

CONEXUS

GREEN CONNECTIVITY AT THE TEST BENCH

BRUTE 1.85mm

MODULAR SYSTEM BUILD

HIGH TENSILE STRENGTH

THERMALLY STABLE

STABILITY WITH FLEXURE

HIGH CRUSH RESISTANCE

EXTENDED OPERATING LIFE

VELOCITY MICROWAVE

SUSTAINABLE¹ SOLUTIONS

in Microwave Design

[1] SUSTAINABLE - MODULAR FEATURES THAT ALLOW PERIODIC REPLENISHMENT IN FACTORY OR FIELD. FOR FULLER DISCUSSION SEE LAST PAGE OF DATA SHEET.

CONEXUS BRUTE185 ~ ORDERING OPTIONS

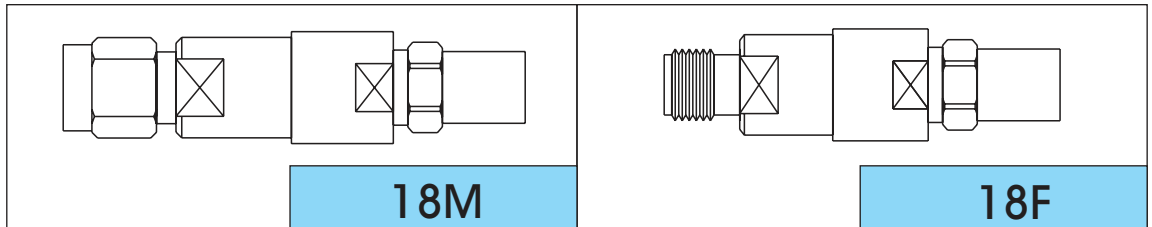
| SERIES | CONNECTOR 1 | GENDER | CONNECTOR 2 | GENDER | LENGTH |
|--------|-------------|--------|-------------|--------|---------------|
| GP | 18 | M F | 18 | M F | 26 IN (660mm) |
| | | | | | 39 IN (991mm) |
| | | | | | CUSTOM |



FEATURING TUFGRIP TECH

EXAMPLE: GP-18M-18F-26

CONEXUS BRUTE185



NOTES:

CONEXUS GP SERIES FOR 1.85MM IS A RUGGED SOLUTION THAT INCLUDES A STAINLESS OUTER SHELL FOR ~ 600 LBS COMPRESSION / LINEAR INCH, ROBUST RESISTANCE TO TORSION AND TENSION FORCES, HARD ANODIZED TYPE III HANDGRIPS WITH VM'S SIGNATURE O-RING FEATURE FOR ANTI SLIP PROPERTIES ON BENCH SURFACES, AND BEST OF BREED ELECTRICAL PERFORMANCE FOR INSERTION LOSS, AND PHASE AND AMPLITUDE STABILITY.



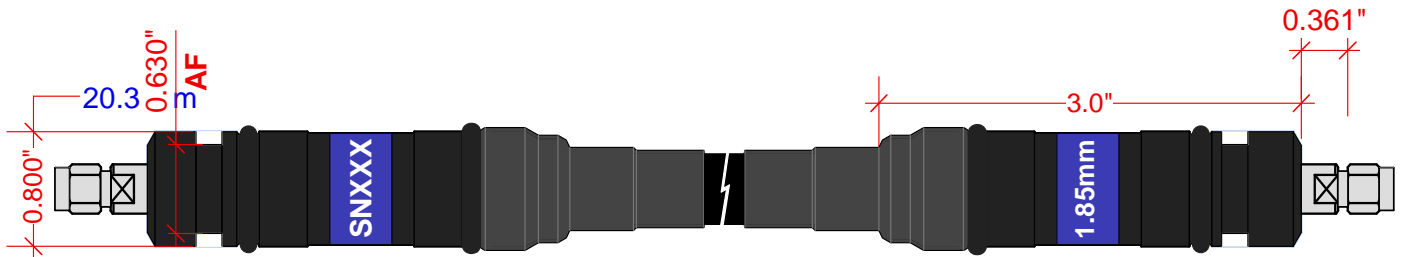
RECESSED MARKING REGION

* JACKET, BOOT COLORS AND LABEL ART MAY VARY BETWEEN LOTS

| PHASE & AMPLITUDE STABILITY [TYP/MAX]** | | | | | SWR / LOSS [LINE LOSS] | | | ELECTRICAL CHARACTERISTICS & NOTES | | |
|---|---------|---------|---|---------|------------------------|------|--------------|---|---|--|
| ASSEMBLY | PHASE Δ | | AMPLITUDE Δ | | MAX f | SWR | LOSS TYP/MAX | CONNECTOR MATING CYCLES | 5000 *** | |
| 1.85mm-26(660)* | +/-4.5 | +/-9.0 | +/-0.06 | +/-0.11 | 65 GHZ | 1.55 | 4.3 / 5.3 | *** ASSUMES MATING WITH CALIBRATED TORQUE WRENCH, AXIAL ALIGNMENT, AND THE ABSENCE OF ECCENTRICITY UPON THREADED ENGAGEMENT | | |
| 1.85mm-39(991) | +/-6.5 | +/-11.0 | +/-0.06 | +/-0.15 | | MAX | 6.5 / 8.0 | COMPRESSION (SWR IMPAIRMENT WITH RECOVERY) | 500 LBS. PER 2 INCH STEPPING PLATE; MIL-T-81490 SEC. 4.7.18 CONCENTRATED AXIAL / NORMAL LOAD. | |
| FLEXURE (CYCLES) | | | 20,000 CYCLES MINIMUM; FLEXURE ENDURANCE PER IEC60966 ~1, SECTION 9.3 | | | | | *INCHES(mm) ** PER IEC60966, SEC. 8.6.1 METHOD 2 | | |

185 BUILD

**1.85mm
67 GHz**



LARGE PROFILE 800 MIL OD 6061-T6 ALUMINUM GRIP, TYPE III HARD ANODIZED, WITH 600 LB COMPRESSION RESISTANT JACKETING PLUS, TOUGH TORSION RESISTANT PET OUTER LAYER AND EXTREME RESISTANCE UNDER TENSION.

MODULAR BUILD FOR SUSTAINABILITY AND LONG SERVICE LIFE

* JACKET AND BOOT COLORS MAY VARY ON ALL MODELS

P3

GENERAL SPECIFICATION & CONSTRUCTION

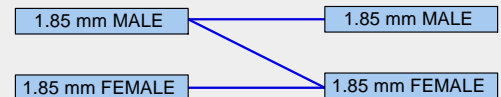
| | |
|-------------------------------|--------------------------------|
| PROPAGATION VELOCITY NOM. | 93% |
| SHIELDING. | > 95 dB |
| CENTER CONDUCTOR | SOLID SPCC OFE ~ ASTM 298 |
| TEMPERATURE RANGE | -55 / + 125 DEGREES C |
| WEIGHT [TYP. ASSEMBLY, 26 in] | 5.3 oz [150g] - 9.5 oz [268 g] |
| CABLE DIAMETER [NOM] | ~0.49 INCHES [12.4mm] MID SPAN |
| DYNAMIC BEND RADIUS | 2.5 INCHES [50.8mm] |

| | |
|------------------------|-----------------------------|
| MATING TORQUE | 8 IN-LBS |
| CONNECTOR INTERFACES | MIL-STD-348A; IEEE287 |
| ANODIZED STRAIN RELIEF | AL 6061T6 TYPE III ANODIZED |

RoHS / REACH Compliant

| | |
|---------------------------|----------------------------|
| ALUMINUM STRAIN RELIEF OD | .8 INCHES [20.3mm] |
| CORE JACKET | FEP |
| OUTER ANTI-TORSION JACKET | PET HEAT TREATED JACKET |
| CRUSH PROTECTION | SS304 800 LBS / 2 IN. LOAD |

MIXED GENDER OPTIONS



NOTES: [i] THE CONEXUS SERIES WAS DESIGNED AS A LONG TERM SERVICE SOLUTION FOR GENERAL PURPOSE TEST CABLE DEPLOYMENT WHERE SUSTAINABILITY IS A REQUIREMENT; [ii] MODULAR BUILD FOR COMPONENT REPLACEABILITY AND EXTENDED OPERATIONAL LIFE.

SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE

**CONEXUS
BRUTE185**

GENERAL PURPOSE MODULAR TEST CABLE WITH REPLACEABLE FEATURES

ULTRA STABLE RELATIVE TO TEMP AND FLEXURE

Velocity Microwave ~ div. ATX Labs
www.velocitybyGTE.com

SUSTAINABILITY

VELOCITY MICROWAVE [VM] SPECIALIZES IN GREEN CONNECTIVITY IN THE DESIGN AND MANUFACTURE OF MICROWAVE CABLE ASSEMBLES FOR TEST AND MEASUREMENT.

TO THIS END, ALL VM CABLE ASSEMBLIES SUPPORT PRUDENT ECO MANAGEMENT AND WASTE FOOTPRINT ECONOMY BY FEATURING A MODULAR BUILD THAT SUPPORTS COMPONENT REPLACEMENT TO EXTEND OPERATIONING LIFE. ONE SUCH FEATURE IS THE ABILITY TO REPLACE CONNECTORS, SOMETHING THAT CAN BE DONE BY VM, OR EVEN IN THE FIELD BY THE END USER FOR ASSEMBLIES OPERATING AT FREQUENCIES AT OR BELOW 40 GHZ. 1.85mm BRUTE CONNECTORS ARE REPLAECABLE IN THE FACTORY.

ON ASSEMBLIES ABOVE 40 GHZ CONNECTORS CAN BE REPLACED OR REPLENISHED BY VM AT THE FACTORY.

NOTES: [i] THE CONEXUS SERIES WAS DESIGNED AS A LONG TERM SERVICE SOLUTION FOR GENERAL PURPOSE TEST CABLE DEPLOYMENT WHERE SUSTAINABILITY IS A REQUIREMENT; [ii] THE SERIES FEATURES A MODULAR BUILD FOR COMPONENT REPLACEABILITY AND EXTENDED OPERATIONAL LIFE.

CONEXUS
BRUTE185

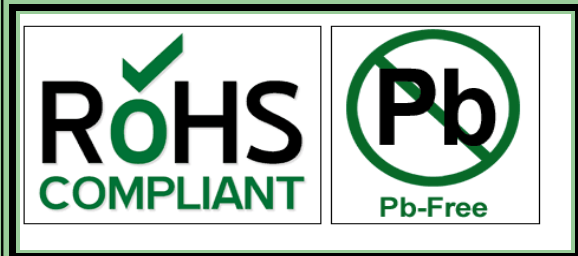
GENERAL PURPOSE MODULAR TEST CABLE WITH
REPLACEABLE FEATURES

ULTRA STABLE RELATIVE TO TEMP AND FLEXURE
Velocity Microwave ~ div. ATX Labs
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— RoHS / REACH —

COMPLIANCE CERTIFICATION

Velocity Microwave (div. ATX Labs) RoHS Compliance Certification



Velocity Microwave [hereafter designated VM], a division of ATX Labs, certifies that all of the products manufactured under the Velocity Microwave brand are in compliance with EU Directive 2011/65EU on the use of certain substances employed in electrical, electronic and microwave equipment that have been designated as hazardous.

| Restricted Substance | Maximum Threshold Limit |
|---------------------------------------|-------------------------|
| Cadmium and its compounds | 100 ppm (0.01 weight %) |
| Mercury and its compounds | 1000 ppm (0.1 weight %) |
| Hexavalent chromium and its compounds | 1000 ppm (0.1 weight %) |
| Lead and its compounds * | 1000 ppm (0.1 weight %) |
| Polybrominated biphenyls (PBB) | 1000 ppm (0.1 weight %) |
| Polybrominated diphenyl ethers (PBDE) | 1000 ppm (0.1 weight %) |
| Decabromine diphenyl ether (DECA BDE) | 1000 ppm (0.1 weight %) |

* Except when allowed by the Directive. For example, 3500 ppm in steel, 4000 ppm in aluminum alloys and 40000 ppm in copper alloys.

VM Partial Materials List

The products in the following classes: **Flexus** cable assemblies; **Benchflex** cable assemblies; **Conexus** cable assemblies; **Conexus HD** cable assemblies; **Continuum** cable assemblies; **Vector** cable assemblies; **Ergon** interface gages and kits, **Legacy** interface gages and kits, **Element** interface gages and kits, **Datum** interface gages and kits; **VM repair** kits; VM connectors of species **SMA, 2.92mm (K); 3.5mm; 2.4mm; 1.85mm; Type N; TNC; APC-7** – contain some or all of the following materials – as well as materials not listed though nevertheless fully compliant with **EU Directive 2011/65EU**.

| Material Class | Finish, Construction or Reference Standard |
|----------------|--|
| Alloy Steel | Copper Clad per ASTM B-501 |
| Soft Copper | Silver plated per ASTM B-298 |

| | | | |
|----------------------|--|----------------------------|----------------------------|
| Copper foil | Silver plated per ASTM-B-298 | | |
| Expanded PTFE | Type F6 per MIL-C-17 or ASTM D-14577 | | |
| FEP | Per ASTM D-2116, FQQ flammability test UL94 | | |
| (BLANK) | | | |
| Stainless Steel | Class AISI-303 UNS20200 SAE30303 – Per: | | |
| | per AMS 5664U Type 1 | ASTM A582 12 | ASTM A262 10 Practice A/E |
| | AASTM E112 96 | Federal Spec QQ-S-764B | DFARS 232.225.7009 10-4-11 |
| | ASTM A484 13 | DIN 50049/en10204 Type 3.1 | ASTM 484 13 |
| | Passivation per ASTM A967, AMS 2700, QQ-P-35 | | |
| PEI (Polyetherimide) | Resin certified to ASTM D 5205 PEI 0113 | | |
| Solder | SnAgCu: ~ 2.5% Silver, 0.9% copper, (100-2.5-0.9)% Tin balance; Typ. | | |
| Aluminum | 6061T6, anodized TYPES II & III per | | |
| Polyolefin | Thin wall Heat shrinkable polyolefin MIL-DTL-23053/5 Class 1 & 3 UL224 corrosion and fire rated | | |
| | Thick wall Heat shrinkable polyolefin MIL-DTL-23053/5 Class 1 & 3 UL224 corrosion and fire rated; encapsulating modified polyamide adhesive | | |
| | Ultra thin wall Heat shrinkable polyolefin MIL-DTL-23053/5 Class 1 & 3 UL224 corrosion and fire rated | | |
| Foam | Closed cell polyethylene, 2.3 lb – 4 lb. ASTM D 3575-93 | | |
| | Convolutated static dissipative <10e11 ohms polyurethane pink foam laminated to top and fitted in bottom; California 117 - Note: All Testing Done By ASTM D 3574Standard Rev. 1, 12-3-02 | | |
| Jacketing | Polyethylene terephthalate FMVSS302, UL94 flame resistance, ASTM G21 Fungus resistance | | |
| Rubber | Oil resistant Buna N O-ring SAE J200 Durometer A70 | | |
| | High temperature Silicone SAE J200 Durometer A70 | | |
| | Steam Resistant EPDM SAE J200 Durometer A70 | | |
| Packaging | ESD shielding with lid closed; “Faraday Cage” effect restricting electrostatic charges to exterior; tested per FED-STD-101, Method 3005 for reducible sulfur | | |
| Vinyl | Connector caps durometer of 75A, maximum temperature of 180° F. - assorted colors. | | |
| | Vinyl substrate 30 mil (.08mm) magnetic mats and signage | | |
| Pigments | Inkjet applied Orcal eco-solvent based inks UV protected | | |
| Adhesives | Polyacrylate, Acrylate polymers permanent, transparent | | |
| | | | |

Velocity Microwave
(div. ATX Labs)
REACH Compliance Certification



Velocity Microwave is deeply committed to the European Union Regulation governing the Registration, Evaluation and Authorization of Chemical (**REACH EC Regulation Number 1907 / 2006**).

[I] Velocity Microwave further represents that it monitors both its internal manufacturing process, as well as that of components in its supply chain, to be free of any substance on the Candidate List of Substances of Very High Concern for Authorization (SVHC) – published in accordance with **Article 59(10) of the REACH Regulation** – and deemed authentic in only the following locus:

<https://echa.europa.eu/candidate-list-table>

[II] Velocity Microwave still further represents that no substances on the REACH SVHC Candidate list, per the above, shall be found in a concentration greater than 0.1% - by weight – in any of the products below in the list designated as **2016 PMVM**, manufactured by Velocity Microwave, or transferred through Velocity Microwave as a pass through agent by either inattention or design.

2016PMVM

Microwave Test and Measurement Cable Assemblies

Flexus microwave test cable assemblies commonly designated with the prefix FL; **Benchflex** microwave test cable assemblies commonly designated with the prefix BF; **Conexus** microwave test cable assemblies commonly designated with the prefix GP; **Conexus HD** microwave test cable assemblies commonly designated with the prefix GP and the subsequent designator HD; **Continuum** microwave test cable assemblies commonly designated with the prefix CTM; **Vector** microwave test cable assemblies commonly designated with the prefix TPX; **Custom** Assemblies developed to meet specific customer requirement; **VM repair kits** deployed as field repair aids for the above microwave test cables.

Microwave Gaging Apparatus

Ergon microwave connector interface gages and kits containing ancillary components, **Legacy** microwave connector interface gages and kits containing ancillary components, **Datum** microwave connector interface gages and kits containing ancillary components; **Element** microwave connector interface gages and kits containing ancillary components; **Ancillary data port** connectors and devices for Datum Gage.

Microwave Connectors ~Subminiature and Larger Families

SMA microwave connector of the subminiature class; **2.92mm (K)** microwave connector of the subminiature class; **3.5mm** microwave connector of the subminiature class; **2.4mm** microwave connector of the subminiature class; **1.85mm** microwave connector of the subminiature class; **Type N** microwave connector 7mm class; **APC7** hermaphroditic microwave connector of the 7mm class; **TNC** microwave connector.

Microwave Torquing Apparatus

8 in-lb Torque wrench with 5/16 dimension designated for use with subminiature microwave connectors; **12 in-lb Torque wrench** with 19mm dimension designated for use with 7mm of the Type N class microwave connectors; **12 in-lb Torque wrench** with 20 dimension designated for use with 7mm of the Type N class microwave connectors; **12 in-lb Torque wrench** with 19mm dimension designated for use with NMD class microwave connectors; **12 in-lb Torque wrench** with 20 dimension designated for use with NMD class microwave connectors; **8 in-lb Torque wrench** with 19mm dimension designated for use with NMD class microwave connectors; **8 in-lb Torque wrench** with 20 dimension designated for use with NMD class microwave connectors; **20 in-lb Torque wrench** with 5/16 dimension designated for use with subminiature microwave connectors as a repair and installation aid.

Velocity Microwave

[Div. ATX Labs]

Located at:

Production

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Material Test & Development

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Chilmark, MA 02535
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