

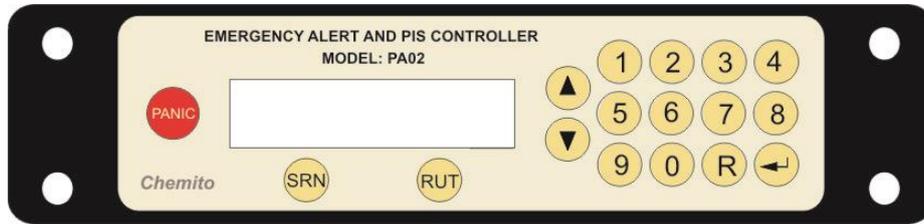
Technical Specifications of OBU-3.1: Emergency Alert and Display Control System as per AIS 052

Document Title	Technical Specifications
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Subject	Technical Specifications for Emergency Alert and PIS Controller as per AIS 052
Purpose	Emergency Alert and PIS Controller as per AIS 052
From	Chemito Infotech Pvt. Ltd
To	
Date	08/02/2018

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Document Revision No	Date	Title or Brief Description of Changes	Prepared by	Reviewed by	Approved by
1.0.0R01	27/01/2016	Original Document	Yunoos Desai	Naresh Panchal	Vishwas Puneekar
1.0.0R02	19/02/2016	<ul style="list-style-type: none">• Power connector changed to 90 Series• Remaining connector 250 Series 8 pin	Yunoos Desai	Naresh Panchal	Vishwas Puneekar
1.0.0R03	05/05/2016	<ul style="list-style-type: none">• Inbus Display support added• Special Features added	Yunoos Desai	Naresh Panchal	Vishwas Puneekar
1.0.0R04	2010/2016	<ul style="list-style-type: none">• Minor corrections in wordings	Shital Ujjainkar	Manoj Baviskar	Vishwas Puneekar
1.0.0R05	02/02/2017	<ul style="list-style-type: none">• Change wordings at some places• Temperature range updated	Shital Ujjainkar	Manoj Baviskar	Vishwas Puneekar
1.0.0R06	29/08/2017	<ul style="list-style-type: none">• Frequency 5~55 Hz change in vibration• Excursion -1.65mm	Shital Ujjainkar	Manoj Baviskar	Vishwas Puneekar
1.0.0R07	08/09/2017	<ul style="list-style-type: none">• Cabinet size updated to 234 x 57 x 127 mm• Updated memory 8 Giga Bytes for route storing• Updated panic switch pressing for 5 sec.	Shital Ujjainkar	Manoj Baviskar	Vishwas Puneekar
1.0.0R08	08/02/2018	<ul style="list-style-type: none">• Added new nomenclature OBU-3.1	Shital Ujjainkar	Naresh Panchal	Vishwas Puneekar

OBU-3.1: Emergency Alert and PIS Controller as per AIS 052



OBU-3.1: Emergency Alert and PIS Controller is designed for manual Passenger Announcement system with Destination Display Control as well as provides emergency declaration for passengers. It will accept input from Emergency declaration switch (mounted in bus) or Panic button on front panel (Note: Long press "PANIC" switch on front panel for 5secs). On pressing this switch, it will activate Audio Hooter through speaker & blinker as a visual indication, to declare an emergency for speedy evacuation of the passengers. Audio hooter automatically goes off when MIC switch is pressed to make announcement to passengers and resumes when the MIC switch is off.

This controller can drive Destination Display for showing Route data. Driver can set route by Route number or by Route Serial Number. Routes can be uploaded in controller through USB port.

A) INPUT – OUTPUT CONNECTIONS ON REAR SIDE CABLE:

Audio Output	2 Channel -20W – 4 or 8 Ohms
MIC Input	External switch
Data Connection for Display	With RS-485 Support destination displays. (Front, Side, Rear and Inbus).
Panic Button	External Input as well as on front panel.
Blinker Output	Operating voltage (50 watt max) output with 1 sec on 0.5 sec off (without fuse)
Hooter output	On Speaker

B) Technical Specifications

Driver Information	On 16 x 2 Alphanumeric LCD Display
Keypad	17 Keys Touch Keypad
Uploading Route data	Pigtail USB port at back terminal

Inbuilt memory	8 Giga Bytes for route storing
Prerecorded Message	1 to 9 Key to play prerecorded audio files
Route memory	Supports 150 routes with 300 Destinations
Display supports	Destination boards like Front, Side, Rear and Inbus
Route Selection	Through Route Number or through Route Serial Number
Emergency Declaration	Panic button on keypad and external input

C) ELECTRICAL PRAMETERS:

Operating Voltage	Nominal + 24 V DC ($\pm 25\%$) /+ 12 V DC ($\pm 25\%$)
	Optional : Extended Supply 9 V to 36 V DC
Power Consumption	0.5 A @ 24 V DC only announcement
Protection	Power supply input is protected against Reverse Polarity, Over voltage, Cranking voltage, Load Dump
	PTC Fuse for over current.

D) STRUCTURE:

1.	Cabinet of size 234 x 57 x 127 mm with Powder coating.
2.	Weight : 700 gm
3.	Mounting arrangement by wall mounting or panel

E) QUALITY:

EMI/EMC	Test complied as per – AIS 004 Part 3
Ambient Environment	Operating temperature: -25°C to +70°C
Humidity	95% RH (Max.)
AIS 012/AIS 062 Vibration	Frequency 5~55Hz and return to 5Hz at a linear sweep period of 1 min/complete sweep cycle and 10G at max frequency Excursion -1.65mm peak to peak over the specified frequency range Test Duration 60 minutes Direction of Vibration -X, Y, Z axis of Device as it is mounted on the vehicle.
Ingress protection	IP 66 as per IS / IEC 60947-1:2004 in conjunction with IS / IEC 60529:2001
Performance Parametric Test	Nine point, Tri voltage, Tri Temp: 9V, 22.5V, 36V, -25° C, room temperature, +70° C.
Cold Test	During testing DUT shall be kept inside test chamber in power ON condition and other components Ramp down the chamber temperature to -25 °C. Operate component at -25 °C for 2 hours with continuous monitoring
High Temperature Operating Endurance	During testing DUT shall be kept inside test chamber in power ON condition Ramp up the chamber temperature to 70 °C. Operate component at 70 °C for 16 hours with continuous monitoring
Damp Heat cyclic	During testing DUT shall be kept inside test chamber in power off condition

	IS 9000 (Part V/Sec 2)1981 at +25° C /+55°C, Humidity 95%, 24 hours for 6 Cycles in off Condition. Functional test with Power in 'On' condition at start of 2nd, 4th and 6th cycle
Fire Resistant	All cables used BIS marked, Copper conductor with fire retardant PVC insulated and withstand working temperature up to 70° C
Short Circuit Protection	All input/ output are short circuit protected except MIC.
Supply reverse polarity protection	Reverse voltage of 27.0 V to power lines for 120 Seconds for 24 V input and 13.5 V to power lines for 120 Seconds for 12 V input. ISO 16750-2:2010
Over Voltage Test	For 24 V DC input : 36V power lines for 60 minutes For 12 V DC input : 18V power lines for 60 minutes (as per ISO 16750-2:2010)
Insulation Resistance Test	500 V DC for 60 seconds between terminals of galvanic isolation, terminals and housing with conductive surface, terminals and electrode wrapped around the housing No arcing or puncturing of insulation allowed Insulation Resistance shall be > 1 MΩ. ISO 16750-2:2010
Cranking Voltage	As per ISO 7637-2:2004/ISO 16750-2:2010
Load Dump Test	As per ISO 16750-2:2010
ESD Protection	As per ISO 10605:2008

F) Special Features

1. Inbuilt preamplifier for mic
2. Inbuilt Amplifier for PA announcement.
3. Inbuilt blinker driving circuit.
4. AIS004 part 3 compliant.
5. Siren gets paused automatically when driver starts announcement through MIC
And Resume after announcement finish.