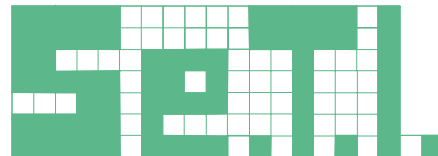


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LAVORO

**INTERVENTI DI AMMODERNAMENTO  
ED INTEGRAZIONE DELL'IMPIANTO  
DI VIDEOSORVEGLIANZA  
II LOTTO**

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**PROGETTO DEFINITIVO - ESECUTIVO**

PROGETTISTI

OGGETTO

**Caratteristiche dei materiali**

Dott. ing.  
Ferdinando ZOLESI

Dott. ing.  
Luigi Pagliai - Studio tecnico K

MODIFICA	DESCRIZIONE	DATA

DATA		GRAFICA		SCALA	
14 Aprile 2022					
INCARICO	CODICE	ANNO	TIPOLOGIA	ELABORATO	REVISIONE
ZF	0495	21	ES	008	D0

TAVOLA

008

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## **1. PREMESSE**

Il presente documento tecnico illustra le caratteristiche dei materiali presi a riferimento per il progetto di videosorveglianza del Comune di Stresa (VB) – Il LOTTO.

Si tratta di modelli non obbligatori ma di riferimento per i materiali che verranno effettivamente installati dopo la gara di appalto, e che dovranno avere caratteristiche tecniche non inferiori al riferimento assunto.

## 2. TELECAMERE DI CONTESTO

Pro Series | DH-HAC-HFW2802T-Z-A



# DH-HAC-HFW2802T-Z-A

4K Starlight HDCVI IR Bullet Camera

### HDCVI



- Starlight, 120dB True WDR, 3DNR
- Max. 4K resolution
- HD/SD switchable
- Audio in interface, built-in mic
- 3.7-11mm motorized lens
- Max. IR length 80m, Smart IR
- IP67, DC12V±30%



#### System Overview

Experience 4K video surveillance with the simplicity of reusing existing coaxial infrastructure. The 4K HDCVI camera adopts a powerful Dahua ISP and advanced 1/2" image sensor, which provides superior high quality images. It also supports Starlight and 120dB true WDR for a clear image in poor lighting conditions. In addition, the camera features broadcast-quality audio to provide enhanced supplementary evidence collection. Ultra-high definition and a complete set of features makes the 4K HDCVI camera an ideal choice for mid to large-size businesses and projects where both highly reliable surveillance and construction flexibility are demanded.

#### Functions

##### 4 Signals over 1 Coaxial Cable

HDCVI technology supports 4 signals to be transmitted over 1 coaxial cable simultaneously, i.e. video, audio\*, data and power. Dual-way data transmission allows the HDCVI camera to interact with the HCVR, such as sending control signal or triggering alarm. Moreover, HDCVI technology supports PoC for construction flexibility.

\* Audio input is available for some models of HDCVI cameras.

##### Long Distance Transmission

HDCVI technology guarantees real-time transmission at long distance without any loss. It supports up to 700m transmission for 4K and 4MP HD video via coaxial cable, and up to 300m via UTP cable.\*

\*Actual results verified by real-scene testing in Dahua's test laboratory.

##### Simplicity

HDCVI technology inherits the born feature of simplicity from traditional analog surveillance system, making itself a best choice for investment protection. HDCVI system can seamlessly upgrade the traditional analog system without replacing existing coaxial cabling. The plug and play approach enables full HD video surveillance without the hassle of configuring a network.

##### Starlight

With the adoption of large sized high performance sensor, the camera is able to provide incomparable performance even under extreme lowlight environment. The starlight feature allows more details to be captured and accurate color to be recognized at night or in scenes with limited illumination.

#### Broadcast-quality Audio

Audio information is used as supplementary evidence in video surveillance applications. The HDCVI camera supports audio signal transmission over coaxial cable. In addition, it adopts unique audio processing and transmission technology that best restores source audio and eliminates noise, guaranteeing the quality and effectiveness of collected audio information.

#### Multiple-formats

The camera supports multiple video formats including HDCVI, CVBS, and other two common HD analog formats in the market. A DIP switch located on the cable allows you to quickly toggle formats, further simplifying installation and debugging. This feature makes the camera compatible with not only XVRs, but also most existing HD/SD DVRs.

#### Wide Dynamic Range

Embedded with industry leading wide dynamic range (WDR) technology, vivid pictures are achieved even in the most intense contrast lighting conditions. True WDR (120dB) optimizes both the bright and dark areas of a scene at the same time to provide usable video.

#### Advanced 3DNR

3DNR is noise reduction technology that detects and eliminates random noises by comparing two sequential frames. Dahua's advanced 3DNR technology allows remarkable noise reduction with little impact to sharpness, especially under limited lighting condition. Besides, the advanced 3DNR effectively decreases the band width and saves the storage space.

#### Protection

The camera's outstanding reliability is unsurpassed due to its rugged design. The camera is protected against water and dust with IP67 ranking, making it suitable for indoor or outdoor environments.

Supporting ±30% input voltage tolerance, this camera suits even the most unstable power supply conditions. Its 4KV lightning rating provides protection against the camera and its structure from the effects of lightning.

[www.dahuasecurity.com](http://www.dahuasecurity.com)

## Pro Series | DH-HAC-HFW2802T-Z-A

### Technical Specification

#### Camera

Image Sensor	1/2" CMOS
Effective Pixels	3840(H)×2160(V), 8MP
Scanning System	Progressive
Electronic Shutter Speed	PAL: 1/4s~1/100,000s NTSC: 1/3s~1/100,000s
Minimum Illumination	0.005Lux/F1.5, 30IRE, 0Lux IR on
S/N Ratio	More than 65dB
IR Distance	Up to 80m (262feet)
IR On/Off Control	Auto / Manual
IR LEDs	4

#### Lens

Lens Type	Motorized lens / Fixed iris
Mount Type	Board-in
Focal Length	3.7-11mm
Max Aperture	F1.5
Angle of View	H: 112°~46°
Focus Control	Auto / Manual
Close Focus Distance	200mm 7.87"

#### DORI Distance

Note: The DORI distance is a "general proximity" of distance which makes it easy to pinpoint the right camera for your needs. The DORI distance is calculated based on sensor specification and lab test result according to EN 62676-4 which defines the criteria for Detect, Observe, Recognize and Identify respectively.

	DORI Definition	Distance	
		Wide	Tele
Detect	25px/m (8px/ft)	83m(272ft)	190m(623ft)
Observe	63px/m (19px/ft)	33m(108ft)	76m(249ft)
Recognize	125px/m (38px/ft)	17m(56ft)	38m(125ft)
Identify	250px/m (76px/ft)	8m(26ft)	19m(62ft)

#### Pan / Tilt / Rotation

Pan/Tilt/Rotation	Pan: 0° ~ 360° Tilt: 0° ~ 90° Rotation: 0° ~ 360°
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#### Video

Resolution	8MP (3840×2160)
Frame Rate	15fps@4K, 20fps@6MP, 25/30fps@4MP
Video Output	1-channel BNC high definition video output / CVBS video output (DIP switch)
Day/Night	Auto (ICR) / Manual

OSD Menu	Multi-language
BLC Mode	BLC / HLC / WDR
WDR	120dB
Gain Control	AGC
Noise Reduction	2D/3D
White Balance	Auto / Manual
Smart IR	Auto / Manual

#### Certifications

Certifications	CE (EN55032, EN55024, EN50130-4) FCC (CFR 47 FCC Part 15 subpartB, ANSI C63.4-2014) UL (UL60950-1+CAN/CSA C22.2 No.60950-1)
----------------	---

#### Interface

Audio Interface	1ch in & Built-in Mic
-----------------	-----------------------

#### Electrical

Power Supply	12V DC ±30% (It is recommended to use a power adapter to supply the power for one camera)
Power Consumption	Max 12.5W (12V DC, IR on)

#### Environmental

Operating Conditions	-30°C ~ +60°C (-22°F ~ +140°F) / Less than 90% RH * Start up should be done at above -30°C (-22°F)
Storage Conditions	-30°C ~ +60°C (-22°F ~ +140°F) / Less than 90% RH
Ingress Protection & Vandal Resistance	IP67

#### Construction

Casing	Aluminium
Dimensions	244.1mm×90.4mm×90.4mm (9.61"×3.56"×3.56")
Net Weight	0.76kg (1.68lb)

## Pro Series | DH-HAC-HFW2802T-Z-A

### Ordering Information

Type	Part Number	Description
4K Camera	DH-HAC-HFW2802TP-Z-A 3.7~11mm	4K Starlight HDCVI IR Bullet Camera, PAL (For centralized power supply, please select-DP model)
	DH-HAC-HFW2802TN-Z-A 3.7~11mm	4K Starlight HDCVI IR Bullet Camera, NTSC (For centralized power supply, please select-DP model)
Accessories	PFA130-E	Junction box (For use alone or with PFA152-E pole mount)
	PFA152-E	Pole mount (For use with PFA130-E junction box)
	PFA151	Corner mount bracket(For use with PFA130-E junction box)
	PFM800-E	Passive HDCVI Balun
	PFM320	12V 2A Power Adapter
	PFM320D-015	12V 1.5A Power Adapter

### Accessories

Optional:



PFA130-E  
Junction box



PFA152-E  
Pole mount



PFA151  
Corner mount bracket



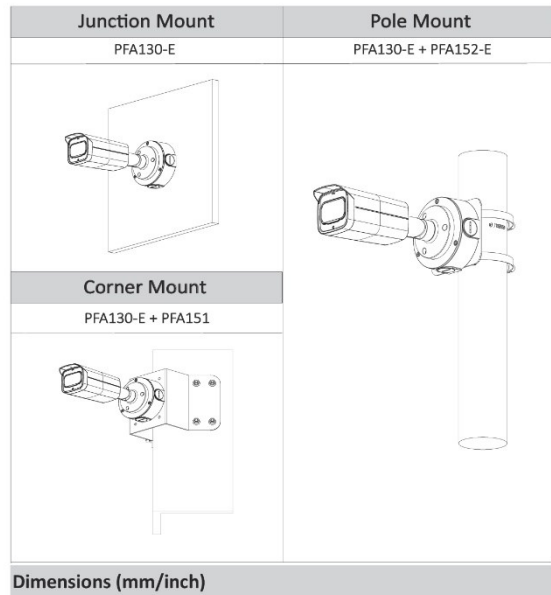
PFM800-E  
Passive HDCVI Balun



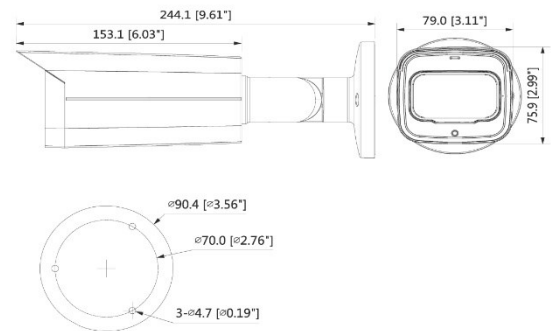
PFM320  
12V 2A Power Adapter



PFM320D-015  
Power Adapter



### Dimensions (mm/inch)



### 3. SWITCH DI COLLEGAMENTO



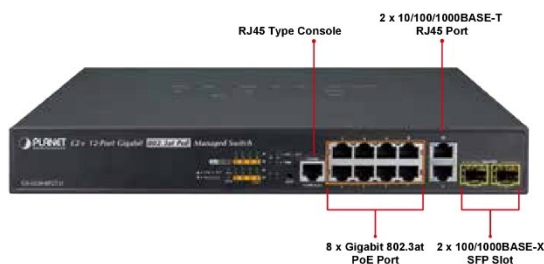
GS-5220-8P2T2S

## L2+ 8-Port 10/100/1000T 802.3at PoE + 2-Port 10/100/1000T + 2-Port 100/1000X SFP Managed Switch



#### *A Perfect Managed PoE+ Switch with Full PoE+ Power Budget*

PLANET GS-5220-8P2T2S is a Layer 2+ Managed Gigabit Switch, which supports both IPv4 and IPv6 protocols and Layer 3 static routing capability, and provides 8 10/100/1000BASE-T ports featuring 30-watt 802.3at PoE+, 2 additional Gigabit copper ports and another 2 extra 100/1000BASE-X SFP fiber slots. Each of the eight Gigabit ports provides 30 watts of power, which means a total power budget of up to 240 watts can be utilized simultaneously without considering the different types of PoE applications being employed. It provides a quick, safe and cost-effective Power over Ethernet network solution to IP security surveillance for small businesses and enterprises.



#### *Centralized Power Management for Gigabit Ethernet PoE Networking*

To fulfill the needs of higher power required PoE network applications with Gigabit speed transmission, the GS-5220-8P2T2S features high-performance Gigabit IEEE 802.3af PoE (up to 15.4 watts) and IEEE 802.3at PoE+ (up to 30 watts) on all ports. It perfectly meets the power requirement of PoE VoIP phone and all kinds of PoE IP cameras such as IR, PTZ, speed dome cameras or even box type IP cameras with built-in fan and heater for high power consumption.

#### Physical Port

- 10-Port 10/100/1000BASE-T RJ45 copper with 8-Port IEEE 802.3at/af Power over Ethernet Injector function
- 2 100/1000BASE-X mini-GBIC/SFP slots,
- RJ45 console interface for basic management and setup

#### Power over Ethernet

- Complies with IEEE 802.3at High Power over Ethernet end-span PSE
- Complies with IEEE 802.3af Power over Ethernet end-span PSE
- Up to 8 ports of IEEE 802.3af/802.3at devices powered
- Supports PoE Power up to 30.8 watts for each PoE port
- Auto detects powered device (PD)
- Circuit protection prevents power interference between ports
- Remote power feeding up to 100 meters
- PoE Management
  - Total PoE power budget control
  - Per port PoE function enable/disable
  - PoE Port Power feeding priority
  - Per PoE port power limitation
  - PD classification detection
  - PD alive check
  - PoE schedule
  - PD power recycling schedule

#### Layer 2 Features

- Prevents packet loss with back pressure (half-duplex) and IEEE 802.3x pause frame flow control (full-duplex)
- High performance of Store-and-Forward architecture and runt/CRC filtering eliminates erroneous packets to optimize the network bandwidth
- Storm Control support
  - Broadcast/Multicast/Unknown unicast
- Supports VLAN
  - IEEE 802.1Q tagged VLAN
  - Up to 255 VLANs groups, out of 4094 VLAN IDs
  - Supports provider bridging (VLAN Q-in-Q, IEEE 802.1ad)
  - Private VLAN Edge (PVE)
  - Protocol-based VLAN
  - MAC-based VLAN
  - Voice VLAN



The GS-5220-8P2T2S's PoE capabilities also help to reduce deployment costs for network devices as a result of freeing from restrictions of power outlet locations. Power and data switching are integrated into one unit, delivered over a single cable and managed centrally. It thus eliminates cost for additional AC wiring and reduces installation time.

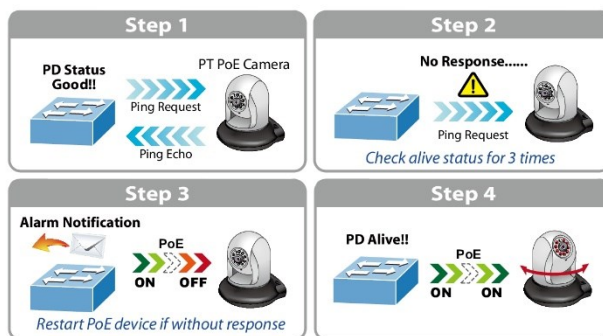
### Built-in Unique PoE Functions for Surveillance Management

As a managed PoE Switch for surveillance network, the GS-5220-8P2T2S features intelligent PoE management functions:

- PD Alive Check
- Scheduled Power Recycling
- SMTP/SNMP Trap Event Alert
- PoE Schedule

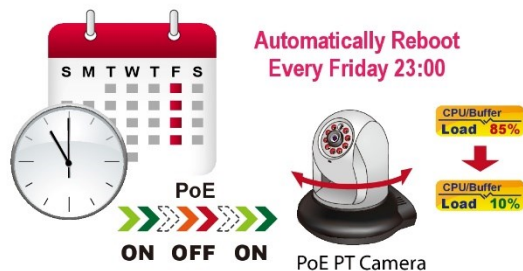
### Intelligent Powered Device Alive Check

The GS-5220-8P2T2S can be configured to monitor a connected PD (Powered Device) status in real time via ping action. Once the PD stops working and it is without response, the GS-5220-8P2T2S will resume the PoE port power and bring the PD back to work. It will greatly enhance the network reliability through the PoE port resetting the PD's power source, thus reducing administrator management burden.



### Scheduled Power Recycling

The GS-5220-8P2T2S allows each of the connected PDs to reboot at a specified time each week. Therefore, it will reduce the chance of PD crash resulting from buffer overflow.



- Supports Spanning Tree Protocol
  - STP, IEEE 802.1D Spanning Tree Protocol
  - RSTP, IEEE 802.1w Rapid Spanning Tree Protocol
  - MSTP, IEEE 802.1s Multiple Spanning Tree Protocol, spanning tree by VLAN
  - BPDU Guard
- Supports Link Aggregation
  - 802.3ad Link Aggregation Control Protocol (LACP)
  - Cisco ether-channel (static trunk)
  - Maximum 6 trunk groups, up to 8 ports per trunk group
  - Up to 16Gbps bandwidth (full duplex mode)
- Provides port mirror (many-to-1)
- Port mirroring to monitor the incoming or outgoing traffic on a particular port
- Loop protection to avoid broadcast loops

## Layer 3 IP Routing Features

- Supports maximum 32 static routes and route summarization

### Quality of Service

- Ingress Shaper and Egress Rate Limit per port bandwidth control
- 8 priority queues on all switch ports
- Traffic classification
  - IEEE 802.1p CoS
  - TOS/DSCP/IP Precedence of IPv4/IPv6 packets
  - IP TCP/UDP port number
  - Typical network application
- Strict priority and Weighted Round Robin (WRR) CoS policies
- Supports QoS and In/Out bandwidth control on each port
- Traffic-policing policies on the switch port
- DSCP remarking

## Multicast

- Supports IGMP Snooping v1, v2 and v3
- Supports MLD Snooping v1 and v2
- Querier mode support
- IGMP Snooping port filtering
- MLD Snooping port filtering
- Multicast VLAN Registration (MVR) support

## Security

- Authentication
  - IEEE 802.1x Port-based/MAC-based network access authentication



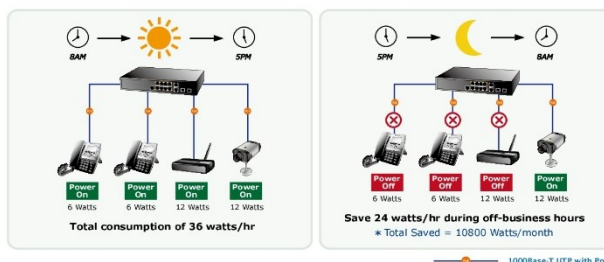
### SMTP/SNMP Trap Event Alert

Though most NVR or camera management software offers SMTP email alert function, the GS-5220-8P2T2S further provides event alert function to help to diagnose the abnormal device owing to whether or not there is a break of the network connection, loss of PoE power or the rebooting response by the PD Alive Check process.



### PoE Schedule for Energy Saving

Besides being used for IP surveillance, the GS-5220-8P2T2S is certainly applicable to build any PoE network including VoIP and wireless LAN. Under the trend of energy saving worldwide and contributing to the environmental protection on the Earth, the GS-5220-8P2T2S can effectively control the power supply besides its capability of giving high watts power. The "PoE schedule" function helps you to enable or disable PoE power feeding for each PoE port during specified time intervals and it is a powerful function to help SMBs and enterprises save energy and budget.



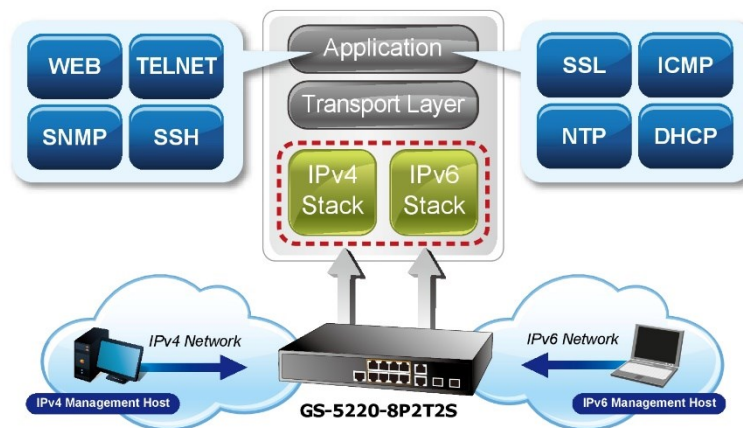
- Built-in RADIUS client to co-operate with the RADIUS servers
- TACACS+ login users access authentication
- RADIUS/TACACS+ users access authentication
- Access Control List
  - IP-based Access Control List (ACL)
  - MAC-based Access Control List
- Source MAC/IP address binding
- DHCP Snooping to filter un-trusted DHCP messages
- Dynamic ARP Inspection discards ARP packets with invalid MAC address to IP address binding
- IP Source Guard prevents IP spoofing attacks
- Auto DoS rule to defend DoS attack
- IP address access management to prevent unauthorized intruder

### Management

- IPv4 and IPv6 dual stack management
- Switch Management Interfaces
  - Console/Telnet Command Line Interface
  - Web switch management
  - SNMP v1, v2c, and v3 switch management
  - SSH/SSL secure access
- IPv6 IP Address/NTP/DNS management
- Built-in Trivial File Transfer Protocol (TFTP) client
- BOOTP and DHCP for IP address assignment
- System Maintenance
  - Firmware upload/download via HTTP/TFTP
  - Reset button for system reboot or reset to factory default
  - Dual Images
- DHCP Relay
- DHCP Option82
- User Privilege levels control
- NTP (Network Time Protocol)
- Link Layer Discovery Protocol (LLDP) and LLDP-MED
- Network Diagnostic
  - ICMPv6/ICMPv4 Remote Ping
  - Cable Diagnostic technology provides the mechanism to detect and report potential cabling issues
- SMTP/Syslog remote alarm
- Four RMON groups (history, statistics, alarms and events)
- SNMP trap for interface Linkup and Linkdown notification
- System Log
- PLANET Smart Discovery Utility for deployment management

#### *Solution for IPv6 Networking*

With the support for IPv6/IPv4 protocol, and easy and friendly management interfaces, the GS-5220-8P2T2S is the best choice for IP surveillance, VoIP and wireless service providers to connect with the IPv6 network. It also helps SMBs to step in the IPv6 era with the lowest investment and without having to replace the network facilities even though ISPs establish the IPv6 FTTx edge network.



#### *IPv4 and IPv6 VLAN Routing for Secure and Flexible Management*

To help customers stay on top of their businesses, the GS-5220-8P2T2S not only provides ultra high transmission performance and excellent layer 2 technologies, but also offers IPv4/IPv6 VLAN routing feature which allows to crossover different VLANs and different IP addresses for the purpose of having a highly-secure, flexible management and simpler networking application.

#### *Robust Layer2 Features*

The GS-5220-8P2T2S can be programmed for advanced switch management function, such as dynamic port link aggregation, Q-in-Q VLAN, Multiple Spanning Tree Protocol (MSTP), Layer 2/4 QoS, bandwidth control and IGMP/MLD snooping. The GS-5220-8P2T2S allows the operation of a high-speed trunk combining multiple ports. Supporting 6 trunk groups, it enables a maximum of up to 8 ports per trunk and supports connection fail-over as well.

#### *Powerful Security*

The GS-5220-8P2T2S offers comprehensive layer 2 to layer 4 access control list (ACL) for enforcing security to the edge. It can be used to restrict network access by denying packets based on source and destination IP address, TCP/UDP port number or defined typical network applications. Its protection mechanism also comprises 802.1x Port-based and MAC-based user and device authentication. With the private VLAN function, communication between edge ports can be prevented to ensure user privacy.

#### *Enhanced Security and Traffic Control*

The GS-5220-8P2T2S also provides DHCP Snooping, IP Source Guard and Dynamic ARP Inspection functions to prevent IP snooping from attack and discard ARP packets with invalid MAC address. The network administrator can now build highly-secure corporate networks with considerably less time and effort than before.

#### *User-friendly Secure Management*

For efficient management, the GS-5220-8P2T2S is equipped with console, web and SNMP management interfaces. With the built-in web-based management interface, the GS-5220-8P2T2S offers an easy-to-use, platform independent management and configuration facility. The GS-5220-8P2T2S supports SNMP and it can be managed via any management software based on the standard SNMP v1 and v2 protocols. For reducing product learning time, the GS-5220-8P2T2S offers Cisco-like command via Telnet or console port and customer doesn't need to learn new command from these switches. Moreover, the GS-5220-8P2T2S offers remote secure management by supporting SSH, SSL and SNMPv3 connection which can encrypt the packet content at each session.



#### Flexible and Extendable Solution

The 2 mini-GBIC SFP slots built in the GS-5220-8P2T2S support dual speed as it features 100BASE-FX and 1000BASE-SX/LX SFP (Small Form-factor Pluggable) fiber-optic modules. Now the administrator can flexibly choose the suitable SFP transceiver according to not only the transmission distance, but also the transmission speed required. The distance can be extended from 550 meters to 2km (multi-mode fiber) and up to 10/20/30/40/50/70/120 kilometers (single-mode fiber or WDM fiber). They are well suited for applications within the enterprise data centers and distributions.

#### Intelligent SFP Diagnosis Mechanism

The GS-5220-8P2T2S supports SFP-DDM (Digital Diagnostic Monitor) function that greatly helps network administrator to easily monitor real-time parameters of the SFP transceivers, such as optical output power, optical input power, temperature, laser bias current, and transceiver supply voltage.

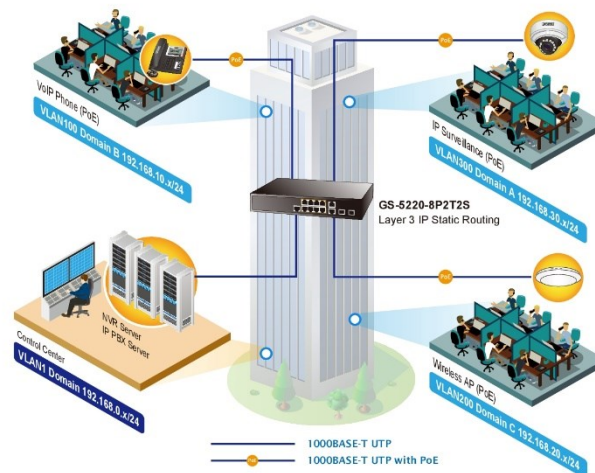
## Applications

#### Layer 2+ VLAN Static Routing and PoE Application

With the built-in robust IPv4/IPv6 Layer 3 traffic routing protocols, the GS-5220-8P2T2S ensures reliable routing between VLANs and network segments. The routing protocols can be applied by VLAN interface with up to 32 routing entries. The GS-5220-8P2T2S is certainly a cost-effective and ideal solution for enterprises.

Providing up to 8 Gigabit High-power PoE ports and in-line power interface, the GS-5220-8P2T2S High-power PoE Switch can easily build a centrally-controlled power network shared by wireless Gigabit AP, IP phone system, or mega-pixel IP camera system group for the enterprises.

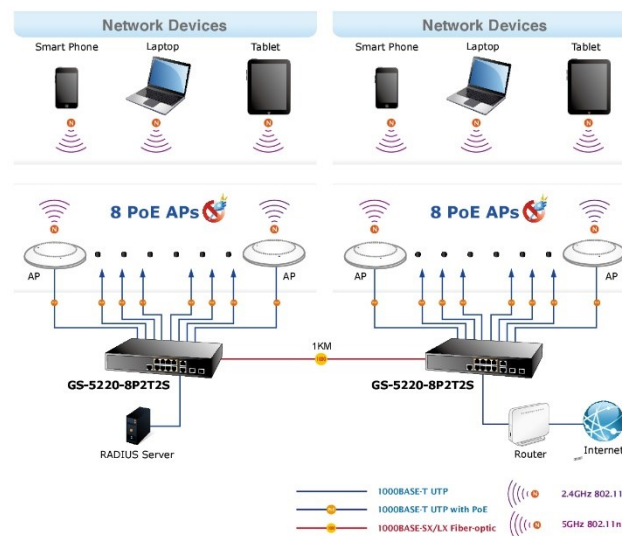
#### VLAN Routing + PoE Applications



#### PoE Wi-Fi Hotspot Solution with Extended Network Infrastructure for Public Spaces

The GS-5220-8P2T2S comes with non-blocking design, desktop size and SFP fiber-optic modules, bringing network infrastructure higher flexibility but lower in cost. Providing eight 10/100/1000BASE-T PoE ports, two 10/100/1000BASE-T copper ports, in-line power interfaces and two Gigabit SFP interfaces, the GS-5220-8P2T2S can easily build a Networking Authentication on Wireless LAN Controllers system for the enterprises. For instance, it can work with the Wireless Controller and RADIUS Server to perform comprehensive security for wireless user authentication with powered APs.

#### High Scalability & Best Security for Today's Wireless Networking Solution



## Specifications

Model	GS-5220-8P2T2S
<b>Hardware Specifications</b>	
Copper Ports	10 10/100/1000BASE-T RJ45 Auto-MDI/MDI-X ports
SFP/mini-GBIC Slots	2 x 100/1000BASE-X SFP interfaces with Port-11 to Port-12 Supports 100/1000Mbps dual mode and DDM
PoE Injector Port	8 ports with 802.3at/af PoE injector function with Port-1 to Port-8
Console	1 x RJ45 serial port (115200, 8, N, 1)
Switch Architecture	Store-and-Forward
Switch Fabric	24Gbps/non-blocking
Throughput	17.76Mpps@64Bytes
Address Table	8K entries, automatic source address learning and aging
Shared Data Buffer	1392KB
Flow Control	IEEE 802.3x pause frame for full-duplex Back pressure for half-duplex
Jumbo Frame	9KB
Reset Button	< 5 sec: System reboot > 5 sec: Factory default
LED	System: Fan Alert (Green), SYS (Green), PWR (Green) 10/100/1000T RJ45 Interfaces (Port 1 to Port 8): 10/100/1000Mbps LNK/ACT (Green) PoE-in-Use (Orange) 10/100/1000T RJ45 Interfaces (Port 9 to Port 10): LNK/ACT (Green) 1000Mbps (Orange) 100/1000Mbps SFP Combo Interfaces (Port 11 to Port 12): LNK/ACT (Green) 1000Mbps (Orange)



Power Requirements		100~240V AC, 50/60Hz
Power Consumption (Full Loading)		320 watts/1091.9 BTU (max.)
ESD Protection		6KV DC
Dimensions (W x D x H)		330 x 200 x 43.5 mm, 1U height
Weight		2kg
Power over Ethernet		
PoE Standard		IEEE 802.3af/802.3at PoE/PSE
PoE Power Supply Type		End-span
PoE Power Output		Per port 54V DC, max. 30.8 watts
Power Pin Assignment		1/2(+), 3/6(-)
PoE Power Budget		240 watts (max.) @ 25 degrees C 200 watts (max.) @ 50 degrees C
PoE Ability	PD @ 7 watts	8 units
	PD @ 15.4 watts	8 units
	PD @ 30.8 watts	8 units
Layer2 Management Functions		
Basic Management Interfaces		Console, Telnet, Web browser, SNMP v1, v2c
Secure Management Interfaces		SSH, SSL, SNMP v3
Port Configuration		Port disable/enable Auto-negotiation 10/100/1000Mbps full and half duplex mode selection Flow Control disable/enable
Port Status		Display each port's speed duplex mode, link status, flow control status, auto negotiation status, trunk status
Port Mirroring		TX/RX/Both Many-to-1 monitor
VLAN		802.1Q tagged based VLAN, up to 255 VLAN groups Q-in-Q tunneling Private VLAN Edge (PVE) MAC-based VLAN Protocol-based VLAN Voice VLAN MVR (Multicast VLAN Registration) Up to 255 VLAN groups, out of 4094 VLAN IDs
Link Aggregation		IEEE 802.3ad LACP/Static Trunk Supports 6 trunk groups with 8 ports per trunk
QoS		Traffic classification based, strict priority and WRR 8-level priority for switching - Port number - 802.1p priority - 802.1Q VLAN tag - DSCP/TOS field in IP packet
IGMP Snooping		IGMP (v1/v2/v3) Snooping, up to 255 multicast groups IGMP Querier mode support
MLD Snooping		MLD (v1/v2) Snooping, up to 255 multicast groups MLD Querier mode support
Access Control List		IP-based ACL/MAC-based ACL Up to 256 entries
Bandwidth Control		Per port bandwidth control Ingress: 100Kbps~1000Mbps Egress: 100Kbps~1000Mbps
SNMP MIBs		RFC 1213 MIB-II RFC 2863 IF-MIB RFC 1493 Bridge MIB RFC 1643 Ethernet MIB RFC 2863 Interface MIB RFC 2665 Ether-Like MIB RFC 2737 Entity MIB RFC 2819 RMON MIB (Groups 1, 2, 3 and 9) RFC 2618 RADIUS Client MIB RFC 3411 SNMP-Frameworks-MIB IEEE 802.1X PAE LLDP MAU-MIB Power over Ethernet MIB
Layer 3 Functions		
IP Interfaces		Max. 8 VLAN interfaces
Routing Table		Max. 32 routing entries
Routing Protocols		IPv4 software static routing IPv6 software static routing
Standards Conformance		
Regulatory Compliance		FCC Part 15 Class A, CE

Standards Compliance	IEEE 802.3 10BASE-T IEEE 802.3u 100BASE-TX/100BASE-FX IEEE 802.3z 1000BASE-SX/LX IEEE 802.3ab 1000BASE-T IEEE 802.3x flow control and back pressure IEEE 802.3ad port trunk with LACP IEEE 802.1D Spanning Tree Protocol IEEE 802.1w Rapid Spanning Tree Protocol IEEE 802.1s Multiple Spanning Tree Protocol IEEE 802.1p Class of Service	IEEE 802.1Q VLAN tagging IEEE 802.1x Port Authentication Network Control IEEE 802.1ab LLDP IEEE 802.3af Power over Ethernet IEEE 802.3at Power over Ethernet Plus RFC 768 UDP RFC 793 TFTP RFC 791 IP RFC 792 ICMP RFC 2068 HTTP RFC 1112 IGMP v1 RFC 2236 IGMP v2 RFC 3376 IGMP v3 RFC 2710 MLD v1 RFC 3810 MLD v2
	Environments	
Operating	Temperature: 0 ~ 50 degrees C Relative Humidity: 5 ~ 95% (non-condensing)	
Storage	Temperature: -10 ~ 70 degrees C Relative Humidity: 5 ~ 95% (non-condensing)	

## Related Products

GS-5220-8P2T2S	L2+ 8-Port 10/100/1000T 802.3at PoE + 2-Port 10/100/1000T + 2-Port 100/1000X SFP Managed Switch
----------------	---

## Related Products

WGSW-20160HP	16-Port 10/100/1000Mbps 802.3at PoE + 4-Port Gigabit TP/SFP Combo Managed Switch
WGSW-24040HP4	24-Port 10/100/1000Mbps 802.3at PoE + 4-Port Shared SFP Managed Switch (440 watts)
WGSW-48040HP	L2+ 48-Port 10/100/1000T 802.3at PoE + 4-Port Shared 100/1000X SFP Managed Switch with Hardware Layer3 IPv4/IPv6 Static Routing

## Available Modules for GS-5220-8P2T2S series

MGB-GT	SFP-Port 1000BASE-T Module
MGB-SX	SFP-Port 1000BASE-SX mini-GBIC module
MGB-LX	SFP-Port 1000BASE-LX mini-GBIC module
MGB-L30	SFP-Port 1000BASE-LX mini-GBIC module - 30km
MGB-L50	SFP-Port 1000BASE-LX mini-GBIC module - 50km
MGB-L70	SFP-Port 1000BASE-LX mini-GBIC module - 70km
MGB-L120	SFP-Port 1000BASE-LX mini-GBIC module - 120km
MGB-LA10	SFP-Port 1000BASE-LX (WDM,TX:1310nm) mini-GBIC module - 10km
MGB-LB10	SFP-Port 1000BASE-LX (WDM,TX:1550nm) mini-GBIC module - 10km
MGB-LA20	SFP-Port 1000BASE-LX (WDM,TX:1310nm) mini-GBIC module - 20km
MGB-LB20	SFP-Port 1000BASE-LX (WDM,TX:1550nm) mini-GBIC module - 20km
MGB-LA40	SFP-Port 1000BASE-LX (WDM,TX:1310nm) mini-GBIC module - 40km
MGB-LB40	SFP-Port 1000BASE-LX (WDM,TX:1550nm) mini-GBIC module - 40km
MFB-FX	SFP-Port 100BASE-FX Transceiver (1310nm) - 2km
MFB-F20	SFP-Port 100BASE-FX Transceiver (1310nm) - 20km
MFB-F40	SFP-Port 100BASE-FX Transceiver (1310nm) - 40km
MFB-F60	SFP-Port 100BASE-FX Transceiver (1310nm) - 60km
MFB-FA20	SFP-Port 100BASE-BX Transceiver (WDM,TX:1310nm) - 20km
MFB-FB20	SFP-Port 100BASE-BX Transceiver (WDM,TX:1550nm) - 20km

### PLANET Technology Corporation

11F., No.96, Minquan Rd., Xindian Dist., New Taipei City  
231, Taiwan (R.O.C.)  
Tel: 886-2-2219-9518 Fax: 886-2-2219-9528  
Email: sales@planet.com.tw www.planet.com.tw




### GS-5220-8P2T2S

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## 4. BOX FIBRA OTTICA

5/5/2021

Fiber Splitter Box Wall Mounted Outdoor Distribution Box



Shenzhen TRTFiber Tech. Co., Ltd.  
Optical fiber communication experts, the lowest price, highest quality

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Fiber Optic Patch cord (44)

Fiber pigtail (20)

MPO/MPT Fiber Optic Cable (8)

Fiber Optic Splitter (13)

Fiber Optic adapter/Attenuator (18)

Fiber Optical Module (9)

Fiber cable (12)

Fiber Optic Distribution Box (13)

Fiber Optic Splice Closure (8)

Fiber Optic Media Converter (5)

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Contact Us

Anthony


lyd@trtfiber.com

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Products




光纖光分箱  
● 內置光分路器  
● 電信、移動、聯通均可用

Fiber Splitter Box Wall Mounted Outdoor Distribution Box

Information:

Inquire Now



Details

Splitter Fiber Optic Distribution Box Outdoor Wall Mounted

Description:

Fiber optic terminal box is available for the distribution and terminal connection for various kinds of optical fiber system, especially suitable for mini-network terminal distribution, in which the optical cables, patch cores or pigtails are connected.

Features:

The box is made of PC+ABS, and lifetime is more than 20 years.  
It also can be used under -40°C.  
Bi-layer structure design. The upper layer is for optical splitter, the other layer is for fiber splicing.  
Easy to operate. Usually installed as wall mounted in the building or at the green belt.  
It can accommodate 8 pcs SC-SC, or SC-FC adapters.  
It can be designed to client requirements.  
It meets YD/T988-2007 standards.


Application:

FTTH access network  
Telecommunication Networks  
CATV Networks  
Data communications Networks


Specification:

Type	FDB-04	FDB-08	FDB-16	FDB-24	FDB-32	FDB-48
Size(mm)	210*140*40	205*215*55	260*320*90	295*335*115	350*340*120	350*340*120
Cable ports	4	8	16	24	32	48
Weight(kg)	0.35	0.75	1.4	2.1	3.5	5


Related Products




2U SC 24 Port Fiber Optic Patch Panel With Fiber Pigtails



LC 24 Port Fiber Optic Patch Panel



MPO Fiber Optic Patch Panel



Indoor and outdoor fiber optic cable box manufacture fiber box cables cable distribution box

trtfiber.com/products/137-Fiber-Splitter-Box-Wall-Mounted-Outdoor-Distribution-Box.html

1/2



5/5/2021

## Fiber Splitter Box Wall Mounted Outdoor Distribution Box


About Us	Fiber Optic Patch cord	Fiber pigtail	MPO/MPT Fiber Optic Cable
Company Profile	MTRJ-MTRJ Duplex 9/125 Single Mode Fiber	Fiber Cable 144-SC/APC 9/125 Singlemode	4U Slidable Fiber Optic Patch Panel for MTP /
Factory preview	Patch Cable	Outdoor Fiber Pigtail	MPO Fiber Cassette Module
Contact Us	MTRJ-MTRJ Duplex Multimode 10G OM3 Fiber	12 Fibers Bunch Fiber Optic Pigtail	MPO/MTP Female to MTP Female 12 Fibers OM3
	Patch Cable	12 Fibers ST/UPC 9/125 Singlemode Bunch Fiber	50/125 Multimode Trunk Cable, LSZH
	SC/UPC-FC/UPC Simplex Multimode 10G OM3	Optic Pigtail	MPO Female to 12core LC Single mode Optic
	Fiber Patch Cable	12 Fibers SC/UPC 9/125 Singlemode Bunch Fiber	Fiber Patch cord
	LC/UPC-ST/UPC Duplex Multimode 10G OM3	Optic Pigtail	MPO to MPO 9/125 Single Mode Fiber Optic Patch
	Fiber Patch Cable	12 Fibers LC/UPC 9/125 Singlemode Bunch Fiber	Cable
	LC/UPC-ST/UPC Duplex 9/125 Single Mode Fiber	Optic Pigtail	SC Simplex Fiber Optic Adapter MTP / MPO Fiber
	Patch Cable		With Swell Clip Lock Cover

Links: Facebook | Twitter | LinkedIn | Google+ |  
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## 5. CAVO UTP

5/5/2021

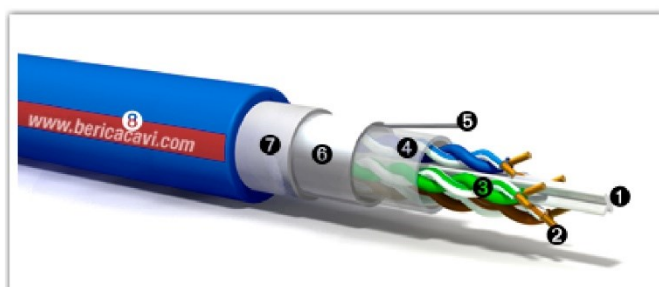
UTP-FTP 4x2x23 AWG CAT. 6 BLU PER ESTERNO

 (/index.php/en/5-uso-esterno-2/274-utp-ftp-4x2x23-awg-cat-6-blu-per-esterno)

 (/images/pdf/utp6\_blu.pdf)

### UTP-FTP 4x2x23 AWG CAT. 6 BLU PER ESTERNO

Cavi per trasmissione dati, non propaganti la fiamma a ridotta emissione di alogeni e resistenti ai raggi UV




1. Crocetta
2. Conduttore
3. Isolante
4. Separatore
5. Drenaggio
6. Schermatura
7. Guaina interna
8. Guaina esterna

**CEI UNEL**  
**36762**

**IMPIEGO:** Impiegati per la trasmissione di dati fino a 250 MHz nei sistemi di cablaggio strutturato LAN (CEI EN 50173 classe E), dove è richiesta una maggiore protezione contro gli agenti atmosferici ed in particolare i raggi ultravioletti.

**POSA:** Per posa fissa all'interno e all'esterno. Possono essere installati su passerelle, tubazioni, canalette e sistemi simili. Possibilità di posa insieme con cavi energia aventi marcatura sia 450/750 V sia 0,6/1 kV utilizzati per sistemi a tensione nominale verso terra (U<sub>0</sub>) fino a 400 V.


CARATTERISTICHE	DESCRIZIONE	NORME
Conduttori:	rame rosso ricotto (23AWG)	
Isolante:	polietilene a bassa densità LDPE	
Colori anime:	biancoblu/blu - biancoarancio/arancio - biancoverde/verde - biancomarrone/marrone	
Crocetta:	crocetta separatrice in polietilene	
Separatore:	nastro Pet	
Drenaggio:	rame stagnato ricotto	
Schermatura:	nastro Al/Pet	
Guaina interna:	mescola termoplastica	CEI EN 50363
Guaina esterna:	PVC di qualità Rz	CEI EN 50363

CARATTERISTICHE	DESCRIZIONE	NORME
Colore della guaina:	 (/index.php/en/5-uso-esterno-2/274-utp-ftp-4x2x23-awg-cat-6-blu-per-esterno)	
Non propagante la fiamma:	blu RAL 5015 con riga rossa RAL 3000	CEI EN 60332-1-2
Ridotta emissione di alogeni:	(< 22%)	CEI EN 50267-2-1 - IEC 60754-1
Resistente agli olii:		CEI 20-34/0-1
Resistente ai raggi UV:		HD 605
Resistenza elettrica:	< 190 Ω/km (loop)	CEI EN 50288-5-1/6-1
Impedenza caratteristica:	100 ± 5Ω a 100 MHz	
Tensione di prova:	700 Vac x 1 min.	
Temperatura max d'esercizio:	70 °C	
Temperatura min. di posa:	0 °C	
Raggio di curvatura:	Ø x 8	
Marcatura:	BERICA CAVI S.P.A. ITALY UV RESISTANT Formazione CEI UNEL 36762 C-4 (Uo = 400 V) 100 OHM CE - Anno/Lotto - 00000 m	

	Mhz	4	20	62,5	100	155	200	250
<b>Attenuazione:</b>	<b>dB/100 m</b>	3,8	8,5	15,5	19,9	25,3	29,1	33,0
<b>NEXT:</b>	<b>dB/100 m</b>	65,3	54,8	47,4	44,3	41,4	39,8	38,3
<b>Return loss:</b>	<b>dB/100 m</b>	24,5	25,0	21,5	20,1	18,8	18,0	17,3

TIPO	Ø ESTERNO MEDIO mm	PESO MEDIO kg/km	CODICE
UTP 4x2x23AWG	8,2	76,0	B7304CA24BLU
FTP 4x2x23AWG	9,3	92,0	B7404CA24BLU

Berica Cavi S.p.a si riserva il diritto di modificare tutte le informazioni presenti nel sito internet senza fornire alcun preavviso a clienti e/o utilizzatori

 (/index.php/en/5-uso-esterno-2/274-utp-ftp-4x2x23-awg-cat-6-blu-per-esterno)



ALLARME BLU PER ESTERNO (/index.php/5-uso-esterno/79-allarme-blu-per-esterno)

FR20HH2R BLU PER ESTERNO (/index.php/5-uso-esterno/78-fr2ohh2r-blu-per-esterno)

FROE PER POSA INTERRATA (/index.php/5-uso-esterno/87-froe-per-posa-interrata)

FROR BLU PER ESTERNO (/index.php/5-uso-esterno/77-fror-blu-per-esterno)

MINI RG 59 + ... BLU PER ESTERNO (/index.php/5-uso-esterno/82-mini-rg-59-blu-per-esterno)

MINI RG 59 +3x1+9x0,50 mm2 BLU PER ESTERNO (ELVOX) (/index.php/5-uso-esterno/81-mini-rg-59-3x1-9x0-50-mm2-blu-per-esterno-elvox)

RG 59 B/U 75Ω BLU PER ESTERNO (/index.php/5-uso-esterno/80-rg-59-b-u-75-blu-per-esterno)

UTP-FTP 4x2x23 AWG CAT. 6 ARMATO BLU PER ESTERNO (/index.php/5-uso-esterno/86-utp-ftp-4x2x23-awg-cat-6-armato-blu-per-esterno)

**UTP-FTP 4x2x23 AWG CAT. 6 BLU PER ESTERNO (/index.php/5-uso-esterno/84-utp-ftp-4x2x23-awg-cat-6-blu-per-esterno)**

UTP-FTP 4x2x24 AWG CAT. 5E ARMATO BLU PER ESTERNO (/index.php/5-uso-esterno/85-utp-ftp-4x2x24-awg-cat-5e-armato-blu-per-esterno)

UTP-FTP 4x2x24 AWG CAT. 5E BLU PER ESTERNO (/index.php/5-uso-esterno/83-utp-ftp-4x2x24-awg-cat-5e-blu-per-esterno)

Cerca...



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## 6. CAVO IN FIBRA OTTICA

5/5/2021

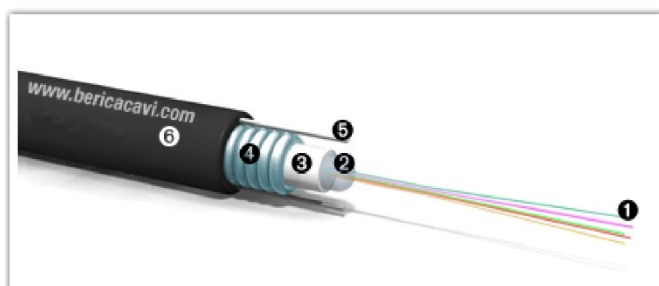
OS1 FIBRA MONOMODALE ACCIAIO

 (/index.php/en/8-fibra-ottica-2/235-os1-fibra-monomodale-acciaio)

 (/images/pdf/fibra\_ottica.pdf)

### OS1 FIBRA MONOMODALE

Cavi f.o. LOOSE con armatura in acciaio corrugato



1. Fibra ottica
2. Gel protettivo
3. Tubo PBT
4. Armatura
5. Filo acciaio
6. Guaina

**IMPIEGO:** Impiegati per la trasmissione di dati nei canali che utilizzano i seguenti protocolli trasmissivi: ITU-T G.652B; ISO/IEC 11802 OS-1; TIA/EIA-492AAAA; Telcordia GR-20-CORE

**POSA:** Per posa fissa all'interno e all'esterno.

CARATTERISTICHE	DESCRIZIONE	
Fibra ottica:	Diametro nucleo:	9 ± 2,5 µm
	Non circolarit� del nucleo:	< 6%
	Diametro mantello:	125 ± 1 µm
	Non circolarit� del mantello:	< 1%
	Errore di concentricit� nucleo/mantello:	< 0,6 µm
	Errore di concentricit� rivestimento/mantello:	< 12 µm
	Non circolarit� del rivestimento/mantello:	< 6%
	Diametro esterno:	242 ± 7 µm
Gel protettivo:	per garantire resistenza all'acqua e all'umidit�	
Tubo PBT:		
Armatura:	acciaio corrugato per la protezione antioditore	
Fili d'acciaio:	per la resistenza alla trazione	
Guaina:	Termoplastico senza alogeni (Posa interna) o Polietilene(Posa esterna)	

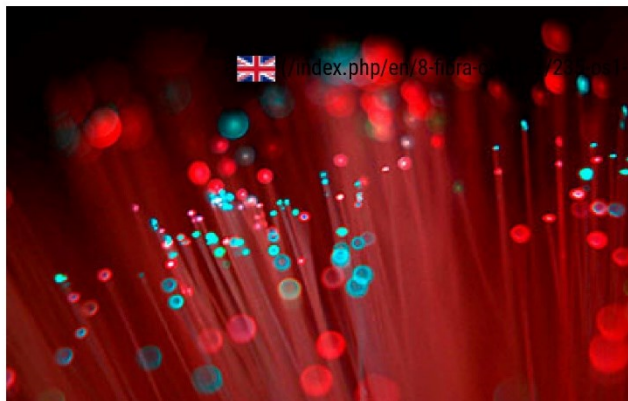
CARATTERISTICHE	DESCRIZIONE			
Colore della guaina:	 (/index.php/en/8-fibra-ottica-2/235-os1-fibra-monomodale-acciaio)           nero RAL 9005			
Resistenza allo schiacciamento:	1000 N/100 mm			
Resistenza alla trazione:	breve 1500 N ; prolungata 600 N			
Raggio di curvatura:	4÷12 fibre / 16÷48 fibre (in posa 15 / 16 cm) (installato 10 / 11 cm)			
Temperatura di esercizio:	-30 °C ÷ +70 °C			
Lunghezza d'onda:	1310 nm	1383 nm	1550 nm	1625 nm
Attenuazione:	≤ 0,36 dB/km	≤ 0,35 dB/km	≤ 0,22 dB/km	≤ 0,24 dB/km
Diametro modale:	9,2 ± 0,4 µm		10,4 ± 0,8 µm	
Indice di rifrazione:	1466		1467	
Coefficiente di dispersione:	1285-1340 nm	(≥ -3 ≤ 3 MHz x km)	≤ 18 MHz x km	≤ 22 MHz x km
Lunghezza d'onda:	≥ 1302 nm ≤ 1320 nm			
Profilo d'indice:	≤ 0,091 ps / (nm <sup>2</sup> x km)			

TIPO (**) N° fibre	Ø ESTERNO MEDIO mm	PESO MEDIO kg/km	CODICE
4	7,5	85	LSAOS1004(*)
6	7,5	85	LSAOS1006
8	7,5	85	LSAOS1008
12	7,5	85	LSAOS1012
16	8,5	110	LSAOS1016
24 (1x24)	8,5	110	LSAOS1024
48 (2x24)	9,5	130	LSAOS1048

\* Aggiungere "P" per guaina in polietilene

\*\* Disponibili a richiesta versioni con n° fibre >48 e con carichi alla trazione >1500 N per applicazioni particolari.





 [/index.php/en/8-fibra-ottica/38-os1-fibra-monomodale-acciaio\)](#)

[OM1 FIBRA MULTIMODALE \(/index.php/8-fibra-ottica/40-om1-fibra-multimodale\)](#)

[OM1 FIBRA MULTIMODALE ACCIAIO \(/index.php/8-fibra-ottica/42-om1-fibra-multimodale-acciaio\)](#)

[OM2 FIBRA MULTIMODALE \(/index.php/8-fibra-ottica/37-om2-fibra-multimodale-iec-60793-2-10-type-a1a-1\)](#)

[OM2 FIBRA MULTIMODALE ACCIAIO \(/index.php/8-fibra-ottica/39-om2-fibra-multimodale-acciaio\)](#)

[OM3 FIBRA MULTIMODALE \(/index.php/8-fibra-ottica/41-om3-fibra-multimodale\)](#)

[OM3 FIBRA MULTIMODALE ACCIAIO \(/index.php/8-fibra-ottica/43-om3-fibra-multimodale-acciaio\)](#)

[OS1 FIBRA MONOMODALE \(/index.php/8-fibra-ottica/36-os1-fibra-monomodale\)](#)

**[OS1 FIBRA MONOMODALE ACCIAIO \(/index.php/8-fibra-ottica/38-os1-fibra-monomodale-acciaio\)](#)**

Cerca...



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## 7. ANTENNA RADIO RICEVITORE - TRASMETTITORE

MikroTik

DynaDish 5

### DynaDish 5

The DynaDish 5 is a new 802.11ac outdoor device with an integrated antenna. Compact in its design, it is a simple and completely integrated product with everything you need to quickly install a reliable point to point link.

The DynaDish 5 is powered by a new 720 MHz CPU from Qualcomm.

#### New 802.11ac outdoor device

- ideal for long distance point-to-point links
- 5 GHz dual chain board integrated into 25 dBi dish antenna with 8 degree beam width
- 720 Mhz CPU 300 MHz DDR2
- one Gigabit Ethernet port



The antenna is a 8 degree 25 dBi dish, and it includes a precise alignment mount, ideal for long range point to point wireless links.

DynaDish 5

1

## Specifications

Product code	RBDynaDishG-5HacD
CPU	QCA9557 720 MHz
Size of RAM	128 MB
10/100/1000 Ethernet ports	1
Wireless	Built-in 5 GHz 802.11ac, dual-chain
Frequency range	4920 - 6100 MHz (Operating range limited by Country Regulations)
Antenna gain	25 dBi
Antenna beam width	8°
Wireless chip model	QCA9892
Wireless regulations	Specific frequency range may be limited by country regulations
Port to port isolation	23 db
Return loss	< 15 db
VSWR	1.5
PoE in	Yes
Supported input voltage	11V - 60V passive PoE or 802.3af/at with unshielded cable
Voltage Monitor	Yes
PCB temperature monitor	Yes
CPU temperature monitor	No
Dimensions	Ø 404 mm, height 175 mm (without mount)
License level	3
Operating System	RouterOS
Max Power consumption	9 W
Supported channels	20/40/80 MHz

## Included



24 V 0.8 A power adapter



Precision mount



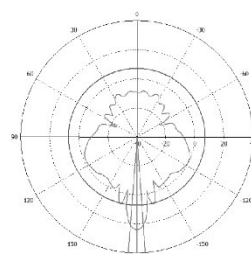
U Kit



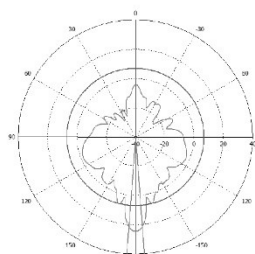
Gigabit PoE injector

## Wireless specifications

RATE	Tx (dBm)	Rx (dBm)
6MBit/s	31	-96
54MBit/s	28	-81
MCS0	30	-96
MCS7	27	-77
MCS9	22	-72



Horizontal polarization



Vertical polarization