Sierra Wireless® HL Series Embedded Modules

Compact, Flexible, and Future Proof 2G, 3G, and 4G Essential Modules

22mm

23mm

Sierra Wireless® AirPrime® HL embedded modules offer everything device manufacturers need to meet essential connectivity requirements. Key differentiators include a common form factor, small size, low-power consumption, enhanced RF performance, optional GNSS (GPS and GLONASS), and worldwide coverage.

COMPACT: THE SMALLEST 2G TO 4G FORM FACTOR ON THE MARKET
The HL Series is the smallest module on the market sharing a common form factor across 2G, 3G, and 4G technologies. Now, with just one PCB design, device manufacturers can easily integrate voice and data connectivity and deploy in any region, on any wireless mobile network.

FLEXIBLE: SOLDER DOWN OR SNAP-IN SOCKET OPTIONS
The compact form factor offers the choice of soldering down the module for efficient high-volume production or, using a snap-in socket on the same solder pads for total flexibility in prototyping or smaller volume runs. The innovative snap-in socket allows device manufacturers to deploy or change modules at any point in the production and product life cycles.

FUTURE PROOF: INTELLIGENT PIN-TO-PIN COMPATIBILITY
The pin-out on the common form factor enables forward and backward compatibility between the different 2G, 3G, and 4G module variants. This means that the mechanical pin location delivers the same function across the series. The pin-out of the HL series is compatible with the application processing WP Series.

Sierra Wireless
HL SERIES
EMBEDDED MODULES

4G LTE Cat 1	HL7618*	HL7648*	HL7688*	HL7690*	HL7692
TARGET REGION	Americas	Americas	Americas	Europe	Europe
CF3™ FORM FACTOR					
LGA	✓	✓	✓	✓	✓
Snap-in Socket Option	✓	✓	✓	✓	✓
Shieldcan Technology	✓	✓		✓	✓
Dimensions: 22 x 23 x 2.5 mm	✓	✓	✓	✓	✓
4G LTE Cat 1 FREQUENCY BANDS	B4, B13	B2, B4, B12	B2, B4, B5, B8, B17	B3, B8, B20	B3, B8, B20
FALLBACKS			HSPA+: B2, B5		GSM/GPRS: 900, 1800
APPROVALS					
Regulatory	FCC, PTCRB	FCC, IC, PTCRB	FCC, PTCRB	CE, GCF	CE, GCF
Carrier	Verizon	AT&T, T-Mobile	AT&T	KPN	Vodafone
CURRENT CONSUMPTION					
Power Supply for Extended Battery Life	2.8V	2.8V	2.8V	2.8V	2.8V
Alarm (leakage only)	110uA	110uA	110uA	110uA	110uA
Standby and Idle (Typ Sleep)	1.4mA	1.4mA	1.4mA	1.4mA	1.4mA
HSxPA max			770mA		
LTE max	945mA	750mA	750mA	750mA	750mA
AUDIO					
Digital Audio	✓	✓	✓	✓	✓
DTMF			✓		
INTERFACES					
UART	8	8	8	8	8
USB	1	1	1	1	1
ADC	2	2	2	2	2
GPIO	8	8	8	8	8
Flash LED Output	1	1	1	1	1
PWM (Buzzer)	1	1	1	1	1
Tx Burst Indicator	1	1	1	1	1
SIM Interface 1.8V/3V (DSSS Support)	1	1	1	1	1
INTERNET SERVICES					
TCP+UDP+FTP+HTTP+HTTPS	✓	✓	✓	✓	✓
SOFTWARE AND DRIVERS					
Secure Boot	✓	✓	✓	✓	✓
Pre-Certified Firmware	✓	✓	✓	✓	✓
Linux Driver: Standard ECM	✓	✓	✓	✓	✓
Android RIL	✓	✓	✓	✓	✓
CLOUD SERVICES					
Free Unlimited FOTA Upgrades	✓	✓	✓	✓	✓
SIM Management Option	✓	✓	✓	✓	✓
Device Management Option	✓	✓	✓	✓	✓
Data Storage/ Application Enablement Platform Option	✓	✓	✓	✓	✓
TEMPERATURE RANGE					
Industrial Grade -40°C to +85°C	✓	✓	✓	✓	✓

* Commercially available soon

SIERRA WIRELESS®

4G LTE Cat 4	HL7518	HL7528	HL7538*	HL7539	HL7548	HL7549	HL7588
TARGET REGION	Americas	Korea	Japan	Japan	Americas	Australia	Americas
CF3™ FORM FACTOR							
LGA	✓	✓	✓	✓	✓	✓	✓
Snap-in Socket Option	✓	✓	✓	✓	✓	✓	✓
Molding Technology	✓	✓	✓	✓	✓	✓	✓
Dimensions: 22 x 23 x 2.5 mm	✓	✓	✓	✓	✓	✓	✓
4G LTE Cat 4 FREQUENCY BANDS	B4, B13	B1, B3, B5, B7	B1, B11, B18	B1, B19, B21	B2, B4, B5, B17	B3, B7, B28	B2, B4, B5, B13, B17
FALLBACKS							HSPA+: B2, B5
APPROVALS							
Regulatory	FCC, GCF	KC Mark	JRF, JPA	JRF, JPA	FCC, IC, PTCRB	RCM	GCF, FCC, PTCRB, IC
Carrier	Verizon	LGU+, SKT, KT	KDD	NTT	AT&T, Rogers	Telstra	AT&T, Verizon
CURRENT CONSUMPTION							
Power Supply for Extended Battery Life	3.2V	2.8V	2.8V	2.8V	2.8V	2.8V	2.8V
Alarm (leakage only)	110uA	110uA	110uA	110uA	110uA	110uA	110uA
LTE Standby and Idle (Typ Sleep)	1.5mA	1.4mA	1.4mA	1.4mA	1.4mA	1.4mA	1.4mA
HSxPA max							770mA
LTE max	945mA	750mA	750mA	750mA	750mA	750mA	750mA
AUDIO							
Digital Audio							✓
Codec: HR, FR, EFR, AMR							✓
Echo Cancellation & Noise Reduction							✓
DTMF							✓
INTERFACES							
UART	8	8	8	8	8	8	8
USB	1	1	1	1	1	1	1
ADC	2	2	2	2	2	2	2
GPIO	8	8	8	8	8	8	8
Flash LED Output	1	1	1	1	1	1	1
PWM (Buzzer)	1	1	1	1	1	1	1
Tx Burst Indicator	1	1	1	1	1	1	1
SIM Interface 1.8V/3V (DSSS Support)	1	1	1	1	1	1	1
INTERNET SERVICES							
TCP+UDP+FTP	✓	✓	✓	✓	✓	✓	✓
SOFTWARE AND DRIVERS							
Secure Boot	✓	✓	✓	✓	✓	✓	✓
Pre-Certified Firmware	✓	✓	✓	✓	✓	✓	✓
Linux Driver: Standard ECM	✓	✓	✓	✓	✓	✓	✓
Android RIL	✓	✓	✓	✓	✓	✓	✓
CLOUD SERVICES							
Free Unlimited FOTA Upgrades	✓	✓	✓	✓	✓	✓	✓
SIM Management Option	✓		✓	✓	✓	✓	✓
Device Management Option	✓		✓	✓	✓	✓	✓
Data Storage/ Application Enablement Platform Option	✓		✓	✓	✓	✓	✓
TEMPERATURE RANGE							
Industrial Grade -40°C to +85°C	✓	✓	✓	✓	✓	✓	✓

* Commercially available soon

SIERRA WIRELESS®

3G, 2G	HL8518	HL8528	HL8529	HL8548	HL8549	HL6528RD
TARGET REGION	Europe	Americas	Americas	Global	Brazil	Global
CF3™ FORM FACTOR						
LGA	✓	✓	✓	✓	✓	✓
Snap-in Socket Option	✓	✓	✓	✓		✓
Shieldcan Technology	✓	✓	✓		✓	✓
Dimensions: 22 x 23 x 2.5 mm	✓	✓	✓	✓		✓
3G HSPA FREQUENCY BANDS	B1, B8	B2, B5	B2, B5	B1, B2, B5, B6, B8, B19	B1, B2, B5, B6, B8, B19	
2G EDGE/GSM/GPRS FREQUENCY BANDS	900, 1800	850, 1900		850, 900, 1800, 1900	850, 900, 1800, 1900	850, 900, 1800, 1900
APPROVALS						
Regulatory	CE, GCF	FCC, IC, PTCRB	FCC, IC, PTCRB	Anatel, CE, FCC, GCF, IC, NCC, PTCRB	Anatel, CE, FCC, GCF, IC, PTCRB	Anatel, CCC, CE, FCC, GCF, IC, NCC, PTCRB
Carrier	Vodafone	AT&T	AT&T	Telstra, NTT, AT&T, Rogers	Vivo	
CURRENT CONSUMPTION						
Power Supply for Extended Battery Life	2.8V	2.8V	2.8V	2.8V	2.8V	2.8V
Alarm (leakage only)	50uA	50uA	50uA	40uA	40uA	35uA
LTE Standby and Idle (Typ Sleep)	1mA	1mA	1mA	1.2mA	1.2mA	1.3mA
HSxPA max	460mA	460mA		475mA	475mA	450mA
AUDIO						
Analog Audio						✓
Digital Audio	✓	✓	✓	✓	✓	✓
Codec: HR, FR, EFR, AMR	✓	✓	✓	✓	✓	✓
Echo Cancellation & Noise Reduction	✓	✓	✓	✓	✓	✓
DTMF	✓	✓	✓	✓	✓	✓
INTERFACES						
UART	8	8	8	8	8	8
USB	1	1	1	1	1	1
ADC	2	2	2	2	2	2
GPIO	8	8	8	8	8	8
Flash LED Output	1	1	1	1	1	1
PWM (Buzzer)	1	1	1	1	1	1
Tx Burst Indicator	1	1	1	1	1	1
SIM Interface 1.8V/3V (DSSS Support)	1	1	1	1	1	1 (DSDS Support)
LOCATION SERVICES						
GPS & Glonass Sirf V				✓	✓	✓
INTERNET SERVICES						
TCP+UDP+FTP+HTTP+HTTPS	✓	✓	✓	✓	✓	✓
SOFTWARE AND DRIVERS						
Secure Boot	✓	✓	✓	✓	✓	✓
Pre-Certified Firmware	✓	✓	✓	✓	✓	✓
Linux Driver: Standard ECM	✓	✓	✓	✓	✓	✓
Android RIL	✓	✓	✓	✓	✓	
CLOUD SERVICES						
Free Unlimited FOTA Upgrades	✓	✓	✓	✓	✓	✓
SIM Management Option	✓	✓	✓	✓	✓	✓
Device Management Option	✓	✓	✓	✓	✓	✓
Data Storage/ Application Enablement Platform Option	✓	✓	✓	✓	✓	✓
TEMPERATURE RANGE						
Industrial Grade -40°C to +85°C	✓	✓	✓	✓	✓	✓

About Sierra Wireless

Sierra Wireless is building the Internet of Things with intelligent wireless solutions that empower organizations to innovate in the connected world. We offer the industry's most comprehensive portfolio of 2G, 3G, and 4G embedded modules and gateways, seamlessly integrated with our secure cloud and connectivity services. OEMs and enterprises worldwide trust our innovative solutions to get their connected products and services to market faster.

For more information, visit www.sierrawireless.com.

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