



OEMStar™ QUICK REFERENCE GUIDE

NovAtel Format Commands

Command	Syntax and Example Input(s)	ID	Tag	Description
ADJUST1PPS	<code>adjust1pps mode [period] [offset]</code> <code>adjust1pps mark</code>	429		Adjust receiver clock or transfer time between receivers
ANTENNA-POWER	<code>antennapower flag</code> <code>antennapower on</code>	98		Enable/disable power from receiver's internal power source to the low-noise amplifier of an active antenna

Command	Syntax and Example Input(s)	ID	Tag	Description
ASSIGN	assign channel [state] prn [Doppler [window]] assign 6 28 -250 0 <i>(sv channel 6 is acquiring satellite prn 28 at an offset of 250 hz only)</i> <i>(prn 1 to 32 for gps channels, 38 to 61 for glonass, and 120 to 138 for sbas)</i>	27		Aids in initial acquisition of a satellite by allowing you to override the automatic satellite/channel assignment reacquisition processes
ASSIGNALL	assignall [system] [state] prn [Doppler [window]] assignall gpsl1 28 -250 0 <i>(L1 dedicated sv channels trying to acquire satellite prn 28 at -250 hz)</i>	28		This command works the same way as ASSIGN except that it affects a group of SV channels
AUTH	auth [state] part1 part2 part3 part4 part5 model [date] auth add 1234 5678 9abc def0 1234 lxxgmts 990131	49		Add or remove authorization codes from the receiver

Command	Syntax and Example Input(s)	ID	Tag	Description
CLOCK-ADJUST	clockadjust switch clockadjust disable	15		Enable receiver clock steering.
CLOCK-CALIBRATE	clockcalibrate mode [period] [width] [slope] [bandwidth] clockcalibrate auto	430		Adjust the control parameters of the clock steering loop
CLOCK-OFFSET	clockoffset offset clockoffset -15	596		Remove a delay in the PPS output
CNOUPDATE	cnupdate rate cnupdate 20hz	849		C/No update rate and resolution
COM	com [port] bps [parity [databits [stopbits [handshake [echo[break]]]]]] com com1 57600 n 8 1 n off on	4		Configure the receiver asynchronous serial port drivers
CSMOOTH	csmooth L1time csmooth 500	269		Set carrier smoothing on code measurements
DATUM	datum datum datum csrs	160		Select a datum

Command	Syntax and Example Input(s)	ID	Tag	Description
DGPSEPHEM- DELAY	dgpsephemdelay delay dgpsephemdelay 120	142		Set base station ephemeris delay
DGPSTIME- OUT	dgpstimeout delay dgpstimeout 60	127		Set rover station max. age of pseudorange differential data
DGPSTXID	dgpstxid type ID dgpstxid rtdcm 2 dgpstxid rtdca d036	144		Set station ID value for the receiver when it is transmitting corrections
DYNAMICS	dynamics dynamics dynamics foot	258		Adjust receiver to match environment
ECHO	echo port [echo] echo icom1 on	1247		Sets port echo
ECUTOFF	ecutoff angle ecutoff 10.0	50		Set elevation cut-off angle for satellites

Command	Syntax and Example Input(s)	ID	Tag	Description
FIX	<pre>fix type [param1 [param2 [param3]]] fix height 4.567</pre>	44		<p>Fix parameters such as height or position</p> <p>Note: You must send <code>pdpfilter disable</code> to the OEMStar for this command to take effect.</p>
FIXPOS-DATUM	<pre>fixposdatum datum [lat [lon [height]]] fixposdatum user 51.11633810554 -114.03839550586 1048.2343</pre>	761		<p>Set position by referencing parameters through a specified datum</p>

Command	Syntax and Example Input(s)	ID	Tag	Description
FREQUENCY-OUT	frequencyout [switch] [pulsewidth] [period] frequencyout enable 1 2 <i>(to generate a 50% duty cycle 10 mhz square wave)</i>	232		Set output pulse train available on the VARF pin (variable frequency)
FRESET	freset [target] freset command	20		Clear data which is stored in non-volatile memory
GGA-QUALITY	ggaquality [#entries] [pos type1] [qual1] [pos type2] [qual2]... ggaquality 1 waas 2	691		Customize NMEA GPGGA GPS quality indicator
GLO-CSMOOTH	glocsmooth L1time glocsmooth 200	830	GLO	Carrier smoothing for GLONASS channels
GLO-ECUTOFF	gloecutoff angle gloecutoff 15.0	735	GLO	Set elevation cut-off angle for tracked GLONASS satellites

Command	Syntax and Example Input(s)	ID	Tag	Description
INTERFACE-MODE	interfacemode [port] rxtype txtype [responses] interfacemode com1 rtca novatel on	3		Specify what type of data a particular port on the receiver can transmit and receive
LOCKOUT	lockout prn lockout 8 <i>(prn 1 to 32 for gps channels, 38 to 61 for glonass, and 120 to 138 for sbas)</i>	137		Prevent receiver from using a satellite by de-weighting its range in the solution
LOG	log [port] message [trigger [period[offset [hold]]]] log com1 bestposa ontime 7 2.5 hold	1		Log data using several different methods of triggering the log events
MAGVAR	magvar type [correction [stddev]] magvar correction 15 0	180		Navigate in agreement with magnetic compass bearings

Command	Syntax and Example Input(s)	ID	Tag	Description
MARK-CONTROL	markcontrol signal switch [polarity] [timebias [timeguard]] markcontrol mark1 enable negative 50 100	614		Control processing of mark 1 (MK1I) inputs
MODEL	model model model lxxmts	22		Switch receiver models previously added with the AUTH command
NMEA-TALKER	nmeatalker ID nmeatalker gp	861		Set NMEA talker ID: gp (GPS only) or auto (GPS or GLO)
NVM-RESTORE	nvmrestore nvmrestore	197		Restore non-volatile memory (NVM)
PDPFILTER	pdpfilter switch pdpfilter disable <i>(see Configurations in OM-20000126)</i>	424		Enable pseudorange /delta phase (PDP) filter (normal or GL1DE ®)

Command	Syntax and Example Input(s)	ID	Tag	Description
PDPMODE	<p>pdpmode mode dynamics</p> <p>pdpmode relative dynamic</p>	970		Select the PDP mode: normal or relative (GL1DE)
POSAVE	<p>posave [state] maxt [maxhstd [maxvstd]]</p> <p>posave 24 1 2</p>	173		Implement base station position averaging
POS-TIMEOUT	<p>postimeout sec</p> <p>postimeout 1200</p>	612		Set the time out value for the position calculation(s)
PPS-CONTROL	<p>ppscontrol switch [polarity] [period][pulse width]</p> <p>ppscontrol enable positive 0.05 1000</p>	613		Control polarity, period and pulse width PPS output

Command	Syntax and Example Input(s)	ID	Tag	Description
PSRDIFF-SOURCE	<pre>psrdiffsource type ID rtksource rtkcm any psrdiffsource rtkcm any sbascontrol enable auto</pre> <p><i>(to enable psrdiff from rtkcm, with an sbas fall-back)</i></p>	493		Identify from which base station to accept differential corrections <i>(see also rtksource)</i>
RAIMMODE	<pre>raimmode mode [hal] [val] [pfa] raimmode user 100 100 0.01 raimmode terminal</pre>	1285	RAIM	Configures RAIM mode
RESET	<pre>reset [delay] reset 120</pre>	18		Perform a hardware reset
RTKSOURCE	<pre>RTKSOURCE type ID rtksource rtkcmv3 5 rtksource rtkcm 6</pre>	494		Set the RTK correction source

Command	Syntax and Example Input(s)	ID	Tag	Description
SAVECONFIG	saveconfig <i>(in CDU, ensure you have all windows, other than the console window, closed before using this command)</i>	19		Save present configuration in NVM
SBAS-CONTROL	sbascontrol [state] [system] [prn] [testmode] sbascontrol enable waas 0 zerototwo	652	SBAS	Set handling of SBAS corrections
SELECT-CHAN-CONFIG	selectchanconfig [set] selectchanconfig 2	1149		Changes the channel configuration used.
SEND	send port data send com1 "log com1 rtcal ontime 5"	177		Send ASCII printable data from a COMUSB port to a specified port

Command	Syntax and Example Input(s)	ID	Tag	Description
SENDHEX	sendhex port length data sendhex com1 6 143ab5910d0a	178		Send non-printable characters expressed as hexadecimal pairs
SETAPPROX-POS	setapproxpos lat lon height setapproxpos 51.116 -114.038 0	377		Set an approximate latitude, longitude, and height in the receiver
SETAPPROX-TIME	setapproxtime week sec setapproxtime 1598 233274	102		Set an approximate time in the receiver
SET-BESTPOS-CRITERIA	setbestposcriteria type delay setbestposcriteria pos2d 5	839		Set criteria for the BESTPOS log
SETIONO TYPE	setionotype model setionotype klobuchar	711		Set the ionospheric model for the receiver

Command	Syntax and Example Input(s)	ID	Tag	Description
SETNAV	setnav from-lat from-lon to-lat to-lon track offset from-point to-point setnav 51.1516 -114.16263 51.16263 -114.1516 -125.23 start end	162		Enter a set of navigation waypoints
SETRTCM RXVERSION	setrtcmrxversion version setrtcmrxversion v23	1216		Enable interpreting the received RTCM corrections as RTCM 2.2 or RTCM 2.3
SETRTCM16	setrtcm16 text setrtcm16 "base station will shut down in 1 hour"	131		Transfer ASCII text from a base to a rover
SETRTCM36	setrtcm36 extdtext setrtcm36 "quick \d166\d146\d174\d144\d140"	880	GLO	Enter ASCII text that includes Cyrillic or Russian characters. e.g. "quick ШТОРМ"

Command	Syntax and Example Input(s)	ID	Tag	Description
SETTIME BASE	settimebase primarysystem number of backup systems secondary system] [timeout] settimebase gps 1 glonass 10	1237		Set the time base that the receiver should use
SETUTCLEAP SECONDS	setutcleapseconds [seconds] setutcleapseconds 15	1150		Used to calculate UTC time
STATUS- CONFIG	statusconfig type word mask statusconfig set status 0028a51d	95		Configure status mask fields in the RXSTATUSEVENT log
UNASSIGN	unassign channel unassign 11	29		Cancel a previously issued ASSIGN command
UNASSIGN- ALL	unassignall [system] unassignall gps11	30		Cancel previous ASSIGN commands for all SV channels

Command	Syntax and Example Input(s)	ID	Tag	Description
UNDULATION	undulation option [separation] undulation user -5.5999999 <i>or</i> undulation table	214		Enter a specific geoidal undulation value or use the internal table of geoidal undulations
UNLOCKOUT	unlockout prn unlockout 8 <i>(prn 1 to 32 for gps channels, 38 to 61 for glonass, and 120 to 138 for sbas)</i>	138		Reinstate a previously locked out satellite
UNLOCKOUT-ALL	unlockoutall unlockoutall	139		Reinstate all previously locked out satellites
UNLOG	unlog [port] datatype unlog com1 bestposa	36		Remove a specific log request from system
UNLOGALL	unlogall [port] unlogall com2	38		Disable all logs on the specified port only

Command	Syntax and Example Input(s)	ID	Tag	Description
USERDATUM	userdatum semimajor flattening dx dy dz rx ry rz scale userdatum 6378206.400 294.97869820000 - 12.0000 147.0000 192.0000 0.0000 0.0000 0.0000 0.0000000000	78		Enter customized ellipsoidal datum parameters

Command	Syntax and Example Input(s)	ID	Tag	Description
USEREXP-DATUM	<pre> userexpdatum semimajor flattening dx dy dz rx ry rz scale xvel yvel zvel xrvel yrvel zrvel scalev refdate userexpdatum 6378137.000 298.25722356280 0.000000000 0.000000000 0.000000000 0.000000000 0.000000000 0.000000000 0.000000000 0.000000000 0.000000000 0.000000000 0.000000000 0.000000000 0.000000000 0.000000000 0.000000000 </pre>	783		Enter customized ellipsoidal expanded datum parameters
UTMZONE	<pre> utmzone command parameter utmzone set 10 </pre>	749		Set UTM persistence, zone #, or meridian
WAAS-ECUTOFF	<pre> waasecutoff angle waasecutoff -2 </pre>	505	SBAS	Set SBAS satellites' elevation cut-off angle

Command	Syntax and Example Input(s)	ID	Tag	Description
WAAS-TIMEOUT	<pre>waastimeout set [delay]</pre> <pre>waastimeout set 100</pre> <p><i>(the auto default is 180 s)</i></p>	851	SBAS	Set amount of time receiver remains in an SBAS position if it stops receiving SBAS

NovAtel Format Logs

Log	Description and fields after header	ID	Tag	Input Example
ALMANAC	Current GPS almanac info #msgs, prn, week, seconds, ecc, ω , ω_0 , ω , mo, afo, afl, n, a, inc-angle, sv config, hlth-prn, hlth-alm, antspf, next prn...	73		log almanaca onchanged
AVEPOS	Position averaging lat, lon, ht, lat σ , lon σ , hgt σ , posave, ave time, samples	172		log aveposa onchanged

Log	Description and fields after header	ID	Tag	Input Example
BESTPOS	Position data sol status, pos type, lat, lon, hgt, undulation, datum id#, lat σ , lon σ , hgt σ , stn id, diff_age, sol_age, #SV, #solnSV, #ggl1, rsvrd, rsvrd, ext sol stat, rsvrd, sig mask	42		log bestposa ontime 1
BESTUTM	Best available UTM position sol status, pos type, z#, zletter, northing, easting, hgt, undulation, datum id#, n σ , e σ , hgt σ , stn id, diff_age, sol_age, #SV, #solnSV, #ggl1, rsvrd, rsvrd, ext sol stat, rsvrd, sig mask	726		log bestutma ontime 1

Log	Description and fields after header	ID	Tag	Input Example
BESTVEL	Velocity data sol status, vel type, latency, age, hor spd, trk gnd, vert spd, rsrvd	99		log bestvela ontime 1
BESTXYZ	Cartesian coordinate position p-solstat, p-type, p-x, p-y, p-z, p-x σ , p-y σ , p-z σ , v-solstat, v-type, v-x, v-y, v-z, v-x σ , v-y σ , v-z σ , stnid, v-latency, diff_age, sol_age, #SV, #solnSV, #ggl1, rsrvd, rsrvd, ext sol stat, rsrvd, sig mask	241		log bestxyza ontime 1
CHAN- CONFIGLIST	Available channel configurations set in use, num sets, channel per signal type [num sets x [num configuration x2]]	1146		log chanconfiglista once

Log	Description and fields after header	ID	Tag	Input Example
CLOCK-MODEL	Clock model matrices clockstat, reject, noiset, updatet, params[1x3], covdata[3x3], rangebias, rangebiasrate, change	16		log clockmodela ontime 1
CLOCK-MODEL2	Clock bias for each satellite system clockmodel quality, rate, #systems, system, bias, biasstddev, next system...	1170		log clockmodel2a ontime 1
CLOCK-STEERING	Clock steering status source, steeringstate, period, pulsewidth, bandwidth, slope, offset, driftrate	26		log clocksteeringa onchanged

Log	Description and fields after header	ID	Tag	Input Example
COM- CONFIG	Current COM port config #ports, port, baud, parity, databits, stopbits, handshake, echo, breaks, rxtype, txtype, response	317		log comconfiga once
GLMLA	GLONASS almanac data \$glmla, #alm, alm#, slot, N, hlth & freq, ecc, ΔT_{dot} , ω , τ_{16msb} , ΔT , $t\lambda$, λ , Δi , τ_{121sb} , t	859	GLO	log glmla onchanged
GLO- ALMANAC	Decoded GLONASS almanac #recs, week, time ^a , slot, freq, sat type, health, tlambda n, lambda n, delta i, ecc, arg perigee, delta t, delta td, tau, next message...	718	GLO	log gloalmanaca onchanged

Log	Description and fields after header	ID	Tag	Input Example
GLOCLOCK	GLONASS clock information rsrvd, rsrvd, rsrvd, sat type, n4, tau gps, na, tau_c, b1, b2, kp	719	GLO	log gloclocka ontime 1
GLO-EPHEMERIS	GLONASS ephemeris data sloto, freqo, sat type, rsrvd, e week, e time, t offset, Nt, rsrvd, rsrvd, issue, health, posx, posy, posz, velx, vely, velz, ls accx, ls accy, ls accz, tau_n, delta_tau_n, gamma, tk, p, ft, age, flags	723	GLO	log gloephemerisa onchanged
GLORAW-ALM	Raw GLONASS almanac week, time ^a , #recs, string, rsrvd, next rec...	720	GLO	log glorawalma onchanged

Log	Description and fields after header	ID	Tag	Input Example
GLORAW-EPHEM	Raw GLONASS ephemeris data sloto, freqo, sigchan, week, time ^a , #recs, string, rsvrd, next rec...	792	GLO	log glorawephema onchanged
GLORAW-FRAME	Raw GLONASS frame data frame#, sloto, freqo, week, time ^a , frame decode, sigchan, #recs, string, rsvrd, next rec...	721	GLO	log glorawframea onchanged
GLORAW-STRING	Raw GLONASS string data slot, freq, string, rsvrd	722	GLO	log glorawstringa onchanged

Log	Description and fields after header	ID	Tag	Input Example
GPALM	Almanac data \$gpalm, #msgs, msg#, prn, gps wk, sv health, ecc, alm ref time, incl angle, omegadot, rt axis, omega, long asc node, m_0 , a_{f0} , a_{f1} , next msg...	217		log gpalm onchanged
GPGGA	GPS fix data and undulation \$gpgga, utc, lat, lat dir, lon, lon dir, gps qual, #sats, hdop, alt, alt units, undulation, undulation units, age, stn id	218		log gpgga ontime 1

Log	Description and fields after header	ID	Tag	Input Example
GPGGA-LONG	Fix data and undulation with extra precision \$gpgga, utc, lat, lat dir, lon, lon dir, gps qual, #sats, hdop, alt, alt units, undulation, undulation units, age, stn id	521		log gpggalong ontime 1
GPGLL ^b	Geographic position - lat/lon \$gpgll, lat, lat dir, lon, lon dir, utc, data status, mode ind	219		log gpgll ontime 1
GPGRS ^b	GPS range residuals for each satellite \$gpgrs, utc, mode, res, res, res, res, res, res, res, res	220		log gpgrs ontime 1

Log	Description and fields after header	ID	Tag	Input Example
GPGSA ^b	GPS DOP and active satellites \$gpgsa, mode man/auto, mode 123, prn, prn, prn, prn, prn, prn, prn, prn, prn, prn, prn, prn, pdop, hdop, vdop	221		log gpgsa ontime 1
GPGST ^b	Pseudorange measurement noise stats \$gpgst, utc, rms, smjr std, smnr std, orientation, lat std, lon std, alt std	222		log gpgst ontime 1
GPGSV ^b	GPS satellites in view \$gpgsv, #msgs, msg#, #sats, prn, elev, azimuth, snr, next sat...	223		log gpgsv ontime 1

Log	Description and fields after header	ID	Tag	Input Example
GPRMB ^b	Generic navigation info \$gprmb, data status, xtrack, dir, origin id, dest id, dest lat, lat dir, dest lon, lon dir, range, bearing, vel, arr status, mode ind	224		log gprmb ontime 1
GPRMC ^b	GPS specific info \$gprmc, utc, pos status, lat, lat dir, lon, lon dir, speed kn, track true, date, mag var, mag var dir, mode ind	225		log gprmc ontime 1

Log	Description and fields after header	ID	Tag	Input Example
GPSEPHEM	GPS ephemeris data prn, tow, health, iodel, iode2, week, z week, toe, a, dn, m0, ecc, w, cuc, cus, crc, crs, cic, cis, i ₀ , i ⁰ , w ₀ , ω̇, iodc, toc, tgd, af0, af1, af2, as, n, ura	7		log gpsephema onchanged
GPVTG ^b	Track made good and ground speed \$gpvtg, track true, t ind, track made good, m track ind, speed kn, n speed ind, speed km, k speed ind, mode ind	226		log gpvtg ontime 1
GPZDA	UTC time and date \$gpzda, utc, day, month, year, rsvrd, rsvrd	227		log gpzda ontime 1

Log	Description and fields after header	ID	Tag	Input Example
IONUTC	Ionospheric/UTC info a0, a1, a2, a3, b0, b1, b2, b3, utcwn, tot, a0, a1, wnlsf, dn, deltat ls, deltat utc, rsvrd	8		log ionutca onchanged
LOGLIST	A list of system logs #logs, port, message, message type, rsvrd, trigger, period, offset, hold, next log...	5		log loglista once
MARKPOS	Position at mark in event solstat, postype, lat, lon, hgt, undulation, datumid#, lat σ , lon σ , hgt σ , stnid, diffage, solage, #SV, #solnSV, #gg11, rsvrd, rsvrd, ext sol stat, rsvrd, sig mask	181		log markposa onnew

Log	Description and fields after header	ID	Tag	Input Example
MARKTIME	Time of mark input event week, s, offset, offsetstd, utcoffset, status	231		log marktimea onnew
NAVIGATE	Navigation waypoint status solstat, ptype, vtype, navtype, dist, bearing, atrack, xtrack, eta wk, eta s	161		log navigatea ontime 1
PASSCOMn (n=1,2) PASSUSBn (n=1,2,3)	Port pass-through logs to redirect data #bytes, data, next byte...	233- 234 607- 609		log passusb2a onchanged
PASSXCOMn (n=1,2,3)	Virtual pass-through logs redirect data <i>as passcom above</i>	405- 406, 795		log passxcom1 onchanged

Log	Description and fields after header	ID	Tag	Input Example
PDPPOS	PDP filter position sol stat, pos type, lat, lon, hgt, undulation, datum id#, lat σ , lon σ , hgt σ , stn id, diff_age, sol_age, #sats, #sats soln, rsvrd, rsvrd, rsrvd, rsvrd, rsvrd, rsvrd	469		log pdpposa ontime 1
PDPVEL	PDP filter velocity sol stat, vel type, latency, age, hor spd, trk gnd, height, rsvrd	470		log pdpvela ontime 1

Log	Description and fields after header	ID	Tag	Input Example
PDPXYZ	PDP Cartesian position and velocity p-sol stat, pos type, p-x, p-y, p-z, p-x σ , p-y σ , p-z σ , v-sol stat, vel type, v-x, v-y, v-z, v-x σ , v-y σ , v-z σ , stn id, v-latency, diff_age, sol_age, #sats, #sats soln, rsvrd, rsvrd, rsvrd, rsvrd, rsvrd, rsvrd	471		log pdpxyza ontime 1
PORTSTATS	COM or USB port statistics #ports, port, rx chars, tx chars, acc rx chars, dropped chars, interrupts, breaks, par err, fram err, overruns, next port...	72		log portstatsa once

Log	Description and fields after header	ID	Tag	Input Example
PSRDOP	DOPs of current SVs gdop, pdop, hdop, htdop, tdop, cutoff, #prns, prn, next prn...	174		log psrdopa onchanged
PSRDOP2	PSRPOS solution DOP gdop, pdop, hdop, vdop, #sys- tem type, tdop	1163		log psrdop2a onchanged 1
PSRPOS	Pseudorange position solstat, postype, lat, lon, hgt, undltn, datumid#, lat σ , lon σ , hgt σ , stnid, diff age, sol age, #SV, #solnSV, rsrvd, rsrvd, rsrvd, ext sol stat, rsrvd, sig mask	47		log psrposa ontime 1
PSRTIME	Time offsets from pseudorange filter #recs, system, offset, offset stdv, next system...	881		log psvertimea ontime 1

Log	Description and fields after header	ID	Tag	Input Example
PSRVEL	Pseudorange velocity solstat, vtype, latency, age, horspd, trkgnd, vertspd, rsrvd	100		log psrvela ontime 1
PSRXYZ	Pseudorange Cartesian position p-solstat, postype, p-x, p-y, p-z, p-x σ , p-y σ , p-z σ , v-solstat, v-type, v-x, v-y, v-z, v-x σ , v-y σ , v-z σ , stnid, v-latency, diff age, sol age, #SV, #solnSV, rsrvd, rsrvd, rsrvd, ext sol stat, rsrvd, sigmask	243		log psrxyza ontime 1

Log	Description and fields after header	ID	Tag	Input Example
RAIMSTATUS	RAIM status raim mode, integrity status, hpl status, hpl, vpl status, vpl, #of excluded svcs, system, id, next excluded id...	1286	RAIM	log raimstatusa ontime 0.5
RANGE	Satellite range info # obs, prn/slot ^c , glfreq, psr, psr std, adr, adr std, dopp, c/no, locktime, ch-tr-status, next obs...	43		log rangea ontime 30
RANGECMP	Compressed RANGE log #obs, 1st range record, next obs...	140		log rangecmpa ontime 10

Log	Description and fields after header	ID	Tag	Input Example
RAWALM	Raw almanac refweek, refsecs, #subframes, svid, data, next subframe...	74		log rawalma onchanged
RAWEPHEM	Raw ephemeris prn, refweek, refsecs, subframe1, subframe2, subframe3	41		log rawephema onchanged
RAWGPS-SUBFRAME	Raw subframe data decode#, prn, subfr id, data, chan	25		log rawgpssubframea onnew
RAWGPS-WORD	Raw navigation word prn, nav word	407		log rawgpsworda onnew
RAWWAAS-FRAME	Raw SBAS frame data decode#, prn, waas msg id, data, chan	287	SBAS	log rawwaasframea onnew

Log	Description and fields after header	ID	Tag	Input Example
RTCA1	Type 1 differential GPS corrections	10	DGPS_Tx	log com2 rtca1 ontime 10 3
RTCAEPHEM	Ephemeris and time information	347	DGPS_Tx	log com2 rtcaephem ontime 10 7
RTCM1	Type 1 differential GPS corrections	107	DGPS_Tx	log rcm1 ontime 10 3
RTCM9	Type 9 partial differential corrections	275	DGPS_Tx	log rcm9 ontime 10
RTCM15	Type 15 ionospheric corrections	307	DGPS_Tx	log rcm15 ontime 10
RTCM16	Type 16 special message	129	DGPS_Tx	log rcm16 once
RTCM31	Type 31 GLONASS differential corrections	864	DGPS_Tx & GLO	log rcm31 ontime 2
RTCM36	Type 36 special message	875	DGPS_Tx & GLO	log rcm36 once
RTCM59GLO	Proprietary GLONASS differential	903	DGPS_Tx & GLO	log rcm59glo ontime 2

Log	Description and fields after header	ID	Tag	Input Example
RXCONFIG	Receiver config status embedded header, embedded msg, embedded crc, next embedded command...	128		log rxconfiga once
RXSTATUS	Self-test status error, #stats, rxstat, rxstat pri, rxstat set, rxstat clear, aux1stat, aux1stat pri, aux1stat set, aux1stat clear, aux2stat, aux2stat pri, aux2stat set, aux2stat clear, aux3stat, aux3stat pri, aux3stat set, aux3stat clear, next stat...	93		log rxstatusa onchanged
RXSTATUS- EVENT	Status event indicator status, bit pos, event, descrip	94		log rxstatuseventa onchanged

Log	Description and fields after header	ID	Tag	Input Example
SATVIS	Satellite visibility satellite visibility?, complete gps almanac?, #sats, prn/slot ^c , glofreq, health, elev, az, true dop, apparent dop, next sat...	48		log satvisa ontime 60
SATXYZ	ECEF satellite Cartesian pos rsrvd, #sats, prn/slot ^c , x, y, z, clk corr, iono corr, tropo corr, rsvrd, rsvrd, next sat...	270		log satxyza ontime 1
TIME	Receiver time information clock status, offset, offset std, utc offset, utc year, utc month, utc day, utc hour, utc min, utc ms, utc status	101		log timea ontime 1

Log	Description and fields after header	ID	Tag	Input Example
TRACKSTAT	Satellite tracking status sol status, pos type, ecutoff, #chans, prn/slot ^c , glofreq, ch-tr-status, psr, dop, cno, locktime, psr res, reject code, psr weight, next chan...	83		log trackstata ontime 1
VALID-MODELS	Receiver model/expiry date #mods, model, expyear, expmonth, expday, next mod...	206		log validmodelsa once
VERSION	Receiver version numbers #components, type, model, psn, hw version, sw version, boot version, compile date, compile time, next component...	37		log versiona once

Log	Description and fields after header	ID	Tag	Input Example
WAAS0	Which PRN to remove from solution prn	290	SBAS	log waas0a onchanged
WAAS1	PRN mask assignment prn, mask, iodp	291	SBAS	log waas1a onchanged
WAAS2	Fast corrections slots 0-12 prn, iodf, iodp, prc0, prc1, prc2, prc3, prc4, prc5, prc6, prc7, prc8, prc9, prc10, prc11, prc12, udre0, udre1, udre2, udre3, udre4, udre5, udre6, udre7, udre8, udre9, udre10, udre11, udre12	296	SBAS	log waas2a onchanged

Log	Description and fields after header	ID	Tag	Input Example
WAAS3	Fast corrections slots 13-25 prn, iodf, iodp, prc13, prc14,prc15,prc16,prc17, prc18,prc19,prc20,prc21, prc22,prc23,prc24,prc25, udre13,udre14,udre15, udre16,udre17,udre18, udre19,udre20,udre21, udre22,udre23,udre24,udre25	301	SBAS	log waas3a onchanged
WAAS4	Fast corrections slots 26-38 prn, iodf, iodp, prc26, prc27, prc28, prc29, prc30, prc31, prc32, prc33, prc34, prc35, prc36, prc37, prc38, udre26, udre27, udre28, udre29, udre30, udre31, udre32, udre33, udre34, udre35, udre36, udre37, udre38	302	SBAS	log waas4a onchanged

Log	Description and fields after header	ID	Tag	Input Example
WAAS5	Fast corrections slots 39-50 prn, iodf, iodp, prc39, prc40, prc41, prc42, prc43, prc44, prc45, prc46, prc47, prc48, prc49, prc50, prc51 (do not use), udre39, udre40, udre41, udre42, udre43, udre44, udre45, udre46, udre47, udre48, udre49, udre50, udre51 (do not use)	303	SBAS	log waas5a onchanged

Log	Description and fields after header	ID	Tag	Input Example
WAAS6	Integrity message prn, iodf2, iodf3, iodf4, iodf5, udre0, udre1, udre2, udre3, udre4, udre5, udre6, udre7, udre8, udre9, udre10, udre11, udre12, udre13, udre14, udre15, udre16, udre17, udre18, udre19, udre20, udre21, udre22, udre23, udre24, udre25, udre26, udre27, udre28, udre29, udre30, udre31, udre32, udre33, udre34, udre35, udre36, udre37, udre38, udre39, udre40, udre41, udre42, udre43, udre44, udre45, udre46, udre47, udre48, udre49, udre50, udre51 (invalid)	304	SBAS	log waas6a onchanged

Log	Description and fields after header	ID	Tag	Input Example
WAAS7	Fast correction degradation prn, latency, iodp, spare bits, ai(0), ai(1), ai(2), ai(3), ai(4), ai(5), ai(6), ai(7), ai(8), ai(9), ai(10), ai(11), ai(12), ai(13), ai(14), ai(15), ai(16), ai(17), ai(18), ai(19), ai(20), ai(21), ai(22), ai(23), ai(24), ai(25), ai(26), ai(27), ai(28), ai(29), ai(30), ai(31), ai(32), ai(33), ai(34), ai(35), ai(36), ai(37), ai(38), ai(39), ai(40), ai(41), ai(42), ai(43), ai(44), ai(45), ai(46), ai(47), ai(48), ai(49), ai(50), ai(51) (invalid, do not use)	305	SBAS	log waas7a onchanged

Log	Description and fields after header	ID	Tag	Input Example
WAAS9	GEO navigation message prn, iodn, t ₀ , ura, x, y, z, xvel, yvel, zvel, xaccel, yaccel, zaccel, a _{fo} , a _{f1}	306	SBAS	log waas9a onchanged
WAAS10	Degradation factor prn, b _{rcc} , c _{1tc_1sb} , c _{1tc_v1} , i _{1tc_v1} , c _{1tc_v0} , i _{1tc_v1} , c _{geo_1sb} , c _{geo_v} , i _{geo} , c _{er} , c _{iono_step} , i _{iono} , c _{iono_ramp} , rss _{udre} , rss _{iono} , spare bits	292	SBAS	log waas10a onchanged
WAAS12	SBAS network time & UTC prn, a1, a0, seconds, week, dtls, wnlsf, dn, dtlsf, utcid, gpstow, gpswn, glo ind, rsvrd	293	SBAS	log waas12a onchanged

Log	Description and fields after header	ID	Tag	Input Example
WAAS17	GEO almanac message prn, #entries, data id, entry prn, health, x, y, z, x vel, y vel, z vel, next entry..., t ₀	294	SBAS	log waas17a onchanged
WAAS18	IGP mask prn, #bands, band#, iodi, igp mask, spare bit	295	SBAS	log waas18a onchanged
WAAS24	Mixed fast/slow corrections prn, prc0, prc1, prc2, prc3, prc4, pcr5, udre0, udrel, udre2, udre3, udre4, udre5, iodp, block id, iodf, spare, vel, mask1, iodel, dx1, dy1, dz1, da ^{f0} , mask2, iode2, ddx, ddy, ddz, da ^{f1} , t ₀ , iodp, corr spare	297	SBAS	log waas24a onchanged

Log	Description and fields after header	ID	Tag	Input Example
WAAS25	Long-term slow corrections source prn, 1st vel, 1st mask1, 1st iodel1, 1st dx1, 1st dy1, 1st dz1, 1st da ^{f0} , 1st mask2, 1st iode2, 1st ddx, 1st ddy, 1st ddz, 1st da ^{f1} , 1st t ₀ , 1st iodp, 1st corr spare, 2nd vel, 2nd mask1, 2nd iodel1, 2nd dx1, 2nd dy1, 2nd dz1, 2nd da ^{f0} , 2nd mask2, 2nd iode2, 2nd ddx, 2nd ddy, 2nd ddz, 2nd da ^{f1} , 2nd t ₀ , 2nd iodp, 2nd corr spare	298	SBAS	log waas25a onchanged

Log	Description and fields after header	ID	Tag	Input Example
WAAS26	iono-delay corrections prn, band#, block id, #pts, igp _{vde} , givei, next pt..., iode, spare	299	SBAS	log waas26a onchanged
WAAS27	SBAS service message prn, iods, #messages, message#, priority code, dudre inside, dudre outside, #regs, lat1,lon1, lat2, lon2, shape,next reg..., t ₀	300	SBAS	log waas27a onchanged
WAASCORR	SBAS range corrections use #sats,prn, iode, psr corr, corr stdv,next sat...	313	SBAS	log waascorra ontime 1

- GPS Time, in milliseconds (binary data) or seconds (ASCII data)
- If NMEATALKER is set to AUTO, the talker (the first 2 characters after the \$ in the log header) is set to GP (GPS satellites only), GL (GLONASS satellites only), or GN (both systems' satellites).
- PRN 1 to 32 for GPS channels, 38 to 61 for GLONASS, and 120 to 138 for SBAS.

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