



**IEC61850-3, IEEE1613
CERTIFIED**

**IEC61850-90-4
CERTIFIED DNV**

**HUSKY™ ESW-E70
INDUSTRIAL GRADE L2/L3
MANAGED ETHERNET SWITCH**

HUSKY ESW-E70 series of Ethernet Switches are specifically designed for Industrial applications. The switches supports a variety of useful functions in both Managed and Unmanaged form. These Switches embed a fully integrated, high performance and cost effective Ethernet Switch controller. This series of switches support variety of features such as Wire Speed on every port, RSTP/MSTP, VL AN, CoS, Bandwidth Control and IGMP/MLD Snooping. Layer 3 routing functions are also supported in the L3 models. For zero-recovery time networks, specific ports can be provided with HSR/PRP support.

GENERAL TECHNICAL DESCRIPTION

HUSKY ESW-E70 series of Ethernet Switch have a built in Non blocking Architecture switching fabric containing internal SRAM for packet buffer. Wire speed operation is provided on every port. Internal 16K MAC Address Entries are supported with CRC/Direct hashing algorithm.

Each port supports ingress/egress methods of rate control to provide proper bandwidth. Port based and Tag based VLAN functionality is available.

The switches offer spanning tree support - STP/RSTP/MSTP .

EMI/EMC Compliance

- ESD Test IEC 61000-4-2
- EFT Test IEC 61000-4-4
- Radiated RFI Test IEC 61000-4-3
- Surge Test IEC 61000-4-5
- HV Impulse Test IEC 60255-5
- Conducted RFI Test IEC 61000-4-6
- Power Frequency Test IEC 61000-4-8
- Damped Oscillatory Magnetic Field IEC 61000-4-10
- Voltage Range and Tolerance IEC60870-2-1
- Ripple on DC Power IEC61000- 4-17
- DC Dip and Interruption Test IEC61000- 4-29
- AC Dip and Interruption Test IEC 61000-4-11
- Oscillatory Waves IEC 61000-4-18
- Immunity to Conducted common Mode Disturbance IEC 61000-4-16
- Emission Test
- Conducted
- Radiated

**CISPR 22
CISPR 22**

Electromechanical Compliance

- **Vibration** IEC60255-21-1
- Seismic IEC60255-21-3
- Shock & Bump IEC60255-21-2
- Drop Test IEEE1613

Environmental

- Dry Heat IEC60068-2-2
- Damp Heat IEC60068-2-78,30
- Cold Test IEC60068-2-1
- Temperature Cycle IEC60068-2-14

Safety

- Impulse Voltage Withstand IEC60255-27

IEEE 1613 Compliance

- DC Rated Control Power Inputs IEEE C37.90
- Allowable AC Component in DC Control Voltage Supply IEEE C37.90
- AC Rated Control Power Inputs IEEE C37.90
- Dielectric Strength IEEE C37.90
- Impulse Voltage IEEE C37.90
- 1 MHz Oscillatory Waveform IEEE C37.90.1
- Fast Transient IEEE C37.90.1
- Radio Frequency (RF) Susceptibility IEEE C37.90.2
- Electrostatic Discharge (ESD) IEEE C37.90.3
- Vibration IEEE 1613
- Shock (Drop Test) IEEE 1613

HUSKY™ ESW-E70

INDUSTRIAL GRADE L2/L3 MANAGED ETHERNET SWITCH

TECHNICAL SPECIFICATIONS

COPPER PORTS (MAX.)	24 NOS. FE/GbE + 4 NOS.GbE AUTO MDIX RJ45 CONNECTOR
FIBER PORTS (MAX.)	16 NOS SFF/SFP FIBERPORTS LC TYPE CONNECTOR
INPUT POWER SUPPLY	9-36VDC / 18-60VDC / 90-250VDC / 230VAC
CONSOLE PORT	USB SERIAL
OPERATING TEMP.	-10 TO +70°C
MOUNTING	DIN RAIL / 19"-RACKMOUNT

** Check ordering information for various combinations of fiber & copper ports.

Features

- Non-blocking Architecture (Latency<10us)
- Wire Speed Operation on every port
- Head of Line Blocking Prevention
- 802.3x compliant flow control in full duplex
- Internal 4K MAC Addresses with Automatic Aging
- IGMP/MLD Snooping
- Port mirroring
- Per Port LED indicators
- Per Port MIB Counters
- 802.1w RSTP/MSTP Support
- Support 4K entries 802.1Q VLAN
- 802.1p QoS
- Broadcast/Multi-cast/DLF/ARP/ICMP Storm Control
- 802.1x Port based security with RADIUS
- MAC/IP based security
- Supports Access Control Lists
- Supports IEEE 802.3 ah OAM
- Link aggregation
- CLI, Web interface for Configuration
- Remote monitoring - SNMP v1/v2c/v3 agent; syslog

L3 Features

- Static L3 Routing
- RIPv2, OSPFv2 Routing
- IPv4, IPv6 Support
- IPv6 Static Routing

Redundancy Protocols

- PRP-Aware (L2 & L3)
- HSR/PRP RedBox (L3)
- STP/RSTP/MSTP (L2 & L3)
- ERPS, <50ms recovery (L3)
- MRP (L3)



Time

Synchronization

- NTP/SNTP (L2 & L3)
- PTP Transparent Clock (L2 & L3)
- PTP Boundary Clock (L3)
- SNTP Server (L3)

ORDERING CODE

HUSKY ESW-E70 - ■ - ■ - ■

MANAGEMENT

- L2 Managed - M
- Unmanaged - U
- L3 Managed - H

INPUT POWER SUPPLY

- 9-36VDC - 1
- 18-60VDC - 2
- 90-250VDC - 3
- 230VAC - 4

*Include suffix R for Redundant PSU

PORT CONFIGURATION

- 10/100 Copper port - T
- 100BaseFX port (MMF) - M
- 100BaseFX port (SMF-10km) - F
- 100BaseFX port (SMF-30km) - C
- 100BaseFX port (SMF-60km) - L
- 10/100/1000 Copper port - G
- SFP port - S

HUSKY™ RTR 6049

LTE ROUTER

HUSKY RTR6049 wireless Router is a device that can enable any Ethernet device to communicate with a central location over 4G/5G networks. The router offers a customized and cost-efficient solution for remote data collection applications. The router features an embedded 32-bit microprocessor and an embedded operating system that provide the computing power to effectively meet the requirements of establishing an IPsec or TLS VPN with the control center. The VPN is a transparent channel which can be used to exchange any kind of TCP/UDP traffic on both the directions. The end devices and the control center communicate using private, static IP addresses, over a public, dynamic IP network.

The router offers up to 2-port 10/100 Ethernet interfaces. In addition, the router supports establishment of multiple independent VPNs with two different control centers. This allows the end devices, typically RTUs, to communicate with more than one control center. Optional RS232 / RS485 serial ports allows connectivity of serial devices also. The serial protocol is transparent to the router. The VPNs can be optionally encrypted using SSL/TLS protocol. The Ethernet ports can be configured for WAN purpose also.

The router supports dual SIM operation, offering cold switch-over of wireless networks. This allows use of different service providers to achieve better link availability.

Optional in-built I/O and in-built support for Modbus / TCP slave or IEC 60870-5-104 slave protocols eliminates the need for a dedicated RTU for very low I/O applications.



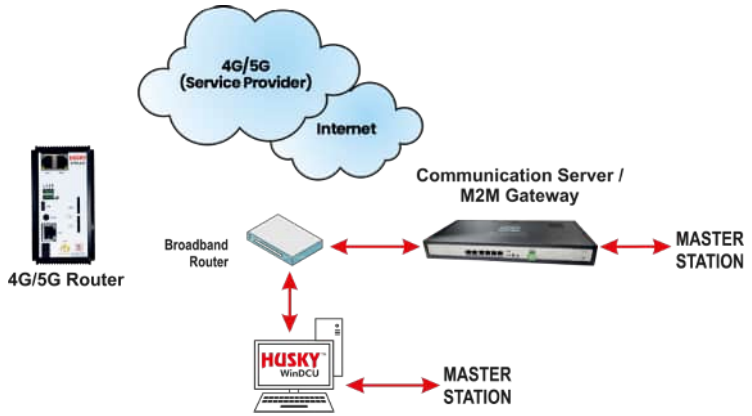
Salient Features

- 32 Bit Fan-less Microprocessor
- U=Up to 2nos. 10/100 Ethernet Ports
- Optional Inos. RS232/RS485 Port
- Built-in 4G / 5G Modem
- Dual SIM option
- Status Indications
- Optional Hardwired I/O (4DI, 4DO)

HUSKY™ RTR 6049

LTE ROUTER

TYPICAL APPLICATION



TECHNICAL SPECIFICATIONS

OPERATING BANDS

ETHERNET INTERFACE	2X 10/100 MBPS ETHERNET RJ 45
SERIAL INTERFACE	1X RS232 / RS485 (2 WIRE / 4 WIRE)
VPN SUPPORT	IPSEC / WIREGUARD
NETWORK PROTOCOL	TCP(S), HTTP(S), FTP(S), UDP, PPP, SNMP, IPV4, IPV6, IPV4/IPV6 DUAL STACK, DHCP SERVER & CLIENT, STATIC IP, FIREWALL
SOFTWARE PACKAGE	IPSEC, SNMP V1/V2C/V3, SSHD, DHCPD, OPENSLL, MINICOM, WIRE GUARD
WEB MANAGEMENT	SIM STATUS, SIGNAL STRENGTH STATUS, LTE STATUS & CONFIGURATION, APN CONFIGURATION, NETWORK CONFIGURATION, FIRMWARE UPDATE, DATA BASED SIM SWITCHING, TIME BASED SIM SWITCHING, TIME SYNC, SYSLOG, KERNEL LOG, WEB BASED FIRMWARE UPDATE
RF MODEM	4G / 5G RADIO MODEM
POWER CONSUMPTION	12W MAX. (@24VDC)
OPERATING COND.	-10 TO 70°C; 95% RH
DIMENSIONS (DIN-RAIL)	(W)50MM X (H)210MM X (D)200MM

LTE FDD	B1/B3/B5/B7/B8/B20
WCDMA	B1/B5/B8
GSM	B3/B8
SMS	POINT TO POINT MO AND MT
ANTENNA	SMA FEMALE CONNECTOR 8DBI ANTENNA WITH 3M CABLE
SIM	DUAL MICRO-SIM SLOT (PUSH-PUSH TYPE) WITH SEALING ARRANGEMENT
HARDWIRED I/O OPTIONS*	24/48VDC POS LOGIC DI 1 NO. RELAY OUTPUTS FOR DO

**ALL I/Os ARE ISOLATED FROM FIELD.

ORDERING CODE

