

High Technology
CATV and Communication
Products

CATV ELITE

GSW Optical Receiver

Operation Manual

Chengdu KT Electronic Hi-Tech Co., Ltd.

Warning

Please read this manual before using the products.

Caution: To avoid electric shock, please keep cover closed. There are no parts inside that user can repair, please ask qualified service personnel for help.



The mark reminds the user that there is enough electric energy to cause electric shock.



The mark reminds the user concerning important components and safe operation.

Safety

- ◆ GSW optical receiver is exceptionally powered by external power supply and wire feed type. External type voltage range is AC 150V to 240V (50Hz), wire feed voltage range is AC 48V to 90V. Please use it within this voltage range.
- ◆ If the liquid or solid matter to fall into the chassis, it should be turned off immediately, and may not be used before professionals inspect.

Installation

- ◆ This machine is not a waterproof designed. For outdoor use, should be to do the waterproofing, moisture handling. Recommended application-specific installation box.
- ◆ Do not install the products in high temperature and humidity place, working temperature range is -25 °C to 60 °C.
- ◆  It must be grounded reliable.

Clean

- ◆ Wipe with a soft cloth with a small amount of water, you should use a neutral household detergent, otherwise it will damage the finish of the shell.

Repack

- ◆ Retain the original carton and packing materials for safe transport in the future.

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Brief introduction

As optical networks continue to reach user side, the cable is gradually getting close to the building, to the unit, and even some direct-to-home. If use traditional equipment, it not only needs a large number of optical transmitters and fiber optic cable, but also features a single network, making operating costs.

GSW is developed by KT for the future HFC network. It has ultra-low power receiving and meets FTTB and FTTH requirement. It's with high receiving sensitivity and output level, high S/N and price-performance ratio, small dimension and power consumption, which ensure the easy connection and installation with EoC equipment.

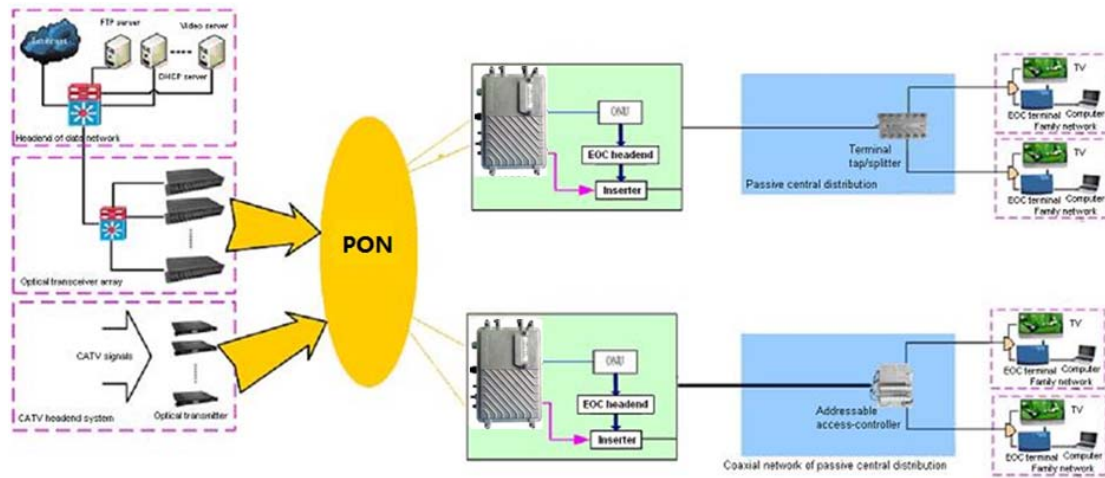
It adopts waterproof shell, small dimension, with digital display and key control. Besides, the display and key can be installed waterproof shell so that it's suitable for both indoor and outdoor.

Feature

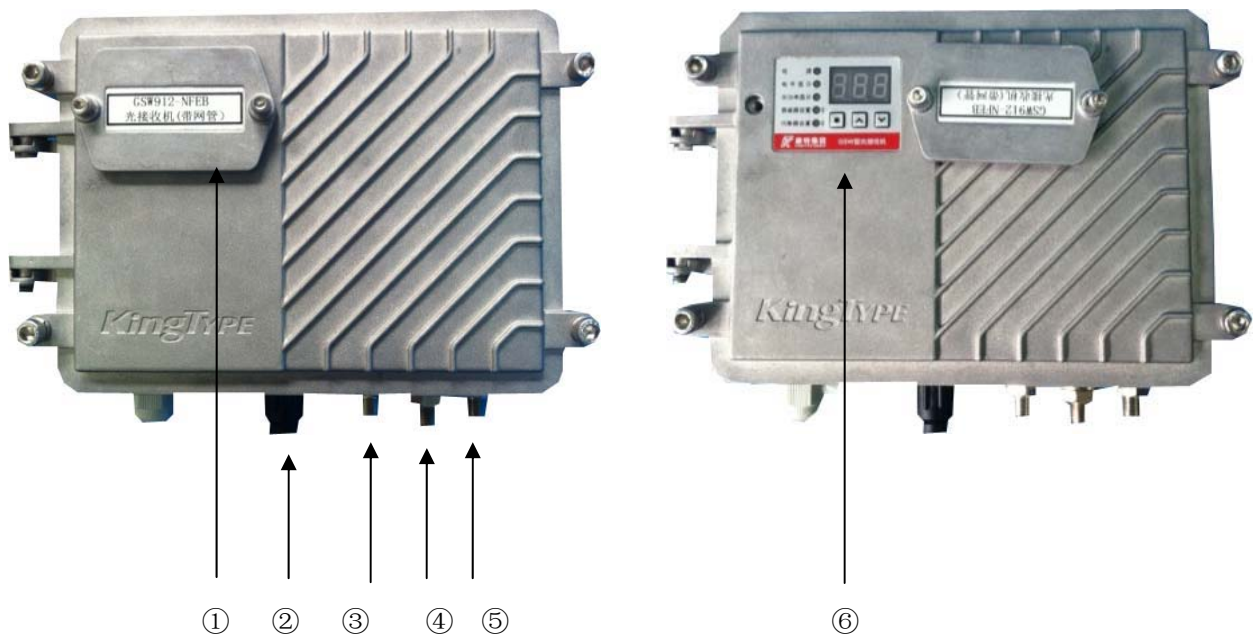
- Dual-window (1310/1550)
- RF port 5KV over-voltage design
- Digital display input optical power, output RF level, attenuation value, equalization value, power indicator. It could control attenuation value and equalization value via panel and network management, enquiry input optical power, chassis temperature, output RF level, voltage, and open shell inspection
- Automatic gain control function (AGC -7~+2dBm or -5~+2dBm)
- High S/N (receiving optical power -7dBm, ≥ 47 dB)
- High output level (dual-port output level ≥ 106 dBuV, one port output level ≥ 110 dBuV, 9dB equalization)
- Electronically control attenuation, adjust range 0~15dB (1dB stepping)
- Electronically control equalization, adjust range 3 to 15dB (3dB stepping)
- Small dimension 222.5×144×80 (L×W×H)
- Dual-port or one port output, with external monitoring port
- Low power consumption ≤ 13 W



Application



Parts and function

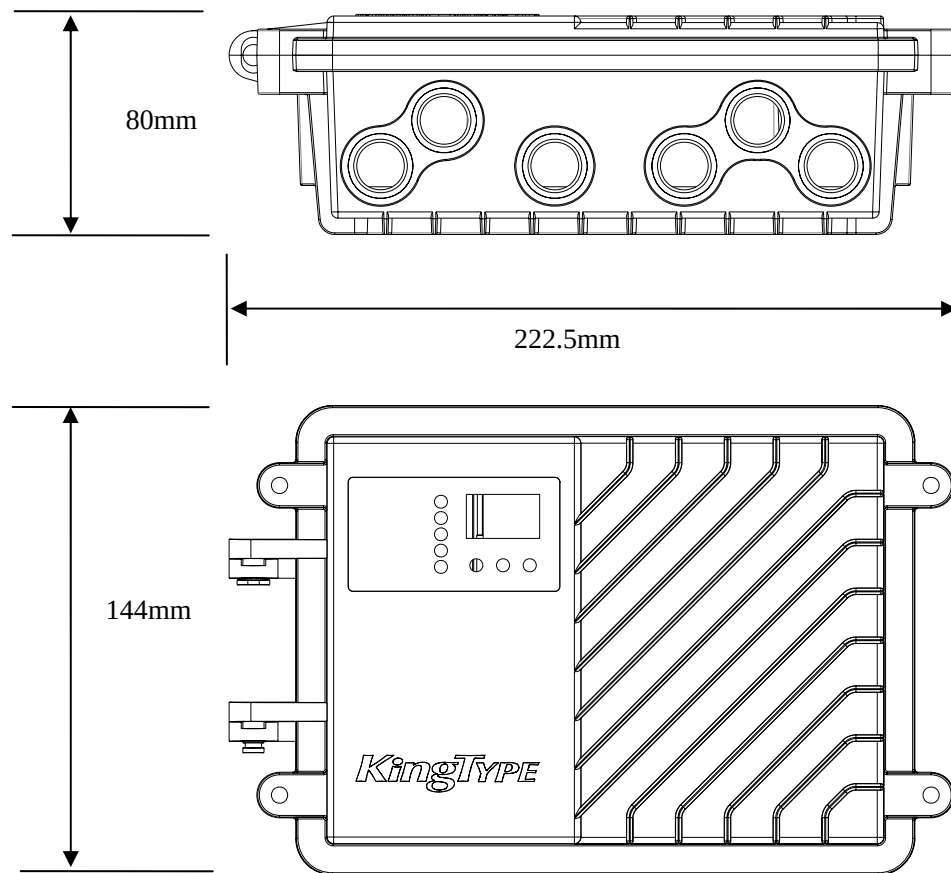




- ①Display and key waterproof shell
- ②Power input port
- ③RF output port 2
- ④Output monitoring port
- ⑤RF output port 1
- ⑥State of open display and key waterproof shell, could display and key operate
- ⑦Optical fiber input port

Installation and operation

GSW is small and easy for installation. The following picture is the specific installation dimension.



Optical fiber pigtail cable connection

The optical fiber connection port, FC/APC or SC/APC port

Power supply

GSW has external power supply type (AC 50Hz 150V to 240V) and core feed type (DC 48V to 90V).

Test and Adjustment

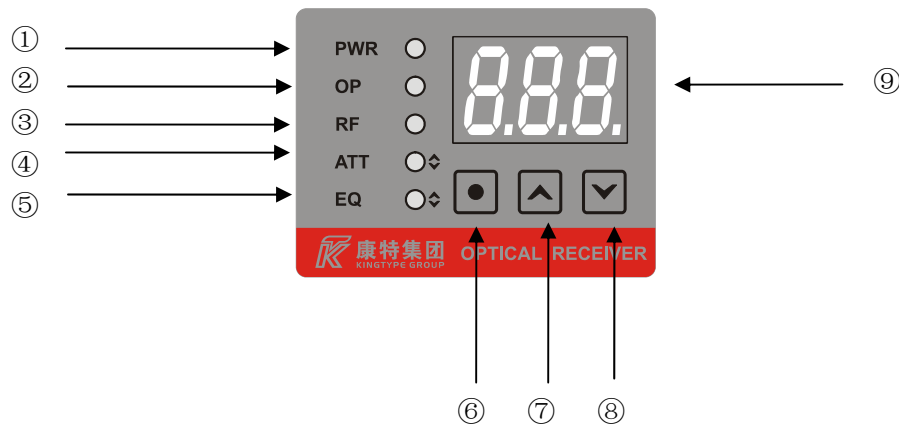
GSW is low power receiving, AGC range is -7dBm to +2dBm or -5dBm to +2dBm, Maximum output RF level of dual-port is 106dBμV (subject to testing environment). Since its wide optical receiving power range, please do not work long time when optical power (>+2dBm) and RF output attenuation is 0dB to avoid damage.

Attention: 1. Recommend optical power is -5dBm, the module will be permanent damaged when it is >+2dBm.

2. Pay attention to the warning marks to prevent laser damage the eyes

3. Please keep the connector clean before connection.

Local Display & Key Operation



①Power supply indicator.

②Receiving optical power indicator.

③Output RF level indicator.

④Attenuator setting indicator.

⑤Equalizer setting indicator.

⑥ "OK" key.

⑦ "Increase" key.

⑧ "Decrease" key.

⑨ Three-digit nixie tube.

There are five indicators on the left panel, when the whole machine works normally, the power supply indicator lights on. The other four indicators are functional indicators, switch among these functions by "increase" key and "decrease" key, when it is chosen, the corresponding indicator will lights on, and numeral display tube on the right side will display parameter value.

Receiving optical power indicator and output RF level indicator can display only, however, attenuator and equalizer can conduct setting.

Press "OK" after the attenuator or equalizer is chosen and then set the corresponding parameter, then the first-digit numeral tube shall flickers at its underline for several seconds, the attenuation value or equalization value can be adjusted by "increase" or "decrease" , then press "OK" after adjustment to exit the setting, and then press "increase" or "decrease" to switch among all functions on the left side.

Attenuation adjustment range is 0 to 15dB.

Equalization adjustment range is 3 to 15dB.

When receiving optical power is lower than -8dBm, displaying as "LL", it means receiving optical power is low; when receiving optical power is higher than +1dBm, displaying "HH", it means receiving optical power is high, and do not keep work in this state with a long time against damaging receiving module.

When no press-key operation within 30s, the display shall switch to receiving optical power state automatically, if no press-key operation again within next 30s, numeral display tube on the right side will go off to be sleep mode, under this mode, wake up display by pressing any key.

Technical specification

Item	Unit	Parameter
Optical characteristic		
Optical working wavelength	nm	Dual-window (1310/1550)
Optical input power	dBm	-7 to +2
Optical fiber connector type (import single port IN)		Standard configuration SC/APC, FC/APC is selectable
Optical return wave loss	dB	> 46
RF characteristic		
Forward working bandwidth	MHz	47 to 860/1000
Output level	dBμV	110 (single port output) 106 (two ports output)
Gain adjustment range	dB	0 to 15
Slope adjustment range	dB	3 to 15
AGC range	dBm	-7 to +2 or -5 to +2
CNR	dB	≥47 (-7dBm receiving); ≥49 (-5dBm receiving)
CSO	dBc	≤-62
CTB	dBc	≤-65
		-1dBm receiving, 59 analog channels (PAL)+30 digital channels. Level of digital channel is 10dB lower than analog. Tilt 9dB output.

RF impedance (copper)	Ω	75(standard is metrical, emprial is selectable)
RF inband flatness	dB	$\leq \pm 0.75$
RF return loss	dB	≤ -16
Power supply	V	AC/DC 48 to 90V (50Hz) or AC 150 to 240V (50Hz)
Environment		
Power consumption	W	$\leq 13W$
Storage temperature	$^{\circ}C$	-40 to +70
Working temperature	$^{\circ}C$	-25 to +60
Humidity	RH	$\leq 95\%$, no condensation
Dimension	mm	(Refer dimension) 222.5×144×80 (L×W×H)

Notice: KT reserves the right to make changes at any time without notice.

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