

D-Link Corporation **External Specification**

DWL-2600AP

802.11n Single-band Unified Access Point

Version 1.1

Date: 2012/2/13

DWL-2600AP Specification Revision History

Version	Revised Date	Author	Content Revised
1.0	2012/2/13	Fatman Chen	Initial Release
1.1	2012/3/9	Fatman Chen	Update physical data

1.0 Scope

1.1 Document

DWL-2600AP is an 802.11n single band Unified AP. The design uses Broadcom BCM 5358.

In enterprise headquarters, branch offices, or campus networks, the D-link DWL-2600AP is an outstanding choice for secure, reliable radio-based connections on 2.4 GHz band. The DWL-2600AP can offer up to 300Mbps data rates (based on 802.11n specification) to wireless clients access to bandwidth-intensive applications such as video streaming, voice or data.

Equipped with a Gigabit Ethernet (10/100Mbps) port with PoE support, DWL-2600AP not only delivers line-rate throughput for 802.11n WLAN technology but also allows to easily implement the access point in location where doesn't have directly power supply.

DWL-2600AP can act either a standalone AP or a thin AP centrally managed by D-Link Unified Switch (DWS-4026/ DWS-3160) or Wireless Controller (DWC-1000). DWL-2600AP supports industry-standard wireless security protocols including 802.11i, WPA, WPA2, and 802.1X to meet the most stringent enterprise and government encryption requirement.

1.2 Product Features

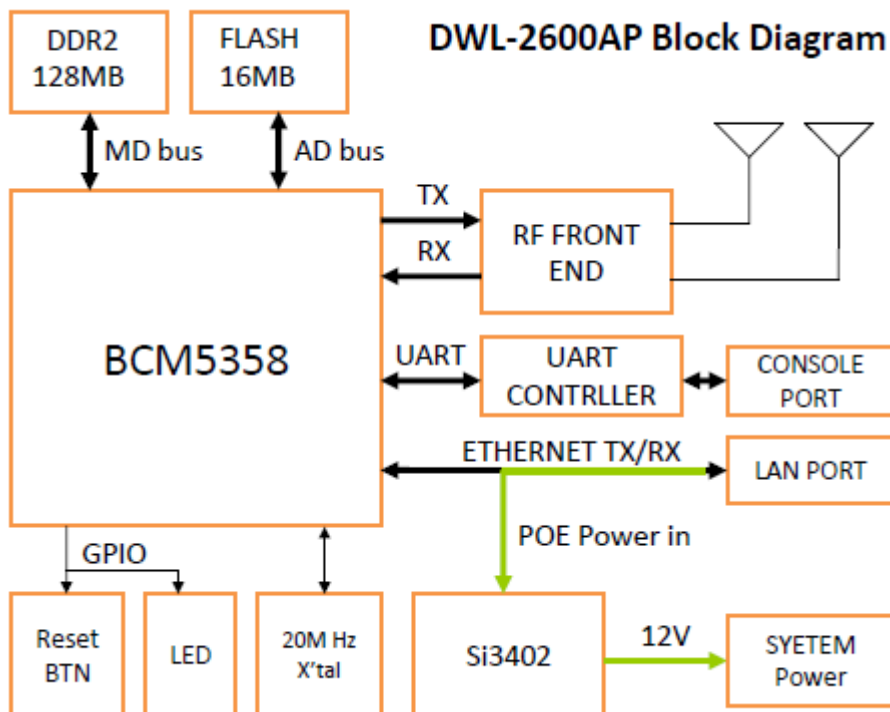
- Provide Ethernet to Wireless LAN bridge fully IEEE 802.3 compatible on the Ethernet side and fully interoperable with IEEE 802.11b/g/n compliant equipment.
- Compatible with IEEE 802.11b high rate standard to provide wireless 11Mbps data rate.
- Compatible with IEEE 802.11g higher speed standard to provide wireless 54Mbps data rate.
- Compatible with IEEE 802.11n higher speed standard to provide wireless 300Mbps data rate.
- Operation at 2.4~2.5GHz to meet worldwide regulations.
- Dynamic data rate scaling at 1, 2, 5.5, and 11Mbps for IEEE802.11b.
- Dynamic data rate scaling at 6, 9, 12, 18, 24, 36, 48, 54Mbps for IEEE802.11g.
- Dynamic data rate scaling at MCS0~15 for IEEE802.11n
- Allows auto fallback data rate for reliability, optimized throughput and transmission range.
- Supports IEEE 802.11 b/g/n wireless data encryption with 64/128-bit WEP for security.
- Supports enhanced security – WPA2-Personal & WPA2-Enterprise,
- Supports one 10/100 Fast Ethernet port with PoE (802.3af).
- Supports one RJ-45 console port
- Up to 16 Virtual APs (VAP) per radio.
- (Standalone Mode only) Supports AP Clustering, enabling APs to form a cluster for simple management and configuration.
- Supports WDS in both of standalone and managed mode (AP acts as a Wireless Bridge to connect two networks.)
- (Standalone Mode only) Can be managed via Web GUI, CLI or SNMP.

2.0 Requirements

The following sections identify the detailed requirements of the **DWL-2600AP**.

Model Description	11b/g/n Unified AP
Chipset	BRCM 5358
RF Chipset	2x2 MIMO
Flash/SDRAM	16MB NOR Flash/128MB DDR2
Ethernet	1 LAN 10/100 Mbps
Power	12 VDC/ 1 A
Antenna	2.4GHz PIFA antenna
Housing	Plastic housing
PoE	802.3af
Max output power at antenna port	TBD

2.1 Functional Block Diagram



2.2 General Requirement

• 2.2.1 IEEE 802.11b Section

#	Feature	Detailed Description
2.2.1.1	Standard	<ul style="list-style-type: none"> IEEE 802.11b
2.2.1.2	Radio and	<ul style="list-style-type: none"> DQPSK, DBPSK, DSSS, and CCK

#	Feature	Detailed Description
	Modulation Schemes	
2.2.1.3	Operating Frequency	<ul style="list-style-type: none"> 2400 ~ 2483.5MHz ISM band
2.2.1.4	Channel Numbers	<ul style="list-style-type: none"> 11 channels for United States 13 channels for Europe Countries
2.2.1.5	Data Rate	<ul style="list-style-type: none"> 11, 5.5, 2, and 1Mbps
2.2.1.6	Media Access Protocol	<ul style="list-style-type: none"> CSMA/CA with ACK
2.2.1.7	Transmitter Output Power at Antenna Connector	<ul style="list-style-type: none"> Typical RF Output Power at each RF chain, Data Rate and at room Temp. 25degree C TBD dBm at 1Mbps TBD dBm at 2Mbps TBD dBm at 5.5Mbps TBD dBm at 11Mbps <p><i>Note: The maximum power setting will vary according to individual country regulations.</i></p>
2.2.1.8	Receiver Sensitivity at Antenna Connector	<ul style="list-style-type: none"> Typical Sensitivity at Which Frame (1000-byte PDUs) Error Rate = 8% and at room Temp. 25degree C TBD dBm at 1Mbps TBD dBm at 2Mbps TBD dBm at 5.5Mbps TBD dBm at 11Mbps

• **2.2.2 IEEE 802.11g Section**

#	Feature	Detailed Description
2.2.2.1	Standard	<ul style="list-style-type: none"> IEEE 802.11g
2.2.2.2	Radio and Modulation Type	<ul style="list-style-type: none"> BPSK, QPSK, 16QAM, 64QAM with OFDM
2.2.2.3	Operating Frequency	<ul style="list-style-type: none"> 2400 ~ 2483.5MHz ISM band
2.2.2.4	Channel Numbers	<ul style="list-style-type: none"> 11 channels for United States 13 channels for Europe Countries 13 channels for Japan
2.2.2.5	Data Rate	<ul style="list-style-type: none"> 6,9,12,18,24,36,48,54Mbps
2.2.2.6	Media Access Protocol	<ul style="list-style-type: none"> CSMA/CA with ACK
2.2.2.7	Transmitter Output Power at Antenna Connector	<ul style="list-style-type: none"> Typical RF Output Power at each RF chain, Data Rate and at room Temp. 25degree C TBD dBm at 6Mbps TBD dBm at 9Mbps TBD dBm at 12Mbps TBD dBm at 18Mbps

#	Feature	Detailed Description
		<ul style="list-style-type: none"> TBD dBm at 24Mbps TBD dBm at 36Mbps TBD dBm at 48Mbps TBD dBm at 54Mbps <p><i>Note: The maximum power setting will vary according to individual country regulations.</i></p>
2.2.2.8	Receiver Sensitivity at Antenna Connector	<ul style="list-style-type: none"> Typical Sensitivity at Which Frame (1000-byte PDUs) Error Rate = 10% and at room Temp. 25degree C TBD dBm at 6Mbps TBD dBm at 9Mbps TBD dBm at 12Mbps TBD dBm at 18Mbps TBD dBm at 24Mbps TBD dBm at 36Mbps TBD dBm at 48Mbps TBD dBm at 54Mbps

• **2.2.3 IEEE 802.11 n Section**

#	Feature	Detailed Description				
2.2.3.1	Standard	• IEEE 802.11n				
2.2.3.2	Radio and Modulation Type	• BPSK, QPSK, 16QAM, 64QAM with OFDM				
2.2.3.3	Operating Frequency	• 2.4GHz Band: 2400 ~ 2483.5MHz				
2.2.3.4	Data Rate	MCS	GI=800ns		GI=400ns	
			20MHz	40MHz	20MHz	40MHz
		0	6.5	13.5	7.2	15.0
		1	13.0	27.0	14.4	30.0
		2	19.5	40.5	21.7	45.0
		3	26.0	54.0	28.9	60.0
		4	39.0	81.0	43.3	90.0
		5	52.0	108.0	57.8	120.0
		6	58.5	121.5	65.0	135.0
		7	65.0	135.0	72.2	150.0
		8	13.0	27.0	14.4	30.0
		9	26.0	54.0	28.9	60.0
		10	39.0	81.0	43.3	90.0
		11	52.0	108.0	57.8	120.0
		12	78.0	162.0	86.7	180.0
13	104.0	216.0	115.6	240.0		
14	117.0	243.0	130.0	270.0		
15	130.0	270.0	144.4	300.0		

#	Feature	Detailed Description		
2.2.3.5	Media Access Protocol	<ul style="list-style-type: none"> CSMA/CA with ACK 		
2.2.3.6	Maximum Transmitter Output Power at Antenna Connector	<ul style="list-style-type: none"> Typical RF Output Power at each RF chain, Data Rate and at room Temp. 25degree C 		
		<table border="1"> <thead> <tr> <th>2.4GHz Band/HT-20</th> <th>2.4GHz Band/HT-40</th> </tr> </thead> <tbody> <tr> <td> <ul style="list-style-type: none"> TBD dBm at MCS0/8 TBD dBm at MCS1/9 TBD dBm at MCS2/10 TBD dBm at MCS3/11 TBD dBm at MCS4/12 TBD dBm at MCS5/13 TBD dBm at MCS6/14 TBD dBm at MCS7/15 </td> <td> <ul style="list-style-type: none"> TBD dBm at MCS0/8 TBD dBm at MCS1/9 TBD dBm at MCS2/10 TBD dBm at MCS3/11 TBD dBm at MCS4/12 TBD dBm at MCS5/13 TBD dBm at MCS6/14 TBD dBm at MCS7/15 </td> </tr> </tbody> </table> <p><i>Note: The maximum power setting will vary according to individual country regulations.</i></p>	2.4GHz Band/HT-20	2.4GHz Band/HT-40
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• 2.2.4 General Section

#	Feature	Detailed Description
2.2.4.1	Interface	<ul style="list-style-type: none"> 1 RJ-45 10/100 Fast Ethernet port with PoE 1 RJ-45 External Console port Power jack (12V/1A) Factory reset button Power button (Only for adapter, it won't affect the power from PoE)
2.2.4.2	Antenna Type	<ul style="list-style-type: none"> 2.4GHz PIFA antenna
2.2.4.3	Ethernet Standard	<ul style="list-style-type: none"> IEEE 802.3, IEEE 802.3u, IEEE 802.3x
2.2.4.4	Adapter Voltage	<ul style="list-style-type: none"> 12V/1A AC
2.2.4.5	Current Consumption	<ul style="list-style-type: none"> TBD
2.2.4.6	LEDs	<p>Power LED – Dual color (red/green)</p> <ul style="list-style-type: none"> Flash Red during booting up or malfunction Static Green while it's ready/working Solid Red while boot up fail

		<p>LAN LED</p> <ul style="list-style-type: none"> • Static Green while Ethernet cable is plugged • Flash Green while traffic is passing through. • Off: Link down/unplugged <p>WLAN LED</p> <ul style="list-style-type: none"> • Ready for working: Flashing in Green in "Normal Speed" • Radio on: Flashing in Green in "Normal Speed" • Receiving packets: Flash in Green in "High Speed" • Radio off: LED off
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2.3 Software Requirements

This section only lists features when the AP is operating under standalone mode. For AP feature sets under managed mode, please refer to the DWS-4026 Unified Switch External Specification.

• 2.3.1 Network Setting

#	Feature	Detailed Description
2.3.1.1	DHCP Client	<ul style="list-style-type: none"> • Supports DHCP for dynamically obtaining network configuration in Managed Mode
2.3.1.2	Multiple Virtual Access Points (VAP)	<ul style="list-style-type: none"> • Supports 16 VAPs. • For each VAP, you can configure a unique SSID name, a default VLAN ID, a security mode, external RADIUS server information.
2.3.1.2	Wireless Client	<ul style="list-style-type: none"> • Allows up to 200 wireless clients connected
2.3.1.3	IP Configuration	<ul style="list-style-type: none"> • Manually configurable IP
2.3.1.4	VLAN	<ul style="list-style-type: none"> • Supports 802.1Q VLAN Tagging • Maximum of 64 Dynamic VLANs

• 2.3.2 Wireless Setting

#	Feature	Detailed Description
2.3.2.1	Single Band	<ul style="list-style-type: none"> • Supports 2.4 GHz
2.3.2.2	Power Adjustment	<ul style="list-style-type: none"> • Manually configurable transmit power level %
2.3.2.3	Auto channel Selection	<ul style="list-style-type: none"> • Automatic channel selection at startup
2.3.2.4	QoS	<ul style="list-style-type: none"> • Supports 802.1p Quality of Service (QoS) for enhanced throughput and better performance of time-sensitive traffic like VoIP and streaming • DSCP
2.3.2.5	WMM	<ul style="list-style-type: none"> • Supports Wi-Fi Multimedia (WMM) for QoS • Supports WMM - Power Save (same as U-APSD)
2.3.2.6	Load Balancing	<ul style="list-style-type: none"> • Configure client access based on AP utilization level
2.3.2.7	Rogue AP Detection	<ul style="list-style-type: none"> • Neighbor AP detection (Rogue AP) using continuous channel scanning
2.3.2.8	802.11d Country Code	<ul style="list-style-type: none"> • Supports 802.11d Regulatory Domain selection (country codes for global operation)

2.3.2.9	802.11e U-APSD	<ul style="list-style-type: none"> • Unscheduled Automatic Power Save Delivery
2.3.2.1 0	802.11h Spectrum and Transmit Power Management	<ul style="list-style-type: none"> • Supports 802.11h, incorporating Dynamic Frequency selection (DFS) and Transmit Power Control (TPC)
2.3.2.1 1	SVP	<ul style="list-style-type: none"> • Supports SpectraLink Voice Priority (SVP) for QoS on Wi-Fi deployment. SVP complies with 802.11 and increases network performance
2.3.2.1 2	Wireless Distribution System (WDS) – Wireless Bridge	<ul style="list-style-type: none"> • WDS allows APs to communicate with each other wirelessly to form an Extended Service Set (ESS) • Used to allow access to a distribution system without the need to run cables • Maximum of 4 WDS links can be configured per AP
2.3.2.1 3	802.1d Spanning Tree Protocol (STP)	<ul style="list-style-type: none"> • Supports STP to prevent loops when using WDS links as redundant links to a distribution system • STP Mode is configurable globally and disabled by default

• 2.3.3 Security Setting

#	Feature	Detailed Description
2.3.3.1	Prevent SSID Broadcast	<ul style="list-style-type: none"> • SSID Broadcast Enable/Disable option to prevent wireless clients from detecting AP
2.3.3.2	Weak IV avoidance	<ul style="list-style-type: none"> • Weak Initialization Vector (IV) avoidance
2.3.3.3	WEP	<ul style="list-style-type: none"> • Supports Static WEP 64/128 bits data encryption
2.3.3.4	WEP - IEEE 802.1X (Dynamic WEP)	<ul style="list-style-type: none"> • Supports WEP 64/128-bit data encryption
2.3.3.5	WPA	<ul style="list-style-type: none"> • Supports WPA Personal / Enterprise • PSK and TKIP
2.3.3.6	802.11i / WPA2	<ul style="list-style-type: none"> • Supports WPA2 Personal / Enterprise • PSK, TKIP and AES • Pre-authentication for WPA2 Enterprise • Key caching for WPA2 Enterprise
2.3.3.7	EAP Types	<ul style="list-style-type: none"> • EAP-MD5, EAP-TLS, EAP-TTLS, EAP-FAST, EAP-SIM, PEAP-GTC, PEAP-TLS, PEAP-MS-CHAPv2, EAP-Fast and EAP-AKA.
2.3.3.8	RADIUS (RFC 2865, 3580)	<ul style="list-style-type: none"> • Supports authentication with RADIUS • Can configure up to 4 external RADIUS servers for failover
2.3.3.9	MAC filtering	<ul style="list-style-type: none"> • Configure a list of MAC addresses to permit/deny access • Local or RADIUS database
2.3.3.1 0	Station Isolation	<ul style="list-style-type: none"> • Wireless Clients associated with the same VAP cannot detect each other
2.3.3.1 1	WAPI	N/A

• 2.3.4 Management

#	Feature	Detailed Description
2.3.4.1	Operating Mode	<ul style="list-style-type: none"> • Standalone Mode – Manually configure settings • Managed Mode – centrally managed by Wireless Switch

2.3.4.2	AP Clustering	<ul style="list-style-type: none"> • APs form a dynamic, configuration-aware group (cluster) with other APs in a network in the same subnet • Single IP management and AP configuration • Up to 8 DWL-2600APs can form a cluster
2.3.4.3	Management Interface Web GUI	<ul style="list-style-type: none"> • Managed through Web browser (HTTP/HTTPS)
2.3.4.4	Management Interface CLI	<ul style="list-style-type: none"> • Managed using Command Line Interface (CLI) with Telnet or SSHv2
2.3.4.5	Remote Upgrade	<ul style="list-style-type: none"> • Firmware upgradeable using TFTP • Firmware upgradeable using HTTP
2.3.4.6	System Status	<ul style="list-style-type: none"> • Displays Device system status like f/w version, device MAC address, Up time, etc.
2.3.4.7	Administrator	<ul style="list-style-type: none"> • Set Administrator username / password
2.3.4.8	AP Statistics	<ul style="list-style-type: none"> • Displays throughput, transmitted frame count, received frame count, dropped frame count, total errors
2.3.4.9	Reset Button	<ul style="list-style-type: none"> • Reboot: press for less than 2 seconds • Reset to Factory default: hold for longer than 5 secs
2.3.4.1 0	Reset Options	<ul style="list-style-type: none"> • Reset to Factory default using CLI • Reset to Factory default using Web GUI
2.3.4.1 1	Reboot	<ul style="list-style-type: none"> • Reboot the AP using CLI • Reboot the AP using Web GUI
2.3.4.1 2	Backup / Restore	<ul style="list-style-type: none"> • Backup and restore of AP configuration using HTTP or TFTP
2.3.4.1 3	Syslog (RFC 3164)	<ul style="list-style-type: none"> • System Logs
2.3.4.1 4	NTP	<ul style="list-style-type: none"> • Supports Network Time Protocol for clock sync
2.3.4.1 5	Link Integrity Monitoring	<ul style="list-style-type: none"> • Continually verifies connection to the client, regardless of network traffic activity levels
2.3.4.1 6	802.1X Supplicant	<ul style="list-style-type: none"> • Authenticates the AP under 802.1X environment
2.3.4.1 7	SNMP	<ul style="list-style-type: none"> • Supports SNMP v1/v2c/v3
2.3.4.1 8	Radio & VAP Scheduler	<ul style="list-style-type: none"> • Enable or disable of the VAPs and Radios based on configured time intervals.
2.3.4.1 9	Time Zone	<ul style="list-style-type: none"> • Synchronize the system time via SNMP • Time Zone is selectable. • Support Daylights Saving
2.3.4.2 0	Package Capture	<ul style="list-style-type: none"> • Capture file mode: Capture package and store in a file on the Access Point. The AP can transfer the file to TFTP server. • Remote capture mode: The captured packets are redirected in real time to an external PC running the Wire shark tool.

2.3.4.2 1	Management ACL	<ul style="list-style-type: none"> Sets up to five IPv4 hosts and five IPv6 hosts that are authorized to access the Web-based AP management interface.
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2.4 Mechanical Requirements

	Feature	Detailed Description
2.4.1	Length	6.30" [D] (160mm [D])
2.4.2	Width	6.30" [D] (160mm [D])
2.4.3	High	1.77" [H] (45 mm [H])
2.4.4	Weight	0.123 lb (272 g)

2.5 Reliability Requirement

#	Feature	Detailed Description
2.5.1	MTBF	<ul style="list-style-type: none"> Mean Time Between Failure > 30,000 hours
2.5.2	Maintainability	<ul style="list-style-type: none"> There is no scheduled preventive maintenance required
2.5.3	Quality	<ul style="list-style-type: none"> The product quality has to comply with D-Link Quality Control System

2.6 Environment Requirement

	Feature	Detailed Description
2.6.1	Operating Temperature Conditions	<ul style="list-style-type: none"> The product is capable of continuous reliable operation when operating in ambient temperature of 0 °C to +40°C.
2.6.2	Non-Operating Temperature Conditions	<ul style="list-style-type: none"> Neither sub-assemblies is damaged nor the operational performance be degraded when restored to the operating temperature after exposing to storage temperature in the range of -20 °C to +65 °C.
2.6.3	Operating Humidity conditions	<ul style="list-style-type: none"> The product is capable of continuous reliable operation when subjected to relative humidity in the range of 10% and 90% non-condensing.
2.6.4	Non-Operating Humidity Conditions	<ul style="list-style-type: none"> The product is not be damaged nor the performance be degraded after exposure to relative humidity ranging from 5% to 95% non-condensing

2.7 Compatibility Requirement

	Feature	Detailed Description
2.7.1	Wi-Fi	Conform with Wi-Fi/WMM certification 802.11b/g/n 802.11d & 11h

	Feature	Detailed Description
		802.1x 802.11i, WPA, WPA2 ■ Personal & Enterprise Advanced Encryption Standard (AES) Temporal Key Integrity Protocol (TKIP) Quality of Service ■ WMM ■ WMM-Power Save EAP ■ EAP-TLS ■ EAP-TTLS/MSCHAPv2 ■ PEAPv0/MSCHAPv2 ■ PEAPv1/EAP-GTC ■ EAP-SIM ■ EAP-FAST ■ EAP-AKA
2.7.2	Physical Layer and Functionality	Pass D-Link Engineering Test Plan and Test Report

2.8 Certifications/ Test Reports Requirement

EMC/RF Certificates and Test Reports

Request	EMI/EMC Test Report	Class A	Class B	Region & Country requirements
V	CE Report (89/336/EEC(EN55022/24), 2004/108/EC)		V	EU
V	FCC report(FCC CFR 47 Part 15 B)		V	US
V	IC report(ICES-003)		V	Canada
	IC report(ICES-006)			Canada
V	C-Tick Report(AS/NZS CISPR 22)			New Zealand & Australia
V	VCCI Report(CISPR 22)			JAPAN
	MIC report			KOREA
	Anatel			Brazil
V	BSMI (CNS 13438/ CNS 14336-1)			Taiwan
	CCC			China
	Other's			
Request	RF Test Report	Wireless		Region requirements
V	CE Report (R&TTE:1999/5/EC)	802.11		EU
		a/b/g/n		
V	FCC report(FCC CFR 47, Part 15 C,E) for 2.4G	802.11		US /FCC
		a/b/g/n		ID

			(KA2XXXXX..)
V	IC report (RSS-2106.2.2.o , 6.2.2.ql) for 2.4G	802.11 a/b/g/n	Canada /IC ID (4216AXXX...)
V	C-Tick Report(AS/NZS4771,4268) for 2.4G	802.11 a/b/g/n	New Zealand & Australia
V	TELEC Report(STD-T66, 33 & STD-T71)		Japan
V	NCC(LP0002 3.10.1 , LP0002 4.7) for 2.4G 低功率射頻電機技術規範	802.11 a/b/g/n	Taiwan
	CE Report (EN 302 326)	802.16e WiMAX 3.5G	Europe/Mexico/Chile

Telecom Certificates and Test Reports

Request	Telecom. Test Report	Telecom (RJ-11 Port link to PSTN)	Region requirements
	CE Report (R&TTE:1999/5/EC) TBR-21		European union(EU)
	FCC Report (FCC CFR 47, Part 68)		US /FCC ID(3P7XXXXXX..)
	IC Report (CS-03)		Canada /IC ID (4216AXXX...)
	A-Tick Report		New Zealand & Australia
	NCC(PSTN01) 公眾交換電話網路終端設備技術規範		Taiwan
	Anatel		Brazil
	BSMI		Taiwan
	CCC		China
	Other's		

Safety Certificates and Test Reports

Request	Certifications	Standards	Region requirements
V	CE LVD report (LVD:73/23/EEC)	EN60950-1: 2001	European Union
V	UL/cUL Listed Mark	UL/CSA 60950-1 UL2043	US / Canada
V	CSA International Mark	IEC60950-1 UL60950-1 CSA60950-1	World US Canada

		EN 60950-1	European Union
V	CB Report	IEC60950-1:2001 EN60950-1 :2001	World European Union
	Other's requirements		

Reliability Test Reports

No.	Required	Test Items	Refer to Standards
1.	V	MTBF of Prediction Report	Bell-core TR-332, Issue 6 or Telcordia SR-332, Issue 1
2.	V	MTBF of Endurance test Report	D-Link SPEC
3.	Optional	MTBF of Demonstration test Report	D-Link SPEC
4.	V	Free Fall(Drop)Test Report	IEC 60068-2-32
5.	V	Random Vibration Test Report	IEC 60068-2-34: 1973
6.	V	Storage Test Report	IEC 60068-2-48
7.	V	Operation Cold(low temperature) Test	IEC 60068-2-1
8.	V	Operation Dry Heat(High temperature) Test	IEC 60068-2-2
9.	V	Operation Temperature Cycles Test	IEC 60068-2-14
10.	V	Thermal Shock Test	IEC 60068-2-14
11.	V	Damp Heat Steady State test	IEC 60068-2-78
12.	V	Thermal Profile Test	D-Link SPEC
13.	V	ESD Simulation Test report	IEC 61000-4-2 Air Discharge: ±8KV Contact Discharge: ±4KV
14.	V	High / Low Temperature Start Test	D-Link SPEC(0~50)
15.	V	Parts on/off & Insert/pulling Test	D-Link SPEC
16.	V	Acoustic Noise test	EN 27779 & ISO 7779
17	V	Operating Temperature Conditions: The product is capable of continuous reliable operation when operating in ambient temperature of <u>-5</u> °C to <u>+45</u> °C.	
18	V	Halt/Hass test	

Please refer the detail in "D-Link Environment & Reliability General Specification" document.

RoHS Requirement

Level A of Substance limitation requirements table (for appliances & accessories)

Level	D-Link No.	Description	Limitation/ ppm
A	A1	鎘及其化合物 Cadmium/ Cadmium Compounds	80
	A2	六價鉻及其化合物 Hexavalent Chromium/ Hexavalent Chromium Compounds	800
	A3	鉛及其化合物 Lead/ Lead Compounds	800
	A4	汞及其化合物 Mercury/ Mercury Compounds	800
	A5	聚溴聯苯 Polybrominated Biphenyls (PBBs)	800
	A6	聚溴聯苯醚 Polybrominated Diphenylethers (PBDEs)	800

Level A of Substance limitation requirements table (for Packing)

Level	D-Link No.	Description	Limitation/ ppm
A	A1 ~ A4	鎘, 六價鉻, 鉛, 汞 Cadmium Chromium VI, Lead and Mercury compounds	100

Level A of Substance limitation requirements table (for battery)

Level	D-Link No.	Description	Limitation/ ppm
A	A1	鎘及其化合物 Cadmium/ Cadmium Compounds(Cd)	2500 (0.025%)
	A3	鉛及其化合物 Lead/ Lead Compounds(Pd)	400 (0.4%)
	A4	汞及其化合物 Mercury/ Mercury Compounds(Hg)	5

Please refer the detail in “產品環境物質管理規範” document.