

Cisco VG30D Q.931/QSIG-to-DPNSS Converter

Overview

The Cisco® VG30D Voice Gateway is a time-division multiplexing (TDM) E1 converter. It supports the conversion of either the Q.931 (Primary Rate Interface [PRI]) or Q Signalling (QSIG) protocol to the United Kingdom (UK)-centric Digital Private Network Signalling System (DPNSS) protocol. You can use it in conjunction with other Cisco voice-gateway products to connect Cisco Unified Communications Manager (UCM) or Unified Communications Manager Business Edition to DPNSS networks. It supports the mapping of advanced DPNSS supplementary services to and from QSIG.

Figure 1. Cisco VG30D



The Cisco VG30D is a single E1 converter but, because of its web-based management, multiple units are easily deployed, making it ideal for managed service networks.

The use of Cisco preset configuration “Application” pages make for quick and easy installation. There is a full range of diagnostics to aid problem determination and resolution.

Key Features and Benefits

The Cisco VG30D converter:

- Maintains DPNSS supplementary services when connecting QSIG into Cisco Unified Communications Manager
- Is a compact self-contained unit in a 1-rack-unit (1RU) 19-inch rack form factor
- Is simple to configure and install with comprehensive diagnostics and alarms
- Offers remote notification through Simple Network Management Protocol (SNMP) traps
- Provides a comprehensive web-based management and help system through Ethernet
- Offers a high-speed software upgrade with configuration backup and restore through FTP

Management

Cisco VG30D systems are designed both to be quick to install and to work in a way that does not require changes to attached equipment. Configuration “Applications” are provided for Cisco, further simplifying installation. These applications are managed over Ethernet by a web-based Modem Management Interface (MMI), accessed through a standard browser. SNMP traps are provided for notification of critical events.

Table 1 lists the DPNSS features supported by Cisco G30D with Cisco Unified Communications Manager Versions 4.1 and later.

Table 1. DPNSS Features Supported by Cisco VG30D with Cisco UCM (Versions 4.1 and later)

DPNSS 188 Section	Feature Description	Comments (specific to Cisco UCM interworking)
5	Transit private branch exchange (PBX)	<ul style="list-style-type: none"> This feature has partial support. Features supported are limited to those features interworked between DPNSS and QSIG. DPNSS services such as nonspecified information (NSI) strings are not passed if connecting DPNSS to DPNSS through Cisco UCM.
6	Simple telephony call	<ul style="list-style-type: none"> This feature includes originating-line information (OLI) (calling-party number).
9	Call back when free	<ul style="list-style-type: none"> This feature has partial support. It is supported only where a single link exists between Cisco UCM and a DPNSS endpoint.
11	Diversion	<ul style="list-style-type: none"> This feature allows diversion and rediversion from traditional to IP and IP to traditional (including diverting number, required for forwarding to voicemail). Diversion validation is spoofed. There is no call-manager QSIG equivalent.
12	Hold	<ul style="list-style-type: none"> The Cisco VG30D notifies the Cisco UCM of a hold but spoofs the "Acknowledge" because there is no QSIG-equivalent service.
13	Three-party service	<ul style="list-style-type: none"> The Cisco VG30D supports the following: Three-party enquiry Three-party shuttle Three-party transfer Three-party conference Three-party reversion to two-party Three-party add-on validation is not supported; the Cisco UCM does not have a QSIG-equivalent service.
14	Call offer	<ul style="list-style-type: none"> Cisco UCM should be configured to provide "Dual Appearance", so the telephone is never busy when a new call arrives.
15	NSI	<ul style="list-style-type: none"> This feature has partial support. NSI is the "escape" clause for manufacturer-specific proprietary signaling. The Cisco VG30D supports interactions for the message-waiting indicator setting: ON/OFF for GPT/Siemens, Nortel, Ericsson, and others.
16	Service-independent strings	<ul style="list-style-type: none"> This feature has partial support. The Cisco VG30D uses many of these strings, where they enhance interworking with Cisco UCM.
17	Call waiting	<ul style="list-style-type: none"> Cisco UCM should be configured to provide "Dual Appearance", so the telephone is not found busy when a new call arrives. The second call is not dropped until the called party accepts or rejects it.
18	Bearer service selection	<ul style="list-style-type: none"> This selection is switched off by default but can be configured if required.
19	Route optimization	<ul style="list-style-type: none"> The Path Replacement timers on Cisco UCM need to be set to delay Cisco UCM from attempting to "Path Replace" until after the call has reached the connected state on a "blind" transfer.
22	Redirection	<ul style="list-style-type: none"> This feature has partial support. Return to operator is supported for calls originating in DPNSS that are camped on to ringing extensions.
23	Series call	<ul style="list-style-type: none"> This feature has partial support. A series call is possible from a DPNSS operator only.
25	Night service	<ul style="list-style-type: none"> This feature has partial support. Night service is supported when the PBX provides a diversion number. There is no provision for configuring a preset night-service answer-point number.
26	Centralized operator	<ul style="list-style-type: none"> This feature has partial support. The following British Telecommunications Network Requirement (BTNR) 188 features are supported: 11, 12, 13, 14, and 22.
29	Add-on conference	<ul style="list-style-type: none"> Standard conferencing functions are supported between the traditional and IP environments.
31	Call back when next used	<ul style="list-style-type: none"> This feature has partial support. It is supported only where a single link exists between the Cisco UCM and the DPNSS endpoint.
36	Call-back messaging	<ul style="list-style-type: none"> Some PBXs (for example, Mitel) use this service for setting or clearing message-waiting indicators. The VG30D supports this usage.
37	Loop avoidance	<ul style="list-style-type: none"> Loop avoidance is configurable; the default is set to 10.
48	Number presentation restriction	<ul style="list-style-type: none"> This restriction is a party-number restriction only.
49	Nonspecified information message	<ul style="list-style-type: none"> This feature is fully supported in transit mode. (Note: NSI messages [NSIMs] are filtered out when calls are transited through Cisco UCM.)

Technical Specifications

Connectivity

- 2 PRIs
- 120-ohm balanced or 75-ohm unbalanced switch selectable
- CCITT G.703, G.704, and G.732

PRI Protocols

- Q.931 Euro-ISDN (ETS 300 403)
- **QSIG**: ISO, ETSI, and ECMA
- **DPNSS**: BTNR 188 issue 7

Environmental

- **Operating temperature**: 0 to 40°C
- **Storage temperature**: -10 to 60°C
- **Relative humidity**: 5 to 90% (noncondensing)

External Dimensions and Weight

- **Height**: 1RU (44.45 mm)
- **Width**: 19-inch rack-mount (439 mm)
- **Depth**: 260 mm
- **Weight**: 4 kg maximum (fully packaged)

Power Requirements

- **Mains**: 100 to 230 VAC 50 or 60 Hz through IEC connector
- Power consumption 10W maximum

Connections

- 10/100 BASE-T Ethernet connector (web management)
- 120-ohm RJ-45 connector
- 75-ohm BNC connector
- Three-way alarm connector
- Nine-way D-type management connector (craft port)

Alarm and Management

- Relay contact alarm indication
- Front-panel LED indicators
- Web-based management
- SNMP traps

Safety

- EN60950 2nd Edition
- ETS 300-046
- IEC 950 (including amendment 4)

EMC

- EN 50082-1 (class A)
- EN 55022 (class A)
- CISPR22

Approvals

- CTR 12/13
- CE marked
- NTR 4
- ROHS

Reliability

- Mean time between failure (MTBF) (to HRD50) calculated >30,000 hours

Note: DPNSS configuration options allow equipment to be matched to existing network configuration, removing the need to reconfigure the existing infrastructure.



Americas Headquarters
Cisco Systems, Inc.
San Jose, CA

Asia Pacific Headquarters
Cisco Systems (USA) Pte. Ltd.
Singapore

Europe Headquarters
Cisco Systems International BV Amsterdam,
The Netherlands

Cisco has more than 200 offices worldwide. Addresses, phone numbers, and fax numbers are listed on the Cisco Website at www.cisco.com/go/offices.

Cisco and the Cisco Logo are trademarks of Cisco Systems, Inc. and/or its affiliates in the U.S. and other countries. A listing of Cisco's trademarks can be found at www.cisco.com/go/trademarks. Third party trademarks mentioned are the property of their respective owners. The use of the word partner does not imply a partnership relationship between Cisco and any other company. (1005R)