

SilverLine[®]-LP (Low-PIM)

ISO 9001 Certified

Coax Test Cables for Passive Intermodulation Testing

- Cellular Site Certification
- Troubleshooting
- Performance Analysis
- Antenna or Radio Equipment Production Test
- *Elliptical Body Improves Grip Force*
- *Now 20% Lighter Weight*
- *Improved Strain Relief*



Features and Benefits:

- Much easier to handle than raw corrugated cable
- Better than -117dbm (-160dbc) Performance
- Includes a set of low PIM adapters
- Low attenuation
- Rugged, durable, steel armored design
- Water resistant
- RoHS compliant

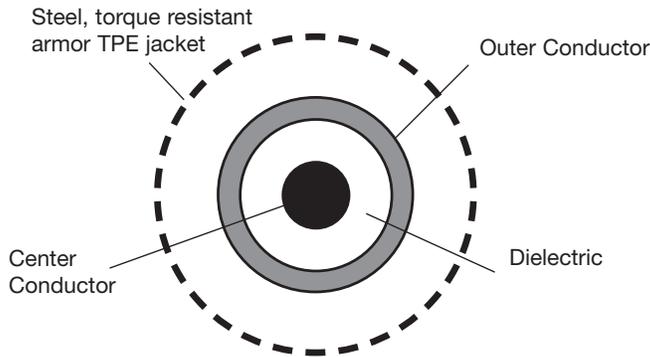
SilverLine[®]-LP is the first test cable specifically designed for field and production PIM Testing. Unlike standard corrugated test leads that experience rapid failures due to kinking and connector/cable interface breakage, SilverLine[®]-LP is steel armored. It has a large back shell and strain relief to protect the cable to connector interface against almost all possibilities for damage. This robust design improves product life and reduces the occurrence of faulty test results.

SilverLine[®]-LP is ideal for use with Portable PIM analyzers in field test applications. It is also ideal for use with bench top PIM Analyzers in a lab or factory production environment. In the field this reliable, high quality test cable cuts costs by eliminating the need to rebuild or re-terminate a test lead on site or worse, cancel a test entirely. In the factory it saves labor by providing more accurate and consistent results over a far longer product life. This reduces product rejects caused by faulty test leads.

In the uncertain world of PIM, SilverLine[®]-LP is an excellent value, reducing reoccurring costs.

Times **Silverline[®]** Product Guarantee
SilverLine[®]-LP is warranted for one year against defects in workmanship and materials. Excludes damage from over-bending, interface wear, contamination from dirt or other foreign materials, misuse, abuse or unauthorized disassembly.

SilverLine®-LP



Cable Construction

Inner Conductor: Solid copper clad aluminum

Dielectric: Low density tape wrapped PTFE or foam polyethylene

Shield: Helical corrugated copper

Armor: Full, 100% interlocked spiral steel sheath overlaid with steel, anti-torque braid. Waterproof, UV & abrasion resistant, Black TPE outer jacket

Connectors:

- Body: Tri-Metal plated brass
- Back Shell: Aluminum
- New Dynaflex® molded strain relief
- Water resistant

Connector Attachment: Soldered center contact & shield. Attachment includes a ribbed, wedge clamp-to-armor for the strongest, most robust retention system in the industry.

*Achieving a high mating life cycle:

- Inspect and clean interfaces frequently
- Flush with alcohol or swab to remove dirt, debris, and metal particles
- Protect interface from damage
- Replace protective caps when not in use
- Install sacrificial male/female low PIM adapter
Replace when needed

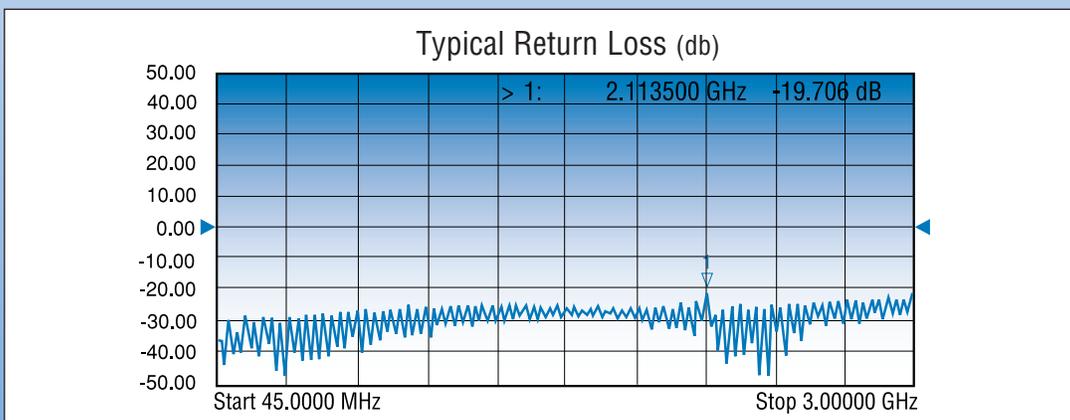
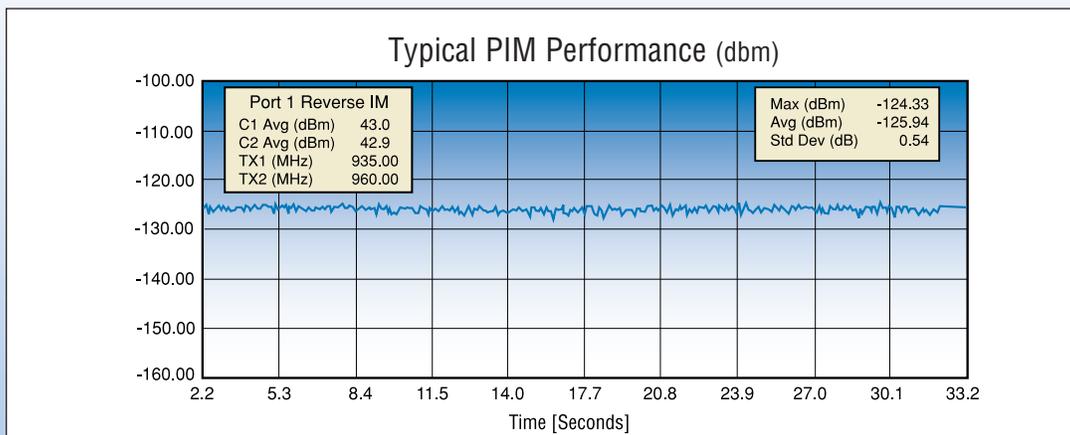
Physical & Mechanical Specifications		
Dimensions	in	mm
Armor	0.59	14.99
Weight: lbs/ft (kg/m)	Cable & Armor Combined: 0.258 (0.383)	
Armor Crush Resistance	>1200 lbs per linear inch	
Bend Radius (min)	7.5"	190.5mm
Mating Life Cycle	1000*	
Storage Temperature	-40°/+185°F	-40°/+85°C
Electrical Specifications		
PIM	-117 dbm (-160 dbc) min. at rest**	
VSWR (ret. loss) DC - 3 GHz	1.25:1 (19db) typ. 1.35:1 (16.54db) max	
Impedance	50 Ohms	
Velocity of Propagation	Foam PE: 84%	PTFE tape: 76%
Shielding Effectiveness	> -100db	
Attenuation Max	@ 77°F (+25°C)	
	MHz	db/100 ft db/100m
	800	3.6 11.8
	900	3.9 13.0
	1800	5.6 18.7
	1900	5.8 19.0
	2100	6.2 20.1
	3000	7.5 24.7
Power handling @77°F (+25°C)(Watts, Avg.)(Sea Level)(Cable Only)		
	MHz	Watts (average)
	800	946
	900	729
	1800	460
	1900	445
	2100	430
	3000	340

Specifications subject to change without notice.

**Best Practices for accurate PIM measurements:

- Assure all interfaces are clean
- Push on and hand tighten test lead
- Tighten with a calibrated torque wrench
- DO NOT use wrenches with "teeth"
- -117 to -125 dbm variations are normal
- If spikes occur loosen and retighten one end at a time
- Blow out interfaces with dry compressed air
- Flex as little as possible. DO NOT over-bend

PIM Performance and Return Loss vs. Frequency



Ordering Information

SilverLine, Steel armor, Low PIM

SLSLP03-76M76M-XX.XXMK

3 GHz

K = Includes set of three low PIM adapters.
Omit for cable assembly only

Low PIM adapter kit PN: 660-0007EA

Every 0.25 meter length from 1.5 meters
Example: -02.75M = 2.75m

Kit contents:



Female bullet, M-F r/a
and M-F connector saver



Heavy duty nylon case with sturdy velcro closure,
individual compartments, belt clip and metal lanyard

Low PIM Accessories

Pulsed Power Portable PIM Load (pn 67033)



pn 67033

Frequency:	690MHz - 2800MHz
Size: in (mm)	6.4L x 1.6w (163 x 40)
Approx Weight:	1.1 lbs. (0.5kg)
Impedance:	50 Ohms
Return Loss:	16 db min
Intermodulation:	-160 dbc (2 x 43 dbm carriers)
Power Handling:	10 watts average
Coupling Torque:	21 ft-lbs (29 N*m) min 36 ft-lbs (49 N*m) max
Operating Temp:	14-130°F (-10-55°C)
Connector Type:	7-16 male, 7-16 female

Portable PIM Load (pn 67019)

Frequency:	690MHz - 2800MHz
Size: in (mm)	10.4L x 3w (263 x 76)
Approx Weight:	3.4 lbs. (1.54kg)
Impedance:	50 Ohms
Return Loss:	16 db min
Intermodulation:	-165 dbc (2 x 43 dbm carriers)
Power Handling:	40 watts average
Coupling Torque:	21 ft-lbs (29 N*m) min 36 ft-lbs (49 N*m) max
Operating Temp:	32-95°F (0-32°C)
Connector Type:	7-16 male, 7-16 female



pn 67019

SilverLine-LPA (Low PIM Adapters)

3191-331 = 7-16 female bullet	3191-397 = Type N female/Type N female
3191-332 = 7-16 male/female right angle	3191-411 = 4.1/9.5 female/Type N female
3191-376 = 7-16 male bullet	3191-412 = 4.1/9.5 female/Type N male
3191-377 = 7-16 male/female	3191-413 = 4.1/9.5 male/Type N female
3191-378 = 7-16 male/Type N male	3191-414 = 4.1/9.5 male/Type N male
3191-379 = 7-16 male/Type N female	3191-415 = 4.3/10 female/7-16 female
3191-380 = 7-16 female/Type N female	3191-416 = 4.3/10 male/7-16 female
3191-381 = 7-16 female/Type N male	3191-417 = 4.3/10 female/Type N male
3191-382 = 7-16 male/female 45°	3191-418 = 4.3/10 male/Type N male
3191-387 = 7-16 female/female 45°	3191-419 = 4.1/9.5 female/7-16 male
3191-394 = 4.1/9.5 male/7-16 female	3191-420 = 4.1/9.5 male/7-16 male
3191-395 = 4.1/9.5 female/7-16 female	3191-421 = 4.3/10 female/7-16 male
3191-396 = Type N male/Type N male	3191-422 = 4.3/10 male/Type N female

For complete information see the SilverLine® LPA data sheet



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