



# TOUGH Cable™

Outdoor Carrier Class  
Shielded Ethernet Cable

Models: PRO, CARRIER, TC-GND, TC-CON

Extreme Weatherproofing

ESD Damage Protection

Extended Cable Support



# TOUGH Cable™

## OUTDOOR CARRIER CLASS SHIELDED

Protect your networks from harmful outdoor environments with Ubiquiti's industrial-grade shielded Ethernet cable, TOUGH Cable™.

### Increase Performance

Dramatically improve your Ethernet link states, speeds, and overall performance with Ubiquiti TOUGH Cables.

### Extreme Weatherproofing

TOUGH Cables have been built to perform even in the harshest weather and environments.

### ESD Damage Protection

Protect your networks from destructive electrostatic discharge (ESD) attacks.

### Extended Cable Support

TOUGH Cables have been developed to increase power handling performance for extended cable run lengths.

## Bulletproof Your networks

TOUGH Cable is currently available in two versions: PRO Shielding Protection and CARRIER Shielding Protection.

### TOUGH Cable PRO

A Category 5e, outdoor, carrier-class shielded cable features an integrated ESD drain wire.

### TOUGH Cable CARRIER

A Category 5e, outdoor, carrier-class shielded cable features an integrated ESD drain wire, anti-crosstalk divider, and secondary shielding. It is rated to provide optimal performance on Gigabit Ethernet networks.

### Additional Details

- 24 AWG copper conductor pairs
- 26 AWG integrated ESD drain wire to prevent ESD attacks and damage
- PE outdoor-rated, weatherproof jacket
- Multi-layered shielding
- Available in lengths of 1000 ft (304.8 m)

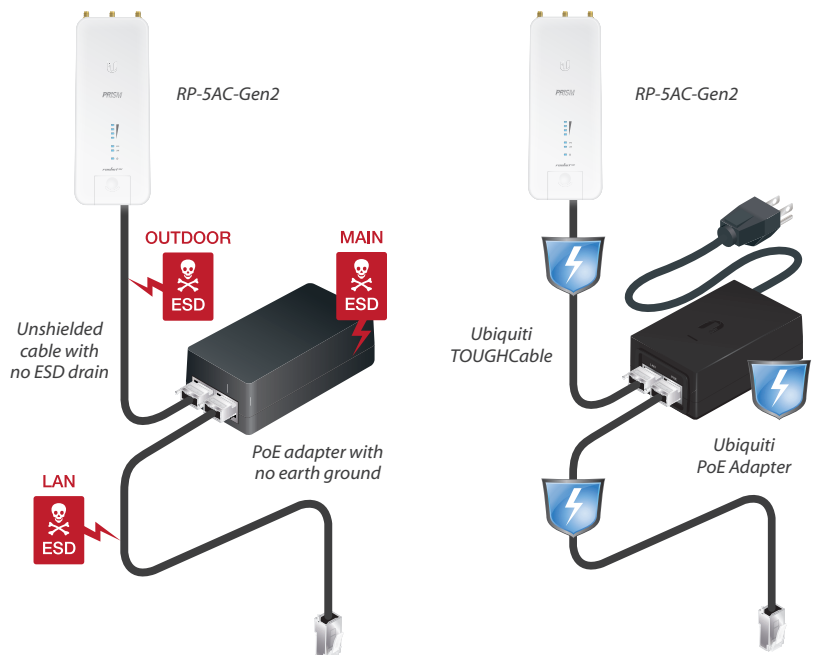


## TOUGH Cable Connectors

Specifically designed for use with Ubiquiti TOUGH Cables, TOUGH Cable Connectors protect against ESD attacks and Ethernet hardware damage, while allowing rapid field deployment without soldering. The standard TOUGH Cable Connectors are available in 100-packs, while the TC-GND versions include ground wires and are available in 20-packs.

ESD attacks are the leading cause for device failures. The diagram below illustrates the areas vulnerable to ESD attacks in a network.

By using a grounded Ubiquiti Power over Ethernet (PoE) Adapter along with Ubiquiti TOUGH Cable and TOUGH Cable Connectors, you can effectively protect against ESD attacks.

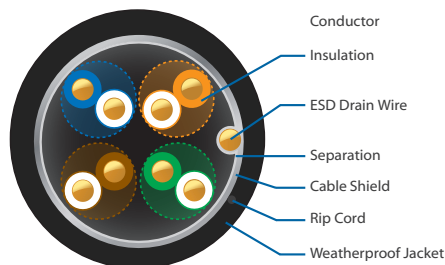


# TOUGH Cable PRO

## Specifications

TOUGH Cable PRO Specifications		
Level 1 Shielding Protection	Cable	CAT5e, Shielded
	Ethernet Support	Up to 1 Gbps
	Conductor Wire Gauge	24 AWG
	Conductor	Solid Bare Copper
	Conductor Diameter	0.500 ± 0.005 mm
	Insulation Type	Solid PE
	Insulation Thickness	Avg. 0.26 mm, Min. 0.25 mm
	Insulation Diameter	1.04 ± 0.03 mm
	Separation (Polyester Wrapping)	Thick: 0.025 mm, Extent: 20 mm
	Anti-Crosstalk Divider	None
	Cable Shield (Aluminum Foil)	Thick: 0.060 mm, Extent: 18 mm
	ESD Drain Wire	0.4 CCS
	Rip Cord	Yes
	Jacket Material	PE
	Jacket Thickness	Avg. 0.50 mm, Min. 0.46 mm
	Jacket Outer Diameter	6.0 ± 0.30 mm
	Jacket Color	Black
	Reference Standard	ISO/IEC 11801, TIA/EIA568B.2
	Installation Temperature	-20 to 60° C (-4 to 140° F)
	Storage Temperature	-30 to 75° C (-22 to 167° F)
Operation Temperature	-40 to 80° C (-40 to 176° F)	

PRO Performance					
Frequency (MHz)	RL (dB) min.	Attenuation (dB/100 m)	NEXT/PSNEXT (dB)	ACR (dB)	ELFEXT/PSELFEXT (dB/100 m)
1	17.0	2.03	62.30	60.30	60.75
4	18.8	4.04	53.26	49.20	48.71
8	19.7	5.76	48.75	43.00	42.69
10	20.0	6.46	47.30	40.80	40.75
16	20.0	8.24	44.30	36.10	36.67
20	20.0	9.26	42.78	33.50	34.73
25	19.3	10.41	41.33	30.90	32.79
31.25	18.6	11.72	39.87	28.20	30.86
62.5	16.5	16.99	35.36	18.40	24.83
100	15.1	21.97	32.29	10.30	20.75
150	13.80	23.40	18.60/30.30	8.30	17.60/18.50



# TOUGH Cable CARRIER

## Specifications

TOUGH Cable CARRIER Specifications		
Level 2 Shielding Protection	Cable	CAT5e, Shielded
	Ethernet Support	Up to 1 Gbps
	Conductor Wire Gauge	24 AWG
	Conductor	Solid Bare Copper
	Conductor Diameter	0.500 ± 0.005 mm
	Insulation Type	Solid PE
	Insulation Thickness	Avg. 0.295 mm Min. 0.29 mm
	Insulation Diameter	1.16 ± 0.02 mm
	Separation (Polyester Wrapping)	Thick: 0.025 mm, Extent: 20 mm
	Anti-Crosstalk Divider	LDPE: 4.2*0.3 mm
	Cable Shield (Aluminum Foil)	Thick: 0.060 mm, Extent: 20 mm
	ESD Drain Wire	0.4 TC
	Rip Cord	Yes
	Secondary Cable Shield (Braid)	16*8*0.16AA Density: 95%
	Jacket Material	PE
	Jacket Thickness	Avg. 0.52 mm Min. 0.46 mm
	Jacket Outer Diameter	6.8 ± 0.30 mm
	Jacket Color	Black
	Reference Standard	ISO/IEC 11801, TIA/EIA568B.2
	Installation Temperature	-20 to 60° C (-4 to 140° F)
Storage Temperature	-30 to 75° C (-22 to 167° F)	
Operation Temperature	-40 to 80° C (-40 to 176° F)	

CARRIER Performance					
Frequency (MHz)	RL (dB) min.	Attenuation (dB/100 m)	NEXT/PSNEXT (dB)	ACR (dB)	ELFEXT/PSELFEXT (dB/100 m)
1	18.0	1.93	65.30	60.30	61.00
4	19.9	3.90	56.27	49.20	48.96
8	20.7	5.50	51.75	43.00	42.94
10	21.0	6.30	50.30	40.80	41.00
16	21.0	8.00	47.24	36.10	36.92
20	21.0	9.00	45.78	33.50	34.98
25	20.3	10.20	44.33	30.90	33.04
31.25	19.5	11.50	42.88	28.20	31.10
62.5	19.0	16.70	38.36	18.40	25.08
100	18.3	21.70	35.30	10.30	21.00
200	16.5	32.20	30.78/27.78	7.60	17.78/14.98

