Interfaces Requirements for LVE

Interface Type	System 1	System 2	Value	Tolerance	Units	Interface N	Interaction Description	Reference Docs
Power	Controls	Chassis	7.2	+1, -0.2	Voltage (V)	1	Power to main control board	
	Controls	Chassis	0.88	+0.2 Max	Current (A)	2	Power to main control board	
	Controls	Chassis	20 AWG Insulated Copper Wire 15-31-1026 to 19-09-1029?	-	Connector	3	Power to main control board	
	Controls	Chassis	7.2	+1, -0.2	Voltage (V)	1	Power to drive motors for operation	
	Controls	Chassis	500mA	+.5 Max	Current (A)	2	Power to drive motors for operation (per motor)	
	Controls	Chassis	Manufacturer: OSTTC042162 Digikey: ED2611-ND	-	Connector	3	Power to drive motors for operation	
	MSA	Chassis	7.2	+1, -0.2	Voltage (V)	1	Power to MSA control board for controller operation	
	MSA	Chassis	0.1	+0.2 Max	Current (A)	2	Power to MSA control board for controller operation	
	MSA	Chassis	20 AWG Insulated Copper Wire	-	Connector	3	Power to MSA control board for controller operation	
	MSA	Chassis	7.2	+1, -0.2	Voltage (V)	1	Power to MSA for motor actuation operation	
	MSA	Chassis	2	+0.2 Max	Current (A)	2	Power to MSA for motor actuation operation	
	MSA	Chassis	Bare Wire	-	Connector	3	Power to MSA for motor actuation operation	
	MSA	Chassis	20 AWG	-	Wire Gauge	4	Power to MSA for motor actuation operation	
	External	Chassis	12?	+1, -0.2	Voltage (V)	5	Power to recharge the battery	
	External	Chassis	2	+0.2 Max	Current (A)	6	Power to recharge the battery	
	External	Chassis	Tamiya High Speed Connector	-	Connector	7	Power to recharge the battery	
	External	Chassis	18 AWG	-	Wire Gauge	8	Power to recharge the battery	
	External	Chassis	7.2	-	Voltage (V)		Power to the onboard RF transmitter	
	External	Chassis	2	-	Current (A)		Power to the onboard RF transmitter	
	External	Chassis	Bare Wire	-	Connector		Power to the onboard RF transmitter	
	External	Chassis	20 AWG	-	Wire Gauge		Power to the onboard RF transmitter	
	All Systems		Black (-) and Red (+)	-	Color	9	Wire colors	
	Controls	Chassis	Controls	-	Party Responsible	10	Signal conditioning responsibility	
	MSA	Chassis	MSA	-	Party Responsible	11	Signal conditioning responsibility	
Mounting	MSA	Chassis	7.5 x 11.5	+/- 0.005	Bolting Pattern (in)	24	Mounting surface for MSA components	
	MSA	Chassis	1/4x20	-	Bolt Dimensions	25	Mounting surface for MSA components	
	MSA	Chassis	Counter-Bore Head	-	Bolt Head Type	26	Mounting surface for MSA components	
	MSA	Chassis	3.5 x 2.5	+/- 0.005	Bolting Pattern (Sketch)	27	Mounting for MSA microcontroller to chassis	
	MSA	Chassis	1/4x20	-	Bolt Dimensions	28	Mounting for MSA microcontroller to chassis	
	MSA	Chassis	Flat Head	-	Bolt Head Type	29	Mounting for MSA microcontroller to chassis	
	MSA	Chassis	6	+0.0 Max	Height (in)	1	Height of the mounting plate above ground	
	MSA	Chassis	Side Mount, Tower Section		Location	2	Location of the I/O Port Mounting	See Model
	MSA	Chassis	1.5 x 0.5	+/- 0.005	Dimensions (Area) (in)	3	Size of I/O Port Mounting	See Model
	MSA	Chassis	4	+/- 0.1	Dimension (in)	4	Maximum distance from MSA control board to MSA I/O pins	See Model
	MSA	Chassis	Centered Location	+/- 0.1	Location	5	Horizontal alignment of the control boards	See Model
	MSA	Chassis	Centered Location	+/- 0.1	Location	6	Horizontal alignment of the I/O pins	See Model
	MSA	Chassis	Flat Rectangular Plate, 12 x 12	+/- 0.005	Dimensions (Area) (in)	1	Shape of top mounting surface available	See Model
	Controls	Chassis			Bolting Pattern (Sketch)	2	Mounting for control board to chassis	
	Controls	Chassis			Bolt Dimensions	3	Mounting for control board to chassis	
	Controls	Chassis			Bolting Pattern (Sketch)	4	Mounting for RF device to chassis	
	Controls	Chassis			Bolt Dimensions	5	Mounting for RF device to chassis	
	Controls	Chassis			Bolting Pattern (Sketch)	6	RF Antenna mount to the chassis	
	Controls	Chassis			Bolt Dimensions	7	RF Antenna mount to the chassis	
	Controls	Chassis			Wiring Type	8	Wire gages, thicknesses, etc	
	Controls	Chassis	0.2		Weight (lb)	9	Max Weight of the Controls System	
	Controls	Chassis	Base, Dead Center		Location	10	Location of main control board within chassis system	See Model
Communication	MSA	Controls	USART	-	Signal Type (Serial)	45	Serial Protocol	
	MSA	Controls	2	-0, +10	Number of Wires	46	Serial Protocol	
	MSA	Controls	Tyco 5-103976-1	-	Connector	47	Communications Interface	
	MSA	Controls	8	-0,+10	I/O Number of Ports	1	Number of ports and I/O's available or signal carrying capabilities	
	External	Controls	4	-	Number of Wires	2	Connection to RF recieving device	
	External	Controls		-	Wire Guage	3	Connection to RF recieving device	
	External	Controls	USB	-	Connector	4	Connection to RF recieving device	
	External	Controls	Custom C++ OR C#	-	Input Program	5	Input interface to RF transmitting device	
	MSA	Controls		-	Wire Type	6	Communications Interface	
Volume	MSA	Chassis	4 x 3 x 1		Dimensions (Volume) (in)	55	Allowed volume for the MSA microcontroller within chassis design	
	MSA	Chassis	4 x 1		Dimensions (Volume) (in)	56	Opening in the top plate for control ports	
	Controls	Chassis	X		Dimensions (Volume) (in)	57	Allowed volume for the controls microcontroller within chassis design	
	Controls	Chassis	X		Dimensions (Volume) (in)	58	Allowed volume for each individual sensor for feedback	
	Controls	Chassis	X		Dimensions (Volume) (in)	59	Allowed volume for the controls RF sensors within chassis design	
	MSA	Chassis	0.5		Dimensions (Volume) (in)	60	Thickness of the top plate for ports	