



## Designed for the Clinical Researcher

Clinical Research Systems combine the clinical efficacy of NeuroCom EquiTest® and SMART EquiTest Computerized Dynamic Posturography (CDP) systems. Integrating the recording capabilities of the AMTI™ Dual Top Six Degrees of Freedom Force Plate with NeuroCom's dynamic software package, the NeuroCom CRS has been tested and proven in demanding gait and balance research labs worldwide.

- ▶ Standardized clinical test protocols
- ▶ Turn-key user-programmable operating system
- ▶ Used by leading researchers in balance & mobility programs worldwide



### **BUILT TO LAST**

The NeuroCom Balance Manager System's robust, durable & low maintenance design delivers a true value-based solution for any clinical and/or research environment.



## Clinical Research System (CRS)

CRS systems provide objective documentation of the balance control functions (sensory as well as voluntary and reflexive motor) in the population to be studied, the ability to design complex sensory and motor challenges to emulate real world conditions, and full access to the detailed force & moments data from two independent Force Plates (Fx, Fy, Fz, Mx, My, Mz) to accurately demonstrate the impact of those challenges on human balance performance.

## Research Software Package

User-programmable operating system for flexibility in designing research protocols. User can specify:

- Independent control of Force Plate and surround movements
  - Waveform
    - ♦ Mathematical function
    - ♦ Look-up tables
  - Step or ramp function
  - Sway referencing
  - Movement onset delay
- Maximum 10 minute trial duration
- Custom targets

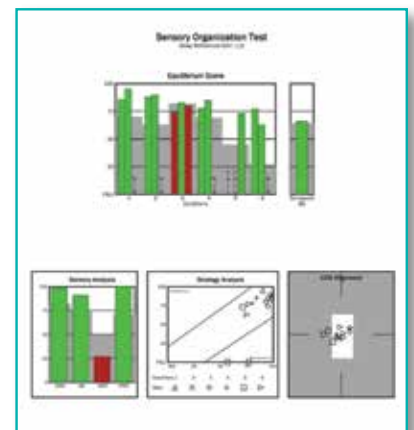
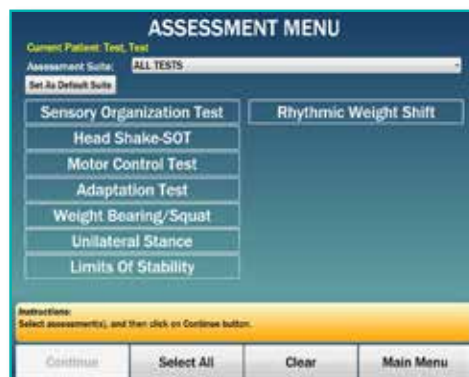
Data from the AMTI Force Plate and motor positions can be exported to a delimited text file for easy access by statistical packages.

## Clinical Software Package

User can select standardized assessment protocols and compare to normative data:

- Sensory Organization Test (SOT)
- Motor Control Test (MCT)
- Adaptation Test (ADT)
- Weight Bearing Squat (WBS)
- Unilateral Stance (US)
- Limits of Stability (LOS) (SMART EquiTest only)
- Rhythmic Weight Shift (RWS) (SMART EquiTest only)

The SMART EquiTest configuration includes Training Protocols: Sequence, Weight Bearing and Custom Training.



# The most powerful balance research mode to date — Waveform

Waveform mode can be used to profile complex waveform movements via support for classic trigonometric functions (Figure 1), intricate multi-ramp movements with varying speed and amplitudes (Figure 2), and VB scripts to articulate permutations of waveforms and ramps (Figure 3).

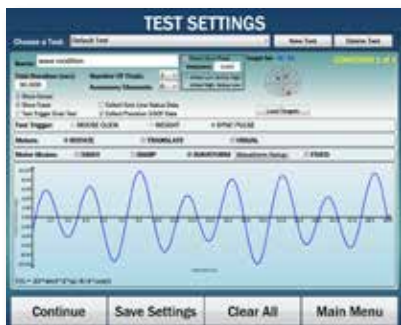


Figure 1

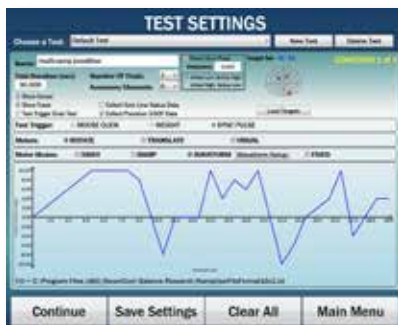


Figure 2

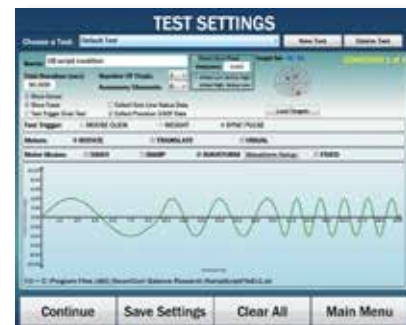


Figure 3

## Configuration Options

### EquiTest CRS



### SMART EquiTest CRS

- Embedded LCD monitor
- Training software for rehabilitation
- Motor for translation of Force Plate
- Motor control test (MCT)



## Setting the Standard in Balance & Mobility

# Technical Specifications

## Components Included

- EquiTest or SMART EquiTest clinical software configuration options
- Separate turn-key research user-programmable operating system
- Dynamic NeuroCom Dual Top Six Degrees of Freedom Force Plate from AMTI (rotate and translate)
- Dynamic visual surround with illumination
- Overhead support bar with patient harness set
- Windows-based desktop computer
- One flat panel 17" LCD operator monitor (EquiTest)
- Two flat panel 17" LCD monitors for operator and patient (SMART EquiTest)
- Medical-grade isolation power supply
- Color printer
- Wireless mouse
- Ergonomic point of care cart

## Accessories Included

- **B100012-00**  
Harness Kit (Sizes: S/M/L)
- **NCM-FOAM**  
Foam pad: 18 x 18 x 5 in (46 x 46 x 13 cm)

### (SMART EquiTest CRS Only)

- **P102604-00** Blocks for Prep kit includes:  
Rocker board  
Step-up blocks: 4 in (10 cm) and 6 in (15 cm)  
Leveling block: 2 in (5 cm)  
Heel/toe wedges: 6° and 12° A/P  
Inversion/eversion wedges: 3° and 6° M/L

## Options

- **NCM-LFP**  
18" x 60" static force plate
- **NCM-INV-D**  
*inVision* software and head tracker  
(PTT, DVA, GST & HS-SOT)
- **NCM-GAMES**  
NeuroGames

## Electrical Characteristics

- 100-240V / 50-60 Hz / 1200 W
- Compliant with the latest medical standards

Force Plate and/or surround movements and data acquisition can be initiated either under operator control or by an external synch pulse. A synch-out pulse is also available to synchronize external devices.

## Physical Dimensions

	in	cm
Assembled dimensions	53 x 61* x 94	135 x 155* x 239
Base	53 x 61 x 6	135 x 155 x 15
System cart	25 x 24 x 44-57**	64 x 61 x 112-145**
Dual Force Plate	18 x 18	46 x 46
Step height	6	15
Visual surround	42 x 36 x 74	107 X 91 X 188
Maximum subject height	80	203
*Depth extends to 64 in (163 cm) with surround in resting position.		
** Minimum-maximum monitor extension height.		
Minimum footprint required	96 x 75	244 x 191
Minimum ceiling height	95	242
Total system weight	775 lb.	352 kg.

## Performance Characteristics

Multiple servomotors provide smooth, accurate movements of the NeuroCom Dual Top Force Plate from AMTI and/or the surround. User can specify the waveforms to control the servomotors, which can be activated individually or in pairs.

## Translations

- $\pm 2.5"$  (6.35 cm) from center, for a maximum of 5" (12.7 cm) in the forward-backward direction
- Maximum velocity: 20 cm/s

## Rotation

- $\pm 10^\circ$  from center, either toes-up or toes-down, for a maximum of 20°
- Maximum velocity: 50°/s

## Visual Surround Movement

- $\pm 10^\circ$  from center
- Maximum velocity: 15°/s

## NeuroCom Dual Top Force Plate (per plate)

- Fz Capacity, lb (N): 400 (1800)
- Fx, Fy Capacity, lb (N): 40 (180)
- Mz Capacity, in-lb (Nm): 300 (34)
- Mx Capacity, in-lb (Nm): 1200 (135)
- My Capacity, in-lb (Nm): 600 (68)
- Sampling rate: 100 Hz

Specifications subject to change without notice.

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