



# Quick Note 044

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Multiple cellular modules compatibility in a single configuration file using tags.

Digi Support  
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## 1 INTRODUCTION

### 1.1 Introduction

This document will show how to use tags to create a configuration file that will support multiple cellular modules on the same Digi TransPort platform.

In this example, a WR21 configuration will be generated to allow usage on a unit with either a Sierra Wireless LTE or a Telit module.

**Please Note:** A configuration file is read top to bottom; any duplicate setting in the file will result as the last one being taken over.

### 1.2 Assumptions

This guide has been written for use by technically competent personnel with a good understanding of the communications technologies used in the product and of the requirements for their specific application. It also assumes a basic ability to access and navigate a Digi TransPort router.

This application note applies only to:

**Model:** DIGI TransPort WR21/41/44

**Firmware versions:** 5246 and later

**Configuration:** This document assumes that the devices are set to their factory default configurations. Most configuration commands are shown only if they differ from the factory default.

**Please note:** This application note has been specifically rewritten for firmware release 5246 and later but will work on earlier versions of firmware. Please contact [tech.support@digi.com](mailto:tech.support@digi.com) if you require assistance in upgrading the firmware of the TransPort router.

### 1.3 Corrections

Requests for corrections or amendments to this application note are welcome and should be addressed to: [tech.support@digi.com](mailto:tech.support@digi.com)

Requests for new application notes can be sent to the same address.

## 2 VERSION

Version Number	Status
1.0	Published

## 3 CREATE CONFIGURATION FILE

### 3.1 Create a backup configuration file

Administration – Backup/Restore

**Administration - Backup/Restore**

Backup configuration to a file on your PC or server.

- Include passwords in the backup file.
- Include CA certificates in the backup file.
- Include certificates and keys in the backup file.
- Include routing protocol configuration files in the backup file.

**Backup**

Restore configuration from a file on your PC or server.

Restore From File:

Click on the “**Backup**” button to generate the backup configuration file. Check the boxes above to include passwords, certificates, keys and routing protocols configurations in the backup file.

Save the file to a location on the computer and extract the content to a folder.

### 3.2 Factory configuration

Administration – File Management > FLASH Directory

File Name	Size	Permissions	Modification Date
<a href="#">x3prof</a>	1680 bytes	rw	01:12:03, 01 Jan 2000
<a href="#">activate.sb</a>	33685 bytes	rw	13:16:41, 15 Aug 2014
<a href="#">bgp.conf</a>	256 bytes	rw	01:12:04, 01 Jan 2000
<a href="#">CAcert.cer</a>	1371 bytes	rw	01:12:04, 01 Jan 2000
<a href="#">cert01.pem</a>	3285 bytes	rw	01:12:05, 01 Jan 2000
<b>config.fac</b>	12979 bytes	ro	13:16:41, 15 Aug 2014

Save the **config.fac** file to a location on the computer. This file contains the factory default settings of the router including all support cellular modules parameters.

### 3.3 Edit the configuration file

Using a text editor, open the **config.da0** and **config.fac** file

In the **config.fac** file, copy the header section and add it after the line **ip 0 cidr ON** in the **config.da0** file. The TOP of the **config.da0** file should look like this :

```
[CFG]
config last_saved "15:36:17, 11 Sep 2014"
config last_saved_changes "1"
config last_saved_user "username"
eth 0 IPaddr "192.168.1.22"
eth 0 gateway "192.168.1.1"
addp 0 enable ON
lapb 0 ans OFF
lapb 0 tinact 120
lapb 1 tinact 120
lapb 3 dtemode 0
lapb 4 dtemode 0
lapb 5 dtemode 0
lapb 6 dtemode 0
ip 0 cidr ON

#####
# Hardware conditional configuration #
#####
```

In the **config.fac** file, copy the sections (TAGS) for each cellular module that will be used in the routers, for this example, we will use a **Sierra\_LTE** and a **Telit\_3G**.

A Tag start with **<module\_name>** and ends with **</module\_name>**

```
<TEELIT_3G>
def_route 0 ll_ent "ppp"
def_route 0 ll_add 1
modemcc 0 asy_add 2
modemcc 0 info_asy_add 3
modemcc 0 init_str "+CGQREQ=1"
modemcc 0 init_str1 "+CGQMIN=1"
modemcc 0 apn "Your.APN.goes.here"
modemcc 0 link_retries 10
modemcc 0 stat_retries 30
modemcc 0 sms_interval 1
modemcc 0 sms_access 1
modemcc 0 sms_concat 0
modemcc 0 init_str_2 "+CGQREQ=1"
modemcc 0 init_str1_2 "+CGQMIN=1"
modemcc 0 apn_2 "Your.APN.goes.here"
modemcc 0 link_retries_2 10
modemcc 0 stat_retries_2 30
ppp 1 phonenum "*98*1#"
ppp 1 name "W-WAN (HSPA 3G)"
ppp 1 r_chap OFF
</TEELIT_3G>

<SIERRA_LTE>
def_route 0 ll_ent "ppp"
def_route 0 ll_add 1
ppp 1 name "W-WAN"
ppp 1 phonenum "*98*3#"
ppp 1 username "username"
ppp 1 password "password"
```

```

ppp 1 r_chap OFF
ppp 1 timeout 0
ppp 1 cdma_backoff ON
ppp 1 pwr_dly 40
modemcc 0 asy_add 2
modemcc 0 info_asy_add 4
modemcc 0 apn "none"
modemcc 0 link_retries 30
modemcc 0 stat_retries 30
modemcc 0 sms_interval 1
modemcc 0 sms_access 1
modemcc 0 sms_concat 0
modemcc 0 link_retries_2 30
modemcc 0 stat_retries_2 30
modemcc 0 apn_2 "none"
modemcc 0 sms_interval_2 1
modemcc 0 sms_access_2 1
modemcc 0 sms_concat 0
</SIERRA_LTE>

```

Paste these 2 module tags AFTER the header you previously inserted and BEFORE the rest of the unit configuration. It should now look like this:

```

ip 0 cidr ON

#####
# Hardware conditional configuration #
#####

<TELIT_3G>
def_route 0 ll_ent "ppp"
def_route 0 ll_add 1
modemcc 0 asy_add 2
modemcc 0 info_asy_add 3
modemcc 0 init_str "+CGQREQ=1"
modemcc 0 init_str1 "+CGQMIN=1"
modemcc 0 apn "Your.APN.goes.here"
modemcc 0 link_retries 10
modemcc 0 stat_retries 30
modemcc 0 sms_interval 1
modemcc 0 sms_access 1
modemcc 0 sms_concat 0
modemcc 0 init_str_2 "+CGQREQ=1"
modemcc 0 init_str1_2 "+CGQMIN=1"
modemcc 0 apn_2 "Your.APN.goes.here"
modemcc 0 link_retries_2 10
modemcc 0 stat_retries_2 30
ppp 1 phonenum "*98*1#"
ppp 1 name "W-WAN (HSPA 3G) "
ppp 1 r_chap OFF
</TELIT_3G>

<SIERRA_LTE>
def_route 0 ll_ent "ppp"
def_route 0 ll_add 1
ppp 1 name "W-WAN"
ppp 1 phonenum "*98*3#"
ppp 1 username "username"
ppp 1 password "password"
ppp 1 r_chap OFF
ppp 1 timeout 0
ppp 1 cdma_backoff ON
ppp 1 pwr_dly 40
modemcc 0 asy_add 2

```

```

modemcc 0 info_asy_add 4
modemcc 0 apn "none"
modemcc 0 link_retries 30
modemcc 0 stat_retries 30
modemcc 0 sms_interval 1
modemcc 0 sms_access 1
modemcc 0 sms_concat 0
modemcc 0 link_retries_2 30
modemcc 0 stat_retries_2 30
modemcc 0 apn_2 "none"
modemcc 0 sms_interval_2 1
modemcc 0 sms_access_2 1
modemcc 0 sms_concat_2 0
</SIERRA_LTE>

def_route 0 ll_ent "ppp"
def_route 0 ll_add 1

```

Scroll down in the **config.da0** file to the device configuration section and remove **AT LEAST** the module configuration lines and the PPP 1 phone number since these 3 parameters will vary from modules to modules:

```

modemcc 0 asy_add 2
modemcc 0 info_asy_add 4
ppp 1 phonenumber "*98*3#"

```

The following lines can also be removed if they are not differing from the factory settings above:

```

modemcc 0 link_retries 30
modemcc 0 stat_retries 30
modemcc 0 sms_interval 1
modemcc 0 sms_access 1
modemcc 0 sms_concat 0
modemcc 0 link_retries_2 30
modemcc 0 stat_retries_2 30
modemcc 0 sms_interval_2 1
modemcc 0 sms_access_2 1

```

If some settings are not matching the factory settings, replace the lines accordingly in the tags section, for example

```

modemcc 0 link_retries 30

```

With

```

modemcc 0 link_retries 40

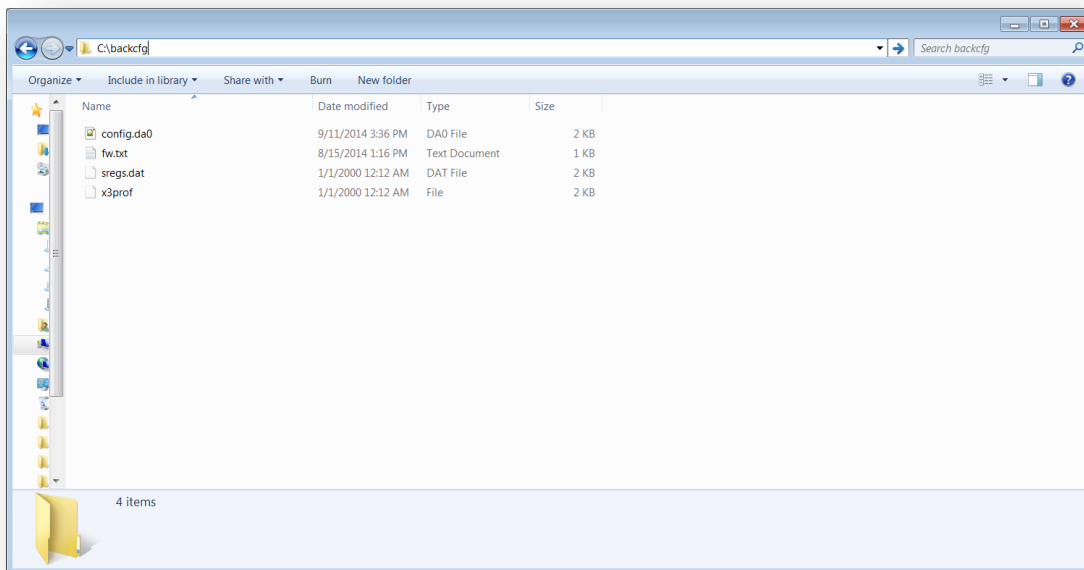
```

Make sure to leave the **modemcc 0 apn "xxx"** and **modemcc 0 apn\_2 "xxx"** lines in the device configuration section or alternatively set the appropriate apn settings under each tags.

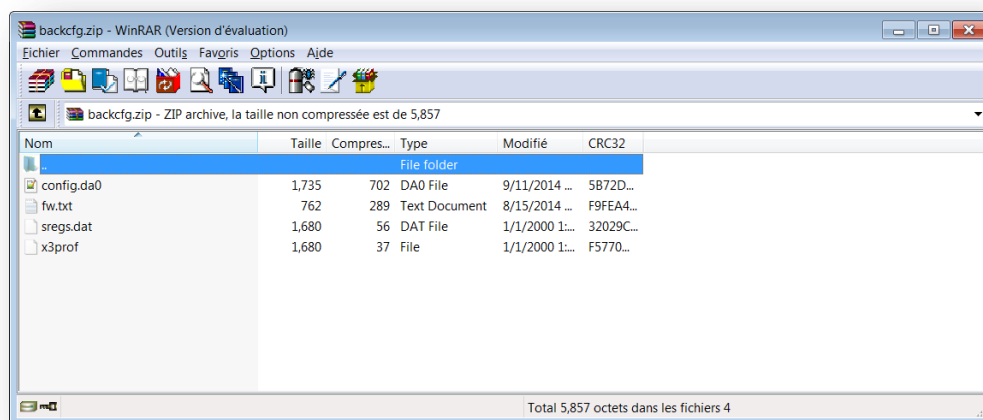
Save the file.

### 3.4 Build backup config zip file

Navigate to the folder containing the extracted backup configuration that was just modified :



Select all the files and compress them in zip format. Make sure that the zip archive only contains the files and not a directory including the files or the restore process on the router will fail:



This archive can now be used to restore the configuration on units with a Telit or a Sierra Wireless module.

**Please note:** Making any further changes to the router's configuration and clicking **save** will result in a merge of the module section in the rest of the configuration.



## 4 SAMPLE CONFIGURATION FILE

Digi TransPort WR21 with Telit and Sierra hardware configuration. In bold, what was added/changed to the configuration file from the device.

```
[CFG]
config last_saved "15:36:17, 11 Sep 2014"
config last_saved_changes "1"
config last_saved_user "username"
eth 0 IPaddr "192.168.1.22"
eth 0 gateway "192.168.1.1"
addp 0 enable ON
lapb 0 ans OFF
lapb 0 tinact 120
lapb 1 tinact 120
lapb 3 dtemode 0
lapb 4 dtemode 0
lapb 5 dtemode 0
lapb 6 dtemode 0
ip 0 cidr ON
#####
# Hardware conditional configuration #
#####

<TELIT_3G>
def_route 0 ll_ent "ppp"
def_route 0 ll_add 1
modemcc 0 asy_add 2
modemcc 0 info_asy_add 3
modemcc 0 init_str "+CGQREQ=1"
modemcc 0 init_str1 "+CGQMIN=1"
modemcc 0 apn "Your.APN.goes.here"
modemcc 0 link_retries 10
modemcc 0 stat_retries 30
modemcc 0 sms_interval 1
modemcc 0 sms_access 1
modemcc 0 sms_concat 0
modemcc 0 init_str_2 "+CGQREQ=1"
modemcc 0 init_str1_2 "+CGQMIN=1"
modemcc 0 apn_2 "Your.APN.goes.here"
modemcc 0 link_retries_2 10
modemcc 0 stat_retries_2 30
ppp 1 phonenum "*98*1#"
ppp 1 name "W-WAN (HSPA 3G)"
ppp 1 r_chap OFF
</TELIT_3G>

<SIERRA_LTE>
def_route 0 ll_ent "ppp"
def_route 0 ll_add 1
ppp 1 name "W-WAN"
ppp 1 phonenum "*98*3#"
ppp 1 username "username"
ppp 1 password "password"
ppp 1 r_chap OFF
ppp 1 timeout 0
ppp 1 cdma backoff ON
ppp 1 pwr_dly 40
modemcc 0 asy_add 2
modemcc 0 info_asy_add 4
modemcc 0 apn "none"
modemcc 0 link_retries 30
```

```

modemcc 0 stat_retries 30
modemcc 0 sms_interval 1
modemcc 0 sms_access 1
modemcc 0 sms_concat 0
modemcc 0 link_retries_2 30
modemcc 0 stat_retries_2 30
modemcc 0 apn_2 "none"
modemcc 0 sms_interval_2 1
modemcc 0 sms_access_2 1
modemcc 0 sms_concat 0
</SIERRA_LTE>
def_route 0 ll_ent "ppp"
def_route 0 ll_add 1
dhcp 0 IPmin "192.168.1.100"
dhcp 0 respdelms 500
dhcp 0 mask "255.255.255.0"
dhcp 0 gateway "192.168.1.1"
dhcp 0 DNS "192.168.1.1"
sntp 0 server "time.etherios.com"
ppp 0 timeout 300
ppp 1 name "W-WAN"
ppp 1 username "username"
ppp 1 IPaddr "0.0.0.0"
ppp 1 timeout 0
ppp 1 use_modem 1
ppp 1 cdma_backoff ON
ppp 1 aodion 1
ppp 1 autoassert 1
ppp 1 pwr_dly 40
ppp 1 r_chap OFF
ppp 3 defpak 16
ppp 4 defpak 16
web 0 prelogin_info ON
modemcc 0 apn "Internet"
modemcc 0 apn_2 "none"
ana 0 llon ON
ana 0 lapdon 0
ana 0 asyon 1
ana 0 logsize 45
cmd 0 unitid "ss%s>"
cmd 0 cmdnua "99"
cmd 0 hostname "digi.router"
cmd 0 asyled_mode 2
cmd 0 tremto 1200
cmd 0 rcihttp ON
user 0 access 0
user 1 name "username"
user 1 access 0
user 2 access 0
user 3 access 0
user 4 access 0
user 5 access 0
user 6 access 0
user 7 access 0
user 8 access 0
user 9 access 0
local 0 transaccess 2
sslsvr 0 certfile "cert01.pem"
sslsvr 0 keyfile "privrsa.pem"
ssh 0 hostkey1 "privSSH.pem"
ssh 0 nb_listen 5
ssh 0 v1 OFF
cloud 0 ssl ON
[ENDCFG]

```