

### FR-N-1SSM-01-70FS

HYBRIFLEX® RRH Optical Fiber Cable, 1 Strand, Ruggedized Bend-Insensitive Single-Mode Fiber, LC to Elongated LC Clip, 70 ft

#### **PRODUCT DESCRIPTION**

RFS' HYBRIFLEX Remote Radio Head (RRH) hybrid feeder cabling solution combines any combination of optical fiber and/or DC power for RRHs in a single lightweight armored or unarmored cable, making it the world's most innovative solution for RRH deployments. Hybrid, Fiber Optic and DC riser trunk and jumper cables are available in a large variety of fiber counts, DC counts and cross sections. Both pre-connectorized and on-site options are available.

#### **FEATURES / BENEFITS**

- Ruggedized, bend-insensitive fiber design with outstanding bending characteristics
- Lightweight solution and compact design Decreases tower loading
- Robust cabling Eliminates need for expensive cable trays and ducts
- Installation of tight bundled fiber optic cable pair directly to the RRH Reduces CAPEX and wind load by eliminating need for interconnection
- Outdoor, black jacket Ensures long-lasting cable protection
- 100% Factory tested Online test results available





# **TECHNICAL FEATURES**

#### **STRUCTURE**

Cable Type		HYBRIFLEX®
Fire Performance		Flame Retardant
Length	m (ft)	21.3 (70)

#### **MECHANICAL SPECIFICATIONS**

MECHANICAL ST LONGO		
Outer Diameter Nominal	mm (in)	5.5 (0.217)
Cable Weight	kg/m (lb/ft)	0.033 (0.022)
Minimum Bending Radius, Single Bend	mm (in)	66 (2.6)
Minimum Bending Radius, Multiple Bends	mm (in)	83 (3.3)
Recommended / Maximum Clamp Spacing	m (ft)	1 / 1.2 (3.25 / 4)

# **F/O CABLE SPECIFICATIONS**

ı			
l	Number of F/O Strands	1	



# FR-N-1SSM-01-70FS

HYBRIFLEX® RRH Optical Fiber Cable, 1 Strand, Ruggedized Bend-Insensitive Single-Mode Fiber, LC to Elongated LC Clip, 70 ft

Storage Temperature  °C (°F)  -40 to 70 (-40 to 158)  Operation Temperature  °C (°F)  -40 to 65 (-40 to 149)  Installation Temperature  °C (°F)  -20 to 65 (-4 to 149)  UL 1666  UL 1666  NOTES  QuickShip 2.0 Program Information: Download			G657-A2 Single Mode, Bend Tolerant				
UL Listed Type OFNR (UL1666), RoHS Compliant Optical Loss  dB/Km  0.5 @ 1310 nm 0.5 @ 1550 nm  O Break-out Length (Top)  mm (in)  228 (9) Semi-rigid flame-retardant polyolefin, with hot melt adhesive Semi-rigid flame-retardant polyolefin, with hot	Core/Clad	μm	9/125				
OBreak-out Length (Top) mm (in) 279 (11) OB Break-out Length (Bottom) mm (in) 228 (9) Cable Sealing Method Semi-rigid flame-retardant polyolefin, with hot melt adhesive  Siber Termination End 1 LC Connector  Liber Termination End 2 LC Connector with Elongated Clip  CABLE JACKET  IV-Protection Individual and xiternal Jacket acket Material Flame Retardant, Indoor/Outdoor, PVC, Black  SESTING AND ENVIRONMENTAL  Storage Temperature °C (°F) -40 to 70 (-40 to 158)  Operation Temperature °C (°F) -40 to 65 (-40 to 149)  INSTALLATION OF COMMENT ACKET Specifications  NOTES  Specifications  NOTES  Specifically designed for Samsung RRH.	Secondary Protection Nominal	μm (in)	900 (0.035)				
OB Reak-out Length (Top) mm (in) 279 (11)  Co Break-out Length (Bottom) mm (in) 228 (9)  Cable Sealing Method Semi-rigid flame-retardant polyolefin, with hot melt adhesive  Fiber Termination End 1  LC Connector  Fiber Termination End 2  LC Connector with Elongated Clip  Cable JacKET  JV-Protection Individual and External Jacket  acket Material Flame Retardant, Indoor/Outdoor, PVC, Black  TESTING AND ENVIRONMENTAL  Storage Temperature °C (°F) -40 to 65 (40 to 149)  Installation Temperature °C (°F) -20 to 65 (-4 to 149)  acket Specifications  UL 1666   NOTES  Specifically designed for Samsung RRH.	O Standards (Meets or Exceeds)  UL Listed Type OFNR (UL1666), RoHS Compliant						
TOP Break-out Length (Bottom)  Cable Sealing Method  Semi-rigid flame-retardant polyolefin, with hot melt adhesive  Fiber Termination End 1  LC Connector  Fiber Termination End 2  LC Connector with Elongated Clip  LC Connector with Elongated Clip  CABLE JACKET  UV-Protection Individual and External Jacket  lacket Material  Flame Retardant, Indoor/Outdoor, PVC, Black  Flame Retardant, Indoor/Outdoor, PVC, Black  Storage Temperature  C (°F)  -40 to 70 (-40 to 158)  Operation Temperature  °C (°F)  -20 to 65 (-40 to 149)  Jacket Specifications  UL 1666  NOTES  Specifically designed for Samsung RRH.	ntical Loss dR/km						
Semi-rigid flame-retardant polyolefin, with hot melt adhesive  Fiber Termination End 1  LC Connector  Fiber Termination End 2  LC Connector with Elongated Clip  CABLE JACKET  UV-Protection Individual and External Jacket  Flame Retardant, Indoor/Outdoor, PVC, Black  TESTING AND ENVIRONMENTAL  Storage Temperature  C (°F)  Operation Temperature  C (°F)  -20 to 65 (-40 to 149)  Jacket Specifications  UL 1666  NOTES  Specifically designed for Samsung RRH.	O Break-out Length (Top) mm (in) 279 (11)						
Eiber Termination End 1  LC Connector  Eiber Termination End 2  LC Connector with Elongated Clip  Yes  External Jacket  Yes  Flame Retardant, Indoor/Outdoor, PVC, Black  IESTING AND ENVIRONMENTAL  Storage Temperature  °C (°F)  -40 to 70 (-40 to 158)  Operation Temperature  °C (°F)  -40 to 65 (-40 to 149)  IN 1666   NOTES  Specifications  NOTES  Specifically designed for Samsung RRH.	O Break-out Length (Bottom) mm (in) 228 (9)						
Eiber Termination End 2  LC Connector with Elongated Clip  CABLE JACKET  UV-Protection Individual and External Jacket  Jacket Material  Storage Temperature  C (°F)  C	Cable Sealing Method		Semi-rigid flame-retardant polyolefin, with hot melt adhesive				
CABLE JACKET  UV-Protection Individual and External Jacket  Jacket Material  Storage Temperature  CC (°F)  Operation Temperature  CC (°F)  Jacket Specifications  CC (°F)  A0 to 65 (-40 to 149)  Jacket Specifications  UL 1666   NOTES  STERNAL DOCUMENT LINKS  DUICkShip 2.0 Program Information: Download  Yes  Flame Retardant, Indoor/Outdoor, PVC, Black  Testing And External Telegraphic Tele	Fiber Termination End 1		LC Connector				
Pyses    Comparison	Fiber Termination End 2		LC Connector with Elongated Clip				
External Jacket  Jacket Material  Flame Retardant, Indoor/Outdoor, PVC, Black  TESTING AND ENVIRONMENTAL  Storage Temperature  °C (°F)  -40 to 70 (-40 to 158)  Operation Temperature  °C (°F)  -40 to 65 (-40 to 149)  Installation Temperature  °C (°F)  Jucket Specifications  UL 1666   NOTES  Specifically designed for Samsung RRH.	CABLE JACKET						
Storage Temperature  °C (°F)  Operation Temperature  °C (°F)  Installation Temperature			Yes				
Operation Temperature  °C (°F)  -40 to 65 (-40 to 149)  -20 to 65 (-4 to 149)  Jacket Specifications  UL 1666  TOP  BOTTON  STERNAL DOCUMENT LINKS  QuickShip 2.0 Program Information: Download	Jacket Material		Flame Retardant, Indoor/Outdoor, PVC, Black				
Operation Temperature  °C (°F)  -40 to 65 (-40 to 149)  Jacket Specifications  UL 1666  UL 1666  NOTES  QuickShip 2.0 Program Information: Download  Download  OC (°F)  -40 to 65 (-40 to 149)  -20 to 65 (-4	TESTING AND ENVIRONMENTAL						
Installation Temperature  °C (°F)  -20 to 65 (-4 to 149)  UL 1666   TOP  BOTTOM  STERNAL DOCUMENT LINKS  QuickShip 2.0 Program Information: Download	Storage Temperature	°C (°F)	-40 to 70 (-40 to 158)				
TOP  EXTERNAL DOCUMENT LINKS  QuickShip 2.0 Program Information: Download  NOTES  Specifically designed for Samsung RRH.	Operation Temperature	°C (°F)	-40 to 65 (-40 to 149)				
TOP  EXTERNAL DOCUMENT LINKS  QuickShip 2.0 Program Information: Download  NOTES  Specifically designed for Samsung RRH.	Installation Temperature	°C (°F)	-20 to 65 (-4 to 149)				
TOP  EXTERNAL DOCUMENT LINKS  QuickShip 2.0 Program Information: Download  NOTES  Specifically designed for Samsung RRH.	lacket Specifications		UL 1666				
	l	11/1	·				
QuickShip 2.0 Program Information: <u>Download</u> Specifically designed for Samsung RRH.	TOP	"[	BOTTOM				
QuickShip 2.0 1108rah mormation. Download	1, 7 )		ВОТТОМ				
·	XTERNAL DOCUMENT LINKS	lownload	NOTES				
	EXTERNAL DOCUMENT LINKS QuickShip 2.0 Program Information:	ownload **Company **Compan	NOTES				
	EXTERNAL DOCUMENT LINKS QuickShip 2.0 Program Information:	Download **	NOTES				
	EXTERNAL DOCUMENT LINKS QuickShip 2.0 Program Information:	ownload **	NOTES				
	EXTERNAL DOCUMENT LINKS QuickShip 2.0 Program Information:	ownload **	NOTES				
	EXTERNAL DOCUMENT LINKS QuickShip 2.0 Program Information:	oownload **	NOTES				



# FR-N-1SSM-01-70FS

HYBRIFLEX® RRH Optical Fiber Cable, 1 Strand, Ruggedized Bend-Insensitive Single-Mode Fiber, LC to Elongated LC Clip, 70 ft

#### **ADDITIONAL ASSEMBLIES - 1 PAIR SM FIBER**

Length, ft	Model Number
10	FR-N-1SM-01-10FS
20	FR-N-1SM-01-20FS
30	FR-N-1SM-01-30FS
40	FR-N-1SM-01-40FS
50	FR-N-1SM-01-50FS
60	FR-N-1SM-01-60FS
79	FR-N-1SM-01-70FS
80	FR-N-1SM-01-80FS
90	FR-N-1SM-01-90FS
100	FR-N-1SM-01-100FS

# **ADDITIONAL ASSEMBLIES - 2 PAIR SM FIBER**

Length, ft	Model Number
10	FR-N-2SM-01-10FS
20	FR-N-2SM-01-20FS
30	FR-N-2SM-01-30FS
40	FR-N-2SM-01-40FS
50	FR-N-2SM-01-50FS
60	FR-N-2SM-01-60FS
70	FR-N-2SM-01-70FS
80	FR-N-2SM-01-80FS
90	FR-N-2SM-01-90FS
100	FR-N-2SM-01-100FS



# FR-N-1SSM-01-70FS

HYBRIFLEX® RRH Optical Fiber Cable, 1 Strand, Ruggedized Bend-Insensitive Single-Mode Fiber, LC to Elongated LC Clip, 70 ft

#### **ADDITIONAL ASSEMBLIES - 1 STRAND SM FIBER**

Length, ft Model Number	
<b>10</b> FR-N-1SSM-01-10FS	, ,
<b>15</b> FR-N-1SSM-01-15FS	
20 FR-N-1SSM-01-20FS	5
<b>30</b> FR-N-1SSM-01-30FS	
<b>40</b> FR-N-1SSM-01-40FS	,
<b>50</b> FR-N-1SSM-01-50FS	,
<b>60</b> FR-N-1SSM-01-60FS	
<b>70</b> FR-N-1SSM-01-70FS	
<b>80</b> FR-N-1SSM-01-80FS	·
<b>90</b> FR-N-1SSM-01-90FS	5
<b>100</b> FR-N-1SSM-01-100F	5
<b>120</b> FR-N-1SSM-01-120F	5
<b>130</b> FR-N-1SSM-01-130F	5
<b>150</b> FR-N-1SSM-01-150FS	5
<b>160</b> FR-N-1SSM-01-160FS	5
<b>170</b> FR-N-1SSM-01-170F	S

# **ADDITIONAL ASSEMBLIES - 2 STRAND SM FIBER**

Length, ft	Model Number
10	FR-N-2SSM-01-10FS
15	FR-N-2SSM-01-15FS
20	FR-N-2SSM-01-20FS
30	FR-N-2SSM-01-30FS
40	FR-N-2SSM-01-40FS
50	FR-N-2SSM-01-50FS
60	FR-N-2SSM-01-60FS
70	FR-N-2SSM-01-70FS
80	FR-N-2SSM-01-80FS
90	FR-N-2SSM-01-90FS
100	FR-N-2SSM-01-100FS



# FR-N-1SSM-01-70FS

HYBRIFLEX® RRH Optical Fiber Cable, 1 Strand, Ruggedized Bend-Insensitive Single-Mode Fiber, LC to Elongated LC Clip, 70 ft

# PRE-PACKED HYBRIFLEX KITS FOR EASY INTEGRATION INTO RAYCAP JUNCTION BOXES

RFS Technologies now offers Kitting options for most hybrid risers and jumpers that include both the cable assembly and the Raycap inserts. For reference, kits have a "K" as the third digit in the model number. HB158 does not require an additional gland/insert for proper installation and sealing into the Distribution Boxes.

Kit Model Prefix	Assembly Prefix	Assembly Qty	Raycap Insert Kit	Insert Kit Contents	Raycap Insert Kit Qty
HBK114	HB114		RFS Technologies- TRUNK-KIT	(2) 190 0620, Insert, M75, 1H, 40mm	
HBK058	HBF058	1	RFS Technologies- JUMP-KIT	(1) 190 0621, Insert, M75, 3H, 22mm, Split w/ plugs	4
HBK012	HBF012		RFS Technologies- JUMP-KIT-2	(1) 190 0903, Insert, M75, 2H, 15mm, Split w/ plugs	'
FRK-N	FR-N		RFS Technologies- FIBER-KIT	(1) 190 0657, Insert, M75, 6H, 6.1mm, Split w/ plugs	