# Dot Graphic VFD Module   EGU128X8T-K612C5

- ❑ **128 x 8 High Brightness Dot Graphic Display**
- ❑ **Single 12V DC Supply**
- ❑ **Large 5x7 ASCII & European Font**
- ❑ **RS232 Asynchronous Serial Interface**
- ❑ **31 Selectable Multi Drop Addresses**
- ❑ **Transformerless PSU (patent pending)**
- ❑ **Low Profile Construction**

The module includes the VFD glass, VF drivers and microcontroller with refresh RAM, character generation, interface logic and patented transformerless DC/DC converter. The RS232 serial interface accepts 9600 or 19200 baud rates with optional parity bit. The module features a low profile design with numerous custom options available including special fonts and commands. Modules can be connected to a multi drop address system.
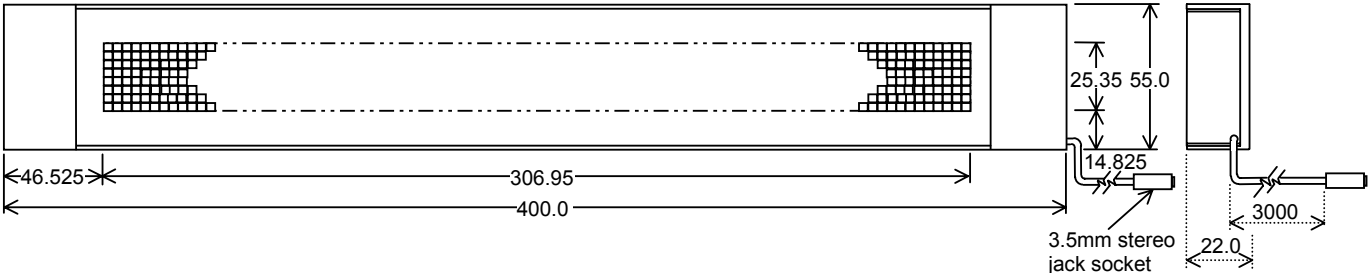
Dimensions in mm & subject to tolerances.

ELECTRICAL SPECIFICATION

Parameter	Symbol	Value	Condition
Supply Voltage	V_{DD}	12.0VDC +/- 10%	G_{ND}=0V
Supply Current	I_{DD}	500 mA typ.	V_{DD}=12V
RS232 Input	V_{SIL} / V_{SIH}	-24V max / +24V max	V_{DD}=12V
RS232 Output	V_{SOL}/V_{SOH}	-5VDC min / +5VDC min	V_{DD}=12V

OPTICAL & ENVIRONMENTAL SPECIFICATION

Parameter	Value
Display Area (X xYmm)	306.95 x 25.35
Dot Size/Pitch (XxY mm)	2.15 x 2.95 / 2.4 x 3.2
Luminance	1000 cd/m² Typ.
Colour of Illumination	Blue-Green (505nm)
Operating Temperature	-40°C to +85°C
Storage Temperature	-40°C to +85°C
Operating Humidity	20 to 85% RH @ 25°C

Optical filters can provide violet, red, yellow, blue & green output.

SOFTWARE COMMANDS

| Hex	Command
10	Software Reset to power on state
11	Write Mode toggles overwrite / scroll
12	Write Direction toggles increment / decrement
13	Display On/Off. Data is retained
14	Display Invert. Toggle negative image
15 + xx	Absolute Column Set from 00H – FFH
16 + xx	Relative Column Set by 00H - FFH
17 + len + data	Graphic Data Write 1 bytes per column, D7 top
18	Clear Character Buffer with 21 ASCII spaces
19 + data	Write to Character Buffer for display effect
1A + effect	Fade, wipe, scroll, dissolve & character delay.
1C + macro + len + data	Store Macro E0H – FFH in EEPROM
1D + delay	Halt process for up to 3 seconds
1E + 1E + 1E + FE	Clear Macros from EEPROM
1E + 1E + 1E + FF	Stop Display and clear receive buffer
1E + 1E + 1E + adr	Address Select 00H – 1FH for active module
1F	Loop receive buffer
20 - DF	Character Write ASCII font.
E0 - FF	Run Macro – execute user defined macro
60 + dh + dl	Send Hexadecimal code instead of binary

The user can send non printable command codes 10H-1FH as hexadecimal by prefixing the code using character 60H. Example: `15`3F = Position column 64. When 1FH is sent, the commands/data in the communication buffer (max 192 bytes) are executed until 'Stop Display' is issued. Example: 10H --- data --- 1FH. Macro E0 is run at power on unless cleared.
Software and font set are copyright Noritake Itron Corporation 2002

CHARACTER SET - 5X7 Font

Character 60H is used as a hexadecimal prefix, but can be displayed with a repeat send. Column position X = 00H – 7FH.
Data is shown in hexadecimal and sent in binary. e.g. FFH = 11111111 Bin
Address 'adr' = 00H - 1FH. Setting 'adr' to 00H activates all modules.
The communication settings and address can be set using the three switches on the rear of the module. Default communication is Addr 00 - 9600,n,8,1 STD. Choose between 'STD' (standard) and 'WEB' modes. In 'WEB' mode 20H and all codes below 10H are ignored. To send a SPACE, 5FH can be used. All codes are accepted when sent using hexadecimal. Select 'WEB' mode when using the display with the Noritake Message Creator software.

JACK SOCKET CONNECTIONS
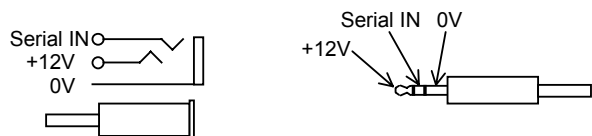
Detailed specification, software commands and interface timing are available on request. Subject to change without notice.
IUK Doc. No. 04045 Iss.2
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NORITAKE ITRON VFD MODULES   128 x 8 Dot Graphic