

J+ ENGINEERING

I N C O R P O R A T E D

The Difference is in the Design

J & J ENGINEERING



The Difference is in the Design

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BioExplorer is an independent product for software developers. BioExplorer is not associated with J&J Engineering.

Capnometer is a product of Better Breathing, Inc, Boulder, CO.

THE J & J ADVANTAGE!



INDUSTRY LEADER
USB WinXP
UltraResolution: 16 bit A to D
One to four EEG or EMG channels
@ 1024 samples per sec

What is the J&J advantage?

The difference is in the design! J&J Engineering builds high-tech physiological monitoring equipment. The factory is nestled in a fir-filled valley next to the Olympic rain forest. We keep your costs down by keeping our overhead down. We have no venture capitalists siphoning off profits, or pressuring us to raise prices or cut corners. We use only the highest grade electronics and assemble and test them ourselves, not overseas.

By design, our company is small, responsive and flexible. Our new product line uses the most advanced integrated circuits and microcomputer technology.

DETAILED KNOWLEDGE OF THE FIELD

J&J has an academic advantage, too. Did you know that our equipment is being used in colleges, universities and research laboratories around the world? In fact every one of our software packages are a direct result of collaboration between J&J and top researchers. To name just three examples, J&J developed software algorithms for EEG feedback being used in research on self-regulation for head injury and attention disorders. We are collaborating on new software extensions into the next phase of self-regulation neurofeedback using multi-site multi-phase techniques. J&J engineers developed the mathematics for heart-rate variability to generate more responsive and accurate displays than other systems. The power of our spectral EMG has been the basis for several applications from incontinence research to malocclusion and TMJ assessment and myofeedback (EMG biofeedback) treatments.

Did you know that we also provide biofeedback instruments for thousands of clinicians? We have more years in the field of computer-assisted biofeedback devices than any other biofeedback manufacturer. This is our fourth generation of physiological software, now built on the latest 32-bit Windows code (i.e. it is very fast and doesn't 'crash'.) Our top systems are as powerful as one-of-a-kind 'research' systems costing tens of thousands of dollars.

You can spend more, and still not get all the features in our systems.

32 years in all areas of the expanding field of psychophysiology and biofeedback. FDA registered for biofeedback.

Robotic circuit assembly for reliability. Latest microchips for signal processing.

Powerful Windows software.

Flexible product line – buy just what you need.

Product features are driven by our users' needs.

J&J has an excellent relationship with the psychophysiology community. J&J has been involved in hundreds of research applications, and thousands of clinical applications. Hundreds of publications and presentations have been made using our systems.

We have a friendly and knowledgeable staff available for phone support and Web consults. We enjoy having an intelligent and loyal customer base. We do not inflate our prices with hidden training costs. Instead we encourage learning about biofeedback by attending generic seminars from leaders in the field at biofeedback and psychophysiology conferences.

THE J&J COST ADVANTAGE!

Buy just what you need at a price you can afford.

Cheaper does not mean fewer features, just fewer channels. Want a simple single-purpose biofeedback unit? Or sEMG for pain assessment and rehabilitation? Want to add Heart-Rate Variability (HRV) to your toolkit? How about a dual-channel EEG? Or a 'quad-EEG' for coherence? Why not purchase one piece of hardware that allows you to run a variety of biofeedback and neurofeedback applications? J&J can help you.

-Make your own J&J Applications.

BioExplorer BioEra LabView

J&J listens to customers. We love our new USE3 Applications. Occasionally our users have a special application in mind not covered in the Standard Application package. If you are one of these, consider this. Many researchers are using BioExplorer to make special applications. Others use BioEra. We support them both! We also support LabView. Want flexibility? Try J&J.

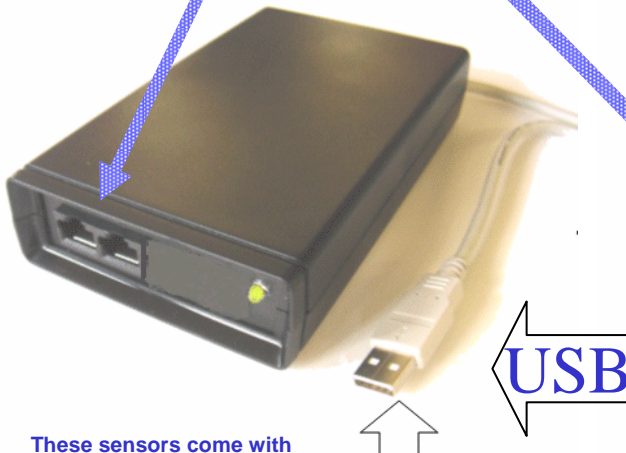


HARDWARE SIGNAL-PROCESSOR MODELS: A SELECTION GUIDE

MODEL-330 USB MODELS	FRONT PANEL INPUTS	Base PRICE	EEG EMG ECG (2048 sps)	TEMP EDR RESP PPG	TOTAL INPUTS	A/D Bit rate	Connector	Built-in Impedance Check?
C2 Plus 12 Channel	[4]	\$3195.00	4 +	8 =	12	16	USB	Y
C2Plus 6 Channel	[2]	\$1995.00	2 +	4 =	6	16	USB	Y

Prices include basic cables, and factory Windows software. Call for other prices, discontinued models, additional sensors, custom software.

C2 Plus 6 Channel



C2 Plus 12 Channel

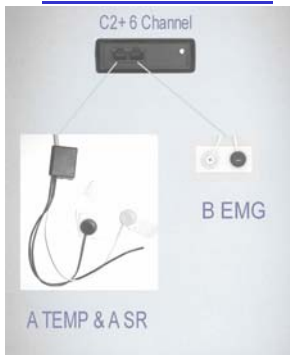


USB

USB

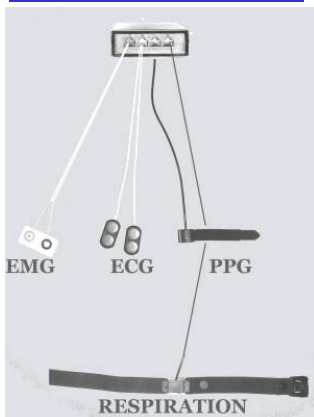
These sensors come with purchase:

EMG/EEG/ECG, Temperature and Skin Conductance



Add additional sensors:

EMG, HRV/Resp&Blood Flow



Six or 12 Channels? What's the difference?

The only difference is in the number of inputs, and – of course – the price.

J&J manufactures 2 models of physiological signal detection platforms:

- All connect via USB and have a very long battery life (40+ hr) in daily use.
- All models share the same state-of-the art 16 bit A/D converter, 2048 cps (hardware) EEG / EMG/ ECG inputs.
- All share the same USE3 software shell.

Purchase price includes 4 basic sensors which run on the included 'Basic Applications' software applications:

Both the C2 PLUS-12 CHANNEL and 6-CHANNEL systems are supplied with one TEMP/EDR CABLE and two EEG/EMG cables at purchase at no charge.

Want more? You can elect to purchase 2 more EEG/ECG/EMG cables, or some other sensors like Respiration.

To find the price for adding additional sensors, see our Price List page.

Bottom line? At J&J you always get the best technology at a great price. The difference is in the design! !

The Sensors connect by Active Carbon-filled noise-reducing cables.

EMG :

Our EMG signals are clean. Our anti-noise cabling allows good signals even in motion. Researchers with 20 foot leads report excellent signals with little or no artifact.

EEG :

Our EEG Bandpass of 1 to 64 Hz permits detection of the whole active spectrum.

ECG :

Built-in missed-beat detector assures reliable spectral HRV. Our HRV biofeedback algorithm has been field-tested for 15 years.

DC :

Built-in amplifier, drift-attenuating design. For Slow Potentials, ElectroGastroGram.

TEMPERATURE:

With a Thermistor Sensitivity of 1/100th of a degree F even the smallest changes are detectable. Want to detect temperature remotely or under the skin? Go Infra-red...

INFRARED TEMPERATURE:

Our infrared detects changes as small as 1/100th of a degree F. More importantly it detects changes immediately. Thermistors inherently require contact through a epoxy bead, and this causes a delay in detecting change. The IR circuit senses immediate changes.

SKIN CONDUCTANCE:

Our Skin Conductance Range of .5 to 200 μ S (5K to 2000 KOhm) assures a reading even on the driest skin. The required Constant current load of only 2 uAmps means minimum drift.

PHOTOPLYTHSMOGRAPH (PPG) BLOOD VOLUME PULSE (BVP):

This is no ordinary detector. Unlike cheaper passive light reflecting PPG systems, it has a full microcircuit built into the sensor. It automatically corrects for ambient-light artifact, and reduces movement artifact using a sophisticated pulse-driven self-correcting loop

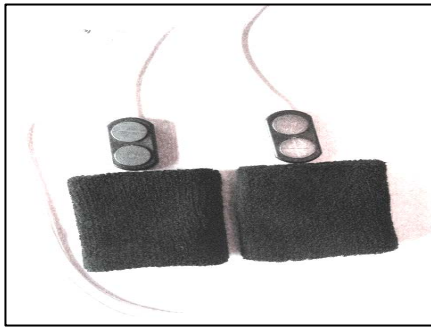
The Emitter uses Narrow-band LED infrared, much more sensitive to the smallest change in blood flow.

PULSE TRANSET TIME (PTT):

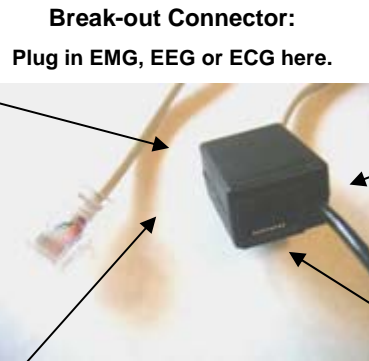
Special peak detector software allows the user to monitor the delay between ECG R-peak and peripheral peak pulse.

RESPIRATION BAND:

This uses a Magnetic field detector microcircuit imbedded in a stretchable belt sensor. The adjustable band has a linear distance rang of 1" to 2" from sensor-to-receiver and an effective stretch sensitivity over 4".



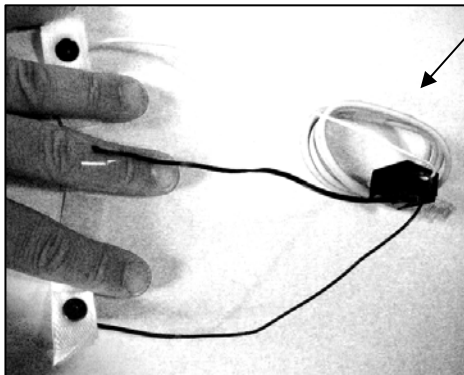
ECG: Non-Gel Snap-on sensors and wrist bands



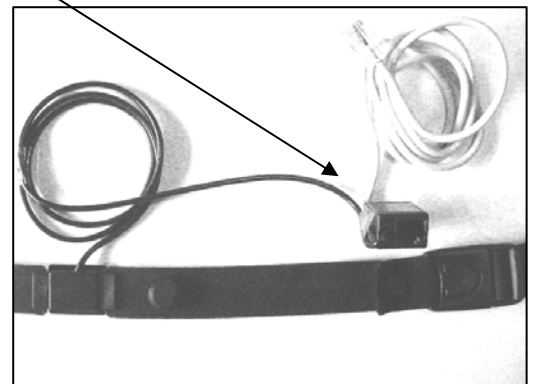
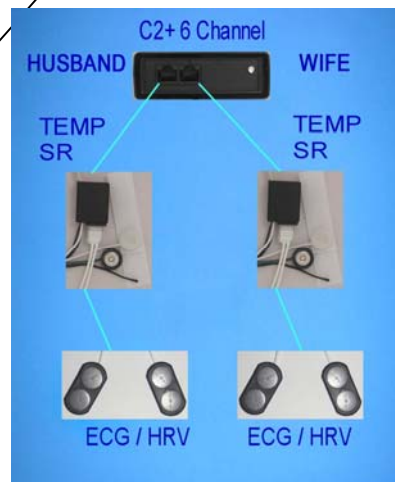
Break-out Connector:
Plug in EMG, EEG or ECG here.



PPG Sensor Head Exposed.



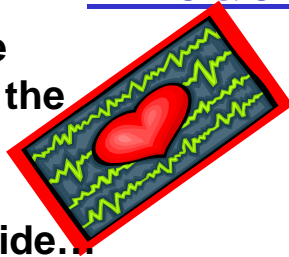
TEMP / SC COMBO with Break-out Connector.



Respiration Sensor with Break-out Connector

THE J & J HARDWARE ADVANTAGE!

In hardware the difference is in the design.



THE C2-Plus is Research-Grade Equipment!

Look under the hood of any J&J product. You will find only the highest quality components, burned in and tested in our factory laboratory. Our tolerances are so high that we reject any unit that fails our rigid factory testing. Our hardware is in use in laboratories around the world.

Take a look inside...

COMPARE SPECS: Before selecting a J&J system, we encourage you to search other biofeedback products. Look closely to see if those products match our specs. Then see if they match our price.



Shake 'em! Noiseless double carbon-shielded leads means more signal, less artifact.

•**COMPARE AMPLIFIERS:** Our new hardware does not use external pre-amplifiers for standard signals. There is no hidden cost associated with expensive cables found in other systems.

•**COMPARE SIGNALS:** Our signals are amplified internally through low noise carbon shielded cables. This allows our amplifiers and filters to be programmed by the software for EEG, EMG or ECG bands and gains, increasing signal reliability and lowering costs by thousands of dollars. So all you need is a cable with the sensor snaps. You get a basic set of cables free, and can add more or different sensors as needed.

•**COMPARE A/D CONVERSION RATES:** We have the first system with 16 bits on ALL channels. That is 16 times more resolution than a 14 bit system, which means you will see smaller signals with more detail. 16 bits also means there is more 'headroom' for reliable signal-to-noise rejection.

•**COMPARE BANDWIDTHS:** Our EEG and EMG signals have industry-leading low-noise signal processing built-in: up to 1024 samples per second. This allows true spectral FFTs in real-time. *

•**COMPARE FLEXIBILITY:** Our superior design allows accurate detection of a wide range of signals, all at the same time and all from the same hardware.

•For example, you could detect slow EEG waves while simultaneously detecting high frequency EMG waves from the same sensors. In addition we can detect blood volume pulse, derive precise HRV sub-bands from ECG and do FFTs on 4 EMG channels without overloading the system.

•This rivals custom laboratory equipment costing 10 times our price.



•**TECH NOTE:** Our hardware samples at 2048 sps. We reduce software sampling rates to 1024 samples per second. This is called over-sampling, and assures no dropped data at lower software pick-up sampling rates. This also allows computers with slower processors (below 3.2 GHz) to multitask in real-time.

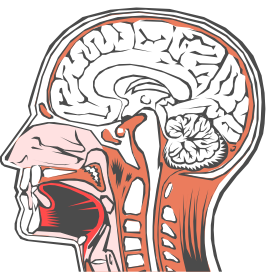
THE J&J APPLICATIONS ADVANTAGE!

In applications, too, the difference is in the design. We provide new users with basic applications. We offer established users a large application library and allow you to share protocols via email.

•EVOLVING BASIC APPLICATION LIBRARIES

- Neurofeedback** : Comes with Single-site Target-Inhibit. Dual site (2 EEG) multi-band coherence. Quad-site (4-site) concordance now available. Want more? Add new protocols via email!
- EMG Feedback**: Single site muscle relaxation, Dual site co-contraction inhibition. Four / eight site balance training.
- Stress protocols** with your own photo libraries of stressors for desensitization, fear and/or anger management
- Vagal Tone Resonant Frequency Stress Management** – HRV, and/or cardio-respiratory synchrony (RSA).
- Special applications** – couples monitoring, pulse-transit times, hand rehab., Etc. Contact us for details.

Factory Windows software upgrades and applications free at Web site.



NEUROFEEDBACK / NEUROTHERAPY:

- Impedance, raw signal and Spectral band check.
- “10-20” Head Map for site name insertion.
- **SHARE ALL NEUROFEEDBACK PROTOCOLS:**
 - Neurofeedback uses hundreds of protocols.
 - J&J allows users to duplicate, and export protocols.
 - These protocols can be emailed, and imported into your computer.
 - Want the Serman or Lubar protocols? Want the latest protocols from researchers in head injury, ADHD, or PTSD? Simply import them and you are ready to go!



- **TRADITIONAL NEUROFEEDBACK** - a sound triggers when ‘good’ band is above threshold, and/or a ‘bad’ band is below threshold.
- **GAME (GOAL) FEEDBACK** – Music, a cartoon, video or game advances one frame with each successful target/inhibit threshold met (called “SCORE”).



COMPUTER PROPERTIES

It is the speed of the computer that determines the smoothness of the signals in the software windows.

Our systems require a computer that runs Windows and has a USB port and has a processor over 1.5 gigahertz. For happy feedback experiences, we recommend the fastest computer with the biggest video memory card you can afford.

The ideal is any computer or laptop built for ‘gamers.’ They are lightning fast, and are set up to maximize real-time streaming of large amounts of inputs without bogging down. Windows XP, a Pentium 4 with threading or Dual Core, and a video memory of 128 MB or more will make your screens fly!

A dual-screen video card is very useful as we include many dual screen displays. Most new laptops provide this as well.

We encourage you to buy a computer that maximizes your investment.

HEART-RATE VARIABILITY APPLICATIONS

Do both kinds of HRV feedback in one application :

- (1) **Spectral HRV** derived from ECG sub-bands, and
- (2) **Cardio-Respiratory Synchrony (RSA)** matching respiration waves with HR waves.
- **Rock-solid spectral HRV:** True digital frequency transforms on heart-rate variability FFTs from ECG.



SEMG APPLICATIONS

- **General purpose Work-Rest-Work protocols.** Repetitive Strain Injury. Neuromuscular Rehabilitation. Muscle relaxation. Co-contraction reduction. Pelvic Floor Training.
- *J&J is the only FDA registered, general purpose system that detects real-time spectral EMG signals on every input, thanks to our 16 bit A/D conversion and high sampling rate.*



TOMORROW'S APPLICATIONS AS THEY EVOLVE ... New or refined applications are emerging around the world. J&J is in a fortunate position to be able to bring these emerging technologies to all of our customers, through software updates and applications. Your investment should never be out of date.

HOW APPLICATIONS WORK

An application is a set of signals and screens. A protocol is a sub-set of special settings designed for a particular training goal using that application. You control everything from a Master Screen, and select client screens for training. You can save settings for a client, or for a new protocol, and retrieve them.

SELECT CLIENT:

First, add or recall Client information from Database. Recalled Clients will also recall their last saved physiological signal settings for this session.



Every Application starts with an Impedance Screen. Green bars mean good impedance, yellow means marginal, and red means bad. OK? Start...



Send and receive new protocols by email.

Each application has a Master Control Screen for the operator.

All other Screens are simplified for clients to see. Distractions from other signals are removed.

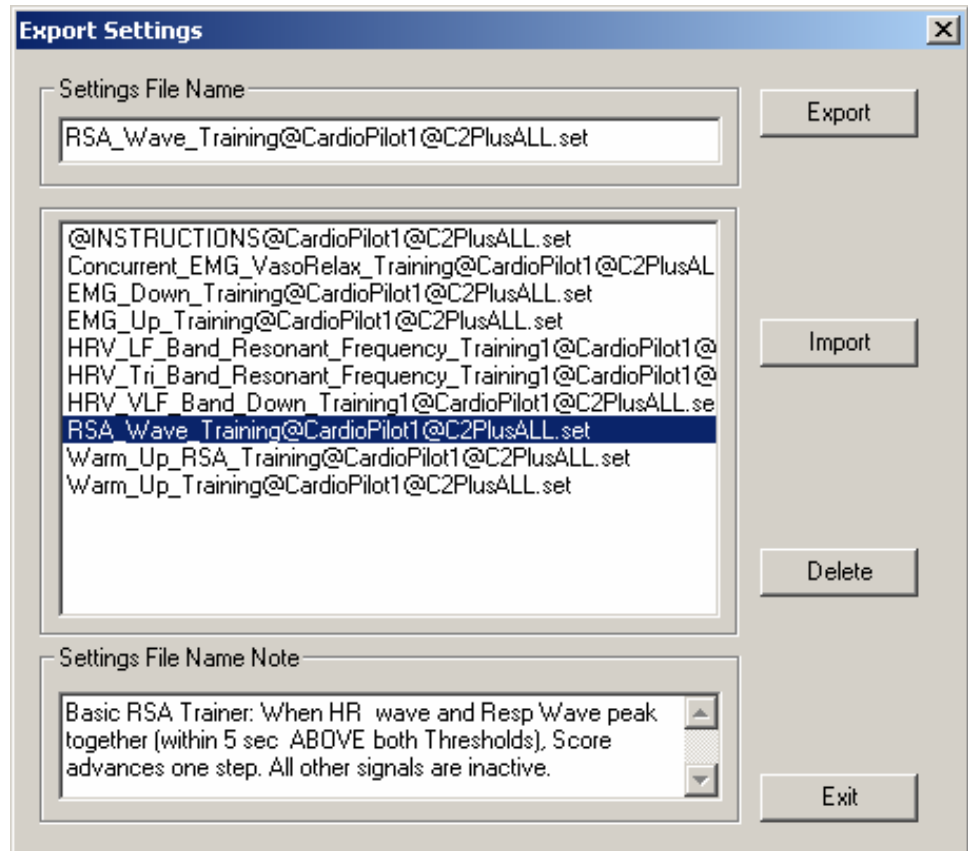
Session over? Save the protocol, save the client's session settings, and save the session data. Use the data to make a report.

USE THE PROTOCOL LIBRARY: Many combinations are possible: EMG alone, Temperature alone, and both EMG and Temp. You may want one version with EMG above and another with EMG below, etc. Rather than set up a protocol every time, you can save and recall these settings, including a description of how to use each one. You can even share protocols by email as attachments. Furthermore you can save the settings from the previous session with the client's name and they will be recalled for the next session with that client. What could be simpler?

**MASTER CONTROL
SCREEN**
EMG
Respiration
ECG (HR)
Skin Conductance

Import, export and share
PROTOCOLS
e.g. 'EMG Balance'
'Breathing & HR'
'Theta-Beta1'
Etc.

Library
Of
Protocols



Send and receive
new protocols
by email.

HOW FEEDBACK WORKS



SIMPLIFIED USER INTERFACE:

- Clinicians will appreciate our new feedback interface, based on 3 years of field trials and comments from a small group of dedicated beta testers.
- A good feedback interface should allow the user to view *all* signals, and adjust all controls for feedback on a Master Control Screen. Clients should see only aspects of a signal that they are training to control.

Simple Example: One EMG. Here is the Master Control Box for this signal:

Toggle Feedback on/off
 Adjust Scale
 Adjust EMG Averaging

FDBK ON 20.0
 SCALE 20
 AVG 10
 EMG A
 20.0
 0.0
 ABOVE T.
 1.3 SIG
 1.5 THR
 1% 10 ms
 THR ADJ
 AVG ADJ

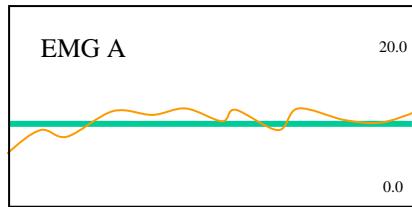
Grey: FBK DISABLED
 Green: FBK Successful
 Red: FBK unsuccessful

Toggle FBK Criterion:
 •FBK On Above Thr.
 •FBK On Below Thr.

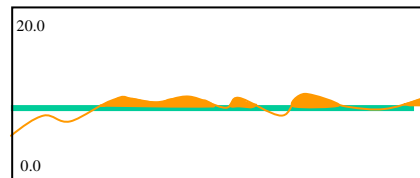
Shows EMG value,
 Current Threshold value
 Averaging Time.

Click to adjust:
 •Threshold value
 •EMG Smoothing

The client need only see one display. There is a display that is identical to the Master Control Box:



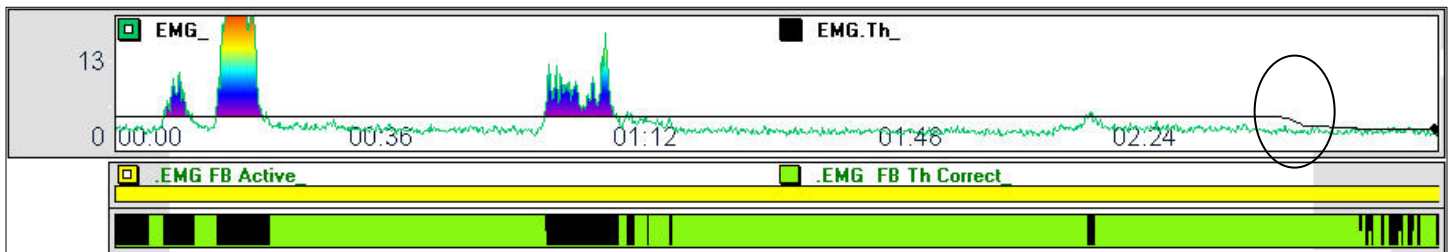
However other displays are also controlled by the EMG Master Control Box:



PhotoFill Games, Vertical Bars, Fill Graphs are some examples of over 30 display types.

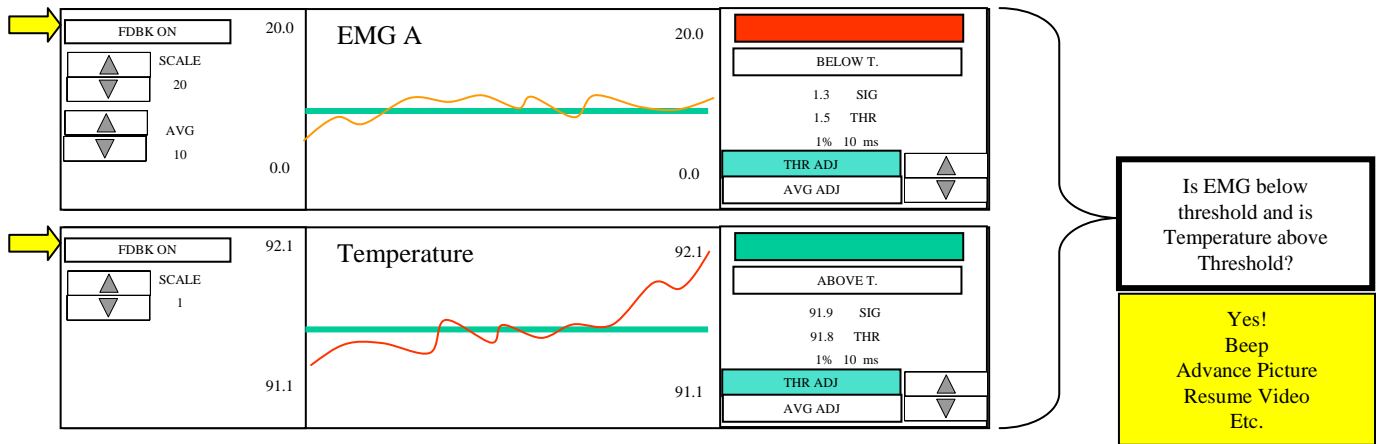
CLEAR REVIEW OF FEEDBACK SUCCESS:

- J&J provides the clinician with a report format that is easily understood by patients, by colleagues, by teachers and by reviewers.
- Not all signals are involved in feedback. The report shows which signals are activated to allow feedback, and how successful the client was in meeting the feedback goal (threshold).
- For example, the EMG relaxation graph shows feedback was active (yellow bar) and that the client was so successful (green lines) that the threshold could be lowered to shape even lower levels of relaxation (end of graph. See EMG.Th line).

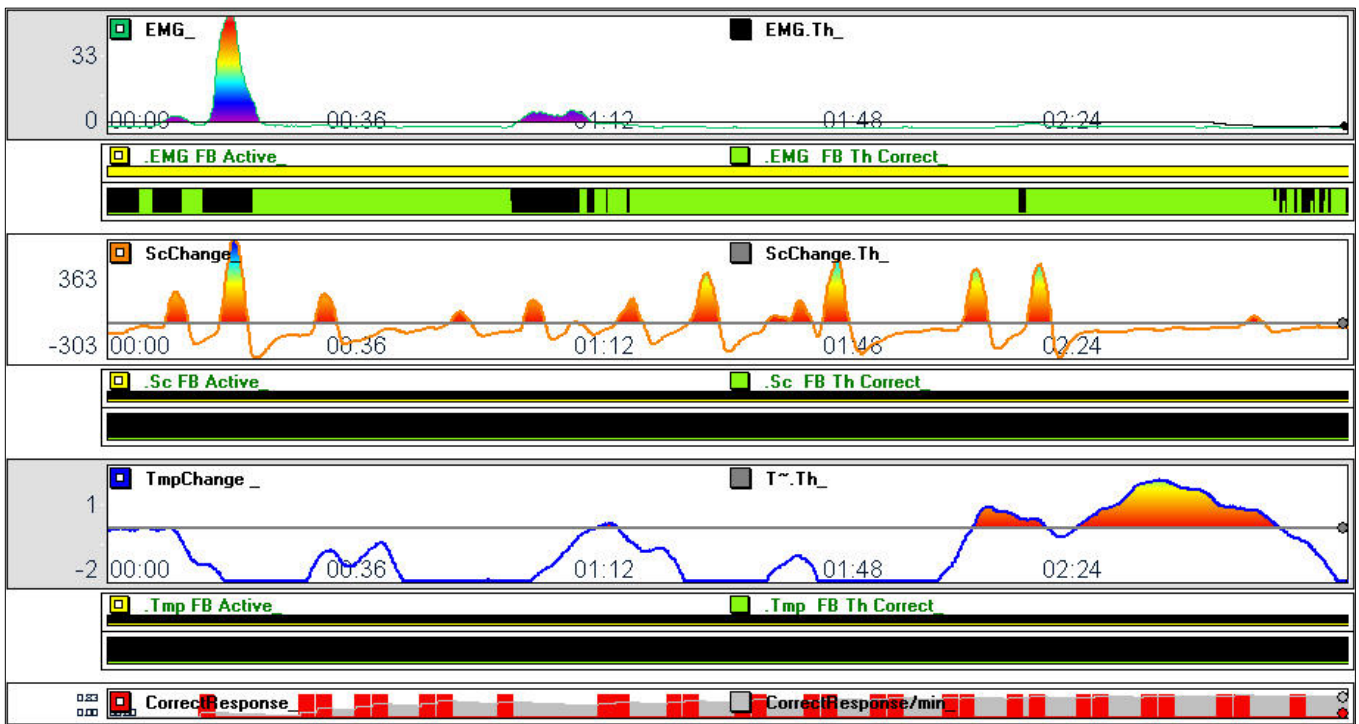


COMBINED FEEDBACK: This is where the new interface is especially useful.

Say you want to now train both Muscle relaxation AND hand warming. To set it up, enable the FBBK ON buttons for both signals. Set thresholds, and when EMG is below (relaxed) and Temperature is above (relaxed), feedback is provided.

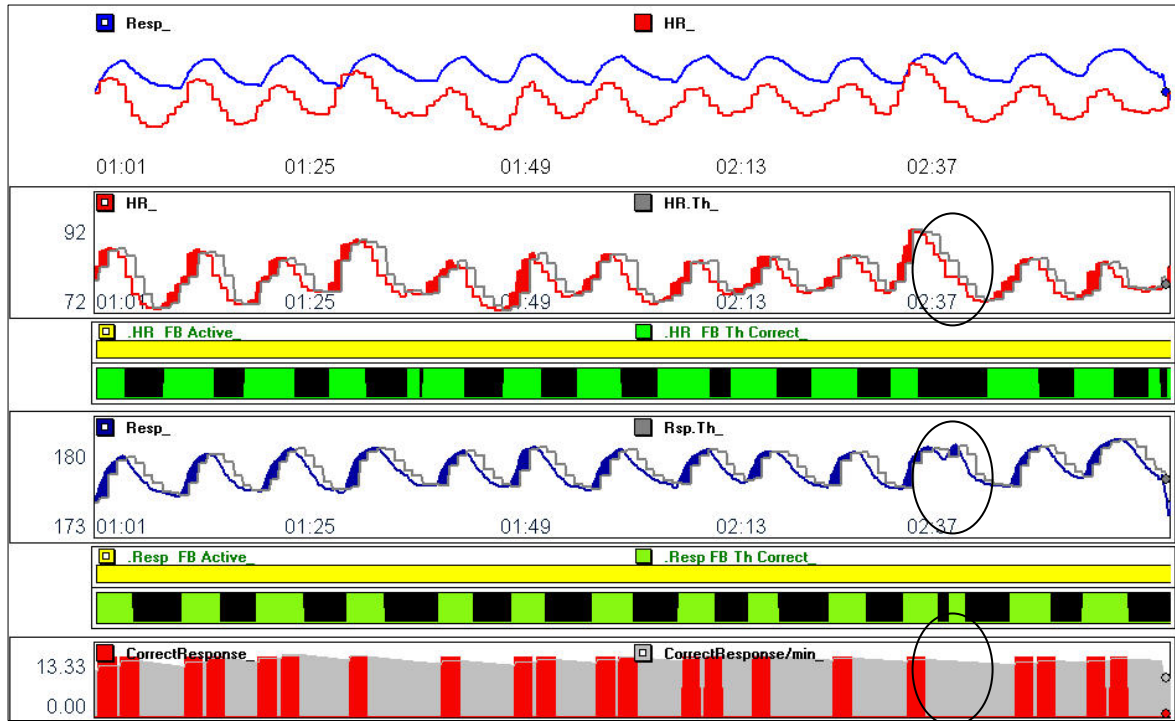


REPORT EXAMPLE: Here Feedback to reduce EMG levels triggered SC bursts (effort) and finally a burst of warming in the fingers (bottom graph).



COMBINED HR and RESPIRATION FEEDBACK:.

Training Cardio-Respiratory Synchrony (RSA) is easy! This REOPT shows that whenever HR and Respiration waves accelerated TOGETHER, feedback told the client they were 'in synch.'



NEUROFEEDBACK: Here Band A1 must be above Threshold and at the same time Band A2 must be below its Threshold. You can see the Threshold adjustments to optimize training (see red bars indicating Success).



END OF BROCHURE

Comparing Specifications: C2-Plus 12 versus C2-Plus 6

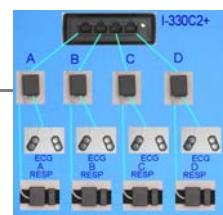
FEATURE COMPARISONS: How J&J compares to Nexus and Thought Technology

Comparisons shown here based on published specifications. (NOTE: Blank cells mean manufacturer has no data)

MANUFACTURER	Engineered, constructed and assembled by J&J Engineering, USA	
Hardware	C-2 Plus 12 Channel	C-2 Plus 6 Channel
Listed Basic Price (See Price Comparison sheet):	\$3,195.00	\$1,995.00
Accessories in Basic Price Package (Free):	2 EEG/EMG/EKG sensors; 1 Temp/EDR Combo	2 EEG/EMG/EKG sensors; 1 Temp/EDR Combo
Applications in Basic Price Package (Free):	The 12-channel comes with all the 6-ch applications plus 4 EMG / EEG / 4 person monitoring.	The 6-ch comes with several Dual Channel Combos: EGG 2/EMG 2/ EEG + EKG(HRV), EMG + EKG(HRV) plus Temp, Resp, EDR

GENERAL PROPERTIES

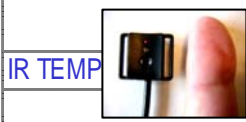
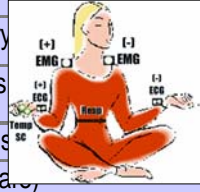
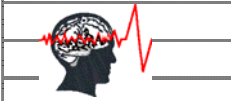
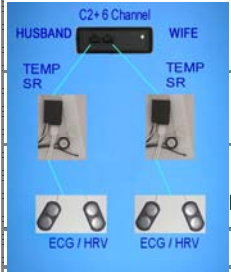
<u>TOTAL CHANNELS:</u>	12 = 4 + 8	6 = 2 + 4
Fast Channels	Four EEG\EMG\ECG @ 2048 samples/sec (hardware) / 1024 samples/sec (software)	Two EEG\EMG\ECG @ 2048 samples/sec (hardware) / 1024 samples/sec (software)
Slow Channels	8. Eight are possible. Temp/SC take 2 slow channels. Resp takes 2. PPG takes 2. So some applications will fill 8 channels with 6 signals.	4. Four are possible. Temp/SC take 2 slow channels. Resp takes 2. PPG takes 2. So some applications will fill 4 channels with 3 signals.
Self-callibration	Yes	
A/D conversion	16 bit (64,000 step resolution)	
Input Impedance	10 Giga-ohms - ten billion ohms	
Common-mode Rejection	Greater than 100 DB	
Triple Notch Filter	50/60 Hz & 100/120 Hz & 150/180 Hz	
Maximum Bandpass	0.5 to 400 Hz	
Isolation, Optical	Tested at 4000 Volts AC	
Amplifier Failure Protection	50 µAmphers maximum	
Static Discharge Protection	±15,000 Volts	
Electrode Impedance Test	250 Ohms to 2 Mohms	
Battery Type:	Alkaline battery (4 x AA) rechargeable OK	
Battery life	75 cont. hours (aprox)	
Computer connection	USB built into unit	
Wireless option?	Future option	



Our sensors, by careful design, assure the highest standards for signal accuracy.

Our built-in impedance check assures the signals are artifact-free.

Amplifier Type:	Programmable internal (Narrow and wide band)
Can positive and negative leads be placed over wide areas without extra extenders?	Yes. EMG leads can be placed anywhere.
EMG Bandpasses	100Hz to 400Hz (narrow). 10Hz to 400Hz (wide) [other EMG bands are also possible in software]
Can positive and negative leads be placed over wide areas without extra extenders?	Monopolar or bipolar sensor packages. 3-lead grass electrode optional cable.
EEG Bandpass	1 to 64 Hz
ECG PROPERTIES:	Use EEG\EMG cables. Or use optional Gelless ECG wrist-to-wrist sensor bands cable.
Heart Rate Bandpass	1Hz to 400Hz
R Wave Filter & Detector	Single Beat Update built-in (reduces artifact)
Error correction	Built-in missing beat detector
IBI or HR Output	40 to 200 beats/minute
THERMISTOR PROPERTIES:	(See IR Temperature sensor for more sensitivity)
Temperature Range	60° to 100°F (15° to 38°C)
Thermistor Sensitivity	1/100 ° F resolution @ 16-bit (64,000 step) sensitivity
SKIN CONDUCTANCE PROPERTIES:	Sensors on velcro finger bands. One sensor is system ground as well.
Skin Conductance Range	0.5 to 200 μS (5K to 2000 KOhm)
Type Constant current	2 uAmps
PHOTOPLYTHSMOGRAPH PROPERTIES:	PPG sensor has built in microcircuit correction loop temperature sensor in sensor head. Ear or finger placement.
Type	Ambient-light correction built in to sensor circuitry
Receiver Circuit	Pulse-driven AC self-correcting loop (eliminates false signals)
Emitter wavelength	Narrow-band LED infra-red (sharp detection of blood flow signals)
PULSE TRANSIT TIME (PTT) PROPERTIES:	(PTT is encoded with 2 peak-detectors in our software)
Special peak detector monitors	Time delay between (1) ECG R-peak and (2) peripheral peak pulse.
RESPIRATION BAND PROPERTIES:	
Type:	Magnetic belt sensor. Adjustable band (no string or tubes to break)
Range	Linear distance range: 0 to 4" sensor-to-receiver (can detect heart pulse in chest position)
IR TEMPERATURE SENSOR PROPERTIES:	Built-in ambient temperature correcting circuit
Self-corrected thermal range	60° to 100°F (15° to 38°C)
Thermistor Sensitivity	1 / 100 ° F resolution (built in ambient temperature correction).
DC AMPLIFIER PROPERTIES:	DC Amplifier uses a microcircuit pre-amp in the sensor box.
Frequency range	.005 to 20 Hz (.005 eliminates DC artifact)
Hardware	C-2 Plus 12 Channel C-2 Plus 6 Channel
SOFTWARE PLATFORMS	
Factory Software Operating System:	Universal Sensor Environment V.3



PRICE COMPARISONS I: How much does a J&J Basic Startup Package really cost?

CALCULATING TOTAL PURCHASE PRICE:		From J&J Engineering, USA	
	Hardware	C-2 Plus 12 Channel	C-2 Plus 6 Channel
Basic Price (J&J includes basic sensor package):		\$3,195.00	\$1,995.00
Accessories in Basic Price Package:	Included in purchase price are 2 EEG/EMG/EKG sensors; 1 Temp/EDR Combo (Free):		
Applications in Basic Price Package:	6 Dual Channel Combos: EGG 2/EMG 2/ EEG + EKG(HRV), EMG + EKG(HRV) plus Temp,	12 ch has all 6 ch applications plus 4 EMG / 4eeg/ 4 person monitoring	
Theoretical Cost of J&J if Free Sensors were Subtracted from Price:		\$2,960.00	\$1,785.00
Extra EXG Sensor (Free with J&J)	ECG/EMG/EEG cable with ground (\$60)		\$0.00
Extra EXG Sensor (Free with J&J)	ECG/EMG/EEG cable (\$60)		\$0.00
Extra Temp and EDR Sensor (Free with J&J)	Temp/EDR sensor cable (\$60)		\$0.00
Extra Disposable Electrode pack (Free with J&J)	1 SE-15 electrode pack (\$35)		\$0.00
Free Applications and Software:	Free Web updates.		\$0.00
Cost of J&Js Free Basic Package if purchased seperately:	\$210.00 (free)		\$210.00 (free)
<u>Total Cost with Sensors Equal to J&J Basic Sensors (Real Cost of Basic User Packages):</u>		\$3,195.00	\$1,995.00
You will need to purchase additional sensors to do Respiration. You may want gelless ECGs. And you may want more than 2 Channels of EEG or EMG. Here is EXTRA cost of typicla additional sensors:			
Typical Additions (Add Cost to Basic System):	MC-3MY Resp + Y-adapter \$150.00		\$150.00
(1) Respiration			
(2) ECG	MC-5D Wrist-to-wrist, non-gel \$75.00		\$75.00
ONLY FOR 12-Channel:			na
(3) Two additional E-G cables for 4 channels	Two (2) MC-5SW E_G sensor, no gnd. \$60 x 2 = \$120		
Total additional cost of (1), (2), and (3):	J&J Extra Sensors Total: C2-PIs 6 = \$345		\$225.00
BOTTOM LINE? Cost of J&J if EXTRA Sensors were Added to Basic Sensor Price:		\$3,540.00	\$2,220.00

C2 Plus 12 Channel



C2 Plus 6 Channel



As of 11/27/06 J&J Engineering Basic Price List (before shipping & taxes)

Item	Item Code	Quantity	Price	Total	Description
C2 PLUS 6 Channel	C2+ 6	1	\$1,995.00	2	EEG/EEG/ECG + 4 Temp/EDR/Resp/PPG Channels
EEG/EEG/ECG	MC-5SGW	1	\$0.00	\$0.00	ECG/EMG/EEG electrode cable with ground
EEG/EEG/ECG	MC-5SW	1	\$0.00	\$0.00	ECG/EMG/EEG electrode cable
Temp/EDR	MC-6SY	1	\$0.00	\$0.00	Temp/EDR sensor cable
EMG Supply kit	SE-15, JE-24	1	\$0.00	\$0.00	1 SE-15 electrode pack, conductive cream & battery.
Software		1	\$0.00	\$0.00	Software and Manual on CD Rom
C2 PLUS 12 Channel	C2+12	1	\$3,195.00	4	EEG/EEG/ECG + 8 Temp/EDR/Resp/PPG Channels
EEG/EEG/ECG	MC-5SGW	1	\$0.00	\$0.00	ECG/EMG/EEG electrode cable with ground
EEG/EEG/ECG	MC-5SW	1	\$0.00	\$0.00	ECG/EMG/EEG electrode cable
Temp/EDR	MC-6SY	1	\$0.00	\$0.00	Temp/EDR sensor cable
EMG Supply kit	SE-15, JE-24	1	\$0.00	\$0.00	1 SE-15 electrode pack, conductive cream & battery.
Software		1	\$0.00	\$0.00	Software and Manual on CD Rom

OPTIONAL ITEMS: Select additional items you want for your C2+ and add to the purchase price:

Item	Item Code	Quantity	Price	Total	Description
Temp/EDR	MC-6SY	1	\$60.00	_____	Temp/EDR sensor cable
Finger electrodes	SE-35	1	\$9.00	_____	Velcro-banded snap on Finger Electrodes (pack of two)
Resp sensor & cable	MC-3MY	1	\$150.00	_____	Magnetic-field stretch sensor and waist band.
PPG sensor	MC-8Y	1	\$150.00	_____	Infrared emitter/sensor, finger blood volume pulse.
Non-Gel ECG kit	MC-5D	1	\$75.00	_____	Wrist-to-wrist ECG sensors, non-gel + wrist bands.
EEG Supply Kit	SE-20, SE-22A, JE-26	1each	\$50.00	_____	EEG electrode& collar pack & 10-20 jelly supply kit
EMG sensor + Gnd	MC-5SW	1	\$60.00	_____	\$60 for 1. Order 2 if running 4-channel EMG (no Grnd)
EEG sensor, no gnd.	MC-5S	1	\$35.00	_____	Single positive snap for EEG. Order 2 for EEG 3 & 4.
IR Temperature Sensor	MC-61Y	1	\$250.00	_____	Attach to head, limbs, or digits.
DC Amplifier Sensor	MC-1DC	1	\$250.00	_____	Requires 3 plug-in Grass electrodes per sensor.
Grass electrode adapter cable	TP-60	1	\$75.00	_____	For use with other vendors electrode sets (3 inputs)
Pelvic Adapter cable	MC-5PA	1	\$50.00	_____	Adapts pelvic sensors to J&J
Extension cable (6 foot)	MC-EX	1	\$40.00	_____	Male-to-Female Input extension cable (All sensors)

J&J Engineering Electrodes, Creams & Gels before shipping & taxes

Item	Item Code	Quantity	Price	Total	Description
EEG/EMG/ECG	JE-24	1	\$5.00	_____	Signa Cream conductive cream 5 oz
EEG/EMG/ECG	JE-26	1	\$6.00	_____	Ten-20 EEG paste 4 oz tube
EEG/EMG/ECG	SE-13	1	\$5.00	_____	Electrode pellets for MC-5DL/MC-5DGL/SE-22A(6 pack
EMG	SE-15	1	\$40.00	_____	Pack of 288 disposable EMG electrodes
EEG	SE-20	1	\$30.00	_____	Pack of 288 disposable EEG electrodes : plastic cup& pellet
EEG	SE-22A	1	\$15.00	_____	EEG Ear clip - pack of 2
EEG/EMG/ECG	SE-60	1	\$5.00	_____	Pre-gelled disposable electrodes for TP-60, pk of 3.
EDR	SE-35	1	\$9.00	_____	EDR finger electrodes - pack of 2
EEG/EMG	SE-55	1	\$28.00	_____	Pre-gelled 1-3/8" dia. disposable electrodes -pack of 100



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The Difference is in the Design

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J&J Engineering Order Form

Customer Information

Name:

(Name as appears on Credit Card, if used) MC/VISA

E-mail:

Phone:

Billing Address:

City:

State:

ZIP:

SHIPPING ADDRESS

Name:

Shipping Address:

#

Phone:

E-mail:

Fax:

City:

State:

ZIP:

Shipping instructions:

MC/VISA #

Exp date

ITEM	QUANTITY	UNIT PRICE	TOTAL
		TOTAL PURCHASE	
		TAX	
		SHIPPING	
		GRAND TOTAL	