

Q-PPCC™

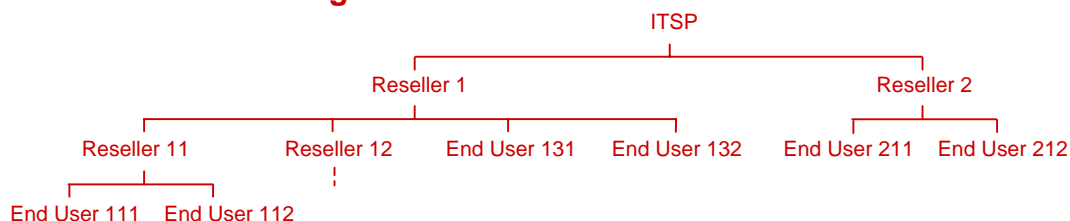
PPCC representing Prepaid Calling Card service



Complete VoIP-based Prepaid Calling Card Solution/Service for Voice and Real Time Fax Communication for owners/operators of VoIP Gateways/IP Phones anywhere on the Internet or marketers/users of PPCC without any VoIP equipment

Real time Web-based Management Services accessible from a browser anywhere on the Internet with 4 levels of secured access control

4-Levels of detailed Billing and Call Accounting in a Hierarchy Arrangement or a Food Chain Arrangement



Reliable, High-Quality, Low-Cost Call Termination/Completion Service to any Telephone Directory Number anywhere, Fixed Line or Mobile for Users of Fixed Line or Mobile (Cellular) Telephones

How does Prepaid Calling Card Operation work?

As a PPCC service provider, operating a VoIP Gateway/Switch, you would arrange to have printed for sale Prepaid Calling Cards of certain designs and of certain face value (please refer to the section on printing of PPCC cards below).

The card has printed on it 2 pieces of essential information: (a) the telephone number the customer is to dial to reach the VoIP gateway/switch and (b) a card number, also known as PIN (Personal Identification Number) that is a unique number that is required by the PPCC service platform for authentication (or validation) as to whether or not the caller (customer) should be permitted to use the service in the first place.

Upon positive authentication, the PPCC service platform then voice-prompts the caller to enter the Destination Number (DN) of the telephone number that he/she wants to reach.

The PPCC service platform calculates the maximum length of time the caller has for the call based on the amount of credit in his/her account and the per minute rate applicable to the DN and then informs the caller of it.

Generally the call flow is as follows:

1. Gateway/switch (GS) answers the call from the user
2. GS plays the greeting prompt
3. GS plays "Please enter your account number"
4. GS collects the digits of the account number dialed by the user
5. GS sends the account number to Ecocarrier Service Platform (ESP)
6. ESP verifies the account number from the GS
7. ESP sends the verification result and account balance to GS
8. GS plays "Your account balance is ..."
9. GS plays "Please enter the destination number followed by pound"
10. GS collects the digits of the destination number dialed by the user
11. GS sends the destination number to ESP
12. ESP verifies the destination number and calculates the maximum call duration
13. ESP sends the maximum call duration to GS
14. GS plays "The maximum duration for this call is ..."
15. GS routes the call
16. GS plays "You have one minute remaining in this call" when (if) the elapsed duration of the call is one minute less than the maximum
17. GS waits for the end of the call
18. GS sends the CDR (Call Details Record) to ESP
19. ESP saves the CDR from GS

Service Platform Requirement

The service platform consists of QiiQ Communications Inc.'s Q-Regime, Q-Bill-R and Q-PPCC Server. One may acquire the integrated system from QiiQ and operate it as an ITSP (Internet Telephony Service Provider) to provide VoIP-based services to clients. This would imply that one has to also maintain the service platform and establish and maintain relationships with carriers for call termination services – an undertaking that requires a great deal of knowledge of network management and of the VoIP industry.

A better approach is to take advantage of the established service platform of Ecocarrier Inc. for all the OSS (operation support system) functions and simply use Ecocarrier's service platform and call termination services.

Internet Access Infrastructure Requirement

in the case of owners/operators with VoIP Gateways or IP Phones

Ideally the owners/operators should have access to Internet via Broadband Network such as ADSL or Cable Network or T1/E1/PRI or satellite service for access to Internet service provider.

For small capacity operation in countries where broadband service is difficult to come by, the PPCC service provider or his clients can make use of single-port VoIP gateway with built-in 56K modem (QiiQ's Q-1FXS+56K www.qiiq.com/products/productsQ1FXS56K.htm) or an IP Phone with built-in 56K modem (QiiQ's Q-FONE-DU-X www.qiiq.com/products/productsQFONEDUX.htm) for dialing up to the local ISP for Internet access.

Where such facility is not available, Internet access can be obtained by infrastructure build-out based on

- (a) Fixed Wireless installation such as 2.4 GHz, 5.8 GHz solution in the license-free ISM Band or 3.5 GHz solution the licensed 3.5 GHz Band (www.qiiq.com/products/productsWireless.htm) or
- (b) Satellite Ground Equipment support by Satellite and Teleport services for satellite transport and Internet access (www.qiiq.com/products/productsSatellite.htm) or
- (c) a combination of (a) and (b) with system integration based on QiiQ's Q-isoPortal server (www.qiiq.com/products/productsQisoPortal.htm).

VoIP gateways and IP Phones required for accessing the Q-PPCC service

Please refer to the network diagram below that depicts the various kinds of endpoint devices that can be used for accessing the Q-PPCC service for making VoIP calls either in a postpaid operation or prepaid calling card operation.

VoIP gateways, IP Phones or Softphone to suit every user situation:

- (a) For large capacity PPCC operation use large VoIP gateways/switches such as
Tenor CMS 480, CMS 960 www.qiiq.com/products/productsTenorCMS.htm
Tenor DX2024, DX2030, DX4048, DX4060, DX6120, and DX8120 www.qiiq.com/products/productsTenorDX.htm
Optional GSM gateway: GoldenGate Multi-Cell PRI-GSM Gateway www.qiiq.com/products/productsGoldenGatePRIGSM.htm
Cisco Universal Gateways AS5350, AS5400 and AS5850 www.qiiq.com/products/productsCisco.htm
and a GateKeeper such as Q-isoPortal www.qiiq.com/products/productsQisoPortal.htm
- (b) For medium capacity PPCC operation use VoIP gateways/switches such as
Tenor DX2024, DX2030 www.qiiq.com/products/productsTenorDX.htm
Tenor Analog AXT1600/2400, AXG1600/2400, AXE1600/2400, AXM1600/2400 www.qiiq.com/products/productsTenorAX.htm
Optional GSM gateway: GoldenGate Multi-Cell PRI-GSM Gateway www.qiiq.com/products/productsGoldenGatePRIGSM.htm
- (c) For small capacity PPCC operation use VoIP gateways/switches/phones such as
Tenor Analog ASG200/400, ASM200/400 www.qiiq.com/products/productsTenorAS.htm
Tenor Analog AXT800, AXG800, AXE800, AXM800 www.qiiq.com/products/productsTenorAX.htm
VoIP!Edge Q-4FXS www.qiiq.com/products/productsQ2FXS.htm
VoIP!Edge Q-2FXS-2FXO www.qiiq.com/products/productsQ1FXSO.htm
VoIP!Edge Q-4FXO, Q-6FXO www.qiiq.com/products/productsQ4FXO.htm
Airello Q-WiFi-Fone www.qiiq.com/products/productsQWiFiFone.htm
VoIP!Phone Q-FONE-ALL www.qiiq.com/products/productsQFONEALL.htm
VoIP!Phone Q-FONE-XUV www.qiiq.com/products/productsQFONEXUV.htm
- (d) For small capacity installation with only dial-up access to the Internet Service Provider use
VoIP!Edge Q-1FXS+56K www.qiiq.com/products/productsQ1FXS56K.htm
VoIP!Phone Q-FONE-DU-X www.qiiq.com/products/productsQFONEDUX.htm
Ecofone www.qiiq.com/products/productsEcoFone.htm

Equipping the VoIP Gateway/Switch with GSM Gateways

In many countries, the per minute rate for calling from one GSM handset to another GSM handset is significantly lower than the per minute rate for calling from one GSM handset to a fixed line telephone. In such cases, it is advisable to include an analog GSM gateway for use with an analog VoIP gateway/switch and a digital GSM gateway for use with a digital VoIP gateway/switch as depicted in the network diagram below.

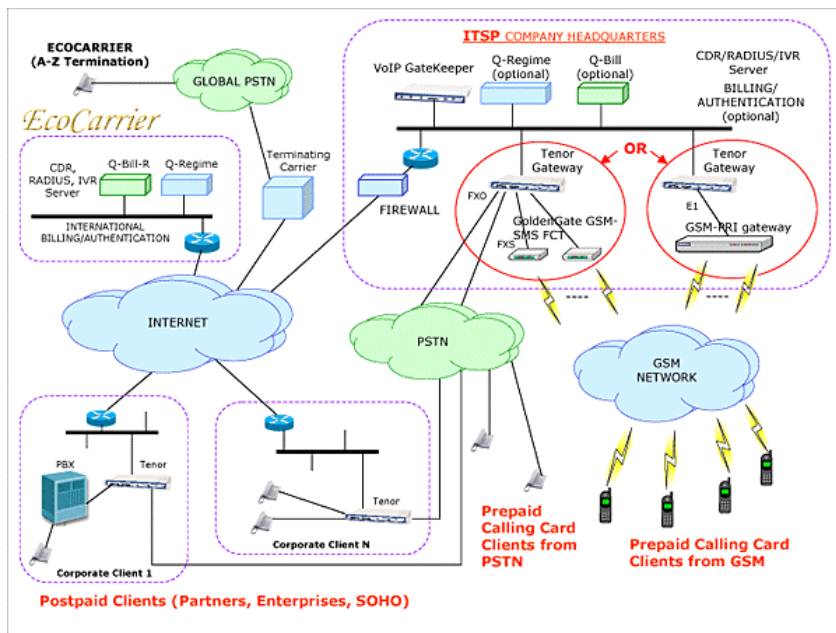
Each channel of the GSM gateways has to be equipped with one or more SIM cards supplied by a local GSM operator so as to be able to receive an incoming call originating from the service subscriber/caller and to forward the call to the VoIP gateway/switch to go through the prepaid calling card operation as described above.

The single-channel analog GSM gateway, GoldenGate GSM-SMS FCT, can be equipped with one SIM card; whereas the GoldenGate Multi-Cell PRI-GSM Gateway can be equipped with up to 4 SIM cards per channel.

The multiple SIM cards feature is important in markets where there are up to 4 GSM operators providing GSM services. A common practice of a GSM operator is to offer special rate concession to its subscribers for calling Mobile Numbers that are within the same network of the GSM operator in various forms such as (a) one flat rate for calling any Mobile Number within the GSM network or (b) special discounted rates for calling Mobile Numbers that are within the GSM network.

As an ITSP, you would want to be able to select the appropriate SIM card in the GoldenGate Multi-Cell PRI-GSM Gateway to use to call a certain Mobile Number that is the Destination Number for call termination of an incoming IP call so as to take advantage of the concessionary rates. This can amount to very substantial savings.

ITSP and GSM Network



Prepaid Charge-Up Card for Use with Q-PPCC

As a reseller of Q-PPCC service you may offer to your customers Prepaid Charge-Up Card that the end-user can use for charging up his/her account with you by calling the Q-PPCC Server by telephone and keying in his/her Prepaid Calling Card account number or PIN and the payment code printed on the Prepaid Charge-Up Card. The system will then credit the PPCC account with the credit amount on the Prepaid Charge-Up Card.

Printing of Prepaid Calling Cards

QiiQ/Ecocarrier collaborates with a reputable printer of Prepaid Calling Cards in Canada to offer the service of printing prepaid calling cards for various market requirement in high quality and at very competitive prices.

The important issues to deal with in printing prepaid calling cards are

- specification for the graphic design on the front surface of the card
- specification for the lay-out of the text and the position for the PIN and the scratch-off strip
- specification of the format of PINs to be printed on the cards to suit the automated printing process
- the face value of each card which may be in \$ amount or Unit.

There is a great deal of advantage in having the prepaid calling card issued with face value in Unit as it allows the PPCC service provider to define the equivalence between one Unit and the local currency of payment.

QiiQ/Ecocarrier can undertake the complete assignment of printing of the prepaid calling cards for a nominal service charge.

To become a PPCC service provider without investing in VoIP Gateway/Switch in the country of service

You may offer PPCC service in some 82 countries without having to invest in VoIP gateways/switches or any form of infrastructure build-out in the countries when you resell Ecocarrier's PPCC service based on Ecocarrier's Q-ICTFA service (www.ecocarrier.com/services/servicesICTFA.htm).

Under Q-ICTFA service, you are issued with special Toll Free Access Numbers (TFAN) for the countries in which you want to offer the PPCC service. You would provide to the customer of the PPCC service an instruction sheet that lists the TFAN and the relative countries.

The call flow of a PPCC call made by dialing the TFAN in the respective country is the same as that above-mentioned. Upon dialing the TFAN, the caller hears the voice-prompting by Ecocarrier's PPCC service platform in Toronto, Canada.

Q-PPCC Management Service Features

Q-PPCC provides a service platform through which the PPCC service provider/reseller with the appropriate User Name and Password may log on from a browser to

- (a) obtain various operation and management data
- (b) manage the account of an authorized user subscriber
- (c) create and generate new PINs and set up new accounts
- (d) suspend or remove a PIN
- (e) generate an invoice or CDR (Call Details Record) report according to PIN or subscriber account
- (f) update or add a Rate Table for Sell Rates
- (g) monitor the activity of a port (line) of an endpoint device that has been registered with the Q-PPCC service platform
- (h) route calls by Least Cost Routing regime based on rules that include ASR and per minute cost consideration
- (i) calculate the total costs of the calls based on the per minute rates of the carriers whose routes were selected for carrying the VoIP call
- (j) generate statistical reports of system performance and calculation of profits/savings for any one defined period
- (k) provide various other useful data and
- (l) carry out various other useful management/operation functions

Private Label Production of Q-PPCC service

Ecocarrier offers private label production of its Q-PPCC service that gives the reseller the appearance of an original service provider vis-à-vis its clients and customers. There is a one-time charge for this kind of customization and the privilege of the private label production.

Procedure for becoming a reseller of Q-PPCC service

To become a reseller of Q-PPCC service of Ecocarrier, you have to do the following:

- (a) sign Ecocarrier Service Provision Agreement
- (b) pay a one-time Set-Up charge of US\$500.00
- (c) make a prepayment of US\$1000.00 for initial coverage of the usage that will be incurred when you use the service
- (d) set your Sell Rates - i.e., the rates at which you want to charge your customers; you will build the Sell Rates by making use of the Excel file containing the City/Country Dialcodes and the relative per minute wholesale rates. You can write the rate you want to charge for calls to each City/Country Dialcode in a separate column. The administrative personnel of the NOC (Network Operation Center) of Ecocarrier will incorporate your Sell Rates in the rating engine of the Ecocarrier's billing server.

Please write to ppcc-reseller@ecocarrier.com to get the process started.

Other Useful Services Available

The enterprise can also take advantage of the various cost-saving productivity-enhancing services available from Ecocarrier's service platform. These include

- Gold Line International Toll Free Access Service www.ecocarrier.com/services/servicesGoldline.htm
- SMS-based CallBack Service for GSM telephone users www.ecocarrier.com/services/servicesCallBack.htm and www.ecogsm.com/services/servicesPronto.htm
- Q-CallShop service www.qcallshop.com
- Q-MXU service for the enterprise users www.qiiq.com/products/productsQMXU.htm

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