



# ETCHED LCD CONSOLES TECHNICAL CERTIFICATION TRAINING

Field Engineering | 2010

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# Course Objectives

- » Introduction to Custom Etched LCDs
- » Basic and Advanced Consoles (commonalities)
- » Advanced Console (differences)
- » Basic Console (differences)
- » Basic and Advanced Consoles (hardware overview)
- » Etched LCD console – a look at the PCB board
- » Basic and Advanced Consoles (common issues/misunderstandings of products' operation)
- » NDT console:
  - ♦ the message center
  - ♦ the NDT console – a look at the PCB board
- » Common Issues
- » Summary

# Introduction to Custom Etched LCDs

- » **Definition:** Custom Etched pattern determined by Life Fitness.
- » The display uses LCD technology to “open” windows of the pre-defined custom characters.



## Basic and Advanced Consoles (commonalities)



- » Separate Tread and Bike/Cross Trainer versions
- » Sourced product - assembled in Mexico
- » Sold separate from base machines
- » Can use either console on any base
- » Used on T3, F3, C1, R1, C3, R3, X1, X3, X5, X7
- » Consoles are warranted for 1 year.

Do not service parts inside the console for this time period.  
Console is replaced as complete assembly and sent back for repair.

## Basic and Advanced Consoles (commonalities)



- » Both Consoles have custom etched blue LCD display with white backlight.
- » Both Consoles have a Cell Phone type menu navigation.
  - ◆ Up/Down changes value.
  - ◆ Left/Right changes menu options.
  - ◆ Enter key accepts input.
  - ◆ Reset key to back up in menu.

# Advanced Console (differences)



- » Advanced Console specific features:
  - ◆ Contact and telemetry boards contained inside console
  - ◆ Has HR control workouts - only available using telemetry
  - ◆ Goal Workouts, Race Mode, and User Profiles
  - ◆ Has a dedicated key to enter settings menu

# Basic Console (differences)



- » Basic Console specific features:
  - ◆ Contact board contained inside console. No Telemetry or HR control workouts
  - ◆ No dedicated key to enter settings menu. Press and hold Enter key

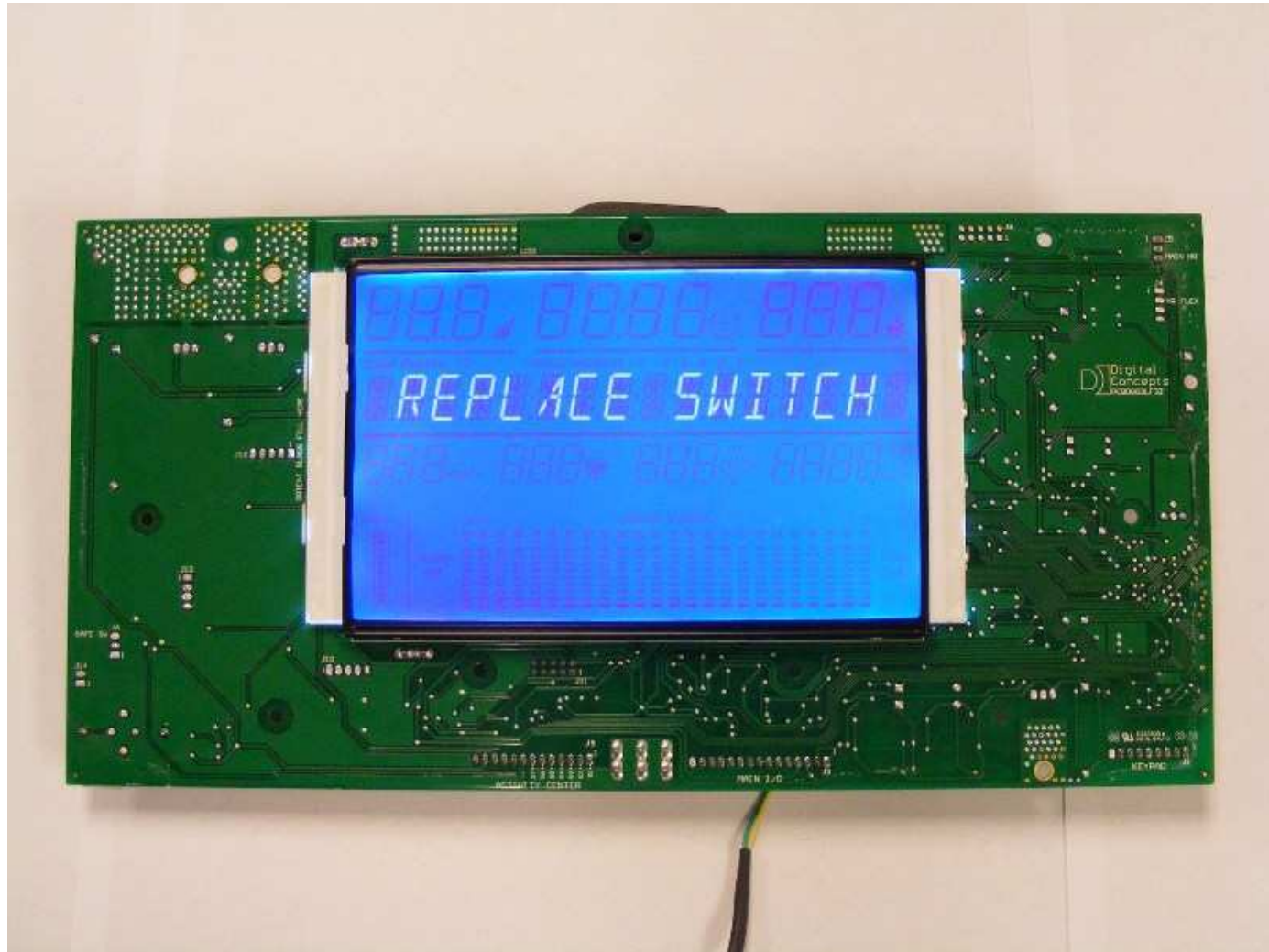
# Basic and Advanced Consoles (hardware overview)



- » Console Inputs/Outputs
  - ◆ Main I/O connector
  - ◆ Activity Zone Connector
  - ◆ Contact HR ground
  - ◆ Contact HR connector
- » Tread consoles:
  - ◆ The F3 tilt switch input determines if console installed on an F3 or a T3 (pin 13, 14). Changes max speed and Elevation.
- » Bike/CT console:
  - ◆ A jumper wire in the main I/O cable (pins 13, 14, 15) indicates which personality the console should take. Options include: generator bike (14 to 15), eddy current bike (13 to 15), cross trainer (none).

## Etched LCD console – a look at the PCB board

Etched LCD  
Display  
(entire display)



# Basic and Advanced Consoles (common issues/misunderstandings of products' operation)

## » Common Issues

- ◆ Displays OFF in Level Window. Cable or Servo motor issue.
- ◆ Hard to pedal CT – Safety Mode is On
- ◆ Stuck Key error – unplug activity zone and watch scan for 0000 in column where error was noted. Replace console or activity zone as needed.
- ◆ Display does not light up – C3/R3 need to be pedaled above about 30 RPM. Check power in.
- ◆ Pause mode does not work on C3/R3 – Software issue only in V1.6
- ◆ Console is crooked – X1, X3, X5, X7 make sure to re-adjusted it
- ◆ Displays “Sleep” – press enter. Can turn off sleep mode
- ◆ Displays “Press enter to unlock” – safety mode on treads
- ◆ Erratic or no Hr – Check in HR test. Use simulator for telemetry. Check contact cables and shorts to ground.
- ◆ Speed display erratic on treads – software fix V1.8

## NDT console – message center

Etched LCD  
Display

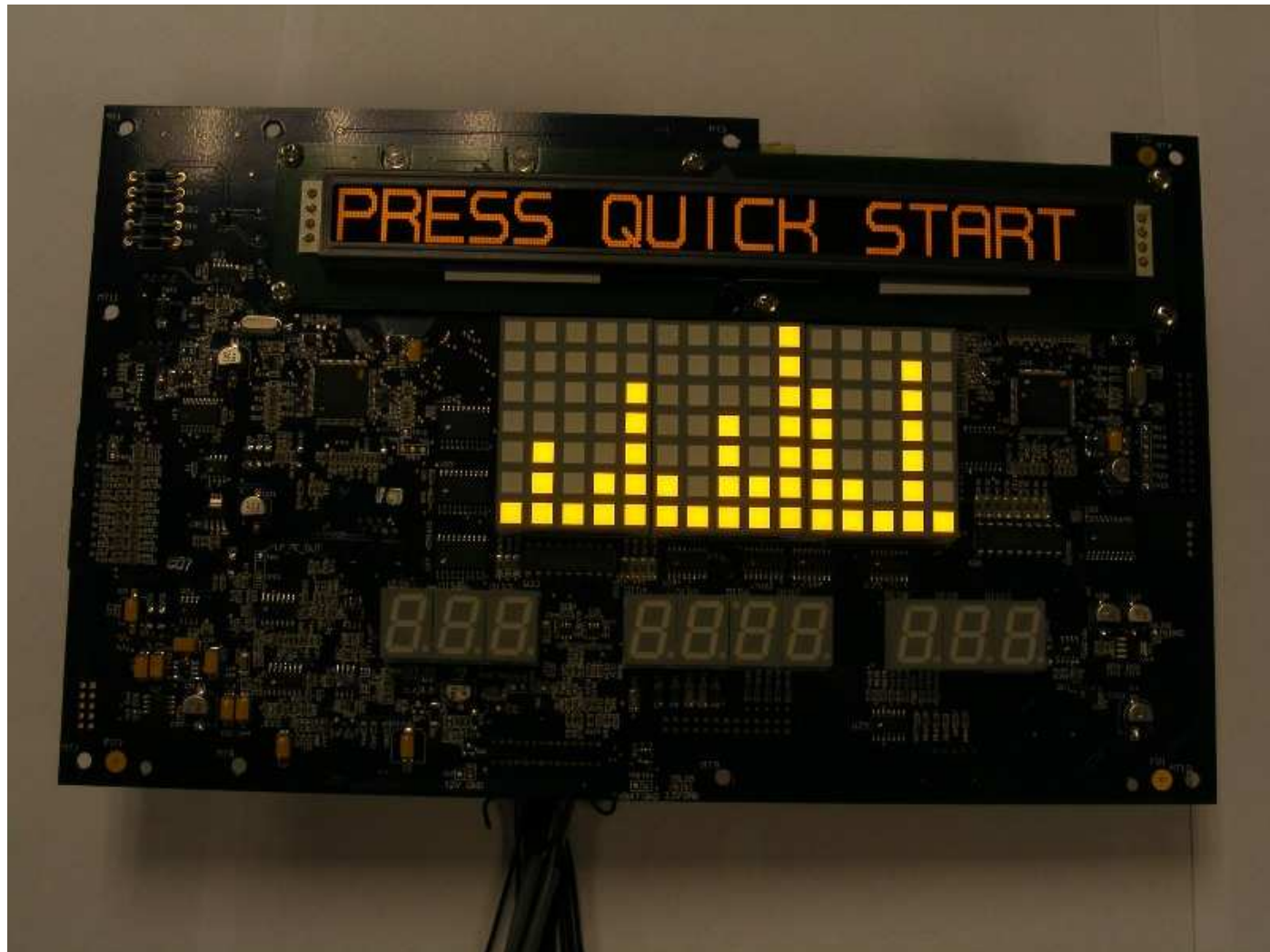


This console is used for the Elevation Series Achieve console in Japan.

Note that this console has an Etched LCD for the Message center. The Profile and Numeric displays are all the same as the Domestic Achieve console (LED based).

## NDT console – a look at the PCB board

Etched LCD  
Display  
(top, message center)



## NDT console – a look at the PCB board

In general the PCB board is very similar to the Achieve console's PCB.

Major difference: etched LCD display that has its own microcontroller.

The board contains the main processor responsible for running the application and diagnostics.

Both microprocessors can be programmed separately by using suitable widgets or the LF Flash Update application.

# NDT Consoles (common issues)

## » Common Issues

- ◆ Design used in Japan and other Asian countries – data is trickling in, but as of this writing nothing major had been detected with the console's performance. This design is used in the Russian market as well due to specific requirements of the Cyrillic alphabet.

# Summary

- » In this presentation we had discussed:
  - ◆ Introduced Custom Etched LCDs
  - ◆ Basic and Advanced Consoles in terms of commonalities and differences
  - ◆ Basic and Advanced Consoles hardware
  - ◆ Basic and Advanced Consoles (common issues/misunderstandings of products' operation)
  - ◆ NDT console – message center
  - ◆ NDT console – the PCB board

# Questions





**THANK YOU!**

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