



## SERVICE BULLETIN

S.B. NO. TR-220 01-2007

### Optional Software update to the TR-220 Test Set

All TR-220 Test Sets

Date of Service Bulletin

Sep 04/07

#### **REASON:**

To provide owners and operators of the Tel-Instrument Electronics Corp. TR-220 Test Set with information regarding a software upgrade that is available to add additional functionality and capability.

Tel-Instrument Electronics Corp periodically updates the software to reflect customer requests, add enhancements, or correct minor bugs and anomalies. A new Software release for the TR-220 Test Set will provide the Operator/Owner with additional functions improving the overall capability and performance.

Added testing capabilities are as follows and detailed in Paragraph 2.

- "JITTER" Tests.
- "REPLY DELAY" Test.
- "PULSE WIDTH" Test.
- "PULSE AMPLITUDES" Test.

## 1. EFFECTIVITY

This Service Bulletin applies to all TR-220 Test Sets.

All TR-220 Test Sets are eligible for this upgrade. This is not a free upgrade, nominal charges will apply.

## 2. PURPOSE

This Service Bulletin describes the improvements that were incorporated and instructions on how to have the Service Bulletin installed.

Tel-Instrument Electronics Corp. has upgraded the software to include the following Changes:

- a. Perform "REPLY DELAY" Test. The reply delay is displayed with a 'P' if the time is within the specification of  $128 \mu\text{sec} \pm 0.25\mu\text{sec}$ , if not an 'F' is displayed
- b. Perform "JITTER" Test. The maximum timing jitter is measured and should be less than 100 nsec. "PASS" is displayed if jitter is below limit and "FAIL" if jitter is above limit..
- c. Perform "PULSE WIDTH" Test. Pulse width is measured and compared to pulse width specification (0.5 or 1.0  $\mu\text{sec}$ ) with a tolerance of +/- 50 nsec. "PASS" or "FAIL" indication is given.
- d. Perform "PULSE AMPLITUDES" Test. Measure and verifies amplitude of pulses in P6 reply are within 2 dB of each other (PASS or FAIL).

## 3. CORRECTIVE ACTION

Work to be performed requires the replacement of the preprogrammed memory chip containing the current Software revision and minor changes to the hardware to accommodate the new test capabilities.

Field Kits will not be made available and all work must be performed by Tel-Instrument or a "**CERTIFIED**" Distributor.

This is an upgrade to functionality and not required, it is recommended that this Service Bulletin be installed during the Test Sets next scheduled calibration.

If an owner/operator desires to have the upgrade incorporated before the next calibration cycle, see paragraph "a" for instructions.

a) **PROCEDURES**

Print a copy of this Service Bulletin and ensure a copy is sent with the Test Set when shipping.

Test Sets should be sent to the following CERTIFIED Service centers for upgrade:

Conus: **Tel-Instrument Electronics Corp.**  
728 Garden Street  
Carlstadt NJ 07072

Europe: **Muirhead Avionics**  
Esterline Corporation  
Mallory House  
Navigator Park  
Southall Lane Southhall  
Middlesex UB2 5NH  
England  
[+44] 20-8571-3422  
[+44] 20 8843 6903 (fax)

AUS Region:

**Mil Spec Services**  
151 Currumburra Rd  
Ashmore, QLD 4214  
Australia  
[+61] 7-5557-9700

Total Charges \$825.00 USD (Includes Calibration and Alignment).

All Shipping, Customs and Broker fees are the responsibility of the owner/operator.

Additional Charges may apply if repairs are required; an estimate of repair will be sent to each customer for approval before any repair above and beyond the Software upgrade is completed.

4. **COMPLIANCE**

Installation of this Service Bulletin is *NOT* mandatory and not required. Only customers formally requesting the upgrade will receive this if the Test Set is returned to Tel-Instrument Electronics Corp for Calibration and Repair services.

5. **PUBLICATIONS AFFECTED**

The TR-220 Operational Manual has already been updated to reflect the new tests. Additional Changes to the IPB and Calibration Procedure are under development with a release date TBD.

**6. FURTHER INFORMATION**

You may contact Tel-Instrument Electronics Corp. at any time for further information regarding this procedure and change.

Tel-Instrument Electronics Corp.  
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(201) 933-1600  
[www.telinstrument.com](http://www.telinstrument.com)