<table>
<thead>
<tr>
<th>Interface Type</th>
<th>Description</th>
<th>Specification</th>
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</table>
| Mechanical             | Customers will be provided Analog/Digital (A/D), Asynchronous Serial, and Parallel links | Connector Type: 37 Pin Cannon (D-Sub)  
Gender: Female (sockets) |
| Electrical, Ground     | Wallops will supply a current return ground connection                        | Pins: 18, 19, 33*, 36 and 37 on RS-X Telemetry Connector  
Max Current: 1 Amp max per line *(Pin 33 is RS232 [async] ground)* |
| Electrical, Not Connected (N/C) | The said connector will have unutilized pins                                   | Pins: 17, 34, and 35 on RS-X Telemetry Connector  
Voltage/Polarity: Floating  
Max Current: 0 Amps |
| Electrical, Analog to Digital Converters | Wallops shall supply ten A/D lines to each full payload space | Pins: 1 - 10 on RS-X Telemetry Connector  
Voltage/Polarity: 0 to 5V  
Resolution/Sample Rate: 10 bits / 1 kHz  
Filtering: None provided; highly encouraged  
High impedance input: Yes |
| Electrical, Parallel Line | Wallops shall supply a single, 16 bit parallel line to each full payload space | Pins: 11 - 16 and 20 - 29 and 30 on RS-X Telemetry Connector  
Sample Rate: <=5000 Hz  
Data Bits Voltage/Polarity: 0 to 0.8 V digital "low"; 2 - 5V digital "high"  
Parallel Read Strobe/Direction: Pin 30 Parallel Read Strobe (See: Next Sheet)/Output from WFF  
Parallel Read Strobe Voltage/Polarity: 2 to 5 V (nominal) "high"; 0 - 0.8 V (nominal) "low" |
| Electrical, Asynchronous Serial | Wallops shall supply a single 8 bit asynchronous line to each full payload space | Pins: 32 and 33 on RS-X Telemetry Connector  
Protocol: 8 N-1 RS-232  
Logic 1 or "high": 3 to 12 V relative to RS-232 GND  
Logic 0 or "low": -3 to -12 V relative to RS-232 GND  
Baud Rate: 19,200 kbs  
Data Pin/Voltage: Pin 32 on RS-X Telemetry Connector / Logic 1 or Logic 0  
RS-232 GND Pin/Voltage: Pin 33 = 0 V (nominal) |

Customer Signature: [Signature]

Date: 12/10/2015
Example RS-232 communication signal

Parallel Read Strobe (PRS) Timing Diagram

- A: PRS Indicator warns customer that next read begins in 0.5 μs
  after the PRS falling edge, I.
- E: READ time of parallel line starts at F (PRS falling edge) and
  continues until G. Customer MUST not change values during this
  time. No "read complete" signal will be sent from Waukesha.
- C: LAG-TIME: between one sample and the next. Begins at G and
  continues until next PRS rising edge. H. Customers should
  refresh their parallel lines during this time.
- D: Time between samples I to I (falling edge to falling edge)
  "Time between I to I edges is

Telemetry Connector Pin-Out

Rockset-K Customer
Telemetry Connector

1. Diagram is the back
side of the connector
3. Backside connections are crimp pins
2. Each ground should have its own wire. DO NOT TIE GROUNDS TOGETHER

Telemetry Connector Pin-Out

Customer Connector (77 Pin) FEMALE