

HDS-55A series  
1-Band SAT-IF & CATV Overlay  
Direct Modulated Optical Transmitter  
(47~862 & 950~5500MHz)  
Technical index

# Catalogue

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## **1.0 PRODUCT DESCRIPTION**

Huatai HDS-55A series 1550nm wide band micro-wave internal modulation optical transmitter, HDS-55A's working bandwidth covering range is 47~862 & 950~5500MHz. It can transmit multi (stacker) 1-way SAT-IF signal and CATV signal by a fiber, to realize one satellite-four polarization-1 way SAT-IF signal of 950~5500MHz (or different satellite 1 way SAT-IF signal), and 47~862 MHz CATV signal, all replacement a fiber to transmit. Users can simultaneously receive all full TV contents of satellite video carried and CATV's analog digital TV. It can provide high quality satellite TV and CATV service up to 3000 SDTV or 600 HDTV channel.

HDS-55A working wavelength can be chosed 1310nm and 1550nm. 1550nm can choose ITU-T standard wavelength to fit for DWDM system application. 1550nm working wavelength can choose EDFA. It can compatible with FTTx PON technology.Realize satellite TV, cable television, internet integration of three networks.

HDS-55A adopt high linear bandwidth micro-wave DFB Laser. Excellent laser APC、ATC control, perfect SNMP、RS232 interface, 1+1 power supply backup. High performance、 high flexibility、 high reliability and excellent performance price ratio. It is the best choice for subscribers.

## **2.0 PRODUCTS FEATURE**

- 47~862 & 950~5500MHz RF working bandwidth
- It adopts frequency-division multiplexing (FDM), and can simultaneously transmit CATV signal and 1-way SAT-IF composite signal  $1 \times (950 \sim 5500\text{MHz})$  through one fiber.
- Reach up to 3000 SDTV or 600 HDTV channels & CATV to be used at subscribers end at the same time
- 1550nm selectable ITU-T standard tunable wavelength, suitable for DWDM systems applications
- Can use EDFA, YEDFA, can compatible with any FTTx PON
- High linear bandwidth micro-wave (microwave)DFB Laser
- Laser APC、ATC、AWC
- All electronic adjustable
- CATV level AGC control, SAT-IF level MGC control
- Telecommunication-grade security and reliability and network management
- SNMP support remote management and control
- 1+1 power supply back up,up hot-plug function available
- Excellent performance price ratio in this area
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## **3.0 MAIN APPLICATION**

- CATV and 1-Band Satellite-TV FTTH
- CATV, satellite-TV, Internet, Triple-play
- Other 47~862 & 950~5500MHz micro-wave bandwidth long distance application.
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## **4.0 Related products**

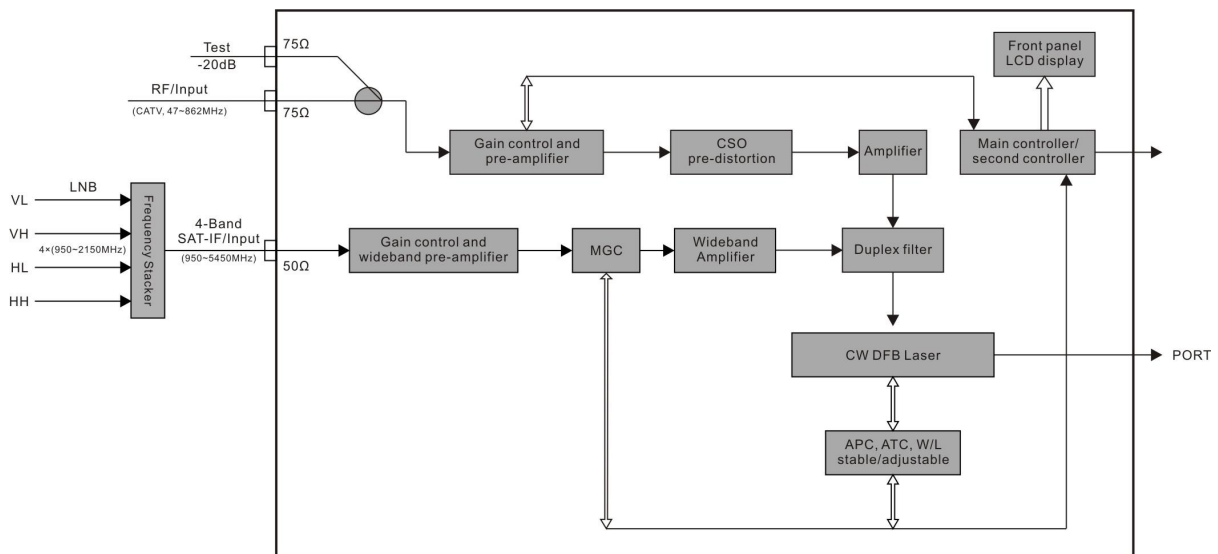
- Applicable receiver: HRS-55A

## 5.0 Technical index

| Feature                 |                                | Min.    | Typ.           | Max. | Supplement              |                   |  |
|-------------------------|--------------------------------|---------|----------------|------|-------------------------|-------------------|--|
| Optical feature         | Working wavelength             | (nm)    | 1290           | 1310 | 1330                    | 13                |  |
|                         |                                |         | 1540           | 1550 | 1563                    | CC                |  |
|                         |                                |         | 1528           |      | 1543                    | CB                |  |
|                         |                                |         | 1528           |      | 1565                    | XX                |  |
|                         | Wavelength adjustable range    | (nm)    | -1.6           |      | +1.6                    |                   |  |
|                         | Wavelength adjustable mode     | (nm)    | ±0.01 stepping |      |                         |                   |  |
|                         | side mode suppression ratio    | (dB)    | 35             | 45   |                         |                   |  |
|                         | Equivalent noise intensity     | (dB/Hz) | 145            |      |                         | To 5500MHz        |  |
|                         | Each port output optical power | (dBm)   | 2              |      | 12                      | 1310nm            |  |
|                         |                                |         | 2              |      | 10                      | 1550nm            |  |
| SBS                     | (dBm)                          | 18      |                |      | 25Km Fiber              |                   |  |
| Return loss             | (dB)                           | 55      | 60             |      | APC                     |                   |  |
| Optical fiber connector |                                | SC/APC  |                |      | FC/APC, LC/APC optional |                   |  |
| RF feature              | Work bandwidth                 | (MHz)   | 47             |      | 862                     |                   |  |
|                         | Input level                    | (dBmV)  | 15             |      | 25                      | AGC               |  |
|                         | Flatness                       | (dB)    | -1             |      | +1                      | 45~862MHz         |  |
|                         | Return loss                    | (dB)    | 16             |      |                         | 45~750MHz         |  |
|                         | Input impedance                | (Ω)     |                | 75   |                         |                   |  |
|                         | RF interface                   |         | F type         |      |                         | Optional imperial |  |
|                         | Transmit channel               |         | PAL-D/60CH     |      |                         | -1dBm receive     |  |
|                         | CNR                            | (dB)    | 50             |      |                         |                   |  |
|                         | CTB                            | 1310nm  | (dB)           |      |                         | -65               |  |
|                         |                                | 1550nm  | (dB)           |      |                         | -63               |  |
| CSO                     | 1310nm                         | (dB)    |                |      | -60                     |                   |  |
|                         | 1550nm                         | (dB)    |                |      | -57                     |                   |  |
| Typical application     | (MHz)                          | 950     |                | 5500 |                         |                   |  |

|                      |                                    |                 |                                |            |     |  |  |
|----------------------|------------------------------------|-----------------|--------------------------------|------------|-----|--|--|
|                      | frequency response                 | (dB)            | -2                             |            | +2  | 950~5500MHz                                |  |
|                      | IM2                                | (dB)            | 40                             |            |     | 2 tone measurement,<br>OMI=20% per carrier |  |
|                      | IM3                                | (dB)            | 40                             |            |     |  |  |
|                      | Input level                        | (dBm)           |                                | -20        |     | Nominal input level                        |  |
|                      | Input impedance                    | ( $\Omega$ )    |                                | 50         |     |  |  |
|                      | RF return loss                     | (dB)            | 8                              |            |     |  |  |
|                      | RF connector                       |                 |                                | SMA-Female |     |  |  |
| Complete performance | SNMP interface                     |                 | RJ45                           |            |     |  |  |
|                      | Telecommunication port             |                 | RS232                          |            |     |  |  |
|                      | Power supply                       | AC              | (V)                            | 90         | 220 | 265  |  |
|                      |                                    | DC              |                                | -30        | -48 | -72  |  |
|                      | Power loss                         | (W)             |                                |            | 25  |  |  |
|                      | Working Temp.                      | ( $^{\circ}$ C) | -5                             |            | -65 |  |  |
|                      | Storage Temp.                      | ( $^{\circ}$ C) | -40                            |            | +85 |  |  |
|                      | Relative humidity                  | (%)             | 5                              |            | 95  |  |  |
|                      | Size (W) $\times$ (D) $\times$ (H) | (")             | 19 $\times$ 14.5 $\times$ 1.75 |            |     |  |  |

## 6.0 HES-55S electrical functional block diagram



## 7.0 Product series

| Model number    | Working wavelength | Optical output port | Each port output power |
|-----------------|--------------------|---------------------|------------------------|
| HDS-55A-1×2-13  | 1310nm             | 1                   | 2dBm                   |
| HDS-55A-1×6-13  |                    | 1                   | 6dBm                   |
| HDS-55A-1×9-13  |                    | 1                   | 9dBm                   |
| HDS-55A-1×10-13 |                    | 1                   | 10dBm                  |
| HDS-55A-1×12-13 |                    | 1                   | 12dBm                  |
| HDS-55A-1×2-□□  | 1550nm             | 1                   | 2 dBm                  |
| HDS-55A-1×4-□□  |                    | 1                   | 4 dBm                  |
| HDS-55A-1×6-□□  |                    | 1                   | 6 dBm                  |
| HDS-55A-1×8-□□  |                    | 1                   | 8 dBm                  |
| HDS-55A-1×9-□□  |                    | 1                   | 9 dBm                  |
| HDS-55A-1×10-□□ |                    | 1                   | 10 dBm                 |

Remarks: 1550 work wavelength: CB:1528~1543nm

CC:1540~1563nm

XX:1528~1563nm

## 8.0 ordering instructions

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| Product type |  | Operating bandwidth |  | Number of output port |               | Output power |       | Wavelength |             | Optical port position |             | Connector |        | Power supply |        |
|--------------|--|---------------------|--|-----------------------|---------------|--------------|-------|------------|-------------|-----------------------|-------------|-----------|--------|--------------|--------|
| HDS          | Satellite Direct Modulated Optical Transmitter     | 55A                 | 47~862MHz & 950~5500MHz Analog TV + SAT-IF | 1                     | 1 output port | 02           | 2dBm  | 13         | 1310nm      | F                     | Front panel | SA        | SC/APC | 48           | -48VDC |
|              |  |                     |  |                       |               | 04           | 4dBm  | CC         | 1540~1563nm | B                     | Back panel  | FA        | FC/APC | 22           | 220VAC |
| HRS          | Satellite Optical Receiver                         | 55D                 | 47~5500MHz Digital TV + SAT-IF             | 1                     | 1 output port | 06           | 6dBm  | CB         | 1528~1543nm |                       |             | LA        | LC/APC | 11           | 110VAC |
|              |  |                     |  |                       |               | 08           | 8dBm  | XX         | 1528~1563nm |                       |             |           |        |              |        |
| HES          | Satellite Externally Modulated Optical Transmitter | 55S                 | 950~5500MHz SAT-IF                         | 1                     | 1 output port | 09           | 9dBm  |            |             |                       |             |           |        |              |        |
|              |  |                     |  |                       |               | 10           | 10dBm |            |             |                       |             |           |        |              |        |
|              |  |                     |  |                       |               | 12           | 12dBm |            |             |                       |             |           |        |              |        |