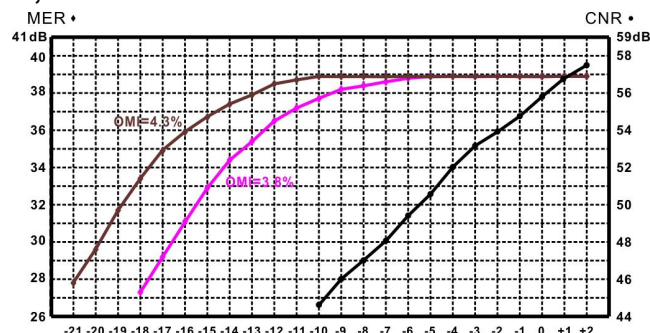


6.0 EPON ONU TECHNICAL INDEX

| | | | |
|----------------------------|---|---|-----------------------|
| Standard appliance | IEEE802.3/802.3ah | Fiber interface performance | SC/APC |
| Work wavelength | Tx: 1310nm, Rx: 1490nm | Fiber type standard | Single mode fiber SMF |
| Tx Output Power | -1dBm ~ +3dBm | Rx receiver sensitivity | -26dBm |
| Transmit rate | 1Gbps up/down bound symmetry | Optical link budget loss | 29dB |
| Service quality | QoS IEEE802.1p IPV4 TOS priority | Subscriber identification | ONU IEEE802.1x |
| Dynamic Bandwidth allocate | DBA The biggest bandwidth of every ONU subscriber and assure the allocate with quantity | | |
| L2 switch function | MAC address management:8K Rate Limiting;Support IGMP Snooping (V1/V2) inquiry Support IEEE802.1d STP support IEEE802.1q VLAN | | |
| Management mode | Web Server , SNMP data collect, can remote escalate built-in software by HTTP | | |
| LAN interface | Standard appliance | IEEE802.3/10Base-t, IEEE802.3u 100Base-Tx/Fx IEEE802.3x | |
| | Interface and quantity | 4 RJ45, 10M/100M Ethernet network port | |

7.0 CNR, MER DEGRADATION TABLE



Note: 1. CNR Test conditions: 59CH PAL-D, OMI = 3.8%

2. MER test conditions: The Original Signal: MER = 39.0dB, BER < 1.0E-9.

Test Frequency: 47 ~ 862MHz Full Channel, (The Curve is: 858.00MHz).

Red curve: OMI=3.8%

Brown curve: OMI=4.3%

3. Digital television Receiving Low Light, appropriate to increase the system modulation (OMI), can greatly improve the MER degradation.

8.0.NOTE

- Power Adapter Type: Input 220V, output DC power 12V (1A)
- PON port with SC/APC fiber connector. Need put protective seal when the connector not in use, make sure the optical connector are cleaning.
- When Optical signal connected with the PON port, the indicator light of PON port will turn on. If the light turns on and stable, it means the signal with center office network well connected and registered. If the light flashes, then means the signal not well connected and registered, need double check.
- LOS lights turn on, means the self-test not pass. If the PON indicator light shows stable, but LOS lights turn on, it means the device is faulty.
- 4 LAN indicator light corresponds to 4 10M/100M Ethernet interface, when lights flashing, it Means the link well connected, and all data well transferred.

H9122L-4FE-SF, H9122L-4FE-DF

Triple play FTTH ONU

(CATV+EPON ONU)



H 9 1 2 2 L - 4 F E - □ □

| FTTx Receiver | CATV Work bandwidth | Number of RF output | Output level (Pin=-16dBm) | L | LAN form and quantity | Mode optical port |
|---------------|---------------------|---------------------|---------------------------|----------------------------|------------------------|------------------------|
| H FTTH | 9 45~862MHz | 1 1ports | 22 22dBmV(82dBμV) | Ultra-low optical Receiver | 4FE Four 10M/100M Port | SF Single fiber access |
| P FTTB | | | | 1GE A 1000M Port | | |
| B FTTB | | | | 4GE Four 1000M Port | | DF Dual fiber access |

User Manual

Ver. 2.2 en

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1.0 PRODUCT DESCRIPTION

Huatai H9122L-4FE, is a triple play, FTTH ONU Optical network unit. Products will be a high-performance optical receivers and CATV FTTH EPON ONU, integrated in an ultra-small metal box. Provides high-quality and high-speed data to the user CATV, language, video and other broadband business services. High-performance products, high compatibility and excellent cost performance, today's triple play, FTTH preferred device.

H9122L-4FE, built-in EPON ONU, providing users 4 10M/100M LAN ports. Product implementation of the national Ministry of interoperability standards, compatible with multiple manufacturers of EPON OLT, to achieve interoperability.

H9122L-4FE, built-in CATV FTTH optical receiver using H9122L. H9122L selected operators in over FTTH networks. Its high performance, high reliability has been widely verified. H9122L can be used to save a large amount of optical fiber amplifier power resource. For operators, can greatly reduce the cost of building the network. H9122L-4FE optical port mode, there are two kinds of selection:

H9122L-4FE-SF: single fiber access, built-in CWDM, applicable Triplexer wave system

H9122L-4FE-DF: dual fiber access, without CWDM, CATV and data each with an optical fiber.

2.0 PRODUCT FEATURE

2.1 Digital TV optical receiver

Ultra-low noise, for analog TV,

Pin = -10dBm, Vo ≥ 69dBμV, CNR ≥ 45dB

High receiver sensitivity for digital television,

Pin = -16dBm, Vo ≥ 60dBμV, MER ≥ 35dB

Received optical power over a large dynamic range of
+2 dBm ~ -21dBm, And have excellent properties

Optical power can save a lot of resources, greatly
reduce the cost of network construction

2.2 EPON ONU

Powerful L2 switching

High rate of PON: up and down the line of symmetry

1Gb/s data, VoIP and IPTV language

For ONU automatic identification, location, configuration,

ONU can "plug and play"

High quality based on the service level agreement (SLA)

Accounting (QoS) features

Powerful remote management functions and data to

Support various OAM functions with a Single fiber.

2.3 General Characteristics

Metal case, offer safeguard for optoelectronic sensitive devices

Low consumption, high performance, high reliability

Excellent cost performance in area

3.0 PRODUCT FEATURE

3.1 CATV (Received optical power)

Red >+2dBm

Green +2~-13dBm (Digital TV:+2~-16dBm)

Orange -13~-16dBm (Digital TV:-16~-20dBm)

Red <-16dBm (Digital TV:<-20dBm)

3.2 ONU

PON (Green)

Bright : Link, registered normal

Flicker : Links, registration is not normal

LOS (Red) Off : Normal

Bright : Device self-test failure

LAN1 (Green) Flicker : Link normal

LAN2 (Green) Flicker : Link normal

LAN3 (Green) Flicker : Link normal

LAN4 (Green) Flicker : Link normal

3.3 Power

Power(Green) Bright : Normal

5.0 TECHNICAL INDEX

| Performance | | | Index | Supplement |
|-------------------------|----------------------|-------|---------------|------------------------|
| Optic feature | CATV Work wavelength | (nm) | 1260~1620 | H9122L-4FE-DF |
| | | | 1540~1563 | H9122L-4FE-SF |
| | Channel Isolation | (dB) | ≥40 | 1550nm & 1490nm |
| | Responsivity | (A/W) | ≥0.85 | 1310nm |
| | | | ≥0.9 | 1550nm |
| | Receiving power | (dBm) | +2~-10 | Analog TV(CNR>45dB) |
| | | | +2~-20 | Digital TV(MER>29dB) |
| | Optical return loss | (dB) | ≥55 | |
| Optical fiber connector | | | SC/APC | H9122L-4FE-SF |
| | | | SC/UPC(CATV) | H9122L-4FE-DF |
| | | | SC/UPC (DATA) | |
| RF Feature | Work bandwidth | (MHz) | 45 ~ 862 | |
| | Flatness | (dB) | ≤±0.75 | 45~862MHz |
| | Output level | (dBμ) | >82 | Analog TV (Pin=-3dBm) |
| | | | >82 | Digital TV (Pin=-5dBm) |
| | Output level adjust | (dB) | 0~18 | MGC |
| | Return loss | (dB) | ≥14 | 47 ~ 862MHz |
| | Output impedance | (Ω) | 75 | |
| | Output port number | | 1 | |
| | RF tie-in | | F-Female | |
| Analog TV Link Feature | Test channel | (CH) | 59CH(PAL-D) | |
| | OMI | (%) | 3.8 | |
| | CNR1 | (dB) | 54.6 | Pin=-2dBm |
| | CNR2 | (dB) | 45.1 | Pin=-10dBm |
| | CTB | (dB) | ≤-65 | Pin: 0~-10dBm |
| | CSO | (dB) | ≤-65 | Pin: 0~-10dBm |
| DigitalTV Link Feature | OMI | (%) | 4.3 | |
| | MER | (dB) | ≥36 | Pin=-15dBm |
| | | | ≥29 | Pin=-20dBm |
| | BER | (dB) | <1.0E-9 | Pin:+2~-20dBm |
| General feature | Power supply | (V) | DC+12V | ±1.0V |
| | Power Consume | (W) | Max ≤10W | Tvoe =7W |
| | Work temp | (°C) | -20 ~ +55 | |
| | Storage temp | (°C) | -40 ~85 | |
| | Work relative temp | (%) | 5 ~ 95 | |
| | Size | (mm) | 132×98×24mm | |

4.0 PRODUCT SERIES

| Model | Mode optical port | CATV work | Data work | Fiber connector |
|---------------|-------------------|-------------|-------------|-------------------------|
| H9122L-4FE-SF | Triplexer wave | 1540~1563nm | 1310/1490nm | SC/APC |
| H9122L-4FE-DF | Dual Fiber Access | 1260~1620nm | 1310/1490nm | CATV:SC/APC,DATA:SC/UPC |