

*UNLESS OTHERWISE SPECIFIED TOLERANCES PER DECIMAL PRECISION ARE: X=±1 (±0.039), X.X=±0.5 (±0.020), X.XX=±0.25 (±0.010), X.XXX=±0.127 (±0.005). LEAD SIZE=±0.05 (±0.002), LEAD LENGTH=±0.75 (±0.030). MIN= ^{+DECIMAL PRECISION} -0.00 MAX= ^{+0.00} -DECIMAL PRECISION



N. GARY AVE.
CAROL STREAM, IL 60188
PHONE : 800-278-5666
FAX : 630-315-2150
WEB : WWW.LUMEX.COM425

96 * 8 PIXELS, PCB WITH 768 PCS LEDS * 1

****THE SPECIFICATIONS MAY CHANGE AT ANY TIME WITHOUT NOTICE DUE TO NEW MATERIALS OR PRODUCT IMPROVEMENT.****

CONFIDENTIAL INFORMATION
THE INFORMATION CONTAINED IN THIS DOCUMENT IS THE PROPERTY OF LUMEX INC. EXCEPT AS SPECIFICALLY AUTHORIZED IN WRITING BY LUMEX INC., THE HOLDER OF THIS DOCUMENT SHALL KEEP ALL INFORMATION CONTAINED HEREIN CONFIDENTIAL AND SHALL PROTECT SAME IN WHOLE OR IN PART FROM DISCLOSURE AND DISSEMINATION TO ALL THIRD PARTIES.

DATE : 2016/09/28	DRAWN BY : E.C.
PAGE : 1 OF 8	CHKD BY : K.C.
SCALE : NTF	APRVD BY : R.C.
UNIT : mm [INCH]	(Pb)

BOM :

P/N	ITEM	COMPONENT	QTY
LDM-768-1LT-X	1	LDM-768-1LT-X1-PCB	1
	2	WIRE002	1

P/N INFORMATION :

PART NUMBER	COLOR
LDM-768-1LT-G1	GREEN
LDM-768-1LT-Y1	YELLOW
LDM-768-1LT-R1	RED

WIRELEAD DEFINITION :

COLOR	DEFINITION
YELLOW	TX1
WHITE	RX1
RED	5V
BLACK	GND

LOAD CURRENT & POWER CONSUMPTION WITH ALL LED ON :

Current consumption	GREEN	YELLOW	RED	UNIT	GREEN	YELLOW	RED	UNIT
All LEDs off	28	28	28	mA	0.14	0.14	0.14	W
Diming level 0	128	302	308	mA	0.64	1.51	1.54	W
Diming level 1	228	420	440	mA	1.14	2.1	2.2	W
Diming level 2	320	550	590	mA	1.6	2.75	2.95	W
Diming level 3	420	670	710	mA	2.1	3.35	3.55	W
Diming level 4	510	790	830	mA	2.55	3.95	4.15	W
Diming level 5	610	900	950	mA	3.05	4.5	4.75	W
Diming level 6	690	1000	1060	mA	3.45	5	5.3	W
Diming level 7	790	1110	1180	mA	3.95	5.55	5.9	W
Diming level 8	870	1200	1290	mA	4.35	6	6.45	W
Diming level 9	950	1310	1390	mA	4.75	6.55	6.95	W
Diming level 10	1010	1390	1490	mA	5.05	6.95	7.45	W
Diming level 11	1115	1490	1590	mA	5.575	7.45	7.95	W

UART CONFIGURATION :

ITEM	SETTING VALUE
BAUD RATE	115200
DATA BIT	8
STOP BIT	1
PARITY BIT	NONE
FLOW CONTROL	NONE

LED ELECTRO-OPTICAL CHARACTERISTICS TA =25° :

	PARAMETER	MIN	TYP	MAX	UNITS	TEST COND
GREEN LED	PEAK WAVELENGTH		525		nm	If=20mA
	FORWARD VOLTAGE	2.7	3.3	3.7	Vf	If=20mA
	REVERSE VOLTAGE			5.0	Vr	Ir=20uA
	LUMINOUS INTENSITY	140		450	mcd	If=20mA
	VIEWING ANGLE		120		2x theta1/2	If=20mA
	EMITTED COLOR	GREEN				
	EPOXY LENS FINISH	WATER CLEAR				
YELLOW LED	PEAK WAVELENGTH		591		nm	If=20mA
	FORWARD VOLTAGE	1.7	2.0	2.4	Vf	If=20mA
	REVERSE VOLTAGE			5.0	Vr	Ir=20uA
	LUMINOUS INTENSITY	16	40		mcd	If=20mA
	VIEWING ANGLE		100		2x theta1/2	If=20mA
	EMITTED COLOR	YELLOW				
	EPOXY LENS FINISH	WATER CLEAR				
RED LED	PEAK WAVELENGTH		632		nm	If=20mA
	FORWARD VOLTAGE	1.7	2.0	2.4	Vf	If=20mA
	REVERSE VOLTAGE			5.0	Vr	Ir=20uA
	LUMINOUS INTENSITY	37	56		mcd	If=20mA
	VIEWING ANGLE		100		2x theta1/2	If=20mA
	EMITTED COLOR	RED				
	EPOXY LENS FINISH	WATER CLEAR				

LED LIMITS OF SAFE OPERATION AT 25° :

	PARAMETER	MAX	UNITS
GREEN LED	PEAK FORWARD CURRENT	100	mA
	FORWARD CURRENT	25	mA
	POWER DISSIPATION	95	mW
	ELECTROSTATIC DISCHARGE	150	V
	OPERATING TEMP	-40~+85	°C
	STORAGE TEMP	-40~+90	°C
	SOLDERING TEMP	MAX +260 °C @3 SEC	
YELLOW LED	PEAK FORWARD CURRENT	60	mA
	FORWARD CURRENT	25	mA
	POWER DISSIPATION	60	mW
	ELECTROSTATIC DISCHARGE	2000	V
	OPERATING TEMP	-40~+85	°C
	STORAGE TEMP	-40~+90	°C
	SOLDERING TEMP	MAX +260 °C @3 SEC	
RED LED	PEAK FORWARD CURRENT	60	mA
	FORWARD CURRENT	25	mA
	ELECTROSTATIC DISCHARGE	2000	V
	POWER DISSIPATION	60	mW
	OPERATING TEMP	-40~+85	°C
	STORAGE TEMP	-40~+90	°C
	SOLDERING TEMP	MAX +260 °C @3 SEC	


*UNLESS OTHERWISE SPECIFIED TOLERANCES PER DECIMAL PRECISION ARE: X=±1 (±0.039), X.X=±0.5 (±0.020), X.XX=±0.25 (±0.010), X.XXX=±0.127 (±0.005). LEAD SIZE=±0.05 (±0.002), LEAD LENGTH=±0.75 (±0.030). MIN= ^{+DECIMAL PRECISION}/_{-0.00} MAX= ^{+0.00}/_{-DECIMAL PRECISION}

COMMAND LIST :

```
void Write_AT_Command(char *string)
{
  Serial.print(string);
  while (Serial.read() != 'E') {}
  delay(2);
}
```


Code	Function	Instruction of AT Command mode	API for Arduino	API of using Write_AT_Command() subroutine above
N/A	Sent a image(192X64 bitmap) to LED Display (An array consist of 1536 bytes bitmap information)	1. A ""for"" loop to send 1536 bytes user define display information 2. Wait until receive a module available byte ('E') from LED Display 3. Wait 2ms	for (i = 0 ; i < 1536; i++) { Serial.write(User_define_array[i]); } while (Serial.read() !='E') {} delay(2);	
0x80	Write a 5X7 Character	1. AT80=(line,column,Character) 2. Wait until receive a module available byte ('E') from LED Display 3. Wait 2ms	Serial.print("AT80=(0,0,A)"); while (Serial.read() !='E') {} delay(2);	Write_AT_Command("AT80=(0,0,A)")
0x81	Write a 8X8 String	1.AT81=(line,column,String) 2. Wait until receive a module available byte ('E') from LED Display 3. Wait 2ms	Serial.print("AT81=(0,0,ABCD1234)"); while (Serial.read() !='E') {} delay(2);	Write_AT_Command("AT81=(0,0,ABCD1234)")
0x82	Write a 8X16 Character	1.AT82=(line,column,Character) 2. Wait until receive a module available byte ('E') from LED Display 3. Wait 2ms	Serial.print("AT82=(0,0,A)"); while (Serial.read() !='E') {} delay(2);	Write_AT_Command("AT82=(0,0,A)")
0x83	Write a 8X16 String	1.AT83=(line,column,String) 2. Wait until receive a module available byte ('E') from LED Display 3. Wait 2ms	Serial.print("AT83=(0,0,ABCD1234)"); while (Serial.read() !='E') {} delay(2);	Write_AT_Command("AT83=(0,0,ABCD1234)")
0x84	Dsisplay a 8X8 pattern	1. AT84=(X position,Y position,pattern ID) 2. Wait until receive a module available byte ('E') from LED Display 3. Wait 2ms	Serial.print("AT84=(16,32,1)"); while (Serial.read() !='E') {} delay(2);	Write_AT_Command("AT84=(16,32,1)")
0x85	Dsisplay a 8X16 pattern	1.AT85=(X position,Y position,pattern ID) 2. Wait until receive a module available byte ('E') from LED Display 3. Wait 2ms	Serial.print("AT85=(16,32,1)"); while (Serial.read() !='E') {} delay(2);	Write_AT_Command("AT85=(16,32,1)")
0x86	Dsisplay a 16X16 pattern	1. AT86=(X position,Y position,pattern ID) 2. Wait until receive a module available byte ('E') from LED Display 3. Wait 2ms	Serial.print("AT86=(16,32,1)"); while (Serial.read() !='E') {} delay(2);	Write_AT_Command("AT86=(16,32,1)")
0x87	Dsisplay a 32X32 pattern	1. AT87=(X position,Y position,pattern ID) 2. Wait until receive a module available byte ('E') from LED Display 3. Wait 2ms	Serial.print("AT87=(16,32,1)"); while (Serial.read() !='E') {} delay(2);	Write_AT_Command("AT87=(16,32,1)")

*UNLESS OTHERWISE SPECIFIED TOLERANCES PER DECIMAL PRECISION ARE: X=±1 (±0.039), X.X=±0.5 (±0.020), X.XX=±0.25 (±0.010), X.XXX=±0.127 (±0.005). LEAD SIZE=±0.05 (±0.002), LEAD LENGTH=±0.75 (±0.030). MIN= ^{+DECIMAL PRECISION}/_{-0.00} MAX= ^{+0.00}/_{-DECIMAL PRECISION}

 <p>N. GARY AVE. CAROL STREAM, IL 60188 PHONE : 800-278-5666 FAX : 630-315-2150 WEB : WWW.LUMEX.COM425</p>	96 * 8 PIXELS, PCB WITH 768 PCS LEDS * 1	DATE : 2016/09/28	DRAWN BY : E.C.	
	THE SPECIFICATIONS MAY CHANGE AT ANY TIME WITHOUT NOTICE DUE TO NEW MATERIALS OR PRODUCT IMPROVEMENT.	PAGE : 3 OF 8	CHKD BY : K.C.	
	CONFIDENTIAL INFORMATION THE INFORMATION CONTAINED IN THIS DOCUMENT IS THE PROPERTY OF LUMEX INC. EXCEPT AS SPECIFICALLY AUTHORIZED IN WRITING BY LUMEX INC., THE HOLDER OF THIS DOCUMENT SHALL KEEP ALL INFORMATION CONTAINED HEREIN CONFIDENTIAL AND SHALL PROTECT SAME IN WHOLE OR IN PART FROM DISCLOSURE AND DISSEMINATION TO ALL THIRD PARTIES.	SCALE : NTF	APRVD BY : R.C.	
		UNIT : mm [INCH]		(Pb)


Code	Function	Instruction of AT Command mode	API for Arduino	API of using Write_AT_Command() subroutine above
0x90	Draw a line	1. AT90=(X0 position,Y0 position,X1 position,Y1 position,0 or 1) 2. Wait until receive a module available byte ('E') from LED Display 3. Wait 2ms	Serial.print("AT90=(0,0,127,63,1)"); while (Serial.read() !='E') {} delay(2);	Write_AT_Command("AT90=(0,0,127,63,1)")
0x91	Draw a Rectangle	1. AT91=(X0 position,Y0 position,X1 position,Y1 position,0 or 1) 2. Wait until receive a module available byte ('E') from LED Display 3. Wait 2ms	Serial.print("AT91=(10,10,100,49,1)"); while (Serial.read() !='E') {} delay(2);	Write_AT_Command("AT91=(10,10,100,49,1)")
0x92	Draw a filled Rectangle	1. AT92=(X0 position,Y0 position,X1 position,Y1 position,0 or 1) 2. Wait until receive a module available byte ('E') from LED Display 3. Wait 2ms	Serial.print("AT92=(10,10,100,49,1)"); while (Serial.read() !='E') {} delay(2);	Write_AT_Command("AT92=(10,10,100,49,1)")
0x93	Draw a Square	1. AT93=(X position,Y position,Width,0 or 1) 2. Wait until receive a module available byte ('E') from LED Display 3. Wait 2ms	Serial.print("AT93=(8,10,30,1)"); while (Serial.read() !='E') {} delay(2);	Write_AT_Command("AT93=(8,10,30,1)")
0x94	Draw a Circle	1. AT94=(X position,Y position,Radius,0 or 1) 2. Wait until receive a module available byte ('E') from LED Display 3. Wait 2ms	Serial.print("AT94(64,32,30,1)"); while (Serial.read() !='E') {} delay(2);	Write_AT_Command("AT94(64,32,30,1)")
0x95	Draw a filled Circle	1. AT95=(X position,Y position,Radius,0 or 1) 2. Wait until receive a module available byte ('E') from LED Display 3. Wait 2ms	Serial.print("AT95=(64,32,30,1)"); while (Serial.read() !='E') {} delay(2);	Write_AT_Command("AT95=(64,32,30,1)")
0x96	Draw a tip upward Triangle	1. AT96=(X position,Y position,Height,0 or 1) 2. Wait until receive a module available byte ('E') from LED Display 3. Wait 2ms	Serial.print("AT96=(64,10,30,1)"); while (Serial.read() !='E') {} delay(2);	Write_AT_Command("AT96=(64,10,30,1)")
0x97	Draw a filled tip upward Triangle	1. AT97=(X position,Y position,Height,0 or 1) 2. Wait until receive a module available byte ('E') from LED Display 3. Wait 2ms	Serial.print("AT97=(64,10,30,1)"); while (Serial.read() !='E') {} delay(2);	Write_AT_Command("AT97=(64,10,30,1)")
0x98	Draw a tip downward Triangle	1. AT98=(X position,Y position,Height,0 or 1) 2. Wait until receive a module available byte ('E') from LED Display 3. Wait 2ms	Serial.print("AT98=(64,50,30,1)"); while (Serial.read() !='E') {} delay(2);	Write_AT_Command("AT98=(64,50,30,1)")
0x99	Draw a filled tip downward Triangle	1. AT99=(X position,Y position,Height,0 or 1) 2. Wait until receive a module available byte ('E') from LED Display 3. Wait 2ms	Serial.print("AT99=(64,50,30,1)"); while (Serial.read() !='E') {} delay(2);	Write_AT_Command("AT99=(64,50,30,1)")
0x9a	Draw a tip leftward Triangle	1. AT9a=(X position,Y position,Width,0 or 1) 2. Wait until receive a module available byte ('E') from LED Display 3. Wait 2ms	Serial.print("AT9a=(16,32,30,1)"); while (Serial.read() !='E') {} delay(2);	Write_AT_Command("AT9a=(16,32,30,1)")

*UNLESS OTHERWISE SPECIFIED TOLERANCES PER DECIMAL PRECISION ARE: X=±1 (±0.039), X.X=±0.5 (±0.020), X.XX=±0.25 (±0.010), X.XXX=±0.127 (±0.005). LEAD SIZE=±0.05 (±0.002), LEAD LENGTH=±0.75 (±0.030). MIN= ^{+DECIMAL PRECISION}/_{-0.00} MAX= ^{+0.00}/_{-DECIMAL PRECISION}

 <p>N. GARY AVE. CAROL STREAM, IL 60188 PHONE : 800-278-5666 FAX : 630-315-2150 WEB : WWW.LUMEX.COM425</p>	96 * 8 PIXELS, PCB WITH 768 PCS LEDS * 1	DATE : 2016/09/28	DRAWN BY : E.C.	
	THE SPECIFICATIONS MAY CHANGE AT ANY TIME WITHOUT NOTICE DUE TO NEW MATERIALS OR PRODUCT IMPROVEMENT.	PAGE : 4 OF 8	CHKD BY : K.C.	
	CONFIDENTIAL INFORMATION THE INFORMATION CONTAINED IN THIS DOCUMENT IS THE PROPERTY OF LUMEX INC. EXCEPT AS SPECIFICALLY AUTHORIZED IN WRITING BY LUMEX INC., THE HOLDER OF THIS DOCUMENT SHALL KEEP ALL INFORMATION CONTAINED HEREIN CONFIDENTIAL AND SHALL PROTECT SAME IN WHOLE OR IN PART FROM DISCLOSURE AND DISSEMINATION TO ALL THIRD PARTIES.	SCALE : NTF	APRVD BY : R.C.	
		UNIT : mm [INCH]		(Pb)


Code	Function	Instruction of AT Command mode	API for Arduino	API of using Write_AT_Command() subroutine above
0x9b	Draw a filled tip leftward Triangle	1. AT9b=(X position,Y position,Width,0 or 1) 2. Wait until receive a module available byte ('E') from LED Display 3. Wait 2ms	Serial.print("AT9b=(16,32,30,1)"); while (Serial.read() !='E') {} delay(2);	Write_AT_Command("AT9b=(16,32,30,1)")
0x9c	Draw a tip rightward Triangle	1. AT9c=(X position,Y position,Width,0 or 1) 2. Wait until receive a module available byte ('E') from LED Display 3. Wait 2ms	Serial.print("AT9c=(120,32,30,1)"); while (Serial.read() !='E') {} delay(2);	Write_AT_Command("AT9c=(120,32,30,1)")
0x9d	Draw a filled tip rightward Triangle	1. AT9d=(X position,Y position,Width,0 or 1) 2. Wait until receive a module available byte ('E') from LED Display 3. Wait 2ms	Serial.print("AT9d=(120,32,30,1)"); while (Serial.read() !='E') {} delay(2);	Write_AT_Command("AT9d=(120,32,30,1)")
0x9e	Set a pixel for positive display (show pixel)	1. AT9e=(X position,Y position) 2. Wait until receive a module available byte ('E') from LED Display 3. Wait 2ms	Serial.print("AT9e=(120,32)"); while (Serial.read() !='E') {} delay(2);	Write_AT_Command("AT9e=(120,32)")
0x9f	Set a pixel for negative display (clear pixel)	1. AT9f=(X position,Y position) 2. Wait until receive a module available byte ('E') from LED Display 3. Wait 2ms	Serial.print("AT9f=(120,32)"); while (Serial.read() !='E') {} delay(2);	Write_AT_Command("AT9f=(120,32)")
0xa0	Display image row by row Up Ward	1. ATa0=(Speed in ms) 2. Wait until receive a module available byte ('E') from LED Display 3. Wait 2ms	Serial.print("ATa0=(20)"); while (Serial.read() !='E') {} delay(2);	Write_AT_Command("ATa0=(20)")
0xa1	Display image row by row Down Ward	1. ATa1=(Speed in ms) 2. Wait until receive a module available byte ('E') from LED Display 3. Wait 2ms	Serial.print("ATa1=(20)"); while (Serial.read() !='E') {} delay(2);	Write_AT_Command("ATa1=(20)")
0xa2	Display image column by column Left Ward	1. ATa2=(Speed in ms) 2. Wait until receive a module available byte ('E') from LED Display 3. Wait 2ms	Serial.print("ATa2=(20)"); while (Serial.read() !='E') {} delay(2);	Write_AT_Command("ATa2=(20)")
0xa3	Display image column by column Right Ward	1. ATa3=(Speed in ms) 2. Wait until receive a module available byte ('E') from LED Display 3. Wait 2ms	Serial.print("ATa3=(20)"); while (Serial.read() !='E') {} delay(2);	Write_AT_Command("ATa3=(20)")
0xa4	Erase image row by row Up Ward	1. ATa4=(Speed in ms) 2. Wait until receive a module available byte ('E') from LED Display 3. Wait 2ms	Serial.print("ATa4=(20)"); while (Serial.read() !='E') {} delay(2);	Write_AT_Command("ATa4=(20)")
0xa5	Erase image row by row Down Ward	1. ATa5=(Speed in ms) 2. Wait until receive a module available byte ('E') from LED Display 3. Wait 2ms	Serial.print("ATa5=(20)"); while (Serial.read() !='E') {} delay(2);	Write_AT_Command("ATa5=(20)")

*UNLESS OTHERWISE SPECIFIED TOLERANCES PER DECIMAL PRECISION ARE: X=±1 (±0.039), X.X=±0.5 (±0.020), X.XX=±0.25 (±0.010), X.XXX=±0.127 (±0.005). LEAD SIZE=±0.05 (±0.002), LEAD LENGTH=±0.75 (±0.030). MIN.= ^{+DECIMAL PRECISION}/_{-0.00} MAX.= ^{+0.00}/_{-DECIMAL PRECISION}

 <p>N. GARY AVE. CAROL STREAM, IL 60188 PHONE : 800-278-5666 FAX : 630-315-2150 WEB : WWW.LUMEX.COM425</p>	96 * 8 PIXELS, PCB WITH 768 PCS LEDS * 1	DATE : 2016/09/28	DRAWN BY : E.C.	
	THE SPECIFICATIONS MAY CHANGE AT ANY TIME WITHOUT NOTICE DUE TO NEW MATERIALS OR PRODUCT IMPROVEMENT.	PAGE : 5 OF 8	CHKD BY : K.C.	
	CONFIDENTIAL INFORMATION THE INFORMATION CONTAINED IN THIS DOCUMENT IS THE PROPERTY OF LUMEX INC. EXCEPT AS SPECIFICALLY AUTHORIZED IN WRITING BY LUMEX INC., THE HOLDER OF THIS DOCUMENT SHALL KEEP ALL INFORMATION CONTAINED HEREIN CONFIDENTIAL AND SHALL PROTECT SAME IN WHOLE OR IN PART FROM DISCLOSURE AND DISSEMINATION TO ALL THIRD PARTIES.	SCALE : NTF	APRVD BY : R.C.	
		UNIT : mm [INCH]		(Pb)


Code	Function	Instruction of AT Command mode	API for Arduino	API of using Write_AT_Command() subroutine above
0xa6	Erase image column by column Left Ward	1. ATa6=(Speed in ms) 2. Wait until receive a module available byte ('E') from LED Display 3. Wait 2ms	Serial.print("ATa6=(20)"); while (Serial.read() !='E') {} delay(2);	Write_AT_Command("ATa6=(20)")
0xa7	Erase image column by column Right Ward	1. ATa7=(Speed in ms) 2. Wait until receive a module available byte ('E') from LED Display 3. Wait 2ms	Serial.print("ATa7=(20)"); while (Serial.read() !='E') {} delay(2);	Write_AT_Command("ATa7=(20)")
0xa8	Display image Inside Out	1. ATa8=(Speed in ms) 2. Wait until receive a module available byte ('E') from LED Display 3. Wait 2ms	Serial.print("ATa8=(20)"); while (Serial.read() !='E') {} delay(2);	Write_AT_Command("ATa8=(20)")
0xa9	Display image Outside In	1. ATa9=(Speed in ms) 2. Wait until receive a module available byte ('E') from LED Display 3. Wait 2ms	Serial.print("ATa9=(20)"); while (Serial.read() !='E') {} delay(2);	Write_AT_Command("ATa9=(20)")
0xaa	Erase image Inside Out	1. ATaa=(Speed in ms) 2. Wait until receive a module available byte ('E') from LED Display 3. Wait 2ms	Serial.print("ATaa=(20)"); while (Serial.read() !='E') {} delay(2);	Write_AT_Command("ATaa=(20)")
0xab	Erase image Outside In	1. ATab=(Speed in ms) 2. Wait until receive a module available byte ('E') from LED Display 3. Wait 2ms	Serial.print("ATab=(20)"); while (Serial.read() !='E') {} delay(2);	Write_AT_Command("ATab=(20)")
0xd0	Clear display	1. ATd0=() 2. Wait until receive a module available byte ('E') from LED Display 3. Wait 2ms	Serial.print("ATd0=()"); while (Serial.read() !='E') {} delay(2);	Write_AT_Command("ATd0=()")
0xd1	Show the data in the display memory	1. ATd1=() 2. Wait until receive a module available byte ('E') from LED Display 3. Wait 2ms	Serial.print("ATd1=()"); while (Serial.read() !='E') {} delay(2);	Write_AT_Command("ATd1=()")
0xd2	Scroll the whole display upward	1. ATd2=(shif time in ms) 2. Wait until receive a module available byte ('E') from LED Display 3. Wait 2ms	Serial.print("ATd2=(20)"); while (Serial.read() !='E') {} delay(2);	Write_AT_Command("ATd2=(20)")
0xd3	Scroll the whole display downward	1. ATd3=(shif time in ms) 2. Wait until receive a module available byte ('E') from LED Display 3. Wait 2ms	Serial.print("ATd3=(20)"); while (Serial.read() !='E') {} delay(2);	Write_AT_Command("ATd3=(20)")
0xd4	Scroll the whole display leftward	1. ATd4=(shif time in ms) 2. Wait until receive a module available byte ('E') from LED Display 3. Wait 2ms	Serial.print("ATd4=(20)"); while (Serial.read() !='E') {} delay(2);	Write_AT_Command("ATd4=(20)")

*UNLESS OTHERWISE SPECIFIED TOLERANCES PER DECIMAL PRECISION ARE: X=±1 (±0.039), X.X=±0.5 (±0.020), X.XX=±0.25 (±0.010), X.XXX=±0.127 (±0.005). LEAD SIZE=±0.05 (±0.002), LEAD LENGTH=±0.75 (±0.030). MIN.= ^{+DECIMAL PRECISION} -0.00 MAX.= ^{+0.00} -DECIMAL PRECISION

 <p>N. GARY AVE. CAROL STREAM, IL 60188 PHONE : 800-278-5666 FAX : 630-315-2150 WEB : WWW.LUMEX.COM425</p>	96 * 8 PIXELS, PCB WITH 768 PCS LEDS * 1	DATE : 2016/09/28	DRAWN BY : E.C.	
	THE SPECIFICATIONS MAY CHANGE AT ANY TIME WITHOUT NOTICE DUE TO NEW MATERIALS OR PRODUCT IMPROVEMENT.	PAGE : 6 OF 8	CHKD BY : K.C.	
	CONFIDENTIAL INFORMATION THE INFORMATION CONTAINED IN THIS DOCUMENT IS THE PROPERTY OF LUMEX INC. EXCEPT AS SPECIFICALLY AUTHORIZED IN WRITING BY LUMEX INC., THE HOLDER OF THIS DOCUMENT SHALL KEEP ALL INFORMATION CONTAINED HEREIN CONFIDENTIAL AND SHALL PROTECT SAME IN WHOLE OR IN PART FROM DISCLOSURE AND DISSEMINATION TO ALL THIRD PARTIES.	SCALE : NTF	APRVD BY : R.C.	
		UNIT : mm [INCH]		(Pb)

Code	Function	Instruction of AT Command mode	API for Arduino	API of using Write_AT_Command() subroutine above
0xd5	Scroll the whole display rightward	1. ATd5=(shif time in ms) 2. Wait until receive a module available byte ('E') from LED Display 3. Wait 2ms	Serial.print("ATd5=(20)"); while (Serial.read() !='E') {} delay(2);	Write_AT_Command("ATd5=(20)")
0xd6	Scroll the section display upward	1. ATd6=(X0 position,Y0 position,X1 position,Y1 position, shif time in ms) 2. Wait until receive a module available byte ('E') from LED Display 3. Wait 2ms	Serial.print("ATd6=(10,16,120,50,1)"); while (Serial.read() !='E') {} delay(2);	Write_AT_Command("ATd6=(10,16,120,50,1)")
0xd7	Scroll the section display downward	1. ATd7=(X0 position,Y0 position,X1 position,Y1 position, shif time in ms) 2. Wait until receive a module available byte ('E') from LED Display 3. Wait 2ms	Serial.print("ATd7=(10,16,120,50,1)"); while (Serial.read() !='E') {} delay(2);	Write_AT_Command("ATd7=(10,16,120,50,1)")
0xd8	Scroll the section display leftward	1. ATd8=(X0 position,Y0 position,X1 position,Y1 position, shif time in ms) 2. Wait until receive a module available byte ('E') from LED Display 3. Wait 2ms	Serial.print("ATd8=(10,16,120,50,1)"); while (Serial.read() !='E') {} delay(2);	Write_AT_Command("ATd8=(10,16,120,50,1)")
0xd9	Scroll the section display rightward	1. ATd9=(X0 position,Y0 position,X1 position,Y1 position, shif time in ms) 2. Wait until receive a module available byte ('E') from LED Display 3. Wait 2ms	Serial.print("ATd9=(10,16,120,50,1)"); while (Serial.read() !='E') {} delay(2);	Write_AT_Command("ATd9=(10,16,120,50,1)")
0xda	Display quarter of display memory (Available for Mode0, 1, and 2 only)	1. ATda=(Quadrant 0~3) 2. Wait until receive a module available byte ('E') from LED Display 3. Wait 2ms	Serial.print("ATda=(1)"); while (Serial.read() !='E') {} delay(2);	Write_AT_Command("ATda=(1)")
0xf0	Turn display Off	1. ATf0=() 2. Wait until receive a module available byte ('E') from LED Display 3. Wait 2ms	Serial.print("ATf0=()"); while (Serial.read() !='E') {} delay(2);	Write_AT_Command("ATf0=()")
0xf1	Turn display On	1. ATf1=() 2. Wait until receive a module available byte ('E') from LED Display 3. Wait 2ms	Serial.print("ATf1=()"); while (Serial.read() !='E') {} delay(2);	Write_AT_Command("ATf1=()")
0xf2	Set the brightness of the LED Module	1. ATf2=(levele of brightness 0~11) 2. Wait until receive a module available byte ('E') from LED Display 3. Wait 2ms	Serial.print("ATf2=(5)"); while (Serial.read() !='E') {} delay(2);	Write_AT_Command("ATf2=(5)")
0xf3	Inverse image	1. ATf3=() 2. Wait until receive a module available byte ('E') from LED Display 3. Wait 2ms	Serial.print("ATf3=()"); while (Serial.read() !='E') {} delay(2);	Write_AT_Command("ATf3=()")
0xf6	Change Instruction mode (0 for Hex Coammand, 1 for AT Command)	1. ATf6=(0) 2. Wait until receive a module available byte ('E') from LED Display 3. Wait 2ms	Serial.print("ATf6=(0)"); while (Serial.read() !='E') {} delay(2);	Write_AT_Command("ATf6=(0)")
0xf7	Change Display Mode	1. ATf7=(Display Mode) 2. Wait until receive a module available byte ('E') from LED Display 3. Wait 2ms	Serial.print("ATf7=(0)"); while (Serial.read() !='E') {} delay(2);	Write_AT_Command("ATf7=(0)")

*UNLESS OTHERWISE SPECIFIED TOLERANCES PER DECIMAL PRECISION ARE: X=±1 (±0.039), X.X=±0.5 (±0.020), X.XX=±0.25 (±0.010), X.XXX=±0.127 (±0.005). LEAD SIZE=±0.05 (±0.002), LEAD LENGTH=±0.75 (±0.030). MIN= ^{+DECIMAL PRECISION} -0.00 MAX.= ^{+0.00} -DECIMAL PRECISION

 <p>N. GARY AVE. CAROL STREAM, IL 60188 PHONE : 800-278-5666 FAX : 630-315-2150 WEB : WWW.LUMEX.COM425</p>	96 * 8 PIXELS, PCB WITH 768 PCS LEDS * 1	DATE : 2016/09/28	DRAWN BY : E.C.	
	THE SPECIFICATIONS MAY CHANGE AT ANY TIME WITHOUT NOTICE DUE TO NEW MATERIALS OR PRODUCT IMPROVEMENT.	PAGE : 7 OF 8	CHKD BY : K.C.	
	CONFIDENTIAL INFORMATION THE INFORMATION CONTAINED IN THIS DOCUMENT IS THE PROPERTY OF LUMEX INC. EXCEPT AS SPECIFICALLY AUTHORIZED IN WRITING BY LUMEX INC., THE HOLDER OF THIS DOCUMENT SHALL KEEP ALL INFORMATION CONTAINED HEREIN CONFIDENTIAL AND SHALL PROTECT SAME IN WHOLE OR IN PART FROM DISCLOSURE AND DISSEMINATION TO ALL THIRD PARTIES.	SCALE : NTF	APRVD BY : R.C.	
		UNIT : mm [INCH]		(Pb)

ASCII code of 5X7 fonts and 8X16 fonts

Hex	Symbol	Hex	Symbol	Hex	Symbol
0x20		0x40	@	0x60	`
0x21	!	0x41	A	0x61	a
0x22	"	0x42	B	0x62	b
0x23	#	0x43	C	0x63	c
0x24	\$	0x44	D	0x64	d
0x25	%	0x45	E	0x65	e
0x26	&	0x46	F	0x66	f
0x27		0x47	G	0x67	g
0x28	(	0x48	H	0x68	h
0x29	)	0x49	I	0x69	i
0x2a	*	0x4a	J	0x6a	j
0x2b	+	0x4b	K	0x6b	k
0x2c	,	0x4c	L	0x6c	l
0x2d	-	0x4d	M	0x6d	m
0x2e	.	0x4e	N	0x6e	n
0x2f		0x4f	O	0x6f	o
0x30	0	0x50	P	0x70	p
0x31	1	0x51	Q	0x71	q
0x32	2	0x52	R	0x72	r
0x33	3	0x53	S	0x73	s
0x34	4	0x54	T	0x74	t
0x35	5	0x55	U	0x75	u
0x36	6	0x56	V	0x76	v
0x37	7	0x57	W	0x77	w
0x38	8	0x58	X	0x78	x
0x39	9	0x59	Y	0x79	y
0x3a	:	0x5a	Z	0x7a	z
0x3b	;	0x5b	]	0x7a	{
0x3c	<	0x5c	\	0x7a	|
0x3d	=	0x5d	[	0x7a	}
0x3e	>	0x5e	^	0x7a	~
0x3f	?	0x5f	_	0x7a	<-


ASCII code of 16X16 fonts

Hex	Symbol
0x30	0
0x31	1
0x32	2
0x33	3
0x34	4
0x35	5
0x36	6
0x37	7
0x38	8
0x39	9

No. of 8X16 pattern

No.	Symbol
0	0
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9

No. of 32X32 pattern

No.	Symbol
0	0
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	°C
11	°F
12	

No. of 8X8 pattern

No.	Symbol
0	0
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9

No. of 16X16 pattern

No.	Symbol
0	0
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9

*UNLESS OTHERWISE SPECIFIED TOLERANCES PER DECIMAL PRECISION ARE: X=±1 (±0.039), X.X=±0.5 (±0.020), X.XX=±0.25 (±0.010), X.XXX=±0.127 (±0.005). LEAD SIZE=±0.05 (±0.002), LEAD LENGTH=±0.75 (±0.030). MIN= ^{+DECIMAL PRECISION}/_{-0.00} MAX= ^{+0.00}/_{-DECIMAL PRECISION}



N. GARY AVE.
CAROL STREAM, IL 60188
PHONE : 800-278-5666
FAX : 630-315-2150
WEB : WWW.LUMEX.COM425

96 * 8 PIXELS, PCB WITH 768 PCS LEDS * 1

THE SPECIFICATIONS MAY CHANGE AT ANY TIME WITHOUT NOTICE DUE TO NEW MATERIALS OR PRODUCT IMPROVEMENT.

CONFIDENTIAL INFORMATION
THE INFORMATION CONTAINED IN THIS DOCUMENT IS THE PROPERTY OF LUMEX INC. EXCEPT AS SPECIFICALLY AUTHORIZED IN WRITING BY LUMEX INC., THE HOLDER OF THIS DOCUMENT SHALL KEEP ALL INFORMATION CONTAINED HEREIN CONFIDENTIAL AND SHALL PROTECT SAME IN WHOLE OR IN PART FROM DISCLOSURE AND DISSEMINATION TO ALL THIRD PARTIES.

DATE : 2016/09/28

DRAWN BY : E.C.

PAGE : 8 OF 8

CHKD BY : K.C.

SCALE : NTF

APRVD BY : R.C.

UNIT : mm [INCH]

