**EarGear Protocol**

**Device is called “EarGear” over Bluetooth**

**System Commands**

VER Returns VER plus firmware version

LISTEN Enter Listen Mode, returns LISTEN ON

ENDLISTEN Stop Listen Mode, returns LISTEN OFF

PING Returns “OK”

SHUTDOWN Switches off device

BATT Returns a number between 1 and 100

**Move Commands**

EARHOME Move servos to their home position

LETWIST RITWIST

BOTWIST

LETILT RITILT

BOTILT

DSSP followed by 4 values to send to all servos at once.

e.g. "DSSP aaa bbb ccc ddd" where a = LETWIST, b = RITWIST, c = LETILT, d = RITILT

All four params must be sent.

All move commands sent with values outside ranges will be autocorrected to the correct number

**Commands sent during a move will return “BUSY”**

**Home and Limits**  
  
LTLIM, RTLIM, LILIM, RILIM

Without parameters the above will return current low and high limits for correspond servo. Acceptable limits values: from 1 to 180.

SET saves the current positions of the servos as HOME position

LT/RT/LI/RILIM **xxx** **yyy**  
where **x** and **y** are low and high limits. Command without **xxx yyy** will return current limits

Servos have limits set in firmware. 25 to 160 is the range. Values outside this range are corrected to the max or min.

**Call and response**

Each move command sent is COMMAND plus angle. It gets the same command returned from the ears with COMMAND VALUE BEGIN. When the move is done, COMMAND VALUE END.

HOME defaults to 90.

Each system command generates a specific unique response.

**Power**

Ears sleep after 120 seconds of inactivity

Power off after 300 seconds of inactivity

Note: Switching Listening Mode on suspends timers until listening mode off is triggered.

**Battery**

Battery notifications are auto sent every 5 percent.

If you send BATT you get the exact amount by return.

You can monitor the separate battery characteristic for 5 nice slices.

**Listen**

LISTEN IOS (for APPLE, with triggered moves) 6 sec moving cycle (3sec twisted + 3sec at home)

LISTEN FULL for verbose mode, no moves triggered. Update every .3 seconds

Negative values are on the right, positives on the left.

Run a MICBAL in a quiet room to give the ears a baseline. Value stored in flash.