



Quick Configuration Guide (QCG) TA 900/900e E&M Wink Trunk Quick Start Guide

Overview

This Configuration Guide explains how to configure a T1 port on the Total Access 900/900e for a Robbed Bit Signaling T1 to be connected to a PBX or other CPE device that requires an E&M Wink connection.

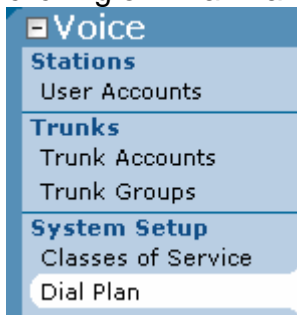
Requirements & Limitations

In the TA 900 series, only T1 port 0/2 can be used for an E&M Wink connection. In the TA 900e series, T1 ports 0/3 and 0/4 can be used for E&M Wink connections.

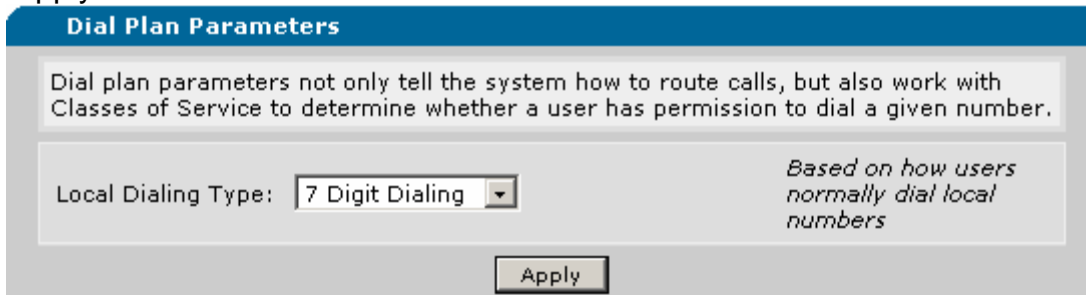
Web Interface Configuration

Configuring the Local Dialing Type

First, we must set the Local Dialing Type to 7 or 10 digits. To do this, begin by clicking on 'Dial Plan' under 'Voice'.

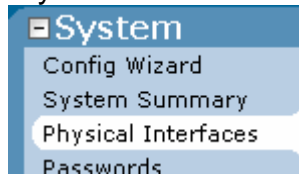


Then, select the appropriate 7 or 10 Digit Dialing for local calls and click on 'Apply'.



Configuring the T1 Interface

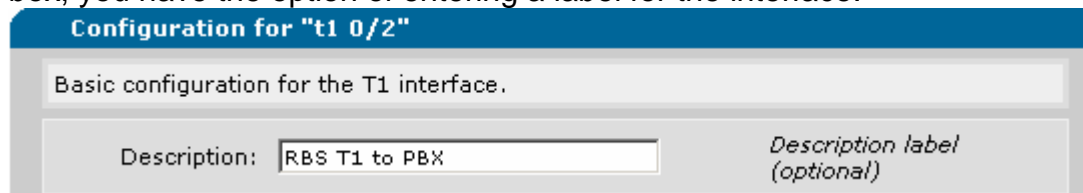
To begin configuring the T1 interface, click on 'Physical Interfaces' under 'System'.



Next, click on 't1 0/2' under the 'Physical Interfaces' list.



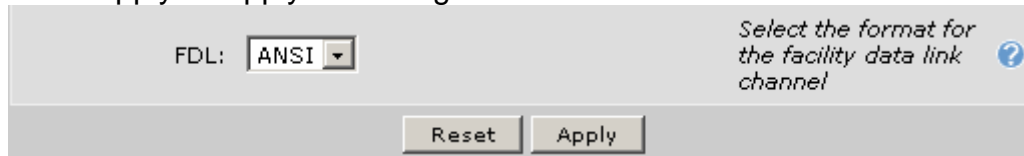
This will take you to the 'T1 0/2' Interface Configuration page. In the Description box, you have the option of entering a label for the interface.



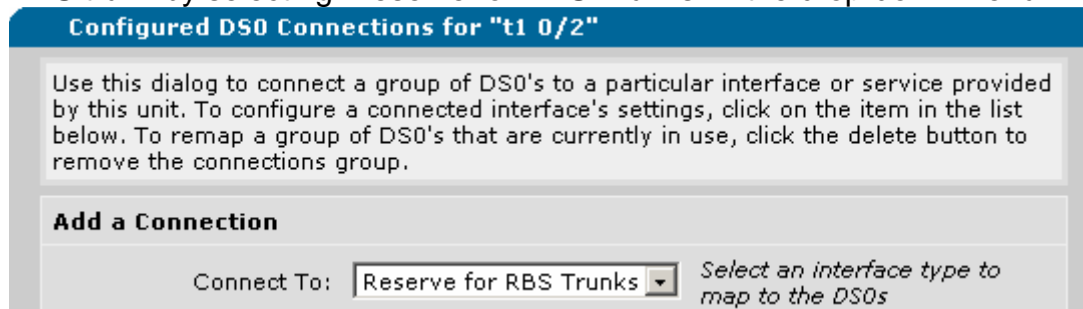
Next, you will want to check the 'Enable' box to enable the interface.



Click 'Apply' to apply the configuration above.



Since this will be an RBS interface, we want to reserve the T1 0/2 interface for an RBS trunk by selecting 'Reserve for RBS Trunks' in the drop-down menu.



Specify the appropriate DS0 range using the drop-down boxes. When finished, click the 'Add' button.

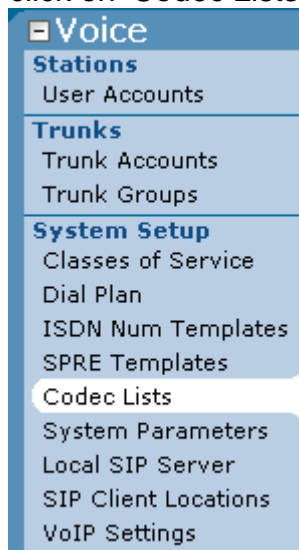
Note: This will create a specific TDM group for each DS0 selected in the range. If this is not the desired behavior, changes will need to be made via the

Command Line Interface. Go to the section titled 'Configuring the T1 Interface' under the 'Command Line Interface Configuration' for more information.

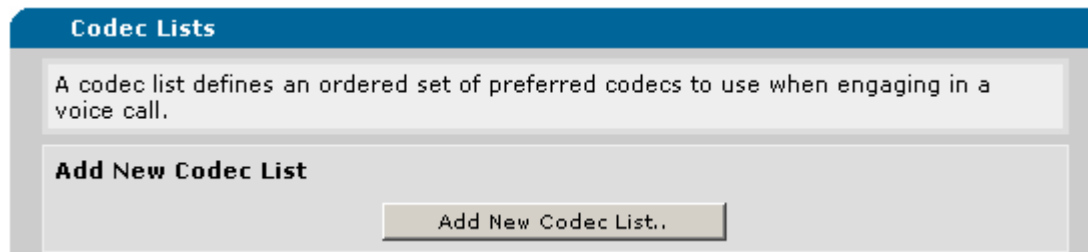
DS0 Range:	<input type="text" value="1"/> to <input type="text" value="24"/>	<i>Set the range of DS0s to be mapped</i>
Speed:	<input type="text" value="64kbps"/>	<i>Select the speed for the DS0s being mapped</i>
<input type="button" value="Add"/>		

Configuring the RBS Trunk

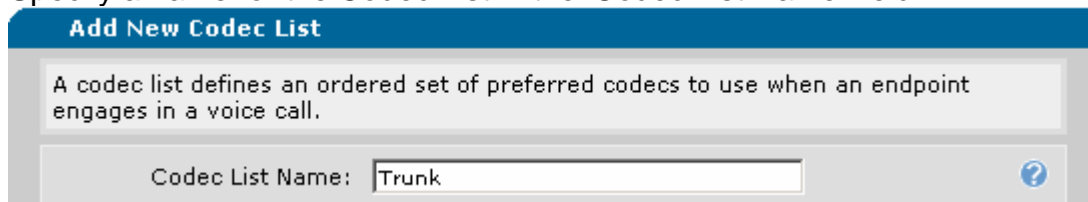
First, we will configure a Codec List to be used by the RBS trunk. To do this, click on 'Codec Lists' under 'Voice'.



Click on the 'Add New Codec List' button to create a new Codec List.



Specify a name for the Codec List in the 'Codec List Name' field.



Specify the primary Codec to be used as 'Codec #1' and the secondary Codec to be used as 'Codec #2'. Once those are configured, click on 'Apply'.

Codec #1: ?

Codec #2: ?

Next, we need to create the RBS trunk. To do this, start by clicking on 'Trunk Accounts' under the 'Voice' tab.

Voice

Stations

User Accounts

Trunks

Trunk Accounts

Trunk Groups

Give the Trunk a name if you'd like.

Add / Modify / Delete Trunk Accounts

Use this page to add and configure trunk accounts.

Add a New Trunk Account

Trunk Name: ?

Make sure that 'Type' is set to T1-RBS.

Type: ?

As of the current revision, the 'Supervision' can only be set to 'E&M Wink' and the 'Role' can only be set to 'Network'. When finished, click on 'Add'.

Supervision: ?

Role: ?

You can specify an optional trunk description in the 'Trunk Name' field.

Trunk Name: ?

You will probably want to un-check the 'Reject External' box to allow trunk-to-trunk calls to work properly. Un-checking this box allows the RBS trunk to accept calls from other trunks that may be configured (i.e. PRI or SIP). This command is necessary for deployments where more than one trunk is being used (i.e. a SIP trunk and an RBS trunk to the CPE).

Reject External: ?

If DTMF digits are needing to be sent to the CPE when an inbound call is made, Direct Inward Dialing will need to be configured by checking the DID box.

DID(Direct Inward Dialing): ?

If Direct Inward Dialing is enabled, you need to specify the number of digits to be sent to the CPE on an inbound call.

DID Digits: ?

The way that a DS0 is allocated for a call can be configured to be 'Linear' or 'Circular'. With 'Linear' the lowest available DS0 is used. With 'Circular', the next DS0 in line is used.

Resource Selection: Linear Hunt Group ?
 Circular (UCD)

To assign DS0s to the RBS trunk, begin by clicking on the 'Assign DS0s' button.

DS0s | VoIP Settings | DNIS Substitution

Assign DS0s

This will bring up a new window where particular DS0s can be added to the RBS Trunk. In this example, we want to connect all 24 DS0s to the trunk so we select all of the T1 0/2 DS0s by clicking on the check box under the 'Add' column for each one. When finished, click the 'Add DS0s' button.

Add DS0s to Trunk Account

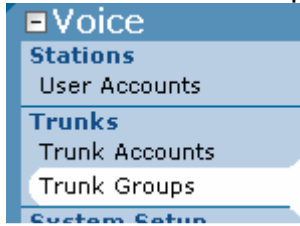
Click on one or more rows to select DS0s to add as members of the trunk account. **Hint: Use the Shift key to select ranges of DS0s.**

To reserve DS0s for use on this Trunk, select a T1 from the [Interfaces](#) page.

Add?	DS0s	Description
<input checked="" type="checkbox"/>	t1 0/2 ds0 1	RBS T1 to PBX
<input checked="" type="checkbox"/>	t1 0/2 ds0 2	RBS T1 to PBX
<input checked="" type="checkbox"/>	t1 0/2 ds0 3	RBS T1 to PBX
<input checked="" type="checkbox"/>	t1 0/2 ds0 4	RBS T1 to PBX
<input checked="" type="checkbox"/>	t1 0/2 ds0 5	RBS T1 to PBX
<input checked="" type="checkbox"/>	t1 0/2 ds0 6	RBS T1 to PBX
<input checked="" type="checkbox"/>	t1 0/2 ds0 7	RBS T1 to PBX

Click 'Apply' to apply the configuration changes.

The last step is to create a trunk group for the RBS trunk. To start this process, click on 'Trunk Groups' under the 'Voice' tab.



Give the Trunk Group an appropriate name using the 'Group Name' field and then click 'Add'.

A screenshot of a web application page titled 'Add / Modify / Delete Trunk Groups'. It contains a text box with the instruction 'Use this page to add and configure trunk groups.' Below this is a section titled 'Add a New Trunk Group' with a 'Group Name' field containing 'RBS T1 to PBX' and a placeholder text 'Enter a name for this group.' An 'Add' button is located below the field.

You can give the Trunk Group a description to help keep track of the configuration.

A screenshot of a web application page titled 'Edit Trunk Group 'RBS T1 TO PBX''. It contains a text box with the instruction 'Basic configuration for a Trunk Group. Click 'Apply' when done.' Below this is a section titled 'Trunk Group Information' with a 'Trunk Group Name' field containing 'RBS T1 TO PBX' and a 'Description' field containing 'RBS T1 to PBX'.

To add the RBS trunk to the trunk group, click on the 'Add Members' button.

A screenshot of a web application page titled 'Trunk Group Members'. It contains a text box with the instruction 'Below is a list of [Trunk Accounts](#) that are being used in this Trunk Group.' Below this is an 'Add Members..' button.

A new window will open with the available trunk accounts. Check the box under the 'Add?' column for the appropriate trunk account and then click on the 'Add Selected Trunks' button.

Add Members to Trunk Group

Click on one or more rows to select Trunk Accounts to add as members of this trunk group. **Hint: Use the Shift key to select ranges.**

Add?	Trunk Account	ID	Type	Supervision
<input checked="" type="checkbox"/>	RBS T1 to PBX	T01	RBS	Wink

To configure calls to certain numbers to route out of the RBS trunk, click on the 'Configure Advanced Templates' button under the Call Templates section.

Detailed View - Permit/Restriction Call Templates ?

Permit Template	Cost
There are no configured Permit Templates	

Restriction Template
There are no configured Restriction Templates

?

A good rule of thumb is to be specific with trunks going to CPE devices and be general when creating call routing rules with trunks going to the PSTN/SIP network. In this example, we have been assigned the number 256-555-1000 by the SIP provider and want to route that number out the RBS trunk. To do this, add the specific number to the 'Template' box and assign a 'Cost' of 0. When finished, click on 'Add'.

Add/Delete Override Templates

Use this form to add and delete specific outbound permit call templates.

Add Outbound Permit Template

Template:
All calls matching the specified pattern will be permitted ?
Valid characters: 0-9 , () - M N X [] \$

Cost:
Enter cost value between 0-499 for this template (optional) ?

Once the Permit Template(s) have been verified, click on the 'Return to Trunk Group Config' button.

Restriction Template
There are no configured Restriction Templates

[Return to Trunk Group Config](#)

Click on the 'Apply' button to apply the configuration changes.

[Detailed View - Permit/Restriction Call Templates](#) ?

Permit Template	Cost
256-555-1000	Low (0)

Restriction Template
There are no configured Restriction Templates

[Configure Advanced Templates](#) ?

[Cancel](#) [Apply](#)

Always remember to save your changes by clicking on 'Save' at the top of the Web GUI.



Command Line Interface Configuration

An RBS trunk is configured over a T1 interface. To begin, we must setup the T1 interface correctly and then connect it to the RBS trunk.

Note: The configuration parameters used in the examples are for instructional purposes only. Please replace all underlined entries (i.e. **example**) with your specific parameters to configure your application.

Configuring the T1 Interface

First, you must create a TDM group. The following example creates a TDM group of 24 DS0s (Channels 1-24 at 64kbps each) on the T1 connection.

Note: The Web Configuration will create 24 individual TDM groups each comprised of one DS0. This is necessary if a particular DID needs to go to a particular channel on the RBS Trunk (Multiple voice trunk accounts and trunk groups are needed for this functionality). If this is not necessary and any DID can go down any channel, only one TDM group is needed when configuring via the CLI (This situation is used for the Web Configuration and the Command Line Interface Configuration in this guide).

```
(config)#interface t1 0/2
(config-t1 0/2)#description RBS T1 to PBX
```



```
(config-t1 0/2)#tdm-group 1 timeslots 1-24 speed 64
(config-t1 0/2)#no shutdown
(config-t1 0/2)#exit
```

Configuring the RBS Trunk

Step 1:

First, it is a good idea to create an appropriate Codec List to be used by the PRI trunk. In a Codec List, you can specify which codec should be prioritized by the trunk when negotiating the call setup. In this example, a Codec List named 'Trunk' is going to be configured to use G.729 as the primary codec and G.711 as the secondary codec.

```
(config)#voice codec-list Trunk
(config-codec)#codec g729
(config-codec)#codec g711ulaw
(config-codec)#exit
```

Step 2:

Next, create the RBS voice trunk using the 'voice trunk' command and specifying the type as 't1-rbs supervision wink role network'. An optional description can be given to the trunk as well using the 'description' command. The command 'no reject-external' allows the RBS trunk to accept calls from other trunks that may be configured (i.e. PRI or SIP). This command is necessary for deployments where more than one trunk is being used (i.e. a SIP trunk and a PRI/RBS trunk to the CPE). Finally, connect the voice trunk to a TDM group on a T1 interface using the 'connect' statement. The 'did digits-transferred' command specifies how many DNIS digits will be sent to the CPE device on an inbound call.

```
(config)# voice trunk T02 type t1-rbs supervision wink role network
(config-T02)#description "RBS T1 to PBX"
(config-T02)#no reject-external
(config-T02)#connect t1 0/2 tdm-group 1
(config-T02)#did digits-transferred 10
```

Step 3:

Since this is a voice trunk and not a voice user, a voice grouped trunk will need to be configured to specify which numbers should be routed out the RBS trunk. A good rule of thumb is to be specific with trunks going to CPE devices and be general when creating call routing rules with trunks going to the PSTN/SIP network. In this example, we have been assigned the number 256-555-1000 by the SIP provider and want to route that number out the RBS trunk. We do this by adding an 'accept' entry for the specific number.

```
(config)#voice grouped-trunk "RBS T1 TO PBX"  
(config-RBS T1 TO PBX)#trunk T02  
(config-RBS T1 TO PBX)#accept 256-555-1000 cost 0
```

Step 4:

Once everything is configured correctly, you will want to save your changes.

```
(config)#exit  
#copy running-config startup-config
```

Example Configuration

```
interface t1 0/2  
  description RBS T1 to PBX  
  tdm-group 1 timeslots 1-24 speed 64  
  no shutdown  
!  
voice codec-list Trunk  
  codec g729  
  codec g711ulaw  
!  
voice trunk T02 type t1-rbs supervision wink role network  
  description "RBS T1 to PBX"  
  no reject-external  
  did digits-transferred 10  
  connect t1 0/2 tdm-group 1  
!  
voice grouped-trunk "RBS T1 TO PBX"  
  no description  
  trunk T02  
  accept 256-555-1000 cost 0
```

If you experience any problems using your ADTRAN product, please contact [ADTRAN Technical Support](#).

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