CONNECTING

MATLAB acts as a server and Kerbal will only attempt to connect to the server once when the craft is loaded. For this reason, Matlab must be started and left "hanging" before the craft is loaded.

Default IP: 127.0.0.1
Default Port: 25001

COMMAD IDS

SENDING COMMANDS

Each command ID is a one byte number sent by MATLAB to KSP either providing complete instruction or giving context to subsequent instruction. Each command ID to KSP will also have a return byte sent by KSP to MATLAB. This return byte is sent before other returns and one is always sent.

FRAMES OF REFERENCE

Body Frame – Attached to the vessel.
RCI – Reference body centered inertial.
RCRF – Reference body centered and reference body fixed.

ID Number	Function	Return Description			Additional Inputs		
15	Get Gyro Rates	Float Vector 3	Rad/s	[x, y, z] in body frame	N/A	N/A	N/A
16	Get Position	Double Vector 3	m	[x, y, z] in RCI frame	N/A	N/A	N/A
17	Get Velocity	Double Vector 3	m/s	[x, y, z] in RCI frame	N/A	N/A	N/A

18	Get Surface Quaternion	Float Quaternion	Unit	[w, x, y, z] frame rotation from RCRF to body frame	N/A	N/A	N/A
19	Get Euler Angles	Float Vector 3	Rad	[x, y, z] N/D frame	N/A	N/A	N/A
20	Get Angular Velocity	N/A	N/A	N/A	N/A	N/A	N/A
21	Get Mission Time	Double	s	Current mission time	N/A	N/A	N/A
22	Get Rigid Body Position	Float Vector 3	N/D	[x, y, z] N/D frame	N/A	N/A	N/A
23	Get Co-Orbiting Body Position	Double Vector 3	m	[x, y, z] in RCI frame	Int32	N/A	Co-Orbiting Body Index number (i.e. 1)
24	Get Vessel Mass	Float	Mg	Current vessel's mass	N/A	N/A	N/A
25	Get Forward Vector	Float Vector 3	Unit	Forward pointing vector of vessel in RCI frame.	N/A	N/A	N/A
26	Get Surface Velocity	Float Vector 3	m/s	[x, y, z] in RCRF	N/A	N/A	N/A
27	Get Quaternions	Float Quaternion	Unit	[w, x, y, z] frame rotation from RCI to body frame	N/A	N/A	N/A
28	Get Rigid Body Velocity	Double Vector 3	N/D	[x, y, z] N/D frame	N/A	N/A	N/A
29	Reference Body Velocity	Double Vector 3	N/D	[x, y, z] N/D frame	N/A	N/A	N/A
32	Turn ON/OFF Autopilot	N/A	N/A	N/A	Byte	N/A	1 is for on, 0 is off
33	Command Roll, Pitch, Yaw	N/A	N/A	N/A	Float Vector 3	Unit	[roll, pitch, yaw] in body frame
34	Command Primary Thrust	N/A	N/A	N/A	Float	Unit	Primary thrust

35	Trigger next stage	N/A	N/A	N/A	N/A	N/A	N/A
36	Command Translation Thrusters	N/A	N/A	N/A	Float Vector 3	Unit	[x, y, z] in body frame
37	Toggle Gear	N/A	N/A	N/A	N/A	N/A	N/A
38	Toggle Lights	N/A	N/A	N/A	N/A	N/A	N/A
39	Solar Panels	N/A	N/A	N/A	N/A	N/A	N/A