

## W520CE



### Ethernet WiFi Access Point and Client

The W520CE from DZS is the ideal solution for building a EasyMesh compliant Wi-Fi Network for home users.

#### Features & Benefits

- + Triple-play service: Internet, IPTV, VOIP
- + Functions as an Access Point or Client
- + One gigabit multi-rate 10/100/1000M Ethernet WAN port
- + Two gigabit multi-rate 10/100/1000M Ethernet interfaces
- + Dual-band 2.4GHz 2x2 802.11n, 5GHz 2x2 802.11ac Carrier-grade Wi-Fi 5 interfaces
- + EasyMesh
- + Easy device setup and subscriber self-installation

The W520CE from DZS is the ideal solution for extending wireless coverage within the subscriber's home. Exclusively designed for whole-home coverage, these Ethernet devices are equipped with 2x2 802.11n and 802.11ac wireless standard. Acting as an Access Point or a Mesh Client, the W520CE is able to provide always-on connectivity and speed for whole-home wireless coverage.

Using the latest wireless technologies, the W520CE with its 2T2R 5.0GHz radio and support of Multi-User MIMO, allows users to enjoy and maximize the full benefits of the 802.11ac wireless standard. Carrier-class software features and management delivers unparalleled network performance to wirelessly connected devices.

The W520CE is simple to install with set-up completed in a matter of minutes with no advanced technical knowledge. No need for manual configuration, each W520CE will auto-detect its role and auto-provision itself.

# W520CE

## Easy to Set-up and Use

Designed to find its way to keep you connected through advanced mesh technology, the W520CE enhances coverage, with robustness and capacity necessary for wireless whole-home networks. Deployed in a conventional star topology the W520CE gives you a premium Wi-Fi experience.

## Key Service Attributes

- + One 10/100/1000MBase-T Ethernet WAN port, RJ45, 1Gbps symmetrical services
- + Two 10/100/1000MBase-T Ethernet LAN ports, RJ45
- + 2.4GHz 2x2 802.11n, 20MHz and 40MHz channels
- + 5GHz 2x2 802.11ac, 20MHz, 40MHz and 80MHz channels
- + Internal antennas
- + Downstream MU-MIMO
- + Explicit and Implicit Beamforming Technology
- + Advanced Mesh Technology
- + 12 VDC power source

# WiFi Access Point and Client

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## Features, Protocols, Interfaces

### System

- 128MB NAND Flash Memory
- 256MB SDRAM Memory

### Interfaces

- WAN: 1 port 10/100/1000MBase-T Ethernet (RJ45)
- LAN: 2 ports 10/100/1000MBase-T Ethernet (RJ45)
- Power input: 1 2-pin barrel connector
- Button: Power on/off, WPS, RESET
- LEDs: PWR, 2.4G, 5G, WAN, GE1, GE2

### Ethernet LAN ports

- Auto-MDI-X crossover control
- Auto-Speed or manual selection
- IEEE 802.3ab 1000Base-T
- IEEE 802.3u 100Base-T

### Wireless LAN

- Wireless Standard: IEEE 802.11 a/b/g/n/ac compliant
- Operation Frequency: 2.4Ghz & 5Ghz
- Antenna: 2.4GHz 2x2 802.11n MIMO, 5GHz 2x2 802.11ac MU-MIMO
- Antennas type: Internal Antennas
- Tx Power (EIRP):  $\geq 18\text{dBm}$
- Antenna gain +3dBi
- Wi-Fi Tx Power: Standard 50%/ Medium 75%/ High 100%
- Signal rate: 5Ghz up to 867Mbps in 802.11ac, 2.4Ghz up to 300Mbps
- Multi-SSIDs: 4x2.4GHz, 4x5GHz
- Auto/Manual Wi-Fi channel selection
- Auto/Manual Channel width 20Mhz/40Mhz in 802.11n, 20Mhz/40Mhz/80Mhz in 802.11ac
- Wifi Encryption: WPA-PSK(TKIP) & WPA2-PSK (AES)
- Maximum devices per radio: 32
- WPS modes: PBC (by default disable)
- Enable/Disable Wifi (Enable by default)
- Wi-Fi MAC filtering
- Wireless bridge mode
- Wi-Fi Client list
- Support Wifi Bandsteering base on IEEE 802.11k, IEEE 802.11v
- Support DFS, disable by default.
- Support WMM, disable by default.

### Residential Gateway Unit Features

- WAN Type: L2 Bridge, L3 route (DHCP/Static-IP/PPPoE)
- Maximum 8 bridge group (8 WAN)
- Support 802.1q, 4K VLAN ID, Support Tag,Untag, Transparent, Passthrough mode for Layer 2 /Layer 3 WAN
- Support IEEE 802.1p (CoS)
- PPPoE client: Automatically initiating the session, automatically keep alive
- IPv4/IPV6/Dual stack
- Static route; Default route
- NAT/NAPT; NAT session management (by default 4K NAT session, maximum 8K NAT session); NAT loop back; NAT session limitation
- Port Mapping between WAN vs LAN/ WLAN
- DNS proxy: Auto/Manual; DNS Relay server (DNS relay, DNS transparent)
- IGMP v1/v2/v3, IGMP snooping/proxy
- DDNS (No IP, Dyn DNS)
- DHCP Server
- SPI Firewall (IPv4/IPv6)
- DMZ; Port Forwarding; Port Triggering
- ALG (FTP, H323, PPTP, L2TP, SIP, RTSP, TFTP, IPSEC)
- UPnP, plug and play
- Support up to 5 VPN session via L2TP / IPsec / PPTP protocols in Passthrough mode (L2 throughput  $\geq 200\text{Mbps}$ , L3 Throughput  $\geq 90\text{Mbps}$ ).

### Management

- Web-Based Device Management using https (auto redirect to https if user use http) via LAN/WAN interfaces (disable remote management via WAN by default).
- Automatically web management logout (default 5 minutes).
- Monitoring status (system, WAN, LAN, uptime) in Web GUI
- Modify WiFi configuration in Web GUI
- Backup/Restore in Web GUI
- Reboot device in Web GUI or Power On/Off button
- Reset configuration in Web GUI or Reset Button
- Local/Remote upgrade firmware via Web GUI
- Dual OS for upgrade/rollback firmware
- Diagnostic tool in WEB GUI (ping, trace)
- TR-069 / TR-181, TR-111 Remote Management (future)
- Parental Controls (Internet usage time, MAC/URL filtering)
- QoS Control
- Auto Reboot
- Network Time Protocol NTP
- Support export log file on ONT web.
- Support manages by Mobile Application

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## Features, Protocols, Interfaces

### Security Features

- Unique password login Web GUI by default
- Support change login Web GUI password, weak password warning.
- VLAN Filter on LAN/WAN
- Unicast MAC address is learned by VLAN or basic interface
- L2 access control by LAN/WiFi MAC Filtering
- L3 access control by LAN IP Address Filtering
- URL Filter
- BPDU Filter
- Prevent to change TR069 parameters on WebUI
- Prevent DOS/DDOS attack, Ping of Death
- Prevent MAC from LAN advertise to WAN in case WAN does not use bridge mode
- Not allow storing and executing strange code automatically.
- Disable Web management on WAN by default
- Support to change https port for remote management through WAN interface.
- Disabled Root access in console interface.
- Disable Telnet, SSH in all interfaces.
- By default, disable all service port connect to ONT except HTTP, HTTPS, DNS, DHCP, TR069.
- Integrated stateful packet inspection IPv4/IPv6 firewall with ACL
- Using public key infrastructure (PKI) before upgrading firmware
- Following OWASP Top 10 - 2017 for Web management security
- Support to encode backup configuration file and check data integrity of the backup file when restoring data

### WiFi Mesh Features

- Easy Mesh (Controller/Agent/Stand-Alone)
- Support 8 Wi-Fi extended connection
- Proactive WiFi roaming
- Automatically synchronized configuration
- Band Steering support
- Display & Monitoring Each device on Mesh Topology through Web GUI

### Mobile Application

- Mobile application manage Mesh AP through LAN or WAN
- Device Status: System Information, Interface WAN, LAN, Wifi Status, Concurrent wireless users.
- Wi-Fi Mesh: Mesh topology, Mesh operation mode, Mesh Configuration.
- Configuration Device:
  - Wi-Fi setting: SSID, Password, Channel, Channel-width
  - LAN setting: Configure DHCP, IP address
  - Parental control: Block internet service at certain times of day
  - Firewall: Enable/disable firewall function
- Maintenance Feature:
  - Diagnostic tools: Ping, Trace route, Speed test
  - Management device: Reboot device, Restore factory reset
  - Firmware upgrade: upgrade to the newest firmware
  - System log: Displays/Download syslog of the device

### Certificate

- CE/FCC Certificate
- RoHS Certificate
- Wi-Fi CERTIFIED™ Certificate

# W520CE

## Physical & Environmental Specifications

### Mechanics

- Material: Flame-retardant, heat resistant, non-recycled ABS
- Cover: Light scratches resistant, vertical dripping water and object size bigger than 12.5mm protection
- Dimension (WxHxD): 154mm x 150mm x 30mm

### Interface Parameters

- Gigabit Ethernet WAN interface:  
1x10/100/1000Base-T ports (RJ45)  
IEEE 802.3ab compliant
- Gigabit Ethernet LAN interface:  
2x10/100/1000Base-T ports (RJ45)  
IEEE 802.3ab compliant
- Wireless LAN interface:  
2.4Ghz Radio: 2x2, IEEE 802.11b/g/n compliant  
5Ghz Radio: 2x2, IEEE 802.11a/n/ac compliant  
Antennas: 4x3dBi internal antennas

### Power Voltage (AC/DC Adapter)

- Input: 100-240VAC, Nominal frequency 50/60Hz (adaptive frequency range 47-63Hz)
- Output: 12VDC/1.0A  $\pm$  5% nominal voltage
- Vpp  $\leq$  150mV (nominal DC Voltage & 90% nominal output current)
- Load regulation  $\leq$  5%

### Environmental Conditions

- Operating Temperature: 0°C~40°C
- Storage Temperature: -40°C~70°C
- Relative Humidity: 10%~90%, non-condensing
- Storage Humidity: 5%~95%, non-condensing

## Ordering Information

Model	
W520CE	Flash 128MB & SDRAM 256MB WAN: 1-Port 10/100/1000Base-T LAN: 2-Port 10/100/1000Base-T Wi-Fi: 2.4GHz 2x2 802.11n, 5Gz 2x2 802.11ac Internal Antennas Power Adaptor: Input 100~240VAC, Output 12V/1.0A

**NOTICE:**

*The software functions can be adjusted without notice depends on firmware version!*

*Maximum wireless signal rate derived from IEEE standard 802.11 specifications. Actual data throughput and wireless coverage will vary. Network conditions and environmental factors, including volume of network traffic, building materials and construction, and network overhead, lower actual data throughput rate and wireless coverage!*

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