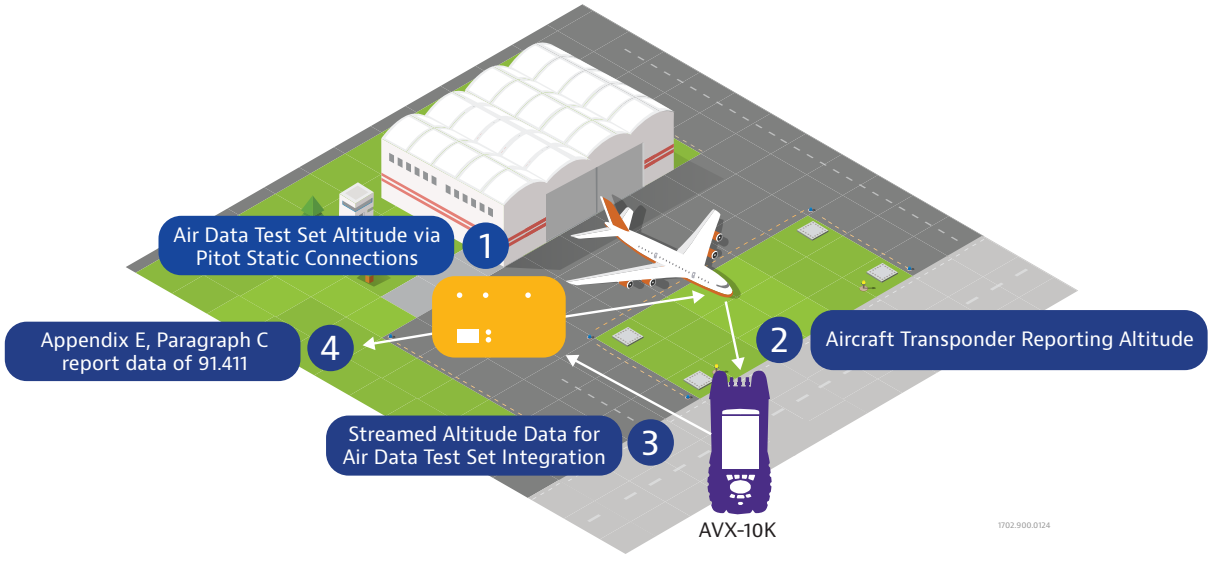
VIAVI Solutions

Application Note

AVX-10K Altitude Streaming Feature

The current 14 CFR § 91.411 process is time-consuming and labor intensive, requiring a technician to verify the reported transponder altitudes for each measured altitude setting. With the new altitude streaming feature of the AVX-10K, air data test set manufacturers can integrate this feature into their process and relieve the technician of this manual step.

With this integration, the altitude checks of the 91.411 process can be fully automated. This, along with the FAR43 transponder test report from the AVX-10K, provides the perfect solution for combined 91.411 and 91.413 testing.



Now, when the Air Data Test Set program is stepping through the various altitudes, instead of asking the user for verification of the transponder reported altitude (Mode C responses), the streamed data from the AVX-10K can be used. Talk to the provider of your Air Data Test Set to find out if they have integrated this new VIAVI feature into their test application!

Details on Running Encoder Test as Standalone Configuration

With AVX-10K software versions 4.0 and higher, Altitude Encoder testing can be accomplished as a standalone operation. The captured transponder data can be streamed to an external application that can then integrate Air Data Test set operation with data received from the transponder. The purpose for this is to help automate the FAR Part 91.411 and FAR Part 91.413 testing. This integrated closed-loop testing is outside of the scope of operation of the AVX-10K. The AVX-10K is simply a provider of captured transponder data.

Most manufacturers will use the direct connect method utilizing the USB port on the side of the AVX-10K using USB to serial adapters and a serial crossover cable. A wireless connection method is also supported.

To start this process, select **Altitude Encoder** from the Test Configuration of the XPDR-Auto application.

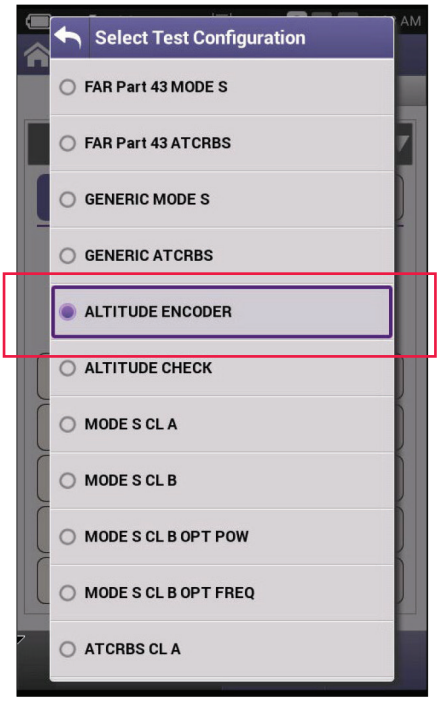


Figure 1: Test Configuration page

Once all of your setup parameters are adjusted, click the **RUN** button to begin capturing transponder data.
To enable external data streaming via either of the USB ports, connect your crossover serial cable to your device and then press the **Enable Altitude Streaming** softkey.

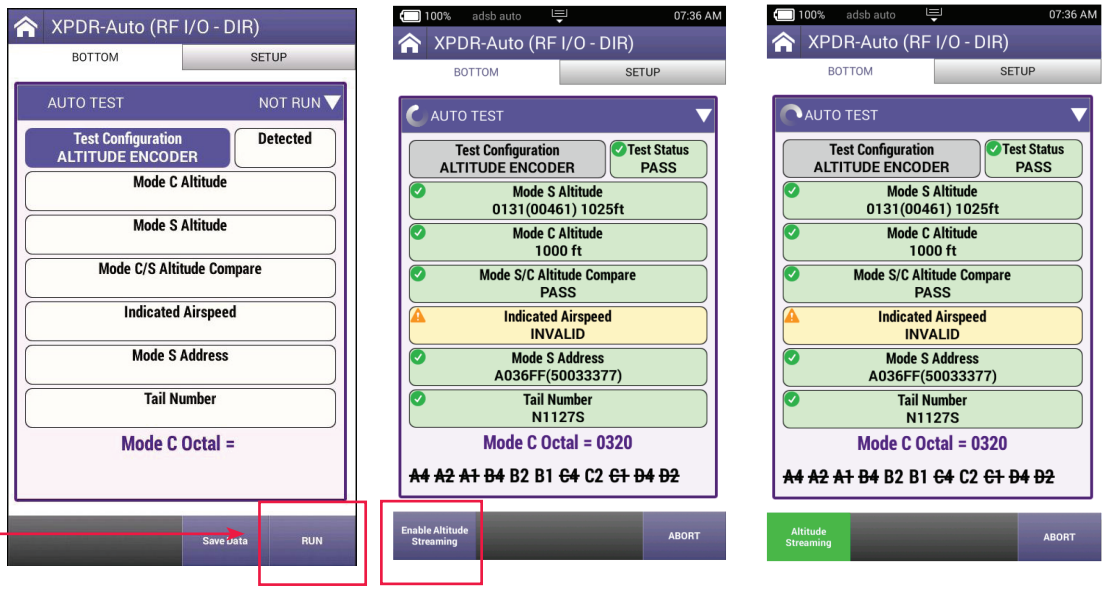


Figure 2: Altitude Encoder pages

NOTE: It is good practice to turn off the streaming feature prior to disconnecting the USB serial cable.

This will provide the captured data to be broadcast via the USB port in a JSON format. An example of the captured data is shown here for reference:


```
{
  “Timestamp”: “07\/10\/2023 02:01:55,715 pm”,
  “Altitude”: [
    {
      “ModeC”: “2000 ft”,
      “ModeS”: “01B9(00671) 2025ft”
    }
  ],
  “Airspeed”: [
    {
      “Indicated”: “INVALID”
    }
  ],
  “ModeS”: [
    {
      “Address”: “A036FF(50033377)”,
      “TailNumber”: “N1127S”
    }
  ]
}
```


VIAVI Solutions

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