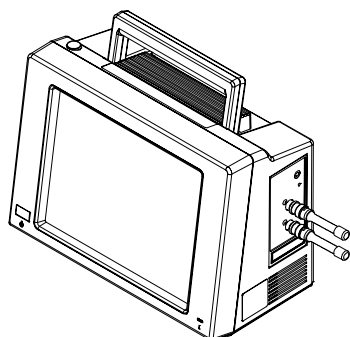
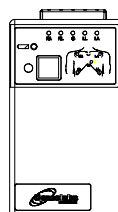


**90343**  
Digital  
Telemetry  
Multiparameter  
Transmitter

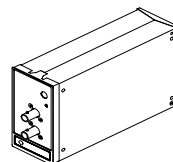
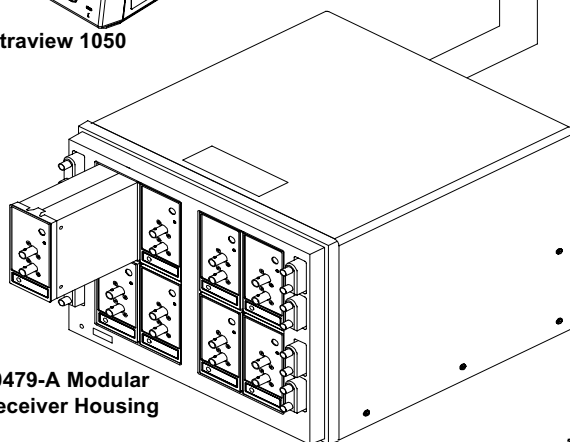
**90341/47**  
Digital  
Telemetry  
ECG  
Transmitter



**Ultraview 1050**

**Diversity Antenna System**

**90479-A Modular  
Receiver Housing**



**90478 Modular Receiver  
(option Q)**



**90217 ABP Monitor**

## **Ultraview®** **Digital Telemetry** **90341, 90343,** **90347, 90478-Q,** **90479-A**

- 608-614 MHz Wireless Medical Telemetry Service (WMTS) band.
- Approved to operate under FCC Part 95 rules.
- ECG and multiparameter transmitters.
- ECG, SpO<sub>2</sub>, and NIBP (optional) for ambulatory patients.
- Touchscreen control of all module functions and compatible with all Ultraview Care Network monitors.
- Lightweight, water resistant transmitters.
- Diversity antenna system.
- Tunable receiver module.
- Modular receiver converts bedside monitors to telemetry operation.
- Multi-lead ECG with ST segment analysis option; comprehensive arrhythmia and ST trending.
- Module Configuration Manager enables the hospital to customize the receiver's monitoring functions to specific patient populations, clinical protocols, or operating preferences.
- Graded alarm functions enables the hospital to define high, medium, or low alarm tones according to critical, warning, or advisory event severity.
- Quicknet™, portable monitor and receiver module, enables central surveillance of ambulatory patients outside antenna coverage.

## **SPECIFICATIONS**

### **ECG**

**Maximum Input** —  $\pm 4$  mV ( $\pm 10\%$ )

**DC Offset** — Up to  $\pm 300$  mV, with no more than 2% signal amplitude degradation

**Overdrive Recovery Time** — < 1 second circuit settling time with offset voltage < 500 mV

**Noise** — < 30 mV p-p, referred to input (rti), at 30 Hz bandwidth

**CMRR** — > 85 dB (monitor mode)

**QRS Detection** — Detects QRS complexes with durations of 40 to 120mS and amplitudes of 0.2 to 4.0 mV (adult) or 0.15 to 4.0 mV (neonatal)

# Ultraview Digital Telemetry 90341, 90343, 90347, 90478-Q, 90479-A

## SPECIFICATIONS

**Defibrillator Protection** — Meets IEC 60601-2-27, AAMI EC-13

**Resolution** — 2.5 mV per LSB, rti

**Input Impedance** — > 10 MW minimum differential at 10 Hz

**Gain Accuracy** —  $\pm 5\%$

**Pacer Rejection** — Baseline shift < 0.2 mV (measured at ECG x 1,000 output)

**Pacer Detection** — Detects pacer pulses of  $\pm 2$  mV to  $\pm 700$  mV with pulse widths of 0.2 to 2 msec and rise times 10% of width not to exceed 100 msec.

**Signal Bandwidth** — 0.05 to 30 Hz  $\pm 10\%$  (-3 dB)

**Sample Rate** — 120 samples per second

**Heart Rate Range** — 30 to 300 bpm. Heart rates > 300 bpm are displayed as “+++”.

**Heart Rate Alarm Limits** — High: 5 to 300 bpm, Low: 0 to 200 bpm. Alarms automatically enabled over a range of 40 (adult) or 100 (neonatal) to 300 bpm. Heart rates > 300 bpm are displayed as “+++”.

**Numeric Update Rate** — Every 3 seconds or immediately at the onset of an alarm.

**Trace Sweep Speeds** — 50, 25, 12.5 mm/sec

**Display Bandwidth** — Two settings: 0.5 to 30 Hz  $\pm 10\%$  (-3 dB) in monitor mode, and 0.05 to 30 Hz  $\pm 25\%$  (-3 dB at 50 mm per second) in extended mode.

## ST SEGMENT ANALYSIS

**Resolution** — 0.08 mm

**Range** —  $\pm 9$  mm (1 mV = 10 mm)

**Leads** — ST segment analysis continuously performed on up to seven leads.

**Alarms** — Single lead or multiple leads. Individual leads can be deselected. Alarms for absolute minimum and maximum ST levels; changes in ST level over the last 5 minutes.

**Displays** — ST values: minimum/maximum/current ST segment deviation and 5-minute averaged segments for the last 30 minutes.

**Measurement Points** — Adjustable ST, PR, and J Points

**Trends** — Up to 24 hours of trend data can be displayed in 1.5-, 3-, 6-, 12-, or 24-hour time tracks.

## SPO<sub>2</sub>

### SpO<sub>2</sub> Sensor Interface —

Red LED drive (max): 175 mA peak at 10% duty cycle

IR LED drive (max): 105 mA peak at 10% duty cycle

**SpO<sub>2</sub> Measurement Method** — Functional saturation (oxygen saturation of functional hemoglobin)

**SpO<sub>2</sub> Measurement Mode** — Continuous, episodic (2 minutes, 5 minutes, and 30 minutes) sampling intervals

### Measurement Accuracy (A<sub>rms</sub>) —

Established accuracy is the root-mean-square of the error between measured values and reference values obtained from a laboratory hemoximeter during adult human blood studies. Assuming a normal distribution, A<sub>rms</sub> encompasses 68% of the data population.

Adult: 70% – 100%  $\pm 3$   
0% – 69% unspecified

Neonatal: 70% – 100%  $\pm 3$   
0% – 69% unspecified

**Measurement Range** — 30 to 100% O<sub>2</sub> Saturation

**Saturation Resolution** —  $\pm 1\%$

**Pulse Rate Range** — 30 to 250 bpm

**Pulse Rate Resolution** — 1 bpm

### Saturation Alarm Limits —

High: 51% – 100%

Low: 50% – 99%

**Numeric Update Rate** — Every 2 seconds for continuous SpO<sub>2</sub> readings.

## NIBP

Refer to specifications for the 90217 ABP Monitor.

### Measurement Range (adult only) —

Systolic: 8.0 – 35.0 kPa  
(60 – 260 mmHg)

Diastolic: 9.0 – 27.0 kPa  
(30 – 200 mmHg)

Mean: 5.3 – 31.0 kPa  
(40 – 230 mmHg)

**Pressure Accuracy** —  $\pm 2\%$  or  $\pm 3$  mmHg (whichever is greater)

**Resolution** — 1 mmHg

**Time Between Readings** — selectable, from 6 to 120 minutes

## SPECIFICATIONS

**Alarms** — High and low alarms for all measured parameters

High:	8.0 – 35.0 kPa (60 – 260 mmHg)
Low:	4.0 – 27.0 kPa (30 – 200 mmHg)

## TRANSMITTERS (90341/43/47)

### ECG Data —

90343/90347: View 2 of 7 available leads from four vectors.

90341: View only 2 leads from 2 vectors.

Synchronized RF digital signal.

**Multiparameter Data** (90343 only) — SpO<sub>2</sub> (saturation, SpO<sub>2</sub> sensor status, pulse rate) and optional NIBP (systolic, diastolic, mean pressure, measurement time, alarm conditions) with the model 90217 ABP monitor.

**Additional Data** — Patient record, low battery indicator, pacer flag, patient ID code, and electrode connection status.

**Output Power** — 3mW EIRP, maximum

**Spectral Efficiency** — 0.11 bps/Hz

**External Indicator** — Yellow LED flashes when battery level is low

**Battery** — 9 V battery. Refer to *Table 1* for battery life expectancy

### Frequency Band Option —

-05: 608-614 MHz (WMTS)

**Electrode Configuration** — Individually replaceable DIN standard safety lead wires.

### Physical Dimensions —

#### 90343 (Multiparameter)

Height:	5.25 in (13.3 cm)
Width:	2.85 in (7.2 cm)
Depth:	1.18 in (2.9 cm)
Weight (w/out battery):	8.5 oz (241.0 gm)

#### 90341/90347 (ECG only)

Height:	5.25 in (13.3 cm)
Width:	2.85 in (7.2 cm)
Depth:	0.98 in (2.5 cm)
Weight (w/out battery):	6.78 oz (192.7 gm)

## MODULAR RECEIVER

**Module Configuration Manager** — Refer to the *Module Configuration Manager* chapter of the *Ultraview Care Network Operations Manual (PIN 070-1001-xx)* for complete feature specifications.

**Trends** — (With appropriate monitor option) 24 hours of trended data display in 1-, 2-, 6-, 12-, or 24-hour segments. Data are stored in 1-minute resolution.

### High Level Analog Output —

ECG 1:	Used for defibrillator synchronization
Connector:	3-conductor TT phone jack
Dynamic Range:	±5 mV (±10%), rti
Gain:	ECG x 1000 (±5%)
Bandwidth:	0.05 to 30 Hz (±10%) (-3 dB)

**Module Parameter Count** — This module counts as 1 or 2 parameters when computing parameter capacity for monitors

1 displayed ECG lead = 1 parameter

2 displayed ECG leads = 2 parameters

**Receiver Options** — The following system configuration options are available in the 90478:

**A** — Basic Arrhythmia: High and low heart rate, asystole and ventricular fibrillation (2 leads).

**B** — Multiview™ I Arrhythmia — Enables users to review trends of abnormalities per minute; provides additional alarms for abnormalities per minute and abnormalities in a row (2 leads).

**C** — Multiview II Arrhythmia — Enables users to review the dominant morphology as well as episodes or classes of ventricular fibrillation, ventricular tachycardia (runs), couplets, single abnormalities, tachycardia, pauses, ventricular and atrio-ventricular pacing; provides additional alarms for abnormalities in a row, abnormalities per minute, and tachycardia (2 leads).

**S** — ST segment analysis/review/trend (2 leads)

**Q** — Band operation, 608 to 614 MHz

**Ultraview  
Digital  
Telemetry  
90341,  
90343,  
90347,  
90478-Q,  
90479-A**

# Ultraview Digital Telemetry 90341, 90343, 90347, 90478-Q, 90479-A

## SPECIFICATIONS

### Electrical Requirements —

Power Consumption:	5.0 watts
External Indicators:	LED lights when user accesses control.
Sensitivity:	Usable ECG signal to -95 dBm

### Physical Dimensions —

Height:	4.46 in (11.32 cm)
Width:	2.24 in (5.68 cm)
Depth:	7.00 in (17.78 cm)
Weight:	2.4 lbs (1.11 kg)

## RECEIVER HOUSING (90479-A)

Accommodates up to 8 modular receivers.

### Physical Dimensions —

Height:	12.0 in (30.5 cm)
Width:	13.5 in (34.3 cm)
Depth:	17.5 in (44.5 cm) (includes protective cover)
Weight:	32.0 lbs (14.6 kg) (without modules loaded)

**Power Requirements —** 100–120 VAC, 50/60 Hz, 2A; 220–240 VAC, 50/60 Hz, 1A

## ENVIRONMENTAL REQUIREMENTS

### Operating —

Temperature:	50° to 104° F (10° to 40° C)
Humidity:	95% (non-condensing)
Altitude:	0 to 10,000 ft (0 to 3,030.3 m)

### Storage —

Temperature:	-40° to 149° F (-40° to 75° C)
Humidity:	100% (non-condensing)
Altitude:	-500 to 40,000 ft (-151.5 to 12,121.2 m)

Water Resistance:  
Meets EN60529 IPX1

## REGULATORY APPROVALS

All models are ETL listed and meet UL544 or UL2601-1 standard for electrical safety; approved by CSA. Models 90341, 90343, 90347, and 90478 approved by FCC (47CFR Part 95) and Industry Canada (RSS - 210, 608-614 MHz operation only).

International - Consult your local Spacelabs Medical Sales Representative.

## ACCESSORIES

Please refer to the Spacelabs Medical Supplies Catalog for availability of ECG lead wires and electrodes, blood pressure cuffs, and SpO<sub>2</sub> sensors from Spacelabs Medical.

90341/90343/90347 Transmitter Pouch  
**Part Number:** 015-0500-00

DIN Standard Safety ECG Lead Wire Set  
(5 wire) 25.2" snap  
**Part Number:** 012-0605-00

Receiver Housing Protective Cover  
**Part Number:** 200-0180-00

Whip Antenna (UHF)  
**Part Number:** 117-0040-00

Belt Clip  
**Part Number:** 344-0020-00

SpO<sub>2</sub> Adapter Cable (Nellcor)  
**Part Number:** 700-0014-00

ABP Telemetry Adapter Cable  
**Part Number:** 700-0015-00

ABP Pouch  
**Part Number:** 015-0501-00

ABP Shoulder Strap  
**Part Number:** 016-0262-00

ABP Waist Belt  
**Part Number:** 016-0080-00

ABP Report Management System  
**Part Number:** 90121ABP Report

Management System Adaptor Cable  
**Part Number:** 012-0097-02

ABP Adult Adapter Assembly  
**Part Number:** 714-0017-00

Nellcor Reusable SpO<sub>2</sub> Sensors  
**Part Numbers:** 690-0003-00  
690-0004-00  
690-0039-00

Nellcor Disposable SpO<sub>2</sub> Sensors  
**Part Numbers:** 690-0006-00  
690-0006-00  
690-0007-00  
690-0001-00  
690-0005-00  
690-0002-00

## SPECIFICATIONS

Table 1: Transmitter Battery Service Life<sup>1</sup> (hours)

Battery Type	9-Volt Alkaline (ANSI/NEDA 1604A)					9-Volt Lithium (ANSI/NEDA 1604LC)				
Load Conditions <sup>2</sup>	ECG Only	ECG and Continuous SpO <sub>2</sub>	ECG and 2-minute Episodic SpO <sub>2</sub>	ECG and 5-minute Episodic SpO <sub>2</sub>	ECG and 30-minute Episodic SpO <sub>2</sub> and NIBP	ECG Only	ECG and Continuous SpO <sub>2</sub>	ECG and 2-minute Episodic SpO <sub>2</sub>	ECG and 5-minute Episodic SpO <sub>2</sub>	ECG and 30-minute Episodic SpO <sub>2</sub>
90343	48	24	36	38	40	120	60	100	104	106
90341/90347	52	N/A	N/A	N/A	N/A	132	N/A	N/A	N/A	N/A

<sup>1</sup> Operational service life (in hours) assuming a new alkaline battery (minimum 580 mAh capacity) or lithium battery (minimum 1200 mAh capacity) used until the local low battery indicator begins to flash.

<sup>2</sup> NIBP operations from a 90217 ABP Monitor sending readings to the 90343 Multi-parameter telemetry transmitter. The 90217 ABP monitor will inflate a standard size adult cuff at least 240 times with alkaline batteries.

Medical telemetry spectrum allocations may be assigned to frequencies already allotted to other priority users. This means that telemetry operations may be exposed to radio frequency interference that may disrupt or impede telemetry patient monitoring. Additionally, medical telemetry spectrum allocations may be changed by government action and Spacelabs Medical accepts no responsibility for such changes, including the possibility that the product may not operate in the modified permissible spectrum ranges other than those expressly set forth in Spacelabs Medical's published product data sheets. Spacelabs Medical cannot, and does not, guarantee interference-free telemetry operation.

Operation of this equipment in the U.S. Wireless Medical Telemetry Service (WMTS) bands requires coordination and registration with the FCC designated frequency coordinator.

**Ultraview  
Digital  
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# Ultraview Digital Telemetry

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90343,  
90347,  
90478-Q,  
90479-A**

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All specifications are subject to change without notice.

[www.spacelabs.com](http://www.spacelabs.com)

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174.00 - 216.00 MHz