Axiom RVT

Smart Datalogger for Extreme Environments

RVT Reference Manual

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700-Axiom-RVT Reference – Rev. 1, 13 Mar 2014

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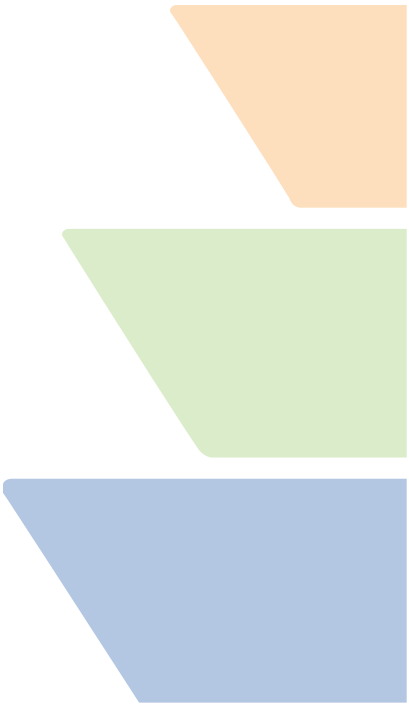

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1.1 *Introduction*

RVT enables a datalogger to broadcast voice messages over radio about important conditions in the datalogger. Messages can contain values measured and recorded by the datalogger. Messages can be sent either in response to radio-transmitted demands or automatically when the datalogger detects a user-defined alert condition.

RVT is compatible with any PTT (push-to-talk) radio, on any band.

RVT can manage many messages and alert conditions. All messages and conditions are defined by the user via a RVT configuration file.

1.2 *"RVT" vs. "AirTalk"*

RVT is the first (and quite different) release of the FTS radio voice messaging system whose current release is known as AirTalk. This chapter documents the first-generation RVT system for those customers who have it.

> NOTE: If you have AirTalk, please see the AirTalk Reference Manual.

1.3 *Main Screen - Status*

The **RVT Status** screen is displayed when the **Status** button associated with the RVT transmitter on the **Telemetry** screen (usually on tab **Telem B**) is pressed. The **RVT Status** screen provides an interface for the user to configure the RVT settings. The **Get** and **Send** buttons are used to upload and download configuration files to and from the RVT. The **Save** and **Load** buttons are used to store and retrieve configuration files from a USB flash drive or the datalogger memory.

> **IMPORTANT!** RVT configuration files are always type .txt

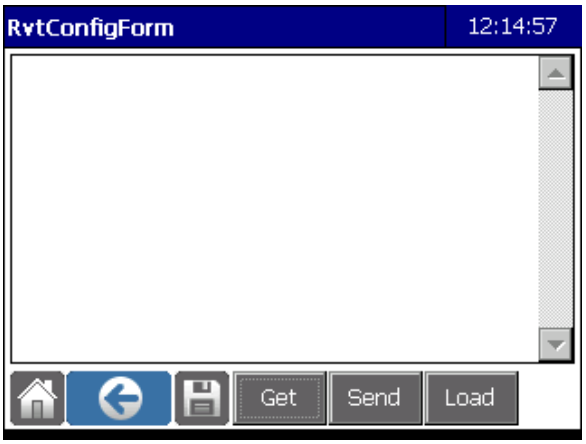

Figure 1: RVT Config Form

1.3.1 Get Configuration

The **Get** button on the **RVT Status** screen is used to download the connected RVT's current configuration file to the datalogger. The retrieved configuration is displayed on the **RVT Status** screen (Figure 2). It is recommended that the retrieved RVT configuration be saved to a file (either on the datalogger or on a USB memory stick) so that the user can revert to the original configuration if required.

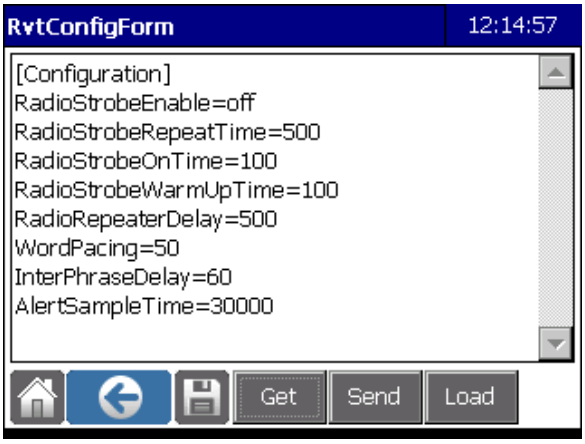

Figure 2: RVT Config Form - Get Configuration

1.3.2 Send Configuration

The **Send** button is used to upload the configuration file displayed on the **RVT Status** screen to the connected RVT. When uploading the file to the connected RVT a 'please wait' message is displayed followed by the message shown in Figure 3. If an error is displayed, the user should re-try the upload process. The error may be due to the tight timing requirements between the RVT and the datalogger and this timing may have been affected by normal datalogger or RVT operation.

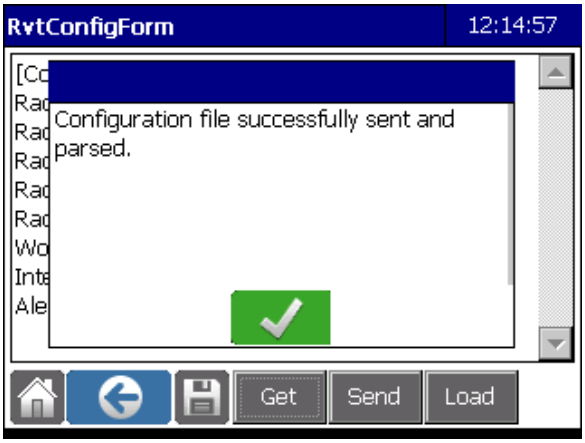

Figure 3: RVT Send Configuration confirmation

1.3.3 Save Configuration

The **Save** button on the **RVT Status** screen is used to store the displayed RVT configuration to a file on the USB memory stick or datalogger memory. The user is required to specify a filename after pressing **Save** (Figure 4).

The Save process defaults to the USB memory stick if a memory stick has been inserted in the datalogger. The save to file path for the USB memory stick is **Logger Type\Station Name\RVT\.** If there is no USB memory stick inserted then the Save process defaults to the RVT folder on the NandFlash.

The file path which the RVT configuration will be save to is located at the top of the screen. Users may change the "save to" directory on the USB memory stick or select to save the file to the datalogger NandFlash; this is done by going up levels in the file structure and choosing the desired path (click "..\" to go up a level in the filepath).

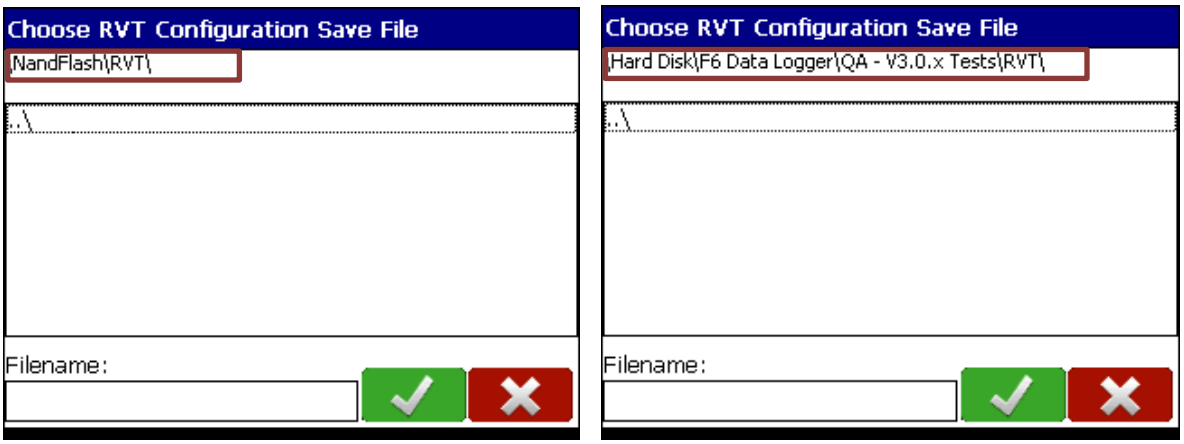

Figure 4: RVT Configuration Save Filename

1.3.4 Load Configuration

The **Load** button is used to retrieve an RVT configuration file from the USB memory stick or datalogger memory. The user is required to select a file after pressing **Load** (Figure 5). The Load process defaults to the USB memory stick if a memory stick has been inserted in the datalogger (filepath: **Logger Type\Station Name\RVT**) otherwise the default location is the datalogger memory (filepath: **NandFlash\RVT**). The newly loaded file appears on the **RVT Status** screen, it can then be uploaded to the RVT using **Send**.

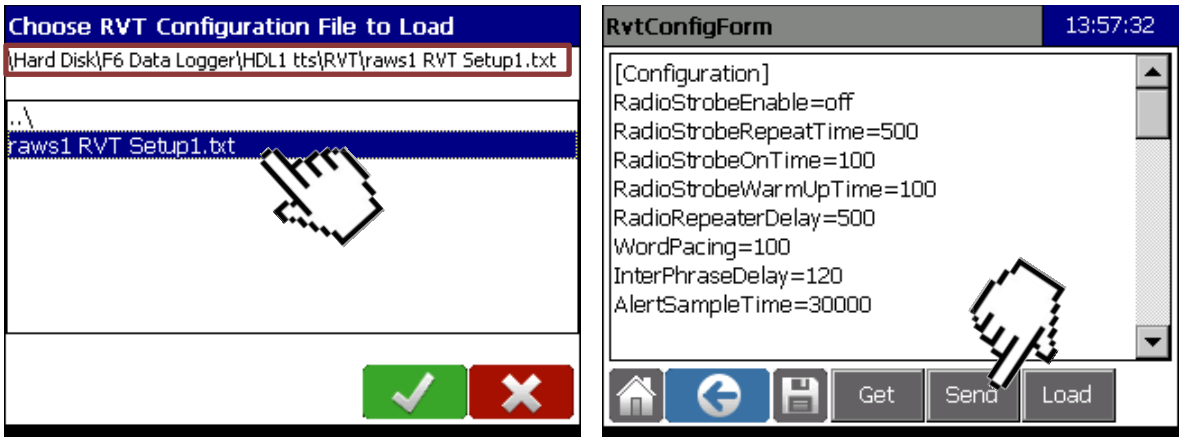

Figure 5: RVT Load Configuration File

1.4 *Editing an RVT Configuration*

An RVT configuration file can be edited on the datalogger or the file can be edited externally using any text editor. The RVT configuration makes reference to variables in the datalogger program. In order to configure the RVT you should have a working knowledge of the datalogger's operation. RVT response to DTMF codes can be easily modified or added. Also, new Alerts can be defined in conjunction with the datalogger configuration.

1.4.1 RVT Configuration File Format

A typical RVT configuration file is shown below. The file is divided into four sections: Configuration; Phrases; Responses; and Alerts.

```
[Configuration]
RadioStrobeEnable=off
RadioStrobeRepeatTime=500
RadioStrobeOnTime=100
RadioStrobeWarmUpTime=100
RadioRepeaterDelay=500
WordPacing=50
InterPhraseDelay=60
AlertSampleTime=30000

[Phrases:English]
SN=STATION NUMBER (Station)
AT=AIR TEMPERATURE (Temp) DEGREES
RH=HUMIDITY (Rh) %
WS=WIND SPEED (Wspd) MILES PER HOUR
WD=WIND DIRECTION (Dir) DEGREES
FM=FUEL MOISTURE (FSM) %
FT=FUEL TEMPERATURE (FST) DEGREES
PWS=PEAK WIND SPEED (PkWS) MILES PER HOUR
PWD=PEAK WIND DIRECTION (PkWD) DEGREES
RN=RAIN (RNIN) INCHES
SR=SOLAR RADIATION (PYRSR) WATTS PER SQUARE METER
MB=MAIN BATTERY (Telem) VOLTS
ALERT=ALERT ALERT
RHAL1=HUMIDITY (Rh) %
PKWSAL1=PEAK WIND SPEED (PkWs10m) MILES PER HOUR
WSAL1=WIND SPEED (Wspd) MILES PER HOUR

 [Responses]
1234=AT RH WS WD FM FT PWS PWD SR RN MB
1235=AT RH WS WD
1236=WS WD

 [Alerts]
al1=(RhAl > 0) ALERT SN RHAL1 RHAL1
al2=(PkWsAl > 0) ALERT SN PKWSAL1 PKWSAL1
al3=(WspdAl > 0) ALERT SN WSAL1 WSAL1
```

1.4.1.1 Configuration section

This portion of the RVT configuration file contains parameters specific to the internal operation of the RVT. These parameters should not be altered unless under the instruction of FTS technical support.

IMPORTANT! Datapoints present in the phrases, responses and alerts section need to exist as seen in the datalogger (case sensitive).

1.4.1.2 Phrases section

This portion of the RVT configuration file contains phrases that the RVT uses to respond to DTMF information requests. Normally phrases do not need to be added or modified. Refer to the RVT operating manual for phrase details if a new phrase is required. (RVT Operating Manual: 700-RVT)

1.4.1.3 Responses section

This portion of the RVT configuration file defines the RVT response to the received DTMF sequence. For instance, in the sample RVT configuration file, the RVT responds with the wind speed and wind direction when a DTMF sequence of 1 2 3 6 is received. Response can be edited or added to the configuration file. The format of the response follows that shown in the sample RVT configuration file.

1.4.1.4 Alerts section

This portion of the RVT configuration file defines when the RVT broadcasts an Alert. The alert flags must be defined in the datalogger (i.e. RhAl, PkWsAl, and WspdAl) as it is the datalogger which determines if there is an alert condition. Alerts are numbered sequentially (i.e. al1, al2, and al3) and the format of the alert follows that shown in the sample RVT configuration file.

Revision History

Revision	Date	Description
1	2014-Mar-13	Original release