

# ***Aculas-AM-100D***

## **2-channel Digital LLLT System**



# **User's Guide**



English

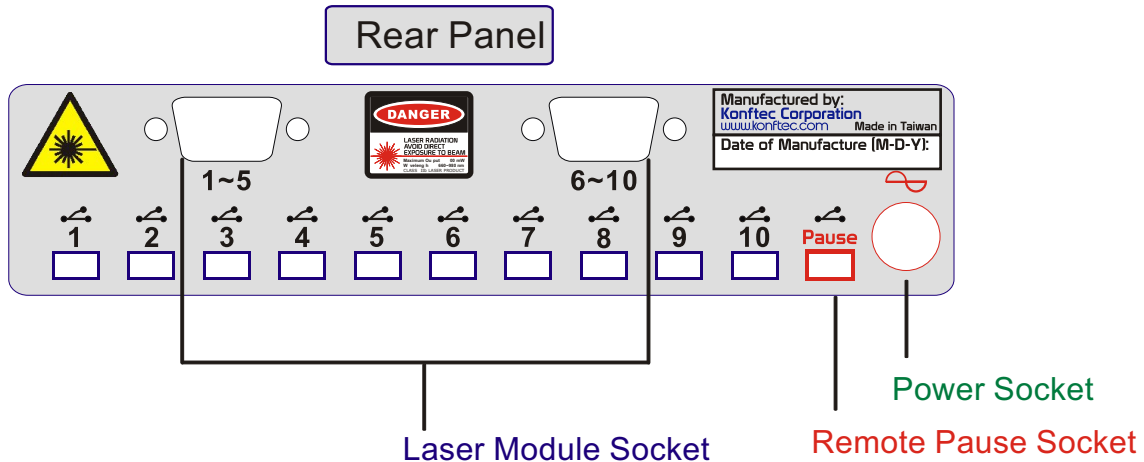
Getting started	1
Using Aculas-AM	4
Specification and Treatment Time	5
Dental Therapy Protocol	9
Tips and troubleshooting	10
Safety and cleaning	11

# Getting started

Read on to find out how to get started low level laser therapy (LLLT) with Aculas-AM

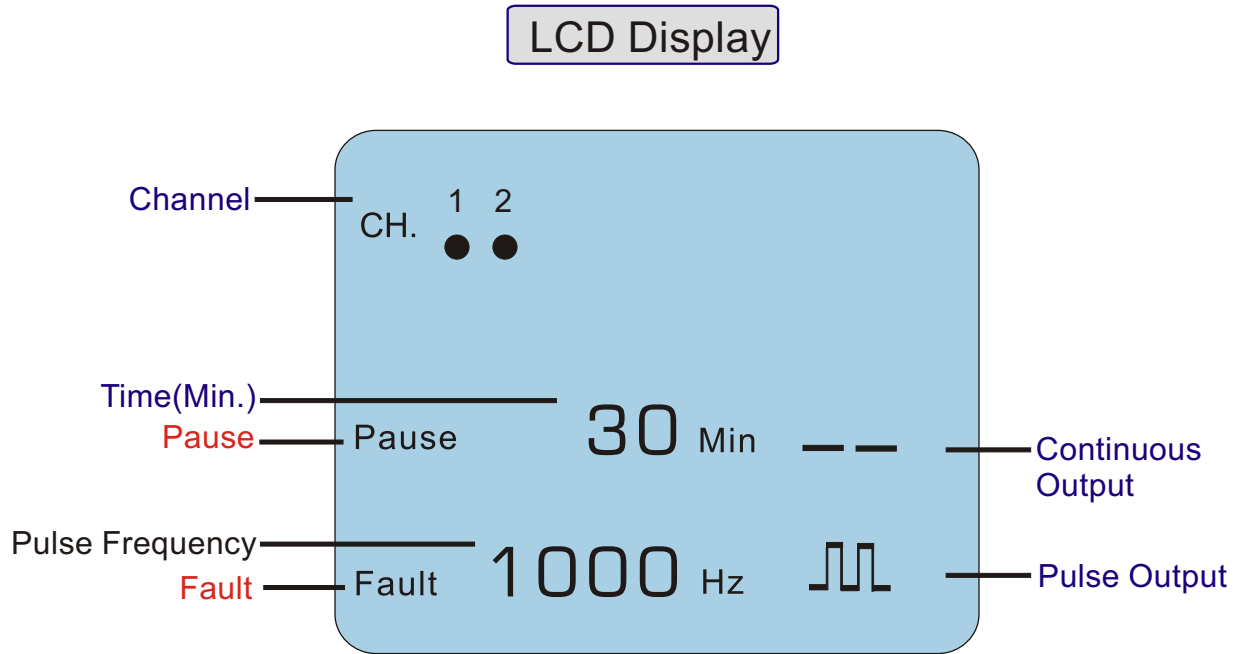
## 1 Connect Aculas-AM

- ☑ Connect your Aculas-AM using the included power supply cable and laser module cable.
- ☑ If your Aculas-AM is equipped with remote pause switch, connect remote pause switch to the “Pause” socket.



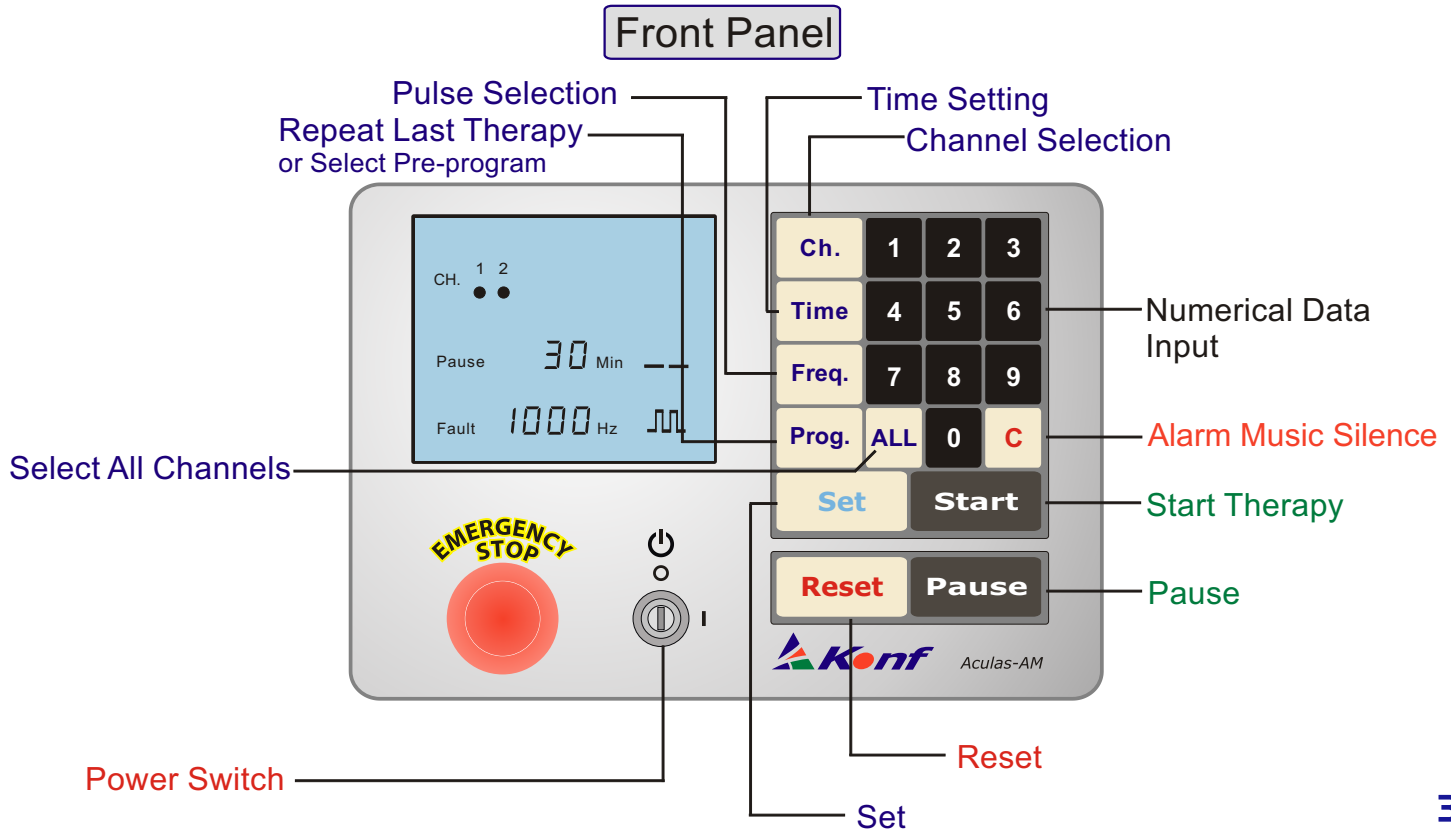
## 2 LCD display

Turn on Aculas-AM's power switch and the LCD display will dynamically indicate the process.



### 3 Front panel keyboard program instruction





Refer your **Operation Manual** for detailed instruction.



# Using Aculas-AM

Aculas-AM can be used for treatment of diseases and conditions, follow the recommended dosage and treatment time to get the best efficacy. You can also find new information about using Aculas-AM on the web [www.konftec.com](http://www.konftec.com).

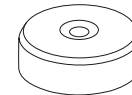
## Specifications

Model No. Selection					
Model No.	Laser Module	Red Laser		Infrared Laser	
	<i>Aculas-</i>	Wavelength	635nm	660nm	808nm
LD Power		220mW	150mW	250mW	460mW
End Power		170mW	120mW	200mW	360mW
<i>AM-100D384</i>					
<i>AM-100D682</i>					
<i>AM-100D684</i>					

Laser Optic Cap				
Type of Cap	Cap-A	Cap-B	Cap-D	Cap-E
Model No.	<i>WO-420</i>	<i>WO-425</i>	<i>WO-422</i>	<i>WO-423</i>
Laser Beam Spot Size	0.13 cm <sup>2</sup>	0.5 cm <sup>2</sup>	0.5 cm <sup>2</sup>	0.07 cm <sup>2</sup>
Applications	Acupuncture & Single Point		Dental	Auricular Acupuncture

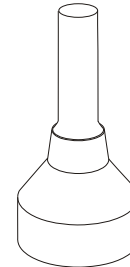
# Specifications and Treatment Time

Treatment Time Calculation Table							
				Optic Cap-A Laser beam spot size: 0.13 cm <sup>2</sup>			
Dose (J/cm <sup>3</sup> )	Depth of Tissue (cm)	Energy Loss Factor	Treatment Time (second)				
			Wavelength (λ)	635nm	660nm	808nm	
			LD Power (mW)	220	150	260	460
			End Power (mW)	170	135	220	390
			Power Density (W/cm <sup>2</sup> )	1.31	1.04	1.69	3.00
3 J/cm <sup>2</sup>	Surface	1		2	3	2	1
3 J/cm <sup>3</sup>	0.5	0.6772		3	4	3	1.5
	1	0.4586		5	6	4	2
	1.5	0.3105		7	9	6	3
	2	0.2103		11	14	8	5
	2.5	0.1424				12	7
	3	0.0964				18	10
	3.5	0.0653				27	15
	4	0.0442				40	23
	4.5	0.0299				59	33
5	0.0203				87	49	



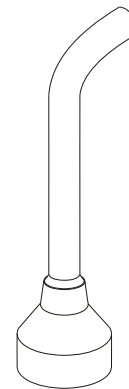
# Specifications and Treatment Time

Treatment Time Calculation Table							
				Optic Cap-C Laser beam spot size: 0.5 cm <sup>2</sup>			
Dose (J/cm <sup>3</sup> )	Depth of Tissue (cm)	Energy Loss Factor	Treatment Time (second)				
			Wavelength (λ)	635nm	660nm	808nm	
			LD Power (mW)	220	150	260	460
			End Power (mW)	170	120	200	370
			Power Density (W/cm <sup>2</sup> )	0.34	0.24	0.40	0.74
1 J/cm <sup>2</sup>	Surface	1		3	4	3	1
1 J/cm <sup>3</sup>	0.5	0.6772		4	6	4	2
	1	0.4586		6	9	5	3
	1.5	0.3105		9	13	8	4
	2	0.2103		14	20	12	6
	2.5	0.1424				18	9
	3	0.0964				26	14
	3.5	0.0653				38	21
	4	0.0442				57	31
	4.5	0.0299				84	45
5	0.0203				123	67	



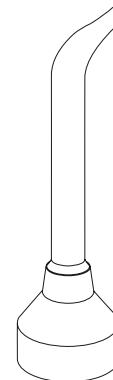
# Specifications and Treatment Time

Treatment Time Calculation Table							
Optic Cap-D Laser beam spot size:				0.5 cm <sup>2</sup>			
Dose (J/cm <sup>3</sup> )	Depth of Tissue (cm)	Energy Loss Factor	Treatment Time (second)				
			Wavelength (λ)	635nm	660nm	808nm	
			LD Power (mW)	220	150	260	460
			End Power (mW)	170	120	200	370
			Power Density (W/cm <sup>2</sup> )	0.34	0.24	0.40	0.74
1 J/cm <sup>2</sup>	Surface	1		3	4	3	1
1 J/cm <sup>3</sup>	0.5	0.6772		4	6	4	2
	1	0.4586		6	9	5	3
	1.5	0.3105		9	13	8	4
	2	0.2103		14	20	12	6
	2.5	0.1424				18	9
	3	0.0964				26	14
	3.5	0.0653				38	21
	4	0.0442				57	31
	4.5	0.0299				84	45
5	0.0203				123	67	



# Specifications and Treatment Time

Treatment Time Calculation Table							
Optic Cap-E Laser beam spot size: 0.07 cm <sup>2</sup>							
Dose (J/cm <sup>3</sup> )	Depth of Tissue (cm)	Energy Loss Factor	Treatment Time (second)				
			Wavelength (λ)	635nm	660nm	808nm	
			LD Power (mW)	220	150	260	460
			End Power (mW)	170	105	180	320
Power Density (W/cm <sup>2</sup> )			2.43	1.50	2.57	4.57	
3 J/cm <sup>2</sup>	Surface	1		1.2	2	1.2	0.7
3 J/cm <sup>3</sup>	0.5	0.6772		2	3	2	1.0
	1	0.4586		3	4	3	1.4
	1.5	0.3105		4	6	4	2
	2	0.2103		6	10	6	3
	2.5	0.1424				8	5
	3	0.0964				12	7
	3.5	0.0653				18	10
	4	0.0442				26	15
	4.5	0.0299				39	22
5	0.0203				57	32	



# Dental Therapy Protocol

Dental Therapy Protocol								
Optic Cap-D Laser beam spot size: 0.5 cm <sup>2</sup>								
Treatment Frequency: 1 ~ 2 Time/Week								
Disease/Condition	Energy (Joule)	Therapy Time (seconds)					Application	Effectiveness
		Wavelength (λ)	635nm	660nm	808nm			
		LD Power (mW)	220	150	260	460		
		End Power (mW)	170	120	200	370		
		Power Density (W/cm <sup>2</sup> )	0.34	0.24	0.40	0.74		
Endodontics	4		12	17	10	5	at apex of each root	No post operative pain
Extractions (Easy)	4		12	17	10	5	in the alveolus	Promote healing; Less swelling;
Extractions (Difficult)	8		24	33	20	11		No post operative pain
Herpes Simplex	3		9	13	8	4	per lesion (2 times/day)	Promote healing; Less pain
Hyperemic Pulp	4		12	17	10	5	at the tooth's apex	No pain/hypersensitivity
Hypersensitive Dentine	4		12	17	10	5	at dentine (+ gel);	No pain/hypersensitivity
	4		12	17	10	5	at the tooth's apex	
Implants	8		24	33	20	11	on bone	Faster and better osseo integration
	4		12	17	10	5	along the flap	
Scaling (Deep)	2		6	8	5	3	at gingival over the pocket before scaling	Less bleeding; Less pain during scaling; Less pain & discomfort afterwards
Surgery	2		6	8	5	3	per cm of suture	Promote healing; Less swelling; No post operative pain

# Tips and troubleshooting

Read on for advice about using and troubleshooting Aculas-AM.

---

## My Aculas-AM won't turn on

- ☑ Make sure Aculas-AM's power switch is on.
- ☑ If that doesn't work, check the connection from Aculas-AM to the Aculas-AM power adapter and connect the adapter to a working electrical outlet.  
If that doesn't work, contact your local sales office.

## My Aculas-AM is flashing fault sign and is continuously playing music

- ☑ **Turn off the power switch** then reconnect the laser module.
- ☑ Repeat the operation steps:
  1. Turn on Aculas-AM's power switch.
  2. Press "**Prog**" (program) button to set the last therapy protocol.  
Wait 3 seconds until the circles of CH. (channel) appear.
  3. Press "**Start**" button to begin the therapy.
- ☑ If that doesn't work, you can still temporarily use the working channels by deleting the faulty channel.
- ☑ Refer your **Operation Manual** for detailed operation steps.
- ☑ Contact your local sales office.

# Safety and cleaning

Read on to learn about using Aculas-AM safely and cleaning Aculas-AM.

---

## Important safety instructions

When setting up and using your Aculas-AM, remember the following:

- ☑ Read user's guide carefully before you plug your Aculas-AM Power Adapter into a power outlet.
- ☑ Keep user's guide handy for reference by you and others.
- ☑ Follow all instructions and warnings dealing with your Aculas-AM.

**Warning:** Electrical equipment may be hazardous if misused.

- ☑ Operation of this device, must always be supervised by an adult. Do not allow children access to the interior of any electrical product and do not permit them to handle any cables.

## Warning: Laser beam

- ☑ Avoid direct eye exposure to the laser beam.
- ☑ Because some Aculas-AM lasers emit invisible infrared light, the usage of laser unit in the area of the face and around the eyes must proceed with appropriate care and caution. Invisible infrared laser light penetrating the eye may cause serious harm after extended exposure. Therefore, the use of the optional laser safety goggles for the patient and clinician is advised.

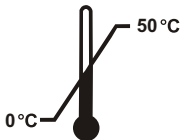


## Using the power adapter

- ☑ Use only the power adapter that came with your Aculas-AM. Adapters for other electronic devices may look similar, but they may damage your Aculas-AM.
- ☑ The only way to shut off power completely to your power adapter is to disconnect it from the power source.
- ☑ When connecting or disconnecting your power adapter, always hold the power adapter by its sides. Keep fingers away from the metal part of the plug.
- ☑ Before connecting the laser module cable to the power adapter, make sure there are no foreign objects inside the adapter's port.
- ☑ The power adapter for your Aculas-AM is a high-voltage component and should not be opened for any reason, even when the Aculas-AM is off. If the power adapter needs service, see “Learning more, service and support.”

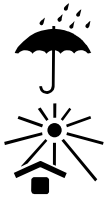
## About operating and storage temperatures

- ☑ Operate your Aculas-AM in a place where the temperature is always between 0 and 50° C (32 to 122° F).
- ☑ Store your Aculas-AM in a place where the temperature is always between -20 and 85° C (-4 to 185° F).
- ☑ When you are using your Aculas-AM, it is normal for the bottom of the power supply case to get warm.



## Avoid wet locations

### Warning



- ☑ To reduce the chance of shock or injury, do not use your Aculas-AM in or near water or wet locations.
- ☑ Keep your Aculas-AM and power adapter away from sources of liquids, such as drinks, wash basins, bathtubs, shower stalls, and so on.
- ☑ Protect your Aculas-AM and the power adapter from direct sunlight and rain or other moisture.
- ☑ Take care not to spill any food or liquid on Aculas-AM or its power adapter. If you do, unplug Aculas-AM before cleaning up the spill.
- ☑ Depending on what you spilled and how much of it got into your equipment, you may have to send your equipment to Konftec for service. See “Learning more, service, and support.”



## Do not make repairs yourself

### Warning

- ☑ Do not attempt to open your Aculas-AM or power adapter, disassemble it. You run the risk of electric shock and voiding the limited warranty.
- ☑ No user-serviceable parts are inside.  
For service, see “Learning more, service, and support.”

## Cleaning

Follow these general rules when cleaning the outside of your Aculas-AM and its components:

- ☑ Make sure your Aculas-AM is unplugged.
- ☑ Use a damp, soft, lint-free cloth. Avoid getting moisture in openings.
- ☑ Don't use aerosol sprays, solvents or abrasives.

## About handling

- ☑ Your Aculas-AM may be damaged by improper storage or handling.
- ☑ Be careful not to drop your Aculas-AM when treating or transporting the device.



**Konftec Corporation**

12F-7, No.77, Sintai 5th Rd., Sec. 1,  
Sijhih District, New Taipei City 221  
Taiwan

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

© 2011 Konftec Corporation. All rights reserved.  
Konf, the Konf logo, Aculas, and Aculas-AM  
are trademarks of Konftec Corporation,  
registered in Taiwan and  
other countries.

UAM100D\_10201E

