FRANKA EMIKA

Franka Emika AI Platform Main Specifications

Proposal for standard manipulation learning platform

by Franka Emika and NVIDIA

Price of every component	Panda Robot (including Arm, Hand and controller with FCI interface, without taxes)	€15.500[1]
	Camera, e.g. Intel RealSense D435i	€200[2]
	Computer, e.g. Nvidia Jetson Xavier	€1.349[2]
Where is it available?	All hardware components are available globally.	
Hardware configuration		
How many parts are there in total?	(Arm, Hand, Mount, Camera) + Controller + Computer	3
Power requirements	(Average / Maximum)	(140 / 430) W
Cable connections	Controller power cable + controller-robot cable + controller-computer cable + camera-computer cable + computer power cable	5
Sensors		
In robot arm	Dedicated position, current and torque (link-side) sensors in all 7 joints	
In robot gripper	Position and force (via current) sensing	
In camera	The Intel Real Sense offers complete depth cameras integrating vision processor, stereo depth module, RGB sensor with color image signal processing and Inertial Measurement Unit (IMU)	
Additional sensors		
Low-level interface		
API language(s)	Open Source C++ library with official integration into MATLAB Simulink, ROS, MoveIt! and NVIDIA Isaac	
Interface frequency (read and write)		1000 Hz
Command level	Joint position, joint velocity, cartesian pose, cartesian velocity and torque control	
Robot state	Joint level signals: motor and estimated joint angles and their derivatives, joint torque and derivatives, estimated external torque, joint collision/contacts	
	Cartesian level signals: cartesian pose, configured end effector and load parameters, external wrench acting on the end effector, cartesian collision	
Model	Numerical values of M, C, G, J are available at 1 kHz	
Gripper commands	Gripper width, velocity and grasping force	
Gripper state	Gripper width and force	
Gripper access	Gripper is accessed via TCP/IP-based commands, not in real-time.	
Hardware connection	Ethernet cable, using the Franka Control Interface	
Protocol	UDP-based	
Minimum PC requirements	Linux with PREEMPT_RT patched kernel, 100BASE-TX network card	

[1]: ICRA 2019 promotional price (Europe), valid until June 30th, 2019.

[2]: Reference price from the manufacturer's web store.