

TECH OFFER

Arm Booster – Smart, Affordable Technology for Upper-Limb Recovery



KEY INFORMATION

TECHNOLOGY CATEGORY:

Electronics - Sensors & Instrumentation

Healthcare - Medical Devices

TECHNOLOGY READINESS LEVEL (TRL): **TRL7**

COUNTRY: **THAILAND**

ID NUMBER: **TO175444**

OVERVIEW

The Arm Booster is a rehabilitation device designed for stroke patients and individuals with arm muscle weakness. It employs a symmetrical-reflex mechanical mechanism, allowing the stronger arm to support and stimulate the weaker arm. Equipped with force and motion sensors, the device records real-time performance data that can be monitored and analyzed through dedicated software. Integrated gamification features further enhance patient motivation by turning repetitive exercises into engaging, interactive tasks. The system is lightweight, safe, cost-effective, and suitable for use in hospitals, rehabilitation centers, elderly care facilities, and potentially in home-based settings.

The ideal collaboration models for the Arm Booster include research and development partnerships with medical and engineering institutions to further advance its technical capabilities. In parallel, licensing agreements with established medical device manufacturers can facilitate large-scale production and distribution. Additionally, collaborations with healthcare organizations and HealthTech companies could accelerate commercialization and drive expansion into new markets, such as digital health and home-based rehabilitation solutions. The device is competitively priced for sale or rental locally, and open to flexible business

models with overseas partners.

TECHNOLOGY FEATURES & SPECIFICATIONS

The Arm Booster is built around a motor-free symmetrical-reflex mechanism that links both arms, where the stronger side provides power assistance to drive the weaker side through a mechanical linkage, ensuring symmetrical rehabilitation movements. The system offers gravity compensation.

Key components of the Arm Booster system include a medical floor stand with wheels for easy mobility, supporting multiple mounted modules such as display screen and ergonomic grips. The structure is built from lightweight yet durable materials, making it easy to move and install across various healthcare settings. It is compatible with both standard chairs and wheelchairs and offers language support in Thai and English.

- **Display screen with proprietary software** – Patients engage in rehabilitation games directly on the screen, with physiotherapists selecting suitable exercises. Embedded gamified training modules make therapy more interactive and motivating.
- **Adjustable ergonomic grips** – Extendable and flexible to fit different users, with force and motion sensors that transmit real-time data (such as grip strength) for tracking.
- **Rehabilitation tracking** – Real-time visualization enables therapists to monitor patient performance, while exportable data supports progress tracking, with measurable improvements typically observed within 2–6 months.
- **Self-contained system** – No additional wearables are required. All functions operate directly on the device screen without Wi-Fi. The experience is immersive, comparable to a VR game but without glasses.

POTENTIAL APPLICATIONS

The primary market opportunity for the Arm Booster lies in community and regional hospitals, which require cost-effective rehabilitation equipment to support a growing number of patients. Private physiotherapy clinics also represent an attractive segment, as they seek user-friendly devices that provide clear and measurable outcomes. Elderly care facilities present another strong market, given the global trend of aging populations and the growing demand for functional rehabilitation solutions. There is also significant potential across Southeast Asia, especially in developing economies where affordable and practical medical rehabilitation devices are in high demand.

UNIQUE VALUE PROPOSITION

The technology strikes an effective balance between cost and functionality. Low-cost basic alternatives are often too limited to meet patient needs, while foreign brands with advanced features tend to be prohibitively expensive. This device offers the best of both worlds—an affordable price point combined with a range of smart features that make it a truly intelligent solution:

- Its motor-free mechanical design provides greater safety, durability, and minimal maintenance requirements.
- Integrated sensors capture real-time exertion data, providing valuable insights to track rehabilitation progress, while gamification features motivate patients to stay engaged in therapy.
- The grips can be freely adjusted and extended to match different games, providing an extensive 3D workspace that accommodates a full range of movements.

Furthermore, the device is easy to install and operate in standard healthcare facilities, with no need for specialized infrastructure.