



AT5100 Direct Modulation Optical Transmitter

**Quick Reference
Guide**

Revision A

ACT AT5100 Direct Modulation Optical Transmitter

Quick Reference Guide

ACT Document Number: ACT AT5100 Direct Modulation Optical Transmitter

Quick Reference Guide Revision A

Copyright © 2019 Ascent Communication Technology Limited.

All rights reserved. Reproduction in any manner whatsoever without the express written permission of Ascent Communication Technology is strictly forbidden.

This document is produced to assist professional and properly trained personnel with installation and maintenance issues for the product. The capabilities, system requirements and/or compatibility with third-party products described herein are subject to change without notice.

For more information, contact ACT: support@ascentcomtec.com



Revision Aistory

| Revision | Date | Reason for Change |
|----------|------------|-------------------|
| A | 07/31/2019 | Initial release |

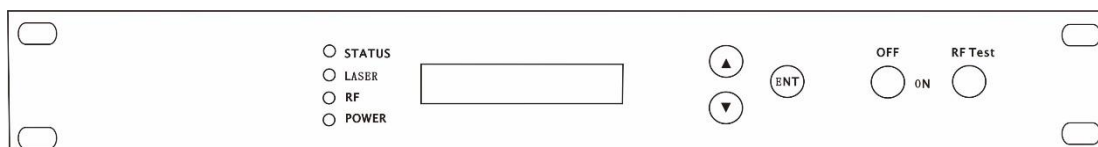
Table of Contents

| | |
|-----------------------------------|----|
| 1 Features..... | 4 |
| 2 Front panel | 4 |
| 3 Rear panel | 5 |
| 4 Flow Chart | 6 |
| 5 Operating Guide:..... | 9 |
| 6 Notice | 9 |
| 7 Diagram | 10 |
| 8 Main Technical Parameters | 10 |
| 9 Warranty Term | 11 |

1 Features

- 1.1 The transmitting modules of this machine adopt the imported DFB laser, the max output power can reach to 16 mW.
- 1.2 The internal RF driving amplifier and controlling circuit of this machine can ensure the best C/N. The perfect and stable circuit of optical power output and controlling circuit of thermoelectric refrigeration device of laser module assure the user the best quality and stable working for a long time.
- 1.3 Intelligent fan, it will run when the case temperature reach 32 °C to 35 °C.
- 1.4 With AGC/MGC control to ensure the stable output when different RF in.
- 1.5 The internal micro-processor software has many functions such as laser monitoring, number display, trouble alarm and on-line management. Once the working parameter of the laser is out of the fixed range, there will be a red light glistening to alarm.
- 1.6 The RS-232 standard connector makes it is possible to manage on line and monitor in another place.
- 1.7 The machine adopts 19" standard shelf and it can work with the voltage from 90 V_{AC} to 265 V_{AC} OR -48 V_{DC}.

2 Front panel



LED Display

Displays the working parameter of the machine

STATUS

Green: Normal Condition

Red: No input or abnormal condition

LASER

Green: Normal Condition

Red: Abnormal condition

RF

Green: Normal Condition

Red: RF input below or above the normal condition.

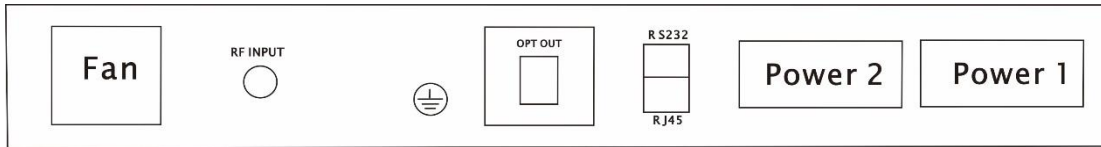
POWER

Green: Two power supply run

Yellow: One power supply run

Red: Abnormal

3 Rear panel



Fan

Intelligent fan, it will run when the case temperature reach 32 ºC to 35 ºC

OPT OUT

Optical signal out

RF INPUT

RF input

RS232

Network management for local computers

RJ45

SNMP, for remote computer network management

Power

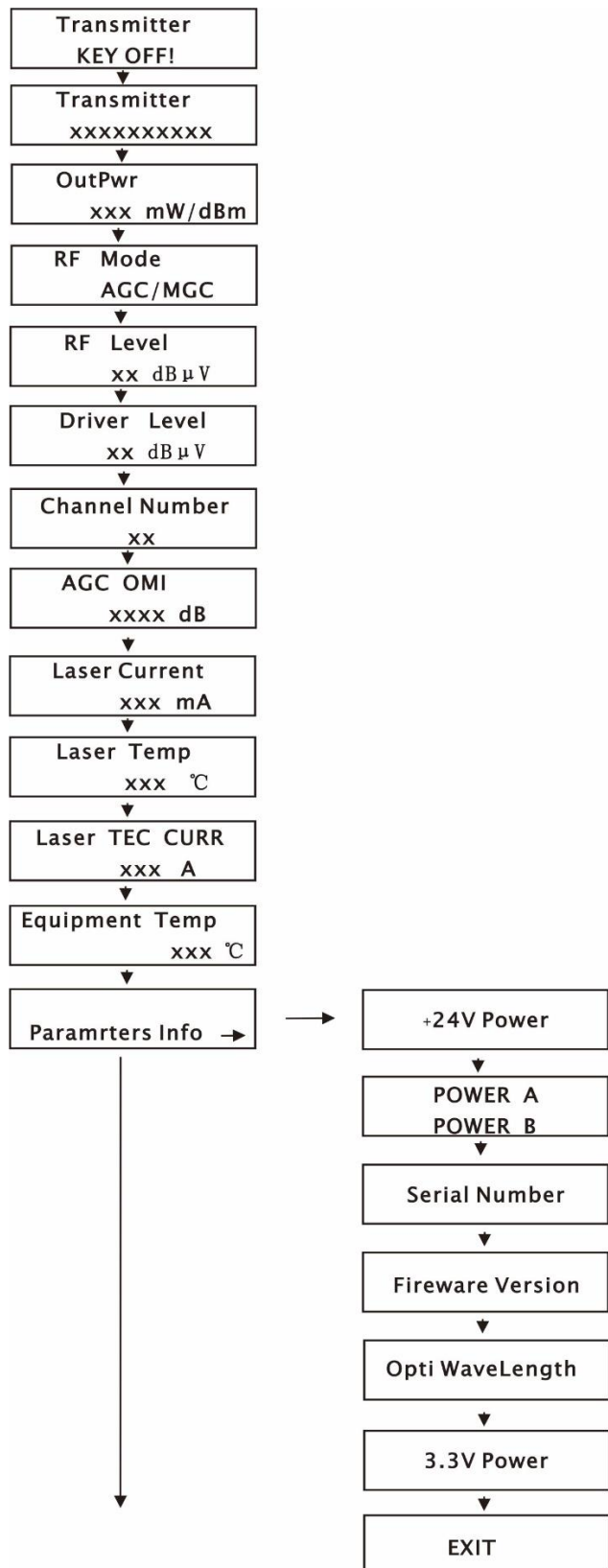
ON: Turn on the power

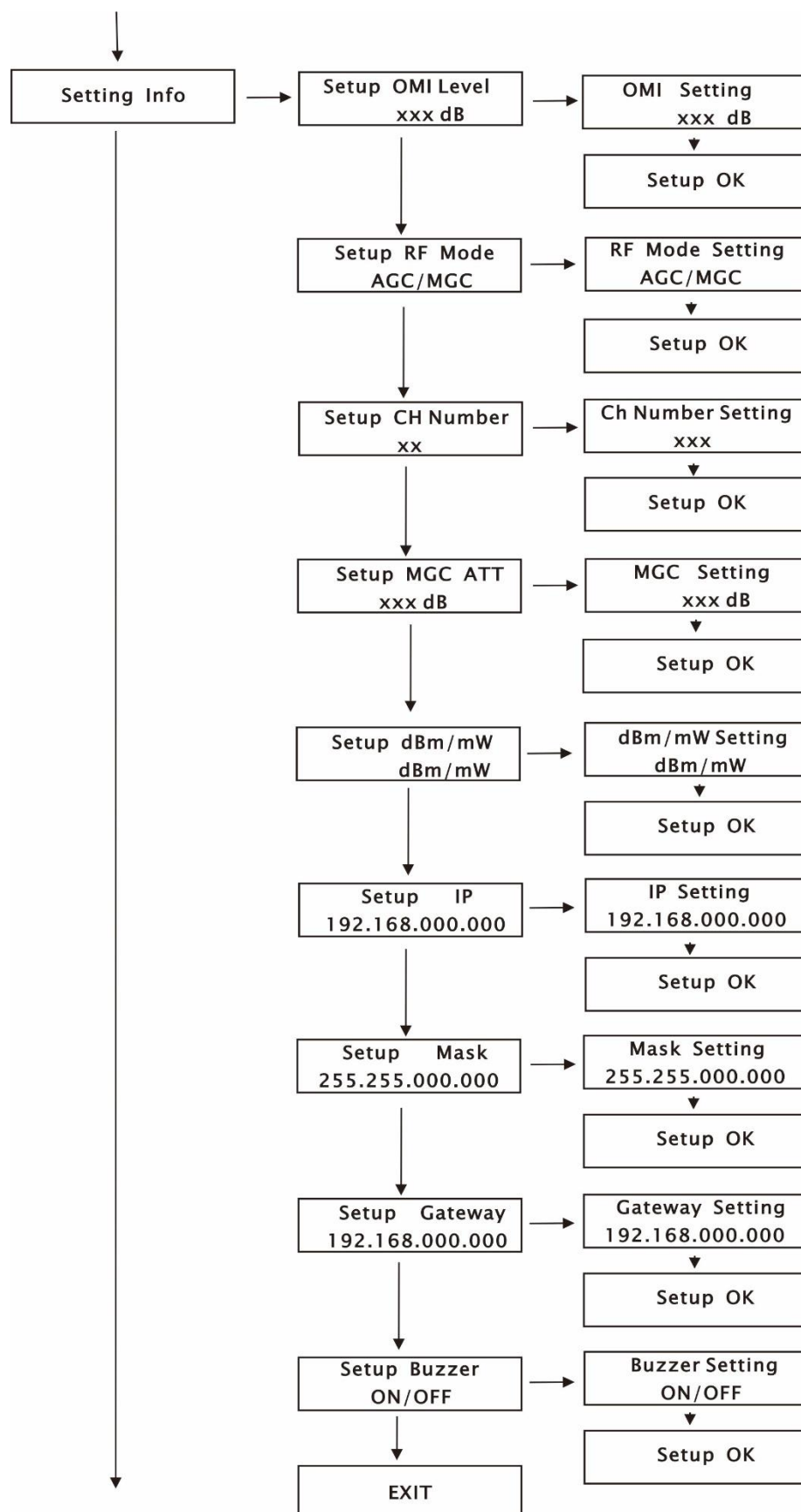
OFF: Turn off the power

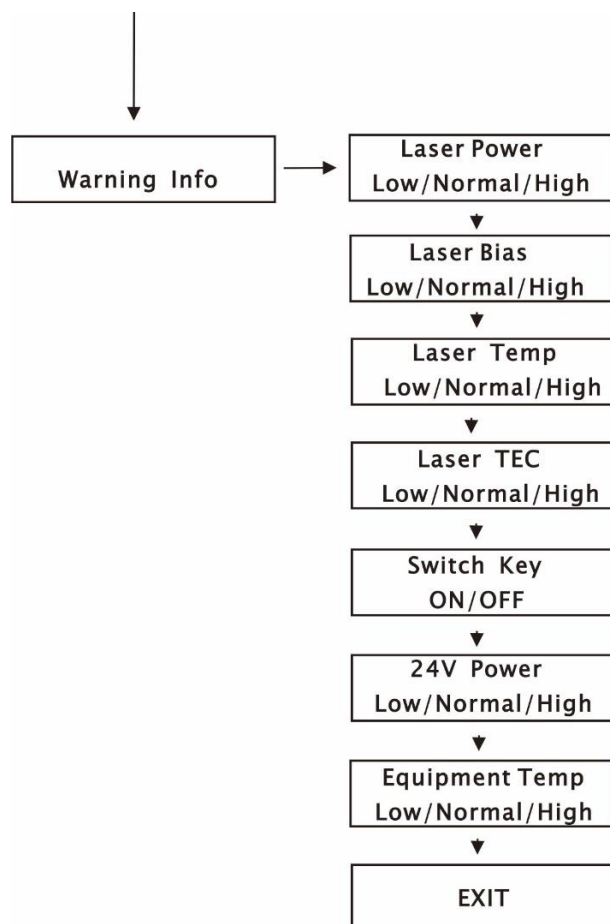
Power Socket

AC220V and DC-48V

4 Flow Chart







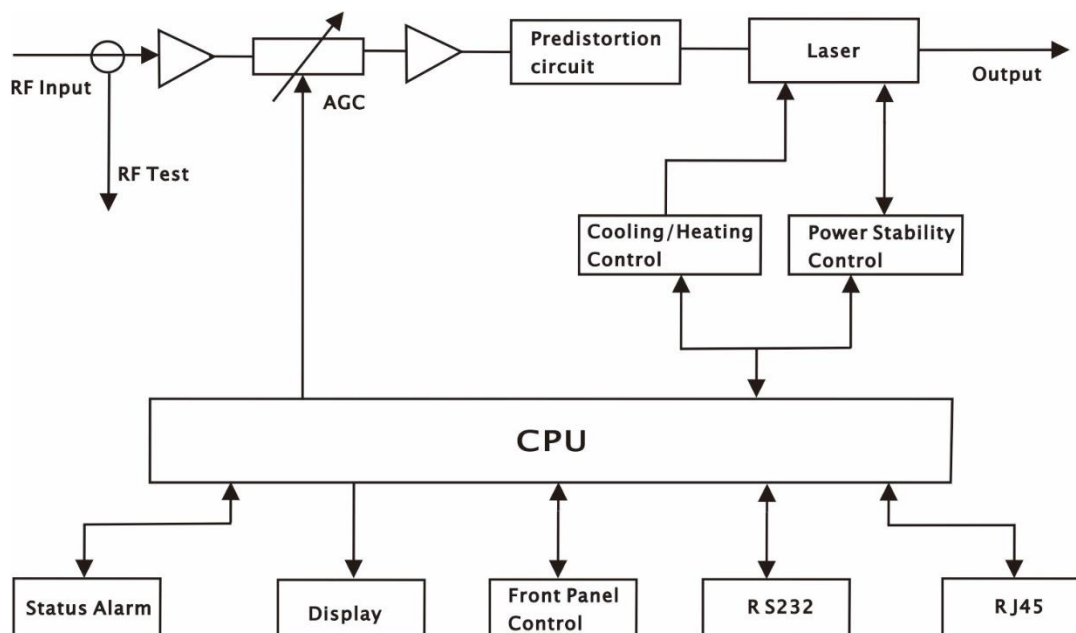
5 Operating Guide:

- 5.1 Please examine this machine, shelf and the power to see if the power supply is good.
- 5.2 This machine adopts the switch power with high quality and high stability which makes it is suitable to work in voltage from 90 V_{AC} to 265 V_{AC} or -48 V_{DC}.
- 5.3 Please make sure the connector is clean before installation. Please clean the fiber connector with pure alcohol before connecting the fiber.
- 5.4 After connecting the power, please turn on the power in the back of the board. The screen will show the basic information of this machine. After several seconds, the laser power will turn on automatically. If the machine is all right, the condition guide light (Laser) will turn from red to green. And the screen will show you the working condition of this machine at present.
- 5.5 Press the button "STATUS", then you can see the parameters of this machine in turn.
- 5.6 If all the above working condition is all right, then examine whether the RF input level can satisfy the request in the test report. If it is all right, please connect the RF input to the transmitter.

6 Notice

- 6.1 Before installation or operation of unit, please carefully go through this manual.
- 6.2 AT5100 Series Transmitters should be serviced only by qualified personnel.
- 6.3 Before proceeding with installation and/or operation of transmitter, please assure that transmitter is well earthed.
- 6.4 AT5100 Series transmitters are Class III laser products. Use of controls, adjustments, and procedures other than those specified herein may result in hazardous laser radiation exposure.

7 Diagram



8 Main Technical Parameters

| | | | | | | | | |
|-----------------------|--|-----|-----|-----|------|------|------|------|
| Model (AT5100) | -2 | -4 | -6 | -8 | -10 | -12 | -14 | -16 |
| Optical Power (mW) | ≥02 | ≥04 | ≥06 | ≥08 | ≥10 | ≥12 | ≥14 | ≥16 |
| Optical Power (dBm) | 3.0 | 6.0 | 7.8 | 9.0 | 10.0 | 10.8 | 11.5 | 12.0 |
| Optical Wavelength | 1528 nm to 1570 nm | | | | | | | |
| Fiber Connector | FC/APC, SC/APC (optional) | | | | | | | |
| Working Bandwidth | 47 MHz to 1218 MHz | | | | | | | |
| Channels | 59 | | | | | | | |
| CNR | ≥51 dB | | | | | | | |
| CTB | ≤-65 dBc | | | | | | | |
| CSO | ≤-60 dBc | | | | | | | |
| RF Input Level | 80 dBμV ± 5 dBμV | | | | | | | |
| Flatness | ≤0.75 dB | | | | | | | |
| Power Consumption | ≤30 W | | | | | | | |
| Power Voltage | 110 V _{AC} , -48 V _{DC} (optional) | | | | | | | |
| Operating Temperature | -20 °C to +65 °C | | | | | | | |
| Dimensions | 483 mm × 44 mm × 370 mm | | | | | | | |

9 Warranty Term

AT5100 Series optical transmitters are covered by **ONE YEAR LIMITED WARRANTY**, which starts from the initial date of your purchase. We provide its customer whole-life technical supports. If warranty is expired, repair service only charges parts (if required). In the event that a unit must be returned for service, before returning the unit, please be advised that:

1. Warranty mark pasted on the housing of unit must be in good conditions.
2. A clear and readable material describes model number, serial number and troubles should be offered.
3. Please pack the unit in its original container. If the original container is no longer available, please pack the unit in at least 3 inches of shock absorbing material.
4. Returned unit(s) must be prepaid and insured. COD and freight collect cannot be acceptable.

NOTE: we **do not** assume responsibility for damage caused by improper packing of returned unit(s).

The following situation is not covered by warranty:

1. The unit fails to perform because of operators' faults.
2. Warranty mark is modified, damaged and/or removed.
3. Damage caused by Force Majeure.
4. The unit has been unauthorized alteration and/or repaired.
5. Other troubles caused by operators' faults.

Conversion of Optical Power

| | | | | | | | | | | | | | | | | |
|------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|------------|------------|------------|
| mW | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| dBm | 0.0 | 3.0 | 4.8 | 6.0 | 7.0 | 7.8 | 8.5 | 9.0 | 9.5 | 10.0 | 10.4 | 10.8 | 11.1 | 11.5 | 11.8 | 12.0 |
| mW | 17 | 18 | 19 | 20 | 21 | 22 | 25 | 32 | 40 | 50 | 63 | 80 | 100 | 125 | 160 | 200 |
| dBm | 12.3 | 12.5 | 12.8 | 13.0 | 13.2 | 13.4 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 |



Ascent Communication Technology Ltd

AUSTRALIA

140 William Street, Melbourne
Victoria 3000, AUSTRALIA
Phone: +61-3-8691 2902

HONG KONG SAR

Unit 9, 12th Floor, Wing Tuck Commercial Centre
177 Wing Lok Street, Sheung Wan, HONG KONG
Phone: +852-2851 4722

CHINA

Unit 1933, 600 Luban Road
200023, Shanghai CHINA
Phone: +86-21-60232616

USA

2710 Thomes Ave
Cheyenne, WY 82001, USA
Phone: +1-203 816 5188

EUROPE

Pfarrer-Bensheimer-Strasse 7a
55129 Mainz, GERMANY
Phone: +49 (0) 6136 926 3246

VIETNAM

15 /F TTC Building, Duy Tan Street
Cau Giay Dist., Hanoi, VIETNAM
Phone: +84 243 795 5917

WEB: www.ascentcomtec.com

EMAIL: sales@ascentcomtec.com

Specifications and product availability are subject to change without notice.
Copyright © 2019 Ascent Communication Technology Limited. All rights reserved.
Ver. ACT_1RU_AT5100_DMOD_SAT_TX_QRG_V1a_Jul_2019