GE Measurement & Control

COMMTEST220
Product Datasheet

Bently Nevada* Asset Condition Monitoring

Approvals Pending

Description

COMMTEST220 is a portable data collector solution that caters to non-hazardous environments. You can use this small form-factor, rugged device to take vibration recordings and upload the collected data for detailed analysis in System 1* Evolution.

The data collector works in tandem with the S1 Collector app which runs on an industrial smartphone handheld device. You can collect vibration data, take pictures, send text messages, check your email, make phone calls and run other apps all on a single device.

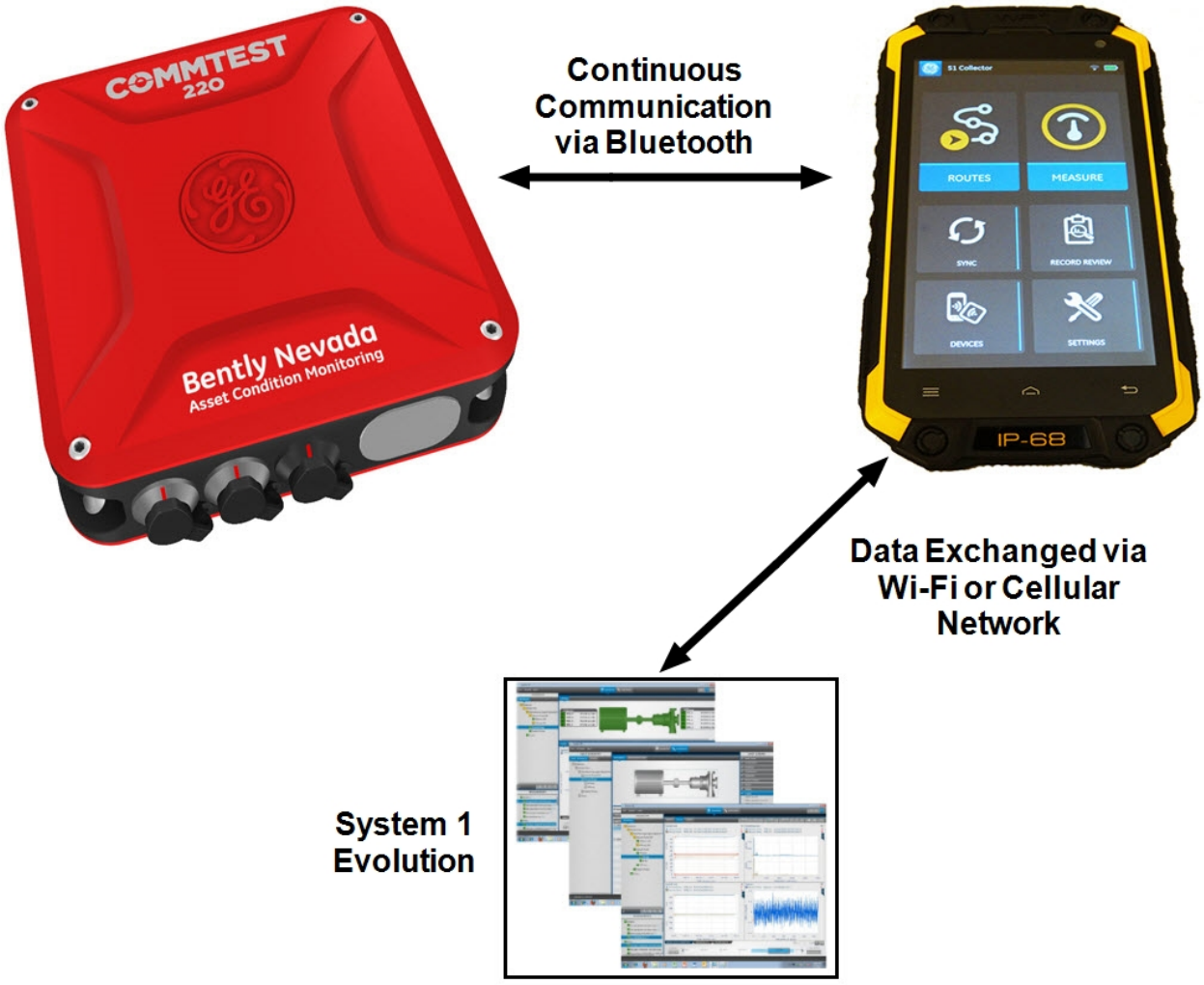
The data collector uses Bluetooth to communicate with the industrial handheld . The S1 Collector app exchanges data with System 1 Evolution via Wi-Fi or a cellular network.

You can set up your routes in System 1 Evolution and sync up the data with the app using remote communication servers.

The industrial handheld eliminates the need for a PC or other software packages at the data collection site. It is the only device you need to receive routes and send collected data from the field.

You can take recordings from a predefined route as well as off-route recordings that are not part of a route sequence. Off-route recordings may be necessary if a machine's vibration pattern does not meet your expectations.

The data collector has a neck strap with Sensor Keeper as well as detachable safety breakaways to protect you in case the cables are caught in rotating machinery. The integrated Sensor Keeper will retain your sensor while you walk or climb to reach other machines.


COMMTEST
220
Bently Nevada
Asset Condition Monitoring
Continuous
Communication
via Bluetooth
S1 Collector
ROUTES
MEASURE
SYNC
RECORD REVIEW
DEVICES
SETTINGS
IP-68
Data Exchanged via
Wi-Fi or Cellular
Network
System 1
Evolution

COMMTEST220 Specifications

Sensors

Sensor input	2 Channels, Simultaneous sampling
Compatible sensor types	Accelerometer, Velocity & displacement
AC coupled range	16 V peak-peak Allows for ± 8 V sensor output swing (± 80 g)
DC coupled ranges	0 to 20 V, -10 to 10 V, -20 to 0 V
Connectors	2 x LEMO connectors for CH1 & CH2 1 X LEMO connector for Tach/Keyphasor All three cables have safety inline break-free connectors.
Analog to digital conversion	24-bit ADC
Sensor excitation current	0 mA or 2.2 mA (configurable), 24 V maximum 2.2 mA required power for IEPE/ICP-type sensors
Sensor detection	Measures sensor bias voltage Warns if short circuit or not connected

Tachometer

Optional laser Tach	Laser sensor powered by COMMTEST220 Triggers when beam on reflective tape Range 10cm to 2 meters Speed 6 to 250K rpm
Other sensor types supported	Contact, TTL Pulse, Keyphasor*
Power supply to sensor	5 V, 40 mA Rated for Zone 2 only
Input Impedance & max values	100 KΩ ± 28 V max
Tach/Keyphasor threshold	Auto
Speed range	6 RPM to 1200 000 RPM (0.1 Hz to 20 kHz) Pulse width at least 0.01 ms
Accuracy	± (0.1 % + 1 cpm)

Parameter Indication

Dynamic signal range	> 95 dB typical at 400 line resolution
Harmonic distortion	Less than -70 dB typical Other distortions and noise are lower
Units	g or m/s2 in/s or mm/s mil or mm or µm 0-peak, peak-peak or RMS auto-scale by 1000x when required
Magnitude & cursors	Overall RMS value Waveform True pk-pk Dual cursors Digital readouts on chart
Base accuracy	± 1% of readings approximately 0.1 dB
High frequency attenuation	≤ 0.1 dB 100 Hz to 10 kHz ≤ 3 dB >10 kHz to 40 kHz Attenuation tolerances are in addition to base accuracy.
AC coupling attenuation	≤ 0.1 dB 10 Hz to <100 Hz ≤ 3 dB 1 Hz to <10Hz
Attenuation due to Integration	≤ 0.1 dB 10 Hz to <100 Hz ≤ 1.5 dB 1 Hz to <10 Hz Values apply to single integration (Acceleration to velocity) Double the values for double integration (Acceleration to displacement)

Spectrum Display

Fmax ranges	25, 50, 100, 125, 150, 200, 300, 400, 500, 600, 800, 1000, 1200, 1600, 2000, 2500, 3000, 4000, 5000, 6000, 8000, 10,000, 15,000, 20,000, 30,000, 40,000 Hz Or equivalent CPM values Or orders-based from 1X to 999X
Fmin possible range	0 to Fmax Instrument zeroes all spectral lines below Fmin.
Resolution	400, 800, 1600, 3200, 6400, 12800 lines 3200 lines max. for dual channel measurements
Frequency scale	Hz, CPM, Orders Linear scale with zooming
Amplitude scale	Acceleration, velocity, displacement Linear auto scaling
Window shapes	Hanning Rectangular
Overlap	(0, 12.5, 25, 37.5, 50, 62.5, 75, 87.5) % Dependent on Fmax and number of lines
Number of averages	1, 2, 4, 8, 16, 32, 64, 128 Increases sampling time proportionally
Averaging types	Linear, exponential, peak hold
Demodulation bandwidths	23 bandwidth options From 125 Hz to 1250 Hz **up to** 16 kHz to 20 kHz
6Pack	Up to 40 kHz & 3200 lines (1 channel) Up to 20 kHz & 1600 lines (2 channels) Spectrum and waveform for low-frequency, high-frequency demodulation

Waveform Display

Number of samples	1024, 2048, 4096, 8192, 16,384
Time scale	10 ms to 256 seconds or orders based from 1 to 999 revs

Battery & Charger

Battery type	Custom Lithium Ion pack, 7.4 V, 4000 mAh Not user accessible but factory replaceable
Operating time	10 hours Typical on-route data collection
Charger type	Internal charging, automatic control External power pack 12 V DC, 3 A output
Charge rate	2 A nominal 3 hours for complete charge

Communication

Bluetooth	BT 4.0 Classic, not Bluetooth low energy

Mechanical

Size	5.1" W x 5.1" L x 1.4" H 130 x 130 x 35 mm
Weight	1.4 lb (650 g)

Environmental Limits

Operating temperature	-4 °F to 140 °F (-20 to 60) °C
Storage temperature & humidity	-4 °F to 140 °F (-20 to 60 °C), 95% RH If storage exceeds 1 month: Up to 95 F (35 °C), 85% RH
Ruggedness drop & sealing	4' (1.2 m) drop onto concrete, IP67 Procedure: 26 drops following MIL-STD-810F-516.5-IV

Compliance & Certifications

EMC	EN61326-1, EN61326-2-3 Commercial emissions Industrial immunity

Industrial Handheld Specifications

BCom SA-SM14	Part Number 109M2379
Display	4.5" 1280x720 High brightness
Mobile	WCDMA, GSM, dual SIM
Wireless	Wi-Fi 802.11 b/g/n, BlueTooth 4.0
Cameras	8MP back, 2MP front
Sensors	GPS, Accel, Gyro, Compass, Light
OS	Android 4.2
CPU	Quad core 1.5 GHz
Memory	1GB RAM, 3 GB + 32 GB micro SD
Battery	Li-Ion 2200 mAhr
Size	76 x 148 x 18 mm, 209 g
Ruggedness	IP68, MIL-STD-810G, -20 to 55C

Ordering Information

COMMTEST220-AXX-BXX

A: Handheld Options
- **00** None
- **02** BCom SA-SM14

B: Approval Options
- **00** None

Metrology certification is available with your order.

Basic Kit

We offer COMMTEST220 in a basic kit with the option to purchase the System 1 Evolution software and license separately. Additional accessories are also available.

Basic Kit

Part Number	Description	Quantity
	S1 Collector app	1
109M2390	COMMTEST220 Data Collector	1
109M2379	BCom SA-SM14 Optional industrial handheld	1

Included Accessories in Basic Kit

Part Number	Description	Quantity
108M4044	AC power adapter	1
109M2382	DC car adapter	1
109M2381	Top exit accelerometer	1
ACCL0561	Side exit accelerometer	1
109M2383	Coiled cable with breakaways LEMO	2
MAGF0104	Accelerometer magnetic base	2
109M2385	BNC to silver-LEMO cable The cable connects rack buffered outputs to CH1/CH2 inputs.	2
TTL70259	BNC to black-LEMO cable The cable connects rack buffered Keyphasor to Tach input.	1
NKST0553	Neck strap with Sensor Keeper	1
109M2386	Hard carrying case	1
Bently_ Manuals	Bently Nevada product manuals on DVD	1

The following documents are available on **Bently_Manuals DVD** which is shipped with the product.

109M0792	Datasheet
109M1269	Installation & Operation Manual
109M1270	Quick Start Guide

Optional Accesseries

3071/01	System 1 Evolution software and license
109M2391	Laser **Tach** powered by COMMTEST220
CBL50216	5-meter laser Tach **cable** for 109M2391
RTAP0094	Reflective tape One roll, 60 cm (23.7 in)
109M2378	BCom Ex-SM14 Industrial handheld with IS rating

All accessories included in the basic kit may also be ordered separately.

© 2015 General Electric Company. All rights reserved.
* Denotes a trademark of Bently Nevada, Inc., a wholly owned subsidiary of General Electric Company.
Printed in USA. Uncontrolled when transmitted electronically. The information contained in this document is subject to change without prior notice.
1631 Bently Parkway South, Minden, Nevada USA 89423
Phone: 1-775.782.3611 Fax: 1-775.215.2873
www.GEmeasurement.com