

# DIVUS HEARTBEAT

## TECHNICAL DATASHEET

### GENERAL OVERVIEW



DIVUS HEARTBEAT is a hardware-software solution, which is composed of a POE+ capable managed switch and an innovative manager. Integrated into the network, it is the heart of a smart building and ensures a secure and stable connection between DIVUS devices. It's software provides novel functionalities that will benefit system integrator as well as the end-user such as system-wide configuration for an easy and quick installation, system scan, real-time monitoring, usage analytics and system diagnostics and trouble-shooting support through automatically generated system reports

A first of its kind solution for a stable, secure and controlled network!

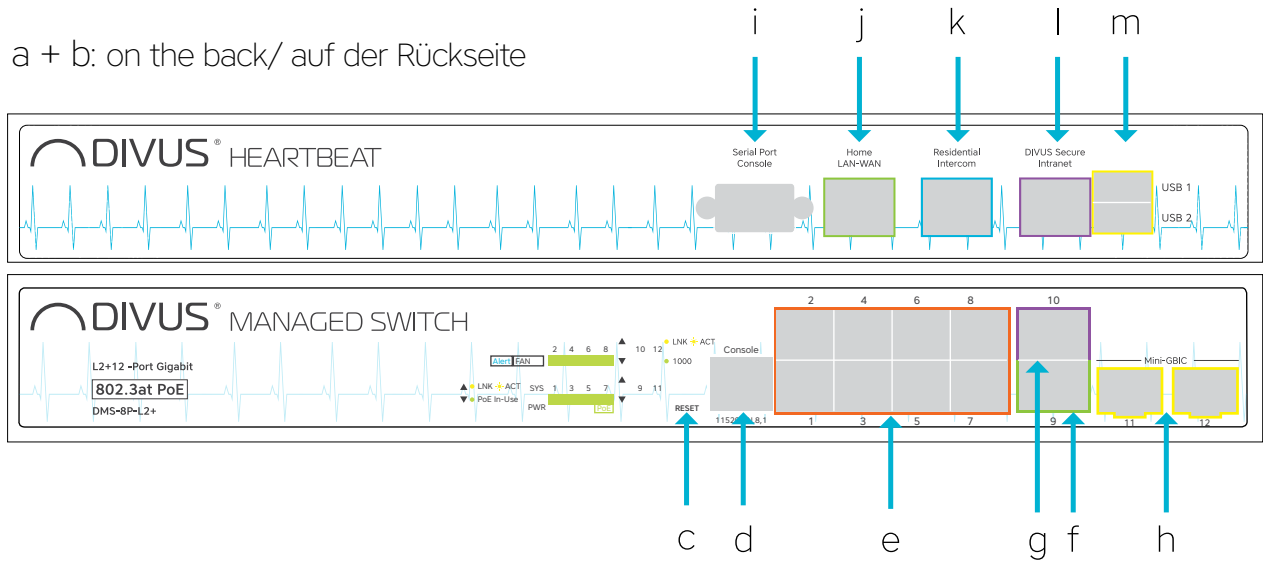
### HEARTBEAT DHB - BUNDLE

	DHB MANAGER	DHB SWITCH
<b>GENERAL HARDWARE SPECIFICATION</b>		
Power supply	100 ... 240V AC, 50/60Hz	100 ... 240V AC, 50/60Hz
Power consumption	Max. 1A (100 V AC) /max. 0,55A (240V AC)	Max. at full capacity 320 V AC
		Total max. consumption 420W
Protection grade		IP 20 according EN 60529
Dimension (WxDxH)	330 x 200 x 43.5 mm, 1U height	330 x 200 x 43.5 mm, 1U height
		Total size: 483 x 200 x 88, 2U height
Weight	ca. 1.5 kg	ca. 2 kg
		Total weight: ca. 3.5 kg
Temp. range (operating)		Temperature: +5°C ... +45°C
		Relative humidity: 5% ... 80% at 25°C (no humidity/condense)
Temp. range (storage)		Temperature: -10°C ... +60°C
		Relative humidity: 5% ... 80% at 25°C (no humidity/condense)



LAYOUT

a + b: on the back/ auf der Rückseite



- a) Power connector on plug - Manager & Switch
- b) Power switch - Manager & Switch
- MANAGED SWITCH**
- c) Switch reset button
- d) Serial interface on RJ45
- e) 8 POE+ ports (orange 1-8) DIVUS SECURE NETWORK
- f) Port 9 - VoIP Server connection
- g) Port 10 - port to connect switch to the manager
- h) Port 11-12 Mini-GBIC - not in use
- MANAGER**
- i) Serial interface on DB9
- j) Home LAN-WAN
- k) Residential Intercom
- l) DIVUS SECURE INTRANET - port to connect manager to switch
- m) 2 USB 3.0 ports

- a) Stromanschluss - Manager & Switch
- b) Netzschalter - Manager & Switch
- MANAGED SWITCH**
- c) Switch Reset-Taster
- d) Serielle Schnittstelle auf RJ45
- e) 8 POE+ Ports (orange 1-8) DIVUS SECURE NETWORK
- f) Port 9 - VoIP Server Anschluss
- g) Port 10 - Vebrindungsport Switch zu Manager
- h) Port 11-12 Mini-GBIC - nicht aktiv
- MANAGER**
- i) Serieller Konsolenportanschluss
- j) Home LAN-WAN
- k) Gebäude-Sprechanlage
- l) DIVUS SECURE INTRANET - Verbindungsport Manager zu Switch
- m) 2 USB 3.0 Schnittstellen

**FUNCTIONALITIES**

VoiP server
VoiP call logging
Managing of multiple switches
Firewall protection of Home LAN and DIVUS SECURE NET
Firewal protection of external residential network to Home LAN and DIVUS SECURE NET
Network scan
Generate network report
Sending network report by email
Network diagram
Network logging
Network diagnostic
Loop protection
DIVUS device control
DIVUS device manage
DIVUS device configuration
DIVUS device logging
DHCP server to DIVUS SECURE INTRANET
NTP server to DIVUS SECURE INTRANET

**MANAGER**

**HARDWARE SPECIFICATION**

Model	DHB - MANAGER
CPU	AMD G series GX-412TC, 1 GHz quad core (Jaguar core) with 64 bit support
DRAM	2 GB DDR3-1333 DRAM
Storage	High quality flash storage

**CONNECTIVITY**

ETH2	DIVUS SECURE INTRANET - secure LAN firewall protection
ETH1	Residential intercom - high secure LAN firewall protection
ETH0	Home LAN - connected to home internal network
SERIAL PORT	Basic config (19200 8, N, 1)
USB	Basic config

## MANAGED SWITCH

### HARDWARE SPECIFICATION

Model	DHB - SWITCH
POE standard IEEE 802.3af/802.3at PoE/PSE	8 x PoE+ (Port 1-8 only), total PoE+ power budget control, max. 30.8 watts per port (240 watts total)
Ports	1x dedicated port for connection to the manager
	1x dedicated port for connection to another switch
	1x RJ45 serial port (115200, 8, N, 1)
Copper ports	10x10/100/1000BASE-T RJ45 Auto-MDI/MDI-X ports
Switch architecture	Store-and-forward
Address table	8K entries, automatic source address learning and aging
Flow control	IEEE 802.3x pause frame for full-duplex. Back pressure for half-duplex
Reset button	< 5 sec: system reboot
	> 5 sec: factory default
Switch fabric	24Gbps / non-blocking
LED	System:
	Fan Alert (Green), SYS (Green), PWR (Green)
	10/100/1000T RJ45 Interfaces (Port 1 to Port 8):
	10/100/1000Mbps LNK/ACT (Green)
	PoE-in-Use (Orange)
	10/100/1000T RJ45 Interfaces (Port 9 to Port 10):
	LNK/ACT (Green)
	1000Mbps (Orange)
	100/1000Mbps SFP Combo Interfaces (Port 11 to Port 12):
	LNK/ACT (Green)
1000Mbps (Orange)	

### POWER OVER ETHERNET

PoE Standard	IEEE 802.3af/802.3at PoE/PSE
PoE Power Supply Type	End-span
PoE Power Output	<b>Per port 54V DC, max. 30.8 watts</b>
Power Pin Assignment	1/2(+), 3/6(-)
PoE Power Budget	<b>240 watts (max.) @ 25° C</b>
	200 watts (max.) @ 50° C
PoE Ability	PD @ 7 watts: 8 units
	PD @ 15.4 watts: 8 units
	PD @ 30.8 watts: 8 units
PoE Management	Auto detects powered device (PD)
	Circuit protection prevents power interference between ports
	Remote power feeding up to 100 meters
	<b>Total PoE power budget control</b>
	Per port PoE function enable/disable
	PoE Port Power feeding priority
	Per PoE port power limitation
	PD classification detection
	PD alive check
	PoE schedule
PD power recycling schedule	

**LAYER2 MANAGEMENT FUNCTIONS**

Basic Management Interfaces	Console, Telnet, Web browser, SNMP v1, v2c
Secure Management Interfaces	SSH, SSL, SNMP v3
Port Configuration	Port disable/enable
	Auto-negotiation 10/100/1000Mbps full and half duplex mode selection
	Flow Control disable/enable
Port Status	Display each port's speed duplex mode, link status, flow control status, auto negotiation status, trunk status
Port Mirroring	TX/RX/Both
	Many-to-1 monitor
VLAN	802.1Q tagged based VLAN, up to 255 VLAN groups
	Q-in-Q tunneling
	Private VLAN Edge (PVE)
	MAC-based VLAN
	Protocol-based VLAN
	Voice VLAN
	MVR (Multicast VLAN Registration)
	Up to 255 VLAN groups, out of 4094 VLAN IDs
Link Aggregation	IEEE 802.3ad LACP/Static Trunk
	Supports 6 trunk groups with 8 ports per trunk
QoS	Traffic classification based, strict priority and WRR
	8-level priority for switching
	- Port number
	- 802.1p priority
	- DSCP/TOS field in IP packet
IGMP Snooping	IGMP (v1/v2/v3) Snooping, up to 255 multicast groups
	IGMP Querier mode support
MLD Snooping	MLD (v1/v2) Snooping, up to 255 multicast groups
	MLD Querier mode support
Access Control List	IP-based ACL/MAC-based ACL
	Up to 256 entries
Bandwidth Control	Per port bandwidth control
	Ingress: 100Kbps~1000Mbps
	Egress: 100Kbps~1000Mbps

SNMP MIBs	RFC 1213 MIB-II
	RFC 2863 IF-MIB
	RFC 1493 Bridge MIB
	RFC 1643 Ethernet MIB
	RFC 2863 Interface MIB
	RFC 2665 Ether-Like MIB
	RFC 2737 Entity MIB
	RFC 2819 RMON MIB (Groups 1, 2, 3 and 9)
	RFC 2618 RADIUS Client MIB
	RFC 3411 SNMP-Frameworks-MIB
	IEEE 802.1X PAE
	LLDP
	MAU-MIB
	Power over Ethernet MIB

### LAYER3 FUNCTIONS

IP Interfaces	Max. 8 VLAN interfaces
Routing Table	Max. 32 routing entries
Routing Protocols	IPv4 software static routing
	IPv6 software static routing

### STANDARDS CONFORMANCE

Regulatory Compliance	FCC Part 15 Class A, CE
Standards Compliance	IEEE 802.3 10BASE-T
	IEEE 802.3u 100BASE-TX/100BASE-FX
	IEEE 802.3z 1000BASE-SX/LX
	IEEE 802.3ab 1000BASE-T
	IEEE 802.3x flow control and back pressure
	IEEE 802.3ad port trunk with LACP
	IEEE 802.1D Spanning Tree Protocol
	IEEE 802.1w Rapid Spanning Tree Protocol

	IEEE 802.1s Multiple Spanning Tree Protocol
	IEEE 802.1p Class of Service
	IEEE 802.1Q VLAN tagging
	IEEE 802.1x Port Authentication Network Control
	IEEE 802.1ab LLDP
	IEEE 802.3af Power over Ethernet
	IEEE 802.3at Power over Ethernet Plus
	RFC 768 UDP
	RFC 793 TFTP
	RFC 791 IP
	RFC 792 ICMP
	RFC 2068 HTTP
	RFC 1112 IGMP v1
	RFC 2236 IGMP v2
	RFC 3376 IGMP v3
	RFC 2710 MLD v1
	RFC 3810 MLD v2