

RJ-45 WITH INTEGRATED 10/100 BASE Tx LAN MAGNETICS

RJmag™

FEATURES

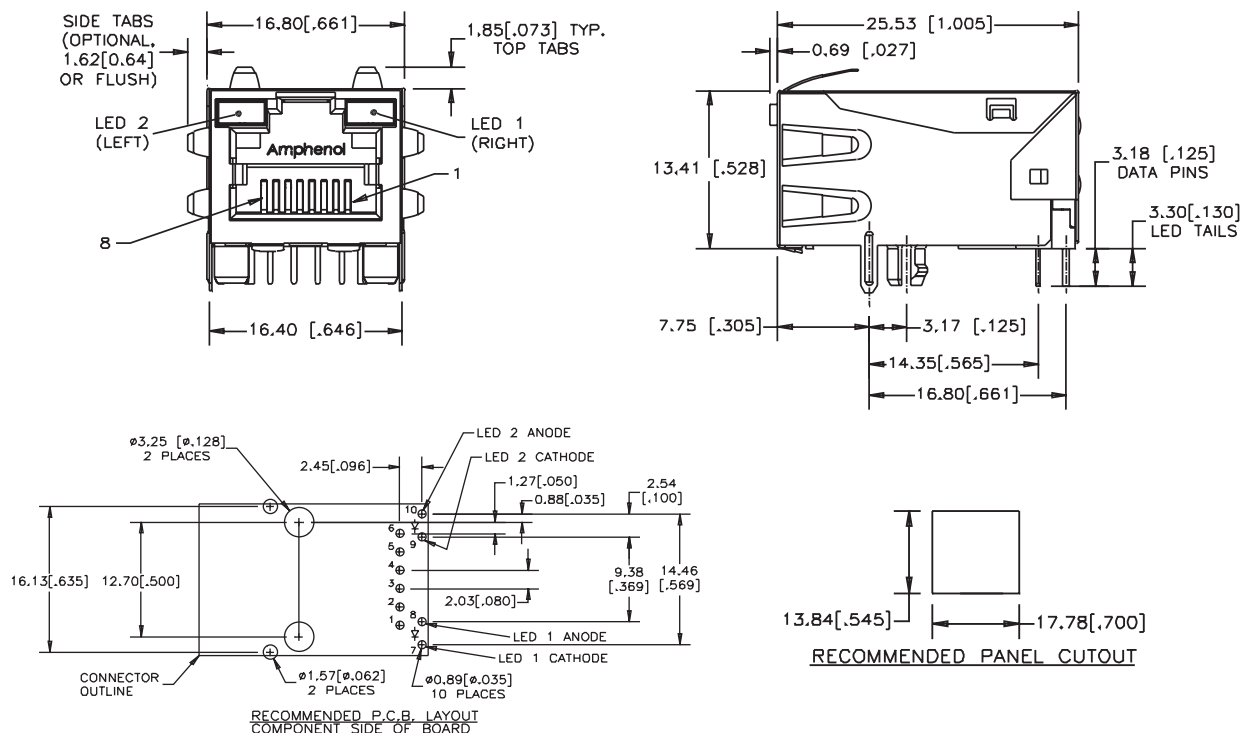
The RJmag is a family of modular jacks with integrated Ethernet Magnetics. The RJmag is available with integrated common mode chokes, isolation transformers, termination circuitry and two LED's per port.

- Reduces the required board space, component count, and manufacturing cost per port
- Eliminates the need for a separate Magnetics package between the RJ-45 and Transceiver
- Simplifies board layout
- Available in 1, 4, and 8 port configuration
- Complies with IEEE 802.3



MECHANICAL

RJMG-63xx-xx-01



PINOUT

PIN	SYMBOL
1	Tct
2	Tx+
3	Tx-
4	Rx+
5	Rx-
6	Rct
7	LED1-
8	LED1+
9	LED2-
10	LED2+

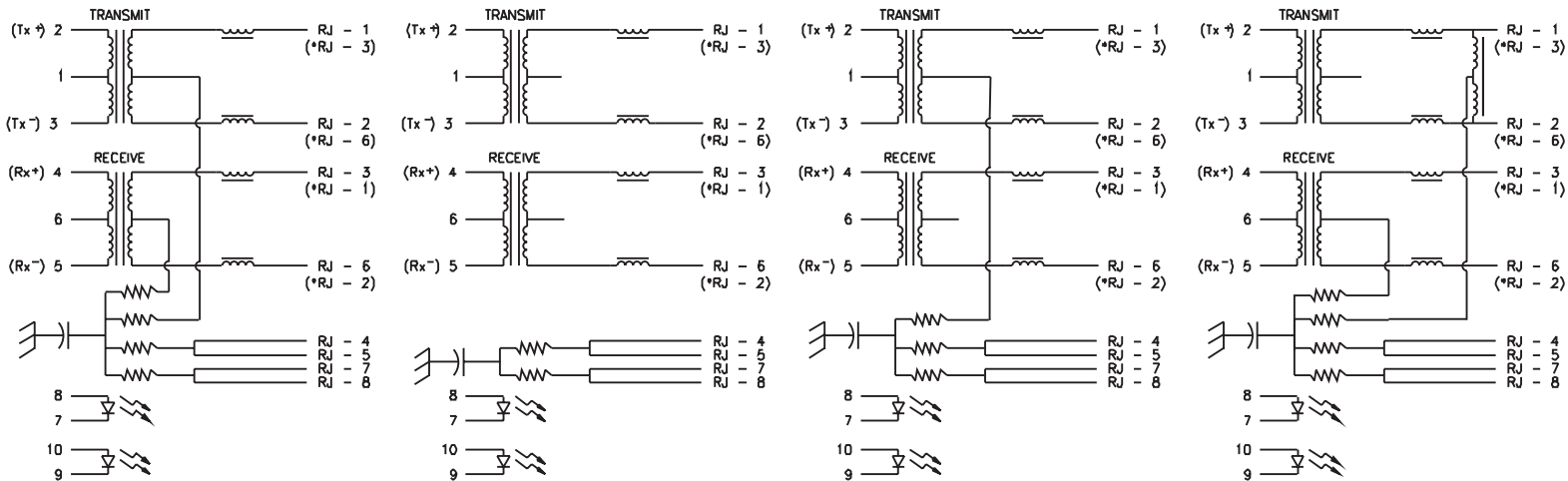
MATERIAL SPECIFICATIONS

- Plastic housing:** thermoplastic polyester
flammability rating UL 94V-0
- Contacts:** Phosphor bronze
- Plating:** 50 microinches [1.27 microns] min.
nickel overall
50 microinches [1.27 microns] min.
gold on mating surfaces
100 microinches [2.54 microns] min.
tin/lead on contact tails
- Shield:** Copper alloy tin-lead plated

ELECTRICAL PERFORMANCE

	Insertion Loss db MAX		Return Loss db MAX				Common to differential mode rejection dB min	Common to common mode rejection dB min	OCL H 100 KHz 8mA DC Bias	Crosstalk dB MAX		Hipot Vrms min
										Pair to pair	LED to Tx/Rx	
	1-10 MHz	1-100 MHz	1-10 MHz	1-30 MHz	30-60 MHz	60-100 MHz	0-100 MHz			0-100 MHz		
10/100 Base T Electrical Characteristic	-	1.0	-	-18	-16	-10	35	38	400	-35	-50	1500
10 Base T Electrical Characteristic	1.0	-	-16	-	-	-	35	38	-	-35	-50	1500

SCHEMATIC



SCHEMATIC (RJMG-6XXX-3X-01)

SCHEMATIC (RJMG-6XXX-4X-01, RJMG-6XXX-5X-01)

SCHEMATIC (RJMG-6XXX-6X-01)

SCHEMATIC (RJMG-6XXX-7X-01)

PART NUMBERING SYSTEM

RJMG - 6 3 1 2 - 7 1 - 0 1

LED 1 (Right Side):

- 0 - LED hole blocked
- 1 - Green
- 2 - Yellow
- 3 - Red
- 4 - Bi-color Green/Yellow
- 5 - Bi-color Red/Green
- 6 - Bi-color Green/Orange
- 6 - Bi-color Red/Yellow

LED 2 (Left Side):

See LED 1 options

Number of Ports

- 01 - 1 Port
- 04 - 4 Port
- 08 - 8 Port

Turns Ratio (Transmit)

- 1 - 1:1
- 2 - 1.25:1
- 3 - $\sqrt{2}$:1
- 4 - 2:1
- 5 - $1:\sqrt{2}$ (10 Base T only)
- 6 - 1:2 (10 Base T only)

Termination Option:

- 3 - 4 x 75 ohm resistors, 68 pF cap
 - 4 - 2 x 0 ohm resistors, 68 pF cap
 - 5 - 2 x 75 ohm resistors, 68 pF cap
 - 6 - 3 x 75 ohm resistors, 1000 pF cap
 - 7 - 4 x 75 ohm resistors, 1000 pF cap (with transmit shunt choke)
 - 8 - 4 x 75 ohm resistors, 1000 pF cap
- (Other terminations are available upon request.)

Amphenol®

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RJmag OVER STACKED USB

RJ-45 WITH INTEGRATED 10/100 BASE TX LAN MAGNETICS OVER A STACKED TYPE A USB

RJmag™

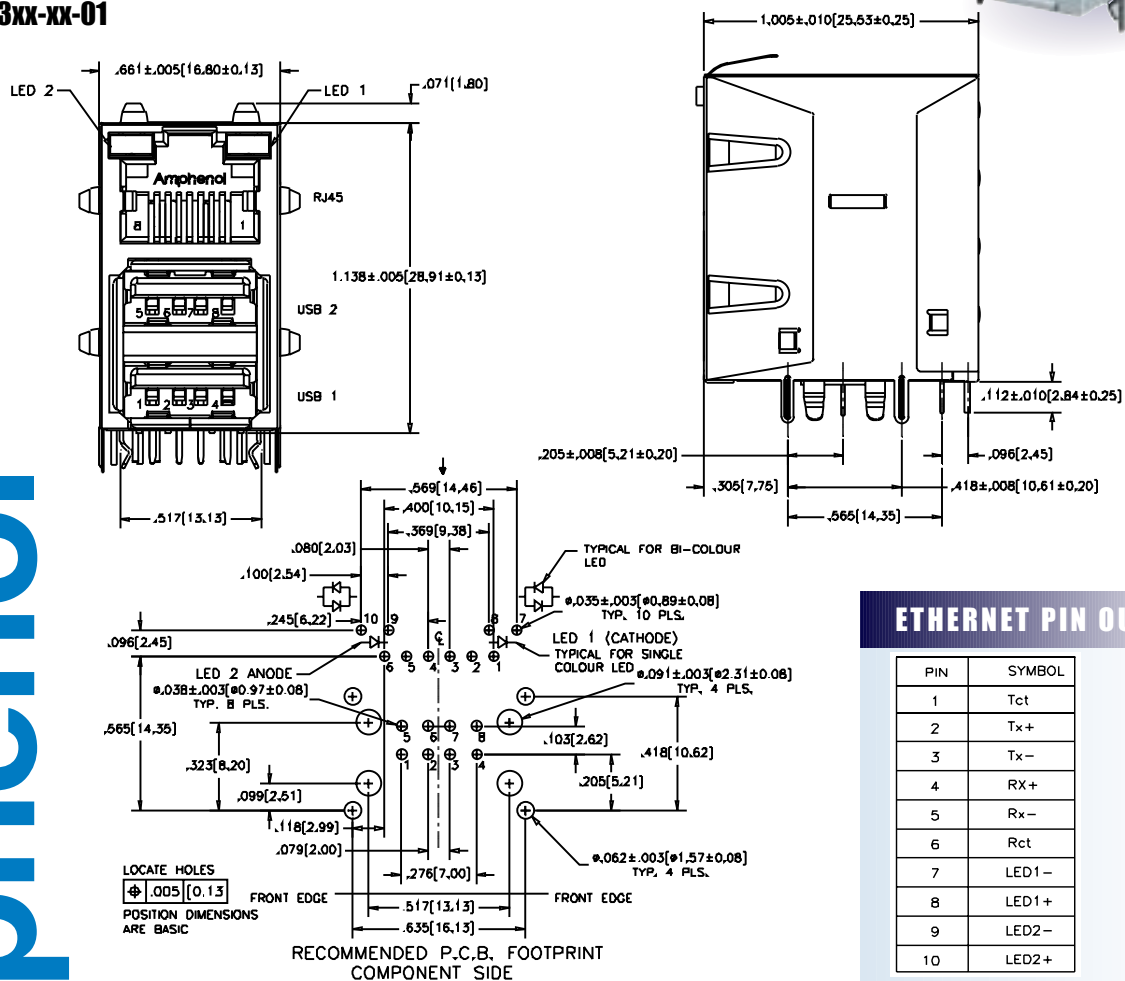
FEATURES

The RJmag is a family of modular jacks with integrated Ethernet Magnetics. The RJmag is available with integrated common mode chokes, isolation transformers, termination circuitry and two LED's per port. The RJmag over USB was designed to save board and panel space on PC motherboard applications.

- Reduces the required board space, component count, and manufacturing cost per port
- Eliminates the need for a separate Magnetics package between the RJ-45 and Transceiver
- Simplifies board layout
- Complies with IEEE 802.3

MECHANICAL

RJMG-73xx-xx-01



ETHERNET PIN OUT

PIN	SYMBOL
1	Tct
2	Tx+
3	Tx-
4	Rx+
5	Rx-
6	Rct
7	LED1-
8	LED1+
9	LED2-
10	LED2+

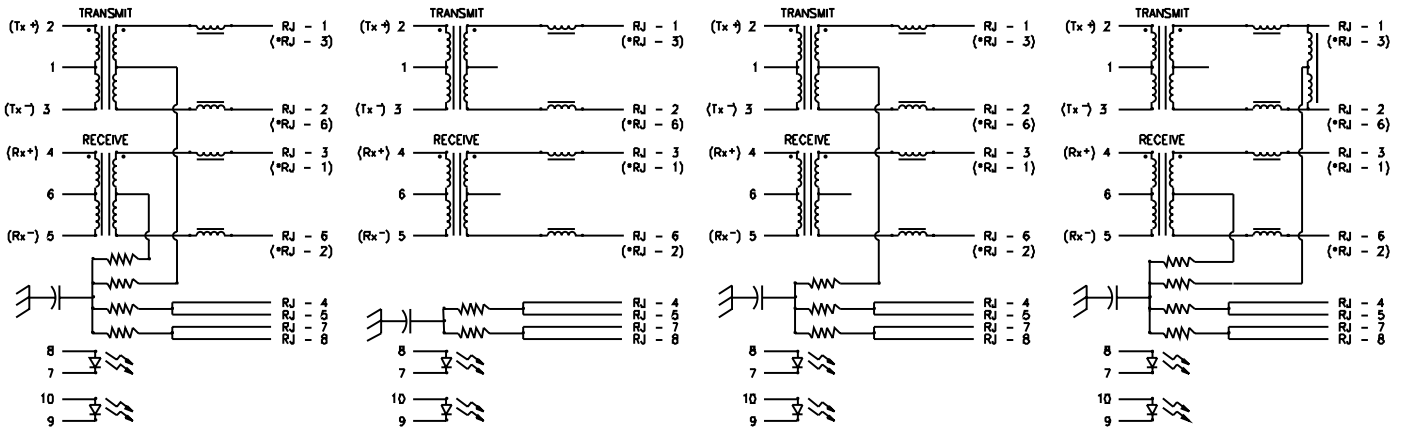
MATERIAL SPECIFICATIONS

Plastic housing: thermoplastic polyester flammability rating UL 94V-0
Contacts: Phosphor bronze
Plating: 50 microinches [1.27 microns] min. nickel overall
 50 microinches [1.27 microns] min. gold on RJ mating surfaces
 100 microinches [2.54 microns] min. tin/lead on contact tails
Shield: Copper alloy tin-lead plated

ELECTRICAL PERFORMANCE

	Insertion Loss db MAX		Return Loss db MAX				Common to differential mode rejection dB min	Common to common mode rejection dB min	OCL μ H 100 KHz 8mA DC Bias	Crosstalk dB MAX		Hipot Vrms min
										Pair to pair	LED to Tx/Rx	
	1-10 MHz	1-100 MHz	1-10 MHz	1-30 MHz	30-60 MHz	60-100 MHz	0-100 MHz			0-100 MHz		
10/100 Base T Electrical Characteristic	-	1.0	-	-18	-16	-10	35	38	400	-35	-50	1500
10 Base T Electrical Characteristic	1.0	-	-16	-	-	-	35	38	-	-35	-50	1500

SCHEMATIC



SCHEMATIC (RJMG-73xx-3x-01)
SCHEMATIC (RJMG-73xx-8x-01)

SCHEMATIC (RJMG-73xx-4x-01, RJMG-73xx-5x-01)

SCHEMATIC (RJMG-73xx-6x-01)

SCHEMATIC (RJMG-73xx-7x-01)

PART NUMBERING SYSTEM

RJMG - 7 3 X X - X X - 0 1

LED 1 (Right Side):

- 0 - LED hole blocked
- 1 - Green
- 2 - Yellow
- 3 - Red
- 4 - Green/Yellow
- 5 - Red/Green
- 6 - Green/Orange
- 7 - Red/Yellow

LED 2 (Left Side):

See LED 1 options

Number of Ports

- 01 - 1 Port

Turns Ratio (Transmit)

- 1 - 1:1
- 2 - 1.25:1
- 3 - $\sqrt{2}$:1
- 4 - 2:1
- 5 - 1: $\sqrt{2}$ (10 Base T only)
- 6 - 1:2 (10 Base T only)

Termination Option:

- 3 - 4 x 75 ohm resistors, 68 pF cap
- 4 - 2 x 0 ohm resistors, 68 pF cap
- 5 - 2 x 75 ohm resistors, 68 pF cap
- 6 - 3 x 75 ohm resistors, 68 pF cap
- 7 - 4 x 75 ohm resistors, 1000 pF cap (transmit shunt choke)
- 8 - 4 x 75 ohm resistors, 1000 pF cap

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RJ
*mag*TM
GIGABIT

FEATURES

A blue RJ45 network port with a yellow LED and a green LED, indicating network activity.

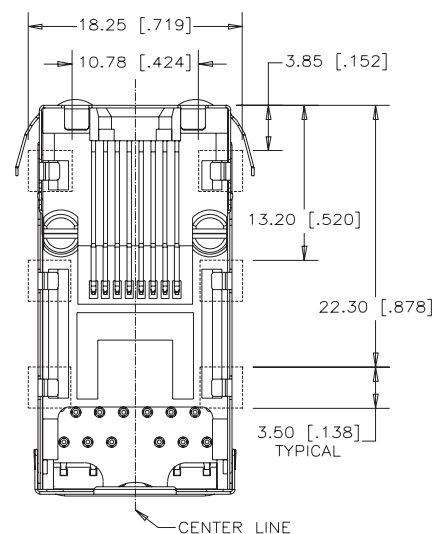
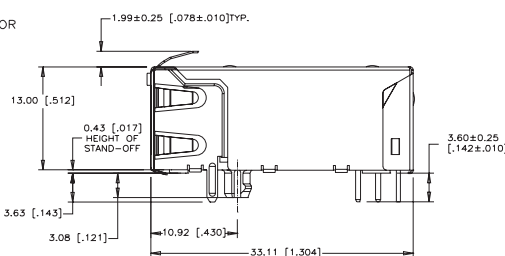
- Reduces the required board space, component count, and manufacturing cost per port
- Eliminates the need for a separate Magnetics package, terminations and LEDs between the RJ-45 and Transceiver
- Simplifies board layout
- Complies with IEEE 802.3
- Compatible with a variety of Gigabit Ethernet transceiver ICs and 10/100 Base TX transceiver ICs
- Storage temperature -40°C to +85°C

MECHANICAL

KEEP OUT AREA

Technical drawing of the Amphenol connector showing dimensions and labels:

- Overall width: 17.00 [.669]
- Width to center of left indicator: 16.51 [.650]
- Label: LEFT INDICATOR
- Brand name: Amphenol
- Width of contact pins: 16.30 [.642]
- Pin pitch: 20.28±0.50 [.798±.020]



KEEP CLEAR AREA

NOTE: DASHED AREAS ARE KEEP CLEAR AREAS

Technical drawing of a connector assembly showing dimensions in inches and millimeters.

Dimensions:

- Overall width: 32.26 [1.270]
- Top section width: 23.50 [.925]
- Section between top and bottom holes: 20.96 [.825]
- Distance from left edge to first hole center: 18.42 [.725]
- Distance between two holes: 3.17 [.125]
- Right side offset: 1.01 [.040]
- Bottom right offset: 2.54 [.100] (2 PLCS)
- Left side height: 17.00 [.669]
- Height to top hole centerline: 16.13 [.635]
- Height to middle hole centerline: 10.16 [.400]
- Height to bottom hole centerline: 12.70 [.500]
- Distance from left edge to bottom hole center: 2.03 [.080] (9 PLCS)
- Distance from left edge to bottom hole centerline (alternative): 10.92 [.430]
- Right side height: 12.18 [.480]

Hole Specifications:

- Top hole: $\phi 1.64 \pm 0.02$ [$\phi .065 \pm .001$] (2 PLCS)
- Bottom hole: $\phi 0.89 \pm 0.02$ [$\phi .035 \pm .001$] (16 PLCS)
- Connector hole: $\phi 3.25 \pm 0.02$ [$\phi .128 \pm .001$] (2 PLCS)

Other Features:

- CENTER LINE
- CONNECTOR OUT LINE

ELECTRICAL PERFORMANCE

Part Number	Insertion Loss db max	Return Loss db max		Common to Differential Mode Rejection dB min	Common to Common Mode Rejection dB min	Crosstalk TX/RX dB min	Crosstalk TX/RX to LED's dB max	Hipot Vrms min
	0.3 MHz-100 MHz	0.5 MHz to 40 MHz	40 MHz to 100 MHz	100 KHz to 100 MHz	0.3 MHz to 100 MHz			
10/100 /1000 Base T Electrical Characteristic	-1.0	-16	12 - 20 log (f/80 MHz)	-30	-30	29 - 16.8 log (f/100)	-45	1500

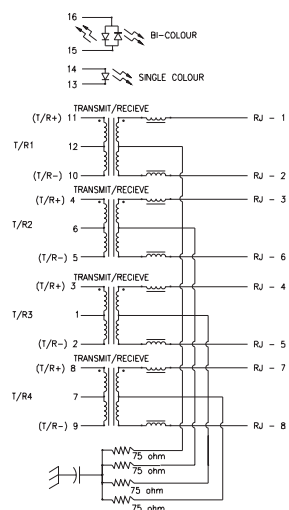
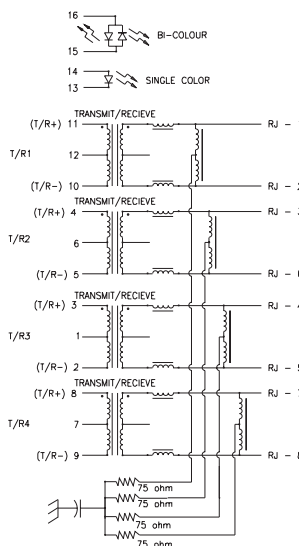
MATERIAL SPECIFICATIONS

Plastic housing: Thermoplastic Polyester
 Colour: Black
 Flammability Rating: UL94V-0

Contacts (RJMag): Phosphor bronze
 Plating: 50 Microinches [1.27 Microns] Gold over
 50 Microinches [1.27 Microns] Min. nickel on
 mating surfaces
 100 Microinches [2.54] tin/lead alloy on
 contact tails

Shield: Copper Alloy
 Plating: tin-lead alloy

SCHEMATICS



PART NUMBERING SYSTEM

RJMG - B 3 1 2 - 7 1 - 0 1

Shield:
3- Shielded

LED 1 (Right Side):

- 1 - Green
- 2 - Yellow
- 3 - Red
- 4 - Bi-color Green/Yellow
- 5 - Bi-color Red/Green
- 6 - Bi-color Green/Orange
- 7 - Bi-color Red/Yellow

LED 2 (Left Side):

See LED 1 options

Number of Ports:
01 - 1 Port

Turns Ratio (Transmit):
1 - 1:1

Termination Option:

- 3 - 4 x 75 ohm resistors, 68 pF cap (2Kv)
- 7 - 4 x 75 ohm resistors, 1000 pF cap (2Kv)
(transmission shunt choke)
- 8 - 4 x 75 ohm resistors, 1000 pF cap (2Kv)

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