

# SilverLine™ - QMA

Motorola Approved!

ISO 9001 Certified

**Now Available with  
SilverLine™ Super-Flex  
Cable Option!**

## Professional Grade Test Cables and Adaptors

*Fast, Reliable, Repeatable  
Rf Test Measurements For  
Hand Held & Mobile Radios.*

- Motorola
- Vertex Standard
- Kenwood
- ICOM
- Midland
- RELM
- EF Johnson
- M/A COM
- Tait
- RELM BK
- HYT
- Others



Test equipment courtesy of Aeroflex

### Features & Benefits:

- **NEW Super-Flex Cable Option**
- Snap-on, Snap-off Connectors
- 5000 Mating Life Cycle\*
- 50,000 - 100,000 Flex Life Cable
- Triple Outer Braid
- Robust Connector Attachment System
- High Frequency Operation
- NEW right angle QMA option
- **ROHS Compliant**

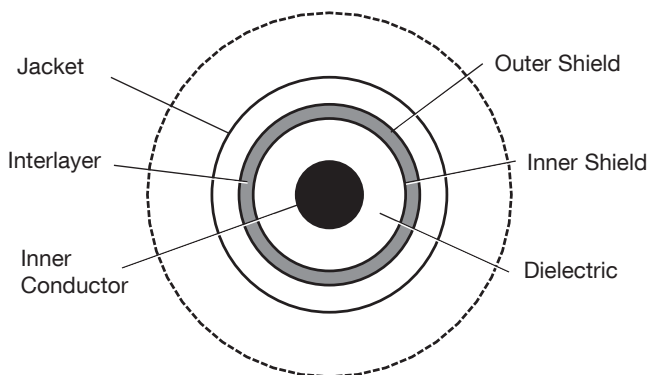
*\*Proper operation required*

SilverLine™-QMA test cables and adaptors together form a test system that eliminates the uncertainties in RF power output and sensitivity measurements associated with BNC connectors. Silverline™ high performance coax cable is extremely loss stable with flexure and exhibits low VSWR. The result is very accurate and dependable measurements time after time.

SilverLine™-QMA test cables and snap-on adaptors are available for virtually all manufacturer's 2-way and mobile radios. The "snap-on, pull-off" design is easy and fast to operate, but is extremely secure in the mated condition. Each half can rotate 360° relative to its mate, yet a mated pair exhibits little or no change in RF performance during rotation. This facilitates the handling of radios, cables and test equipment.

SilverLine™ has an unparalleled reputation with the largest radio and RF test equipment manufacturers in the world as a very long life, rugged, yet value-priced coax test cable.

# SilverLine™ - QMA Specifications:



## Cable Construction

### Inner Conductor:

SilverLine: Solid Silver Plated Copper Clad Steel  
 Super-Flex: Stranded Copper Center Conductor

**Dielectric:** Solid PTFE

**Shield:** Silver-Plated Copper Flat Ribbon Braid  
 Aluminum-Polyimide Tape Interlayer  
 36 GA Silver-Plated Copper Braid (90%k)

### Jacket:

SilverLine: FEP

SilverLine Super-Flex: Polyurethane

## Connectors

- Passivated stainless steel finish (QMA coupling nut nickel plated brass)
- QMA SureGrip™ coupling nut design
- Captive center contact
- Knurl/hex coupling nut Type N
- PTFE dielectric
- **NEW!** QMA right angle with quick release



## Connector Attachment/Strain Relief

- Rugged, solder-clamp to braid. 175 lb pull force
- Triple layer strain relief with redundant long tail system

### Time's SilverLine™ Product Guarantee

Times will repair or replace your SilverLine test cable at its option if the connector attachment fails within four months of shipment. This guarantee excludes cable or connector interface damage from misuse or abuse.

Physical and Mechanical Specifications	
Bend Radius: Minimum	1in                      25mm
Connector Retention	>175lbs
Mating Life Cycle	Type N: > 5000*    QMA: > 5000
Length Tolerances	< 2ft. or 0.75m, -0, +50" (12.7mm) > 2ft. or 0.75m, -0, +2% of length

Electrical Specifications			
VSWR Max		4 GHz	6GHz
	BNC	1.20:1	
	Type N QMA		1.25:1
Impedance	50 Ohms		
Velocity of Propagation	70%		
Shielding Effectiveness	>100dB		
Capacitance	29.4 pf/ft = 96.4 pf/meter		
Phase Stability	DC +to 6 GHz: +/- 1.1°		

Attenuation Max @ +77° F (+25°C)				
Frequency (GHz)	SilverLine		SilverLine Super Flex	
dB ft/mm	dB/ft	dB/mm	dB/ft	dB/mm
1	12.2	40.0	13.2	43.2
2	18.0	59.0	19.4	63.7
3	22.7	74.5	24.5	80.5
4	26.8	87.9	28.9	94.9
5	30.6	100.4	33.0	108.4
6	34.2	112.2	36.9	121.2

Power Handling (Watts Max) ** @ +77°F (+25°C), (sea level)		
Frequency (GHz)	SilverLine	SilverLine Super Flex
0.4	891	801.9
1	539	485.1
2	363	326.7
6	180	162

\* Type N: Assumes use of calibrated torque wrench. QMA: Assumes proper operation at all times. Both assume proper care and cleaning of interface and mated connector is within mil spec limits.

\*\* Connector configuration may limit cable assembly maximum power handling capability.

## Operating Instructions

To operate: Grasp cable along strain relief boots with last three fingers. Grasp O-ring between thumb and index finger and pull back on coupling nut before disengaging from adaptor.



## Ordering Information

U = Unarmored  
A = Armored

### SilverLine™ - QMA

Feet: 0.50 ft increments only  
Example: -04.50F = 4.5 ft  
Meters: 0.25m increments only  
Example: -00.75M = 0.75m

SLXXXXX-XXXXXX-XX.XXX

F=Feet M=Meter

Cable Option

Add "SF" for Super Flex cable option  
Omit "SF" for original SilverLine cable.

Maximum Frequency

04 = 4 GHz (BNC, one or both ends)  
06 = 6GHz (Any combination of N and QMA)

Connector Codes (2 or 3 Characters)

BM = BNC male	First Connector
NM = Type N male	
QMM = QMA male	↓
QMR = QMA right angle	Second Connector

## Adaptor Kits

### Starter Shop Kit PN 66576EA

(One each)

- 3191-133EA SMA Plug
- 3191-136EA XTS
- 3191-141EA Mini UHF plug
- 3191-143EA Type N plug
- 3191-144EA CP200 & 400
- 3191-145EA CT250
- 3191-146EA P1225
- 3191-184EA PL259
- 3191-186EA ICOM J-plug
- 3191-191EA M/A-COM
- 3190-584 - Leather pouch

### Full Shop Kit PN 66573EA

(Two each)

- 3191-133EA - SMA Plug
- 3191-136EA - XTS
- 3191-141EA - Mini UHF plug
- 3191-143EA - Type N plug
- 3191-144EA - CP200 & 400
- 3191-145EA - CT250
- 3191-146EA - P1225
- 3191-184EA - PL259
- 3191-186EA - ICOM J plug
- 3191-191EA - M/A-COM
- 3190-2169EA - Carry case

### Starter Field Kit PN 66755EA

(One each)

- 3191-133EA - SMA plug
- 3191-134EA - SMA jack
- 3191-141EA - Mini UHF plug
- 3191-143EA - Type N plug
- 3191-148EA - TNC plug
- 3191-182EA - Mini UHF plug
- 3191-183EA - PL259 jack
- 3191-184EA - PL259 plug
- 3191-187EA - BNC plug
- 3191-188EA - BNC jack
- 3191-189EA - Type N jack
- 3191-193EA - TNC jack
- 3191-194EA - Release tool
- 3191-197EA - QMA plug
- 3191-199EA - N plug-QMA
- 3191-198EA - QMA jack
- 3191-286EA - TNC jack
- 3190-584 - Leather pouch

### Full Field Kit PN 66574EA

(Two each)

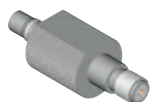
- 3191-133EA - SMA plug
- 3191-134EA - SMA jack
- 3191-141EA - Mini UHF plug
- 3191-143EA - Type N plug
- 3191-148EA - TNC plug
- 3191-182EA - Mini UHF plug
- 3191-183EA - PL259 jack
- 3191-184EA - PL259 plug
- 3191-187EA - BNC jack
- 3191-188EA - BNC jack
- 3191-189EA - Type N jack
- 3191-192EA - SMB plug
- 3191-196EA - SMB jack
- 3191-190EA - N plug QMA
- 3191-195EA - SMA plug
- 3190-584 - Leather pouch

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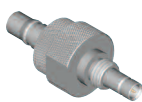
See page 4 for separate ordering of adaptors and accessories

## Separate Order Adaptors, Cases & Tools

All Times QMA adaptors are fabricated from the highest quality stainless steel for superior performance and extra long life.



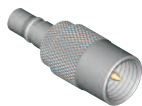
SMA Jack  
(Motorola Modified)  
3191-136EA



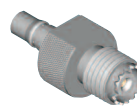
(Motorola)  
3191-144EA



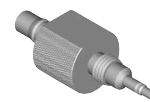
(Motorola)  
3191-146EA



Mini-UHF Plug  
(Lengthened)  
3191-141EA



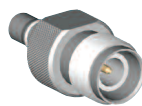
Mini-UHF Jack  
3191-182EA



(Motorola)  
3191-145EA



TNC Plug  
3191-148EA



TNC Jack  
Reverse Polarity  
3191-193EA



TNC Plug  
Reverse Polarity  
3191-199EA  
Cisco Compatible



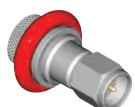
N Plug-QMA  
Plug between series  
3191-190EA



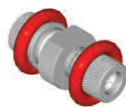
Type N Plug  
3191-143EA



Type N Jack  
3191-189EA



SMA Plug-QMA  
Plug Between Series  
3191-195EA



QMA Plug-QMA Plug  
Adaptor  
3191-197EA



QMA Jack-QMA Jack  
Adaptor  
3191-198EA



SMA Plug  
3191-133EA



SMA Plug  
Reverse Polarity  
3191-194EA



SMA Jack  
(Standard)  
3191-134EA



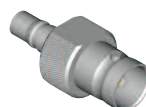
PL259 Plug  
3191-184EA



PL259 Jack  
3191-183EA



BNC Plug  
3191-187EA



BNC Jack  
3191-188EA



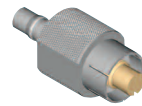
SMB Plug  
3191-192EA



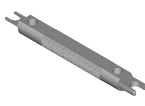
SMB Jack  
3191-196EA



M/A-COM  
3191-191EA



ICOM J-Plug  
3191-186EA



Release Tool  
(High Volume Testing)  
3190-1941EA



QMA Plug - SMA Jack  
3191-204EA



Bird Watt Meter  
QMA Adaptor  
3191-202EA



2 Watt QMA Load  
3191-264EA



TNC-Jack  
3191-286EA



Field Pouch for Kit 66574EA  
(Order pn 3190-584)



Case for Kit 66573EA  
(Order pn 3190-2169EA)

Shop case is blow molded, dual walled, high impact, pardonable construction. It is impervious to gas, oil, grease and most chemicals. It features a long life cover and dense foam inserts that securely hold adaptors even during rough handling. UPS and airline approved. Field kit pouches are heavy duty, cut-resistant suede with a sturdy, lockable, wide-mouthed zipper access.



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