GPS SOURCE

GPS LIVE INSIDE

TECHNICAL PRODUCT DATA SHEET

S18 REGULAR HOUSING

1x8 GPS Splitter

DESCRIPTION

The S18 GPS Splitter is a one-input, eight-output GPS splitter device. The typical application allows the GPS signal from an active GPS roof antenna to be split evently between eight GPS receivers. The S18 can be configured to pass the DC from an RF output (OUT1) to the antenna input port in order to power an active GPS antenna. The DC blocked ports (OUT2 through OUT8) would feature a 200 Ω DC load to simulate an antenna DC current draw for any receiver connected to those ports.

FEATURES

- Passes GPS, Galileo, and GLONASS L1/L2
- Excellent Gain Flatness
- RoHS/WEEE Compliant
- Designed to MIL-STD-810
- Amplified to Preserve Link Margins
- Available Options:
  - L1/L2
  - Waterproof
  - EMI Shielding
  - Hermetically Sealed

OPTIONS

The S18 GPS Splitter comes with many available options to meet specific needs. Please contact GPS Source via phone, fax, email, or visit the website for further information on product options and specifications.

1. S18 Specifications

1.1 Electrical Specifications

Table 1-1. Operating Temperature -40°C to 85°C

Parameter			Conditions	Min	Typ	Max	Units
Frequency Range			Ant: Any Port, Unused Ports 50Ω	1		2	GHz
In/Out Impedance			Ant: J1 through J8		50		Ω
Gain(1)(2)	Standard	Amplified	Ant: Any Port, Unused Ports 50Ω	16.5	18	19.5	dB
	Custom	Amplified	As Specified (xdB)	X - 1	X	X + 1	
Loss-Passive(2)			Ant: Any Port, Unused Ports 50Ω	6.5	7.5	8.5	dB
Input SWR(2)			All Ports 50Ω			2:1	—
Output SWR(2)			All Ports 50Ω			2:1	—
1dB Comp. Pt		Amplified	All Ports 50Ω		-32		dBm
Input IP_3		Amplified	All Ports 50Ω		-24		dBm
Noise Figure		Amplified	Ant: Any Port, Unused Ports 50Ω			2.2	dB
Gain Flatness(2)		Amplified	[L1 – L2] Ant: Any Port, Unused Ports 50Ω		2	2	dB
		Passive					
Amp. Balance			[J1 – J8] Ant: Any Port, Unused Ports 50Ω			0.5	dB
Phase Balance			Phase (J1 – J8) Ant: Any Port, Unused Ports 50Ω			1	Degree
Group Delay Flatness			$T_{d,max}$ - $T_{d,min}$; Ant: Any Port			<1	ns
Isolation(1)	Standard	Amp/Pass	Adjacent Ports: Ant 50Ω	13			dB
			Opposite Ports: Ant 50Ω	21			
	Hi Isolation	Amplified	Adjacent Ports: Ant 50Ω	30			
			Opposite Ports: Ant 50Ω	40			
Current			Current Consumption of device (excludes Ant. Cur.)			16	mA
Draw Current	Pass DC		Non-Powered Configuration, DC Input on J1			250	mA
	Powered		Powered, Military or Quick Connect Option			Note 3	
Max RF Input		Amplified	Max RF Input Without Damage			0	dBm
		Passive				30	

Notes:
1. Choose custom gain option for improved port-to-port isolation.
2. Performance guaranteed for N(F) connectors.
3. The maximum combined DC current draw out all ports of the device is a function of the DC input voltage and desired DC output voltage according to: |out ≤ 1.4 / ($V_{DC\ IN}$ – $V_{DC\ OUT}$) – 0.016A.
For the powered option with a wall mount transformer: (Voltage Input = 110/220/240VAC), $V_{DC\ IN}$ is 9V.

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Table 1-2. Input Voltage

Parameter			Conditions	Min	Typ	Max	Units
AC IN[3]	110		Wall Mount Transformer		110		VAC
	220/240		Wall Mount Transformer (Various Intl. Plug Options)		230		
DC IN	DC Blk		Any DC Blocked Port with a 200Ω Load				VDC
	Pass DC	Amplified	Non-Powered Configuration, DC Input on J1	3		16	
	Powered		Powered, Military or Quick Connect Option	3[1]		28[2]	

Notes:
1. DC IN for powered option must be 2V greater than the desired DC Voltage Out.
2. The maximum DC IN is 35V when the 1275B powered option is included.
3. The maximum combined DC current draw out all ports of the device is a function of the DC input voltage and desired DC output voltage according to: $|out \leq 1.4 / (V_{DC\ IN} - V_{DC\ OUT}) - 0.016A$.
For the powered option with a wall mount transformer: (Voltage Input = 110/220/240VAC), $V_{DC\ IN}$ is 9V.

2. Performance Data

2.1 S18 Active — Standard

Figure 2-1. Active: Gain vs. Frequency

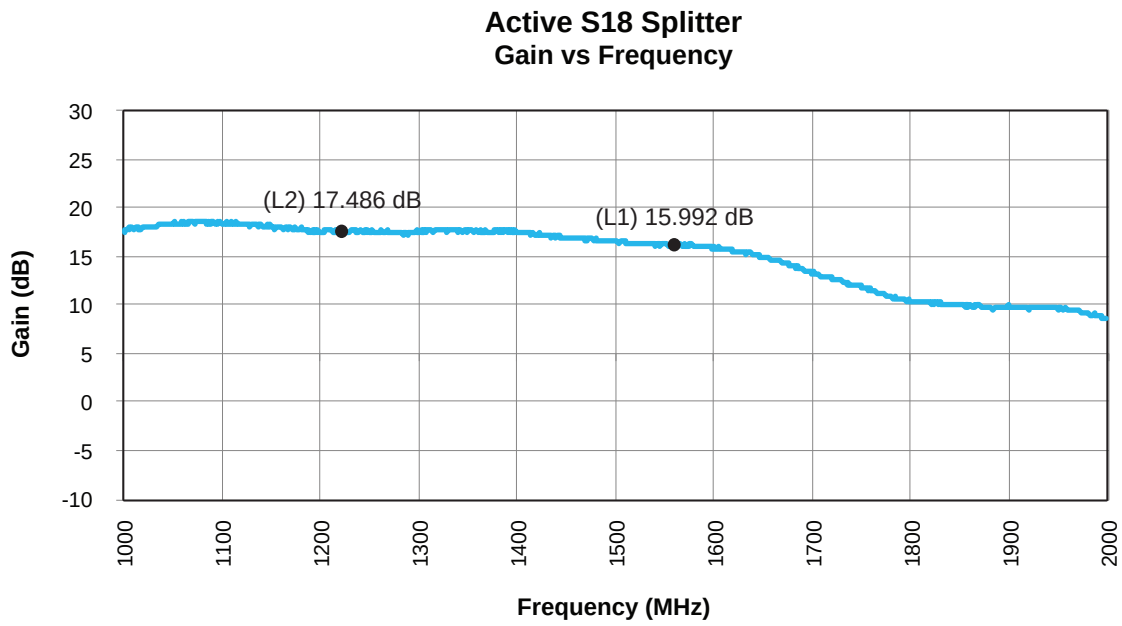
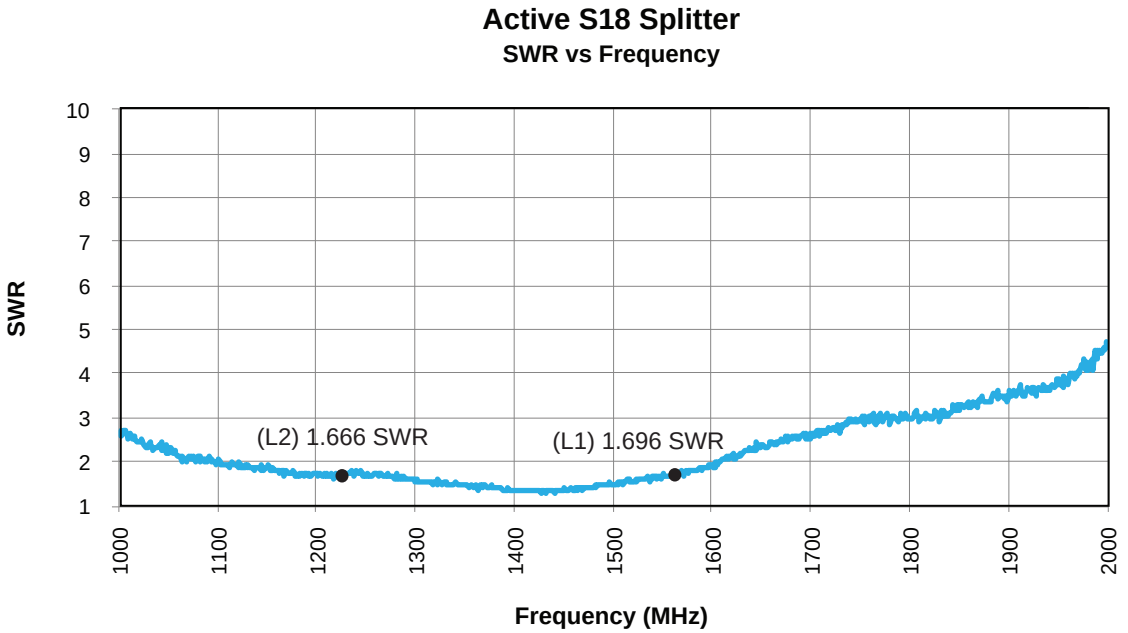


Figure 2-2. Active Input: SWR vs. Frequency



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2.2 S18 Active or Passive — High Isolation

Figure 2-3. Active or Passive: Gain vs. Frequency

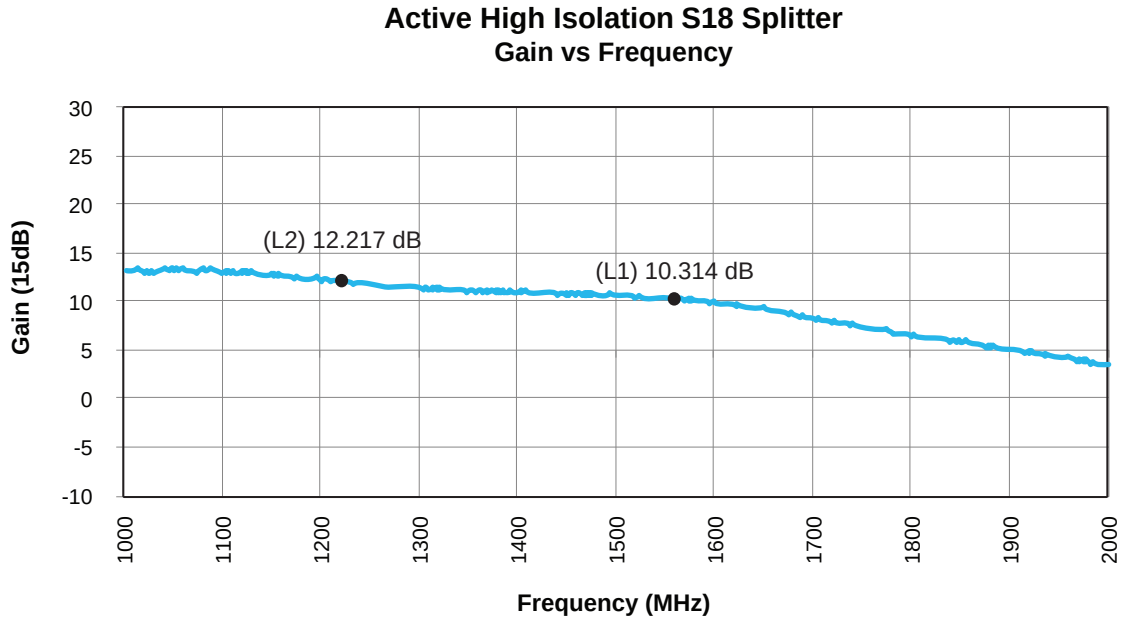
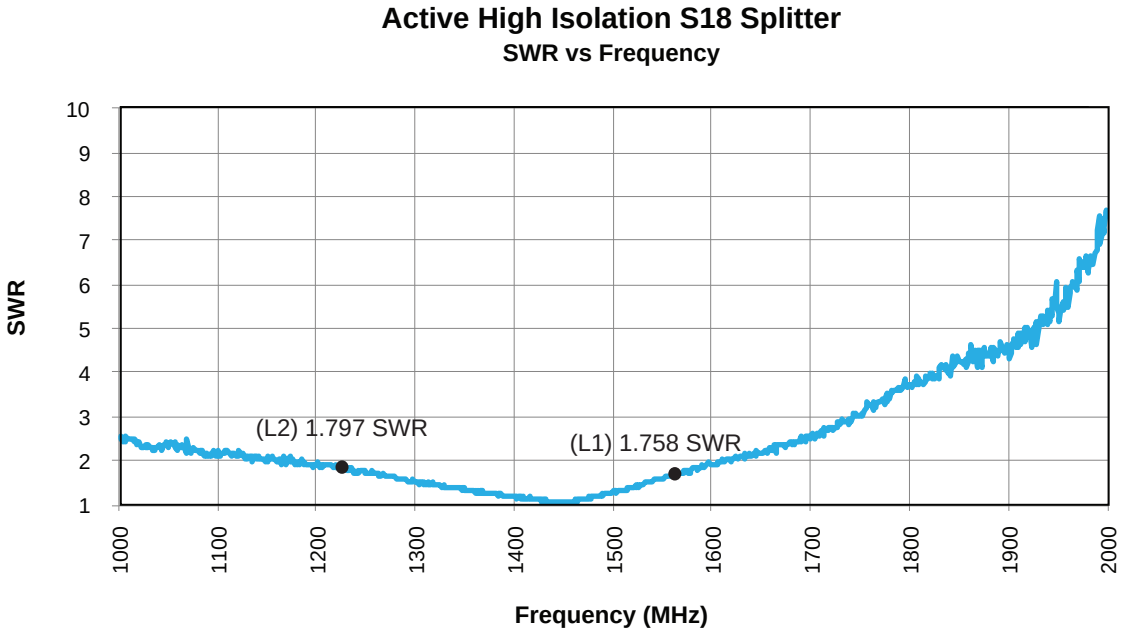


Figure 2-4. Active or Passive: SWR vs. Frequency



3. Product Options

Table 3-1. S18 Available Options

Power Supply		
Source Voltage Options	**Voltage Input**	**Type**
	110VAC	Wall Mount Transformer
	220VAC	Wall Mount Transformer
	240VAC (U.K.)	Wall Mount Transformer
	DC 5VDC to 28VDC	Military Style or Quick Connect
Output Voltage(1)	**DC Voltage Out**(2)	
	3.3	
	5.0	
	7.5	
	9.0	
	12.0	
	Custom	
RF Connector		
Connector	**Connector Type**	**Limitations**
	N (Female/Male)	N/A
	SMA (Female/Male)	N/A
	TNC (Female/Male)	N/A
Housing		
Housings	**Housing Type**	**Limitations**
	Standard	None
	Slimline	Powered Option Not Available SMA Only
Port		
Pass DC(1)	All Ports Pass DC (Special Configuration)	
DC Blocked(1)	Pass DC OUT1, Block DC (OUT2 - OUT8, Standard Configuration)	

Notes:
1. Powered option: any or all RF ports (input or output) can be DC Blocked or can pass the powered DC voltage.
2. Maximum combined DC current draw out all ports of the device is a function of the DC input voltage and desired DC output voltage according to the following:

$$|out \leq 1.4 / (V_{DC\ IN} - V_{DC\ OUT}) - 0.016A \text{ (or 250mA max)}$$

For powered option with a wall mount transformer (Voltage Input = 110/220/240VAC), $V_{DC\ IN}$ is 9V.

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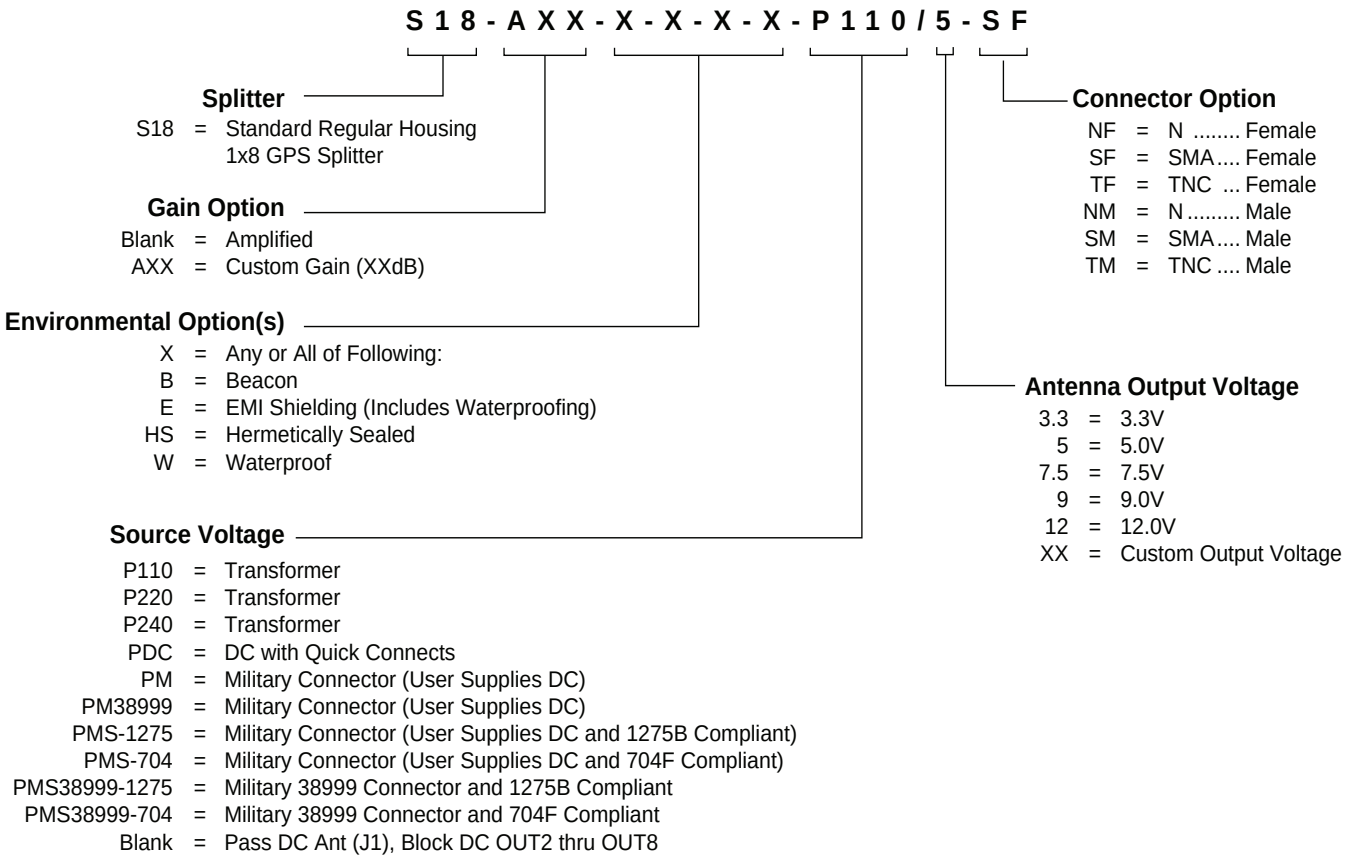
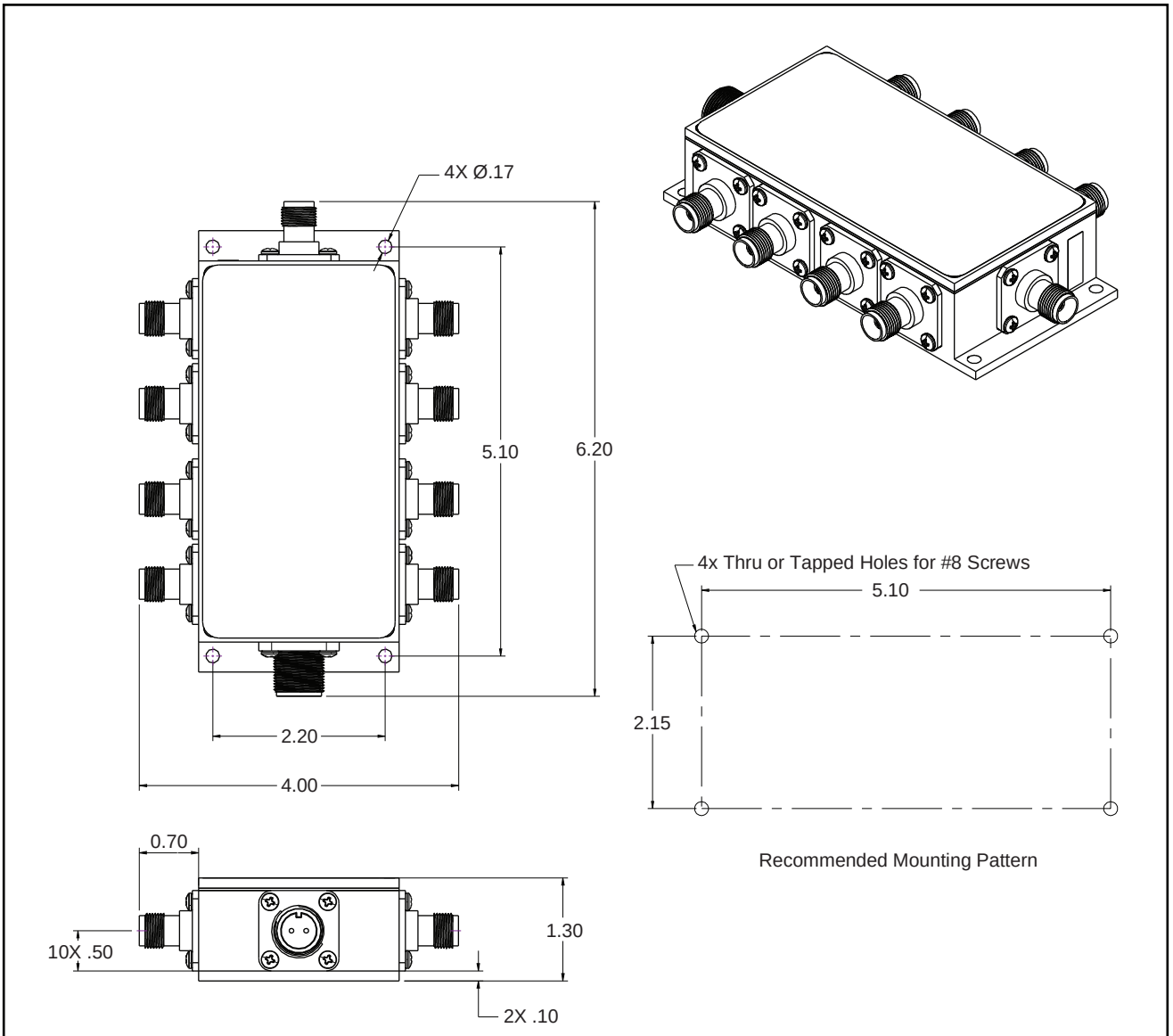
4. Product Code Decoder



Note: To have product/part codes customized to meet exact needs, contact GPS Source at techsales@gpssource.com or visit the website at www.gpssource.com.

5. Mechanical Drawing

S18 Regular Housing — FSA-ABB-AAX-BBZ



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GPS Source Part No.	Finish	Size	Mass	Tolerances	
FSA-ACA-EEY-AG	**N/A**	**C**		Linear	Angular
Description	Material	3rd Angle Projection		**.X = ±0.100** **.XX = ±0.010** **.XXX = ±0.005**	**±1°** **RADII** See Linear
S18 GPS Splitter **MIL SPEC, FSA 1 IN 8 OUT N(F)**	**N/A**				

All materials and finishes shall comply with European Union RoHS and are lead free. Dimensions are in inches unless otherwise specified.

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S18 Regular Housing Data Sheet
059-FSA-ABB-AAX-BBZ-006

AS9100C:2009 and ISO 9001:2008 Compliant Company