

# Quark T12x

# Quark C12x

Stress Testing ECG



Diagnostic Quality 12-lead Stress Testing ECG available in telemetry or cable configuration

- ▶ Resting and Exercise ECG interpretation
- ▶ Full Disclosure ECG analysis
- ▶ ST segment, ST slopes, Trends
- ▶ Arrhythmia Analysis
- ▶ Standard and User defined Exercise Protocols
- ▶ Integration with COSMED Gas exchange equipment
- ▶ Patient Database & Network Compatibility



## Applications

COSMED Quark C12x and T12x are the ideal ECGs for monitoring patient care from prevention through rehabilitation. Ultimate quality ECG signal allows for the diagnosis of coronary artery disease, evaluation of patients after artery bypass surgery or angioplasty, document response to therapies, prevent from myocardial infarction.

If used combined with any COSMED gas exchange analysis equipment, Quark C12x or Quark T12x become the complementary tools that help clinician to quantify patient's functional capacity and evaluate cardiac response in athletes.

Quark T12x and C12x are used in:

- ▶ Cardiology
- ▶ Pneumology
- ▶ Rehabilitation
- ▶ Sport Medicine
- ▶ Primary care

## Stress Test ECG

COSMED's computer-based stress testing systems offer unparalleled flexibility. The **Quark T12x** with wireless technology or the **Quark C12x** with a traditional ECG patient cable meet the most advanced requirements for clinical exercise testing.

Powerful software allows full control over ECG acquisition, real time display, report configuration and printing. High resolution (500 samples per second) ECG processing produces an exceptionally clear on-screen display and allows detailed, reliable analysis of ST segments and subtle arrhythmia changes.

The COSMED Quark ECG system offers the ultimate in stress testing flexibility, bringing you the most efficient diagnostic quality ECG device available in the PC-based ECG market.

The main features are:

- ▶ Retrospective ECG and arrhythmia analysis even during test

- ▶ Full disclosure
- ▶ Scroll back during the test
- ▶ High resolution (up to 16,000 samples/sec) ECG processing;
- ▶ State of the art Digital RF Wireless technology
- ▶ On-line filtering and automated baseline correction
- ▶ Exceptional clarity of on-screen ECG;
- ▶ User defined, automatic print during test



Quark T12x (Wireless)

## Available versions

**Quark T12x** – 12-lead Wireless Stress Test ECG (Telemetry)

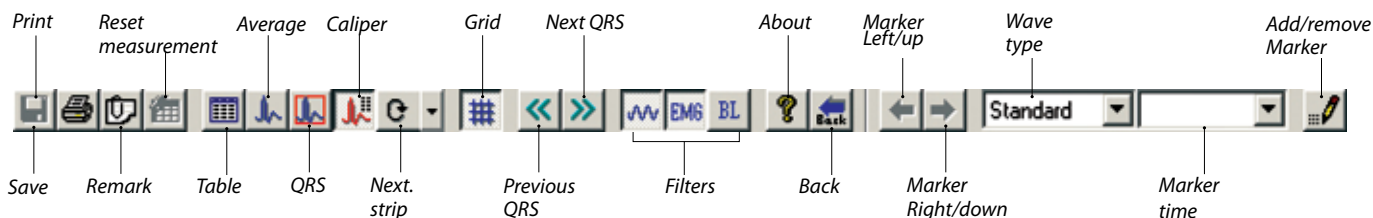
**Quark C12x** – 12-lead Patient Cable Stress Test ECG, with USB communication interface

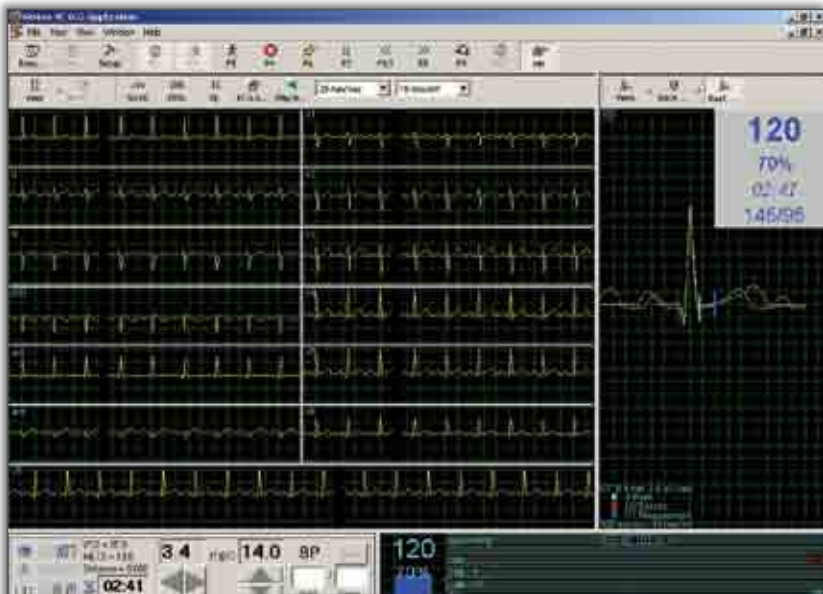


Quark C12x (USB patient cable)

## Software Features

- ▶ Automatic Arrhythmia detection, print and capture: VPB and SVPB
- ▶ Real time and retrospective J Point and Isoelectric identification
- ▶ Remote viewing anywhere on your local hospital network room
- ▶ Standard paper or thermal paper print options
- ▶ User initiated and automatic capture of events
- ▶ User defined Exercise Protocols
- ▶ Integration with COSMED Gas exchange equipment
- ▶ Predicted oxygen uptake and METS estimation
- ▶ Real time super imposition QRST complex
- ▶ Export formats: JPEG, XML, GDT, PDF

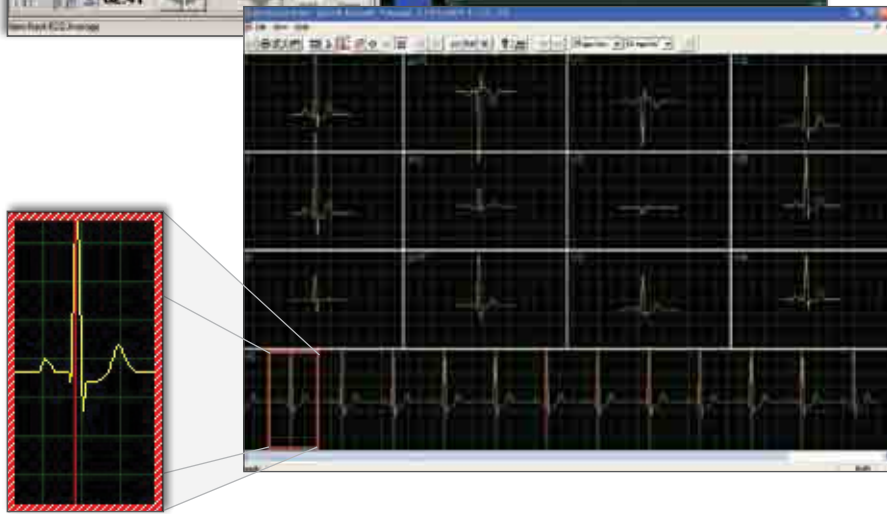




Quark C12x, direct USB connection to notebook



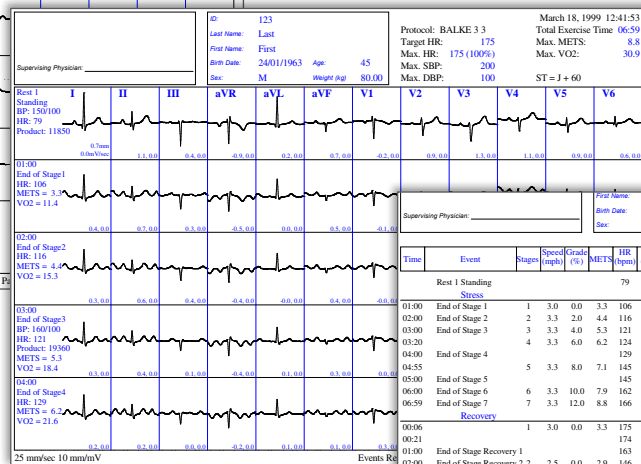
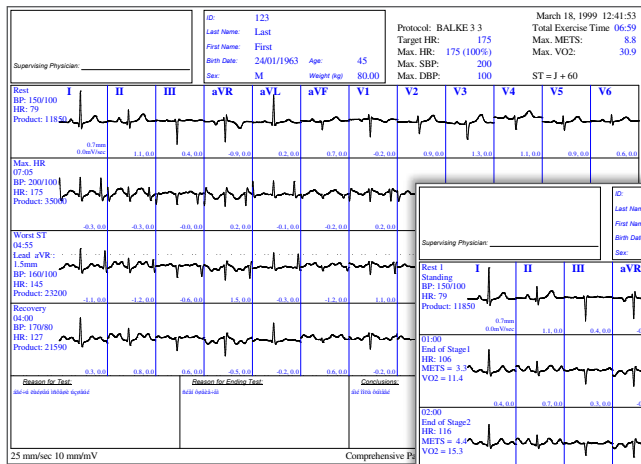
Integrated cardio-pulmonary exercise test: Quark C12x with Fitmate MED



Real time ECG display and scroll back of all leads, QRS complexes and trends



Integrated cardio-pulmonary exercise test: Quark C12x with a Quark CPET



| Time  | Event                   | Stages | Speed (mph) | Slope (%) | METS  | HR (bpm) | BP (mmHg) | Product | ST Level (mm, Slope (mV/sec)) |       |       |       |       |       |      |      |       |
|-------|-------------------------|--------|-------------|-----------|-------|----------|-----------|---------|-------------------------------|-------|-------|-------|-------|-------|------|------|-------|
| 01:00 | Rest 1 Standing         |        | 79          | 150/100   | 11850 | 0700     | 1100      | 0400    | -0900                         | 0200  | 0700  | -0200 | 0900  | 1300  | 1100 | 0900 | 0400  |
| 01:00 | End of Stage 1          | 1      | 3.0         | 0.0       | 3.3   | 106      |           |         |                               |       |       |       |       |       |      |      |       |
| 02:00 | End of Stage 2          | 2      | 3.3         | 2.0       | 4.4   | 116      |           |         |                               |       |       |       |       |       |      |      |       |
| 03:00 | End of Stage 3          | 3      | 3.3         | 4.0       | 5.3   | 121      | 160/100   | 19360   | 0300                          | 0400  | 0100  | -0400 | 0300  | 0000  | 0400 | 1100 | 1000  |
| 03:20 | End of Stage 3          | 4      | 3.3         | 6.0       | 6.2   | 124      | 160/100   | 19840   | 0300                          | 0600  | 0400  | -0400 | -0600 | 0500  | 0300 | 0100 | 0700  |
| 04:00 | End of Stage 4          |        |             |           |       | 129      |           |         |                               |       |       |       |       |       |      |      |       |
| 04:55 | End of Stage 5          | 5      | 3.3         | 8.0       | 7.1   | 145      | 160/100   | 23200   | -1100                         | -1200 | -0600 | -1500 | -0300 | -1200 | 1100 | 0200 | -0400 |
| 05:00 | End of Stage 5          |        |             |           |       | 145      |           |         |                               |       |       |       |       |       |      |      |       |
| 06:00 | End of Stage 6          | 6      | 3.3         | 10.0      | 7.9   | 162      |           |         |                               |       |       |       |       |       |      |      |       |
| 06:59 | End of Stage 7          | 7      | 3.3         | 12.0      | 8.8   | 166      | 200/100   | 33200   | -0400                         | -0800 | 0400  | 0200  | -0300 | 0100  | 0100 | 0300 | 0000  |
| 00:06 | Recovery                |        |             |           |       |          |           |         |                               |       |       |       |       |       |      |      |       |
| 01:00 | End of Stage Recovery 1 | 1      | 3.0         | 0.0       | 3.3   | 175      | 200/100   | 35000   | -0300                         | -0300 | 0000  | 0200  | -0100 | -0200 | 0200 | 0200 | -0400 |
| 02:00 | End of Stage Recovery 2 | 2      | 2.5         | 0.0       | 2.9   | 146      |           |         |                               |       |       |       |       |       |      |      |       |
| 03:00 | End of Stage Recovery 3 | 3      | 2.0         | 0.0       | 2.5   | 132      |           |         |                               |       |       |       |       |       |      |      |       |
| 03:46 | End of Stage Recovery 3 | 4      | 1.5         | 0.0       | 2.1   | 128      | 190/80    | 24320   | 0100                          | 0600  | 0600  | -0400 | -0200 | 0500  | 0200 | 0700 | 0400  |
| 04:00 | End of Stage Recovery 4 |        |             |           |       | 127      | 170/80    | 21590   | 0300                          | 0800  | 0600  | -0500 | -0200 | 0600  | 0200 | 0800 | 0700  |

Multiple printout report formats (single lead, all leads, full disclosure, sum up, trends, QRS, etc.)

# Technical Specification

## Quark T12x

## Quark C12x

### ECG Functions

|  |   |   |
|--|---|---|
| Resting ECG                                  | ● |   |
| Stress Testing ECG                           | ● |   |
| Resting ECG w/ Interpretation                | ● |   |
| Full Disclosure ECG Analysis                 | ● |   |
| Scroll-back during the ECG test              | ● |   |
| St Segment, St Slopes, Trends                | ● |   |
| Arrhythmia Analysis w/stress                 | ● |   |
| Integration w/ COSMED Gas Exchange Equipment | ○ |   |
| Heart Rate Variability,                      | ○ |   |
| User Defined Exercise Protocols              | ● |   |
| Patient Database & Network Compatibility     | ● |   |
| TTL Port For External Hr Trigger             | ● | ○ |

### Hardware

|                                     |                   |            |
|-------------------------------------|-------------------|------------|
| Standard Leads                      | AHA or IEC        | AHA Or IEC |
| Number of Electrodes                | 10                | 10         |
| Communication                       | Digital RF *      | USB        |
| Radio Frequency Range (Auto-select) | 2400 - 2483.5 Mhz | -----      |
| Rf Output Power                     | 0.4 mW            | -----      |
| Maximal Operational Distance (m)    | ~ 10              | -----      |
| Dimensions (cm)                     | 16x10x4.5         | 17x9x3     |
| Weight (g)                          | 350               | 300        |

### Standard Packaging Includes

ECG Unit, Pc Software, ASP Key, Patient Cable, Electrodes

### Available Languages

English, French, Spanish, German, Dutch, Italian

### Pc Configuration Required

Pentium Iii (1 Ghz), Ram Memory: 256 MB, Hd Free Space: 20 GB, USB Ports, Operating: Windows XP (Sp2)/Vista

### Electrical Requirements

|                     |                                      |                |
|---------------------|--------------------------------------|----------------|
| Batteries           | 4 - AA Alkaline or NiMH Rechargeable | -----          |
| Power Supply        | -----                                | Via USB (5V)   |
| Current Consumption | -----                                | < 200 mA ± 10% |

### Safety & Quality Standards

IEC60601-1; IEC60601-2-25; IEC60601-2-27;  
EN 60601-1-2 and EC11  
FDA 510(K) Cleared  
Federal Law Restricts This Device To Sale By Or On The Order Of A Physician



● Standard ○ Option

\*Quark T12x Wireless ECG Transmitter has been optimized for working in noisy EM Environments (Bluetooth, Wi-Fi Networks, Cellphones etc.). It includes an automatic Channel Shift Feature for selecting the optimal Transmission Channel.

Distributed by:



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