QX WORLD®

DEVICE COMPARISON

Technical Specifications	QX WORLD QXCI	QX WORLD SCIO	QX WORLD Partner INDIGO	QUEST9	QX WORLD EDUCTOR
Signal Generator	1 signal generator	1 signal generator	2 signal generators - 1, +1 Arbitrary	1 signal generator	3 signal generators
Dedicated EEG/ECG/EMG Chips	/	/	Dedicated ECG	EEG/ECG dedicated chip	EEG/ECG/EMG dedicated chips
Harness Connection	Serial plug	Serial plug	Harose medical plug	Medical plug	Redel medical plugs
Waveform	Square	Square, Spike, Sine, Saw - programmable	Square, Sine (Dual Channel), Square, Saw, Pulse 0 to 100% Duty cycle, Triangle, + Arbitrary	Programmable. Pre-programmed: Square, Spike, Sine, Saw	Lissajous, Square, Spike, Sinus, Saw, Programmable
Channel	4 channels	1 to 12 channels	12 channels bidirectional and programmable	1 to 12 tristate	1 to 16 channels (4 are dedicated for EEG)
Sensitivity	1 kHz	3 mV - 4V	0.8 mV - 3.3V (0,000806 lμV) < 1 mu for EEG	3 mV	1 μV (EEG Channels) 100 μV - 4V (others)
Regulated Output Current	less than 250 mA	0 to 850 μA	0 to 3.3 mA (3300 μA)	0 to 4 mA/channel	0 to 6 mA/channel
Frequency	0 - 1.000 Hz	0.1 Hz to 25.000 Hz multiplier (100.000 Hz)	0.06 Hz - 1.500.000 Hz	0 to 100.000 Hz Normal Quality	0 Hz to 2.000.000 Hz
Maximum Output Voltage	4V DC	4V DC	3.3 Nominal	4V DC	4V DC
Wave Polarity	Alternating or Pulsed DC - Programmable	Alternating or Pulsed DC - Programmable	Alternating or Pulsed DC - Programmable	Programmable	Alternating or Pulsed DC - Programmable
Modulation Risetime	Variant - Programmable	Variant - Programmable	Variant - Auto-focused, Programmable	Programmable	Variant - programmable
Waveslope	Variant	Variant	Variant - Auto-focused	Programmable	Variant
Timer	0 to 30 min	Software controlled	Unlimited, Software controlled	Programmable	Software controlled
Output Indicators	LED	LED	Organic (OLED) 1.5" Display, Bluetooth - Android OS Tablet / Smartphone	LED	Touch screen LCD display
Power Source	Battery or 9V charger	USB	USB	USB	USB 3.0
High Cut	Selectable - Software	Selectable at 100, 200, 500 Hz 1, 2, 3, 5, 10 kHz - Software	Selectable - Software	Programmable	Selectable at 100, 200, 500 Hz 1, 2, 3, 5, 10 kHz - Software
Low Cut	Selectable - Software	Selectable at 2, 20, 30,100, 200, 500 Hz 1 kHz - Software	Selectable - Software	Programmable	300 Hz to 0 Hz - 8 poles Chebisev (HV. digital)
Input Impedance	> 1 M Ω	> 1 M Ω	> 0.01 M Ω, variable	> 100 M Ω	> 100 M Ω
Noise	less than 5 μV peak to peak (10 Hz to 10 kHz)	less than 5 μV peak to peak (10 Hz to 10 kHz)	less than 5 μV peak to peak (10 Hz to 10 kHz)	5V peak to peak	less than 5 μV peak to peak (10 Hz to 10 kHz) , EEG Channels
Design	188 × 144 × 66 mm	200 × 175 × 75 mm	234 × 140 × 65 mm	220 × 175 × 60 mm	200 × 150 × 60 mm
Weight (box)	0.750 kg	0.800 kg	0.990 kg	1.300 kg	0.540 kg
Enclosure Material	Recyclable high impact molded plastic	Recyclable high impact molded plastic	Recyclable high impact molded plastic	Metal Cover	Recyclable high impact molded plastic
Principles of Operation	Biofeedback	GSR, Biofeedback	Biofeedback, EPR, Neurofeedback	Biofeedback, Galvanic Skin, EEG, ECG	GSR, EEG, ECG, EMG Biofeedback, Neurofeedback, TVEP
Isolation Voltage (Inputs-Outputs)	Not measured	2500V AC	3000V AC	5200V AC*	4000V AC Complying with the 60601 Safety Standard

*60601 Electrical Safety Standard allows a maximum of 4000 V AC

Registrations

FDA Registration	no	yes	yes	yes	yes
CE Certification	no	not renewed	no	no	yes
Mexican Registration	no	NA	no	no	yes

Safety Tests

IEC 60601-1 Medical electrical equipment Part 1-6 General requirements for safety - Collateral Standard: Usability	no*	yes	yes	not reported	yes
IEC 60601-2-26 Particular requirements for the basic safety and essential performance of electroencephalographs	no*	no*	no*	not reported	yes
EN 60601-1-2:2015 30-1000 MHz, Class A	no*	no*	no*	not reported	yes
EN 60601-1-2:2015 Modulation: PM 18 Hz and 217 Hz	no*	no*	no*	not reported	yes
EN 60601-1-2:2015 6 Veff 0.15 – 80 MHz Modulation: 1 kHz, 80% AM	no*	no*	no*	not reported	yes
EN 60601-1-2:2015 ±15 kV air, ±8 kV contact	no*	no*	no*	not reported	yes

*tested to the current requirements during certification

Delivery Time	not in production	immediate from stock	immediate from stock	reported 4-6 weeks	immediate from stock
Manufacturer	not in production	QX WORLD Ltd. / Pentavox Ltd. ISO13485 Certified FDA Establishment Registration	EPR Signature Solutions LLC / Copper Code Systems Inc. FDA Establishment Registration QX WORLD Partner	Mandelay Ltd. FDA Establishment Registration	QX WORLD Ltd. / Pentavox Ltd. ISO13485 Certified FDA Establishment Registration
Adverse Events	None reported	None reported in 15 years	None reported in 9 years (device lifetime)	Not enough data	None reported in 5 years

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