



Documentation

Amtel RTU Guide

OSSI

**W228 N727 Westmound Dr.
Waukesha WI 53186 USA
TEL: 262-522-1870
FAX: 262-522-1872
Ossi-usa.com**

Intelli-Site

Security Management Software Amtel RTU Guide

PC Software RTU Interface Guide
For Windows 7 SP1, 2008 R2 SP1, XP SP3 & 2003 SP2

Version 3.x
Copyright © 1999 –2012 OSSI, LLC.

Copyright

Copyright © 1999-2012 OSSI, LLC. All rights reserved.

Information in this document is subject to change without notice. The software described in this document is furnished under a license agreement or nondisclosure agreement. The software may be used or copied only in accordance with the terms of those agreements. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or any means electronic or mechanical, including photocopying and recording for any purpose other than the purchaser's use without the written permission of OSSI

OSSI
W228 N727 Westmound Dr
Waukesha WI 53186
TEL: 262-522-1870
FAX: 262-522-1872

Trademarks

Intelli-Site[®] is a registered trademark of OSSI LLC. **Intelli-Site**[®] is registered in U.S. Patent & Trademark Office.

All other registered and unregistered trademarks are the sole property of their respective owners.

Table of Contents

- Copyright..... 3**
- Trademarks..... 3**
- Table of Contents 4**
- Section 1 – Introduction..... 5**
 - Overview 5
 - Technical Support Assistance 6
 - OSSI Headquarters.....**Error! Bookmark not defined.**
 - Technical Support**Error! Bookmark not defined.**
- Section 2 – Amtel RTU Setup 7**
 - Adding Amtel RTU Nodes 7
 - Configuring the Amtel Node..... 8
 - Amtel Receiver Node- 'Receiver' tab 11
 - Amtel Receiver Node- 'Event Actions' tab..... 13
- Section 3 – RFID Access Rights and Information Management..... 14**
 - Underlying Database Tables 14
 - Screen Design for Table Maintenance and Review ... 18
 - Database Filtering Example 23
 - Grid Setup to Maintain Access Rights 26
- Section 4 – Amtel Driver Setup 30**
 - Adding and Configuring an Amtel Driver 30
 - Reader Diagnostics 31

Section 1 – Introduction

This section describes the following:

- Overview
- Technical Support Assistance

Overview

The Amtel RTUs (Receiver/Transmitter Units) are the Intelli-Site software representations of the Amtel RFID Panels.

Technical Support Assistance

OSSI Headquarters

W228 N727 Westmound Dr.

Waukesha WI 53186 USA

Tel: 262-522-1870 Fax: 262-522-1872

Technical Support


Technical support is available via Telephone, Fax or Email. Contact OSSI Technical Support 8:00 AM to 5:00 PM Central Standard time. If calling after hours, please leave a detailed voice mail message, and someone will return your call as soon as possible.

E-Mail: support@ossi-usa.com

Fax: 262-522-1872 (Attention Technical Support)

Local: 262-522-1870

When calling, please be at the computer prepared to provide the following information:

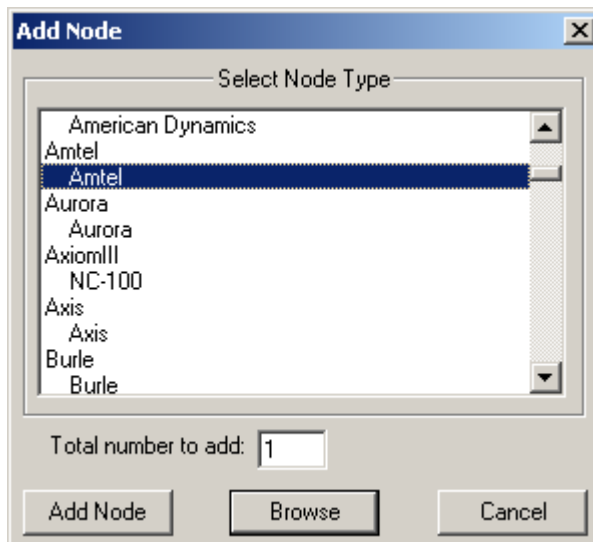
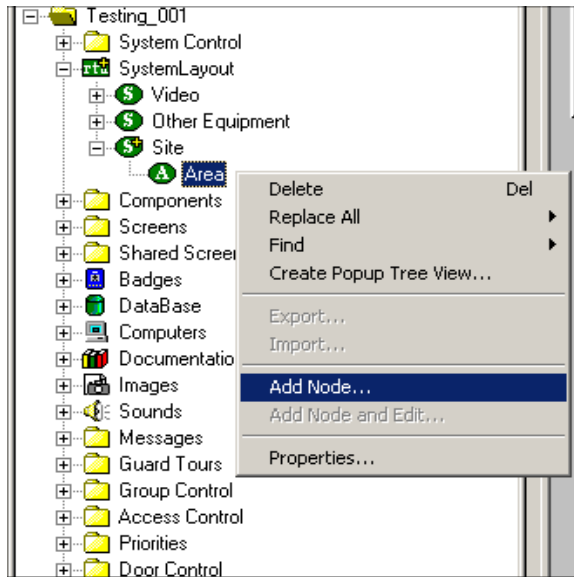
- Product version number, found by selecting the **About**  button from the Intelli-Site Menu Application Bar.
- Product serial number used for registration.
- The type of computer being used including, operating system, processor type, speed, amount of memory, type of display, etc.
- Exact wording of any messages that appear on the screen.
- What was occurring when the problem was detected?
- What steps have been taken to reproduce the problem?

Section 2 – Amtel RTU Setup

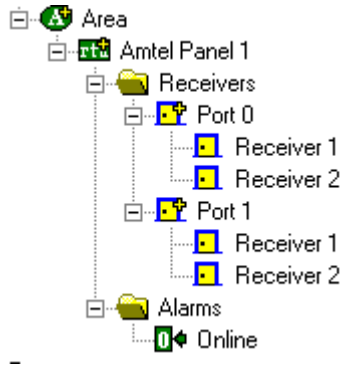
This section discusses the setup of Amtel RTUs in the project in Graphic Design mode.

Adding Amtel RTU Nodes

Amtel RTU nodes are added by selecting the 'Add Node' menu option:



After selecting 'Add Node', a new Amtel node will be created:



Configuring the Amtel Node

After an Amtel node has been added, it needs to be configured. This is accomplished by selecting the properties of the Amtel node:

RFID (Asset Tracking) - Intelli-Site RFID Test

RTU | Notes/Comments

Name: Amtel Panel 1 1775

Access Level: Level 1

RTU Setup

Domain: 200 Net: 1 Virtual Point: *None*

Panel Reset Time (sec): 20 Panel Heartbeat Interval (sec): 30

Tag Age Threshold (0-127): 5 Tag Persistence (0-252): 2

Tag Persistence Timeout (0-255 sec): 30

Tag Ranges:

Bottom	Top	Bottom	Top
5580000	to 5989999	5580000	to 5989999
5580000	to 5989999	5580000	to 5989999
5580000	to 5989999		

IP Settings

Panel IP Address: 192 . 168 . 12 . 75

Subnet Mask: 255 . 255 . 255 . 0

Gateway: 192 . 168 . 12 . 249

Primary Server (PC) IP Address: 192 . 168 . 12 . 145 Port: 9000

Secondary Server (PC) IP Address: 192 . 168 . 12 . 145 Port: 9000

Download

RTU Setup | IP Settings | Reader ID Change... | Reset

Ok | Cancel

Select the 'Settings' tab. Fill out the following required information:

RTU Settings Section

General Note on the following settings: These panel settings will only be downloaded if their corresponding checkbox has been selected. When a given setting's checkbox is not selected, the value field(s) will be disabled.

Panel Reset Time (sec): This value represents the amount of time that a particular RFID Tag has to report itself as being present. If the tag fails to report in this amount of time, it will be reported as missing. The default is 20 seconds.

Panel Heartbeat Interval (sec): This determines the amount of time the panel should wait between sending heartbeat notifications (these heartbeats are used to determine if the panel is connected or not).

Tag Age Threshold(0-127): Upon receiving a tag reading from any reader, the tag age will be compared with the age threshold value and the reading discarded if "older" (i.e. its age value greater than threshold). This helps in filtering out spurious readings caused by RF interference or noise.

Tag Age Persistence (0-252): Once a tag is read for the first time, a notification is not sent immediately. Instead, the panel will wait for additional readings up to the value of this persistence parameter. Once this minimum number of readings is achieved, a new tag notification is issued. This way the panel filters out spurious readings.

Tag Age Persistence Timeout (0-255 sec): After a tag is read for the first time, if no additional readings are found in a certain time period, the tag will be considered spurious and hence discarded. This timeout parameter controls the waiting/validation period.

Tag Ranges: While validating tag readings, the panel will compare the incoming tag ID with predefined range limits. If the tag Id doesn't fall in the predefined range, the reading will be discarded. There are five different ranges which can be defined. They all act as independent filters.

IP Settings Section

'Panel IP Address': The IP Address of the panel (the panel default is 192.168.2.112).

'Subnet Mask': The Subnet Mask for the panel (the panel default is 255.255.255.0).

'Gateway': The Gateway for the panel.

'Primary Server (PC) IP Address': The IP address of the Intelli-Site computer that contains the Amtel Driver (the panel default is 192.168.2.52).

'Secondary Server (PC) IP Address': The IP address of an optional secondary (redundant) Intelli-Site computer that contains a second Amtel Driver (if redundancy is not used, simply fill use the Primary Server (PC) IP Address).

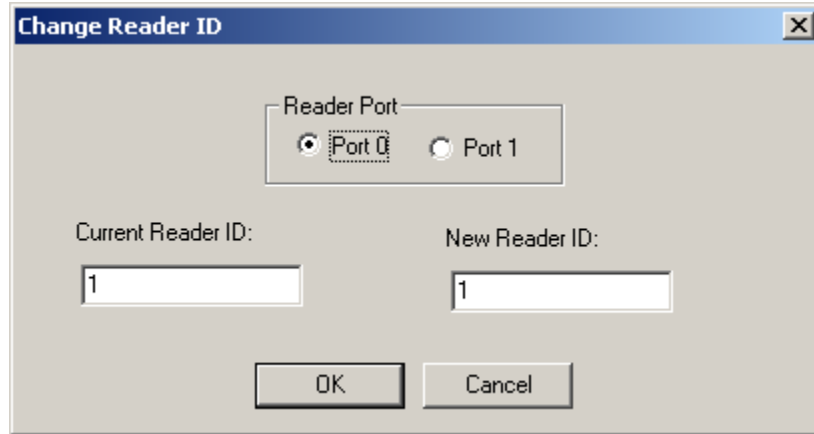
'Port': For both Primary and Secondary PC settings, this value has a default of 9000. In the case where more than one panel is to communicate with a single Intelli-Site computer, this port value will need to be a unique value for each panel. For example, panel1 and panel2 communicate with PC1. Set panel1's port value to 9000 and panel2's port value to 9001.

Download Section

'RTU Setup': Download settings from the 'RTU Settings' section as well as the 'RSSI' and 'Ignore Time' settings for all child receiver nodes (see Receiver settings below).

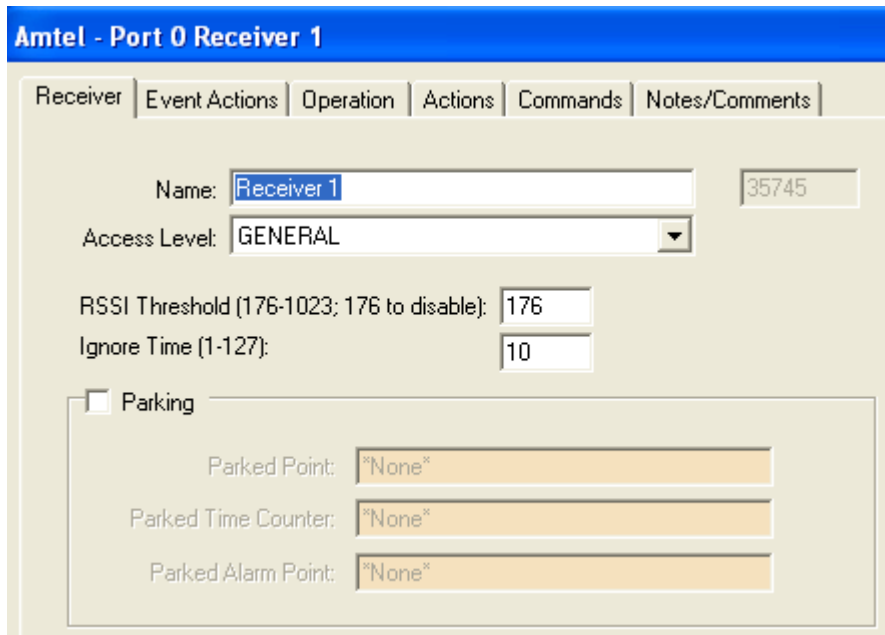
'IP Settings': Download 'IP Settings' section values.

'Reader ID Change': This will invoke the 'Change Reader ID' dialog, where a Reader's ID can be modified and then downloaded to the panel:



'Reset': Selecting this button will cause the panel to restart.

Amtel Receiver Node- 'Receiver' tab



'RSSI Threshold (176-1023; 176 to disable)':

The RSSI value indicates how strong the signal strength is coming from an RFID tag. The RSSI threshold is a value that filters out tag readings as such: Any tag with an RSSI reading below the value set here will be ignored. The panel default is 176. This means this feature is disabled by default.

'Ignore Time (1-127)':

This value is represented in seconds. An individual tag won't be reported again unless the ignore time interval had already elapsed since the last reading (from the same tag).

Parking Section

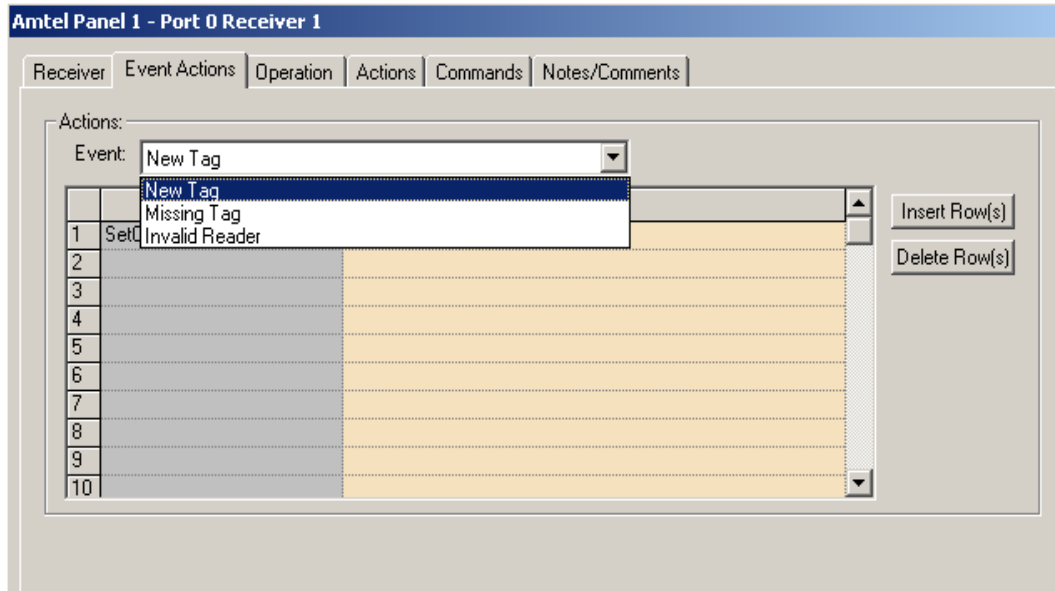
'Parking': Select this checkbox to designate this receiver as a 'Parking Receiver'. This will enable the fields in the 'Parking' section.

'Parked Point': A point can be assigned here that will be turned on when an RFID tag has been detected by this reader (i.e. someone has parked in this parking spot).

'Parked Time Counter': A Counter point can be assigned here that will be incremented every minute. This counter can be used to set other actions in motion based on the amount of time the RFID tag is located at this receiver.

'Parked Alarm Point': A point can be assigned here that will be turned on when the 'Parked Time Counter' goes into a High state (i.e. when the counter reaches it's threshold value). This can be used, for example, to serve as an alarm to indicate that an RFID tag has been located at this receiver for too long (i.e. someone has been parked in this parking spot beyond a reasonable amount of time).

Amtel Receiver Node- 'Event Actions' tab



'Event' Combo List: Each event type listed ('New Tag', 'Missing Tag' and 'Invalid Reader') can have specific actions assigned to it. Use the 'Action' Grid to assign actions to the selected 'Event' type.

NOTE: Under the 'Alarms' node there is only one point, 'Online'. This point is used to report the 'Online' status of the panel that corresponds to this Amtel RTU.

Section 3 – RFID Access Rights and Information Management

This section discusses the setup of User screens for the purpose of viewing and maintaining the RFID-related information in the Intelli-Site database. This information includes data related to Access Rights.

Underlying Database Tables

The following tables comprise all the RFID-related tables in the database. These tables will be displayed in the project tree and should be used in conjunction with Database grids when creating User screens. This will be detailed further below.

'RFIDTags': This table stores RFID Tags and their current location.

Fields:

TagID: The RFIDTag value.

LastReaderUsedID: The project tree ID of the receiver where this tag was last detected. This field is used for internal purposes.

LastReaderUsedName: The name of the receiver where this tag was last detected.

LastTimeUsed: The date/time when this tag was last detected.

SignalStrength: The RSSI value for the last read of this tag.

TagAge: The age of this tag. See Amtel documentation for the a description on the meanings of various values for age.

TagAssetName: The User can fill this field with a name for this tag. This can help to more easily identify a tag (by name, instead of by a long Tag ID number value).

InvalidLocation: A Boolean field whose value is set to true if a tag has been read (detected) by a reader that is not part of this tag's assigned readers.

Missing: A Boolean field whose value is set to true when the tag's last report was a 'Missing' report.

'RFIDLocation': This table stores Locations, which can be a room or other place. A location can be identified by either a ReaderID or a TagID.

Fields:

LocationID: The ID of the Location (used for internal purposes).

LocationName: The Location's name (e.g. Printer Room).

ReaderID: The Reader assigned to this location. This is the ID of the receiver node in the project tree.

TagID: The RFID Tag ID associated with this Location.

'RFIDGroup': This table stores 'Access' Groups which allows for the assignment of multiple Locations to a single Group.

Fields:

GroupID: The ID of the Group (used for internal purposes).

GroupName: The Groups's name (e.g. Printer Room Group).

'RFIDGroupToLocation': This table stores 'Access' Groups which allows for the assignment of multiple Locations to a single Group.

Fields:

GroupID: The ID of the Group.

LocationID: The ID of the Location.

Details: This table is used to assign Locations to Groups. There can be 1 Location assigned to many Groups and 1 Group assigned to many Locations.

'RFIDAccess': This table stores 'Access Sets' which allows for the assignment of multiple Groups to one RFID Tag.

Fields:

TagID: The ID of the RFID Tag.

GroupID: The ID of the Group.

'RFIDInventoryTemp': This table stores the Inventory information that is stored here by the Hand-held devices which are used to perform the Inventory checks.

Fields:

TagID: The ID of the RFID Tag (i.e. the Asset).

TagAssetName: Optional name assigned to this RFID Tag.

RoomTagID: The ID of the RFID Tag assigned to this room.

IMPORTANT NOTE: At the time of this writing, the exact details of how the hand-held RFID readers are to work is unknown.

At the moment, performing an 'DownloadCards' action using an Amtel panel as the target will trigger the server to take the information in this table and update the RFIDTags table (complete the Inventory update). This action can be setup anywhere that allows for actions (on a button press, on the 'Actions on High' of an I/O point, etc.):

Action Sets

	Action	Target
1	DownloadCards	[59] Amtel Panel 1
2		
3		
4		
5		
6		
7		
8		

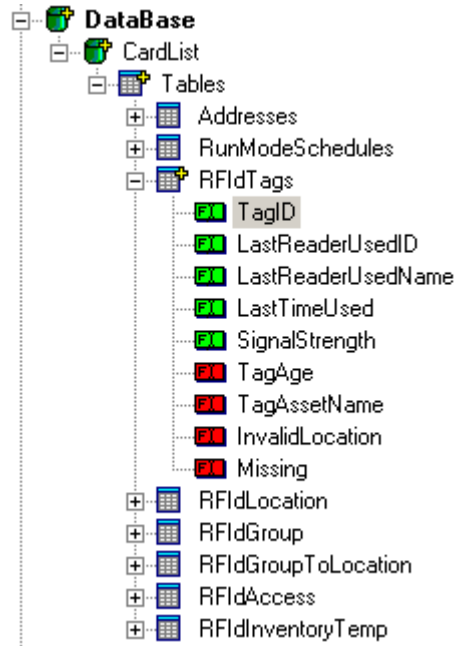
Mouse Down (1) / Mouse Up (0) / On Active (0)


Insert
Delete

Screen Design for Table Maintenance and Review

Screens need to be created in order to manage Access Rights (i.e. for Parking), viewing of Tag status in Run Mode, and general maintenance of the RFID-related data.

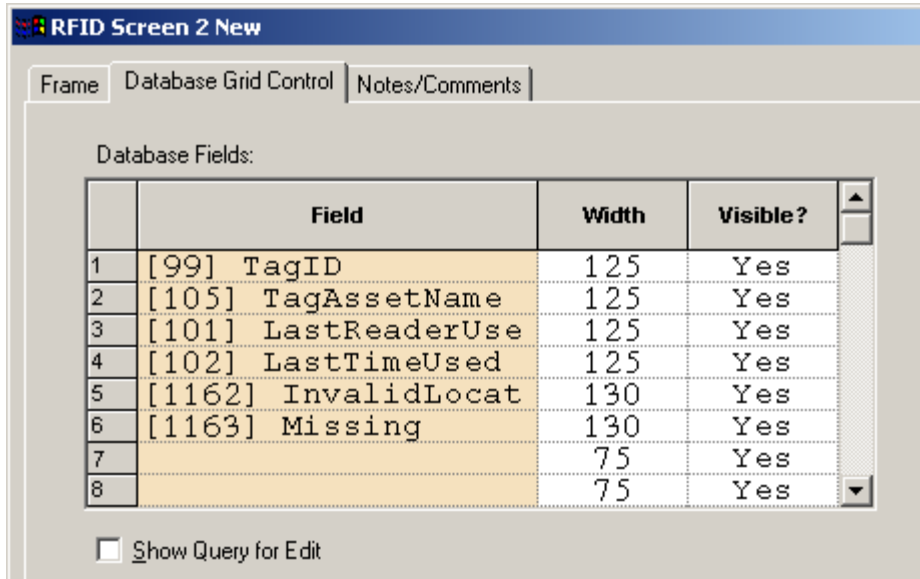
The database table and field nodes are to be used in conjunction with screen objects and controls:



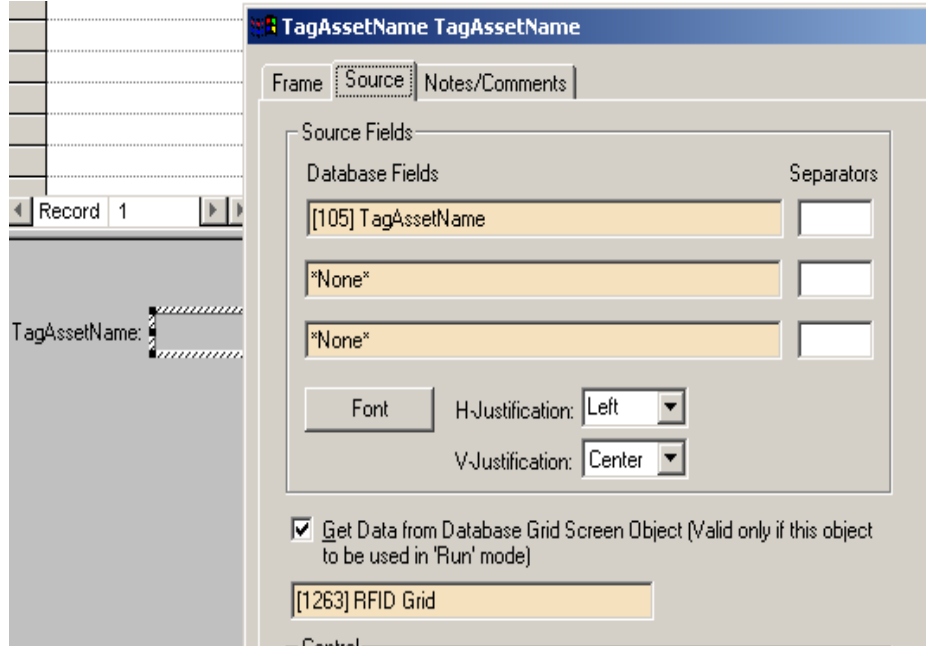
A Database Grid control is used as an interface to the data residing in the database. Click the 'Database Grid Control' button  on the Design toolbar and create a grid on the screen:



Next, drag and drop the database fields from the project tree onto the database grid's 'Database Fields' grid located on the 'Database Grid Control' tab of the Grid's properties:



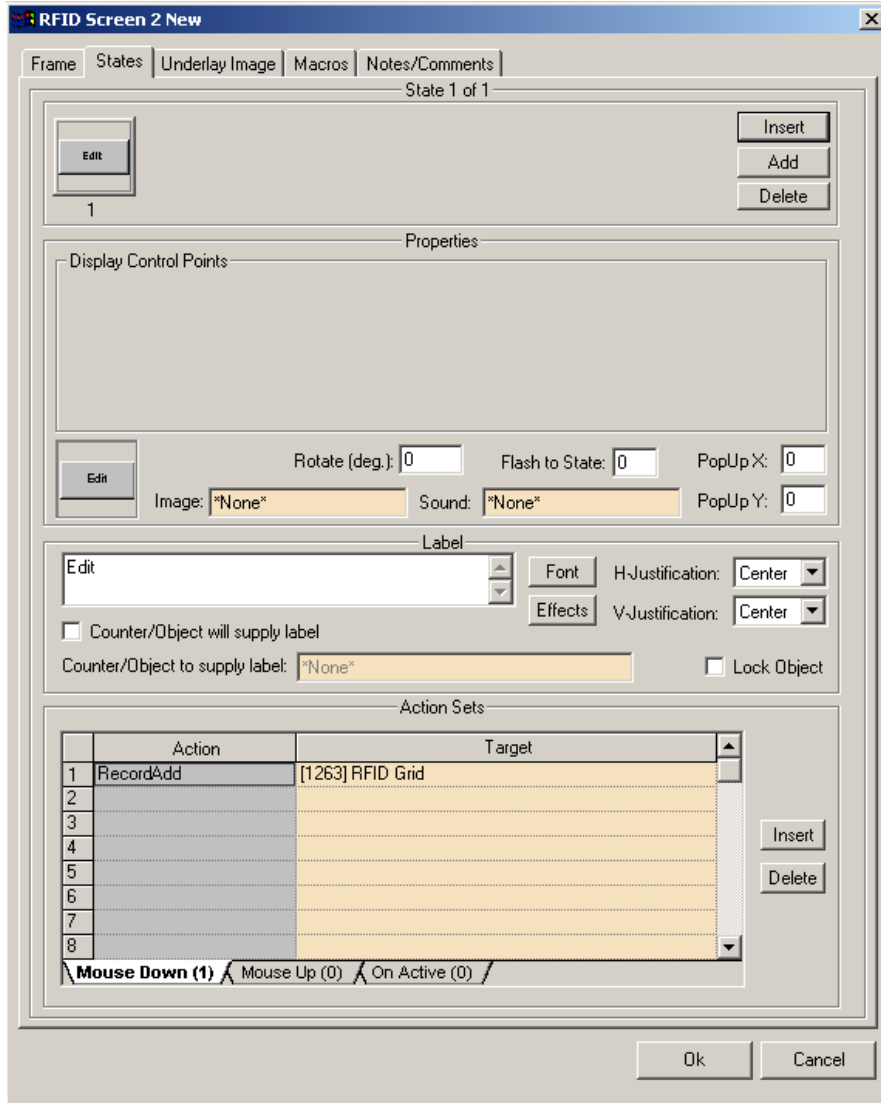
Next, drag and drop the database fields onto the screen itself. Do this for the fields you plan on editing. For example, the user may want to modify the TagAssetName field for purposes of reporting:



For the properties of our example field 'TagAssetName', the 'Get Data from Database Grid Screen Object...' checkbox must be selected. Also the Grid Screen object ('[1263] RFID Grid') must be dragged and dropped from the project tree into the drop edit box as shown above. These two steps associate the 'TagAssetName' field with the Grid.

Finally, buttons must be created to perform the desired database operations ('Add', 'Edit', 'Cancel' etc.). These operations are located under the 'Database' column in the 'Actions' popup dialog:

Actions							
IO Control	Door Control	Screen Control	Video	Macro	Group Control	Database	
SetOn	LockDoor	PopUp	PopUpVideo	Macro	GroupSetOn	MoveFirst	Play
SetOff	UnlockDoor	PopUpDialog	PopOffVideo	RunMacro1	GroupSetOff	MovePrevious	Loa
Pulse	TempUnlockDoor	PopOff	LiveCompare	RunMacro2	GroupSet	MoveNext	Mas
TempPulse	PulseDoor	PushScreen	SwitchInputs	RunMacro3	GroupSetAll	MoveLast	Forc
Toggle	SwitchEntryCamera	PopScreen	LiveVideo	RunMacro4	GroupClearAll	RecordAdd	Pres
SetOnPush	SwitchExitCamera	Display	NetworkVideo	RunMacro5	ShuntSet	RecordChange	Rele
ForceOn	ConnEntryIntercom	CleanScreen	PlayVideo	RunMacro6		RecordBulkModify	Sen
ForceOff	DiscEntryIntercom	PopUpQueue	PauseVideo	RunMacro7		RecordDelete	Virtu
ForceNormal	ConnExitIntercom	PopOffQueue	StopVideo	RunMacro8		RecordCancel	Unvi
IncrementCounter	DiscExitIntercom		StartRecording			RecordSave	Onlir
DecrementCounter	StartEntryAlarm		StopRecording			SelectGrid	Offli
ResetCounter	StopEntryAlarm					FilterBy	Dow
StartTimer	StartExitAlarm					MatchExact	Dow
KillTimer	StopExitAlarm					MatchNotEqual	Forc
ForceTimer	ShuntDoorForced					MatchPartialStart	Loct
ShuntAlarm	UnshuntDoorForced					MatchPartialEnd	Unlo
UnShuntAlarm	ShuntDOTL					MatchPartial	Zon
RestoreTPControl	UnshuntDOTL					MatchLessThan	Mus
	ShuntDUTL					MatchLessOrEqual	Star
	UnshuntDUTL					MatchGreaterThan	Stop
	SelectCallStation					MatchGreaterOrEqual	Pagr
	DeselectCallStation					SortBy	Runl
	DisableCallStation					FilterSet	Print
	EnableCallStation						Auth
	AckCallIn						
	ProcessCallIn						



Above is an example 'Edit' button. Again, repeat the process to create buttons for all the database operations (actions) desired.

In this example, the final product is a screen that allows the User to edit the name of an RFID Tag (Asset):

	TagID	TagAssetName	LastReaderUsedNam	LastTimeUsed	InvalidLocation	Missing
1	5680515		Receiver 1	13/03/2007 06:12:00 a.	0	0
2	5680516		Receiver 1	08/03/2007 09:58:00 a.	0	-1
3	5680572		Receiver 1	08/03/2007 11:44:00 a.	0	-1
4	5681425		Receiver 1	08/03/2007 10:16:00 a.	0	-1
5	5681426		Receiver 2	07/03/2007 04:51:00 p.	0	0
6	5681427		Receiver 1	08/03/2007 09:49:00 a.	0	-1
7	5681468		Receiver 2	07/03/2007 04:10:00 p.	0	-1
8	5681471		Receiver 2	06/03/2007 08:04:00 a.	0	-1
9	5947667		Receiver 1	07/03/2007 11:24:00 p.	0	-1
10	6204803		Receiver 2	13/03/2007 12:10:00 a.	0	-1
11	6466947		Receiver 2	13/03/2007 06:43:00 a.	0	-1

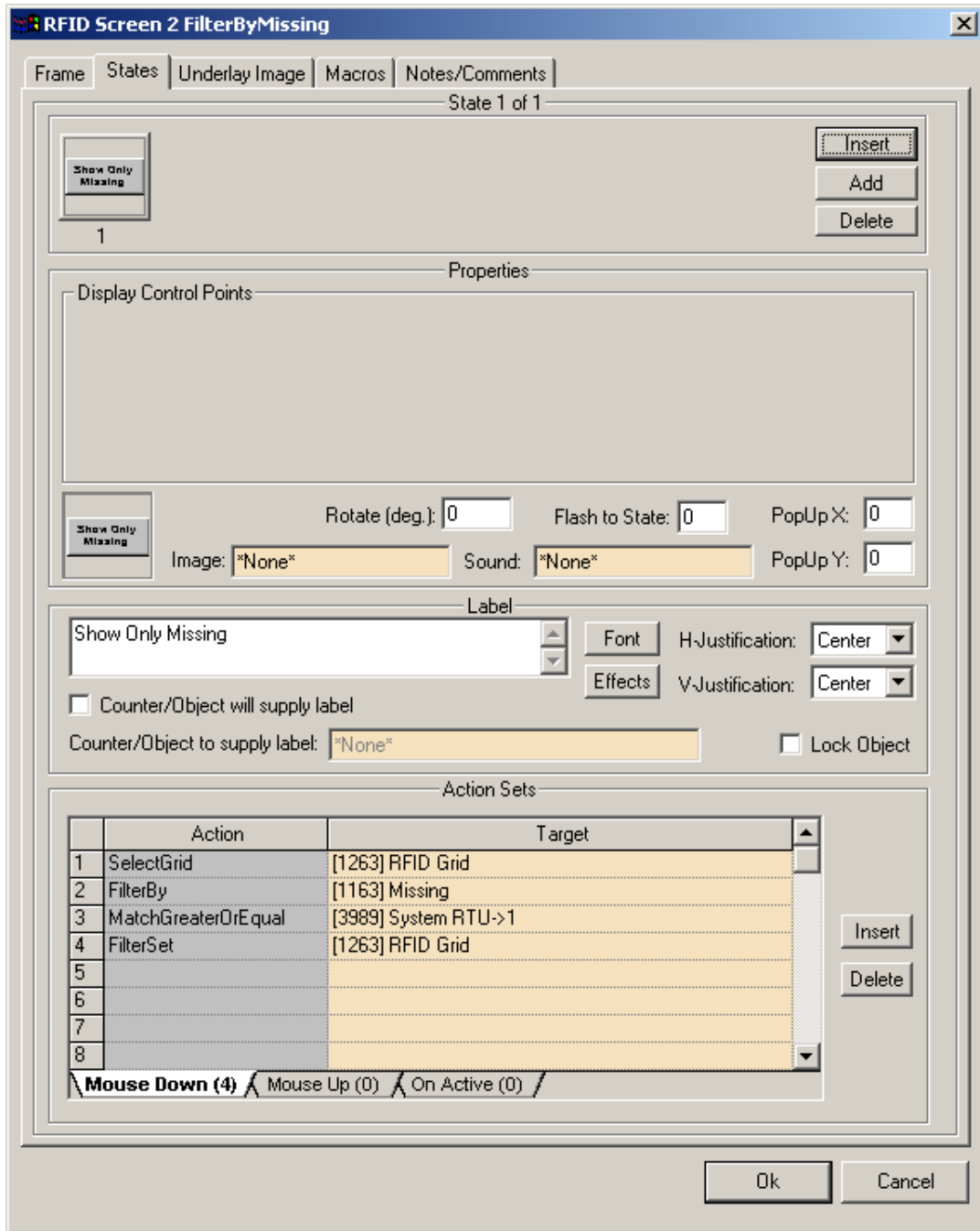
Record 1

TagAssetName:

Database Filtering Example

The User may want to filter data on a particular column in order to see only specific results that meet a user-defined search criteria. In the following example, the User filters the grid created above to only show RFID Tags that are missing.

Create a button and create the following Database actions (for detailed explanations on each Action, please see the Intelli-Site Reference Guide):



Once this button is clicked, the Grid will only show Missing RFID Tags:

	TagID	TagAssetName	LastReaderUsedNam	LastTimeUsed	InvalidLocation	Missing
1	5680516		Receiver 1	08/03/2007 09:58:00 a.	0	-1
2	5680572		Receiver 1	08/03/2007 11:44:00 a.	0	-1
3	5681425		Receiver 1	08/03/2007 10:16:00 a.	0	-1
4	5681427		Receiver 1	08/03/2007 09:49:00 a.	0	-1
5	5681468		Receiver 2	07/03/2007 04:10:00 p.	0	-1
6	5681471		Receiver 2	06/03/2007 08:04:00 a.	0	-1
7	5947667		Receiver 1	07/03/2007 11:24:00 p.	0	-1
8	6204803		Receiver 2	13/03/2007 12:10:00 a.	0	-1
9	6466947		Receiver 2	13/03/2007 06:43:00 a.	0	-1

Record 1

TagAssetName: Edit Save Cancel Show Only Missing Show All

The 'Show All' button removes the filtering using the following actions:

	Action	Target
1	SelectGrid	[1263] RFID Grid
2	FilterSet	[1263] RFID Grid
3		

Grid Setup to Maintain Access Rights

It is important that a screen or screens be created to maintain the database tables that control Access Rights for RFID Tags.

In addition to the RFID Tag Table, the following tables need to have Database Grid Screen objects created for them:

RFIDLocation: A 'Location' is a place where either an RFID Reader exists (for purposes of tracking RFID Tags) or an RFID Tag exists (for the purposes of identifying the place). A location can be, for example, a parking spot or a room.

LocationID- The value for this field is auto-generated. Do not edit this value. LocationName- Assign a name that aids in identifying this place. ReaderID- The ID of the reader (from the project tree). TagID- The ID of the tag that is assigned to this location (i.e. a tag next to the door entrance of a storage area).

Locations

	LocationID	LocationName	ReaderID	TagID
1	7	Printer Room - Storage Closet	108	5680515

Record 1

add Edit Save Cancel Delete

Location Name: ReaderID: TagID:

Receiver 1
Receiver 2

RFIDGroup: A 'Group' is a collection of Locations. A Group is assigned one or more locations in the GroupToLocation table.

GroupID- The value for this field is auto-generated. Do not edit this value. GroupName- Assign a name that best identifies this group. For example, if this group is going to be a collection of Locations that all exist on the third floor, consider 'Third Floor' as a name.

Groups

	GroupID	GroupName
1	2	Printer Room
2	5	Test Group 5
3	6	Test Group 6
4	8	Test Group 8
5	9	Test Group 9

Record 1

add Edit Save Cancel Delete

Group Name:

RFIDGroupToLocation: A Group is assigned one or more locations in the GroupToLocation table. GroupID and LocationID- These values need to originate from the RFIDGroup and RFIDLocation tables.

Group To Location

	GroupID	LocationID
1	2	7

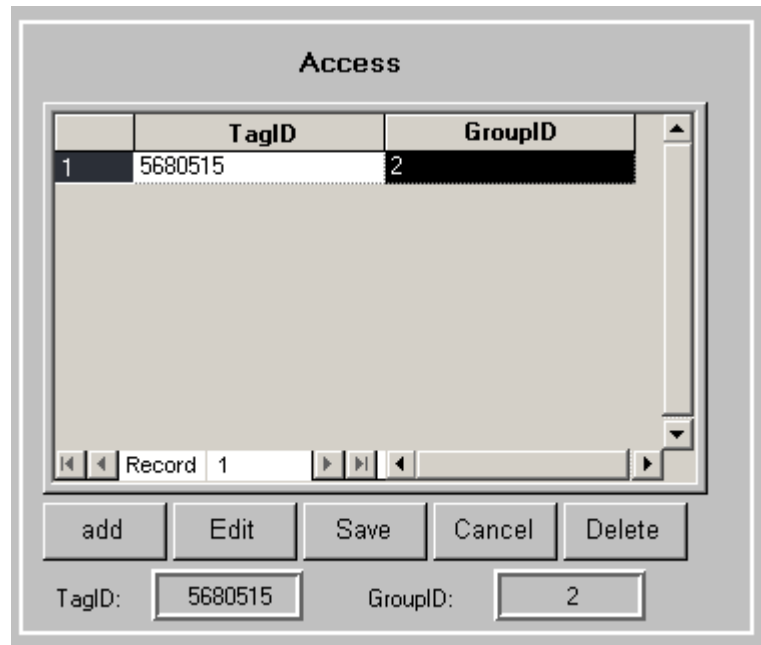
Record 1

add Edit Save Cancel Delete

GroupID: LocationID:

RFIDAccess: This is the table where a Tag is assigned one or more Groups. The TagID and GroupID values need to originate from the RFIDTags and RFIDGroup tables. An entry (or entries) in this table completes the setup of Access Rights for an RFID Tag.

Using our example tables, the entry below assigns RFID Tag '5680515' to Group 'Printer Room', which contains one Location, 'Printer Room - Storage Closet'. This Location consists of 1 reader, 'Receiver 1' (ID 108).

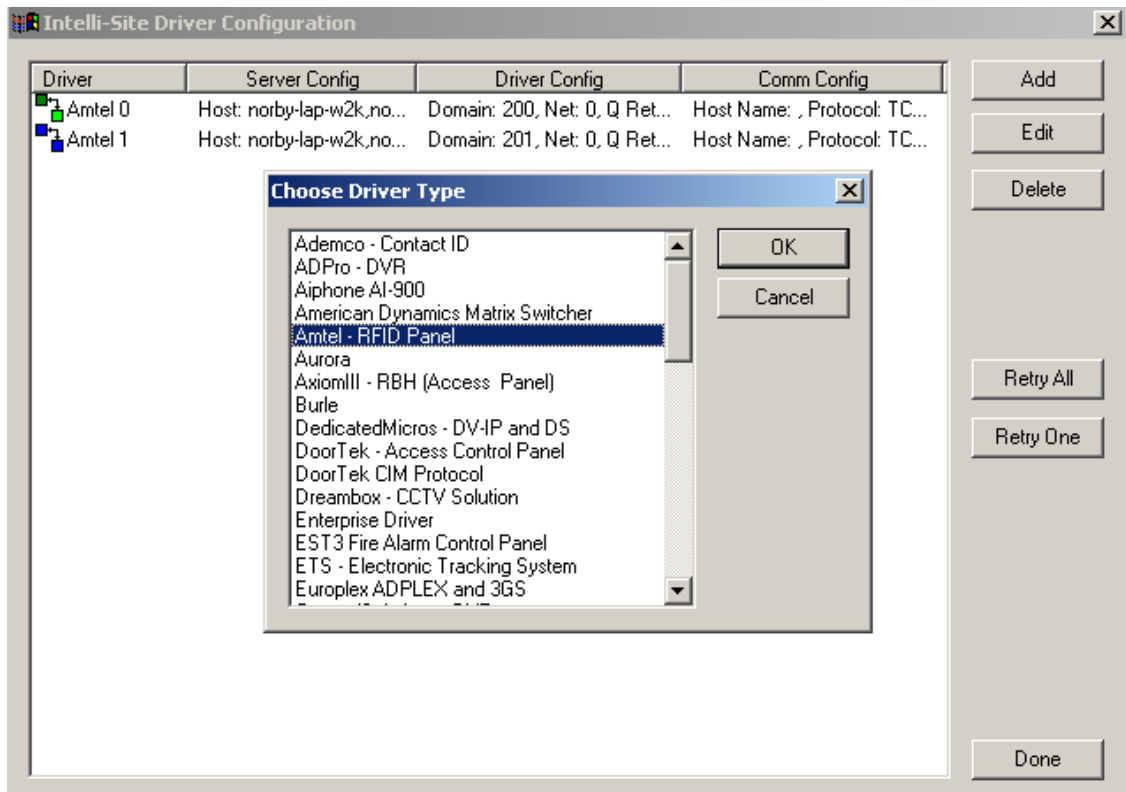


Section 4 – Amtel Driver Setup

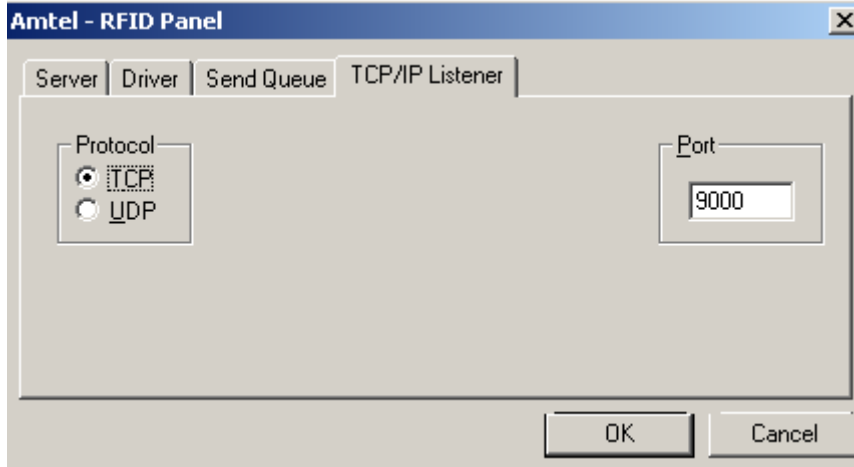
This section discusses the setup of an Amtel driver in the Driver Service.

Adding and Configuring an Amtel Driver

Select the 'Add' button in the main Driver Service window. From there, select 'Amtel - RFID Panel' from the list of drivers in the 'Choose Driver Type' window:

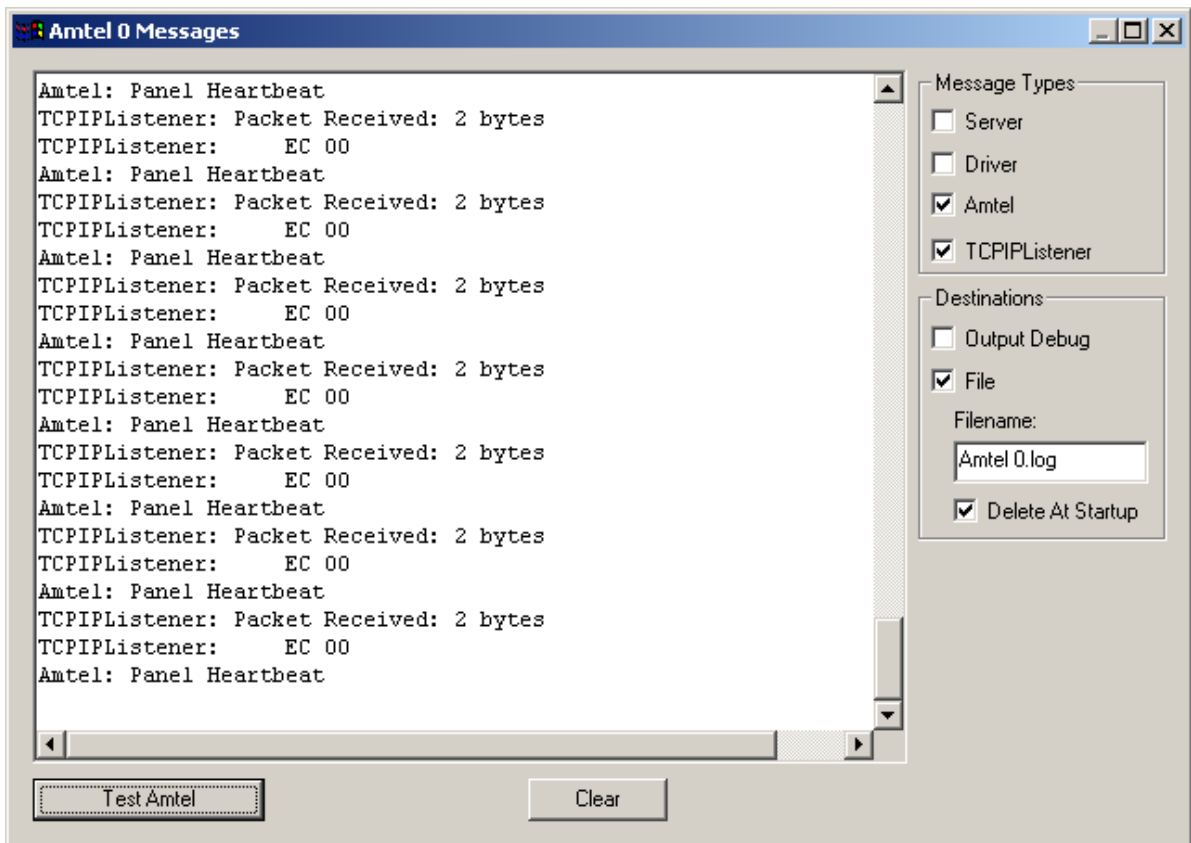


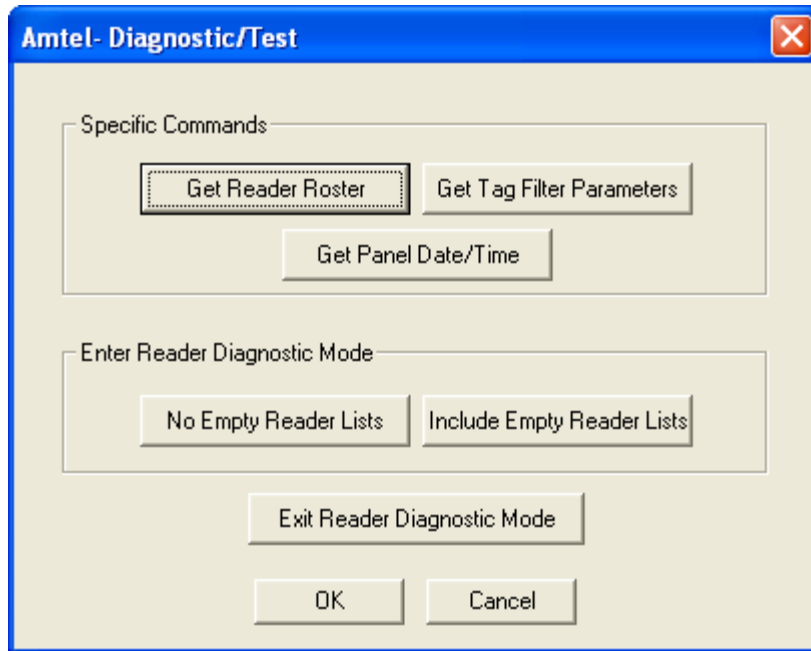
Setup steps are the same as for any driver; however if the default 'Port' value of '9000' has been changed for the panel (via the RTU settings), this value will also need to be changed in the 'Port' edit box located on the 'TCP/IP Listener' tab:



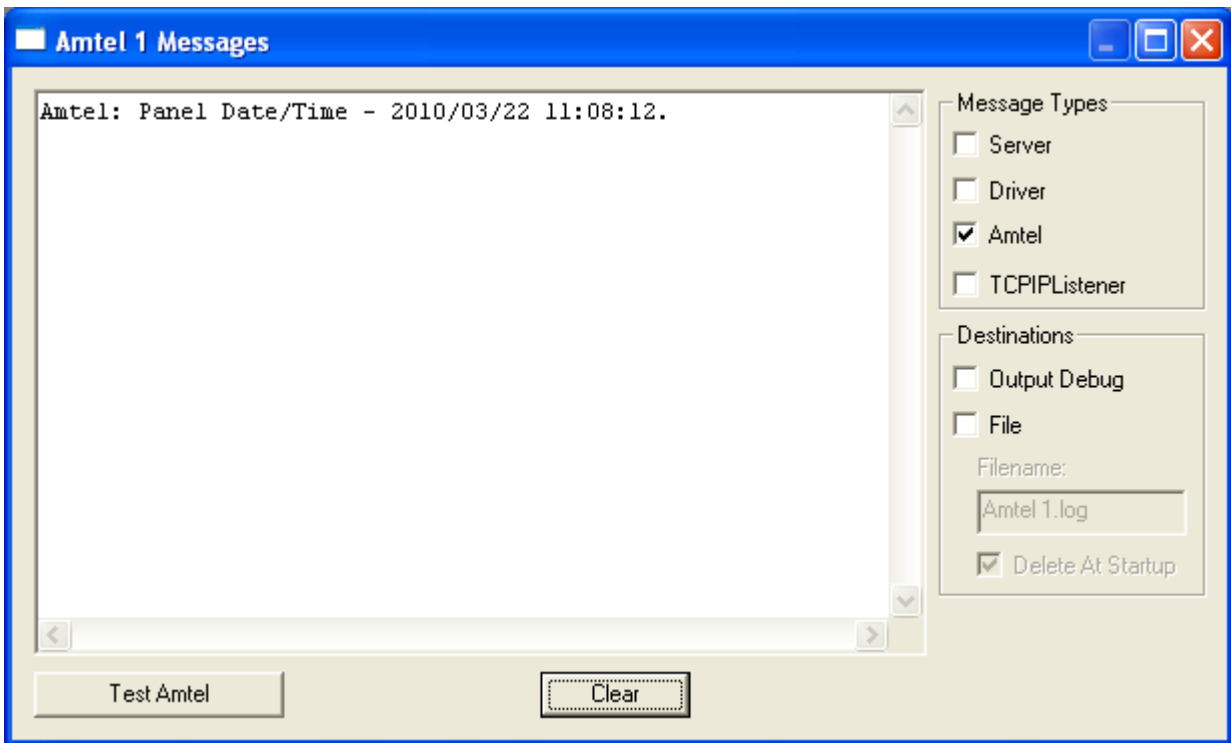
Reader Diagnostics

Select the 'Test Amtel' button to perform reader diagnostic tests:

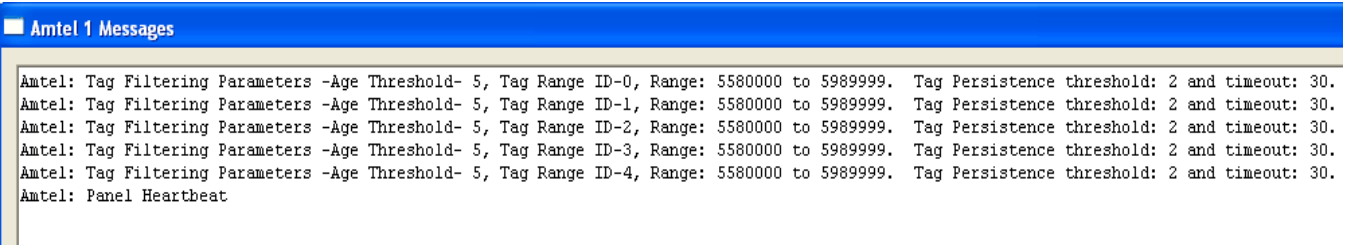




'Get Reader Roster': This option forces the panel to report the readers that it currently has in its roster. The results are shown below:

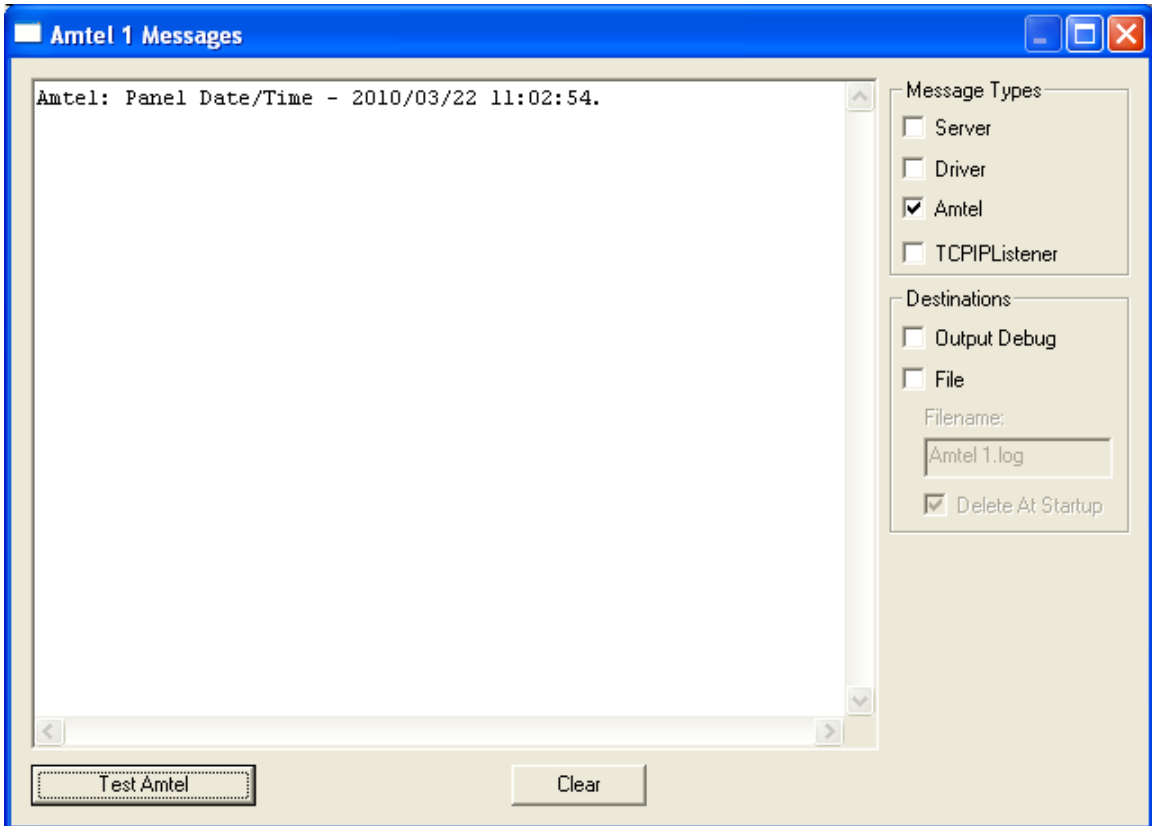


'Get Tag Filtering Parameters': This option will retrieve the current filtering parameters configured in the panel:

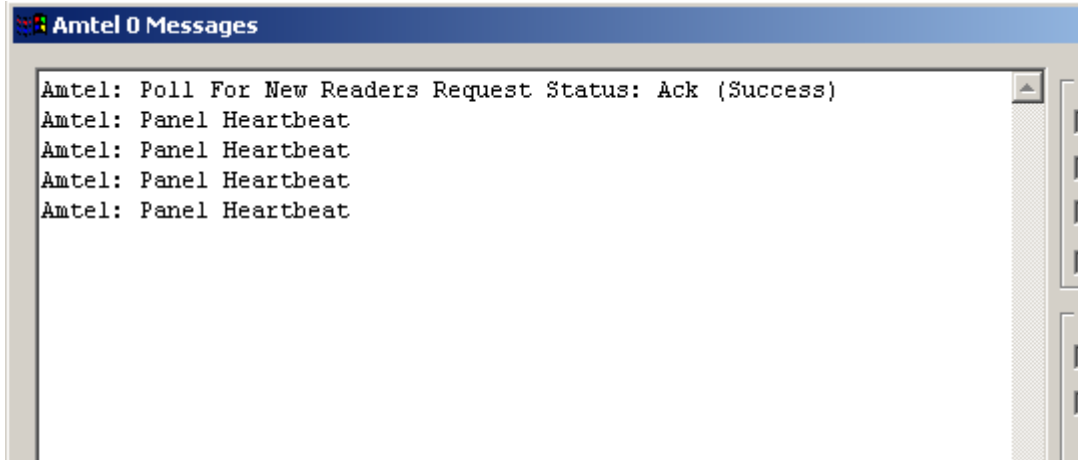


```
Amtel: Tag Filtering Parameters -Age Threshold- 5, Tag Range ID-0, Range: 5580000 to 5989999. Tag Persistence threshold: 2 and timeout: 30.
Amtel: Tag Filtering Parameters -Age Threshold- 5, Tag Range ID-1, Range: 5580000 to 5989999. Tag Persistence threshold: 2 and timeout: 30.
Amtel: Tag Filtering Parameters -Age Threshold- 5, Tag Range ID-2, Range: 5580000 to 5989999. Tag Persistence threshold: 2 and timeout: 30.
Amtel: Tag Filtering Parameters -Age Threshold- 5, Tag Range ID-3, Range: 5580000 to 5989999. Tag Persistence threshold: 2 and timeout: 30.
Amtel: Tag Filtering Parameters -Age Threshold- 5, Tag Range ID-4, Range: 5580000 to 5989999. Tag Persistence threshold: 2 and timeout: 30.
Amtel: Panel Heartbeat
```

'Get Panel Date/Time': The panel's internal date/time is retrieved and displayed:



'Check for New Readers': This option forces the panel to check for any new readers that may have been added after the panel was started. This is the same 'check reader' sequence that the panel performs during initialization. If any new readers are detected, they will be listed, otherwise a simply 'Acknowledgement' will be seen:



'No Empty Reader Lists' and 'Include Empty Reader Lists': This option causes the panel to enter 'Reader Diagnostic Mode'.

'No Empty Reader Lists'- only show reader responses that are reporting a Tag.

'Include Empty Reader Lists'- shows all reader responses, even if the reader reports no tags. This option can be useful to aid in determining if a reader is actually answering the panel polling or not.

'Exit Reader Diagnostic Mode'- Return to the normal operating mode.