UBX Messages Overview continued

Page	Mnemonic	Cls/ID	Length	Type	Description
346	**MON-RXR**	0x0A 0x21	1	Output	Receiver status information
347	**MON-SMGR**	0x0A 0x2E	16	Periodic/Polled	Synchronization manager status
350	**MON-SPT**	0x0A 0x2F	4 + 12*numR...	Polled	Sensor production test
354	**MON-TXBUF**	0x0A 0x08	28	Periodic/Polled	Transmitter buffer status
355	**MON-VER**	0x0A 0x04	0	Poll Request	Poll receiver and software version
355	**MON-VER**	0x0A 0x04	40 + 30*N	Polled	Receiver and software version
	UBX Class NAV			**Navigation Results Messages**	
357	**NAV-AOPSTATUS**	0x01 0x60	16	Periodic/Polled	AssistNow Autonomous status
358	**NAV-ATT**	0x01 0x05	32	Periodic/Polled	Attitude solution
359	**NAV-CLOCK**	0x01 0x22	20	Periodic/Polled	Clock solution
359	**NAV-COV**	0x01 0x36	64	Periodic/Polled	Covariance matrices
360	**NAV-DGPS**	0x01 0x31	16 + 12*numCh	Periodic/Polled	DGPS data used for NAV
361	**NAV-DOP**	0x01 0x04	18	Periodic/Polled	Dilution of precision
362	**NAV-EELL**	0x01 0x3d	16	Periodic/Polled	Position error ellipse parameters
363	**NAV-EOE**	0x01 0x61	4	Periodic	End of epoch
363	**NAV-GEOFENCE**	0x01 0x39	8 + 2*numFe...	Periodic/Polled	Geofencing status
364	**NAV-HPPOSECEF**	0x01 0x13	28	Periodic/Polled	High precision position solution in ECEF
365	**NAV-HPPOSLLH**	0x01 0x14	36	Periodic/Polled	High precision geodetic position solution
367	**NAV-NMI**	0x01 0x28	16	Periodic/Polled	Navigation message cross-check...
370	**NAV-ODO**	0x01 0x09	20	Periodic/Polled	Odometer solution
371	**NAV-ORB**	0x01 0x34	8 + 6*numSv	Periodic/Polled	GNSS orbit database info
374	**NAV-POSECEF**	0x01 0x01	20	Periodic/Polled	Position solution in ECEF
374	**NAV-POSLLH**	0x01 0x02	28	Periodic/Polled	Geodetic position solution
375	**NAV-PVT**	0x01 0x07	92	Periodic/Polled	Navigation position velocity time solution
379	**NAV-RELPOSNED**	0x01 0x3C	40	Periodic/Polled	Relative positioning information in...
381	**NAV-RESETODO**	0x01 0x10	0	Command	Reset odometer
381	**NAV-SAT**	0x01 0x35	8 + 12*numSvs	Periodic/Polled	Satellite information
383	**NAV-SBAS**	0x01 0x32	12 + 12*cnt	Periodic/Polled	SBAS status data
385	**NAV-SLAS**	0x01 0x42	20 + 8*cnt	Periodic/Polled	QZSS L1S SLAS status data
386	**NAV-SOL**	0x01 0x06	52	Periodic/Polled	Navigation solution information
388	**NAV-STATUS**	0x01 0x03	16	Periodic/Polled	Receiver navigation status
390	**NAV-SVINFO**	0x01 0x30	8 + 12*numCh	Periodic/Polled	Space vehicle information
392	**NAV-SVIN**	0x01 0x3B	40	Periodic/Polled	Survey-in data
393	**NAV-TIMEBDS**	0x01 0x24	20	Periodic/Polled	BeiDou time solution
394	**NAV-TIMEGAL**	0x01 0x25	20	Periodic/Polled	Galileo time solution
395	**NAV-TIMEGLO**	0x01 0x23	20	Periodic/Polled	GLONASS time solution
397	**NAV-TIMEGPS**	0x01 0x20	16	Periodic/Polled	GPS time solution
398	**NAV-TIMELS**	0x01 0x26	24	Periodic/Polled	Leap second event information

UBX Messages Overview continued

Page	Mnemonic	Cls/ID	Length	Type	Description
400	**NAV-TIMEUTC**	0x01 0x21	20	Periodic/Polled	UTC time solution
401	**NAV-VELECEF**	0x01 0x11	20	Periodic/Polled	Velocity solution in ECEF
402	**NAV-VELNED**	0x01 0x12	36	Periodic/Polled	Velocity solution in NED frame
	UBX Class RXM			**Receiver Manager Messages**	
403	**RXM-IMES**	0x02 0x61	4 + 44*numTx	Periodic/Polled	Indoor Messaging System information
406	**RXM-MEASX**	0x02 0x14	44 + 24*num...	Periodic/Polled	Satellite measurements for RRLP
407	**RXM-PMREQ**	0x02 0x41	8	Command	Power management request
408	**RXM-PMREQ**	0x02 0x41	16	Command	Power management request
409	**RXM-RAWX**	0x02 0x15	16 + 32*num...	Periodic/Polled	Multi-GNSS raw measurement data
413	**RXM-RAWX**	0x02 0x15	16 + 32*num...	Periodic/Polled	Multi-GNSS raw measurements
416	**RXM-RLM**	0x02 0x59	16	Output	Galileo SAR short-RLM report
417	**RXM-RLM**	0x02 0x59	28	Output	Galileo SAR long-RLM report
418	**RXM-RTCM**	0x02 0x32	8	Output	RTCM input status
419	**RXM-SFRBX**	0x02 0x13	8 + 4*numW...	Output	Broadcast navigation data subframe
420	**RXM-SFRBX**	0x02 0x13	8 + 4*numW...	Output	Broadcast navigation data subframe
421	**RXM-SVSI**	0x02 0x20	8 + 6*numSV	Periodic/Polled	SV status info
	UBX Class SEC			**Security Feature Messages**	
423	**SEC-UNIQID**	0x27 0x03	9	Output	Unique chip ID
	UBX Class TIM			**Timing Messages**	
424	**TIM-DOSC**	0x0D 0x11	8	Output	Disciplined oscillator control
424	**TIM-FCHG**	0x0D 0x16	32	Periodic/Polled	Oscillator frequency changed notification
425	**TIM-HOC**	0x0D 0x17	8	Input	Host oscillator control
426	**TIM-SMEAS**	0x0D 0x13	12 + 24*num...	Input/Output	Source measurement
428	**TIM-SVIN**	0x0D 0x04	28	Periodic/Polled	Survey-in data
429	**TIM-TM2**	0x0D 0x03	28	Periodic/Polled	Time mark data
430	**TIM-TOS**	0x0D 0x12	56	Periodic	Time pulse time and frequency data
432	**TIM-TP**	0x0D 0x01	16	Periodic/Polled	Time pulse time data
434	**TIM-VCOCAL**	0x0D 0x15	1	Command	Stop calibration
435	**TIM-VCOCAL**	0x0D 0x15	12	Command	VCO calibration extended command
436	**TIM-VCOCAL**	0x0D 0x15	12	Periodic/Polled	Results of the calibration
437	**TIM-VRFY**	0x0D 0x06	20	Periodic/Polled	Sourced time verification
	UBX Class UPD			**Firmware Update Messages**	
438	**UPD-SOS**	0x09 0x14	0	Poll Request	Poll backup restore status
438	**UPD-SOS**	0x09 0x14	4	Command	Create backup in flash
439	**UPD-SOS**	0x09 0x14	4	Command	Clear backup in flash
439	**UPD-SOS**	0x09 0x14	8	Output	Backup creation acknowledge
440	**UPD-SOS**	0x09 0x14	8	Output	System restored from backup

32.8 UBX-ACK (0x05)

Ack/Nak Messages: i.e. Acknowledge or Reject messages to UBX-CFG input messages.
Messages in the UBX-ACK class output the processing results to UBX-CFG and some other messages.

32.8.1 UBX-ACK-ACK (0x05 0x01)

32.8.1.1 Message acknowledged

Message	**UBX-ACK-ACK**						
Description	**Message acknowledged**						
Firmware	Supported on: • u-blox 8 / u-blox M8 protocol versions 15, 15.01, 16, 17, 18, 19, 19.1, 19.2, 20, 20.01, 20.1, 20.2, 20.3, 22, 22.01, 23 and 23.01						
Type	Output						
Comment	Output upon processing of an input message. A UBX-ACK-ACK is sent as soon as possible but at least within one second.						
	Header	Class	ID	Length (Bytes)		Payload	Checksum
Message Structure	0xB5 0x62	0x05	0x01	2		see below	CK_A CK_B
Payload Contents:							

Byte Offset	Number Format	Scaling	Name	Unit	Description
0	U1	-	clsID	-	Class ID of the Acknowledged Message
1	U1	-	msgID	-	Message ID of the Acknowledged Message

32.8.2 UBX-ACK-NAK (0x05 0x00)

32.8.2.1 Message not acknowledged

Message	**UBX-ACK-NAK**						
Description	**Message not acknowledged**						
Firmware	Supported on: • u-blox 8 / u-blox M8 protocol versions 15, 15.01, 16, 17, 18, 19, 19.1, 19.2, 20, 20.01, 20.1, 20.2, 20.3, 22, 22.01, 23 and 23.01						
Type	Output						
Comment	Output upon processing of an input message. A UBX-ACK-NAK is sent as soon as possible but at least within one second.						
	Header	Class	ID	Length (Bytes)		Payload	Checksum
Message Structure	0xB5 0x62	0x05	0x00	2		see below	CK_A CK_B
Payload Contents:							

Byte Offset	Number Format	Scaling	Name	Unit	Description
0	U1	-	clsID	-	Class ID of the Not-Acknowledged Message
1	U1	-	msgID	-	Message ID of the Not-Acknowledged Message