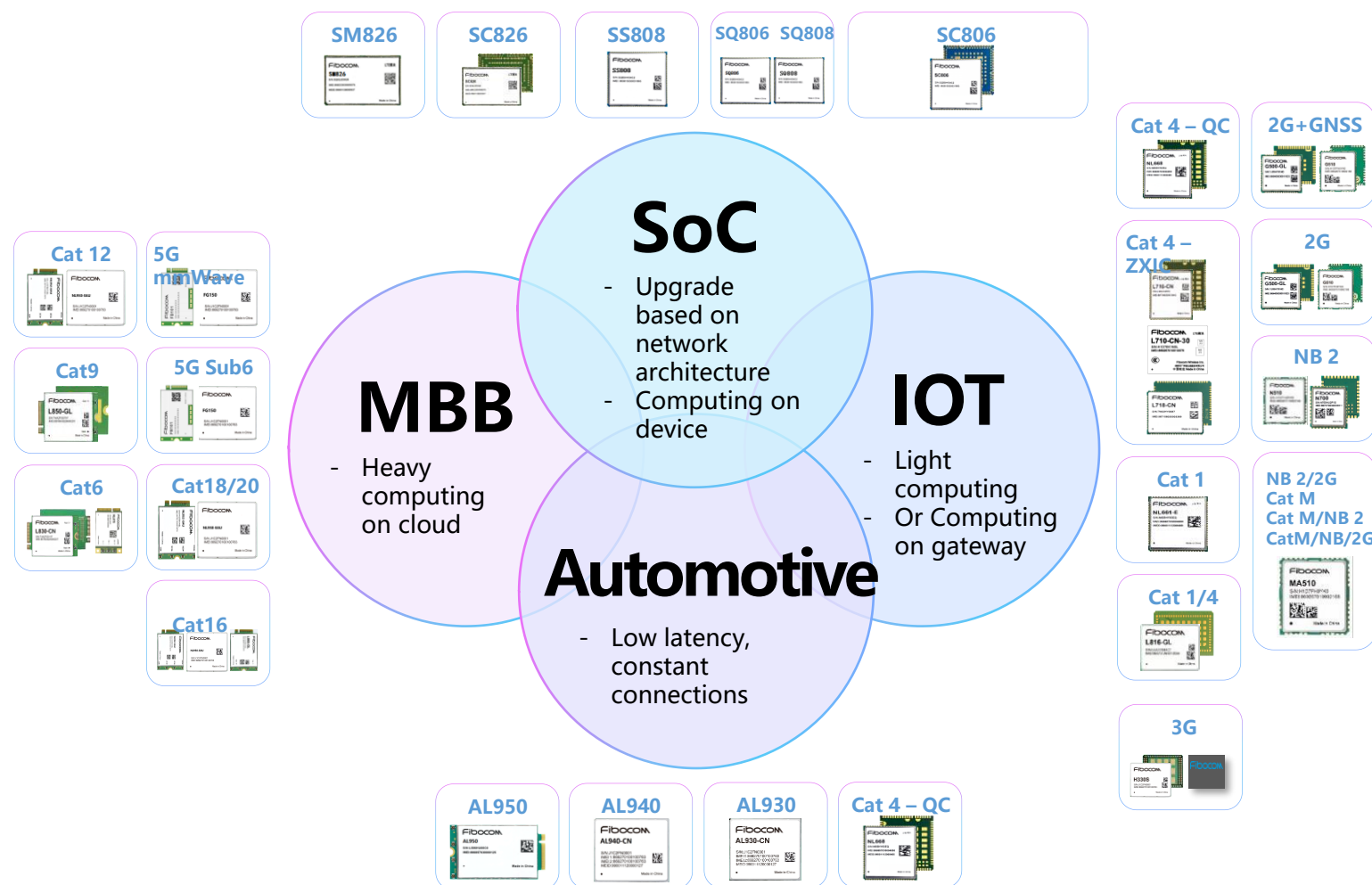




Perfect Wireless Experience

Company Products 2020

Fibocom Cellular Module Series



MBB Series

5G mmWave	 FM150W 30x52x2.3mm M.2 form factor Antenna: 4(sub6) +4 (mmWave)	 FG150W 41x44x2.75mm LGA form factor Antenna: 6 or 8 optional + 1GPS +4 mmWave	
5G Sub6	 FM150 M.2 30x52x2.3mm Antenna: 4	 FG150 LGA 41x44x2.75mm Antenna : 6 or 8 optional + 1GPS	
Cat18/20	 NL952 M.2 30x42x2.3mm Antenna: 4	 NL950 LGA 41x44x2.75mm Antenna: 4	
Cat16	 NL952 M.2 30x42x2.3mm Antenna: 4	 NL950 LGA 41x44x2.75mm Antenna: 4	 L860 Multiple CA bands

FM150 5G module

Product Features

- Chipset: SDX55
- Support SA/NSA network architectures, support ENDC
- 5G Sub-6: n1, n3, n5, n7, n8, n20, n28, n38, n41, n77, n78, n79
- LTE FDD: B1, B2, B3, B5, B7, B8, B20, B28
- LTE TDD: B34, B38, B39, B40, B41, B42, B43*
- WCDMA: B1, B2, B5, B8
- MIMO:
5G NR: DL 4*4 MIMO: n1, n38, n41, n77, n78, n79
UL 2*2 MIMO: n41, n77, n78, n79
LTE : DL 4*4 MIMO: B1
UL 1*1 MIMO

Data

Downlink:

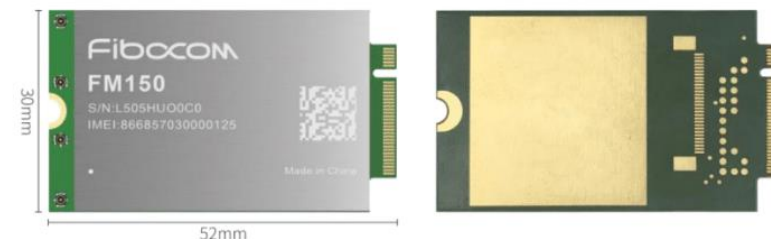
- NR sub6: 256QAM 1CC(4 layers)
- LTE: 1024QAM 3CC(8 layers)

Uplink:

- NR sub6: 256QAM
- LTE: 256QAM

Basic parameters

- Factor: M.2
- Size: 30 x 52 x 2.3mm
- Operating Voltage: 3.135V~4.4V, Typical 3.3V
- Operating Temperature: -10~+55°C
- AT Command Set: 3GPP TS 27.007 and 27.005, proprietary FIBOCOM AT commands
- Antenna: 4 Antennas
- GNSS: GPS/GLONASS/Beidou/Galileo
- Support FOTA/DFOTA/VoLTE/Audio/eSIM



Interface

- GPIO
- I2S x2
- UIM x1
- USB3.1/3.0 x1
- USB2.0 x1
- PCIe3.0 x1
- MIPI x2

Driver

- Linux 4.1 / Android 9.0 / Windows 10 or later

Approval

- CCC/SRRC/CMCC/CUCC/CTCC/Rohs/CE/GCF/RCM/Optus/Telstra/NCC/KC/Carriers(TBD)

FG150 5G module

Product Features

- Chipset: SDX55
 - Support SA/NSA network architectures, support ENDC
 - 5G Sub-6: n1, n3, n5, n7, n8, n20, n28, n40*, n38, n41, n77, n78, n79
 - LTE FDD: B1, B2, B3, B5, B7, B8, B20, B25, B28, B32
 - LTE TDD: B34, B38, B39, B40, B41, B42, B43*
 - WCDMA: B1, B2, B5, B8
 - MIMO:
- 5G NR: DL 4*4 MIMO: n1, n3, n7, n38, n41, n77, n78, n79
UL 2*2 MIMO: n41, n77, n78, n79
- LTE : DL 4*4 MIMO:
B1, B3, B7, B32, B34, B38, B39, B40, B41, B42
UL 1*1 MIMO

Data

Downlink:

- NR sub6: 4 x 4MIMO 256QAM 1CC(4 layers)
- LTE: 4 x 4MIMO 1024QAM 7CC(6CC 24 layers)

Uplink:

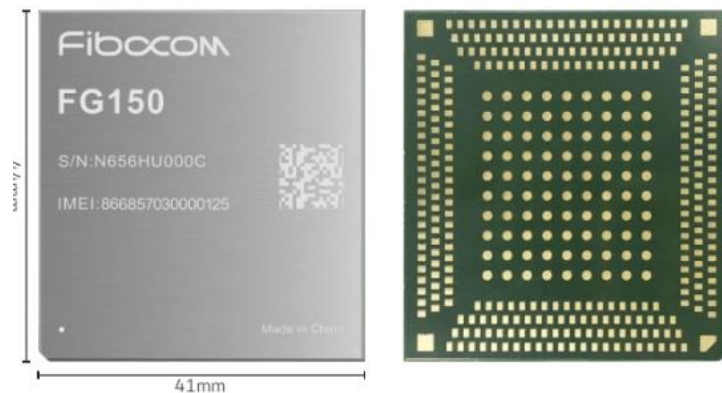
- NR sub6: 2 x 2MIMO 256QAM
- LTE: 1 x 1MIMO 256QAM

Basic parameters

- Factor: LGA
- Size: 41 x 44 x 2.75mm
- Operating Voltage: 3.3V~4.4V, Typical 3.8V
- Operating Temperature: -30~+75°C
- AT Command Set: 3GPP TS 27.007 and 27.005, proprietary FIBOCOM AT commands
- Antenna: 6 Antennas + 1GPS
- GNSS: GPS/GLONASS/Beidou/Galileo
- Support FOTA/DFOTA/VoLTE/Audio/eSIM

Interface

- | | |
|-----------|-----------------|
| • UART ×1 | • USB3.1/3.0 ×1 |
| • GPIO | • USB2.0 ×1 |
| • I2C ×1 | • PCIe3.0 ×1 |
| • SDIO ×1 | • SPI ×1 |
| • I2S ×2 | • RGMII ×1 |
| • UIM ×2 | • MIPI ×2 |



Driver

- Linux 4.1 / Android 9.0

Approval

- CCC/SRRC/CMCC/CUCC/CTCC /Rohs/CE/GCF/RCM/Optus/Telstra/NCC/KC/Carriers(TBD)

MBB Series

Cat 12



NL952
M.2 30x42x2.3mm
Antenna: 4



NL950
LGA 41x44x2.75mm
Antenna: 4

Cat 9



L850-GL
LTE Cat9
DL:450Mbps
Multiple CA bands

Cat 6



L830-EB
LTE Cat6
DL:300Mbps
M.2 form factor



NL678
LTE Cat6
DL:300Mbps
M.2 form factor

L860 4G module CAT16

Product Features

- Chipset: Intel XMM7560
- LTE FDD: LTE FDD: Band 1, 2, 3, 4, 5, 7, 8, 12, 13, 14, 17, 18, 19, 20, 21, 25, 26, 28, 29, 30, 32, 66
LTE TDD: B38/39/40/41/42
- UMTS: Band 1, 2, 4, 5, 8
- M.2: 30.0*42.0*2.3 mm
- DL 5CA on 4 bands, DL 256QAM support
- DL-MIMO: 2*2, 4*2, 4*4
- DL 4x4 MIMO: Band 1,2,3,4,7,30,40,41NB, 66
- LAA(Band 46)
- Integrated GNSS
- eSIM interface support
- Operating Voltage: 3.135V~4.4V, Typical 3.3V
- Operating Temperature: -10~+55°C
- Storage Temperature: -40~+85°C
- AT Command Set: 3GPP TS 27.007 and 27.005, proprietary FIBOCOM AT commands
- TX Power:
FDD&TDD LTE: 23dBm
WCDMA: 23.5dBm
- RX Sensitivity:
FDD&TDD LTE: -98dBm~102dBm



Data

- FDD&TDD LTE: 1 Gbps (DL Cat. 16) / 150 Mbps* (UL Cat. 13), *from Q2 '19
- UMTS/HSPA+: 42Mbps DL(Cat 24), 11.5Mbps UL(Cat 7)

Interface

- USIM: 3V/1.8V
- PCIe
- BodySar

Driver

- Windows 10/Linux

Approval

- CE / CCC / FCC / GCF / PTCRB etc. 100+ countries certification
- AT&T / Verizon / Sprint / DT / Telefonica / Vodafone / Swisscom / Docomo / KDDI / Softbank / Telstra / Optus

NL952 4G module

Product Features

- Chipset: Qualcomm SDX24
- FDD:B1,B3,B5,B7,B8,B20,B28,B32
TDD:B38,B40,B42,B43*,B48*
- UMTS/HSPA+:B1,B5,B8
- M.2: 30.0*52.0*2.3 mm
- DL 5CA , DL 256QAM support
- UL 2CA , UL 64QAM support
- DL-MIMO: 2*2, 4*4
- DL 4x4 MIMO: Band 1,3,7,32,38,40,42
- Integrated GNSS
- eSIM interface support
- Operating Voltage: 3.3V~4.4V, Typical 3.8V
- Operating Temperature: -30~+75°C *
- Storage Temperature: -40~+85°C
- AT Command Set: 3GPP TS 27.007 and 27.005, proprietary FIBOCOM AT commands
- TX Power:
FDD&TDD LTE: 23dBm
WCDMA: 23.5dBm
- RX Sensitivity:
FDD&TDD LTE: -98dBm~102dBm



Data

- FDD&TDD LTE: 1Gbps (DL Cat. 16) / 150 Mbps (UL Cat. 13)
- UMTS/HSPA+: 35Mbps DL(Cat 23), 5.76Mbps UL(Cat 6)

Interface

- USIM: 3V/1.8V
- USB3.0
- PCIe2.0*

Driver

- Linux4.0*/ Android 9.0*

Approval

- CE / GCF / RCM
- BT/EE/ Telefonica */ Vodafone */ Swisscom* / Telstra* / Optus*

NL678 4G module CAT6

Product Feature

- LTE FDD: Band 1/3/5/7/8/20/28
- LTE TDD: Band 38/40/41
- WCDMA: Band 1/3/5/8
- 2CA Combo: B1+B1/3/5/7/8/20/28, B3+B3/5/7/8/20/28, B5+B7, B7+B7/8/20/28, B38+B38, B40+B40, B41+B41, B20+B32
- MiniPCIe: 51x30x4.9mm
- Operating Temperature: -40°C~+85°C
- Storage Temperature: -40°C~+85°C
- Operating Voltage: 3.1V~4.4V typical 3.3V
- **AT Command Set:** 3GPP TS 27.007 and 27.005, and proprietary FIBOCOM AT commands
- **TX Power**
WCDMA : 23.5dBm±1dB
LTE FDD: 23.0dBm±1dB
LTE TDD: 23.0dBm±1dB

Data

- LTE FDD CA: 300Mbps DL/50Mbps UL
- LTE TDD CA: 240Mbps DL/30Mbps UL
- UMTS: 384 kbps DL/384 kbps UL
- HSPA/HSPA+: 42Mbps DL/5.76Mbps UL

Function

- MUX: Basic Mode
- SMS: MO/MT Text and PDU modes
- DHCP/HTTP(S)*/FTP(S)*/TCP*/UDP*/IPV4V6/SSL*
- PPP*/ECM/RNDIS/Gobinet
- DFOTA/FOAT
- VoLTE/Audio/Recording*/TTS*/BIP*/FFS*
- GNSS*/LBS*/CellID*

Interface

- SIM Card: 1.8V/3.0V
- USB 2.0
- USB 3.0
- I2C
- PCM

- Analog Audio
- GPIO*
- Network indicator
- Antenna: Main/Div/GNSS

Driver

- Linux/Android/Window*

Approval

- CE/GCF/NCC
- RoHS/HF*

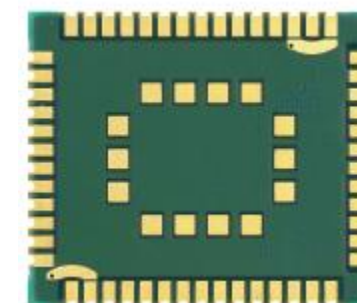
IoT-LPWA Series

2G+GNSS		G500-GL		G510
2G		G500-Q50		G510
NB 2		N510-EAU		N510-GL
NB 2/2G				
Cat M		MA510		
Cat M/NB 2				
CatM/NB/2G				

G500 2G module

Product Feature

- Band: 850(B5), 900(B8), 1800(B3), 1900(B2)
- GPS/Beidou/SBAS
- Dimensions: 18.7 x 16.0 x 2.3mm
- LCC+LGA
- Normal operating temperature: -30°C ~ +75°C
- Optional operating temperature: -40°C ~ +85°C
- Storage Temperature: -40 °C~ +85°C
- Operating Voltage: 3.3 ~ 4.5V, Typical 4V
- TX Power:
 - 850/900 MHz class 4 (2W)
 - 1800/1900 MHz class 1 (1W)
- RX Sensitivity:
 - 109dBm (850/900MHz)
 - 108dBm (1800/1900MHz)
- AT Command Set: FIBOCOM proprietary AT commands/
GSM 07.05/GSM 07.07/GSM 07.10



Data

- Embedded TCP/UDP/FTP/HTTP/FOTA
- GPRS: Multi-slot class 12(4 Down;4 Up;5 Total)
 - Max Downlink 85.6 Kbps
 - Coding Scheme CS1-CS4SMS
- SMS*

Interface

- SIM Card: 1.8V/3.0V
- Power on/off
- UART X 2
- EINT
- GSM/GPRS AN
- PCM
- ADC
- Audio
- GNSS ANT

Approval

- CCC/RoHS/SRRC/NAL/CE*

N510 NB only module

Product Feature

- Cat.NB1: Band 1/3/8/20/28
- LCC 22.2x20.2x2.1mm
- Operating temperature : -40°C~+85°C
- Storage Temperature: -40°C~+90°C
- Operating Voltage: 3.3V~5.0V
- **AT Command Set:** 3GPP TS 27.007 and 27.005, proprietary FIBOCOM AT commands
- **TX Power:** 23.0dBm±1dB

Data

- Multi-tone: 62.5Kbps UL/ 26.15Kbps DL
- Single-tone: 15.6Kbps UL

Function

- TCP/UDP
- IPV4/IPV6
- COAP
- CellID
- LWM2M
- MQTT
- HTTP
- FOTA
- PSM
- eDRX
- DRX
- NTP
- China Mobile OneNet
- China Telecom Cloud



Interface

- UART
- USIM 1.8V/3V
- System Indicator
- Antenna

Driver

- ADC
- GPIO
- I2C
- SPI *
- Linux/Windows

Approval

- CE/NCC/ROHS/HF//GCF*/DT*/VDF*

MA510 NB IOT/2G module

Basic Features

- Cat-M1: B1/2/3/4/5/8/12/13/14/18/19/20/25/26/27/28/66/85
- Cat-NB2: B1/2/3/4/5/8/12/13/18/19/20/25/26/28/66/71/85
- EGPRS: 850/900/1800/1900MHz
- GNSS: GPS/GLONASS/BeiDou/Galileo/QZSS
- LCC+LGA: 22.2x20.2x2.1mm
- Operating temperature: -40 °C~+85 °C
- Storage temperature: -40 °C~+90 °C
- Operating Voltage: 3.3V~4.5V
- **AT Command Set:** 3GPP TS 27.007 and 27.005, proprietary FIBOCOM AT commands
- **TX Power:**
 - GSM850/900: 33dBm±1dB
 - DCS1800/PCS1900: 30dBm±1dB
 - FDD-LTE: 21dBm±1dB (Power Class 5)



Data Transmission

- Cat-M1: Max 375Kbps (DL)/ Max 1119Kbps (UL)
- Cat-NB1: Max 32Kbps (DL)/ Max 70Kbps (UL)
- Cat-NB2: Max 136Kbps (DL)/ Max 150Kbps (UL)
- EGPRS: Max 296Kbps (DL)/ Max 236.8Kbps (UL)
- GPRS: Max 107Kbps (DL)/ Max 85.6Kbps (UL)

Features

- PPP/TCP/UDP/SSL/TLS/FTP(S)/HTTP(S)
- MQTT/CoAP/LWM2M
- VoLTE/NITZ/PING/Jamming Detection
- DFOTA

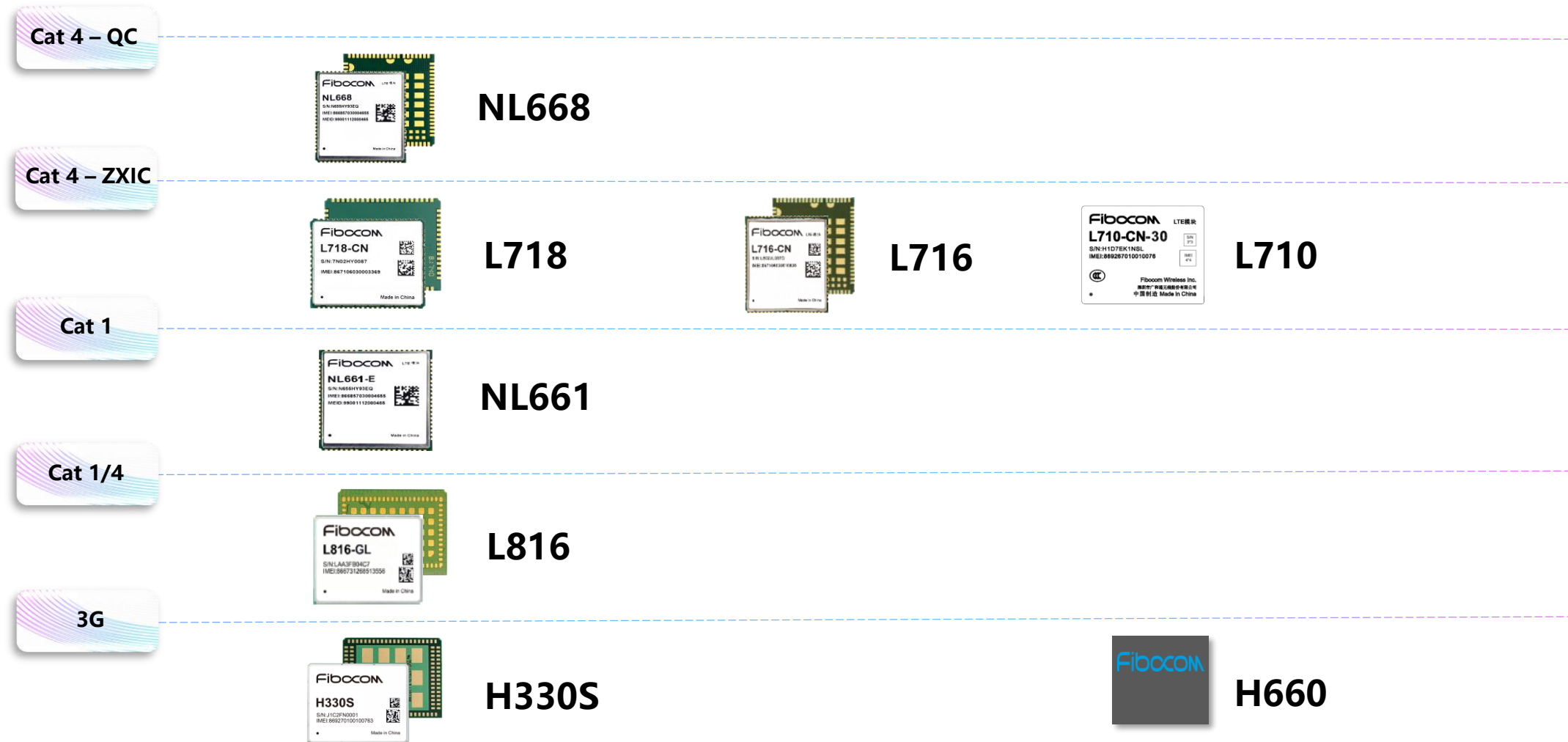
Interfaces

- SIM1.8V
- UART x3
- USB2.0 x1
- I2C x1
- SPI x1
- I2S x1
- ADC x2
- GPIO x4
- Antenna x2

Certifications

- RoHS/HF/GCF/RCM/Telstra/NCC
- FCC/IC/PTCRB/Sprint/AT&T/Verizon/ANATEL
- JATE/TELEC/SFB/DCM/KDDI
- CE/DT/VDF

IoT Series



NL668 4G module

Product Feature

- LTE FDD: Band 1/3/5/7/8/20/28
- LTE TDD: Band 38/40/41
- WCDMA: Band 1/5/8
- GSM/GPRS/EDGE: 850/900/1800MHz
- LCC 32x29x2.4mm
- Operating Temperature: -40°C~+85°C
- Storage Temperature: -40°C~+85°C
- Operating Voltage: 3.3V~4.3V typical 3.8V

- **AT Command Set:** 3GPP TS 27.007 and 27.005, and proprietary FIBOCOM AT commands
- **TX Power**
GSM850: 32.5 dBm±1dB
GSM900: 32.5 dBm±1dB
DCS1800: 29.5dBm±1dB
WCDMA : 23.5dBm±1dB
LTE FDD: 23.0dBm±1dB
LTE TDD: 23.0dBm±1dB

Data

- LTE FDD: 150Mbps DL/50Mbps UL
- LTE TDD: 130Mbps DL/35Mbps UL
- UMTS: 384 kbps DL/384 kbps UL
- HSPA/HSPA+: 42Mbps DL/5.76Mbps UL
- EDGE: 296Kbps DL/236.8Kbps UL
- GPRS: 107Kbps DL/85.6Kbps UL

Function

- MUX: Basic Mode
- SMS: MO/MT Text and PDU modes
- HTTP(S)/FTP(S)/TCP(S)/UDP/IPV4/IPV6/NITZ/NTP/SSL/CSD
- ECM/RNDIS/PPP/Gobinet
- DFOTA/FOAT
- E-Call/VoLTE/TTS/Recording/FFS/BIP
- GNSS/LBS/CellID
- OpenLinux*

Interface

- SIM Card: 1.8V/3.0V
- USB 2.0
- UART
- I2C
- PCM/I2S

Driver

- Linux/Android/Windows

- ADC
- SDIO
- SPI
- SGMII
- GPIO
- Antenna: Main/Div/GNSS



Approval

- CE-RED/GCF/NCC/RCM
- Telstra*/Anatel*
- RoHS/HF*

L610 2G/4G module CAT1

Product Feature

- LTE FDD: Band 1/3/5/8
- LTE TDD: Band 34/38/39/40/41
- GSM: 900/1800MHz
- LCC 31x28x2.4mm
- Operating Temperature: -40°C~+85°C
- Storage Temperature: -40°C~+85°C
- Operating Voltage: 3.3V~4.3V typical 3.8V

Data

- LTE FDD: 10Mbps DL/5Mbps UL
- LTE TDD: 10Mbps DL/5Mbps UL
- GPRS: 107Kbps DL/85.6Kbps UL

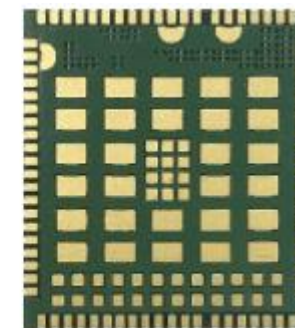
Interface

- SIM Card: 1.8V/3.0V
- USB 2.0
- UART
- I2C
- PCM/I2S**
- ADC
- SDIO**
- SPI**
- GPIO
- Antenna: Main

- AT Command Set: 3GPP TS 27.007 and 27.005, and proprietary FIBOCOM AT commands
- TX Power
 - GSM900: 32.5 dBm±1dB
 - DCS1800: 29.5dBm±1dB
 - LTE FDD: 23.0dBm±1dB
 - LTE TDD: 23.0dBm±1dB

Function

- MUX: Basic Mode
- SMS: MO/MT Text and PDU modes
- HTTP(S)/FTP(S)/TCP(S)/UDP/IPV4/IPV6/MQTT
- ECM/RNDIS/PPP
- DFOTA/FOAT
- VoLTE/TTS/Recording/FFS/BIP/NITZ/NTP/SSL



Driver

- Linux/Android/Windows

Approval

- CCC*/SRRC*/NAL*/CE*/RoHS*

SoC Series

SM6125		SM826	
MSM8953		SC826	
SDM450		SS808	
QM215		SQ806	
MSM8909		SC806	

Fibocom Global Services

Reducing customer operation cost.

Maximizing customer market values around the world.