

SMA Male to RA SMA Male MIL-DTL-17 Cable M17/183-00001 Coax in 60 Inch



FMHR0120-60

Configuration

- Connector 1: M39012/55-3029 (SMA Male)
- Connector 2: M39012/56-3129 (SMA Male Right Angle)
- Cable: M17/183-00001

Features

- Max Frequency 1 GHz
- 65.9% Phase Velocity
- Polyolefin Jacket
- J-STD-Soldering
- Lot Traceability Data
- Qualified cable and connectors (QPL)
- Acceptance Test Report
- RF Test Data
- In stock and ready to ship

Applications

- General Purpose
- Laboratory Use
- Hi-Reliability
- Unmanned Systems
- Drones
- MIL-DTL-17 Requirements
- Military Electronics

Description

MIL-DTL-17 SMA (M39012/55-3029) to SMA (M39012/56-3129) cable assemblies with test reports from Fairview Microwave are part of our full line of reliable RF components available with same-day shipping. These COTS (commercial-off-the-shelf) cable assemblies using M17/183-00001 have traceable processes and materials that are recorded and provided in the included test report. The MIL-DTL-17 coaxial cable and MIL-PRF-39012 connectors are assembled with J-STD-001 soldering processes and meet WHMA-A-620 workmanship criteria. These carefully selected materials, assembly processes and test sequence ensure a dependable cable assembly for high reliability applications where the cost of failure or replacement is high. Each serialized SMA to SMA MIL-DTL-17 cable assembly is traceable to its component lots and test data ship with every cable.

This MIL-C-17 M39012/55-3029 to M39012/56-3129 cable assembly using M17/183-00001 datasheet PDF contains specifications, CAD drawing and dimensions that are shown below. Fairview Microwave offers these high reliability RF cable assemblies with test data, and many other RF, microwave and millimeter wave components which allow designers to configure and customize their signal systems however they like. Whether the need is to provide reliable MIL-DTL-17 interconnects or supporting test reports, Fairview Microwave has the right cable assemblies for the job. Fairview can also expertly build your custom cable assemblies for you and ship same day.

Referenced Specifications

| | |
|----------------|---|
| IPC/WHMA-A-620 | Requirements and Acceptance for Cable and Wire Harness Assemblies |
| MIL-DTL-17 | Cables, Radio Frequency, Flexible and Semirigid, General Specification for |
| MIL-STD-348 | Radio Frequency Connector Interfaces for MIL-DTL-3643, MIL-DTL-3650, MIL-DTL-3655, MIL-DTL-25516, MIL-PRF-31031, MIL-PRF-39012, MIL-PRF-49142, MIL-PRF... |
| MIL-PRF-39012 | Connectors, Coaxial, Radio Frequency, General Specification for |
| IPC J-STD-001 | Requirements for Soldered Electrical and Electronic Assemblies |
| IPC J-STD-006 | Requirements for Electronic Grade Solder Alloys and Fluxed and Non-Fluxed Solid Solders for Electronic Soldering Applications |
| SAE AS5942 | Marking of Electrical Insulating Materials |
| SAE AS23053 | Insulation Sleeving, Electrical, Heat Shrinkable, General Specifications For |
| SAE AS22520 | Crimping Tools, Wire Termination, General Specification For |

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Material Specifications

| Component | Specification |
|---------------|---|
| Cable | M17/183-00001 in accordance with MIL-DTL-17 |
| Connector 1 | M39012/55-3029 in accordance with MIL-PRF-39012 |
| Connector 2 | M39012/56-3129 in accordance with MIL-PRF-39012 |
| Heat Shrink 1 | M23053/5-106-0 in accordance with SAE AS23053 |
| Heat Shrink 2 | M23053/5-106-0 in accordance with SAE AS23053 |
| Solder | SN63 in accordance with J-STD-006 |

Electrical Specifications

| Description | Minimum | Typical | Maximum | Units |
|--------------------------------------|---------|---------------|---------|-----------------|
| Frequency Range | DC | | 1,000 | MHz |
| VSWR | | | 1.4:1 | |
| Velocity of Propagation | | 65.9 | | % |
| Capacitance | | 32.2 [105.64] | | pF/ft [pF/m] |
| DC Resistance Inner Conductor | | 0.97 [3.18] | | Ω/1000ft [Ω/Km] |
| Dielectric Withstanding Voltage (AC) | | | 1,000 | Vrms |

Specifications by Frequency

| Description | F1 | F2 | F3 | F4 | F5 | Units |
|-----------------------|------|-----|------|-------|----|-------|
| Frequency | 50 | 100 | 400 | 1,000 | | MHz |
| Insertion Loss (Max.) | 0.25 | 0.4 | 0.99 | 1.61 | | dB |

Electrical Specification Notes:

The Insertion Loss data above is based on the performance specifications of the coax cable used in this assembly. The Insertion Loss includes an estimated insertion loss of $0.06 \cdot \sqrt{\text{GHz}}$ dB maximum for the SMA Male connector and $0.15 \cdot \sqrt{\text{GHz}}$ dB for the SMA Male right angle connector.

Mechanical Specifications

Cable Assembly

| Description | Minimum | Typical | Maximum | Units |
|----------------------|------------|-------------|-------------|---------|
| Length* | 60 [152.4] | 61 [154.94] | 60 [152.4] | in [cm] |
| Cable Outer Diameter | 0.191 | 0.195 | 0.199 | in |
| Weight | | [0] | 0.2 [90.72] | lbs [g] |

Cable Characteristics

| Description | Specification |
|-------------|---------------|
| Cable Type | M17/183-00001 |

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Cable Characteristics

| Description | Specification |
|--------------------------------------|-------------------|
| Impedance | 50 Ohms |
| Inner Conductor Type | Stranded |
| Inner Conductor Material and Plating | Tinned Copper |
| Dielectric Type | PE |
| Number of Shields | 1 |
| Shield Layer 1 | Tinned Copper |
| Outer Conductor Diameter | 0.15 in [3.81 mm] |
| Jacket Material | Polyolefin |

Connector Characteristics

| Description | Connector 1 | Connector 2 |
|------------------------------------|-------------------|----------------------|
| Type | SMA Male | SMA Male Right Angle |
| Specification | MIL-PRF-39012 | MIL-PRF-39012 |
| Impedance | 50 Ohms | 50 Ohms |
| Configuration | Straight | Right Angle |
| Contact Material and Plating | Brass, Gold | Brass, Gold |
| Contact Plating Specification | ASTM B488 | ASTM B488 |
| Dielectric Type | Teflon | Teflon |
| Body Material and Plating | Steel, Passivated | Steel, Gold |
| Body Plating Specification | QQ-P-35 | ASTM B488 |
| Coupling Nut Material and Plating | Steel, Passivated | Steel, Passivated |
| Coupling Nut Plating Specification | QQ-P-35 | AMS-QQ-P-35 |
| Seal Gasket Material | Silicone Rubber | Silicone Rubber |
| Contact Gage Specification | 0 in min | 0 in min |
| Insulator Gage Specification | 0 in min | 0 in min |

Mechanical Specification Notes:

Environmental Specifications

| Description | Specification |
|-----------------------------|------------------|
| Temperature Operating Range | -30 to +85 deg C |

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Compliance Certifications (see [product page](#) for current document)

Process Specifications

| Process | Specification |
|-------------|---|
| Soldering | in accordance with J-STD-001, class 3 |
| Crimping | dies in accordance with SAE AS22520 |
| Marking | shall meet the adherence requirements of SAE AS5942 |
| Workmanship | shall be in accordance with IPC/WHMA-A-620, class 3 |

Tests and Inspections

| Description | Sampling |
|---|--------------|
| Connector Gaging (pin and insulator position) | 100% |
| Insertion Loss | 100% |
| VSWR | 100% |
| Dielectric Withstanding Voltage (DWV) | 100% |
| Visual - workmanship, configuration and marking | 100% |
| Length | C=0, 1.5 AQL |
| Mass | C=0, 1.5 AQL |

Plotted and Other Data

Notes:
Values at 25°C, sea level.

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How to Order

Part Number Configuration:

FMHR0120 - xx uu



Example: FMHR0120-12 = 12 inches long cable
FMHR0120-100cm = 100 cm long cable

Cable Assembly Length Tolerances:

| Imperial English | | Metric | |
|---------------------|-----------------|---------------------|------------------|
| "L" ≤ 1 ft | +0.5 in / -0 in | "L" ≤ 0.3 m | +12.5 mm / -0 mm |
| 1 ft < "L" ≤ 5 ft | +1 in / -0 in | 0.3 m < "L" ≤ 1.5 m | +25 mm / -0 mm |
| 5 ft < "L" ≤ 10 ft | +2 in / -0 in | 1.5 m < "L" ≤ 3 m | +50 mm / -0 mm |
| 10 ft < "L" ≤ 25 ft | +3 in / -0 in | 3 m < "L" ≤ 7.5 m | +75 mm / -0 mm |
| 25 ft < "L" | +2%"L" / -0%"L" | 7.5 m < "L" | +2%"L" / -0%"L" |

* Cable Length = "L"

SMA Male to RA SMA Male MIL-DTL-17 Cable M17/183-00001 Coax in 60 Inch from Fairview Microwave is in-stock and available to ship same-day. All of our RF/microwave products are available off-the-shelf from our ISO 9001:2008 certified facilities in Lewisville, Texas. Fairview Microwave is RF on-demand.

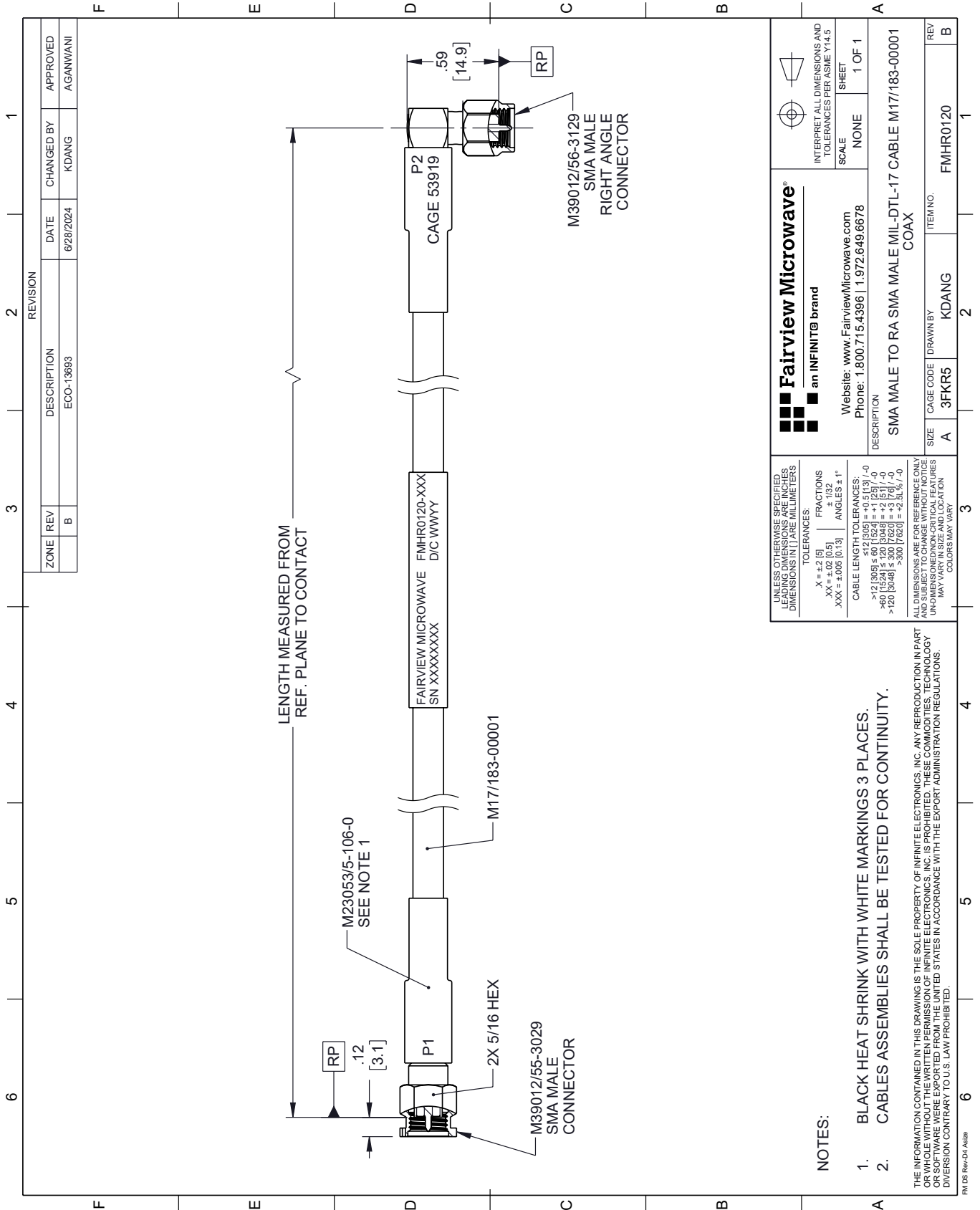
For additional information on this product, please click the following link: [SMA Male to RA SMA Male MIL-DTL-17 Cable M17/183-00001 Coax in 60 Inch FMHR0120-60](#)

URL: <https://www.fairviewmicrowave.com/sma-male-ra-sma-male-cable-m17-183-00001-coax-fmhr0120-60-p.aspx>

The information contained within this document is accurate to the best of our knowledge and representative of the part described herein. It may be necessary to make modifications to the part and/or the documentation of the part in order to implement improvements. Fairview Microwave reserves the right to make such changes as required. Unless otherwise stated, all specifications are nominal. Fairview Microwave does not make any representation or warranty regarding the suitability of the part described herein for any particular purpose, and Fairview Microwave does not assume liability arising out of the use of any part or document.

FMHR0120-60 CAD Drawing

SMA Male to RA SMA Male MIL-DTL-17 Cable M17/183-00001 Coax in 60 Inch



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UNLESS OTHERWISE SPECIFIED, LEADING DIMENSIONS ARE IN INCHES AND TRAILING DIMENSIONS IN [] ARE IN MILLIMETERS.

TOLERANCES:
 .X = ±.2 (5) FRACTIONS ±.132
 .XX = ±.02 (0.5) ANGLES ± 1°
 .XXX = ±.005 (0.13)

CABLE LENGTH TOLERANCES:
 >12 (305) ≤ 60 (1524) = +0.15 (3) / -0
 >60 (1524) ≤ 120 (3048) = +.2 (5) / -0
 >120 (3048) ≤ 300 (7620) = +.25 (6) / -0

ALL DIMENSIONS ARE FOR REFERENCE ONLY. UNDIMENSIONED/NON-CRITICAL FEATURES MAY VARY IN SIZE AND LOCATION. COLORS MAY VARY.

INTERPRET ALL DIMENSIONS AND TOLERANCES PER ASME Y14.5

SCALE NONE SHEET 1 OF 1

DESCRIPTION: SMA MALE TO RA SMA MALE MIL-DTL-17 CABLE M17/183-00001 COAX

| REV | DESCRIPTION | DATE | BY | CHKD |
|-----|-------------|-----------|-------|----------|
| B | ECO-13683 | 6/28/2024 | KDANG | AGANWANI |

- NOTES:
- BLACK HEAT SHRINK WITH WHITE MARKINGS 3 PLACES.
 - CABLE ASSEMBLIES SHALL BE TESTED FOR CONTINUITY.
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- FM DS Rev-D4 Alt2b