# Telemetry

This page is based on This RCGroups Post
See also this other RCG post.

## Quick Devo setup:

The quad should have telemetry enabled by default

- Devo: select protocol Bayang, set protocol option “Telemetry” to on
- Add one or more of “**Loss**, **Holds** , **Batt/Volt2** , **RxV/Volt1**” to the main screen
- You should now see the data on the main screen after binding

### Devo 7e and other versions update info:

The telemetry is present in deviation firmware in the latest nightlies, currently. That means you may need to flash a recent nightly ( dec 2016 or newer) to make use of telemetry with the bayang protocol, and your flashed quadcopter.

Please back-up the model files, and perhaps other files just in case, when upgrading the transmitter firmware.

To enable telemetry , hit enter when selecting bayang protocol, the same as enabling telemetry for other protocols, such as DSMX

The protocol with telemetry enabled will **only bind to a quad with telemetry capability**. With telemetry off, it will bind to all quads, including factory firmware, and telemetry quads.

### Telemetry data:

The quad sends battery voltage, battery voltage- compensated against throttle , packets received ( reception quality indicator ) , and battery low -led flash signal

Additionally, the tx generates telemetry reception stats.

### Telemetry names:

Telemetry names are shared with the dsm2 protocol, and as such, their names are not very appropriate to describe the quantity they represent.

***Fades_L** - led battery low flashing= 100 , otherwise 0
***Loss** - TX's telemetry reception quality indicator in packets per seconds (max 200)
***Holds** - quad's reception indicator in packets per seconds (max 200 )
***RxV** -**Volt1**- real battery voltage
***Batt** -**Volt2**- compensated battery voltage

**Alarms:** Some alarms could be setup for telemetry data. Make sure to fly in range of telemetry if you rely on them only. Telemetry range is smaller than the range of a tx with a PA module.
FadesL > 1 will create an alarm that sounds if the leds flash a low battery code
Batt ⇐ 3.40 is ok for low battery alarm - using voltage compensation settings from config.h
Rxv ⇐ 2.90 - real battery voltage - this would be more like a traditional lvc that sounds on max throttle sometimes
The real voltage goes down a lot, so it may not be very useful. An alarm of 2.8 - 3.0 could be used.

**Additional:**
Since the telemetry range is shorter compared to the tx range ( with PA ) , there is no point setting an alarm for quad reception strenght, as the telemetry will probably fail before that level is reached.

The quadcopter only sends telemetry after a packet is received from the transmitter. This is to avoid on-air clashes when the code hopping becomes unsyncronized. Because of this, the telemetry rate will go down when reception is poor on the quadcopter.

**HACKs**

MCU Utilisation

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