



PIM-Guard Solutions Product Selection Guide

From the top of the tower to the bottom line, PIM-Guard protects

November 2022

COMMSCOPE®

Now PIM Has Nowhere To Hide

PIM-Guard solutions extend CommScope's industry-leading PIM protection to non-RF path installation accessories. PIM-Guard components—cable support brackets, hangers, RRU mounts, roof mounts, cable bands, cable ties, tower adapters—are optimized to reduce PIM while maximizing structural integrity. From materials selection and corrosion resistance to the exterior contours and profile, PIM-Guard reflects CommScope's experience and understanding of PIM's sources and solutions. When combined with CommScope's PIM-fighting RF path components, PIM-Guard accessories provide an end-to-end strategy, enabling network contractors and installers to improve the RF efficiency in their customers' evolving and complex networks.

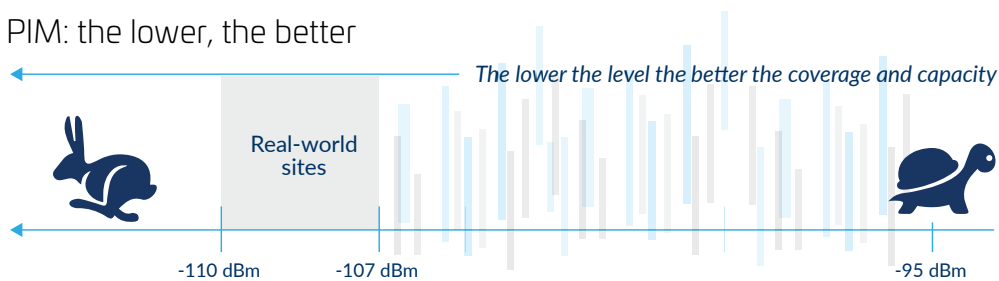
External Passive Intermodulation (PIM) Explained

PIM occurs when two or more wireless signals mix together and create additional frequencies that cause interference and deteriorate network performance.

Common Causes:

- Loose metal-to-metal contacts
- Poor quality components that rust or corrode
- Metal shavings or other site contamination
- Nearby frequency sources (power lines/equipment)
- Obstacles in the RF path including supports for stealth enclosures

PIM: the lower, the better



Hi-Risk PIM Zone

The Hi-Risk PIM zone exists in close proximity to the antenna; in front, above, below, and even behind it. The zone is defined as:

- Ten feet directly above or below the antenna
- One hundred feet in front of the antenna
- Five feet behind the antenna

Standard installation practices and products must be modified within the Hi-Risk zone to avoid PIM. Many traditional installation products including metal cable hangers, hose clamps, poor quality components with rust or corrosion and loose hardware or brackets have been identified as being PIM generators and must be eliminated.



PIM-Guard Solutions

To guard against the effects of PIM, CommScope offers the PIM-Guard family of products specifically designed and tested to protect your network.

- Cable management and cable hangers
- Tower adapters
- Cable banding
- High capacity cable hanger brackets



SnapWrap Universal Cable Management

Features:

- PIM-free cable attachment
- Manages multiple cables, multiple sizes, multiple types
- No hangers or grommets needed
- Optimized to reduce PIM while maximizing structural integrity
- Simpler BOMs, Easier standardization
- Lower material & labor costs



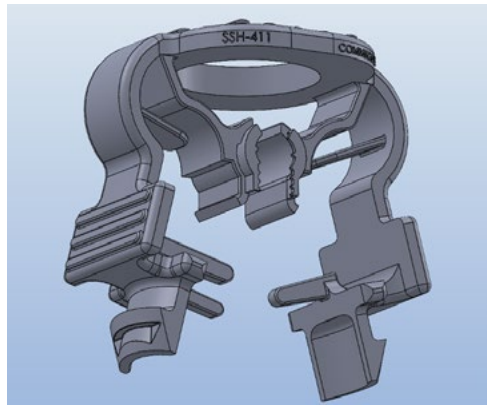
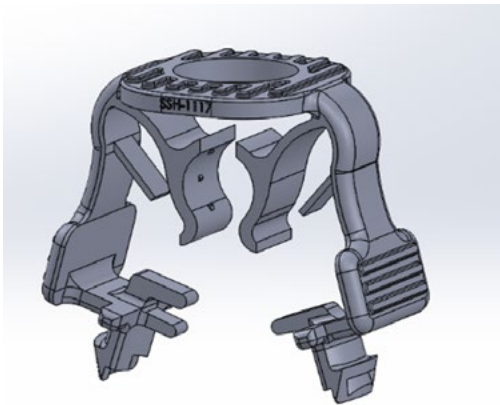
Ordering Information

Description	Part Number
SnapWrap Universal Cable Management, 10 pcs	SWH-200-10
SnapWrap Universal Cable Management, 100 pcs	SWH-200-100

SnapTak Hanger Generation 2

Features:

- Two new hangers replace four Generation 1 hangers
- Increased cable attachment range
 - 4.0 to 11.0 mm
 - 11.1mm to 17.0mm
- Increased overall size by 133% for easier installation and removal
- Cable secured by leaf spring saddles instead of gripper pins
- Stacked hangers can rotate 360 degrees
- Added finger gripper tabs at bottom to aid installers with gloved hands



Ordering Information

Description	Cable Size Range (mm)	Example Cable Type	Part Number
SnapTak PIM free, wide range cable hangers	4.0 to 11.0	2-fiber jumpers, AISG cables	SSH-411
	11.1 to 17.0mm	½" coax, power cable jumpers	SSH-1117

SnapStak Plus Adjustable Hangers


Put the proven strength and reliability of solid stainless steel hangers to work on your heavy hybrid and power trunk cables with SnapStak Plus. Only SnapStak Plus features steel tower gripping tabs that have been proven by over 20 years in the field. Use the PIM isolater under the SnapStak hanger only in the PIM zone which is usually the top 10 ft of the cable run.

Features:

- Strength and reliability of stainless steel
- support heavy hybrid and
- over gripping tabs with over 20 years of top performance in the field
- PIM isolater under the SnapStak hanger in the PIM zone
- Metal shavings or other site contamination



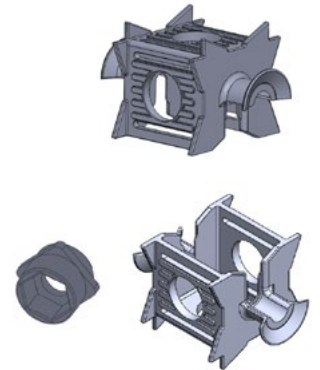
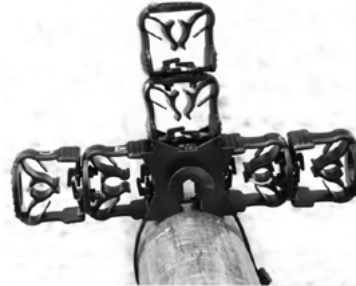
Ordering Information

Description	Cable Size Range (mm)	Typical Cable Use	Part Number
SnapStak Plus Adjustable Hangers Self adjusting hangers, no grommets required, stackable	14.0 to 25.0 mm	Power trunk cables, hybrid jumpers	SSH-M
	25.1 to 36.0 mm	Large power cables, medium hybrid cables	SSH-L
	36.1 to 51.0 mm	Large hybrid cables, 1-5/8 coax	SSH-XL
PIM Isolator Snaps in under any snap-in hanger to eliminate external PIM from metal-to-metal contact		Any Snap-in Hanger	SA-ISO

Universal Hanger Adapter

Features:

- Attaches onto round and angle tower members with 1/2" banding
- Mounts grommets
- Includes insert to mount 3/8" threaded rod kits
- Mounts polymer and metal
- Optimized to reduce PIM while maximizing structural integrity
- Provides three hanger mounting positions



Ordering Information

Description	Part Number
PIM-Guard Tower Adapters 6-Port Adapter Brackets, Mount SnapTak hangers to round members 2-3/8" to 3-1/2" OD	PG-RM06
PIM Free Polymer Angle Adapter Use to attach SnapTak and snap-in type cable hangers to angle member towers	UA-3C
Polymer Round Member Adapter Use with cable ties or cable banding system to mount SnapTak hangers to round members	SA-1C
Polymer 3-Way Adapter Strap to round members or bolt onto angle adapters to get 3 mounting positions for SnapTak hangers	SA-3C
Multifunction Polymer Adapter Snaps into tower, provides 1-inch standoff, Threads onto 3/8" and 1/2" bolts to attach SnapTak hangers, Snaps between SnapTak hangers to provide full hanger rotation	SA-1TR
Polymer Stand off Adapter Strap to round or angle member towers to attach a 3/8" threaded rod or snap-in hanger	RA-38C



6-Port Adapter Bracket
(PG-RM06)



PIM Free Angle Adapter
(UA-3C)



Polymer Round Member Adapter
(SA-1C)



Polymer 3-Way Adapter
(3A-3C)



Polymer Stand off Adapter
(RA-38C)

SA-1TR Multifunction Adapter Applications



Multifunction Adapter
(SA-1TR)



SA-1TR on Threaded Rod
with SnapTak



SA-1TR Between SnapTaks
for Full Rotation

PIM-Guard Cable Banding and Cable Ties

Cable banding products from Commscope are well suited for modern cable installations where PIM must be controlled. The heavy duty 1/2" Acetal banding withstands harsh outdoor environments and is tested to meet Telcordia specifications for tensile strength to ensure long term reliability.

Ordering Information

Description	Part Number
Cable Banding System	
Bulk Banding; 1/2" x 50' reel	CB-12-50
Locking Heads; for cable banding (CB-12-50), qty. 25	CB-LH-25
Cable Banding Installation Tool; for cable banding (CB-12-50)	CB-IT
Weatherproof cable band with locking head, 16"	CB-12-16LH
Weatherproof cable band with locking head, 27"	CB-12-27LH
Cable Ties	CT-460-100
Heat stabilized, weather resistant nylon, 460 mm length, 100 pcs	



Cable Banding
(CB-12-50)



Locking Head
(CB-LH-25)



Cable Ties
(CT-460-100)



Cable Band
(CB-12-16LH)



Cable Band
(CB-12-27LH)



Cable Banding Installation Tool
(CB-IT)

PIM-Guard Cable Support Brackets

PIMguard cable support brackets will support up to 69 cables with SnapTak hangers under high port count devices. Their low PIM design is ideal for PIM mitigation work or new installations alike.

Features:

- Minimum number of parts and junctions
- Hot dipped galvanized steel for corrosion resistance
- High contact pressure junctions
- Rounded corners

Ordering Information

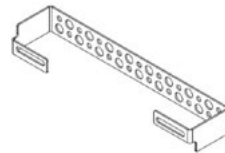
Description	Part Number
PIM-Guard Cable Support Brackets Mount to 1.9" - 4.5" OD pipes	
8-Port antenna cable support bracket	PG-CS08
23-Port antenna cable support bracket	PG-CS23
17-Port Cable Support Expansion Bracket Expands PG-CS8 (8-port) to 23 ports	PG-CSEB17
RRU Cable Support Bracket 24-Port RRU and Antenna cable support bracket Includes new mounting feature to enable changing orientation of brackets for mounting under antennas	ACS-D24



Cable Support Bracket
8-Port (PG-CS08)



Cable Support Bracket
23-Port (PG-CS23)



Cable Support Expansion
(PG-CSEB17)



RRU Cable Support Bracket (ACS-D24)

PIM-Guard RRU Mounting

RR-FA2 Fast Access RRU Mount

Features:

- Fast-Access Design
- Removable brackets allow mounting to RRU then insertion into clamps for ease of installation
- Round legs up to 5-5/8" OD
- 60 Degree Angle legs up to 6"
- 90 Degree Angle legs up to 4 1/2"



RR-FA2

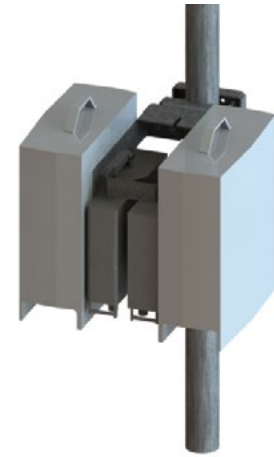
Ordering Information

Description	Part Number
Fast Access RRU Mount	RR-FA2

RR-B2B-AR Access Ready RRU Mount

Features:

- Fits 2 Radios + A2 Modules within the mount envelope minimizing footprint
- Suitable for Assembly right behind antenna – Minimizes radio wind-load
- Round legs 2 3/8" to 4 1/2" OD



RR-B2B-AR

Ordering Information

Description	Part Number
Access Ready RRU Mount	RR-B2B-AR

PIM-Guard Roof-Top Cable Support

Ordering Information

Description	Part Number
PIM-Guard Roof-Top Cable Support PVC roof sleeper	
For 4 coaxial cable runs	MT-F1598
For 8 coaxial cable runs	MT-F1599
For 12 coaxial cable runs	MT-F1600



Roof-Top Cable Support

CommScope Contact Information

Visit our website for additional information. [PIM-Guard Solutions](#)



CommScope pushes the boundaries of communications technology with game-changing ideas and ground-breaking discoveries that spark profound human achievement. We collaborate with our customers and partners to design, create and build the world's most advanced networks. It is our passion and commitment to identify the next opportunity and realize a better tomorrow.

Discover more at commscope.com

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