

OBU-4.2: Integrated Bus Display Controller



A) DIMENSIONS:

Cabinet Size	175 x 125 x 53 mm
Display	Graphic LCD 64 x 256 Pixels with back light
Keyboard	Backlit, 20 key, cap sense key-board.

B) INPUT – OUTPUT CONNECTIONS ON REAR SIDE CABLE:

Power Connections	90 series 3 pin connector
Data connections for display	90 Series 2 pin sealed male connector to drive destination displays on RS 485
GPS Connections	Gold plated SMA connector for GPS antenna for in built GPS or 90 series 2 pin connector for RS 232 channel for external GPS receiver
LAN / Ethernet	RJ 45 connector
Audio Output	2 Channel -20W - 4/8 Ohms
Mic Input	90 Series 2 pin sealed female connector
USB	USB connector from rear cable or at front face
Digital I/O	4 no. input & output each. 2 x 8 pin connectors

C) ELECTRICAL PRAMETERS:

Operating Voltage	Nominal + 24V DC /+ 12 V DC
	Extended Supply 8.5 V to 36 V DC
Power Consumption	0.7 A @ 24V DC
Protection	Power supply input is protected against Reverse Polarity, over voltage, Cranking voltage, Load Dump
	External Fuse on cabinet for over current
	Communication lines are protected against high voltage application and ESD

D) QUALITY:

EMC/EMC	Test complied as per – AIS 004 Part 3
Ambient Environment	Operating temperature: -25°C to +80°C
Humidity	95% RH
Vibration Test	10g as per AIS 012
Ingress protection	IP 66 as per IS / IEC 60947-1:2004 in conjunction with IS / IEC 60529:2001
ROHS/Non ROHS	ROHS

E) STRUCTURE:

Aluminum Cabinet, Powder Coated finish.
Weight – 2 kg
Mounting arrangement by wall mounting / Panel mounting
Conformal coated PCBA and ROHS Compliant & with automotive grade components

F) TECHNICAL SPECIFICATIONS:

Processor :32 bit minimum
Memory: 256 MB minimum
Operating system: Linux
Interface: RS 485, RS 232, USB, GPS, Ethernet, Digital I/O and Audio
In-Built GPS module for On-Bus location based display and announcement
Communication with Signs will be on RS 485.
Route Data upload and-flash on Controller from PC via USB port USB 2.0, FAT 32, up to 8 GB capacity), which includes 2 GB of Audio Files in .wav or mp3. Buzzer indication when loading is complete.
Incorporate LCD Graphic Display Panel (resolution 64 x 256 minimum), illuminated with automatic brightness control and Backlit Keypad with minimum 20 soft keys including alphanumeric.
In-built MP3 files storage/playback function with built in amplifier to drive 4 Ohm impedance.
Programming Software is compatible with Window 10, includes simulation, Brightness control, scroll speed control, scroll direction, Template configuration, Graphic library, customized graphics
Programming Software includes Route configuration with bus stops and Point of Interest (POI) with geo-location.
Provide capability to upload firmware on Signs via RS 485.
Provide facility to check Firmware Version, Route Data base version on the Controller Display
The IBDC controls complete Public Information System on Bus including Destination Signs and announcements.
All drivers related interfaces / information for PIS are provided on ICU.
Route selection function is provided on IBDC with easy sorting of Routes by Line/Route/ Destination. Last selected Route is retained in memory and appears automatically on Power reset.
The Driver has to select a 'Route', from a Pre-Loaded Route Data Base and all configured Information will be displayed and or announced automatically based on Bus Location (GPS).
Information on Single or Multiple line fonts on GLCD
IBDC supports various options of number of languages in sequence, Stop announcements, messages, music, etc. via PC software programming.
IBDC supports operation of displays & announcement for 150 routes, 300 destinations & 75 bus stops in each route
With 3 announcement events - "before arrival" of the bus at the bus stop; "on arrival" of the bus at bus stop and "after departure" of the bus from the bus stop.
IBDC provides a facility of manual skipping of bus stop announcement. In event of GPS failure, the above functionality can be carried out through manual intervention on ICU
Keyboard & Display supports functions selection by using Route no., Sr. no., Skip Next Stop operation, volume control for audio, displaying LAT LON on move.
GPS triggered display with next stop on Inner sign is synchronized with audio announcement.
Supports Manual announcement
Driver can press 1-9 keys to display pre-defined information on Inner sign & announce pre-recorded messages.
Functionality of Display 'clock'-GPS based or 'Default Messages' on Inner sign
Displays Driver & conductor ID once in between bus stops on Inbus display
Supports 'Emergency Stop' Button placed anywhere in the bus. Inbus display shows 'Stop' message &

buzzer near the drivers alerts the driver for stopping the bus.
Provides alert to the driver by playing a beep on buzzer if vehicle speed exceeds set limit. Limit is configurable via. software & preset at 50 kmph
During the default message display, the other messages can be included viz. 'Time' and 'Outside Temperature 'on the Right hand top corner. 'Time' will be based on GPS Input
IBDC can provide functions like 'Selected Route' at preconfigured Interval.
External 'Gate Way' -Two Way Communication with Control Centre via Ethernet Port
Facilitates to check Firmware and Data base version of ICU remotely.
Facilitates to provide current route information remotely.
Facilitates to change/Choose/Select Route remotely
Facilitates to transmit ad-hoc messages (English) from back office to Internal Sign

Generic	I/P VOLT	Display	KBD	GPS	GPRS	PID	Mic	VAS	Emergency Annou-ncement (Panic)
BC	N-18~36V	G-Graphic LCD	S-4 Key small KBD	C- Internal	C- Internal	S-With RS485	I-internal preamplifier	A-Audio Available	P-Panic switch available
	E-Extended 9~36V	O-OLED	L-Large, Alphanumeric KBD	U-ublox or as required	U-ublox or as required	B-with Blue tooth	E-external Preamplifier	N-Audio Not Available	N-Panic switch Not Available
	-	2-2 Line	I-Illuminated	E-Extended GPS (Internal + External)	E-External	W-Wireless	N-No mic input	-	-
	-	4-4 Line	-	N-No GPS	N-No GPRS	N-No PID	-	-	-
						O- OS based IBDC			