

Richmar TheraTouch CX2

Richmar, Model TheraTouch CX2

TheraTouch CX2 two-channel combination therapy system Combines therapeutic ultrasound and electrotherapy Simple-to-use, intuitive, menu-driven interface 1 MHz and 3 MHz therapeutic ultrasound...



Category: Medical Imaging

Technical Specifications

Product Name	TheraTouch CX2
Product Type	Combination Therapy System
Therapy Types	Therapeutic Ultrasound and Electrotherapy
Stimulation Channels	2
Ultrasound Frequencies	1 MHz and 3 MHz
Ultrasound Modes	Pulsed and Continuous
Ultrasound Applicator	5 cm ² ergonomic applicator
Maximum BNR	5:1
Stimulation Waveforms	Interferential, Premodulated, Biphasic, NMS, Russian, High Volt, Microcurrent
Biphasic Modes	Symmetrical, Asymmetrical, RAAS
Clinical Protocols	8 evidence-based stimulation protocols
User-Defined Protocols	Up to 99
Electrode Guidance	Electrode placement suggestions
Interface Languages	English and Spanish
Warranty	3 years

Typical Failure Modes (category reference)

- Ultrasoustic output drops to zero or displays error during treatment**

High

Symptoms: Therapy head produces no ultrasound output or intermittent output; display may show reduced power or fault indicator; patient reports no sensation.
Cause: Piezoelectric crystal degradation or internal microfracture within the applicator; waveguide seal failure allowing moisture ingress; mainboard ultrasound driver IC failure.
- Electrical stimulation channel produces no output or intermittent output**

Medium

Symptoms: Stimulation channel fails to deliver current; waveform selection has no effect; patient reports tingling only on one channel.
Cause: Output relay contact wear or failure; stimulation driver transistor degradation; electrode cable shield break or connector pin corrosion.
- Device fails to power on or shuts down unexpectedly**

High

Symptoms: Power button unresponsive; unit displays blank screen or immediate shutdown; no LED indicators.
Cause: Internal fuse blowout (line voltage surge); AC power inlet terminal block loose or damaged; mainboard power supply capacitor failure; battery pack (if equipped) cell degradation.

Waveform selection does not change output characteristics

Medium

Symptoms: Device remains in default mode regardless of user selection; menu navigation appears functional but settings have no effect.

Cause: Software logic fault in firmware; waveform selection switch/contact matrix failure; mainboard MCU communication error with stimulation DSP.

Thermal overload protection activates prematurely

Low

Symptoms: Device shuts down ultrasound output after short duration; display shows thermal warning; applicator feels warm but not excessively hot.

Cause: Ultrasound power sensor drift or calibration loss; airflow obstruction over cooling vents; applicator contact surface degradation affecting heat transfer.

Serviceable Parts & Consumables (category reference)

PART	P/N	SERVICE CLASS	REL. COST	R&R
5 cm ² ergonomic therapeutic ultrasound applicator	-	Frequent wear item	\$	Easy
Mainboard ultrasound driver integrated circuit	-	Periodic replacement	\$\$	Moderate
Stimulation output relay assembly	-	Periodic replacement	\$\$	Moderate
AC power inlet terminal block and fuse assembly	-	Major service part	\$	Fairly easy
Internal cooling fan (if service manual confirms fan-equipped configur	-	Periodic replacement	\$	Fairly easy
User interface membrane keypad and display assembly	-	Periodic replacement	\$\$	Moderate

Troubleshooting Approach (BioDeviceHub synthesis)

Symptom: No ultrasound output, device powers on normally

1. Visually inspect applicator cable and connector for damage or loose seating; verify 5 cm² applicator is properly attached to therapy head.
2. Connect a known-working applicator to isolate whether fault lies in handpiece cable or mainboard driver.
3. If output restored with known-good applicator, replace the original applicator as consumable wear item. If no output with known-good applicator, suspect mainboard ultrasound driver IC or waveguide seal failure.

Symptom: One stimulation channel produces no output, other channel functional

1. Swap stimulation electrode cables between channels at the rear panel; if fault follows cable, replace the cable assembly.
2. Inspect the relay contacts on the affected channel for pitting or carbon tracking; clean with appropriate contact cleaner if accessible.
3. If relay contacts are intact and fault persists, replace the stimulation output relay assembly for the non-functioning channel.