IBMS In-Tunnel Broadcasting Monitor System

MODEL:

CT-IBMS-options (see table below)

DESCRIPTION:

AM/FM IN-TUNNEL BROADCASTING MONITOR SYSTEM

A.1 SUMMARY

The IBMS is a monitor component of the AM/FM Radio Rebroadcast operation in tunnels. The IBMS is an AM/FM tuner based system with external control.

It allows monitoring of multi-zone systems (1, 2 or more tunnel bores or tubes, depending on configuration).

Features:

- Band Selection (AM or FM)
- Channel selection
- Preset memory
- Auto-scan function
- Digital Display with Frequency, Band, Stereo, RDS and other indicators
- RDS reception in FM broadcasts (Europe RDS, US RBDS)
- Independent AM & FM antenna inputs
- Advanced RDS search functions
- Local Button front panel
- External Control thru RS-232 tuner control with RT protocol
- Bore (tube) selection via discrete inputs
- Desktop or rack mount versions
- Analog Stereo Audio Outputs
- Integrated G.U.I. Control Panel in VAR3 software suite.

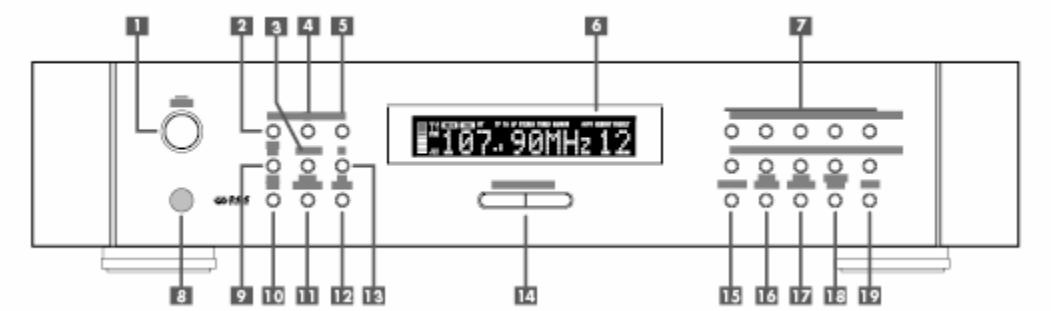
OPTIONS SUMMARY:

Model number= IBMS-xx-z-A-R-y-M

Option	Option's brief description
xx	A for AM, F for FM monitoring, AF for both AM & FM
z	Number of monitoring zones
A	Specified for pick-up antennas
r	Rack-mount Adapter Kit
y	U for Un-balanced audio outputs (default), B for Balanced Audio outputs,
M	Specified when analog modem interface is required

5318 E. Second Street #700 | Long Beach CA 90803 USA
Phone +1(562) 856-0178 | canam@mail.com

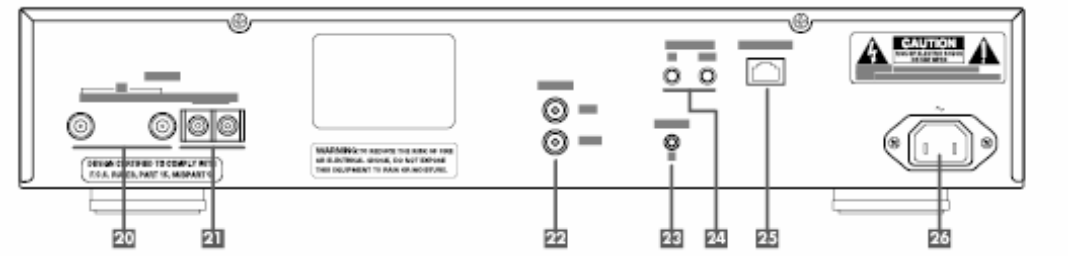
A.2 Receiver Front Panel Interface



The Front Panel provides a digital display with indicators for frequency band, channel, RDS decoded data, and other functions.

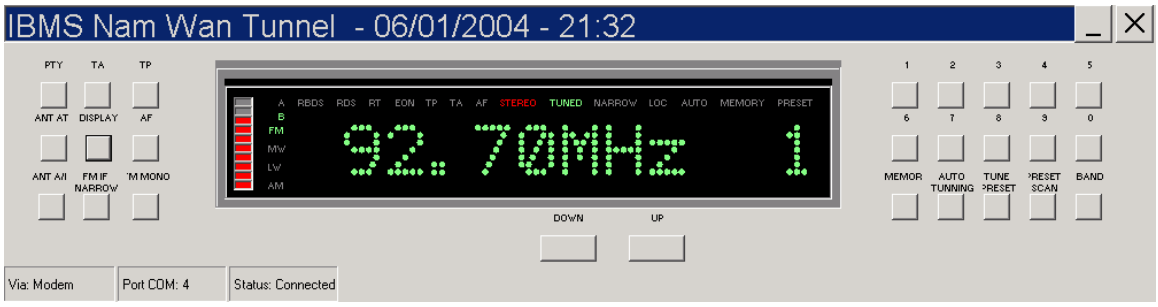
Several buttons allow controlling the receiver directly for parameters such as frequency, band, RDS functions and others operations including an ON/OFF switch.

A.3 Receiver Rear Panel Interface



The receiver's rear panel provides the interface for AM/FM antenna inputs, audio outputs, external computer control interface, and AC power input.

A.4 VAR3 Software: Graphical User Interface



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IBMS In-Tunnel Broadcasting Monitor System DATA SHEET

An optional software package can be integrated in the VAR3 Software Suite to provide control to the IBMS sub-system thru the VAR3 system, which is a Digital Recorder and Override (Break-in) Controller or Console.

IBMS Datasheet	
Radio Tuner	
FM Receiver	
Frequency Steps:	100 kHz
Audio Frequency Response	10Hz-15 kHz (+/- 3 dB)
FM Signal-to-Noise ratio (@ 65 dBf /-85 dBm/)	75 dB (mono), 72 dB (stereo)
Harmonic Distortion (@ 65 dBf /-85 dBm/), 1kHz	0.2% mono, 0.3% stereo
FM usable Sensitivity (@ 75 Ohm)	12.2 dBf /-107.8 dBm/
Input Levels for 50 dB FM Quieting Sensitivity (50 dB noise reduction)	
mono	20 dBf /-100 dBm/
Stereo	45.3 dBf /-74.7 dBm/
FM Capture ratio (for a typical 30 dB reduction of unwanted on-frequency signals)	2 dB
Adjacent Channel Selectivity	47 dB (+/- 400 kHz)
Spurious Response ratio	90 dB
Image Rejection ratio	80 dB
IF Rejection ratio	80 dB
FM Antenna Input	75 Ohm default, 50 Ohm optional adapter

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RDS Receiver	
RDS/ RBDS: Several functions including:	RDS/RBDS Presence Indicator
	Display of the station's identifying name (e.g. BBC1) (PS)
	Display of the station's program (e.g. ROCK or NEWS) (PROGRAM TYPE)
	Traffic information broadcasts (TP, TA, EON)
	Scrolling text display for announcements or information
	Clock Time
	Radio text
	AF Support
RDS Advance Functions, including:	
	Search for a station with the desired program content (PTY)
	Search for traffic information (TP)
	Search for stations broadcasting special traffic announcements (TA).
AM Receiver	
Frequency Steps	10 kHz or 9 kHz
AM input sensitivity	300 uV/m
Audio Frequency Response	100Hz-8kHz (+/- 3dB)
AM Selectivity	25 dB
Harmonic Distortion	0.5 %
Signal to Noise ratio	48 dB
Image Rejection ratio	45 dB

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AM Antenna Input	300-Ohm balanced default, 50/75-Ohm coaxial adapter optional
Audio Outputs	
• Drive level	Fixed Line Level
• Balanced lines (differential) (using balance adapter kit)	
• Un-balanced lines (single-ended), default	
• Load impedance capacity	600 ohms or greater
• Connectors	RCA default
	XLR on balance adapter kit
Digital Display	
Frequency & Band Indicator	
Stereo Indicator	
RDS/RBDS Indicator	
Other indicators	
External Controller Interface	
RS-232 Serial Port	One RJ-45 Connector
RT Protocol	
MODEM	Analog modem
AUX Discrete inputs: Used to monitor multiple tunnel zones	RF switches with n inputs, depending on configuration with Discrete Control Inputs

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IBMS In-Tunnel Broadcasting Monitor System DATA SHEET

APPLICATION-software	
Fully Integrated G.U.I. Control Panel in VAR3 Protocol Suite (order separately as VAR3 Option)	VAR3-IBMS
OPTIONAL ACCESSORIES	To be ordered separately
	MODEL #
Optional Rack-mount adapter kit, 2U	**IBMS-RK**
AM Pick-up antenna	**IBMS-APA**
FM Pick-up Antenna	**IBMS-FPA**
FM multi-zone (tube) select switch (n-inputs)	**IBMS-FMS-n**
AM multi-zone (tube) select switch (n-inputs)	**IBMS-AMS-n**
AM Antenna Balun kit	**IBMS-ABK-50/75**
FM Impedance pad adapter (75 Ohm-to-50 Ohm)	**IBMS-IPA**
Amplified Stereo Desktop Loud Speakers	**IBMS-DLS**

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