

FREQUENTLY ASKED QUESTIONS

ETERNITY PE/GE/ME/LE, EON48



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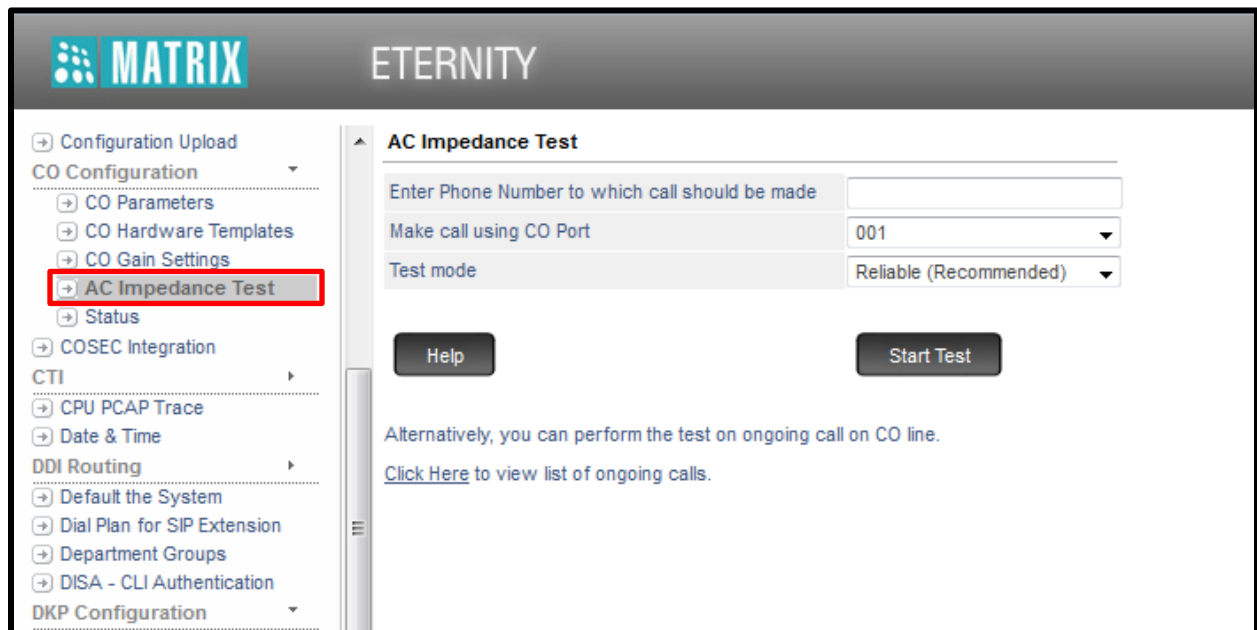
How to improve speech quality for DKP – CO Trunk calls?

To troubleshoot speech issues for call between a CO Trunk and a DKP (Digital Key Phone) follow the below given steps:

1. AC Impedance Test
2. Configure Echo Cancellation Parameter
3. Configure Gain Settings
4. Configure DKP volume settings

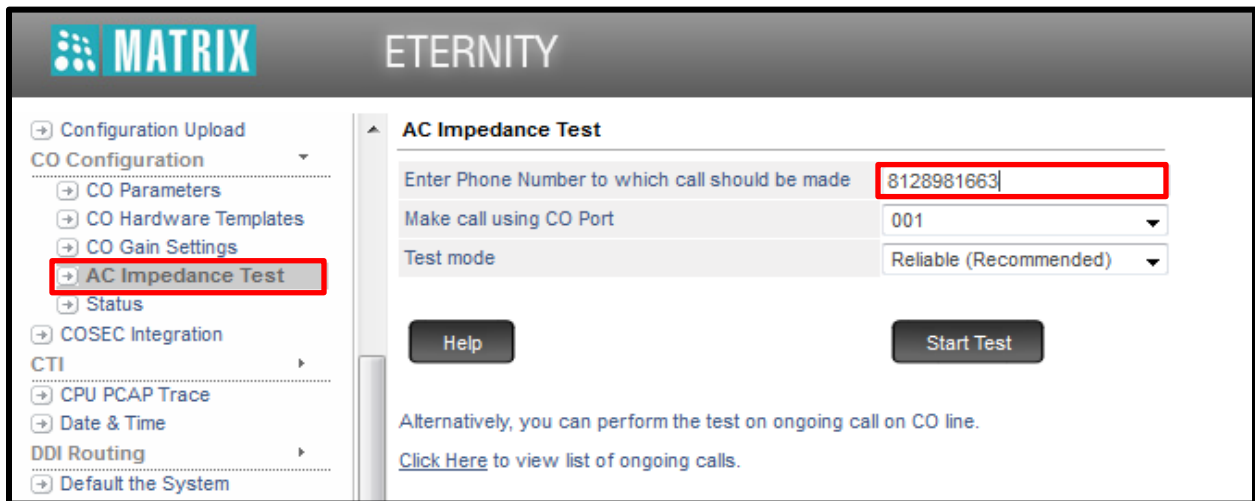
- **AC Impedance Test:**

Step 1: Go to AC Impedance Test

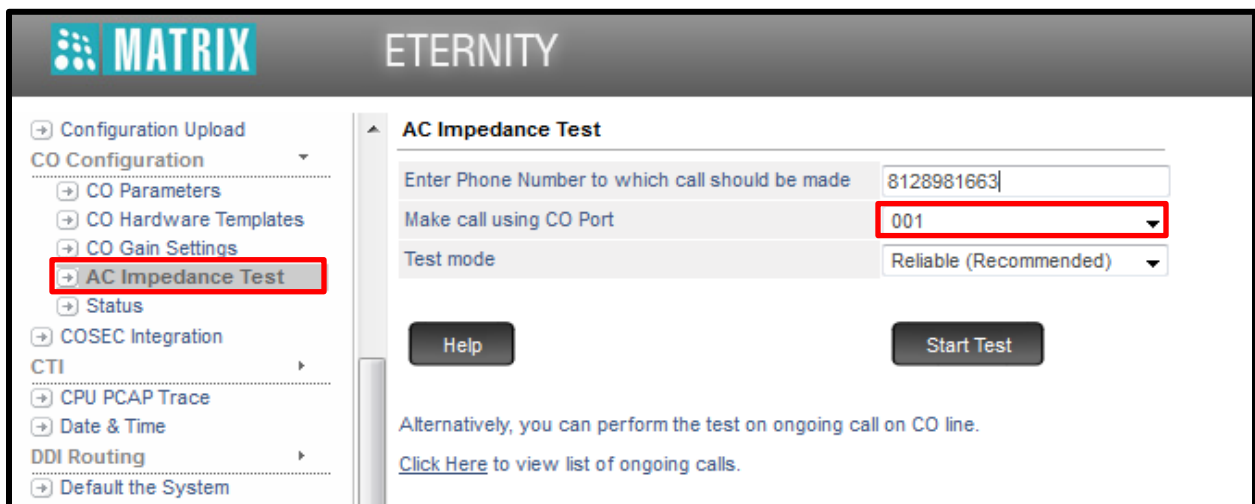


Step 2: Enter the phone number on which you want to make test call

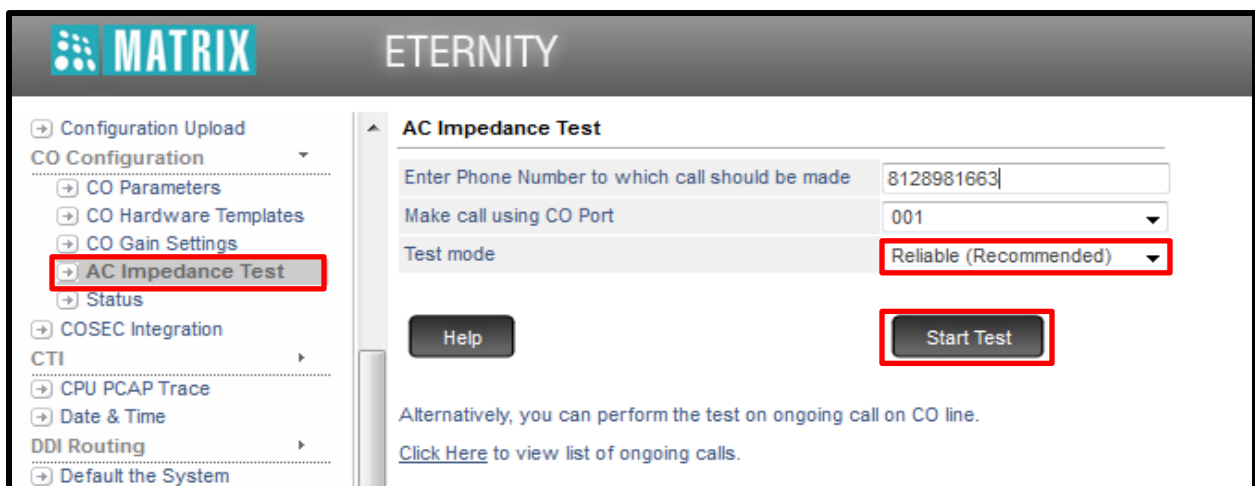
Note: It is recommended to use a mobile number for the test call. Use a mobile number only if the mobile phone has Mute function.



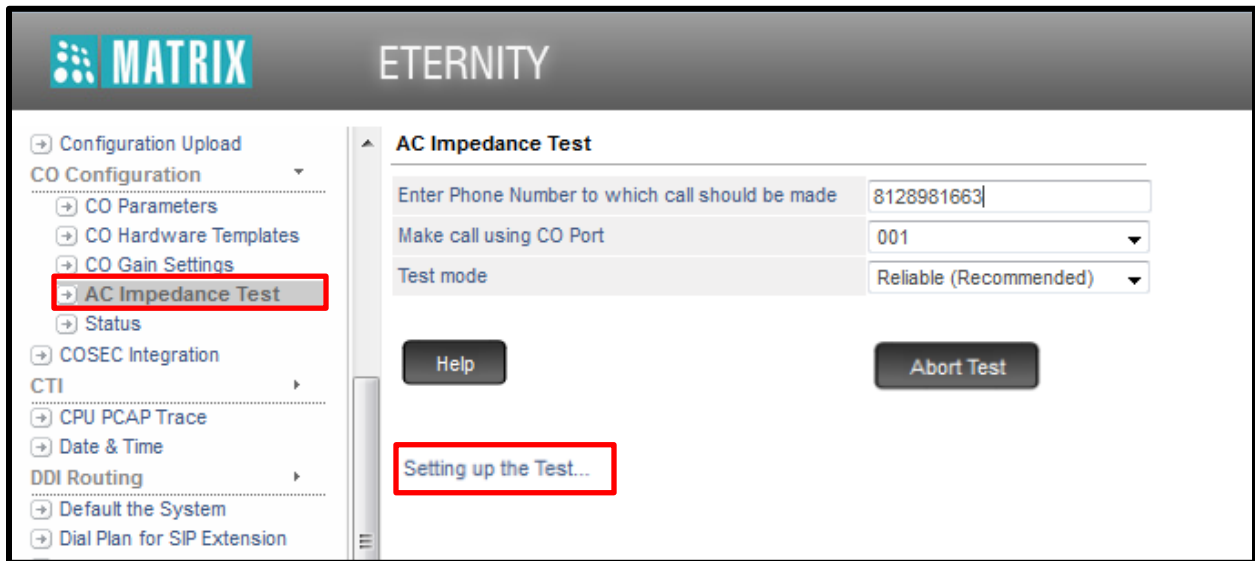
Step 3: Select the CO Port number on which the test is to be conducted



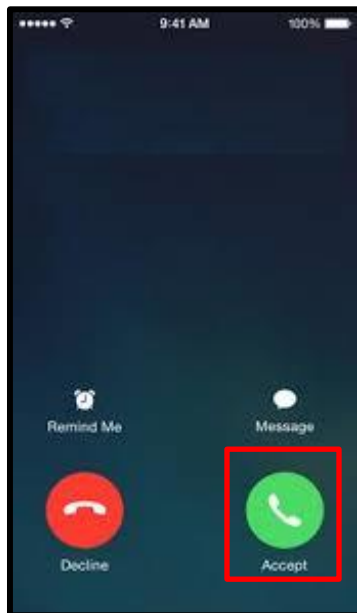
Step 4: select the 'Test Mode' as either Reliable (Recommended) or Accurate (If Reliable AC Impedance Test does not provide desired solution). Click on the "Start Test" button.



Step 5: System will make a call on the configured number using the CO Trunk under test. The Web Page will display “Setting up the Test.....”



Step 6: On receiving the test call from the CO Trunk, answer the call. You will get Music-on-hold after 10 seconds of answering the call. On hearing the Music-on-hold, mute the Microphone.



Step 7: On completion of the test, the system will automatically disconnect the call. The web page displays "Test completed." The web page will display the best setting for the AC Impedance settings.

MATRIX ETERNITY

Configuration

- Abbreviated Dialing
 - Global Directory
 - Personal Directory
 - Upload/Download
- Access Codes
 - Account Name
 - Authority Code
 - Automated Control Applications
 - Automatic Number Translation
- BRI Configuration
- Call Cost Calculation
 - Call Duration Control
 - Change SA P/w
 - Change SE P/w
 - CLI Based Routing
 - Class of Service
 - Closed User Groups
 - Communication Ports
 - Configuration Upload
- CO Configuration
 - CO Parameters
 - CO Hardware Templates
 - CO Gain Settings
 - AC Impedance Test**
 - Status
- CTI
 - CPU PCAP Trace

AC Impedance Test

Enter Phone Number to which call should be made: 8128981663

Make call using CO Port: 001

Test mode: Reliable (Recommended)

Help Start Test

Alternatively, you can perform the test on ongoing call on CO line.
[Click Here](#) to view list of ongoing calls.

Test completed.

Suggested Impedance Settings

AC Impedance	320 Ω + (1050 Ω 230 nF)
CO Termination	300 Ω + 1000 Ω + 220 nF
CO Line Type	2000 ft 24AWG
Return Loss	29.68dB

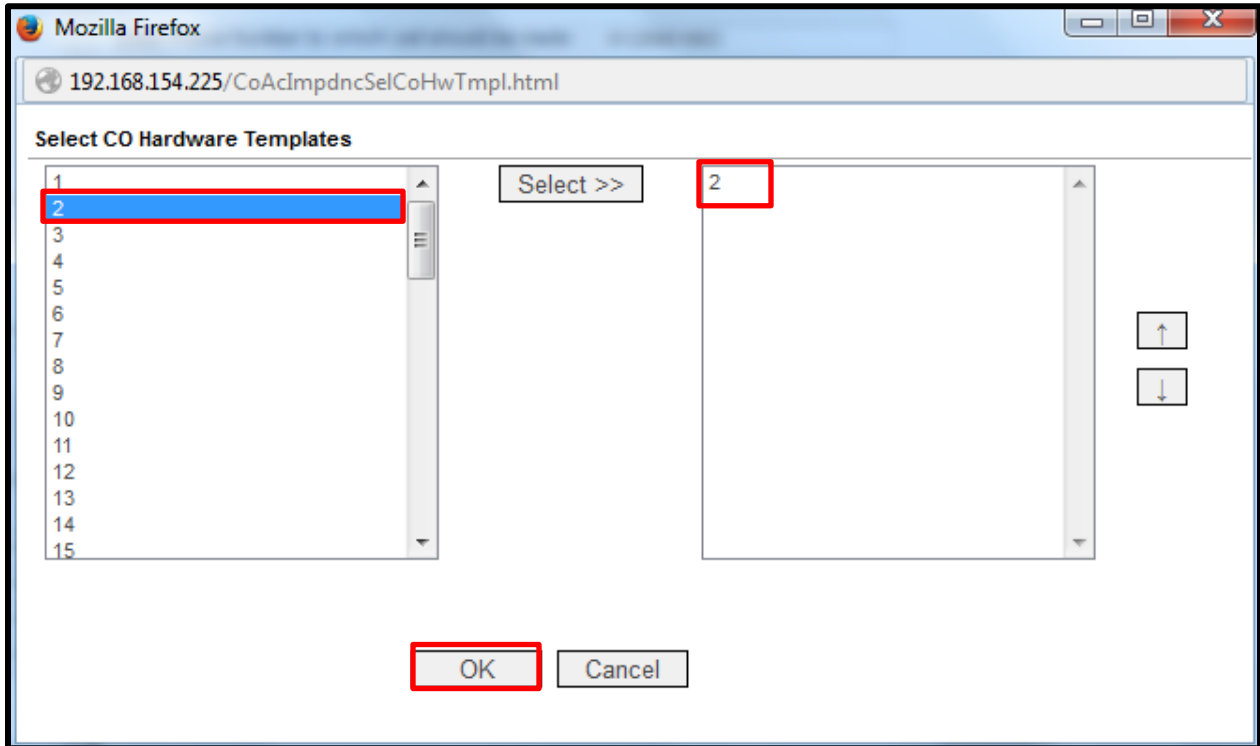
Apply to CO Hardware Template: Double-click to select... Apply

Generate Test Report

Note: If the Return Loss after the Reliable AC Impedance test is less than 25 dB then it is recommended to carry out Accurate AC Impedance test.

Note: The possible cause of low return loss may be ADSL Splitter used on CO Line. In such cases it is advisable to carry out an AC Impedance test by changing the ADSL Splitter or by removing the ADSL Splitter.

Step 8: Now double click on “double click to select” tab, you will find page as shown below. Select hardware template on which you want to set this AC impedance results, click on OK to apply setting.



Step 9: Verify the above parameters must set to CO Hardware Template after following Step 8.

Template No.	Rx CLI Type	AC Impedance	CO Termination	CO Line Type
1	None	600 Ω	None	None
2	None	320 Ω + (1050 Ω 230 nF)	300 Ω + 1000 Ω + 220 nF	2000 ft. 24 awg
3	Any ETSI DTMF format	600 Ω	None	None

- **Echo Cancellation Parameters**

Step 1: Go to **DKP Configuration** → **DKP Parameters**, Click **'Advance'** and check **'Line Echo Cancellation'** option.

The screenshot shows the 'DKP Parameters' configuration page. The 'Line Echo Cancellation' checkbox is checked for all ports (1-8) and is highlighted with a red box. The table below shows the configuration for each port.

Port No.	Handsfree Transmit Volume Level	Handsfree Receive Volume Level	Key Click Volume Level	DTMF Generation Flag	DTMF Transmit Level	Headset Connected?	Auto Answer	Auto Ans. Timer (sec)	LCD Back Light Level	Back Light Off Timer (sec)	LCD Contrast Level	Line Echo Cancellation
1	4	5	5	<input checked="" type="checkbox"/>	2	<input type="checkbox"/>	<input type="checkbox"/>	1	3	010	3	<input checked="" type="checkbox"/>
2	3	5	5	<input checked="" type="checkbox"/>	2	<input type="checkbox"/>	<input type="checkbox"/>	1	3	010	3	<input type="checkbox"/>
3	4	5	5	<input checked="" type="checkbox"/>	2	<input type="checkbox"/>	<input type="checkbox"/>	1	3	010	3	<input type="checkbox"/>
4	4	5	5	<input checked="" type="checkbox"/>	2	<input type="checkbox"/>	<input type="checkbox"/>	1	3	010	3	<input type="checkbox"/>
5	4	5	5	<input checked="" type="checkbox"/>	2	<input type="checkbox"/>	<input type="checkbox"/>	1	3	010	3	<input type="checkbox"/>
6	4	5	5	<input checked="" type="checkbox"/>	2	<input type="checkbox"/>	<input type="checkbox"/>	1	3	010	3	<input type="checkbox"/>
7	4	5	5	<input checked="" type="checkbox"/>	2	<input type="checkbox"/>	<input type="checkbox"/>	1	3	010	3	<input type="checkbox"/>
8	4	5	5	<input checked="" type="checkbox"/>	2	<input type="checkbox"/>	<input type="checkbox"/>	1	3	010	3	<input type="checkbox"/>

Step 2: Go to **'System Timers and Counts'** and configure **'Line Echo Cancellation Start Timer'** as 1 second.

The screenshot shows the 'System Timers and Counts' configuration page. The 'Line Echo Cancellation Start Timer (sec)' is set to 001 and is highlighted with a red box. The table below shows the configuration for various system timers.

Parameter	Value
Transfer on Busy Timer (sec)	030
Transfer on Busy Timer (sec)	030
Trunk to Trunk Inactivity Timer (min)	002
Call Park Timer (min)	002
Call Park Release Timer (min)	003
LCS Timer (sec)	010
Message Wait Ring Count	010
Message Wait Ring Timer (sec)	030
Message Wait Ring Interval Timer (min)	030
Conflict Dialing Timer (sec)	002
Extension - Inter Digit Wait Timer (sec)	007
SA Command - Inter Digit Wait Timer(sec)	015
Trunk - First Digit Wait Timer (sec)	025
Trunk - Inter Digit Wait Timer (sec)	003
Global Hold Retrieval Timer (sec)	120
Exclusive Hold Retrieval Timer (min)	002
RCOC Record Delete Timer (min)	999
Release Conference if Idle for more than (min)	002
Watchdog Refresh Wait Timer (sec)	060
Line Echo Cancellation Start Timer (sec)	001
Retry counts for Authority Code	003
Emergency Reporting Call - Ring Timer (min)	010
Held Call Disconnection Timer (min)	005

Note: Line Echo Cancellation may suppress the voice a bit.

- Gain Parameters

Step 1: Go to **CO Configuration** → **CO Parameters** followed by **CO Hardware Template**.

The screenshot shows the 'CO Parameters' configuration page. On the left is a navigation menu with 'CO Parameters' selected. The main area contains a table with the following columns: Port No., H/w Slot - Port, Enable Port, Name, CO Hardware Template, Trunk Features Template, and Cost Factor. The 'CO Hardware Template' column is highlighted with a red box. Below the table are buttons for 'Submit', 'Default', 'Default One', 'Advance', and 'Call Traffic'.

Port No.	H/w Slot - Port	Enable Port	Name	CO Hardware Template	Trunk Features Template	Cost Factor
1	04 - 03	<input checked="" type="checkbox"/>		02	01	01
2	04 - 04	<input checked="" type="checkbox"/>		02	01	01
3	00 - 00	<input checked="" type="checkbox"/>		02	01	01
4	00 - 00	<input checked="" type="checkbox"/>		02	01	01
5	00 - 00	<input checked="" type="checkbox"/>		02	01	01
6	00 - 00	<input checked="" type="checkbox"/>		02	01	01
7	00 - 00	<input checked="" type="checkbox"/>		02	01	01
8	00 - 00	<input checked="" type="checkbox"/>		02	01	01
9	00 - 00	<input checked="" type="checkbox"/>		02	01	01
10	00 - 00	<input checked="" type="checkbox"/>		02	01	01
11	00 - 00	<input checked="" type="checkbox"/>		02	01	01
12	00 - 00	<input checked="" type="checkbox"/>		02	01	01
13	00 - 00	<input checked="" type="checkbox"/>		02	01	01
14	00 - 00	<input checked="" type="checkbox"/>		02	01	01
15	00 - 00	<input checked="" type="checkbox"/>		02	01	01
16	00 - 00	<input checked="" type="checkbox"/>		02	01	01

Step 2: Go to configured '**CO Gain Settings Template**' and vary '**CO-DKP**' gain as required until we get the desired speech quality.

The screenshot shows the 'CO Hardware Templates' configuration page. On the left is a navigation menu with 'CO Hardware Templates' selected. The main area contains a table with the following columns: Template No., AC Impedance, CO Termination, CO Line Type, CO Gain Settings Template, Answer Supervision, Pseudo Answer Supervision Timer(sec), and Disconnect. The 'CO Gain Settings Template' column is highlighted with a red box. Below the table are buttons for 'Submit', 'Default', and 'Default One'.

Template No.	AC Impedance	CO Termination	CO Line Type	CO Gain Settings Template	Answer Supervision	Pseudo Answer Supervision Timer(sec)	Disconnect
1	600 Ω	None	None	1	Pseudo Answer	010	None
2	600 Ω	None	None	1	Pseudo Answer	010	None
3	600 Ω	None	None	1	Pseudo Answer	010	None
4	600 Ω	None	None	1	Pseudo Answer	010	None
5	600 Ω	None	None	1	Pseudo Answer	010	None
6	600 Ω	None	None	1	Pseudo Answer	010	None
7	600 Ω	None	None	1	Pseudo Answer	010	None
8	600 Ω	None	None	1	Pseudo Answer	010	None
9	600 Ω	None	None	1	Pseudo Answer	010	None
10	600 Ω	None	None	1	Pseudo Answer	010	None

CO Gain Settings

Template No.	CO-SLT			CO-CO		CO-DKP		CO-SIP		
	x-Gain	Tx-Gain	Rx-Gain	Tx-Gain	Rx-Gain	Tx-Gain	Rx-Gain	Tx-Gain	Rx-Gain	Tx-Gain
1	dB	-0.6 dB	-0.3 dB	-0.6 dB	-0.3 dB	-0.6 dB	-0.3 dB	-0.6 dB	-0.3 dB	-0.6 dB
2	dB	-0.6 dB	-0.3 dB	-0.6 dB	-0.3 dB	-0.6 dB	-0.3 dB	-0.6 dB	-0.3 dB	-0.6 dB
3	dB	-0.6 dB	-0.3 dB	-0.6 dB	-0.3 dB	-0.6 dB	-0.3 dB	-0.6 dB	-0.3 dB	-0.6 dB
4	dB	-0.6 dB	-0.3 dB	-0.6 dB	-0.3 dB	-0.6 dB	-0.3 dB	-0.6 dB	-0.3 dB	-0.6 dB

Buttons: Submit, Default

- **Configure DKP volume settings:**

Step 1: Go to DKP Configuration → DKP Parameters, click 'Advance' and vary DKP volumes for desired speech quality.

DKP Parameters

Port No.	me	Handset Transmit Volume Level	Handset Receive Volume Level	Headset Transmit Volume Level	Headset Receive Volume Level	Handsfree Transmit Volume Level	Handsfree Receive Volume Level	Key Click Volume Level	DTMF Generation Flag	Trans
1	▼	4	4	4	4	4	4	5	<input checked="" type="checkbox"/>	2
2	▼	4	4	4	4	4	3	5	<input checked="" type="checkbox"/>	2
3	▼	4	4	4	4	4	4	5	<input checked="" type="checkbox"/>	2
4	▼	4	4	4	4	4	4	5	<input checked="" type="checkbox"/>	2
5	▼	4	4	4	4	4	4	5	<input checked="" type="checkbox"/>	2
6	▼	4	4	4	4	4	4	5	<input checked="" type="checkbox"/>	2
7	▼	4	4	4	4	4	4	5	<input checked="" type="checkbox"/>	2
8	▼	4	4	4	4	4	4	5	<input checked="" type="checkbox"/>	2

Buttons: Submit, Default, Default One, Clear Access Code, Call Traffic

'Handset Volume Level' is for phone's receiver cradle, 'Headset Volume Level' is for headset/headphone connected to the DKP and 'Handsfree Volume Level' is for phone speaker.

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