

SUPPLEMENTARY MATERIALS

Table 1: Specifications of the Microcontroller ESP8266EX with ESP-12 Wi-Fi Module

Features	Range of values
Operating voltage	3.3 V
Current consumption	10mA - 150mA
Flash memory	16MB max (512k normal)
Processor	Tensilica L106 32 bit
Processor speed	80-160 MHz
GPIOs	11
Analog to digital	1 entry with 10 bit of resolution (1024 levels)
802.11 support	b/g/n
Protocol stack	TCP/IP
Save mode up	<10 mA
Temperature range	-40 to 125°C

Table 2: Specifications of Voltage Regulators produced by Advanced Monolithic Systems

Specifications	KIA1117-3.3	AMS1117-5.0
Output Configuration	Positive	Positive
Output Type	Fixed	Fixed
Voltage - Input (Max)	12 V	15 V
Voltage - Output (Min/Fixed)	3.3 V	5 V
Output Current	1 A	1 A
Current - Supply (Max)	10 mA	10 mA
PSRR / Ripple Rejection	75 dB (120 Hz)	68 dB (120 Hz)
Operating Temperature	-0 ~125°C	-40 C ~125°C

Table 3: Total cost of the microinjector

Elements	Total cost (USD)
Microcontroller ESP8266EX, ESP-12	14.81
Aiyima 15 Stepping Micro Gear Motor	8.73
Integrated circuit Hex Inverter 74HC04D	0.47
Rechargeable battery 9.0 V	17.98
Voltage Regulator AMS1117-5.0	1.53
Voltage Regulator KIA1117-3.3	0.37
Integrated Circuit L293DD	5.50
Switch button	0.48
Resistors	0.03
Capacitors	0.04
Syringue	0.64
Position sensor	1.68
Double-Sided Circuit Board	3.56
Polylactic acid (PLA)	22.57
Silicone Capillary (1 m)	1.35
Fret	10.86
Total	90.60