Positioning chips

	Standard Precision GNSS chips					Dead Reckoning GNSS chips	
	UBX-M8230-CT	UBX-M8030-CT	UBX-M8030-KT	UBX-M8030-KA*	UBX-G8020-KT	UBX-M8030-KT-DR	UBX-M8030-KA-DR*
Grade							
Automotive				•			•
Professional			•		•	•	
Standard	•	•					
Physical							
Image							
Size [mm]	2.99 x 3.21		5.00 x 5.00		5.00 x 5.00	5.00 x 5.00	
Height [mm]	0.36		0.59		0.59	0.59	
Package & pins	WL-CSP47		QFN40		QFN40	QFN40	
GNSS							
GPS / QZSS	•	•	•	•	•	•	•
GLONASS	•	•	•	•	•	•	•
Galileo	cm	•	•	•		•	•
BeiDou	•	•	•	•		•	•
Number of concurrent GNSS	3	3	3	3	1	3	3
Interfaces							
UART	1	1	1	1	1	1	1
USB		1	1	1	1	1	1
SPI	1	1	1	1	1	1	1
DDC (I^2C compliant)	1	1	1	1	1	1	1
Features							
Programmable (Flash)		S	S	S		•	•
Data logging	S	S	S	S	S	•	•
Data batching	•						
RTC crystal	S	S	S	S	S	S	S
Oscillator	T	C/T	C/T	C/T	C/T	C/T	C/T
Antenna supply & supervisor		S	S	S	S	S	S
Time pulse		2	2	2	2	2	2

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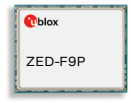
* = Operating temperature -40 °C to +105 °C

cm = only supported in continuous mode
S = supported, may require ext. components

T = TCXO supported
C/T = Crystal and TCXO supported

Timing, Dead Reckoning, and High Precision GNSS modules

	Timing modules					Dead Reckoning GNSS modules			High Precision GNSS modules		
	RCB-F9T	ZED-F9T	LEA-M8F	LEA-M8T	NEO-M8T	NEO-M8L	NEO-M8U	EVA-M8E	NEO-M8P-0	NEO-M8P-2	ZED-F9P
Grade											
Automotive						•					
Professional		•	•	•	•	•	•	•	•	•	•
Standard	•										
Physical											
Image											
Size [mm]	31.7 x 67.2	17.0 x 22.0	17.0 X 22.4			12.2 x 16.0		7.0 x 7.0	12.2 x 16.0		17.0 x 22.0
Height [mm]		2.4	3.5	2.4		2.4		1.1	2.4		2.4
Package & pins	8 pins	LGA 54	LCC 28			LCC 24		LGA 43	LCC 24		LGA 54
GNSS											
GPS / QZSS	•	•	•	•	•	•	•	•	•	•	•
GLONASS	•	•	•	•	•	•	•	•	•	•	•
Galileo	•	•		•	•	•	•	•			•
BeiDou	•	•	•	•	•	•	•	•	•	•	•
Number of concurrent GNSS	4	4	2	3	3	3	3	3	2	2	4
Multi-band	•	•									•
Interfaces											
UART	1	2	1	1	1	1	1	1	1	1	2
USB		1	1	1	1	1	1	1	1	1	1
SPI		1	1	1	1	1	1	1	1	1	1
DDC (I^2C compliant)		1	1	1	1	1	1	1	1	1	1
Features											
Programmable (Flash)	•	•	•	•	•	•	•	E	•	•	•
Data logging	•	•		•	•	•	•	E	•	•	•
Carrier phase output	•	•		•	•				•	•	•
Additional SAW	•	•	•	•	•				•	•	•
Additional LNA			•		•				•	•	
RTC crystal	•	•		•	•	•	•	o	•	•	•
Oscillator	T	T	V	T	T	C/T	C	T	T	T	T
RTK rover									•	•	•
RTK base station										•	•
Moving base									•	•	•
Survey-in and fixed mode	•	•	•	•	•					•	•
Built-in sensor						•	•				
Time pulse	2	2	1	2	2	1	1	1	1	1	1
Time mark input		2	2	2	2	1	1		1	1	1
Frequency output			•								
Power supply											
2.7 V – 3.6 V	•	•		•	•	•	•	•	•	•	•
3.0 V – 3.6 V			•			•					

E = External Flash required
o = Optional, or requires external components

C = Crystal
T = TCXO

V = VCTCXO

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Standard Precision GNSS modules

	Standard Precision GNSS SiP modules						Standard Precision GNSS modules					
	ZOE-M8B	ZOE-M8G	ZOE-M8Q	EVA-M8M	EVA-M8Q	EVA-8M	MAX-M8C	MAX-M8Q	MAX-M8Q-01A*	MAX-M8W	MAX-8C	MAX-8Q
Grade												
Automotive									•			
Professional	•	•	•	•	•	•	•	•		•	•	•
Standard												
Physical												
Image												
Size [mm]	4.5 x 4.5			7.0 x 7.0		7.0 x 7.0	9.7 x 10.1				9.7 x 10.1	
Height [mm]	1.0			1.1		1.1	2.5				2.5	
Package & pins	S-LGA 51			LGA 43		LGA 43	LCC 18				LCC 18	
GNSS												
GPS / QZSS	•	•	•	•	•	•	•	•	•	•	•	•
GLONASS	•	•	•	•	•	•	•	•	•	•	•	•
Galileo	cm	•	•	•	•		•	•	•	•		
BeiDou	•	•	•	•	•		•	•	•	•		
Number of concurrent GNSS	3	3	3	3	3	1	3	3	3	3	1	1
Interfaces												
UART	1	1	1	1	1	1	1	1	1	1	1	1
USB				1	1	1						
SPI	1	1	1	1	1	1						
DDC (I^2C compliant)	1	1	1	1	1	1	1	1	1	1	1	1
Features												
Programmable (Flash)		E	E	E	E							
Data logging	E	E	E	E	E	E						
Data batching	•											
Additional SAW	•	•	•									
Additional LNA	•	•	•									
RTC crystal	o	o	o	o	o	o	♦	•	•	•	♦	•
Oscillator	T	T	T	C	T	C	C	T	T	T	C	T
Built-in antenna supply & supervisor										•		
Time pulse		1	1	1	1	1	1	1	1	1	1	1
Power supply												
1.71 V – 1.89 V	•	•										
1.65 V – 3.6 V				•		•	•				•	
2.7 V – 3.6 V			•		•			•	•	•		•

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cm = only supported in continuous mode

E = External Flash required

o = Optional, or requires external components
♦ = Yes, but with higher backup current

C = Crystal
T = TCXO

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Standard Precision GNSS modules

	Standard Precision GNSS modules						Standard Precision GNSS antenna modules		
	LEA-M8S	NEO-M8M	NEO-M8N	NEO-M8Q	NEO-M8Q-01A*	NEO-8Q	CAM-M8C	CAM-M8Q	SAM-M8Q
Grade									
Automotive					•				
Professional	•	•	•	•		•	•	•	•
Standard									
Physical									
Image									
Size [mm]	17.0 X 22.4	12.2 x 16.0				12.2 x 16.0	9.6 x 14.0		15.5 x 15.5
Height [mm]	2.4	2.4				2.4	1.95		6.3
Package & pins	LCC 28	LCC 24				LCC 24	LCC 31		LGA 20
GNSS									
GPS / QZSS	•	•	•	•	•	•	•	•	•
GLONASS	•	•	•	•	•	•	•	•	•
Galileo	•	•	•	•	•		•	•	•
BeiDou	•	•	•	•	•		•	•	
Number of concurrent GNSS	3	3	3	3	3	1	3	3	3
Interfaces									
UART	1	1	1	1	1	1	1	1	1
USB	1	1	1	1	1	1			
SPI		1	1	1	1	1	1	1	
DDC (I^2C compliant)	1	1	1	1	1	1	1	1	1
Features									
Programmable (Flash)			•						
Data logging			•						
Additional SAW	•		•	•		•	•	•	•
Additional LNA			•	•		•	•	•	•
RTC crystal	•	•	•	•	•	•	♦	•	•
Oscillator	T	C	T	T	T	T	C	T	T
Built-in antenna							•	•	•
Built-in antenna supply & supervisor	•								
Time pulse	1	1	1	1	1	1	1	1	1
Power supply									
1.65 V – 3.6 V		•					•		
2.7 V – 3.6 V	•		•	•	•	•		•	•

* = Operating temperature -40 °C to +105 °C

♦ = Yes, but with higher backup current

C = Crystal / T = TCXO

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