & Other Relevant Projects
- 6.48 OnGo Alliance
 - 6.48.1 Promoting 4G & 5G OnGo Wireless Network Technology
 - 6.48.2 Technical Specifications & Guidelines for 4G/5G-Based CBRS Networks
 - 6.48.3 Product Certification Program Supporting Multi-Vendor Interoperability
- 6.49 OPC Foundation
 - 6.49.1 OPC UA (Unified Architecture) Over 5G for Industry 4.0 Applications
- 6.50 Open RAN Policy Coalition
 - 6.50.1 Promoting Policies to Drive the Adoption of Open RAN
- 6.51 Open5GCore

- 6.51.1 Vendor-Independent 5GC Implementation
- 6.52 Open5GS & NextEPC
 - 6.52.1 Open-Source 5GC & EPC Software
- 6.53 OpenInfra (Open Infrastructure) Foundation
 - 6.53.1 StarlingX Software Stack for Ultra-Low Latency Edge Applications
 - 6.53.2 OpenStack Cloud Software & Other Projects
- 6.54 O-RAN Alliance
 - 6.54.1 O-RAN Architecture Specifications
 - 6.54.2 O-RAN SC (Software Community)
 - 6.54.3 Testing & Integration Support
- 6.55 OSA (OpenAirInterface Software Alliance)
 - 6.55.1 OAI (OpenAirInterface) 5G RAN, Core & MOSAIC5G Projects
- 6.56 PIA (PSBN Innovation Alliance)
 - 6.56.1 PSBN (Public Safety Broadband Network) Governance in Canada's Ontario Province
- 6.57 PMeV (German Professional Mobile Radio Association)
 - 6.57.1 Professional Broadband & 5G Campus Network-Related Activities
- 6.58 PSBTA (Public Safety Broadband Technology Association)
 - 6.58.1 Public Safety LTE/5G-Related Activities
- 6.59 PSCE (Public Safety Communication Europe)
 - 6.59.1 Public Safety Broadband-Related Standardization Activities
 - 6.59.2 BroadX Projects: Pan-European Interoperable Mobile Broadband System for Public Safety
- 6.60 Safe-Net Forum
 - 6.60.1 Technical & Policy Guidance for 3GPP-Based Critical Communications Networks
- 6.61 SCF (Small Cell Forum)
 - 6.61.1 Reference Blueprints for Private 5G Networks
 - 6.61.2 Neutral Hosting, Edge Computing & Other Relevant Work
- 6.62 Seamless Air Alliance
 - 6.62.1 Leading Global Standards for Inflight Connectivity
- 6.63 SimpleRAN
 - 6.63.1 Ensuring Interoperability & Transparency in the vRAN Ecosystem
- 6.64 srsRAN Project
 - 6.64.1 Open-Source 4G & 5G Software Suites
- 6.65 TCA (Trusted Connectivity Alliance)
 - 6.65.1 5G SIM/eSIM Recommendations for Private Networks
- 6.66 TCCA (The Critical Communications Association)
 - 6.66.1 CCBG (Critical Communications Broadband Group)

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- 6.68 TIA (Telecommunications Industry Association)
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- 6.78 UTC (Utilities Technology Council)
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8.147.4 Deployment Summary

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- 8.155.3 Integrators & Suppliers
- 8.155.4 Deployment Summary
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9 CHAPTER 9: KEY ECOSYSTEM PLAYERS

- 9.1 10T Tech
- 9.2 1NCE
- 9.3 1oT
- 9.4 2TEST (Alkor-Communication)
- 9.5 3D-P (Epiroc)
- 9.6 450connect

- 9.7 4K Solutions
- 9.8 4RF (Aviat Networks)
- 9.9 6Harmonics/6WiLInk
- 9.10 6WIND
- 9.11 7P (Seven Principles)
- 9.12 A Beep/Diga-Talk+
- 9.13 A1 Telekom Austria Group
- 9.14 A10 Networks
- 9.15 A5G Networks
- 9.16 AAEON Technology (ASUS ASUSTeK Computer)
- 9.17 Aarna Networks
- 9.18 ABB
- 9.19 ABEL Mobilfunk
- 9.20 ABiT Corporation
- 9.21 ABS
- 9.22 Abside Networks
- 9.23 AccelerComm
- 9.24 Accelink Technologies
- 9.25 Accelleran
- 9.26 Accenture
- 9.27 Access Spectrum
- 9.28 Accton Technology Corporation
- 9.29 Accuver (InnoWireless)
- 9.30 ACE Technologies
- 9.31 AceTel (Ace Solutions)
- 9.32 Achronix Semiconductor Corporation
- 9.33 ACOME
- 9.34 Actelis Networks
- 9.35 Action Technologies (Shenzhen Action Technologies)
- 9.36 Actiontec Electronics
- 9.37 Active911
- 9.38 Actus Networks
- 9.39 Adax
- 9.40 Adcor Magnet Systems
- 9.41 ADI (Analog Devices, Inc.)
- 9.42 ADLINK Technology
- 9.43 ADRF (Advanced RF Technologies)
- 9.44 ADT
- 9.45 Adtran

- 9.46 Advanced Energy Industries
- 9.47 AdvanceTec Industries
- 9.48 Advantech
- 9.49 Advantech Wireless Technologies (Baylin Technologies)
- 9.50 Aegex Technologies
- 9.51 Aerial Applications
- 9.52 Aeris
- 9.53 Aerostar International
- 9.54 Aethertek
- 9.55 Affarii Technologies
- 9.56 Affirmed Networks (Microsoft Corporation)
- 9.57 AFL Global
- 9.58 AFRY
- 9.59 Agile (Agile Interoperable Solutions)
- 9.60 AGIS (Advanced Ground Information Systems)
- 9.61 AGM Mobile
- 9.62 AH NET (MVM NET)
- 9.63 AI-LINK
- 9.64 AINA Wireless
- 9.65 Airbus/SLC (Secure Land Communications)
- 9.66 Airfide Networks
- 9.67 Airgain
- 9.68 AirHop Communications
- 9.69 Airlinq
- 9.70 Airspan Networks
- 9.71 Airtower Networks
- 9.72 Airwavz Solutions
- 9.73 AIS (Advanced Info Service)
- 9.74 AiVader
- 9.75 Akamai Technologies
- 9.76 Akoustis Technologies
- 9.77 Alaxala Networks Corporation (Fortinet)
- 9.78 ALBEDO Telecom
- 9.79 albis-elcon (UET United Electronic Technology)
- 9.80 Alcadis
- 9.81 Alea (Leonardo)
- 9.82 Alef (Alef Edge)
- 9.83 Alepo
- 9.84 Alibaba Group

- 9.85 Aliniant
- 9.86 Allbesmart
- 9.87 Allen Vanguard Wireless
- 9.88 Allerio
- 9.89 Allied Telesis
- 9.90 Allot
- 9.91 Alpha Networks
- 9.92 Alpha Wireless
- 9.93 Alsatis Reseaux
- 9.94 Alstom
- 9.95 Altaeros
- 9.96 Altair Semiconductor (Sony Semiconductor Israel)
- 9.97 ALTAN Redes
- 9.98 Altice Group
- 9.99 ALVIS (Argentina)
- 9.100 AM Telecom
- 9.101 Amantya Technologies
- 9.102 Amarisoft
- 9.103 Amazon/AWS (Amazon Web Services)
- 9.104 Ambra Solutions-ECOTEL
- 9.105 AMD (Advanced Micro Devices)
- 9.106 Amdocs
- 9.107 America Movil
- 9.108 American Tower Corporation
- 9.109 AMI (American Megatrends International)
- 9.110 AMIT Wireless
- 9.111 Ampere Computing
- 9.112 Amphenol Corporation
- 9.113 Ampleon
- 9.114 Amtele Communication
- 9.115 Andesat
- 9.116 ANDRO Computational Solutions
- 9.117 Anktion (Fujian) Technology
- 9.118 Anokiwave
- 9.119 Anritsu
- 9.120 ANS Advanced Network Services (Charge Enterprises)
- 9.121 Antenna Company
- 9.122 Anterix
- 9.123 Antevia Networks

- 9.124 Antna Antenna Technology
- 9.125 Aorotech
- 9.126 Apple
- 9.127 APRESIA Systems
- 9.128 APSTAR (APT Satellite Company)
- 9.129 APT (Asia Pacific Telecom)
- 9.130 aql
- 9.131 Aquila (Suzhou Aquila Solutions)
- 9.132 Aqura Technologies (Telstra Purple)
- 9.133 Arabsat
- 9.134 Arcadyan Technology Corporation (Compal Electronics)
- 9.135 Archos
- 9.136 Arctic Semiconductor (Formerly SiTune Corporation)
- 9.137 Arete M
- 9.138 Argela
- 9.139 ArgoNET
- 9.140 Aria Networks
- 9.141 Arista Networks
- 9.142 Arkessa (Wireless Logic Group)
- 9.143 Arm
- 9.144 Armour Communications
- 9.145 Arqit Quantum
- 9.146 ArrayComm (Chengdu ArrayComm Wireless Technologies)
- 9.147 Arrcus
- 9.148 Artemis Networks
- 9.149 Artiza Networks
- 9.150 Aruba (HPE Hewlett Packard Enterprise)
- 9.151 Arukona
- 9.152 Asavie
- 9.153 ASELSAN
- 9.154 AsiaInfo Technologies
- 9.155 AsiaSat (Asia Satellite Telecommunications Company)
- 9.156 Askey Computer Corporation (ASUS ASUSTeK Computer)
- 9.157 ASOCS
- 9.158 Aspire Technology (NEC Corporation)
- 9.159 ASR Microelectronics
- 9.160 AST SpaceMobile
- 9.161 ASTELLA (Astella Technologies)
- 9.162 ASTRI (Hong Kong Applied Science and Technology Research Institute)

- 9.163 ASUS (ASUSTeK Computer)
- 9.164 Asylon
- 9.165 AT&T
- 9.166 Ataya
- 9.167 ATDI
- 9.168 ATEL (Asiatelco Technologies)
- 9.169 Atel Antennas
- 9.170 Atesio
- 9.171 Athonet (HPE Hewlett Packard Enterprise)
- 9.172 ATL A Test Lab (Eurofins E&E Electrical and Electronics)
- 9.173 Atlas Telecom
- 9.174 AtlasEdge (Liberty Global/DigitalBridge Group)
- 9.175 ATN International
- 9.176 Atos
- 9.177 Atrinet (ServiceNow)
- 9.178 Attabotics
- 9.179 AttoCore
- 9.180 Auden Techno
- 9.181 Auray Technology (Auden Techno)
- 9.182 Avanti Communications
- 9.183 Avari Wireless
- 9.184 AVI
- 9.185 Aviat Networks
- 9.186 Avidyne Corporation
- 9.187 AVIWEST (Haivision)
- 9.188 AVM
- 9.189 AW2S Advanced Wireless Solutions and Services (SERMA Group)
- 9.190 AWTG
- 9.191 AXESS Networks (HISPASAT)
- 9.192 Axians (VINCI Energies)
- 9.193 Axiata Group
- 9.194 Axione
- 9.195 Axis Communications
- 9.196 Axon
- 9.197 Axtel
- 9.198 Axxcelera Broadband Wireless (Axxcss Wireless Solutions)
- 9.199 Axxcss Wireless Solutions
- 9.200 Axyom.Core (Formerly Casa Systems)
- 9.201 Azcom Technology

- 9.202 Azetti Networks
- 9.203 B+B SmartWorx (Advantech)
- 9.204 BAE Systems
- 9.205 Baicells
- 9.206 Ball Aerospace
- 9.207 Ballast Networks
- 9.208 BandRich
- 9.209 Barrett Communications (Motorola Solutions)
- 9.210 BATS Wireless (Broadband Antenna Tracking Systems)
- 9.211 BAYFU (Bayerische Funknetz)
- 9.212 Baylin Technologies
- 9.213 BBB (BB Backbone Corporation)
- 9.214 BBK Electronics
- 9.215 BCDVideo
- 9.216 Beam Semiconductor
- 9.217 Beamlink
- 9.218 BearCom
- 9.219 BEC Technologies (Billion Electric)
- 9.220 becon
- 9.221 Beeper Communications
- 9.222 Beijer Electronics Group
- 9.223 Belden
- 9.224 BelFone
- 9.225 Bell Canada
- 9.226 Bellantenna
- 9.227 Benetel
- 9.228 BesoVideo
- 9.229 Betacom
- 9.230 Bharti Airtel
- 9.231 BHE (Bonn Hungary Electronics)
- 9.232 BICS (Proximus)
- 9.233 BinnenBereik (NOVEC)
- 9.234 Bird Technologies
- 9.235 BISDN (Berlin Institute for Software Defined Networks)
- 9.236 Bittium
- 9.237 BK Technologies
- 9.238 Black & Veatch
- 9.239 Black Box
- 9.240 BlackBerry

- 9.241 Blackned
- 9.242 BLiNQ Networks (CCI Communication Components Inc.)
- 9.243 Bloxtel
- 9.244 Blu Wireless
- 9.245 Blue Arcus Technologies
- 9.246 Blue Wireless
- 9.247 Bluebird
- 9.248 Blueforce Development Corporation
- 9.249 BLUnet Schweiz (Axpox WZ-Systems)
- 9.250 Boeing/Aurora Flight Sciences
- 9.251 Boelink (Shanghai Boelink Communication Technology)
- 9.252 Boingo Wireless (DigitalBridge Group)
- 9.253 Boldyn Networks (Formerly BAI Communications)
- 9.254 Bombardier
- 9.255 BONC (BON Corporation)
- 9.256 Booz Allen Hamilton
- 9.257 Boston Dynamics
- 9.258 Bouygues Telecom
- 9.259 Boxchip
- 9.260 Branch Communications
- 9.261 BravoCom
- 9.262 Bredengen
- 9.263 Broadcom
- 9.264 BroadForward
- 9.265 Broadmobi Shanghai Broadmobi Communication Technology (Wutong Group)
- 9.266 Broadpeak
- 9.267 Broadtech
- 9.268 BSNL (Bharat Sanchar Nigam Limited)
- 9.269 BT Group
- 9.270 BTI Wireless
- 9.271 BubbleRAN
- 9.272 Bullitt Mobile
- 9.273 Bumicom Telecommunicatie
- 9.274 Bureau Veritas/7Layers
- 9.275 BVSystems (Berkeley Varitronics Systems)
- 9.276 BWT (BlueWaveTel)
- 9.277 BYD
- 9.278 B-Yond
- 9.279 C Spire

- 9.280 C Squared Systems
- 9.281 C3Spectra
- 9.282 CableFree (Wireless Excellence)
- 9.283 CableLabs
- 9.284 CACI International/LGS Innovations
- 9.285 Cadence Design Systems
- 9.286 CalAmp
- 9.287 CalChip Connect
- 9.288 Caliber Public Safety
- 9.289 Calix
- 9.290 Calnex Solutions
- 9.291 Caltta Technologies
- 9.292 Cambium Networks
- 9.293 Cambridge Consultants (Capgemini Invent)
- 9.294 CampusGenius
- 9.295 Canoga Perkins
- 9.296 Canonical
- 9.297 Capgemini Engineering
- 9.298 CapX Nederland
- 9.299 Carbyne
- 9.300 CASIC (China Aerospace Science and Industry Corporation)
- 9.301 Casio Computer Company
- 9.302 Castor Marine
- 9.303 Catalyst Communications Technologies
- 9.304 Cavli Wireless
- 9.305 CBNG (Cambridge Broadband Networks Group)
- 9.306 CCI (Communication Components Inc.)
- 9.307 CCN (Cirrus Core Networks)
- 9.308 CCww (Communications Consultants Worldwide)
- 9.309 Cegeka
- 9.310 CeLa Link Corporation
- 9.311 Celfinet (Cyient)
- 9.312 CellAntenna Corporation
- 9.313 Cellcomm Solutions
- 9.314 Cellient
- 9.315 Celling 5G
- 9.316 CellMax Technologies (Rosenberger)
- 9.317 Cellnex Telecom
- 9.318 cellXica

- 9.319 cellXion
- 9.320 Celona
- 9.321 CelPlan Technologies
- 9.322 Centerline Communications
- 9.323 CENTRA Technology
- 9.324 CentralSquare Technologies
- 9.325 Ceragon Networks
- 9.326 Cerillion
- 9.327 CertusNet
- 9.328 CETC (China Electronics Technology Group Corporation)
- 9.329 CETIN Group
- 9.330 CEVA
- 9.331 CGI
- 9.332 Challenge Networks (Vocus)
- 9.333 Charter Communications
- 9.334 Cheerzing (Xiamen Cheerzing IoT Technology)
- 9.335 Chelton
- 9.336 Chemring Technology Solutions
- 9.337 Chengdu NTS
- 9.338 China All Access
- 9.339 China Mobile
- 9.340 China Satcom (China Satellite Communications)
- 9.341 China Telecom
- 9.342 China Unicom
- 9.343 Chunghwa Telecom
- 9.344 Cibicom
- 9.345 CICT China Information and Communication Technology Group (China Xinke Group)
- 9.346 Ciena Corporation
- 9.347 CIG (Cambridge Industries Group)
- 9.348 CIO (Connected IO)
- 9.349 Cirpack
- 9.350 Cisco Systems
- 9.351 Citymesh (Cegeka/DIGI Communications)
- 9.352 CitySwitch
- 9.353 CKH IOD (CK Hutchison)
- 9.354 Clavister
- 9.355 Clever Logic
- 9.356 CloudMinds

- 9.357 CMIoT (China Mobile IoT)
- 9.358 Cobham
- 9.359 COCUS
- 9.360 Codan Communications
- 9.361 Codium Networks
- 9.362 Cogisys
- 9.363 Cognizant
- 9.364 Cohere Technologies
- 9.365 Coherent (Formerly II-VI)
- 9.366 Coherent Logix
- 9.367 Coiler Corporation
- 9.368 Collinear Networks (EOS Electro Optic Systems)
- 9.369 Collins Aerospace (RTX Corporation)
- 9.370 Colt Technology Services
- 9.371 Com4 (Wireless Logic Group)
- 9.372 Comander (ANDRA)
- 9.373 Comarch
- 9.374 Comba Telecom
- 9.375 Combain Mobile
- 9.376 Comcast Corporation
- 9.377 Comcores
- 9.378 Comfone
- 9.379 COMLAB
- 9.380 CommAgility (E-Space)
- 9.381 CommandWear Systems
- 9.382 Commnet Wireless (ATN International)
- 9.383 Comms365
- 9.384 CommScope
- 9.385 Compal Electronics
- 9.386 Comprod
- 9.387 Comptek Technologies (Aero Wireless Group)
- 9.388 Comrod Communication Group
- 9.389 COMSovereign
- 9.390 Comtech Telecommunications Corporation
- 9.391 Comtest Wireless
- 9.392 Comtrend Corporation
- 9.393 Comviva (Tech Mahindra)
- 9.394 CONET Technologies
- 9.395 CONEXIO Corporation

- 9.396 CONGIV (ROBUR Industry Service Group)
- 9.397 Connect Tech
- 9.398 Connect44 Group
- 9.399 Connectivity Wireless Solutions (M/C Partners)
- 9.400 Consort Digital
- 9.401 Contela
- 9.402 Coolpad
- 9.403 CopaSAT
- 9.404 coreNOC
- 9.405 Cornerstone (CTIL)
- 9.406 Cornet Technology
- 9.407 Corning
- 9.408 Cortina Access
- 9.409 Cosemi Technologies
- 9.410 COSMOTE (OTE Group)
- 9.411 Council Rock
- 9.412 Coweaver
- 9.413 Cox Communications
- 9.414 Cradlepoint (Ericsson)
- 9.415 Creanord
- 9.416 CrisisGo
- 9.417 CROSSCALL
- 9.418 Crown Castle International Corporation
- 9.419 CRSC (China Railway Signal & Communication Corporation)/CASCO Signal
- 9.420 CS Corporation
- 9.421 CSG Systems International
- 9.422 CTG (Celestia Technologies Group)
- 9.423 CTL
- 9.424 CTOne (Trend Micro)
- 9.425 CTS (Communication Technology Services)
- 9.426 CTS Corporation
- 9.427 Cubic Corporation
- 9.428 Cubic Telecom
- 9.429 Cumucore
- 9.430 Custom MMIC
- 9.431 CybertelBridge
- 9.432 Cyient
- 9.433 Cyrus Technology
- 9.434 D2 Technologies

- 9.435 DAEL Group
- 9.436 Daeyoun System Company
- 9.437 Dahua Technology
- 9.438 Dali Wireless
- 9.439 DAMM Cellular Systems
- 9.440 DATACOM
- 9.441 DataSoft
- 9.442 DBcom
- 9.443 dbSpectra
- 9.444 DeepSig
- 9.445 Dejero Labs
- 9.446 DEKRA
- 9.447 Dell Technologies
- 9.448 Delta Electronics
- 9.449 DENGYO (Nihon Dengyo Kosaku)
- 9.450 Dense Air (SIP Sidewalk Infrastructure Partners)
- 9.451 Deutsche Funkturm
- 9.452 DGS (Digital Global Systems)
- 9.453 Dialogic
- 9.454 Diamond Communications
- 9.455 Digi International
- 9.456 Digicert
- 9.457 Digis Squared
- 9.458 Digita (DigitalBridge Group)
- 9.459 Digital Ally
- 9.460 Digital Enhancement
- 9.461 DigitalBridge Group
- 9.462 DigitalRoute
- 9.463 Digitata
- 9.464 DigitGate (Nanjing DigitGate Communication Technology)
- 9.465 Dimetor
- 9.466 DISH Network Corporation
- 9.467 DKK (Denki Kogyo)
- 9.468 D-Link Corporation
- 9.469 DMI
- 9.470 Doodle Labs
- 9.471 Doogee
- 9.472 Doosan Corporation
- 9.473 DragonWave-X (COMSovereign)

9.474 Drakontas
9.475 DriveNets
9.476 Drone Aviation (COMSovereign)
9.477 DroneSense
9.478 Druid Software
9.479 DSBJ (Suzhou Dongshan Precision Manufacturing)
9.480 DT (Deutsche Telekom)
9.481 DTAC (Total Access Communication)
9.482 du (EITC Emirates Integrated Telecommunications Company)
9.483 Duons
9.484 Durabook (Twinhead International Corporation)
9.485 Duubee
9.486 DZS
9.487 Eahison Communication
9.488 EANTC
9.489 Eastcom (Eastern Communications)
9.490 Easycom (Shenzhen Easycom Electronics)
9.491 E-Band Communications (Axxcss Wireless Solutions)
9.492 e-BO Enterprises
9.493 ECE (European Communications Engineering)
9.494 EchoStar Corporation
9.495 Ecochip
9.496 Ecom Instruments (Pepperl+Fuchs)
9.497 Ecrio
9.498 Edgecore Networks (Accton Technology Corporation)
9.499 EdgeQ
9.500 Edgybees
9.501 edotco Group (Axiata Group)
9.502 EDX Wireless
9.503 Effnet
9.504 Eigencomm
9.505 eino
9.506 EION Wireless
9.507 Eir (Eircom)
9.508 Ekinops
9.509 Elbit Systems
9.510 Elefante Group
9.511 Element Materials Technology
9.512 E-Lins Technology

9.513 Elisa
9.514 Elisa Polystar
9.515 Elistair
9.516 Elsight
9.517 Elta Systems (IAI Israel Aerospace Industries)
9.518 Eltex
9.519 ELUON Corporation
9.520 ELVA-1
9.521 Emblasoft
9.522 Embraer
9.523 Embratel
9.524 Emerson
9.525 EMnify
9.526 EMS (Electronic Media Services)
9.527 Encore Networks
9.528 Endress+Hauser
9.529 Enea
9.530 ENENSYS Technologies
9.531 Energizer Mobile (Avenir Telecom)
9.532 EnerSys
9.533 Entel (United Kingdom)
9.534 Entropia
9.535 Entropy Solution
9.536 Eoptolink Technology
9.537 Epiroc
9.538 Equiendo
9.539 Eravant (SAGE Millimeter)
9.540 Ericsson
9.541 Errigal
9.542 ErvoCom
9.543 Eseye
9.544 Esharah Etisalat Security Solutions
9.545 E-Space
9.546 Estalky (K-Mobile Technology)
9.547 ETELM
9.548 eTera (Sinotech R&D Group)
9.549 Ethernity Networks
9.550 Etherstack
9.551 Etisalat Group (e&)

- 9.552 ETRI (Electronics & Telecommunications Research Institute, South Korea)
- 9.553 Etteplan
- 9.554 EUCAST
- 9.555 Eurofins E&E (Electrical and Electronics)
- 9.556 Eurotech
- 9.557 Eutelsat Group
- 9.558 Eventide Communications
- 9.559 Evolve Cellular
- 9.560 Exacom
- 9.561 Exaware
- 9.562 Excelerate Technology
- 9.563 EXFO
- 9.564 Exium
- 9.565 Expandium
- 9.566 Expeto
- 9.567 Extenet (DigitalBridge Group)
- 9.568 Extreme Networks
- 9.569 EY (Ernst & Young)
- 9.570 Eyecom Telecommunications Group
- 9.571 EZcon Network
- 9.572 F2G (Far-Together) Solutions
- 9.573 F5
- 9.574 Fairspectrum
- 9.575 Fairwaves
- 9.576 Faraday Technology Corporation
- 9.577 Fastback Networks (COMSovereign)
- 9.578 FCNT (Fujitsu Connected Technologies)-JEMS (Japan EM Solutions)
- 9.579 Federal Engineering
- 9.580 Federated Wireless
- 9.581 Fenix Group (Nokia)
- 9.582 Festo
- 9.583 FET (Far EastTone Telecommunications)
- 9.584 FIBERSTAMP
- 9.585 Fibocom
- 9.586 Fibrolan
- 9.587 Filtronic
- 9.588 Fingu (Wuhan Fingu Electronic Technology)
- 9.589 Fiplex Communications (Honeywell International)
- 9.590 Firecell

- 9.591 Fivecomm
- 9.592 Flash Networks
- 9.593 Flash Private Mobile Networks
- 9.594 Flectory
- 9.595 Fleet Complete
- 9.596 Flex
- 9.597 Flex Logix Technologies
- 9.598 Flightcell International
- 9.599 FLIR Systems
- 9.600 floLIVE
- 9.601 Flymotion
- 9.602 FMBE (FMB Engineering)
- 9.603 Forsk
- 9.604 Fortinet
- 9.605 Fortress Solutions
- 9.606 Four-Faith Communication Technology
- 9.607 Foxconn (Hon Hai Technology Group)
- 9.608 Franklin Wireless
- 9.609 Fraunhofer FOKUS (Institute for Open Communication Systems)
- 9.610 Fraunhofer HHI (Heinrich Hertz Institute)
- 9.611 Fraunhofer IIS (Institute for Integrated Circuits)
- 9.612 Fraunhofer IPT (Institute for Production Technology)
- 9.613 FreedomFi
- 9.614 Freeway
- 9.615 Frequentis
- 9.616 Freshwave Group (DigitalBridge Group)
- 9.617 Frog Cellsat
- 9.618 FRTek
- 9.619 FSG (Field Solutions Group)
- 9.620 FTS Formula Telecom Solutions (Magic Software Group)
- 9.621 Fujikura
- 9.622 Fujitsu
- 9.623 Funk-Electronic Piciorgros
- 9.624 Funkwerk
- 9.625 Furukawa Electric
- 9.626 Furuno Electric
- 9.627 Future Technologies Venture
- 9.628 G REIGNS (HTC Corporation)
- 9.629 G+D (Giesecke+Devrient)

- 9.630 G3 Global
- 9.631 Galtronics (Baylin Technologies)
- 9.632 Gamma Nu
- 9.633 Gapwaves
- 9.634 Garderos
- 9.635 Gazprom Space Systems
- 9.636 GCT Semiconductor
- 9.637 GD (General Devices)
- 9.638 GE (General Electric)
- 9.639 Gemtek Technology
- 9.640 General Dynamics
- 9.641 Genesis Group
- 9.642 GENEViSiO (QNAP Systems)
- 9.643 Genew Technologies
- 9.644 Genmix Technology
- 9.645 Geotab
- 9.646 GeoTraq
- 9.647 Getac Technology Corporation
- 9.648 Gewei (Wuhan Gewei Electronic Technology)
- 9.649 GF (GlobalFoundries)
- 9.650 GIGABYTE Technology
- 9.651 Gigalane
- 9.652 GIGALIGHT
- 9.653 Gigamon
- 9.654 GigaTera Communications (KMW)
- 9.655 GigSky
- 9.656 Gilat Satellite Networks
- 9.657 GL Communications
- 9.658 Global Telecom
- 9.659 Globalgig
- 9.660 Globalstar
- 9.661 Globe Telecom
- 9.662 Gogo Business Aviation
- 9.663 Goodman Telecom Services
- 9.664 Goodmill Systems
- 9.665 Google (Alphabet)
- 9.666 Goosetown Communications
- 9.667 Gore (W. L. Gore & Associates)
- 9.668 GosuncnWelink Technology (Gosuncn Group)

- 9.669 Granite Telecommunications
- 9.670 Grape One (Sumitomo Corporation)
- 9.671 Green Communications
- 9.672 Green Packet
- 9.673 Greenet (Netherlands)
- 9.674 GreenPalm (Hangzhou GreenPalm Technology)
- 9.675 GrenTech
- 9.676 GridGears
- 9.677 Groundhog Technologies
- 9.678 GroupTalk
- 9.679 GS Lab (Great Software Laboratory)
- 9.680 GSI (GS Instech)/GST (GS Teletech)
- 9.681 Guavus (Thales)
- 9.682 Guerrilla RF
- 9.683 GXC (Formerly GenXComm)
- 9.684 HAAS Alert
- 9.685 Haier
- 9.686 Haivision
- 9.687 Halys
- 9.688 Hancor MDS
- 9.689 Handheld Group
- 9.690 Handsfree Group
- 9.691 Hansen Technologies
- 9.692 Hanswell
- 9.693 Hanwha Techwin
- 9.694 HAPSMobile
- 9.695 Harbor Max
- 9.696 HARMAN DTS (Digital Transformation Solutions)
- 9.697 HARTING
- 9.698 Harvilon (Shenzhen Harvilon Technology)
- 9.699 Hawk Networks (Althea)
- 9.700 Haystack Technology (Fishtech Group/Cyderes)
- 9.701 HBFEC (Hebei Far East Communication System Engineering)
- 9.702 HCLTech (HCL Technologies)
- 9.703 Helios (Fujian Helios Technologies)
- 9.704 Hengxin (Jiangsu Hengxin Technology)
- 9.705 Henkel
- 9.706 Herystorm (Guangzhou Herystorm Technology)
- 9.707 Hexagon

- 9.708 Hexagon Communication (Suzhou Hexagon Communication Technologies)
- 9.709 HFCL
- 9.710 HFR Networks
- 9.711 HG Genuine (HGTECH Huagong Technology)
- 9.712 Highstreet Technologies
- 9.713 Highway9 Networks
- 9.714 Hikvision (Hangzhou Hikvision Digital Technology)
- 9.715 Hilinks Technology
- 9.716 HipLink Software
- 9.717 Hisense
- 9.718 HiSilicon Technologies (Huawei)
- 9.719 HISPASAT
- 9.720 Hitachi
- 9.721 HKT (PCCW)
- 9.722 HKTech (Howking Tech)
- 9.723 HLS (HARD-LINE Solutions)
- 9.724 HMD Global
- 9.725 HMF Smart Solutions
- 9.726 HMS Networks
- 9.727 Hoimyung ICT
- 9.728 Hologram
- 9.729 Honeywell International
- 9.730 Hongdian Corporation
- 9.731 HONOR
- 9.732 Horizon Powered
- 9.733 Hoverfly Technologies
- 9.734 HP
- 9.735 HPE (Hewlett Packard Enterprise)
- 9.736 HQT (Shenzhen HQT Science and Technology)
- 9.737 HSC (Hughes Systique Corporation)
- 9.738 HTC Corporation
- 9.739 Huahuan (Beijing Huahuan Electronics)
- 9.740 Huaptec
- 9.741 Huawei
- 9.742 HUBER+SUHNER
- 9.743 HUCOM Wireless
- 9.744 Hughes Network Systems (EchoStar Corporation)
- 9.745 HXI (Renaissance Electronics & Communications)
- 9.746 Hypha (Wireless Innovation)

9.747 Hytec Inter
9.748 Hytera Communications
9.749 i.safe MOBILE
9.750 i2i Systems
9.751 iBASIS (Tofane Global)
9.752 IBM
9.753 IBO Technology Company
9.754 iBwave Solutions
9.755 iCana (Foxconn Hon Hai Technology Group)
9.756 Ice Norway (Lyse)
9.757 Icom
9.758 Iconec
9.759 iConNext
9.760 iDAQS
9.761 IDEMIA
9.762 IDY Corporation
9.763 IFLY Electronics
9.764 ifm
9.765 IJ (Internet Initiative Japan)
9.766 IM Technology
9.767 Imec
9.768 IMPTT
9.769 InCoax Networks
9.770 Indra
9.771 iNET (Infrastructure Networks)
9.772 INEX Microtechnology
9.773 Infineon Technologies
9.774 Infinera
9.775 InfiNet Wireless
9.776 InfiniG
9.777 Infinite Electronics
9.778 Infomark Corporation
9.779 Infosys
9.780 Infovista
9.781 InHand Networks
9.782 Inmanta
9.783 Inmarsat (Viasat)
9.784 Innertron
9.785 InnoGence Technology (TROY Information)

- 9.786 InnoLight Technology
- 9.787 Innonet
- 9.788 Innovile
- 9.789 InnoWireless
- 9.790 Inrico Technologies
- 9.791 Inseego Corporation
- 9.792 Inspur
- 9.793 Insta Group
- 9.794 Instant Connect
- 9.795 INSYS icom (INSYS Microelectronics)
- 9.796 Intec E&C
- 9.797 Intel Corporation
- 9.798 Intelbras
- 9.799 Intelliport Solutions
- 9.800 Intelsat
- 9.801 Intenna Systems
- 9.802 InterDigital
- 9.803 INTERLEV
- 9.804 Interop Technologies
- 9.805 InterTalk Critical Information Systems
- 9.806 Intracom Telecom
- 9.807 Intrado Corporation
- 9.808 Intrepid Networks
- 9.809 Inventec Corporation
- 9.810 INWIT (Infrastrutture Wireless Italiane)
- 9.811 IoT4Net
- 9.812 IoTAS (IoT & Approval Solutions)
- 9.813 IP Infusion (ACCESS CO.)
- 9.814 IPAGEON
- 9.815 IPITEK (Integrated Photonics Technology)
- 9.816 IPLOOK Technologies
- 9.817 iPosi
- 9.818 Iradio Electronics
- 9.819 Iridium Communications
- 9.820 Irteya (Russia)
- 9.821 ISCO International
- 9.822 ISL Networks (Japan)
- 9.823 IS-Wireless
- 9.824 Italtel

- 9.825 ITCEN
- 9.826 ITRI (Industrial Technology Research Institute, Taiwan)
- 9.827 Itron
- 9.828 IWT (Innovative Wireless Technologies)
- 9.829 Jabil
- 9.830 JACS Solutions
- 9.831 JATONTEC (Jaton Technology)
- 9.832 JCI (Japan Communications Inc.)
- 9.833 JET Connectivity
- 9.834 Jezetek (Sichuan Jiuzhou Electric Group)
- 9.835 Jiaxun Feihong (Beijing Jiaxun Feihong Electrical)
- 9.836 Jinan USR IoT Technology (Mokuai/Wenheng)
- 9.837 JIT (JI Technology)
- 9.838 JMA Wireless
- 9.839 Johnson Controls
- 9.840 JOUAV
- 9.841 JPC Connectivity
- 9.842 JPS Interoperability Solutions
- 9.843 JQL Technologies
- 9.844 JRC (Japan Radio Company)
- 9.845 JSC Ingenium
- 9.846 JT IoT
- 9.847 Juniper Networks (HPE Hewlett Packard Enterprise)
- 9.848 Junkosha
- 9.849 Juvare
- 9.850 JVCKENWOOD Corporation
- 9.851 Kacific Broadband Satellites
- 9.852 Kaelus
- 9.853 Kaifa (Shenzen Kaifa Technology)
- 9.854 Kajeet
- 9.855 Kalmar (Cargotec)
- 9.856 Kaloom
- 9.857 Kalray
- 9.858 Katela Networks
- 9.859 KATIM
- 9.860 KBR
- 9.861 KBT (Kenbotong Technology)
- 9.862 KDDI Corporation
- 9.863 Key Bridge Wireless

- 9.864 Keysight Technologies
- 9.865 Khomp
- 9.866 Kiana Analytics
- 9.867 Kigen
- 9.868 Kindroid Shanghai Jinzhuo Technology (Kyland Technology)
- 9.869 Kirisun Communications
- 9.870 Kisan Telecom
- 9.871 KiwiCT (Kiwi Communication Technology)
- 9.872 KLA Laboratories
- 9.873 Klas Telecom
- 9.874 Klein Electronics
- 9.875 Kleos
- 9.876 KMW
- 9.877 Knightscope
- 9.878 Kolibri Systems
- 9.879 Komatsu
- 9.880 Konecranes
- 9.881 Kontron
- 9.882 KORE Wireless
- 9.883 KPN
- 9.884 KT Corporation
- 9.885 Kudelski Group
- 9.886 KUKA
- 9.887 Kumu Networks
- 9.888 K-Won/Hunter Technology
- 9.889 Kyland Technology
- 9.890 Kymeta Corporation
- 9.891 Kyndryl
- 9.892 Kyocera Corporation
- 9.893 Kyrio (CableLabs)
- 9.894 KZ TECH (KZ Broadband Technologies)
- 9.895 L3Harris Technologies
- 9.896 Laird Connectivity
- 9.897 Landis+Gyr
- 9.898 Landmark Dividend (DigitalBridge Group)
- 9.899 Lanner Electronics
- 9.900 Lantronix
- 9.901 Lattice Semiconductor
- 9.902 LCR Embedded Systems

- 9.903 Leenos Corporation
- 9.904 Leidos
- 9.905 Lekha Wireless Solutions
- 9.906 Lemko Corporation
- 9.907 Lenovo
- 9.908 Leonardo
- 9.909 Lextrum (COMSovereign)
- 9.910 LG Corporation
- 9.911 LG Uplus
- 9.912 Liberty Global
- 9.913 Lierda Science & Technology Group
- 9.914 Lifecycle Software
- 9.915 Ligado Networks
- 9.916 Lightron
- 9.917 Lime Microsystems
- 9.918 Lindsay Broadband
- 9.919 Linkem
- 9.920 Linksys
- 9.921 Linx Technologies
- 9.922 LIONS Technology
- 9.923 LIS (Laboratory of Infocommunication Networks)
- 9.924 Lisheng Fujian Communications
- 9.925 LITE-ON Technology Corporation
- 9.926 LitePoint (Teradyne)
- 9.927 LiveU
- 9.928 Lociva
- 9.929 Lockheed Martin Corporation
- 9.930 Logicalis (Datatec)
- 9.931 LogicTree IT Solutions
- 9.932 Longsung Technology (Sunsea AIoT Technology)
- 9.933 Lookout
- 9.934 LS Mtron
- 9.935 LS telcom
- 9.936 LTTS (L&T Technology Services)
- 9.937 Luceor
- 9.938 Lumen Technologies
- 9.939 Lumentum
- 9.940 Lumineye
- 9.941 LuxCarta

- 9.942 Luxoft (DXC Technology)
- 9.943 Lyfo
- 9.944 Lynk Global
- 9.945 M1
- 9.946 m3connect
- 9.947 M4PS (Mobility 4 Public Safety)
- 9.948 MACOM
- 9.949 Magnaquest Technologies
- 9.950 Maipu Communication Technology
- 9.951 Maja Systems
- 9.952 MantisNet
- 9.953 MarchNet
- 9.954 Marlink
- 9.955 Marquistech
- 9.956 Martin UAV
- 9.957 Marubeni Corporation
- 9.958 Marubun Corporation
- 9.959 Marvell Technology
- 9.960 MASMOVIL
- 9.961 Mathworks
- 9.962 Matrix Electronica/Webdyn (Flexitron Group)
- 9.963 MATRIX Software
- 9.964 MatSing
- 9.965 Maven Wireless
- 9.966 Mavenir
- 9.967 Maxar Technologies
- 9.968 MaxComm
- 9.969 Maxis
- 9.970 MaxLinear
- 9.971 MC Technologies
- 9.972 MCLabs
- 9.973 MCP (Mission Critical Partners)
- 9.974 MCS Benelux
- 9.975 MD (MICRODRIVE)
- 9.976 Mdex (Wireless Logic Group)
- 9.977 MEASAT Satellite Systems
- 9.978 MECSware
- 9.979 Media Broadcast (freenet Group)
- 9.980 MediaTek

- 9.981 Meeami Technologies
- 9.982 MegaChips Corporation
- 9.983 MegaFon
- 9.984 Meglab (Epiroc)
- 9.985 MeiG Smart Technology
- 9.986 Meizu
- 9.987 Mentura Group
- 9.988 MER Group
- 9.989 Meta
- 9.990 Metanoia Communications
- 9.991 Metaswitch Networks (Microsoft Corporation)
- 9.992 Metawave Corporation
- 9.993 Metismake
- 9.994 MetTel
- 9.995 MHD (Muhan Digital)
- 9.996 MIC Nordic
- 9.997 MICAS-RF (MICAS Shenzhen Telecommunication)
- 9.998 MiCOM Labs
- 9.999 Micran
- 9.1000 Microamp Solutions
- 9.1001 Microchip Technology
- 9.1002 Microlab (RF Industries)
- 9.1003 MicroNova
- 9.1004 Microsoft Corporation
- 9.1005 Microwave Networks
- 9.1006 MikroTik
- 9.1007 Mikwave (Guangdong Mikwave Communication Tech)
- 9.1008 Milesight
- 9.1009 Milestone Systems
- 9.1010 Miliwave
- 9.1011 MiMOMax (Ubiik)
- 9.1012 MIPS
- 9.1013 MiTAC Computing Technology Corporation
- 9.1014 MitraStar Technology (Unizyx Holding Corporation)
- 9.1015 MITRE Corporation
- 9.1016 Mitsubishi Electric Corporation
- 9.1017 MKI (Mitsui Knowledge Industry)
- 9.1018 MOBI (Mobi Antenna Technologies)
- 9.1019 Mobil Group (Russia)

- 9.1020 Mobile Inform Group
- 9.1021 Mobile Mark
- 9.1022 Mobile Tornado
- 9.1023 Mobile Viewpoint
- 9.1024 MobileComm Professionals (UST)
- 9.1025 MobileDemand
- 9.1026 MobileIron
- 9.1027 MobileTek (Shanghai Mobiletek Communication)
- 9.1028 Mobileum
- 9.1029 Mobilicom
- 9.1030 Mobiveil
- 9.1031 Modular Mining Systems (Komatsu)
- 9.1032 Molex
- 9.1033 Monogoto
- 9.1034 Morningcore Technology (CICT China Information and Communication Technology Group)
- 9.1035 Morningstar Corporation
- 9.1036 Moseley Associates (Axxcss Wireless Solutions)
- 9.1037 MosoLabs (Sercomm Corporation)
- 9.1038 Motive Infrastructure Solutions
- 9.1039 Motorola Mobility (Lenovo)
- 9.1040 Motorola Solutions
- 9.1041 Mott MacDonald
- 9.1042 Movandi
- 9.1043 Moxa
- 9.1044 MP Antenna
- 9.1045 MRK Media
- 9.1046 MRT Technology (Suzhou)
- 9.1047 MSB (M S Benbow & Associates)
- 9.1048 MST Global Mine Site Technologies (Komatsu)
- 9.1049 MTI (Microelectronics Technology Inc.)
- 9.1050 MTI Wireless Edge
- 9.1051 MTN Group
- 9.1052 MTS (Mobile TeleSystems)
- 9.1053 MUGLER
- 9.1054 MultiTech (Multi-Tech Systems)
- 9.1055 Murata Manufacturing
- 9.1056 Mushroom Networks
- 9.1057 Mutualink

- 9.1058 MVI Group
- 9.1059 MW (Matrix Wave)
- 9.1060 MYCOM OSI
- 9.1061 Mynaric
- 9.1062 MYT Electronics
- 9.1063 N.A.T.
- 9.1064 Nable Communications
- 9.1065 NanoSemi (MaxLinear)
- 9.1066 Napatech
- 9.1067 Nash Technologies
- 9.1068 Nearby Computing
- 9.1069 NEC Corporation
- 9.1070 Nemergent Solutions
- 9.1071 Nemko
- 9.1072 Neolink Communications Technology
- 9.1073 NeoPlane
- 9.1074 Neoway Technology
- 9.1075 Neptune Communications
- 9.1076 Neragon Networks
- 9.1077 Net AI
- 9.1078 Netas
- 9.1079 NETBEE (NET-Automation)
- 9.1080 NetCity (GEOS Telecom/GEOS Holding)
- 9.1081 Netcracker Technology (NEC Corporation)
- 9.1082 NetFoundry
- 9.1083 Netgear
- 9.1084 NetModule (Belden)
- 9.1085 Netmore Group
- 9.1086 NETSCOUT Systems
- 9.1087 Netsia (Argela)
- 9.1088 Netvision Telecom
- 9.1089 Neutral Wireless
- 9.1090 Neutron Technologies
- 9.1091 New H3C Technologies (Tsinghua Unigroup)
- 9.1092 New Postcom Equipment
- 9.1093 NewEdge Signal Solutions
- 9.1094 NEXCOM International
- 9.1095 Nexign
- 9.1096 Nexpring

9.1097 NextEPC Korea (COONTEC)
9.1098 Nextivity
9.1099 NextNav
9.1100 NextWave
9.1101 Nextworks
9.1102 ng4T
9.1103 NGK Group (NGK Insulators)
9.1104 ng-voice
9.1105 NI (National Instruments)
9.1106 NICE
9.1107 NimbeLink
9.1108 Niral Networks
9.1109 Nitto Denko Corporation
9.1110 NKG (New Kinpo Group)
9.1111 Node-H
9.1112 Nokia
9.1113 Nomad Digital (Alstom)
9.1114 Nordic Semiconductor
9.1115 Northrop Grumman Corporation
9.1116 NOTION Information Technology
9.1117 Nova Labs (Helium)
9.1118 NOVEC
9.1119 NOVELSAT
9.1120 NRB (Network Research Belgium)
9.1121 NS Solutions Corporation
9.1122 Nsight
9.1123 NT (National Telecom)
9.1124 NTC Corporation (Japan)
9.1125 NTMore (Network Technology More)
9.1126 NTT DoCoMo
9.1127 NTT Group
9.1128 Nubia Technology (ZTE)
9.1129 NuRAN Wireless
9.1130 Nurlink Technology
9.1131 NVIDIA Corporation
9.1132 NXP Semiconductors
9.1133 Oasis Smart SIM
9.1134 Obvios
9.1135 Ocado Technology

9.1136 Oceus Networks
9.1137 Octasic
9.1138 O-Cubes
9.1139 ODN (Orbital Data Network)
9.1140 OE Solutions
9.1141 OFS Fitel (Furukawa Electric)
9.1142 OKI Electric Industry
9.1143 Omnispace
9.1144 Omnitele
9.1145 Omnitron Systems
9.1146 Omnitronics
9.1147 One2many (Everbridge)
9.1148 OneLayer
9.1149 OnePlus (BBK Electronics)
9.1150 OneSimCard
9.1151 OneWeb (Eutelsat Group)
9.1152 Onomondo
9.1153 Ontix
9.1154 Onwave
9.1155 Ooredoo
9.1156 Opanga Networks
9.1157 Open Valley
9.1158 Opencode Systems
9.1159 OPPO (BBK Electronics)
9.1160 O'Prueba Technology
9.1161 OPTAGE
9.1162 OptConnect
9.1163 Optical Zonu Corporation
9.1164 Opticoms
9.1165 Option
9.1166 Optiva
9.1167 OQ Technology
9.1168 Oracle Communications
9.1169 Orange
9.1170 ORBCOMM
9.1171 Ori Industries
9.1172 Orion Labs
9.1173 Oscilloquartz (Adtran)
9.1174 OV (Manx Telecom)

- 9.1175 OVHcloud
- 9.1176 P.I. Works
- 9.1177 PacStar (Pacific Star Communications)
- 9.1178 Padtec
- 9.1179 Palo Alto Networks
- 9.1180 Panasonic Connect
- 9.1181 Panda Electronics
- 9.1182 PanOptis
- 9.1183 Panorama Antennas
- 9.1184 Parallel Wireless
- 9.1185 Parsec Technologies
- 9.1186 Particle
- 9.1187 PASTech
- 9.1188 Patrocinium Systems
- 9.1189 Patton
- 9.1190 Pavlov Media
- 9.1191 PBE Axell (Formerly Axell Wireless)
- 9.1192 PCS Technologies
- 9.1193 PCTEL (Amphenol Corporation)
- 9.1194 PCTEST Lab (PCTEST Engineering Laboratory)
- 9.1195 Peatalk Corporation
- 9.1196 Pegatron Corporation
- 9.1197 Pei Tel Communications
- 9.1198 Pelion
- 9.1199 Penguin Solutions (SGH SMART Global Holdings)
- 9.1200 Pente Networks
- 9.1201 Pentonet
- 9.1202 Peplink (Plover Bay Technologies)
- 9.1203 Pepperl+Fuchs
- 9.1204 Pepro
- 9.1205 Peraso
- 9.1206 Peraton Labs
- 9.1207 Percepto
- 9.1208 Perle Systems
- 9.1209 PGE Systemy (PGE Polish Energy Group)
- 9.1210 Pharrowtech
- 9.1211 Phirst Technologies/xCraft Enterprises
- 9.1212 Phluido
- 9.1213 Phoenix Contact

- 9.1214 Phytium Technology (Tianjin Phytium Information Technology)
- 9.1215 PHYTunes
- 9.1216 Picocom
- 9.1217 Pierson Wireless
- 9.1218 Pivot Technology Services
- 9.1219 Pivotal Commware
- 9.1220 Pivotel Group
- 9.1221 Pivotone
- 9.1222 Pixavi (BARTEC)
- 9.1223 Platform9
- 9.1224 Pletronics
- 9.1225 Plextek
- 9.1226 Plintron
- 9.1227 Plus (Polkomtel)
- 9.1228 POCSTARS
- 9.1229 Pod Group (G+D Giesecke+Devrient)
- 9.1230 Polaris Networks (Motorola Solutions)
- 9.1231 Polaris Wireless
- 9.1232 Pollen Mobile
- 9.1233 Positron Access Solutions
- 9.1234 Potevio (CETC China Electronics Technology Group Corporation)
- 9.1235 Poutanet
- 9.1236 PPC (Power Plus Communications)
- 9.1237 PPC Broadband (Belden)
- 9.1238 Precision OT (Optical Transceivers)
- 9.1239 PRESCOM
- 9.1240 PrioCom
- 9.1241 Proef
- 9.1242 Proptivity
- 9.1243 Proscend Communications
- 9.1244 PROSE Technologies
- 9.1245 PROTEI
- 9.1246 Proxim Wireless Corporation (SRA Holdings)
- 9.1247 Proximus
- 9.1248 Pryme Radio Products
- 9.1249 pSemi Corporation (Murata Manufacturing)
- 9.1250 PT INTI (PT Industri Telekomunikasi Indonesia)
- 9.1251 PT LEN Industri
- 9.1252 PTC

9.1253 Publicis Sapient
9.1254 Puloli
9.1255 Pulsara
9.1256 Pulse Electronics (YAGEO Corporation)
9.1257 PureSoftware
9.1258 Pycom
9.1259 PySENSE
9.1260 QCT (Quanta Cloud Technology)
9.1261 QinetiQ
9.1262 Qorvo
9.1263 QuadGen Wireless Solutions
9.1264 Qualcomm
9.1265 Quanta Computer
9.1266 Quantum Wireless
9.1267 Qucell Networks (InnoWireless)
9.1268 Quectel Wireless Solutions
9.1269 Quintel (Cirtek Holdings Philippines Corporation)
9.1270 Qulsar (VIAVI Solutions)
9.1271 Qwake Technologies
9.1272 Qwilt
9.1273 R Systems (Computaris International)
9.1274 R3 Solutions
9.1275 RACOM (Czech Republic)
9.1276 RACOM Corporation
9.1277 RAD
9.1278 RADCOM
9.1279 Radiall
9.1280 Radio Gigabit
9.1281 Radio IP Software
9.1282 RadioMobile
9.1283 Radisys (Reliance Industries)
9.1284 RADTONICS
9.1285 Radware
9.1286 RADWIN
9.1287 Rafael Advanced Defense Systems
9.1288 Raisecom
9.1289 Rajant Corporation
9.1290 Rakon
9.1291 Rakuten Symphony

- 9.1292 RAKwireless
- 9.1293 Range Networks (AMN Africa Mobile Networks)
- 9.1294 Ranger Systems
- 9.1295 Ranplan Wireless
- 9.1296 Rapid.Space (Nexedi)
- 9.1297 RapidDeploy
- 9.1298 RapidSOS
- 9.1299 Rapidtek Technologies
- 9.1300 Rave Mobile Safety
- 9.1301 Raycap
- 9.1302 RCS Telecommunications
- 9.1303 RCT (Remote Control Technologies)
- 9.1304 Ready Wireless
- 9.1305 Realme (BBK Electronics)
- 9.1306 Red Hat (IBM)
- 9.1307 Red Lion Controls (Spectris)
- 9.1308 RED Technologies
- 9.1309 RedZinc
- 9.1310 Reliance Jio Infocomm (Jio Platforms)
- 9.1311 REMEC Broadband Wireless Networks (Bridgewave Communications/SAGE SatCom)
- 9.1312 Renesas Electronics Corporation
- 9.1313 REPLY
- 9.1314 Rescue
- 9.1315 Responder Corp
- 9.1316 RF Connect
- 9.1317 RF DSP
- 9.1318 RF Industries
- 9.1319 RF MORECOM
- 9.1320 RF Window
- 9.1321 RF-Comm
- 9.1322 RFHIC Corporation
- 9.1323 RFI Technology Solutions (Tait Communications)
- 9.1324 RFS (Radio Frequency Systems)
- 9.1325 RFTech
- 9.1326 Ribbon Communications
- 9.1327 Ricon Mobile
- 9.1328 RigNet (Viasat Energy Services)
- 9.1329 RIMEDO Labs

- 9.1330 RiPSIM Technologies
- 9.1331 Rivada Networks
- 9.1332 RKTPL (RK Telesystem Private Limited)
- 9.1333 Robert Bosch
- 9.1334 Robustel
- 9.1335 Rogers Communications
- 9.1336 Rogers Corporation
- 9.1337 Rohde & Schwarz
- 9.1338 Rohill
- 9.1339 Rolling Wireless (Fibocom)
- 9.1340 Rolloos (FMJ Group)
- 9.1341 Rosenberger
- 9.1342 Royole Corporation
- 9.1343 RSCC (Russian Satellite Communications Company)
- 9.1344 RSConnect
- 9.1345 RTX A/S
- 9.1346 RTX Corporation (Formerly Raytheon Technologies)
- 9.1347 RTx Technology
- 9.1348 RugGear
- 9.1349 RuggON Corporation
- 9.1350 Ruijie Networks
- 9.1351 RunEL
- 9.1352 Rushmere Technology
- 9.1353 S&T Iskratel (Kontron)
- 9.1354 Saab
- 9.1355 Saankhya Labs (Tejas Networks)
- 9.1356 SABIC
- 9.1357 SAC Wireless (Nokia)
- 9.1358 SAE IT-Systems (LACROIX Group)
- 9.1359 SAF Tehnika
- 9.1360 Safe-Com Wireless
- 9.1361 SafeMobile
- 9.1362 Safran
- 9.1363 Sagemcom
- 9.1364 SageRAN (Guangzhou SageRAN Technology)
- 9.1365 Saguna Networks (COMSovereign)
- 9.1366 SAI Technology
- 9.1367 SAIC (Science Applications International Corporation)
- 9.1368 Samji Electronics

9.1369 Samsung
9.1370 SAMWON FA
9.1371 Samyoung Celetra
9.1372 Sandvik
9.1373 Sandvine
9.1374 Sanechips Technology (ZTE)
9.1375 Sanjole
9.1376 San-tron
9.1377 Sanxing (Ningbo Sanxing Smart Electric)
9.1378 Sasken Technologies
9.1379 SaskTel
9.1380 Sateliot
9.1381 SatixFy
9.1382 Saviah Technologies
9.1383 Savox Communications
9.1384 SBA Communications
9.1385 Sceye
9.1386 Schneider Electric
9.1387 SEA Systems Engineering & Assessment (Cohort)
9.1388 Seamless Waves
9.1389 Sectra Communications
9.1390 Secured Communications
9.1391 SecureG
9.1392 Select Spectrum
9.1393 SEMPRES (Secure EMP-Resilient Edge)
9.1394 Semtech Corporation
9.1395 Senko Advanced Components
9.1396 Sensorview
9.1397 Senstar Corporation
9.1398 Sensus (Xylem)
9.1399 Sentient Energy (Koch Engineered Solutions)
9.1400 Sentinel Camera Systems
9.1401 Seong Ji Industrial
9.1402 SEONTECH
9.1403 Seowon Intech
9.1404 Sepura
9.1405 Sequans Communications
9.1406 Sercomm Corporation
9.1407 SES

- 9.1408 SETUP Protokolltester
- 9.1409 SGS
- 9.1410 Shabodi
- 9.1411 Shannon Wireless (Zhejiang Shannon Communication Technology)
- 9.1412 Shared Access
- 9.1413 Sharp Corporation (Foxconn Hon Hai Technology Group)
- 9.1414 Shenglu (Guangdong Shenglu Telecommunication)
- 9.1415 Shenzhen CXD Science & Technology
- 9.1416 Shenzhen Recoda Technologies
- 9.1417 SIAE Microelettronica
- 9.1418 SICK
- 9.1419 Siemens
- 9.1420 Sigma Wireless
- 9.1421 Signal Information & Communication Corporation
- 9.1422 Signalchip
- 9.1423 Signalwing
- 9.1424 Silicom Connectivity Solutions
- 9.1425 Silicom SAS (France)
- 9.1426 SIMCom Wireless Solutions (Sunsea AloT Technology)
- 9.1427 Simnovus
- 9.1428 Simoco Wireless Solutions
- 9.1429 Sinclair Technologies (Norsat International/Hytera Communications)
- 9.1430 Singtel
- 9.1431 Sinnwell (audius)
- 9.1432 SIRADEL
- 9.1433 SITA
- 9.1434 siticom (Logicalis)
- 9.1435 SiTime Corporation
- 9.1436 SITRONICS (Sistema)
- 9.1437 Siverts Semiconductors
- 9.1438 Siyata Mobile
- 9.1439 SK Telecom
- 9.1440 SK Telesys
- 9.1441 Skoltech (Skolkovo Institute of Science and Technology)
- 9.1442 SKY Perfect JSAT
- 9.1443 SkyFive
- 9.1444 Skylark Wireless
- 9.1445 Skylo Technologies
- 9.1446 Skytic Telecom

- 9.1447 Skyvera (TelcoDR)
- 9.1448 Skyworks Solutions
- 9.1449 SLA Corporation
- 9.1450 SM Optics (SIAE Microelettronica)
- 9.1451 Smart Communications (PLDT)
- 9.1452 Smart Mobile Labs
- 9.1453 Smartfren
- 9.1454 SmarTone
- 9.1455 SmartSky Networks
- 9.1456 SMAWave (Shanghai SMAWave Technology)
- 9.1457 Socionext
- 9.1458 SoftBank Group
- 9.1459 Softil
- 9.1460 Soitec
- 9.1461 Solectek Corporation/Cielo Networks
- 9.1462 SOLiD
- 9.1463 Solidtronic
- 9.1464 Soliton Systems
- 9.1465 Sonim Technologies
- 9.1466 Sony Group Corporation
- 9.1467 Sooktha
- 9.1468 Soracom
- 9.1469 Source Photonics
- 9.1470 Southern Linc
- 9.1471 Space Data Corporation
- 9.1472 SpaceBridge
- 9.1473 Spacecom
- 9.1474 SpaceX
- 9.1475 Spark New Zealand
- 9.1476 Spectra Group
- 9.1477 SpectraRep
- 9.1478 Spectre (Rostec)
- 9.1479 Spectronite
- 9.1480 Spectronn
- 9.1481 Spectrum Effect
- 9.1482 Speedcast
- 9.1483 Spideradio (Suzhou Spideradio Telecommunication Technology)
- 9.1484 SPIE Group
- 9.1485 Spirent Communications

- 9.1486 SPIRIT DSP
- 9.1487 SPL (Stratospheric Platforms Limited)
- 9.1488 Sporton International
- 9.1489 SQUAN
- 9.1490 Squire Technologies
- 9.1491 SRS (Software Radio Systems)
- 9.1492 SRTechnology
- 9.1493 SSC (Shared Spectrum Company)
- 9.1494 SSS Public Safety
- 9.1495 ST (STMicroelectronics)
- 9.1496 ST Engineering iDirect
- 9.1497 Star Microwave
- 9.1498 Star Solutions
- 9.1499 StarHub
- 9.1500 StarPoint (Beijing StarPoint Technology)
- 9.1501 STC (Saudi Telecom Company)
- 9.1502 Steep
- 9.1503 STEP CG
- 9.1504 STL (Sterlite Technologies Ltd.)
- 9.1505 Stop Noise
- 9.1506 sTraffic
- 9.1507 Strata Worldwide
- 9.1508 Streambox
- 9.1509 Streamwide
- 9.1510 Subex
- 9.1511 Sumitomo Electric Industries
- 9.1512 Summa Networks
- 9.1513 Summit Tech
- 9.1514 Sunsea AIoT Technology
- 9.1515 Sunwave Communications
- 9.1516 Supermicro (Super Micro Computer)
- 9.1517 SureSite Consulting Group
- 9.1518 SUSE
- 9.1519 Swisscom
- 9.1520 Swissphone
- 9.1521 Sylincom (Beijing Sylincom Technology)
- 9.1522 SynaXG Technologies
- 9.1523 Synctechno
- 9.1524 Syniverse

9.1525 SYRTEM
9.1526 Systech Corporation
9.1527 System Innovation Group
9.1528 Systemics-PAB
9.1529 T&W (Shenzhen Gongjin Electronics)
9.1530 T2M
9.1531 TacSat Networks
9.1532 Tait Communications
9.1533 Taiwan Mobile
9.1534 TAIYO YUDEN
9.1535 Talia Communications (Commercis)
9.1536 Talk-IP International
9.1537 Talkpod Technology
9.1538 Tambora Systems
9.1539 Tampa Microwave (Thales)
9.1540 Tampnet
9.1541 Tango Networks
9.1542 Tango Tango
9.1543 Taoglas
9.1544 Tarana Wireless
9.1545 TASSTA
9.1546 Tata Elxsi
9.1547 Tatfook (Shenzhen Tatfook Technology)
9.1548 TCL Communication
9.1549 TCOM
9.1550 TCS (Tata Consultancy Services)
9.1551 TD Tech
9.1552 TDC NET
9.1553 TDCOMM
9.1554 TE Connectivity
9.1555 Teal Communications
9.1556 Tech Mahindra
9.1557 Techbros
9.1558 Tecom
9.1559 Tecore Networks
9.1560 Tejas Networks
9.1561 TEKTELIC Communications
9.1562 Telco Systems (BATM Advanced Communications)
9.1563 Telcaware

9.1564 Teldat
9.1565 Tele2
9.1566 Tele2 Russia (Rostelecom)
9.1567 Telecom26
9.1568 Teleena (Tata Communications MOVE)
9.1569 Telefield
9.1570 Telefonica Group
9.1571 Telekom Slovenije
9.1572 Telenor Group
9.1573 Telent
9.1574 Telesat
9.1575 Telespazio (Leonardo/Thales)
9.1576 Teleste
9.1577 teleSys Software
9.1578 Telet Research
9.1579 Televate
9.1580 Telewave
9.1581 TeleWorld Solutions (Samsung)
9.1582 Telia Company
9.1583 Telit Cinterion
9.1584 Telkomsel
9.1585 Tellabs
9.1586 Tellion
9.1587 Telna
9.1588 TELNET Redes Inteligentes
9.1589 TELOX (Telo Systems)
9.1590 Telrad Networks
9.1591 Telsasoft
9.1592 Telstra
9.1593 Teltonika
9.1594 Teltronic (Hytera Communications)
9.1595 Telus
9.1596 TEOCO
9.1597 Teracom
9.1598 Teradek
9.1599 TeraGo
9.1600 Tera-Pass
9.1601 Tessares
9.1602 TESSCO Technologies/Ventev

- 9.1603 Thaicom
- 9.1604 Thales
- 9.1605 ThinkRF
- 9.1606 Three Group Solutions (CK Hutchison)
- 9.1607 Thundercomm
- 9.1608 TI (Texas Instruments)
- 9.1609 Tianyi (Sichuan Tianyi Comheart Telecom)
- 9.1610 Tibco Telecoms
- 9.1611 TietoEVRY
- 9.1612 Tillman Global Holdings
- 9.1613 Tilson
- 9.1614 TIL-TEK Antennae
- 9.1615 TIM (Telecom Italia Mobile)
- 9.1616 Titan ICT
- 9.1617 Titan.ium Platform
- 9.1618 TJ Innovation
- 9.1619 TLC Solutions
- 9.1620 TM (Telekom Malaysia)
- 9.1621 T-Mobile US
- 9.1622 TMYTEK (TMY Technology)
- 9.1623 TNS (Transaction Network Services)
- 9.1624 TO21COMMS
- 9.1625 Tofane Global
- 9.1626 TOKIE (Irvees Technology)
- 9.1627 TOMIA
- 9.1628 Tongyu Communication
- 9.1629 Toshiba Corporation
- 9.1630 Totogi
- 9.1631 TowerJazz
- 9.1632 TPG Telecom
- 9.1633 TPL Systemes
- 9.1634 TP-Link Technologies
- 9.1635 Transatel (NTT Group)
- 9.1636 TransPacket
- 9.1637 Trialink (Russia)
- 9.1638 TriaSys Technologies Corporation
- 9.1639 TRIOPT
- 9.1640 Triorail
- 9.1641 Tropico (CPQD Center for Research and Development in Telecommunications,

Brazil)

9.1642 TrueMove H (True Corporation)

9.1643 TRUMPF

9.1644 Truphone

9.1645 TRX Systems

9.1646 TSMC (Taiwan Semiconductor Manufacturing Company)

9.1647 Tsofun

9.1648 TST Systems (Thorcom Systems/Sonic Communications/Tioga Electronic Assembly)

9.1649 T-Systems International

9.1650 TTG International

9.1651 TTM Technologies

9.1652 Tupl

9.1653 Turk Telekom

9.1654 Turkcell

9.1655 TUSUR (Tomsk State University of Control Systems and Radioelectronics)

9.1656 TUV SUD

9.1657 Two Six Labs

9.1658 Tyler Technologies

9.1659 U.S. Cellular

9.1660 UANGEL

9.1661 UBCS

9.1662 Ubicquia

9.1663 Ubiik

9.1664 UBiqube

9.1665 Ubiquoss

9.1666 Ubiwhere

9.1667 U-Blox

9.1668 Ucloudy (Shanghai Ucloudy Information Technology)

9.1669 UCtel

9.1670 UfiSpace

9.1671 UL

9.1672 ULAK Communication

9.1673 Ultraband Technologies

9.1674 UMC (United Microelectronics Corporation)

9.1675 UMS (United Monolithic Semiconductors)

9.1676 UNIMO Technology

9.1677 UNISOC (Tsinghua Unigroup)

9.1678 UniStrong

9.1679 UNITAC Technology
9.1680 UniTTEC
9.1681 UROS
9.1682 URSYS
9.1683 US Digital Designs
9.1684 USI (Universal Scientific Industrial)
9.1685 Utility (Utility Associates)
9.1686 Utility Connect (Alliander/Stedin)
9.1687 UTStarcom
9.1688 V&M (Venus & Mercury) Telecom
9.1689 V5 Systems
9.1690 Valid (Brazil)
9.1691 Valid8
9.1692 Vankom Technology
9.1693 Vantage Towers
9.1694 Vantiva (Formerly Technicolor)
9.1695 Vanu
9.1696 Vapor IO
9.1697 Vavitel (Shenzhen Vavitel Technology)
9.1698 VDI (Virginia Diodes, Inc.)
9.1699 Vector Data
9.1700 Veea
9.1701 VEON
9.1702 Verana Networks
9.1703 Verizon Communications
9.1704 Verkotan
9.1705 Versa Networks
9.1706 Vertel
9.1707 Vertical Bridge (DigitalBridge Group)
9.1708 Vertiv
9.1709 Verveba Telecom
9.1710 VHT (Viettel High Tech)
9.1711 Viasat
9.1712 VIAVI Solutions
9.1713 VIDA Technologies
9.1714 Vigilante
9.1715 VinSmart (Vingroup)
9.1716 Viper RF
9.1717 Viprinet

- 9.1718 ViPRO Corporation
- 9.1719 Virtual Access (Westermo Network Technologies)
- 9.1720 Virtusa Corporation
- 9.1721 Vislink Technologies
- 9.1722 Visual Labs
- 9.1723 Vital (New Zealand)
- 9.1724 VITES
- 9.1725 Vivo (BBK Electronics)
- 9.1726 VMware (Broadcom)
- 9.1727 VNL Vihaan Networks Limited (Shyam Group)
- 9.1728 Vodacom Group
- 9.1729 Vodafone Group
- 9.1730 VoerEir
- 9.1731 VoiceAge Corporation
- 9.1732 Voipfuture
- 9.1733 Volvo CE (Construction Equipment)
- 9.1734 Voxer
- 9.1735 VTT Technical Research Centre of Finland
- 9.1736 Vubiq Networks
- 9.1737 VVDN Technologies
- 9.1738 WAGO
- 9.1739 WAV4M
- 9.1740 WAVE (AGC)
- 9.1741 Wave Electronics (Korea)
- 9.1742 Wave1
- 9.1743 Wave-In Communication
- 9.1744 Wavelabs
- 9.1745 Wavesight
- 9.1746 Wavetel Technology
- 9.1747 Waycare
- 9.1748 WCCTV (Wireless CCTV)
- 9.1749 WDNA (Wireless DNA)
- 9.1750 Weaccess Group
- 9.1751 Weidmuller
- 9.1752 Welotec
- 9.1753 Westell Technologies
- 9.1754 Wevercomm
- 9.1755 Wewins (Shenzhen Wewins Wireless)
- 9.1756 wgtwo Working Group Two (Cisco Systems)

- 9.1757 WH Bence Group
- 9.1758 Whale Cloud Technology (Alibaba Group)
- 9.1759 Whizz Systems
- 9.1760 Widelity
- 9.1761 WiFrost
- 9.1762 WIG (Wireless Infrastructure Group)
- 9.1763 Wildox (Shenzhen Happy Technology)
- 9.1764 Wilson Electronics
- 9.1765 Wilus
- 9.1766 WIN Connectivity (Wireless Information Networks)
- 9.1767 Wind River Systems
- 9.1768 Wind Tre
- 9.1769 Wingtech Technology
- 9.1770 WINITECH
- 9.1771 Winmate Communications
- 9.1772 Winncom Technologies
- 9.1773 Wipro
- 9.1774 Wireless Logic Group
- 9.1775 Wireless Technologies Finland
- 9.1776 Wireless Telecom Group
- 9.1777 WiSig Networks
- 9.1778 Wistron Corporation
- 9.1779 Wiwynn (Wistron Corporation)
- 9.1780 WM Systems
- 9.1781 WMS (Wireless Maritime Services)
- 9.1782 WNC (Wistron NeWeb Corporation)
- 9.1783 Wolfspeed
- 9.1784 WooriNet
- 9.1785 Workz
- 9.1786 World View
- 9.1787 WorldCell Solutions
- 9.1788 Wouxun (Quanzhou Wouxun Electronics)
- 9.1789 WTL (World Telecom Labs)
- 9.1790 WTW Electronic
- 9.1791 WWT (World Wide Technology)
- 9.1792 Wyttec International
- 9.1793 X4000 Communications
- 9.1794 Xantaro
- 9.1795 XAVi Technologies Corporation (Chicony Electronics)

- 9.1796 Xelera Technologies
- 9.1797 Xemex
- 9.1798 Xena Networks
- 9.1799 Xiamen Puxing Electronics Science & Technology
- 9.1800 Xiamen Sanan Integrated Circuit
- 9.1801 Xiaomi
- 9.1802 Xingtera
- 9.1803 Xinwei Group
- 9.1804 XINYI Information Technology
- 9.1805 XipLink
- 9.1806 XIUS
- 9.1807 YADRO (ICS Holding)
- 9.1808 YAGEO Corporation
- 9.1809 Yahsat (Al Yah Satellite Communications)/Thuraya
- 9.1810 YaleBTS
- 9.1811 Yanton (Quanzhou Yanton Electronics)
- 9.1812 YOFC (Yangtze Optical Fibre and Cable)
- 9.1813 Yokogawa Electric Corporation
- 9.1814 Yokowo
- 9.1815 Yuge Technology (Shanghai Yuge Information Technology)
- 9.1816 Yunzhi Ruantong (Beijing Yunzhi Ruantong Information Technology)
- 9.1817 Zain Group
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