

## APPENDIX I OF TEST REPORT T101210A\_F

### USER MANUAL

FCC ID: MOQ-LF700  
Manufacturer: Laser Force International Pty Ltd  
Test Sample: Laser Force Laser Tag Amusement System  
Model Number: LF7 (Battlesuit)  
Serial Number: 03221 (Battlesuit)

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**LASERFORCE GEN6 BATTLESUIT**  
**USER MANUAL**



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Dear Operator,

Please find enclosed your Laserforce Gen6 battlesuit user manual. This document contains much of what you need to know about the Gen6 battlesuit pertaining to the Laserforce system. Take the time to read it through, and become familiar with its contents.

Please contact your Laserforce team or myself if you have any queries or require any clarifications at all about any of the information provided in this document.

Yours sincerely,

Sam Kelly  
Laserforce International

## **FCC INFORMATION**

### **Information to the user (FCC Part 15.105)**

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

### **Modification Warning (FCC Part 15.21)**

Warning: Any changes or modifications not expressively approved by Laserforce International could void the user's authority to operate this equipment.

## **GEN6 BATTLE SUIT**

Each Laserforce battlesuit consists of five major parts. These are the:

- 1) Chestpack
- 2) Phaser unit
- 3) Shoulder units
- 4) Back unit
- 5) Vest chassis

### **Chestpack**

Purpose: The chestpack contains the Main Controller Board (MCB), which is the heart and brains of the battlesuit – it is effectively a mini wireless computer. Its major functions are:

Setting and identifying the colour of the player by the flashing LED's.

Housing the radio transceiver (located on the MCB)

Housing the main MCB board.

Housing the main power connector that is used for turning the suit on and off.

The radio provides a wireless communications link between the battlesuit and the computer. Amongst other things, it transceives with the computer to record hits on or by other battlesuits. The radio is built into the MCB.

The MCB board has embedded programmed Integrated Circuit (IC) chips. The MCB board controls all aspects of the suit function. The main IC are commonly referred to as the Main Eprom and the Sound Eprom. The Main Eprom controls the functions of the battlesuit whereas the Sound Eprom has the pre-recorded sounds embedded in

its memory. The MCB can be updated with new programs by downloading the program through the FUB connector

### **Phaser Unit.**

The phaser has many sub-components internal to the phaser being:

- 1) Lens
- 2) Forward special features button
- 3) Forward microswitch
- 4) Two hand detect metal shield
- 5) Phaser PCB
- 6) Laser diode
- 7) Laser diode mounts (2)
- 8) Trigger microswitch
- 9) Trigger
- 10) RJ45 wiring assembly
- 11) Tamper plate
- 12) RJ45 locking plate

Purpose: The phaser has the following purposes:

- a) Identifying the colour of the player by the flashing LED's.
- b) Housing infrared (IR) emitters to act as a hit zone for the players.
- c) Housing the infrared receiver that records hits on all other players and field devices.
- d) Housing the laser diode that acts as a special visual effect and also is used as an aiming point
- e) Housing the anti vandalism accelerometer

The phasers are supplied with the two-hand safety feature enabled. This means that the phaser will not fire unless the forward hand grip is held when the main rear trigger is pulled. This forces players to keep both hands on the phaser and generally makes the game much safer.

The phaser board in the phaser unit controls the IR receiver, IR emitters, the laser, the muzzle flash, special feature button and the flashing LEDs.

The IR receiver is located to the rear of the lens, which is located in the forward part of the phaser barrel. It receives the IR from other battlesuits and targets.

**Important:** The phaser does not fire a beam, it receives infrared from the battlesuit at which it is being aimed. When a phaser receives a signal it lets the player know via the beeping lock-on tone

The phaser has a 2.5x lens located 41mm from the sensor (in the centre slot). This magnifies and focuses the IR onto the IR receiver.

The phaser is fitted with a low-power red laser diode that fires a thin red beam for 2/10ths of a second when the trigger is pulled (or when the trigger is held down during rapid fire). The laser is purely a visual effect. Many players will use the beam to help with their aim.

### **Shoulder Units**

Purpose: The shoulder units have the purpose of:

- (a) Housing the speakers to provide sound to the player.
- (b) Identifying the colour of the player by the flashing LED's.
- (c) Housing infrared (IR) emitters to act as a hit zone for the players.

The shoulders contain the speakers, visible LED's and the target infrared (IR) LED's. Care should be taken that these are not damaged or knocked out of alignment when working on the unit or removing or replacing the plastic cover.

Generally the shoulder units require little maintenance. The most likely failure will be the speaker or the wiring leading into the shoulder unit.

### **Back Unit**

Purpose: The back unit has the purpose of:

- a) Housing infrared (IR) emitters to act as a hit zone for the players.
- b) Identifying the colour of the player by the flashing LED's.
- c) Houses the 12v 2.2amp battery that provides all the power to the battlesuit

The 12 volt battery unit resides at the back of the battlesuit. The plastic battery cover is retained on the unit by a locking tab and a spring clip. The battery is held in place by lugs and spring clips.

The battery unit also contains a circuit board on which is mounted two visible and two IR LEDs. Care should be taken that these are not damaged or knocked out of alignment when removing or replacing the plastic cover.

### **Vest Chassis**

The vest chassis consists of the woven nylon mesh, the adjustable straps and the conduit containing the internal wiring.