



## FLEXIPILOT 1.35

### Command set

The commands specified in this document are entered using HyperTerminal at 912kbps, 8N1 or UAVStation console, when the autopilot is connected to the PC using USB port. If the USB connector has been replaced by wireless modem and baudrate adapter, the same commands can be issued remotely.

Red commands: are ignored after takeoff

During reset operation, the RC receiver always takes total control of the plane. Since using RC override is possible at any time, complete autopilot tuning is possible in flight using long range modem.

**#ARxxx** is an ID for a special formatted command that is human-readable but also is used by automated UAVStation in order to display the data in graphical form. Some of those special outputs are used by logger download software supplied with FLEXIPILOT.

**Fn** is a key shortcut in UAVStation

L... means that you can obtain extra information pressing that key several times (cyclic)

### Realtime debug print (lowercase disables, Uppercase Enables, Repeat Uppercase for more):

a, A	Raw ADC	
e, E	Formatted Position and orientation data	(#ARPOS)
f, F...	Feedback loops (cyclic)	
g, G	GPS NMEA received	
h, H...	Altitude, baro, temperature/opt. humidity+weather sensor	
i, I...	Formatted IMU data	(#ARIMU)
j, J	Formatted COMMAND+NAVIGATION data	(#ARCOM)
k, K	Formatted feedback data	(#ARPID)
n, N	Parsed navigation data	
p, P	Logged data	
q, Q	Trigger status	
r, R	Realtime clock report, serial port status report	
s, S...	Servo capture/opt. voltage, amperage, RPM	
w, W	Waypoint status report	(#ARWPT)
y, Y	Servo output	
@@@QUIET	Silence all output set with single-letter commands	

## TRACE

@@@TRACESTART or T	Trace enable	
@@@TRACESTOP or t	Trace disable	
@@@TRACEDIR or d, F3	Show trace usage	
@@@TRACECLEAR or C, F8	Trace clear and disable	
@@@TRACEDUMP	Dump formatted trace content	(#ART)

## LOG

@@@LOGSTART or L	Start logging	
@@@LOGSTOP or I	Stop logging	
@@@LOGDIR or d, F3	Log directory listing	
@@@LOGCLEAR or C, F8	Log clear and disable	
@@@LOGDUMP	Show compressed log content	(#ARi)
@@@LOGDUMPn	Show compressed log content, flight #n	(#ARi)

## WAYPOINT

@@@WPTSTATUS, w	Waypoint sequencer info
@@@WPTSHOWn	Show waypoint n
@@@WPTNEXT	Advance waypoint engine
@@@WPTGOn	Select waypoint n, after reaching continue using normal waypoint iteration rules
@@@WPTHOME	Return home
@@@WPTAPPROACH	Fly landing approach or return home if approach not defined
@@@WPTRESET	Restart mission
@@@WPTINIT	Restart mission and reload all mission planning
@@@WPTWRITE: param1,param2,altitude,spd_kmh,evalmode,actions	
@@@WPTSHOWALL	Show all stored waypoints
@@@WPTSHOWLIST	Show only mission waypoints (excluding approach)
@@@WPTITERALL	Evaluate all waypoints generating the event display (for use with mission simulator), resets waypoint engine (#AREVE)
@@@WPTLOITER	Start loiter, keep last loiter position
@@@WPTLOITERDONE	Resume navigation
@@@WPTLOITERHERE	Start loiter at actual position
@@@WPTLOITERTAKEOFF	Start loiter at takeoff position
@@@WPTLOITERHOME	Start loiter above fixed home position
@@@WPTLOITERTARGET	Start loiter above target
@@@WPTWLOITERn	Set loiter parameters (radius, duration) using slot n=1..3
@@@WPTLOITERSETTIME t	Set loiter time (negative specifies duration in s, positive is UTC time in the format HHMMSS 245912, 0 is inf)
@@@WPTLOITERSETPOS lat,lon	Set loiter coordinates
@@@WPTLOITERSETAGL agl	Set/update loiter altitude to altitude above takeoff [m]
@@@WPTLOITERSETMSL msl	Set/update loiter altitude to altitude above sea level [m]
@@@WPTLOITERSETRADIUS km	Set/update loiter radius and direction
@@@WPTLOITERDXDY dx_km,dy_km	Move loiter position using Cartesian grid
@@@WPTLOITERHDGDIST hdg,dist_km	Move loiter position using heading and distance
@@@WPTSETLOITERPOSHERE	Sets loiter position without entering loiter mode
@@@WPTSETTARGETPOSHERE	Sets target position without entering loiter mode
@@@WPTSETHOMEPOSHERE	Sets home position without entering loiter mode
@@@WPTSETTAKEOFFPOSHERE	Sets takeoff position without entering loiter mode
@@@SETQNH pressure, altitude	Set barometer pressure at given altitude

## ZONE

@@@ZONWRITE n,lat1,lon1,lat2,lon2      Write zone #n used by rethome or parachute  
@@@ZONESHOW n      Show zone #n

## MISPROG

@@@MISSIONSELECTn      Select mission #n, current waypoint not changed  
@@@MISSIONEXECUTEn      Select mission #n, waypoint list is reloaded  
@@@MISSIONWRITEn,ncycles,begin,end,iterstyle      Creates a new mission

## RETHOME

@@@PING      Resets PING timeout  
@@@RETHOME      Navigate to failsafe home  
@@@RETHOMERESET      Reset rethome logic, disarm minagl, clear faults  
@@@RETHOMEZONESHOW      Show allowed zones guarded by rethome

## PARACHUTE

@@@PARA      Immediate parachute deploy  
@@@PARALAND      Loiter in place, deploy parachute when low  
@@@PARARESET      Reset parachute logic, close latch, will stay armed  
@@@PARAZONESHOW      Show allowed zones guarded by parachute

## TRIGGER

@@@TRIGENABLEn      Enable trigger n (1, 2 or both)      (#AREVE)  
@@@TRIGDISABLEn      Disable trigger n (1, 2 or both)      (#AREVE)  
@@@TRIGDISTADVn      advance distance flown in order to fire trigger n (1, 2 or both)  
@@@TRIGDIRECTn      Connect trigger input channel to trigger output channel

## RC OVERRIDE CONTROL

@@@RXOVRON      It is always possible to take RC control  
@@@RXOVRAUTO      It is possible to take RC control within prescribed ranges  
@@@RXOVROFF, F2      Disable RC control (be careful), useful for simulation

## WEATHER ADJUSTMENT

@@@SETOATGUESS      Set OAT vs PCB temperature offset in Celsius from external source, by imposing measured OAT  
@@@SETHUMIGUESS      Set relative humidity in absence of external sensor

## SYSTEM

@@@RESET, <b>F12</b>	Reboot autopilot, update all variables
@@@GPSRESET	Reload GPS settings and console to/from OSD relay
@@@OSDRESET	Reload OSD settings, telemetry protocol, purge output buffers
@@@TAKEOFF	Begin automatic takeoff
@@@ABORT	Abort takeoff, returns to pre-takeoff state, stops all logging
@@@CONSOLEMONO	Select mono console when using modem
@@@CONSOLECOLOR	Select color console (until takeoff)
@@@BOOTVERBOSE	Enable verbose booting with full diagnostics
@@@BOOTQUICK	Disable variables printout during booting

## UAVSTATION

<b>F1</b>	@@@ (without CRLF, type rest of the command manually)
<b>F2</b>	@@@RXOVROFF
<b>F3</b>	@@@LOGDIR and @@@TRACEDIR
<b>F4</b>	@@@SIMENABLE
<b>F8</b>	@@@LOGCLEAR and @@@TRACECLEAR
<b>F12</b>	@@@RESET

## SYSTEM TUNING AND TESTING

@@@SERVODIRECT	All servo outputs are copied directly from inputs in auto mode
@@@THRENABLE	Re-enable throttle output in autopilot mode
@@@THRDISABLE	Disable throttle output in autopilot mode
@@@THRCUT	Final motor cutoff
@@@FBRESET	Reload all feedback settings
@@@GYROZAVGSTART	Start yaw gyro value display
@@@GYROZAVGSTOP	Stop yaw gyro value display
@@@SIMENABLE, <b>F4</b>	THRDISABLE, enable display of ARPOS, ARCOM, ARWPT, start simulation mode
@@@SIMDISABLE	Disable simulation
@@@SIMFAIL_HALT	Simulate main uC hang (passing to manual)
@@@SIMFAIL_GPSDISCONN	Simulate GPS connection fail (return home using IMU)
@@@SIMOK_GPS	Simulate good GPS lock, allowing takeoff
@@@SIMOK_OSDGPS	Send artificially correct GPS output to OSD
@@@SIMOK_POWER	Ignore all voltage level, battery capacity and RPM warnings
@@@DEEPCLEAN	Deep erase all logs, trace, IMU and barometer defaults
@@@SETIDSTRING	Rename UAV ID
@@@SHOWIDSTRING	Show UAV ID
@@@RCADJn	Start tuning using RC transmitter selecting a triplet of parameters #n, 0 is off
@@@RCADJSAVE	Save actual set of tuned parameters, can change to another set
@@@SHEAD1NOLAG	Disable slew rate limiters in stabilized head for debugging

## STABILISED VIDEO HEAD

@@@SHEAD1RESET	Reload all related variables
@@@SHEAD1DOCK	Puts camera head in to docked mode, safe for landing
@@@SHEAD1NAVIGATION	Drives head by looking at waypoints
@@@SHEAD1TAKEOFF	Head looks at takeoff position
@@@SHEAD1HOME	Head looks at predefined home position
@@@SHEAD1TARGET	Head looks at target position
@@@SHEAD1SETPOS lat lon	Head looks at specified coordinates, altitude 0 relative to takeoff point
@@@SHEAD1SETPOS lat lon alt	Head looks at specified coordinates, altitude is alt in meters relative to takeoff point
@@@SHEAD1SETALT alt	Setting lookat altitude
@@@SHEAD1SETRELPOS direction, dist_km, dh_m	Sets target direction, distance and relative altitude difference Head enters relative mode, direction is locked
@@@SHEAD1BEAM roll, pitch, bearing	Sets the 'beam angles' relative to airplane at which the head is pointing
@@@SHEAD1LOITER	Head keeps looking at the last position, the plane starts loitering around, mission is interrupted
@@@SHEAD1SETTARGET	The position at which head is looking is taken as target position for waypoints