

## V-Link-LXRS Feasibility:

Power: Battery=650mAh, draw from gauges ~43mA( from graph at 128Hz, but 256Hz would still be under 50mA). Assuming total current of 65mA.  $650\text{mAh} \cdot 65\text{mA} = 10$  hours of full time battery life.

Spec: S6 125% of Marginal

Range: From data sheet is 70m to 2km, we need approximately 10m

Spec: S7 Minimal 140% of Marginal Value, Can be well above Ideal

Channels: 4 differential input channels with Op-Amp, and 16bit ADC for each channel. We need 4 channels. Also, this solution is expandable with more nodes.

Spec: S8, S5 Receiver can handle multiple nodes transmitting so we will have >100% of bandwidth needed

Storage: 4Mb on board (2,000,000 points). From prior analysis this is more than we need. Also, we are transmitting not storing permanently. Save to CSV file.

Spec: S14, S3 1.2Mb needed per 20 minute test, Storage is 333% met for each test.

Environmental: IP65/66 available, but we will be using a waterproof case for this purpose.

Spec: S12, S4

Data Collection Rate: Need 100Hz, power calculation with 128Hz on 4 channels prove we have power. 10Khz total sample rate and  $128 \cdot 4 = 512\text{Hz}$ . With 1000ohm gauges 256Hz totaling at 1024Hz is also possible.

Spec: S8, 128% Met at 128Hz, 256% at 256Hz