



Quick Note 35

Configuring SMS alerting on a TransPort

Digi Technical Support

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1 INTRODUCTION

1.1 Outline

This document contains information regarding the configuration and use of syslog alerting.

All Digi TransPort products contain an Event Log. Whenever the TransPort firmware does any significant operation, an event is stored in the Event Log. Each event can be used to trigger an automatic email, SNMP trap, syslog alert, or an SMS message (on products with GPRS/WCDMA).

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.

This Application Note (AN) applies to:

Models shown: Digi TransPort WR21.

Other Compatible Models: All Digi TransPort products.

Firmware versions: 5.146 or newer.

Configuration: This AN assumes that the Digi TransPort product has a PPP instance configured to connect to the Internet. The SIM card in use on the router is activated correctly and supports sending SMS text messages.

Alerts will be configured to notify a mobile phone via SMS when the PPP connection on the WAN interface changes its UP/DOWN status.

1.3 Corrections

Requests for corrections or amendments to this AN are welcome and should be addressed to:

tech.support@digi.com

Requests for new ANs can be sent to the same address.

1.4 Version & Revision History

Version Number	Status
1.0	Published
1.1	Updated screenshots and instructions for new web interface, rebranding (Sept 2016)

2 CONFIGURATION

2.1 Configuring the Event Logcodes

First, it is necessary to choose which events should trigger the SMS alerts.

The Event Logcodes are configured from Configuration - Alarms > Event Logcodes. The list of events and trigger priorities is held in a file called logcodes.txt. When the event logcodes are changed, the changes will not appear in the config.dao or logcodes.txt files, but are stored in the logcodes.dif file once the changes have been saved.

In order to send an SMS alert when a particular event occurs, the Alarm Priority for the event should be changed. There can be a number of reasons for each event. Each event can be configured with a global Alarm Priority which applies to all the reasons. It is also possible to override the global event Alarm Priority with a different Alarm Priority for each reason.

In the example below, the Event 5 “%e %a down” will be used to trigger an SMS alert when PPP 1 is down, and Event 153 “PPP 1 up” will be used to trigger an SMS alert when PPP 1 is up.

Navigate to **Configuration - Alarms > Event Logcodes**

[Configuration - Alarms > Event Logcodes](#)

- ▶ Event Settings
- ▼ Event Logcodes

The logcodes describe the logged events. It is possible to configure each event / reason with a specific priority which can be used to control when that event / reason causes an alarm to be created.

Event Description	Filter	Event Priority	Reasons	Reason Priority
1			1 Reboot command	
			2 Reboot command via web	
			3 Message shortage reboot	
			4 Buffer shortage reboot	
			5 Buffers excessive	
			6 MsgLog	
			7 High CPU usage	
			8 Locked task %c	
			9 Watchdog timeout	
			10 Reboot command via iDigi Server	
			11 Python script watchdog	
			12 ESPAD request	
			13 ASY transmit watchdog	
			14 Cloud SMS command	
			15 Power failure	

The following table describes the meaning of each column:

Parameter	Description
Event	A numerical value that represents the event.
Description	The main description of the event.
Filter	If the Filter is ON, this event will not be logged.

Event Priority	The priority that the event current has assigned. This is the alarm priority.
Reasons	The reason that the event is triggered.
Reason Priority	The priority that the reason currently has assigned. This is the alarm priority.

Click on the **%e %a down** event (event number 5):

[Configuration - Alarms > Event Logcodes](#)

5	%e %a down	
1	Inactivity	
2	Remote disconnect	
3	LL disconnect	
4	Upper layer req	
5	Negotiation failure	2
6	Retransmit failure	6
7	DISC transmit	
8	TEI failure	5
9	TEI lost	5
10	Lower deactivated	
11	DISC receive	
12	B Channel clr	
13	Protocol failure	
14	PPP PING Failure	
15	PPP TX Link Failure	
16	Call Req Timeout	
17	LCP Echo Failure	
18	Rebooting	
19	Firewall Request	
20	Timeband Off	
21	Max up time	
22	Max negotiation time	
23	LL remote disconnect	
24	WEB request	
25	CLI request	

On the following page, configure the Alarm Priority:

[Configuration - Alarms > Event Logcodes](#)

► Event Settings
▼ Event Logcodes

Event: %e %a down

Do not log this event

Log Priority:

Alarm Priority:

Alarm Priority is dependent on the event being logged by Entity All instance

Priority only applies to

PPP 0 PPP 1 PPP 2 PPP 3
 PPP 4 PPP 5 PPP 6 PPP 7

Store a snapshot of the Traffic Analyser trace on the log drive

If this event creates an Email alarm

Attach a snapshot of the Traffic Analyser trace

After this event: Leave the Analyser trace
 Freeze the Analyser trace
 Delete the Analyser trace

Attach a snapshot of the Event Log

After this event: Leave the Event Log
 Delete the Event Log

Attachment List ID:

If this event creates a Syslog alarm, use

Syslog Priority:

Syslog Facility:

Click the "Apply" button.

Parameter	Setting	Description
Alarm Priority	9	Change the Alarm Priority to 9; this will be used later.

Repeat the process for Event 153, 'PPP 1 up':

[Configuration - Alarms > Event Logcodes](#)

153	PPP 1 up
154	PPP 2 up
155	PPP 3 up
156	PPP 4 up

[Configuration - Alarms > Event Logcodes](#)

▶ **Event Settings**

▼ **Event Logcodes**

Save All Event Code Changes

Event: PPP 1 up

Do not log this event

Log Priority:

Alarm Priority:

Alarm Priority is dependent on the event being logged by Entity All instance

Priority only applies to

- PPP 0 PPP 1 PPP 2 PPP 3
 PPP 4 PPP 5 PPP 6 PPP 7

Store a snapshot of the Traffic Analyser trace on the log drive

If this event creates an Email alarm

- Attach a snapshot of the Traffic Analyser trace
After this event: Leave the Analyser trace
 Freeze the Analyser trace
 Delete the Analyser trace

- Attach a snapshot of the Event Log
After this event: Leave the Event Log
 Delete the Event Log

Attachment List ID:

If this event creates a Syslog alarm, use

Syslog Priority:

Syslog Facility:

Apply

Click the "Apply" button.

Optional step:

If required, alerts can be locked to a specific PPP interface by using the parameter "Alarm Priority is dependent on the event being logged by Entity" and configuring it as the PPP interface in use.

[Configuration - Alarms > Event Logcodes](#)

▶ **Event Settings**
▼ **Event Logcodes**

Event: %e %a down

Do not log this event

Log Priority:

Alarm Priority:

Alarm Priority is dependent on the event being logged by Entity All instance

Priority only applies to

PPP 0 PPP 1 PPP 2 PPP 3
 PPP 4 PPP 5 PPP 6 PPP 7

Store a snapshot of the Traffic Analyser trace on the log drive

If this event creates an Email alarm

Attach a snapshot of the Traffic Analyser trace

After this event: Leave the Analyser trace
 Freeze the Analyser trace
 Delete the Analyser trace

Attach a snapshot of the Event Log

After this event: Leave the Event Log
 Delete the Event Log

Attachment List ID:

If this event creates a Syslog alarm, use

Syslog Priority:

Syslog Facility:

OPTIONAL STEP

When all changes to the Logcodes are complete, scroll to the top of the screen, and then click 'Save All Event Code Changes' to save the changes to the logcodes.dif file.

[Configuration - Alarms > Event Logcodes](#)

▶ **Event Settings**
▼ **Event Logcodes**

The logcodes describe the logged events. It is possible to configure each event / reason with a specific priority which can be used to control when that event / reason causes an alarm to be created.

2.2 Configuring the Event Settings

In the Event Settings, the delay after power up should be long enough for the router to detect and register on the mobile network. Increase this if required.

The mobile number entered to send SMS alerts to should be in MSISDN format. The '+' symbol and/or leading zero should not be used. The Country Code should be included.

UK example: 44xxxxxxxxx

US example: 1xxxxxxxxx

The SMS alarm priority (Send SMS messages to <MSISDN> if the alarm priority is at least <nn>) should be set to a number the same or higher than the alarm priority configured for the event in the previous steps.

If the alarm priority on the Event Settings page is set to 9, then every event (or event reason) with an alarm priority of 9=> will trigger an SMS alert. i.e. 9, 10, 11, 12....

The SMS template should be set to event.sms to use the included factory default template. Custom templates can be created if required.

The maximum number of SMS per day should be configured to take into account the SMS charges on the tariff in use.

Navigate to **Configuration - Alarms > Event Settings > SMS** and configure the following parameters:

Configuration - Alarms > Event Settings

▼ **Event Settings**

Only log events with a log priority of at least

Do not log the following events:

After power up, wait seconds before sending Emails, SNMP traps, SMS or Syslog messages

Include event number in the event log and Email, SNMP traps, SMS or Syslog messages

▶ **Email Notifications**

▶ **SNMP Traps**

▼ **SMS**

Send SMS messages to if the alarm priority is at least

Send SMS messages to if the alarm priority is at least

Send SMS messages to if the alarm priority is at least

Use SMS template

Send a maximum of SMS messages per day

0 SMS messages have been sent today

▶ **Local Logging**

▶ **Syslog Messages**

▶ **Syslog Server 0**

▶ **Syslog Server 1**

▶ **Syslog Server 2**

▶ **Syslog Server 3**

▶ **Syslog Server 4**

Click the **“Apply”** button.

Parameter	Setting	Description
After power up, wait nn seconds before sending Emails, SNMP traps, SMS or Syslog messages	60	Delay in seconds, after power up, before alerts will be sent.
Send SMS messages to...	Mobile phone number	Must be in MSISDN format.
...if the alarm priority is at least nn	9	Events with an alarm priority equal or greater than this number will trigger an alert.
Use SMS template	event.sms	The message template to use.
Send a maximum of nn SMS messages per day	20	The maximum number of alerts to send per day. This counter is reset at midnight.

3 TESTING

To test that the TransPort is configured correctly and prove that SMS alerts work when PPP is down (PPP status has no effect on SMS functions), the PPP interface should be set so it does not try and re-connect automatically when deactivated. The PPP interface will then be disconnected, when the SMS is received, the PPP interface will be re-activated and a second SMS will be sent when PPP is up.

Only perform this test when connected to the router via the LAN because the WAN connection will now be disconnected and will require a manual re-connect.

Configure the PPP interface to not reconnect automatically:

Navigate to **Configuration - Network > Interfaces > Advanced > PPP 1 > Advanced**

Remove the tick from 'Enable "Always On" mode of this interface' and click the **Apply** button:

[Configuration - Network > Interfaces > Advanced > PPP 1 > Advanced](#)

▼ **Advanced**

Metric:

Allow this PPP interface to settle for x 100 milliseconds after the connection has come up

- Enable "Always On" mode of this interface
- Attempt to re-connect after seconds
- If a PPP interface that would be inhibited by this PPP is connected, attempt to re-connect after seconds
- Wait seconds after power-up before activating this interface

[Configuration - Network > Interfaces > Advanced > PPP 1 > Advanced](#)

- Inhibit other PPP interface if this PPP interface is disconnected but operational
- Attempt to negotiate DEFLATE compression on this interface
- Attempt to negotiate MPPE encryption on this interface
- Use PPP for processing CHAP
- TCP transmit buffer size: bytes

▶ **PPP Negotiation**

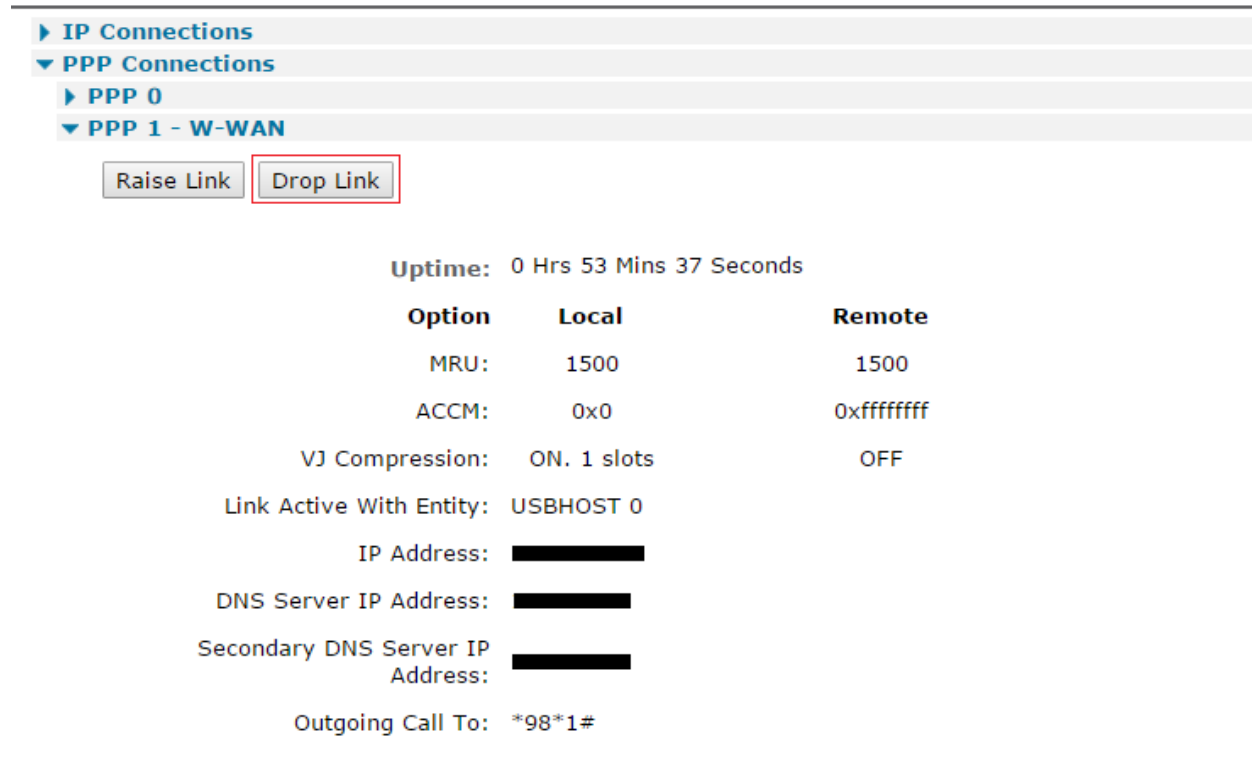
▶ **QoS**

Click the "Apply" button.

Navigate to **Management - Connections > PPP Connections > PPP 1** and click the **Drop Link** button.

NOTE: The connection to the Internet will disconnect.

[Management - Connections](#) > [PPP Connections](#) > [PPP 1](#)

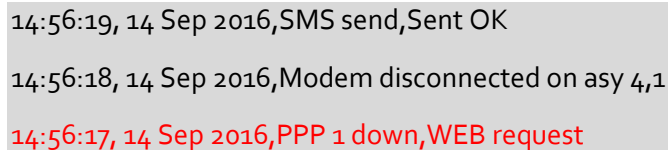


The screenshot shows the configuration page for PPP 1. The navigation path is Management - Connections > PPP Connections > PPP 1. Under the PPP 1 - W-WAN section, there are two buttons: 'Raise Link' and 'Drop Link'. The 'Drop Link' button is highlighted with a red rectangular box. Below the buttons, the 'Uptime' is shown as 0 Hrs 53 Mins 37 Seconds. A table lists various options and their local and remote values:

Option	Local	Remote
MRU:	1500	1500
ACCM:	0x0	0xffffffff
VJ Compression:	ON. 1 slots	OFF
Link Active With Entity:	USBHOST 0	
IP Address:	[REDACTED]	
DNS Server IP Address:	[REDACTED]	
Secondary DNS Server IP Address:	[REDACTED]	
Outgoing Call To:	*98*1#	

When the PPP link is dropped, this will create an event in the Event Log and an SMS will be sent.

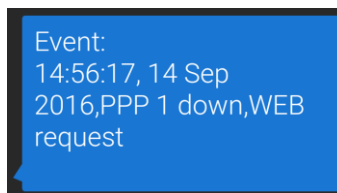
The events in **Management - Event Log** will look similar to this:



14:56:19, 14 Sep 2016, SMS send, Sent OK
14:56:18, 14 Sep 2016, Modem disconnected on asy 4,1
14:56:17, 14 Sep 2016, PPP 1 down, WEB request

NOTE: The event that triggered the SMS is shown in red for clarification. Colouring of text in the actual Event Log does not happen.

The received SMS is shown here:



Event:
14:56:17, 14 Sep
2016, PPP 1 down, WEB
request

Configure the PPP interface to reconnect automatically:

Navigate to **Configuration - Network > Interfaces > Advanced > PPP 1 > Advanced**

Insert the tick in 'Enable "Always On" mode of this interface'.

[Configuration - Network > Interfaces > Advanced > PPP 1 > Advanced](#)

▼ **Advanced**

Metric:

Allow this PPP interface to settle for x 100 milliseconds after the connection has come up

Enable "Always On" mode of this interface

On On and return to service immediately

Put this interface "Out of Service" when an always-on connection attempt fails

Attempt to re-connect after seconds

If a PPP interface that would be inhibited by this PPP is connected,
attempt to re-connect after seconds

Wait seconds after power-up before activating this interface

[Configuration - Network > Interfaces > Advanced > PPP 1 > Advanced](#)

- Inhibit other PPP interface if this PPP interface is disconnected but operational
- Attempt to negotiate DEFLATE compression on this interface
- Attempt to negotiate MPPE encryption on this interface
- Use PPP for processing CHAP
- TCP transmit buffer size: bytes

► **PPP Negotiation**

► **QoS**

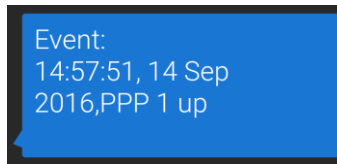
Apply

Click the "Apply" button.

After a few seconds the PPP interface will reconnect. When PPP 1 is up, an SMS will be sent. This can be seen in the Event Log:

```
14:58:01, 14 Sep 2016, SMS send, Sent OK
14:57:51, 14 Sep 2016, PPP 1 up
14:57:51, 14 Sep 2016, PPP 1 Start
14:57:51, 14 Sep 2016, Modem connected on asy 4
14:57:47, 14 Sep 2016, Modem dialing on asy 4 #: *98*1#
14:57:39, 14 Sep 2016, Par change by username, ppp 1 autoassert to 1
```

The received SMS is shown here:



The number of SMS messages sent by the router since midnight can be checked by navigating to **Configuration - Alarms > Event Settings**. The number of messages sent is shown in the **SMS** section. This is the total number of alerts sent to all configured mobile numbers.

[Configuration - Alarms > Event Settings](#)

▼ **Event Settings**

Only log events with a log priority of at least

Do not log the following events:

After power up, wait seconds before sending Emails, SNMP traps, SMS or Syslog messages

Include event number in the event log and Email, SNMP traps, SMS or Syslog messages

▶ **Email Notifications**

▶ **SNMP Traps**

▼ **SMS**

Send SMS messages to if the alarm priority is at least

Send SMS messages to if the alarm priority is at least

Send SMS messages to if the alarm priority is at least

Use SMS template

Send a maximum of SMS messages per day

5 SMS messages have been sent today

4 CONFIGURATION FILES

4.1 TransPort Configuration Files

Relevant portions of the configuration are **bold**.

Command: config c show

Command result

```
eth o IPAddr "192.168.1.1"  
addp o enable ON  
lapb o ans OFF  
lapb o tinact 120  
lapb 1 tinact 120  
lapb 3 dtemode o  
lapb 4 dtemode o  
lapb 5 dtemode o  
lapb 6 dtemode o  
ip o cidr ON  
def_route o ll_ent "ppp"  
def_route o ll_add 1  
dhcp o respdelms 500  
dhcp o mask "255.255.255.0"  
dhcp o gateway "192.168.1.1"  
dhcp o DNS "192.168.1.1"  
sntp o server "time.devicecloud.com"  
sntp o offset -8  
sntp o dstonmon 1  
sntp o dstoday 1  
sntp o dstoffmon 12  
sntp o dstoffday 31  
dyndns o ifent "default"
```

```
ppp o timeout 300
ppp 1 name "W-WAN"
ppp 1 phonenum "*98*1#"
ppp 1 IPAddr "o.o.o.o"
ppp 1 timeout 0
ppp 1 use_modem 1
ppp 1 aodion 1
ppp 1 autoassert 1
ppp 1 r_chap OFF
ppp 1 radiuscfg 0
ppp 3 defpak 16
ppp 4 defpak 16
web o prelogin_info ON
modemcc o asy_add 4
modemcc o info_asy_add 2
modemcc o init_str "+CGQREQ=1"
modemcc o init_str1 "+CGQMIN=1"
modemcc o apn "Your.APN.goes.here"
modemcc o link_retries 10
modemcc o stat_retries 30
modemcc o sms_interval 1
modemcc o sms_access 1
modemcc o sms_concat 0
modemcc o init_str_2 "+CGQREQ=1"
modemcc o init_str1_2 "+CGQMIN=1"
modemcc o apn_2 "Your.APN.goes.here"
modemcc o link_retries_2 10
modemcc o stat_retries_2 30
modemcc o sms_access_2 1
modemcc o sms_concat_2 0
```



```
ana o l1on ON
ana o lapdon o
ana o asyon 1
ana o logsize 45
cmd o unitid "ss%s>"
cmd o cmdnua "99"
cmd o hostname "digi.router"
cmd o anonftp ON
cmd o tremto 86400
cmd o rcihttp ON
user o access o
user 1 name "username"
user 1 epassword "PDZxUxQeFBo="
user 1 access o
user 2 access o
user 3 access o
user 4 access o
user 5 access o
user 6 access o
user 7 access o
user 8 access o
user 9 access o
local o transaccess 2
event o sms_max 20
event o smstemp "event.sms"
event o sms_to "1234567890"
event o sms_trig 9
event o action_dly 60
sslcli o verify 10
sslsvr o certfile "cert01.pem"
```

```
sslsvr o keyfile "privrsa.pem"
ssh o hostkey1 "privSSH.pem"
ssh o nb_listen 5
ssh o v1 OFF
templog o mo_autooff ON
qdl o fw 7
cloud o ssl ON

Power Up Profile: o
OK
```

Below are the contents of the logcodes.dif file. Manual configuration of the logcodes.dif is outside the scope of this AN; if further instruction is required, please contact tech.support@digi.com

```
E5,9,
E153,9,
```

4.2 TransPort Firmware Versions

Firmware / hardware information from the unit:

Command: atij

Command result

Digi TransPort WR21-U81B-DE1-XX Ser#:xxxxxx HW Revision: 1201a

Software Build Ver5.2.15.6. Aug 17 2016 17:42:05 WW

ARM Bios Ver 7.56u v43 454MHz B987-M995-F80-Oo,o MAC:00042d042ac6

Power Up Profile: o

Async Driver Revision: 1.19 Int clk

Ethernet Port Isolate Driver Revision: 1.11

Firewall Revision: 1.0

EventEdit Revision: 1.0

Timer Module Revision: 1.1

(B)USBHOST Revision: 1.0

L2TP	Revision: 1.10
PPTP	Revision: 1.00
TACPLUS	Revision: 1.00
MODBUS	Revision: 0.00
RealPort	Revision: 0.00
MultiTX	Revision: 1.00
LAPB	Revision: 1.12
X25 Layer	Revision: 1.19
MACRO	Revision: 1.0
PAD	Revision: 1.4
X25 Switch	Revision: 1.7
V120	Revision: 1.16
TPAD Interface	Revision: 1.12
GPS	Revision: 1.0
TELITUPD	Revision: 1.0
SCRIBATSK	Revision: 1.0
BASTSK	Revision: 1.0
PYTHON	Revision: 1.0
CLOUDSMS	Revision: 1.0
TCP (HASH mode)	Revision: 1.14
TCP Utils	Revision: 1.13
PPP	Revision: 5.2
WEB	Revision: 1.5
SMTP	Revision: 1.1
FTP Client	Revision: 1.5
FTP	Revision: 1.4
IKE	Revision: 1.0
POLLANS	Revision: 1.2
PPPOE	Revision: 1.0
BRIDGE	Revision: 1.1

MODEM CC (GOBI UMTS) Revision: 5.2

FLASH Write Revision: 1.2

Command Interpreter Revision: 1.38

SSLCLI Revision: 1.0

OSPF Revision: 1.0

BGP Revision: 1.0

QOS Revision: 1.0

PWRCTRL Revision: 1.0

RADIUS Client Revision: 1.0

SSH Server Revision: 1.0

SCP Revision: 1.0

SSH Client Revision: 1.0

CERT Revision: 1.0

LowPrio Revision: 1.0

Tunnel Revision: 1.2

OVPN Revision: 1.2

TEMPLOG Revision: 1.0

QDL Revision: 1.0

OK