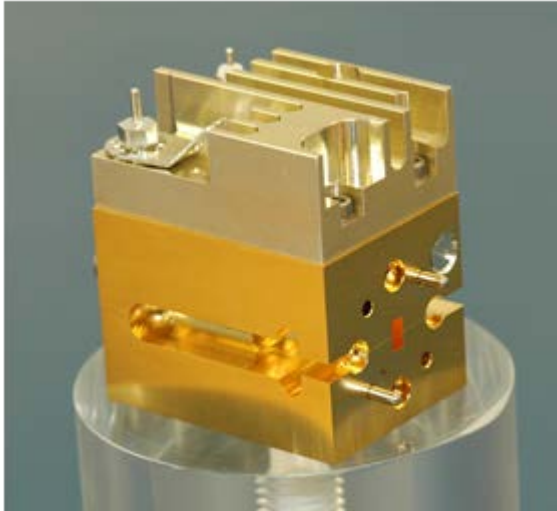


## ACTIVE MULTIPLIER CHAIN



### DESCRIPTION

Millitech's line of active multipliers offers the best performance available in the industry. These multipliers are capable of extending the range of sources from 7.5 to 20 GHz coaxial to the complete millimeter-wave spectrum from 26 to 140 GHz in waveguide outputs of WR-28, 22, 19, 15, 10, and 08 as well as K/2.92mm coaxial connectors. Recent upgrades have improved the performance of the WR-19, WR-15 and WR-10 models with higher output power, lower power dissipation, built-in bias protection, and a more rugged package.

The frequency stability at the output frequency is the same as that of the input source. The output phase noise will degrade by the  $(20 \text{ Log } N)$ , where  $N$  is the multiplication factor of the active multiplier chain.

### FEATURES:

- Full waveguide bandwidths
- Optional Removable Heatsink
- Compact package

### APPLICATIONS:

- LO source for up/down converters
- Frequency extenders

The series AMC can be used as the Local Oscillator (LO) input when mated with Millitech mixers series MXP, MXB, and MSH. Added versatility can be achieved by using the series AMC with Millitech series MUD Frequency Doublers and series MUT Frequency Triplers for frequency ranges extending up to 300 GHz. Higher power levels can be obtained by adding Millitech series AMP Power Amplifiers as an intermediate stage. Contact Millitech to discuss specific requirements and applications.

Plots of harmonic performance on selected models are included in this data sheet.

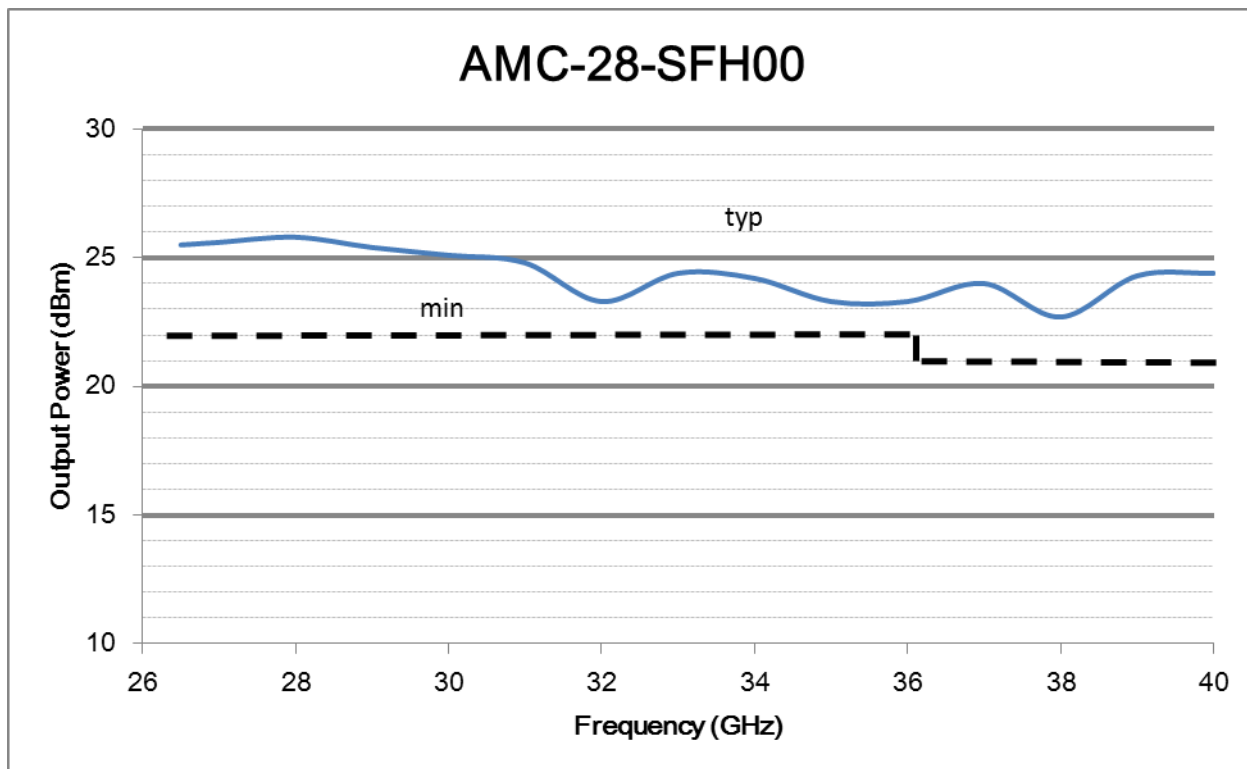
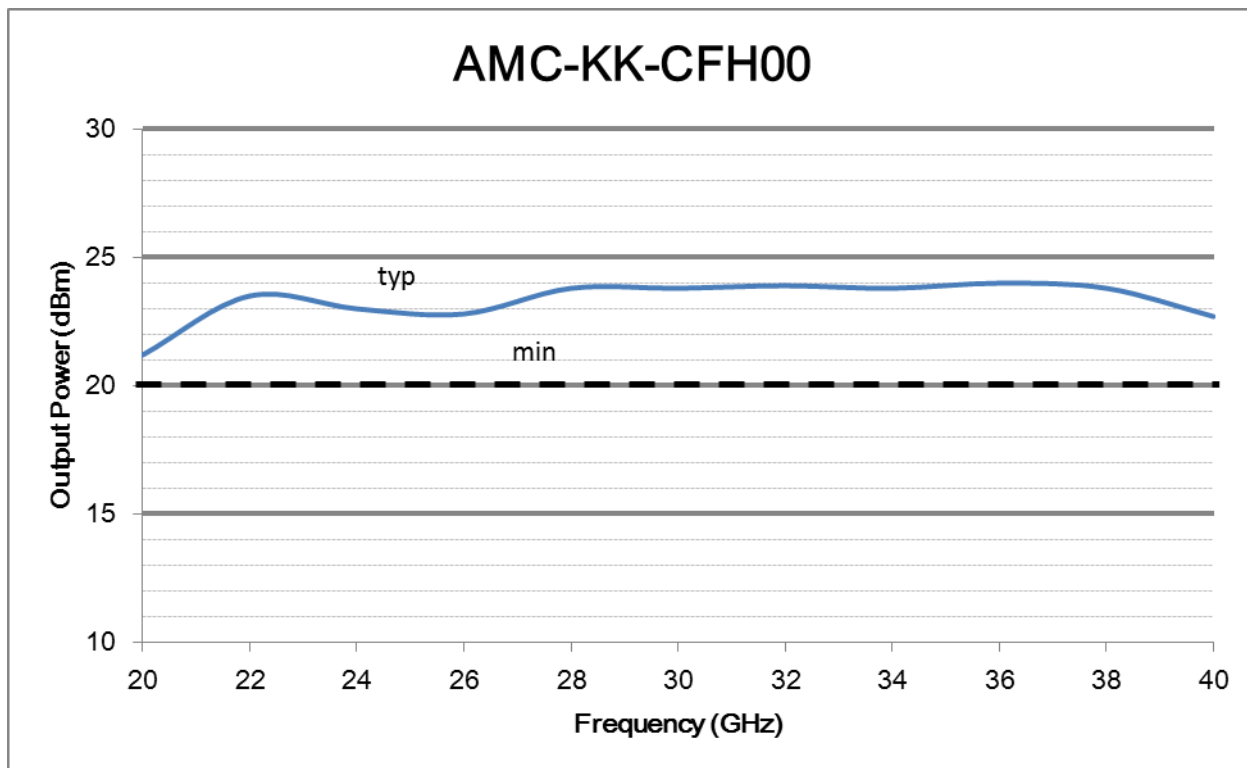
## SPECIFICATIONS<sup>1,2,3,4,5,6,7</sup>

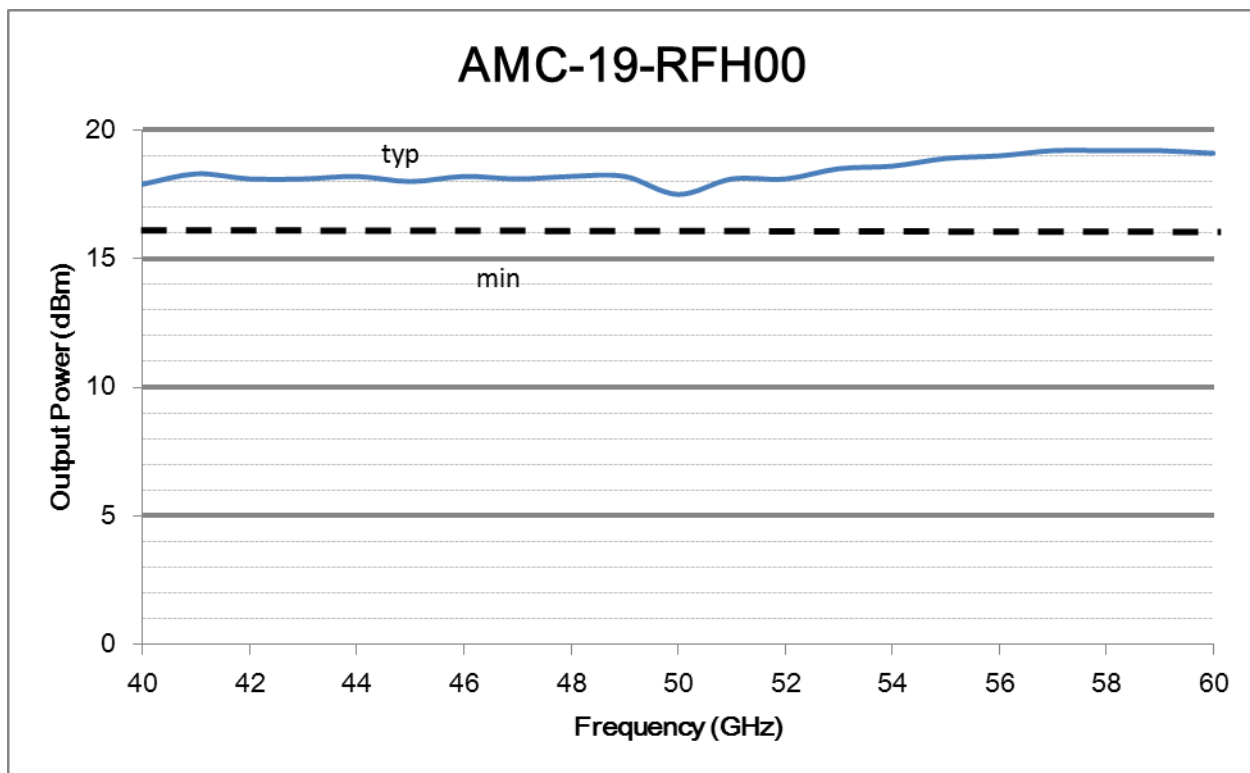
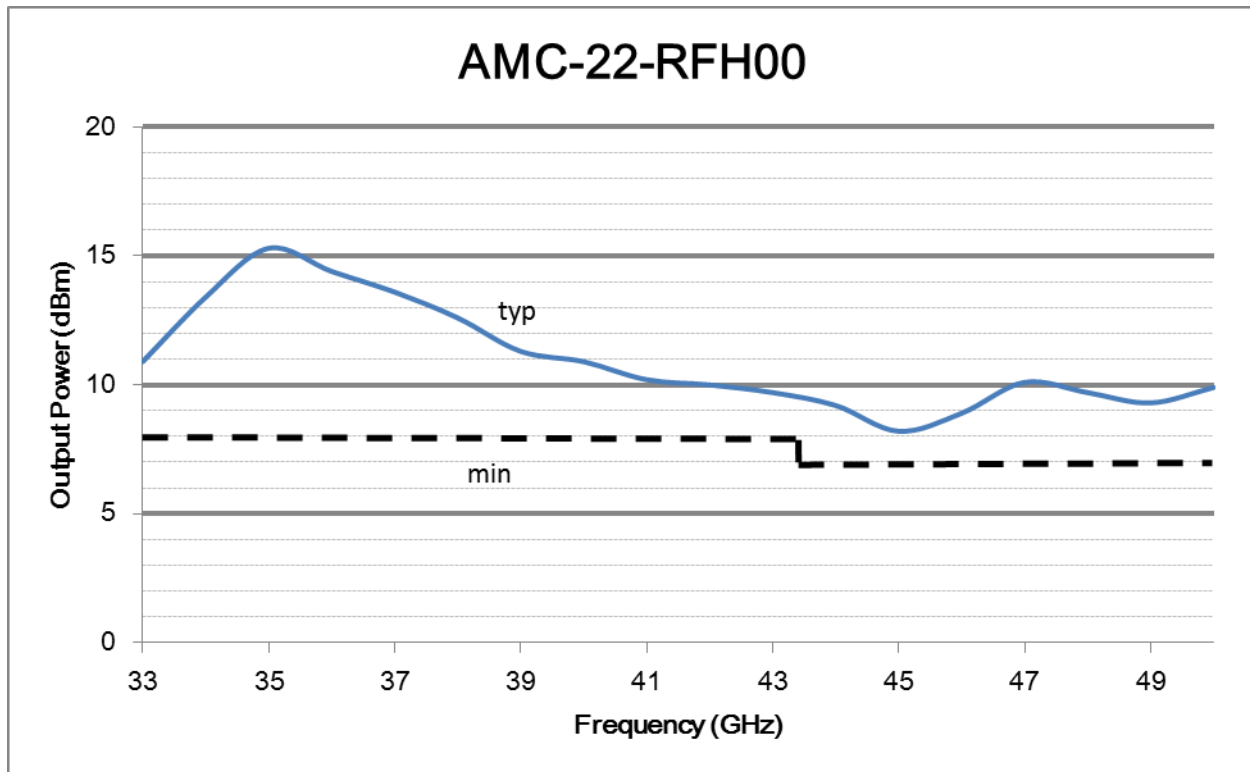
Model Number	Output frequency (GHz)	Input frequency (GHz)	Multiplication factor	Output power	DC input (typ.)	Outline drawing
AMC-KK-CFH00	20 to 40	10 to 20	2	>20 dBm, See plot	8 – 12 V @ 0.7A	Figure 5
AMC-28-SFH00	26.5 to 40	13.25 to 20	2	See plot	8 – 12 V @ 0.7A	Figure 1
AMC-22-RFH00	33 to 50	8.25 to 12.50	4	See plot	8 – 12 V @ 0.6A	Figure 2
AMC-19-RFH00	40 to 60	10 to 15	4	See plot	8 – 12 V @ 0.6A	Figure 2
AMC-15-RFH00	50 to 75	12.50 to 18.75	4	See plot	8 – 12 V @ 0.7A	Figure 3
AMC-15-RFHB0	55 to 70	13.75 to 17.5	4	See plot	8 – 12 V @ 1.4A	TBA
AMC-12-RFH0A	60 to 90	7.5 to 11.25	8	See plot	8 – 12 V @ 0.8A	Figure 4
AMC-12-RFHB0	70 to 90	8.75 to 11.25	8	See plot	8 – 12 V @ 1.2A	TBA
AMC-12-RNHB0	60 to 70	7.5 to 8.75	8	See plot	8 – 12 V @ 1.5A	TBA
AMC-12-RNHB1	65 to 76	8.125 to 9.5	8	See plot	8 – 12 V @ 1.6A	TBA
AMC-12-RNHB2	77 to 86	9.625 to 10.75	8	See plot	8 – 12 V @ 1.6A	TBA
AMC-10-RFH00	75 to 110	12.50 to 18.33	6	See plot	8 – 12 V @ 0.7A	Figure 3
AMC-10-RFHB0	75 to 110	12.50 to 18.33	6	>11 dBm, See plot	8 – 12 V @ 0.7A	Figure 3
AMC-10-RFHB1	75 to 110	12.50 to 18.33	6	See plot	8 – 12 V @ 0.9A	TBA
AMC-10-RFHMP	75 to 110	12.50 to 18.33	6	See plot	8 – 12 V @ 0.7A	Figure 6
AMC-10-RNHB0	78 to 96	13 to 16	6	>14 dBm, See plot	8 – 12 V @ 0.7A	Figure 3
AMC-10-RNHB1	85 to 105	14.17 to 17.5	6	>14 dBm, See plot	8 – 12 V @ 0.8A	TBA
AMC-10-RNHB2	90 to 96	15 to 16	6	>20 dBm	8 – 12 V @ 1.0A	TBA
AMC-10-RNHB3	82 to 103	13.67 to 17.17	6	>17 dBm, See Plot	8 – 12 V @ 1.0A	Figure 7
AMC-08-RFH00	90 to 140	11.25 to 17.5	8	>1 dBm, See plot	8 – 12 V @ 0.7A	Figure 3

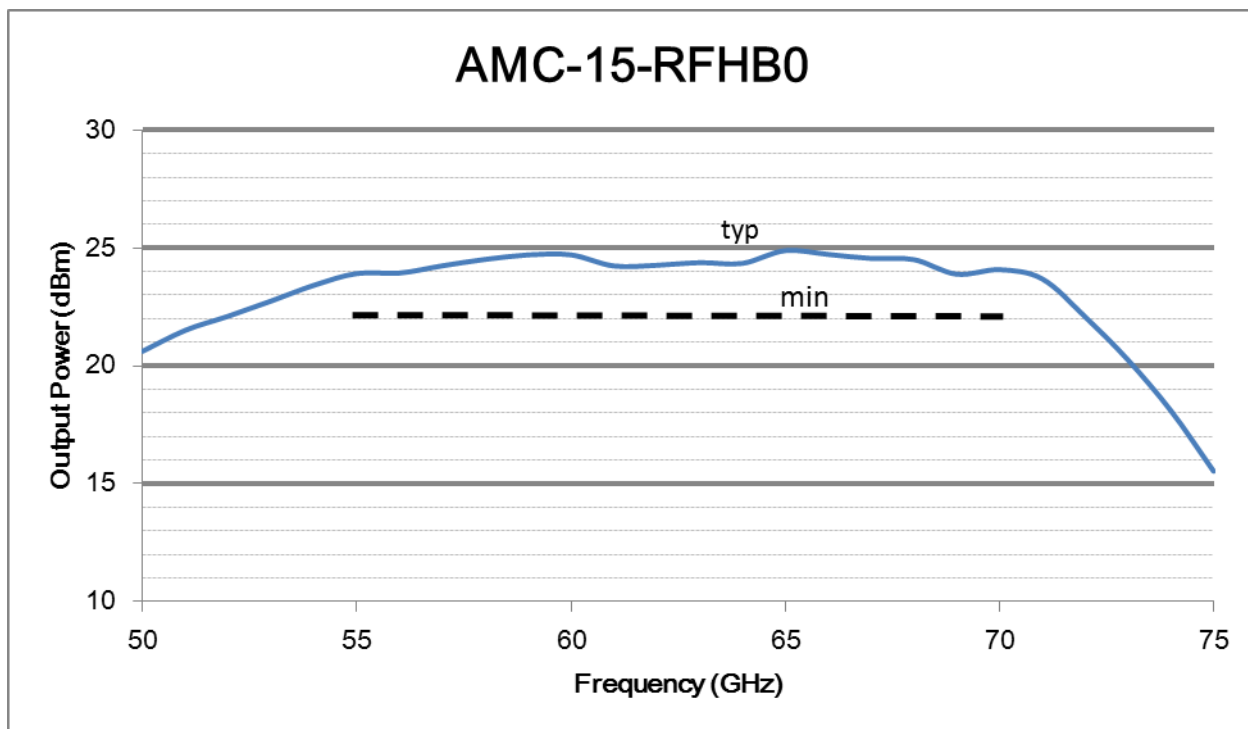
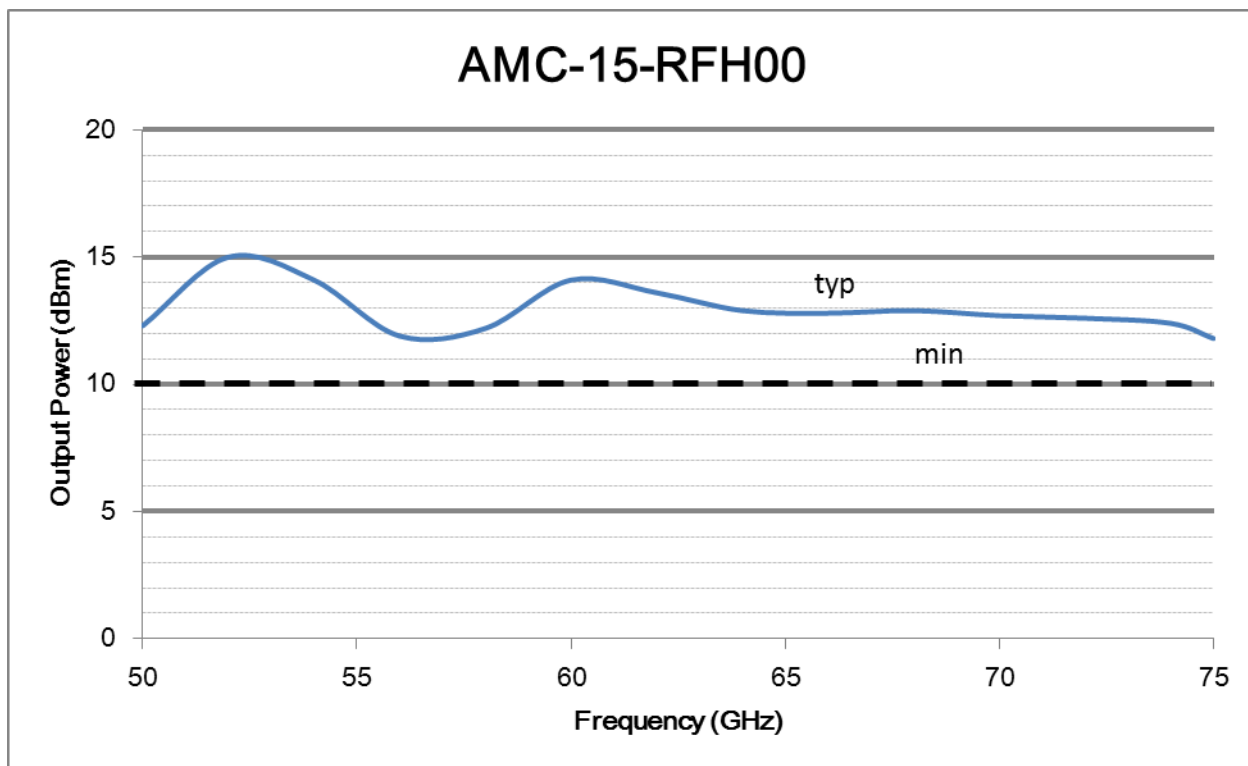
### Notes:

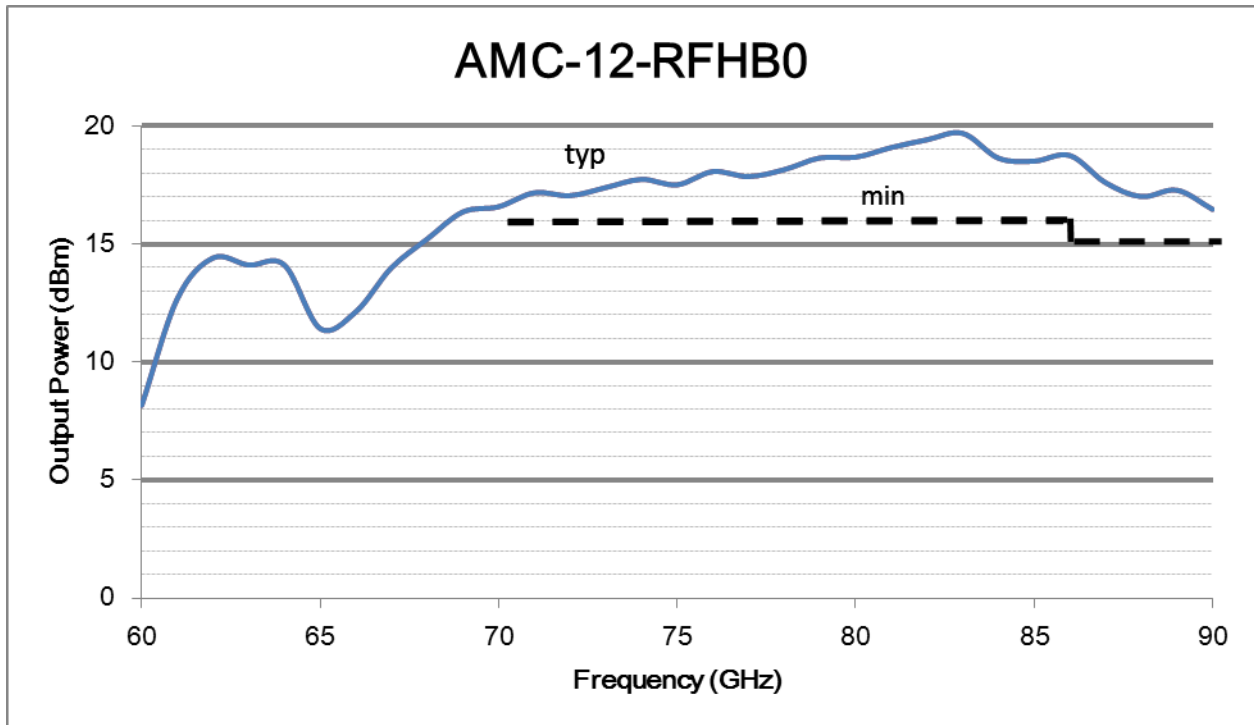
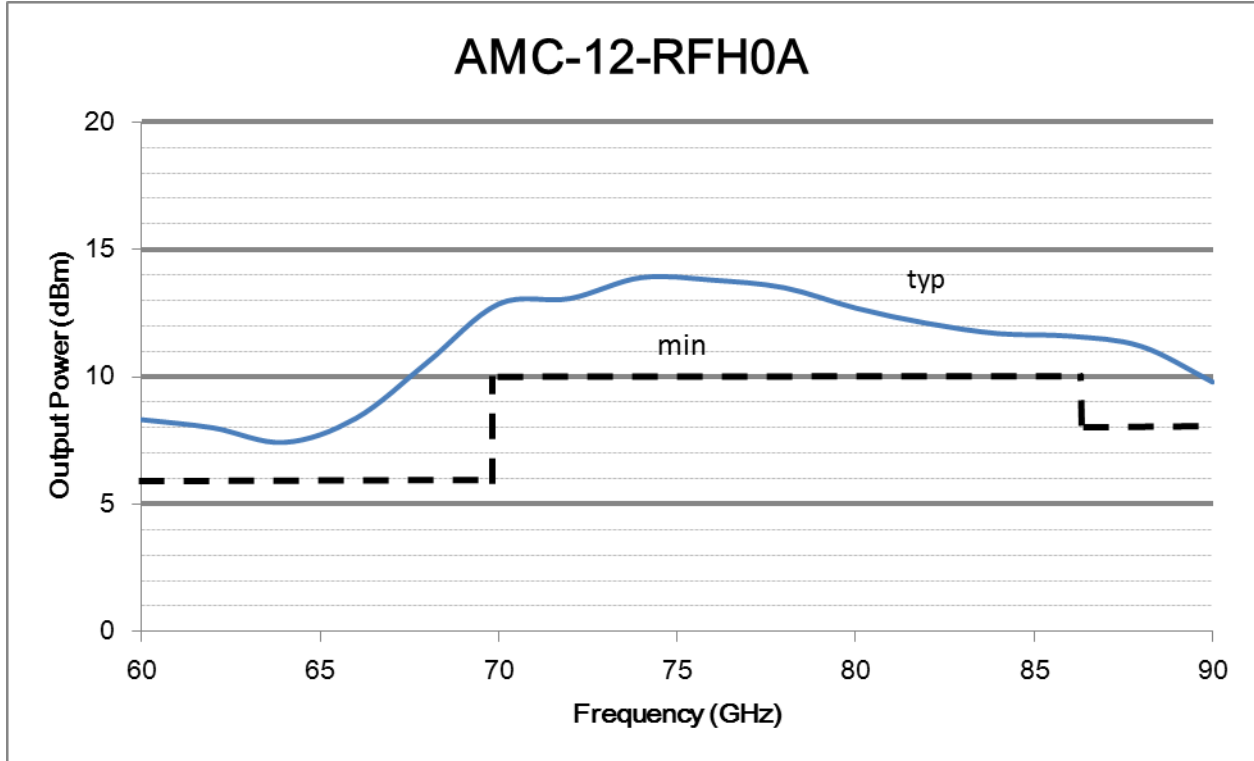
1. The units must be heat sunk to keep the case temperature at or below +45°C.
2. If required, heatsinks can be omitted. See “How To Order” section.
3. All testing will be at room temperature.
4. The output power is saturated.
5. The maximum DC input current is 200 mA above the typical values.
6. Signal purity is -20dBc typ.
7. Input power is +3dBm nom.

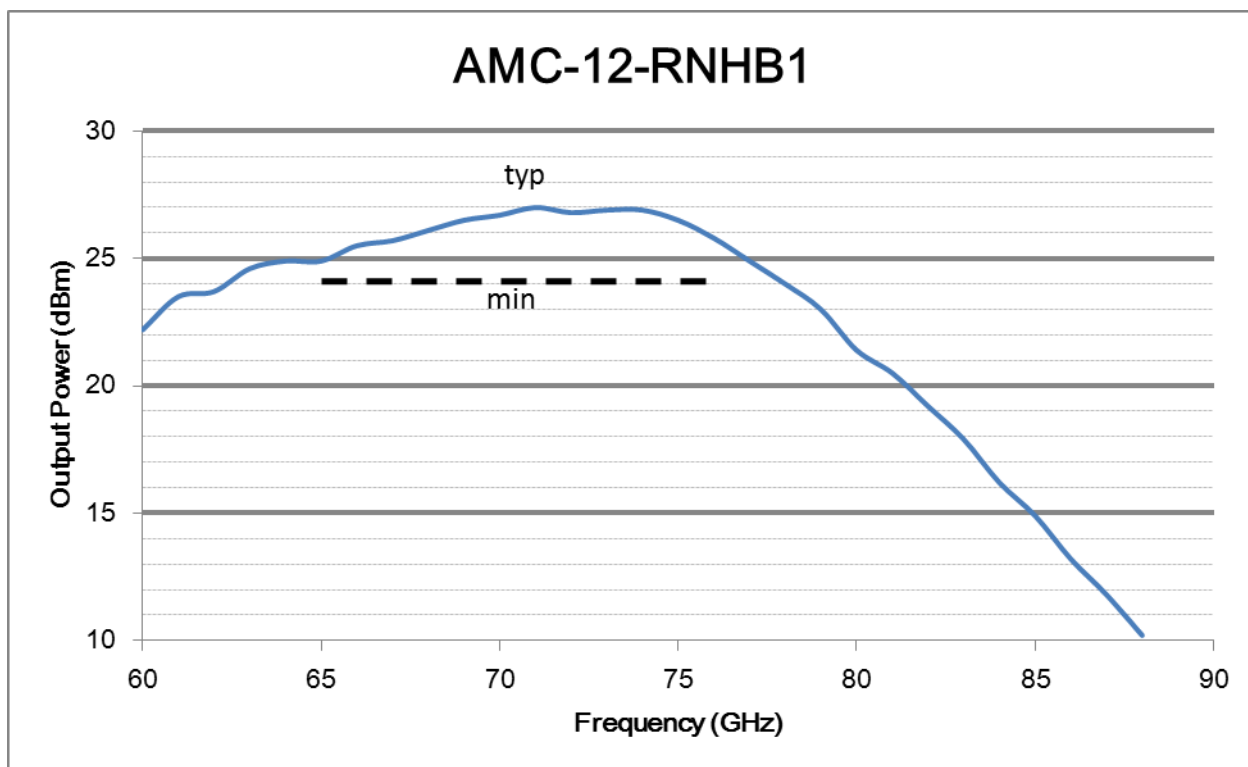
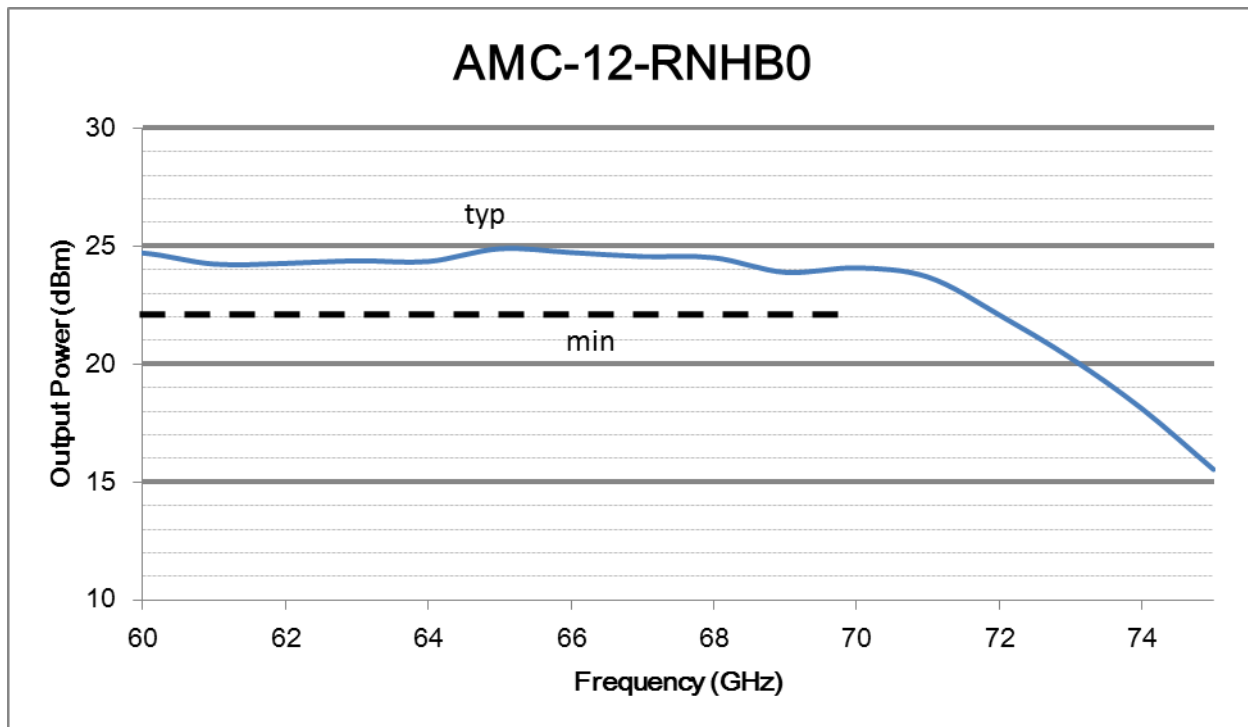
**TYPICAL OUTPUT POWER**

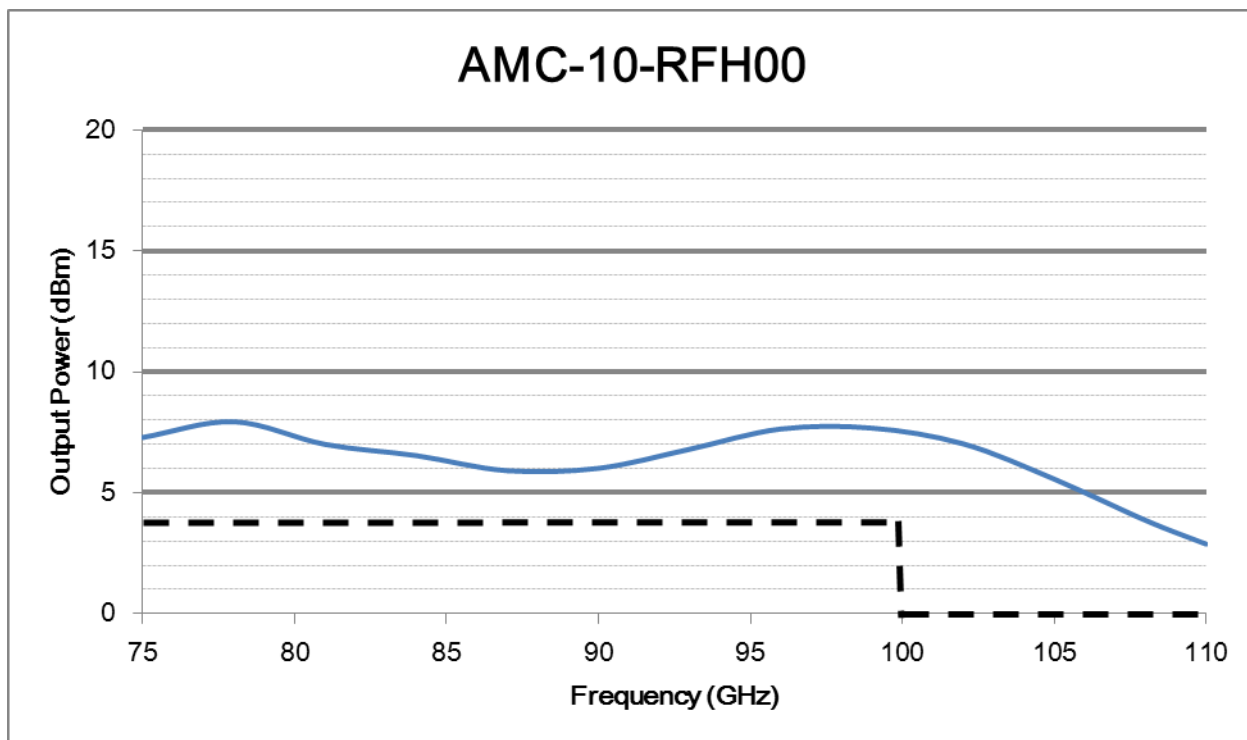
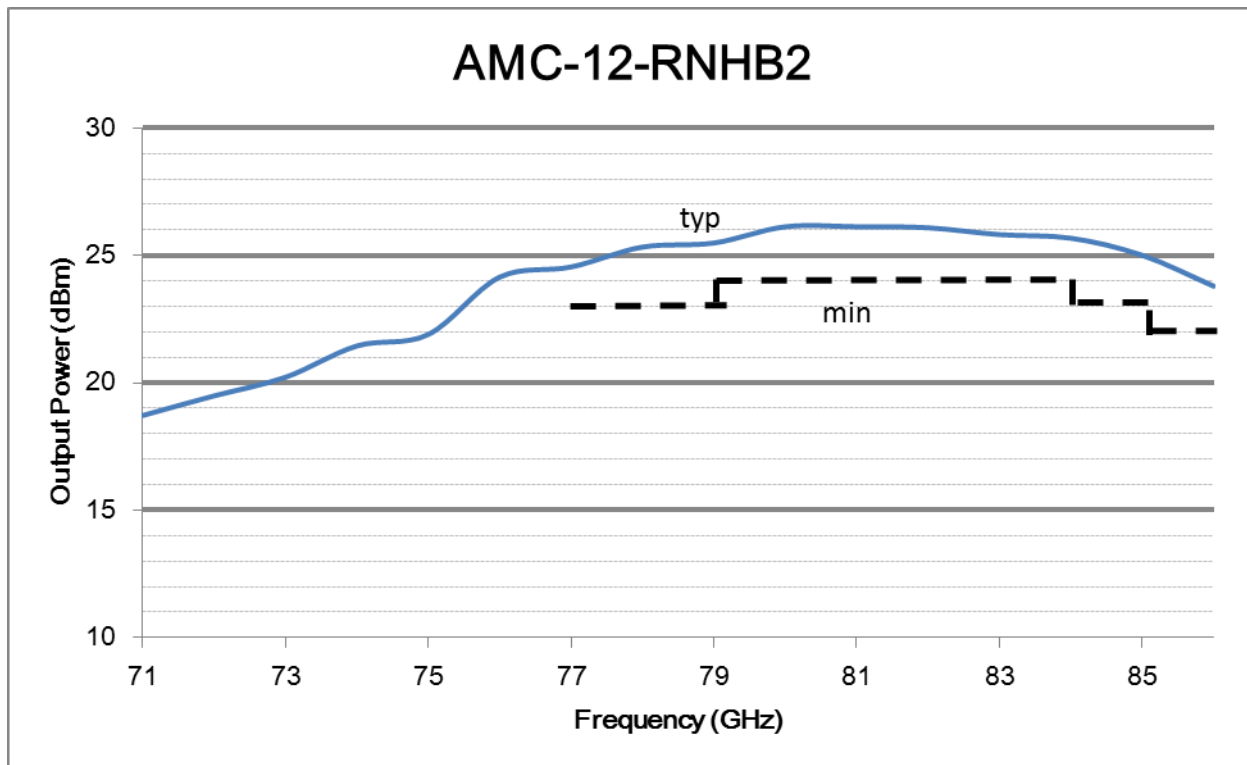




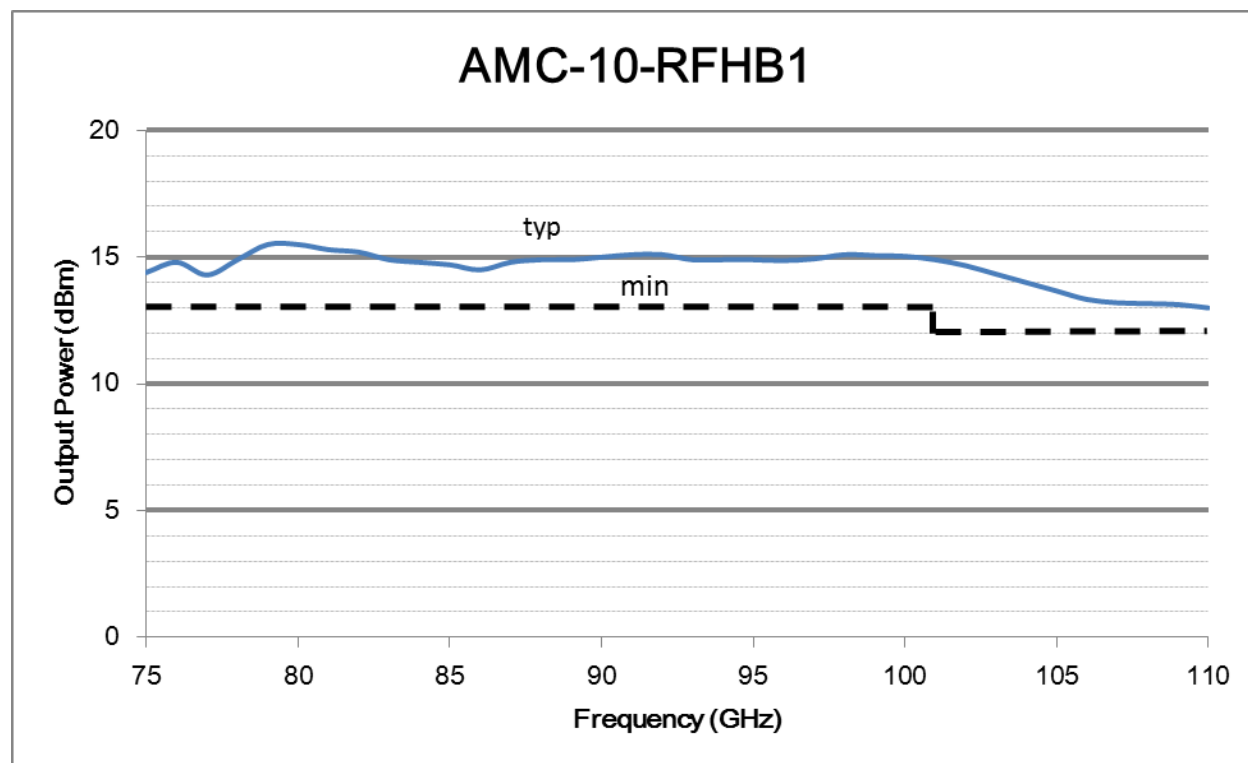
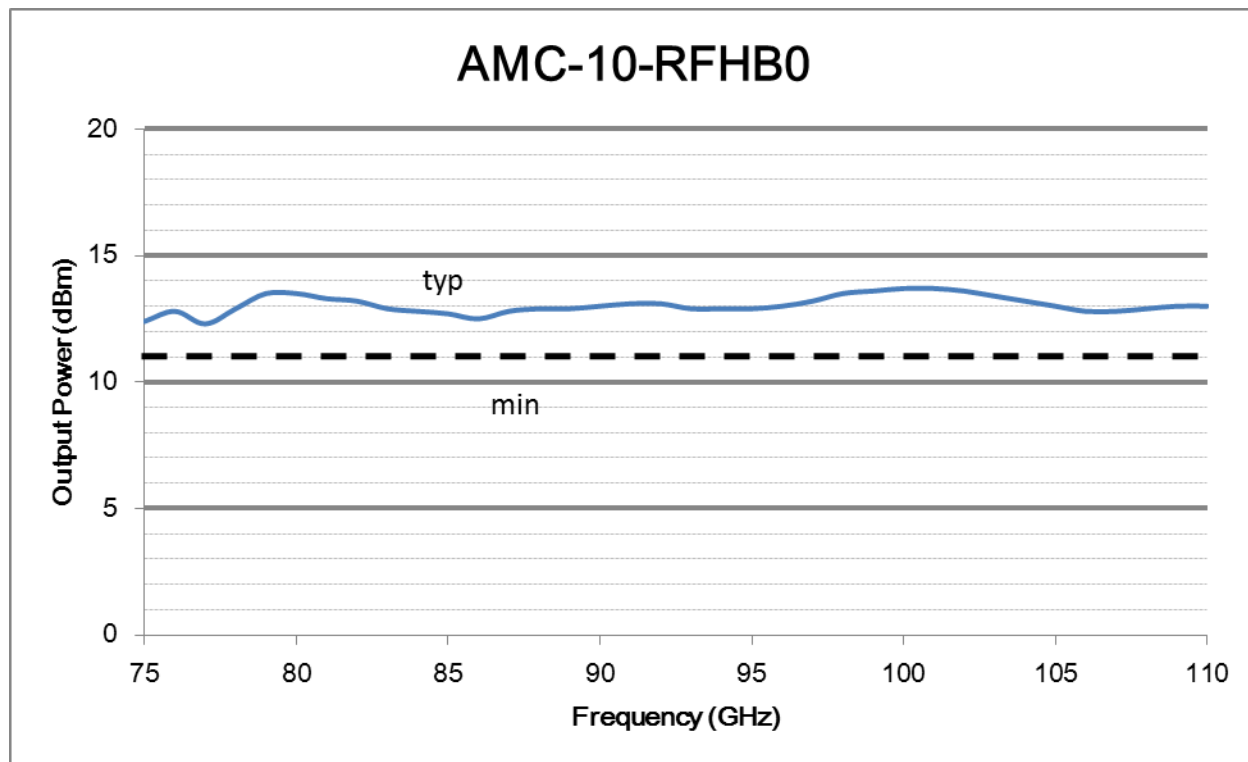


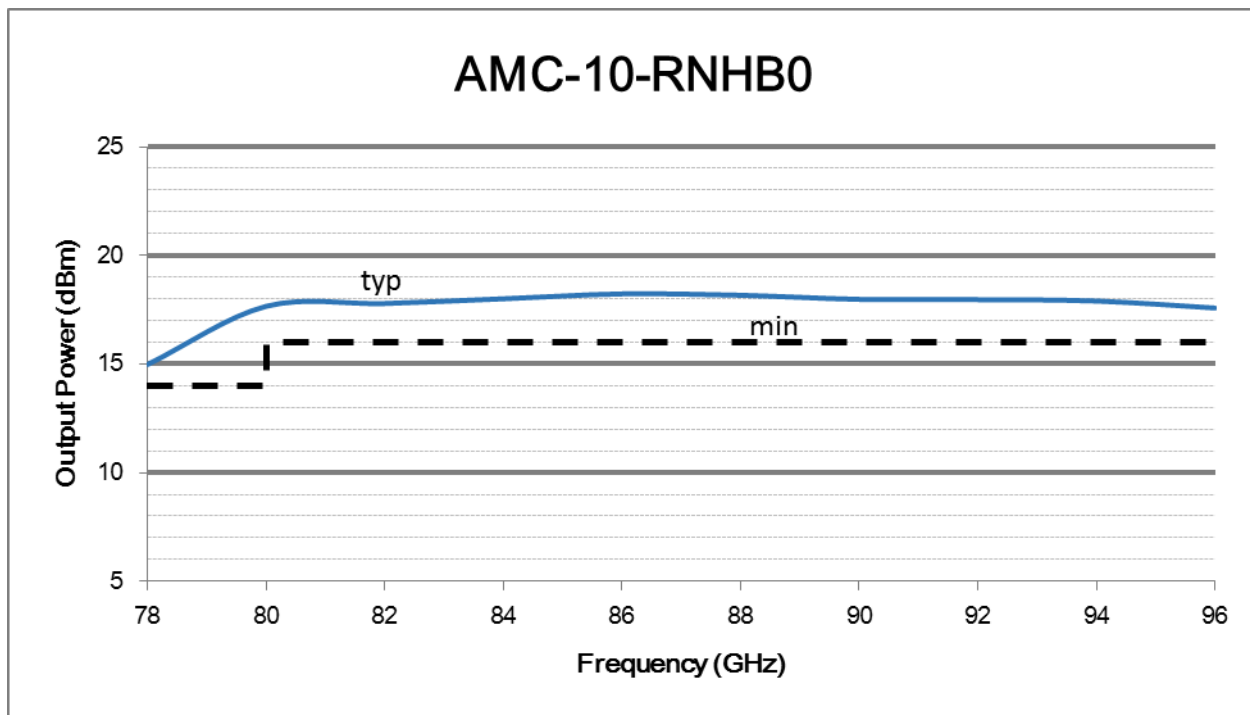
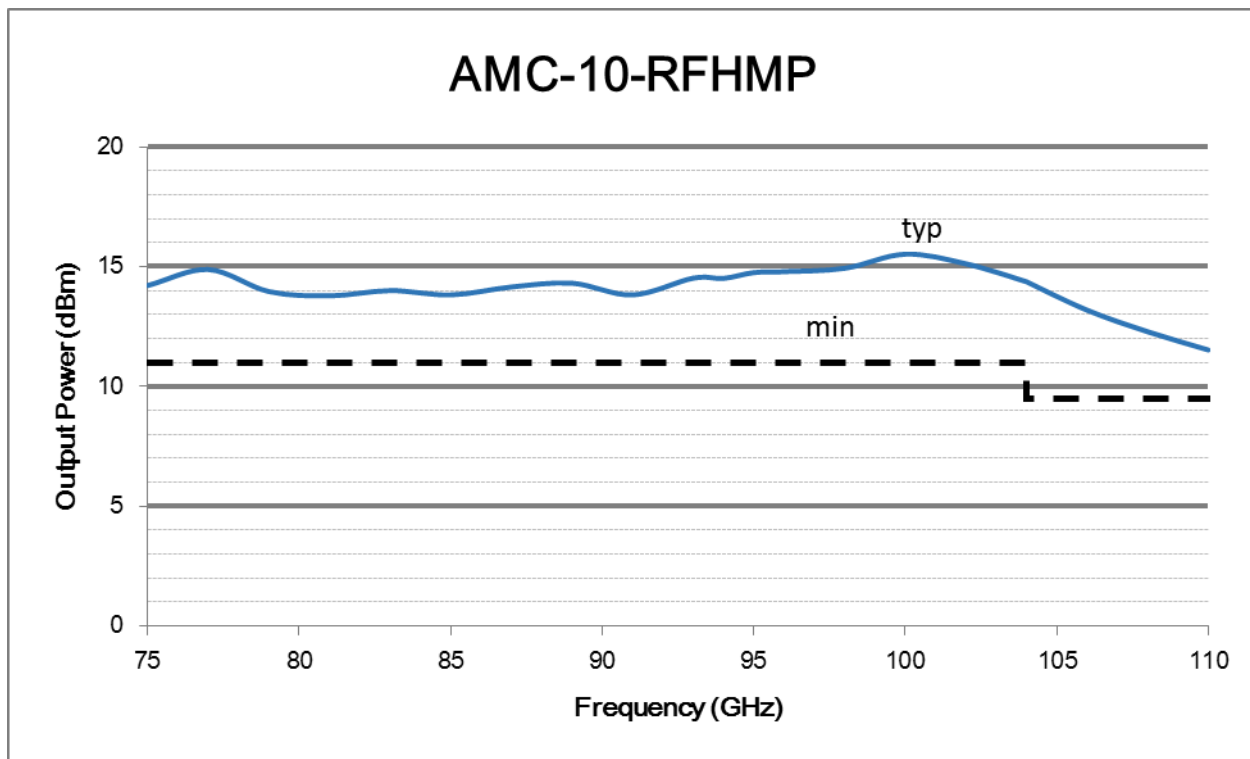


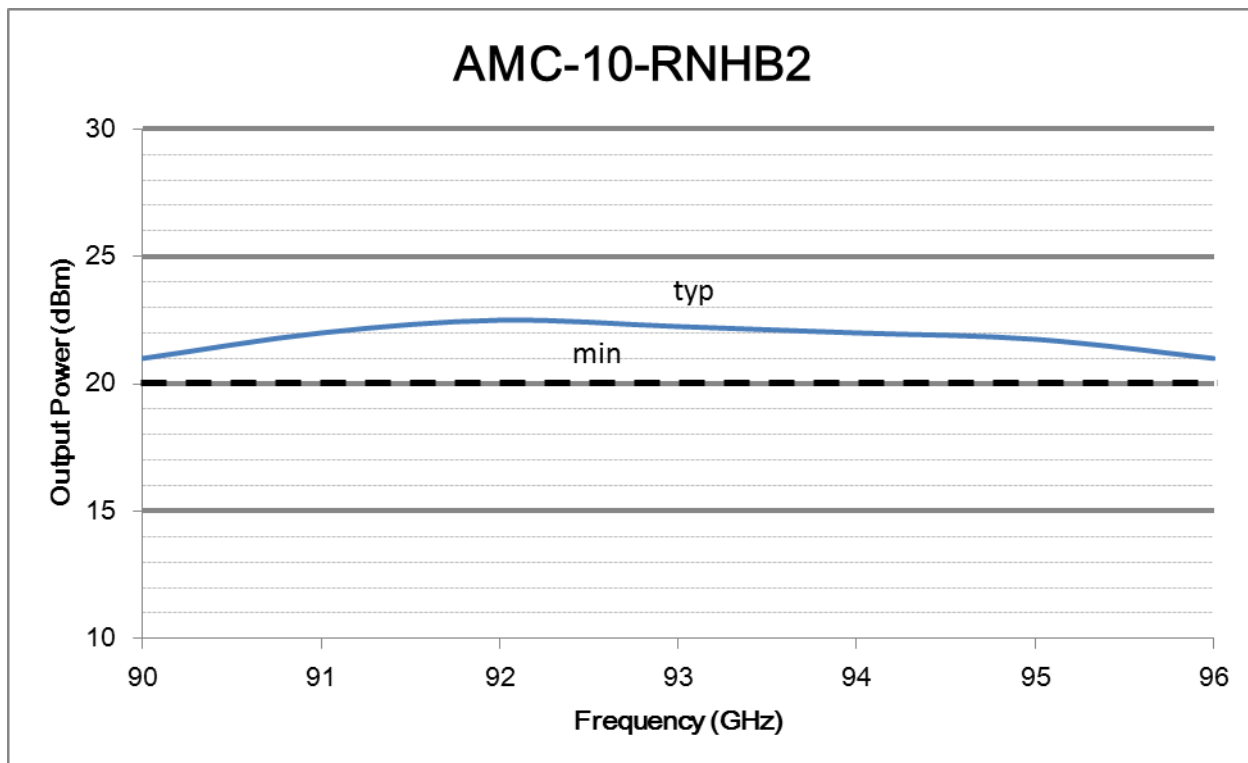
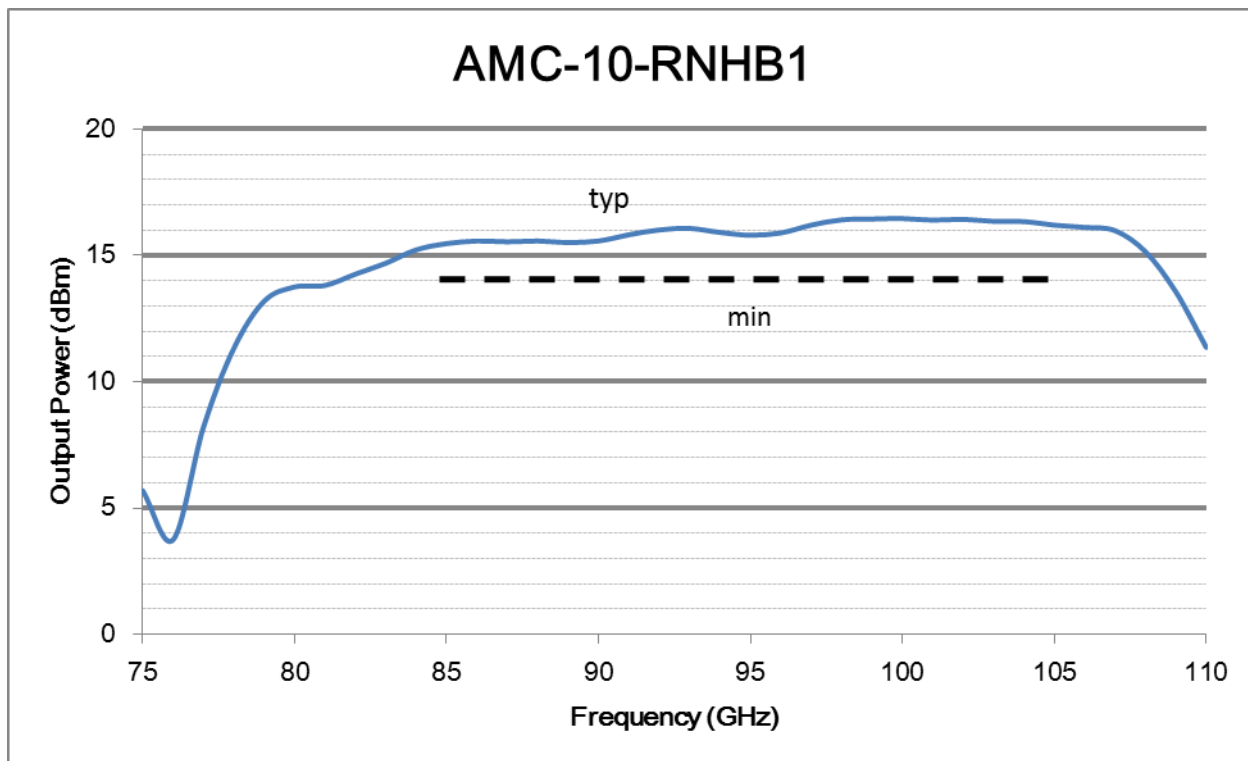


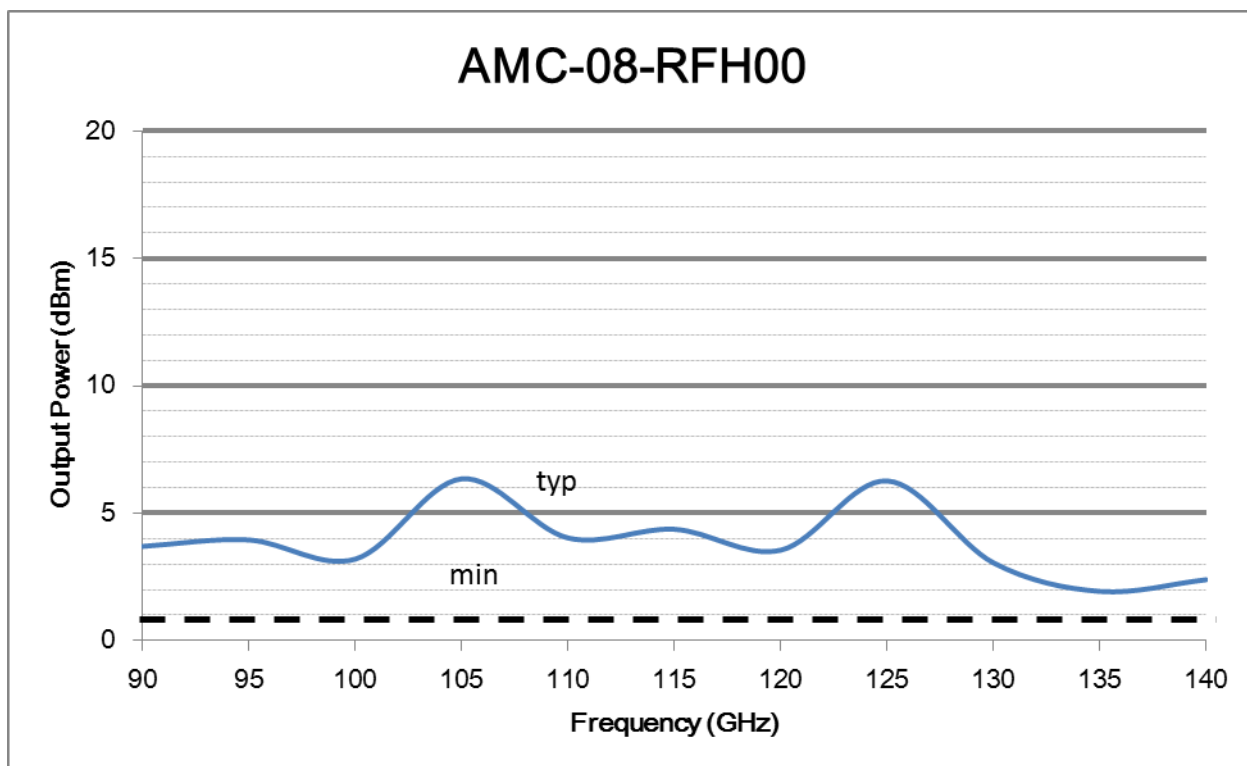
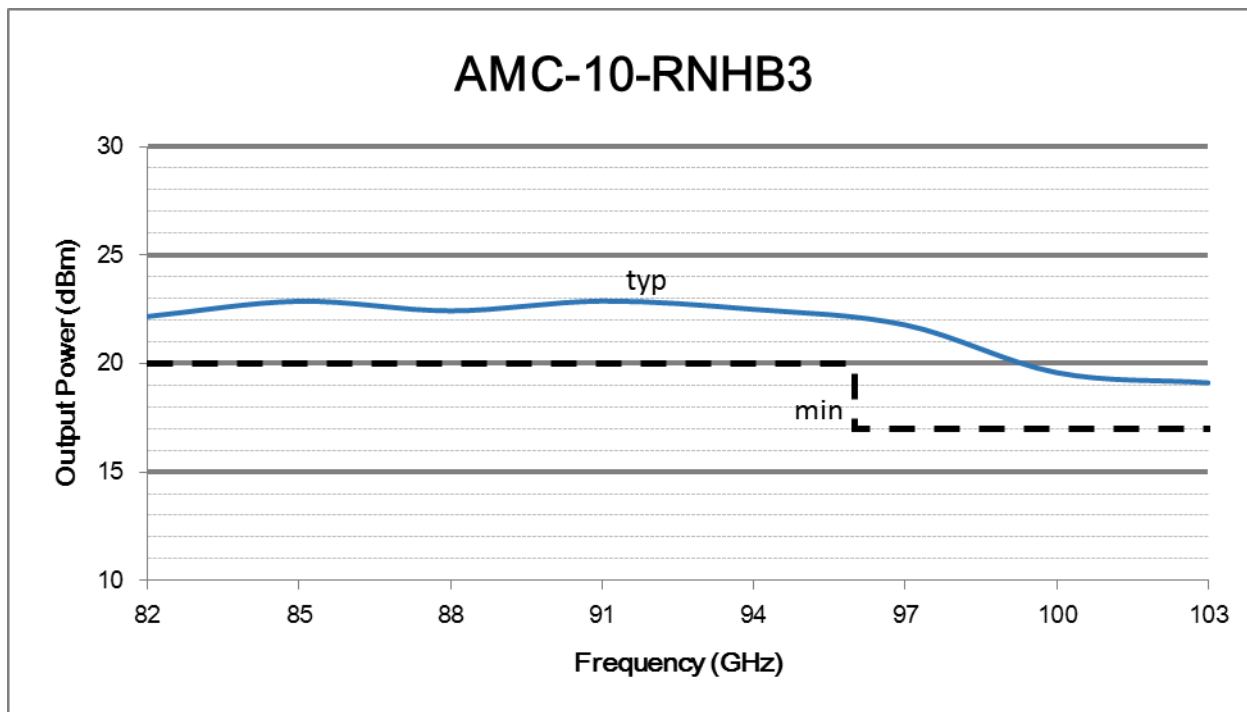




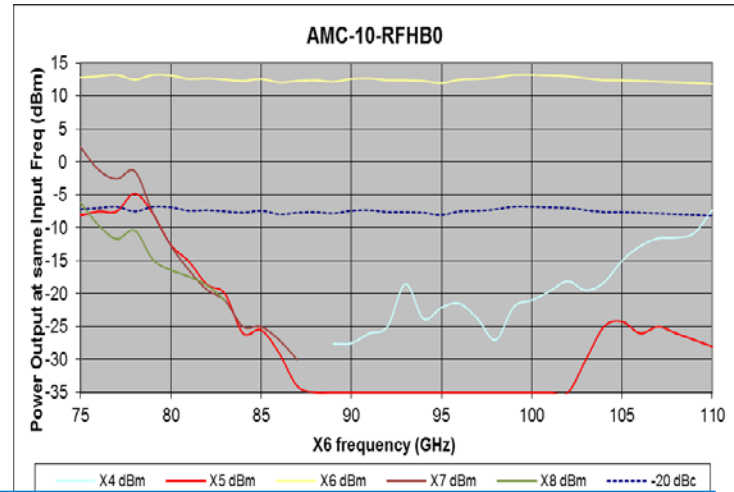
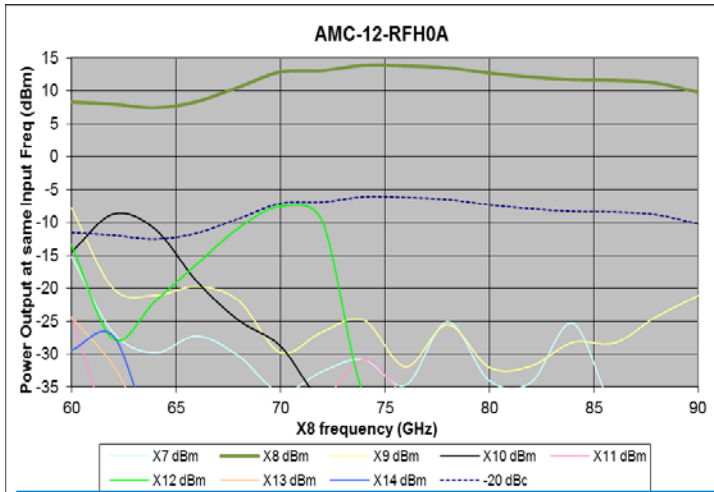
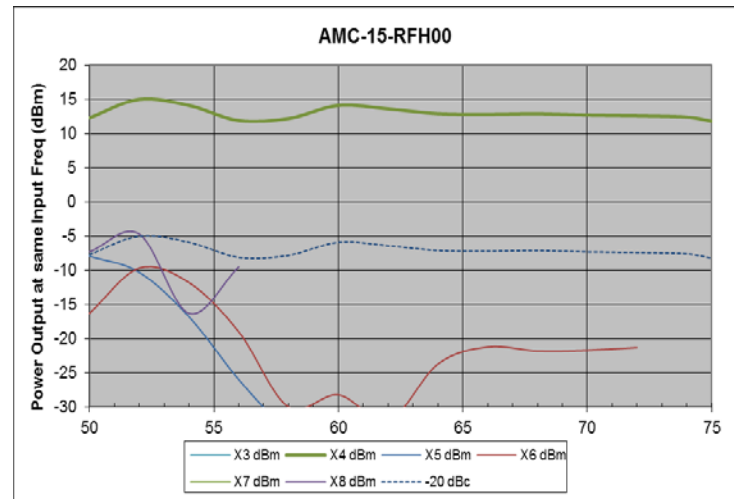
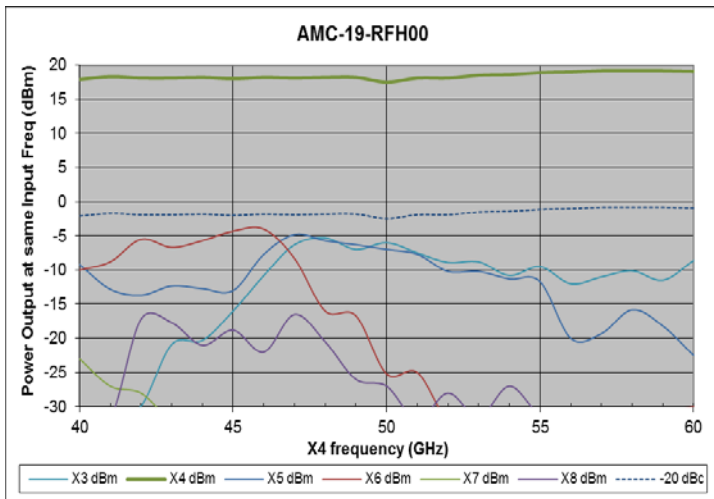
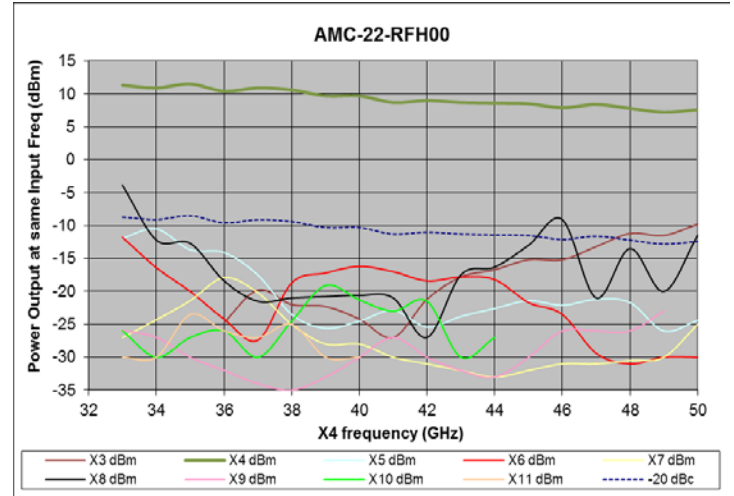
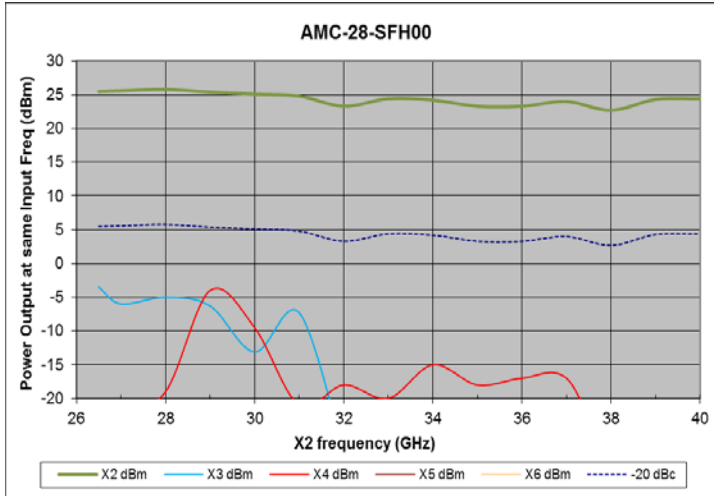


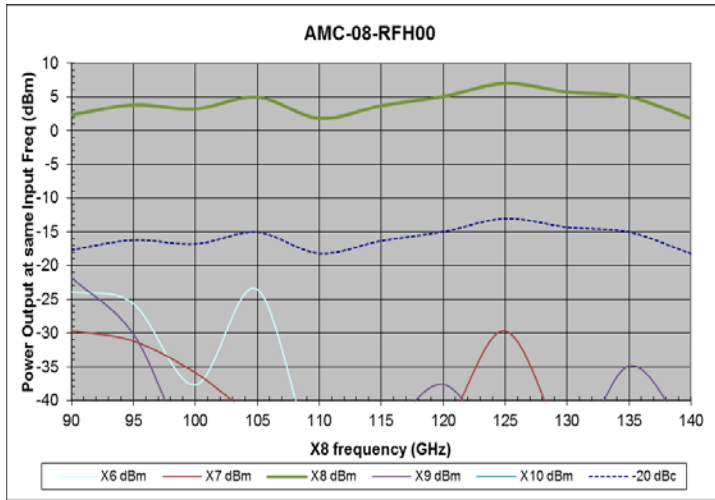






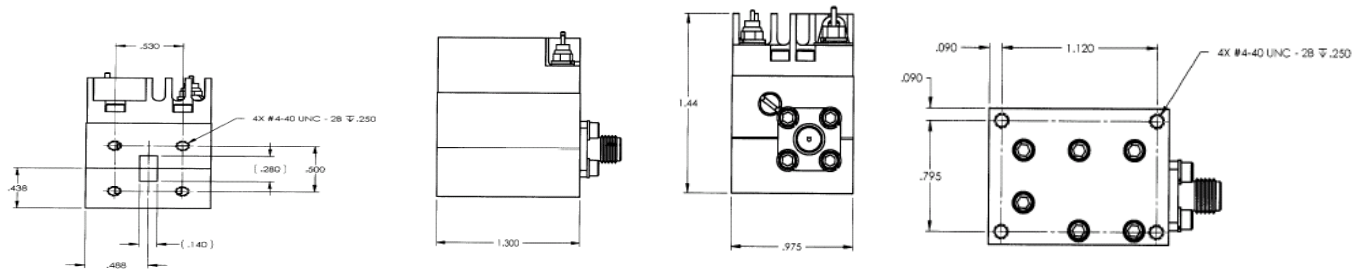
## TYPICAL HARMONICS



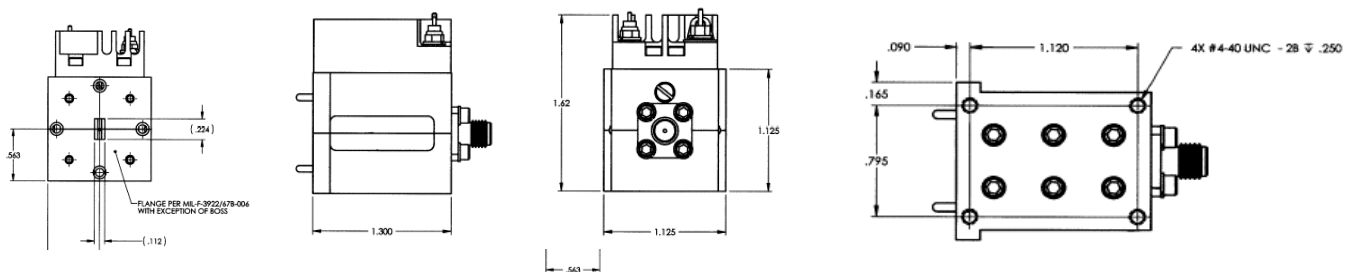


## OUTLINE DRAWINGS

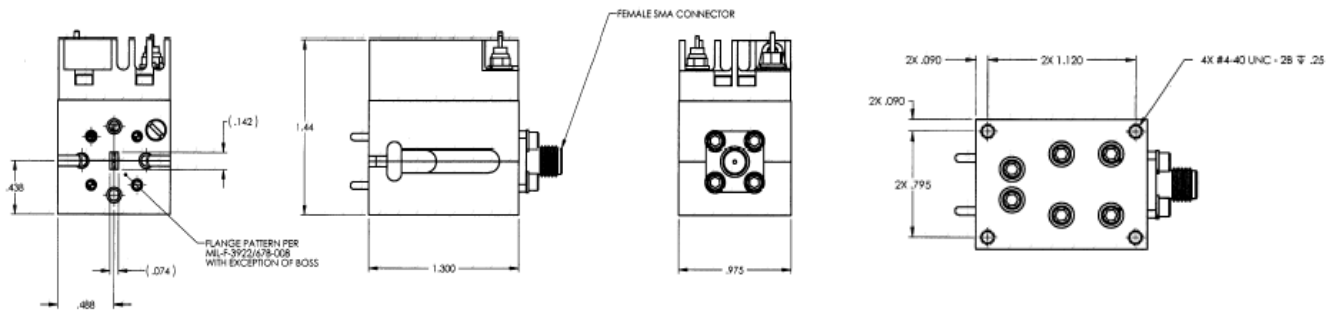
### FIGURE 1



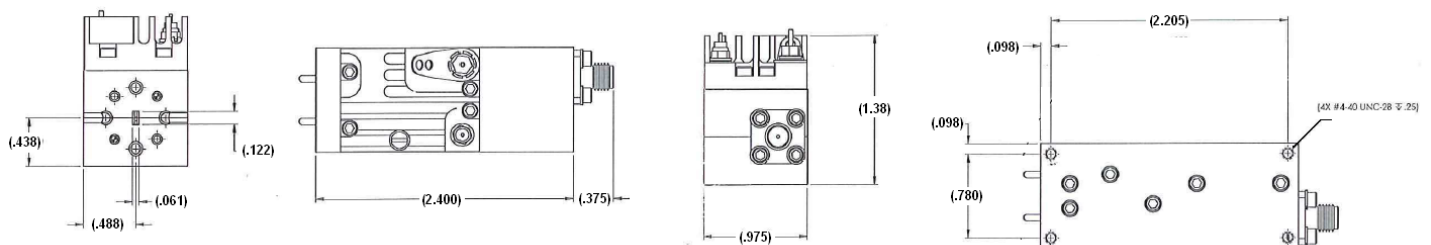
### FIGURE 2



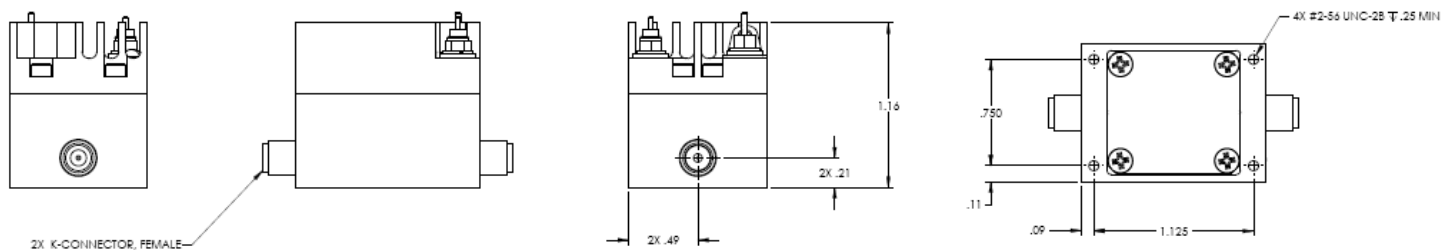
### FIGURE 3



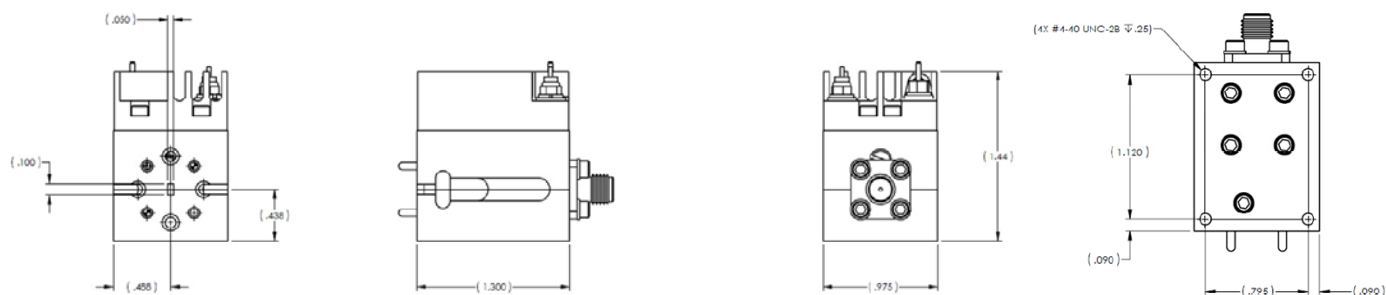
### FIGURE 4



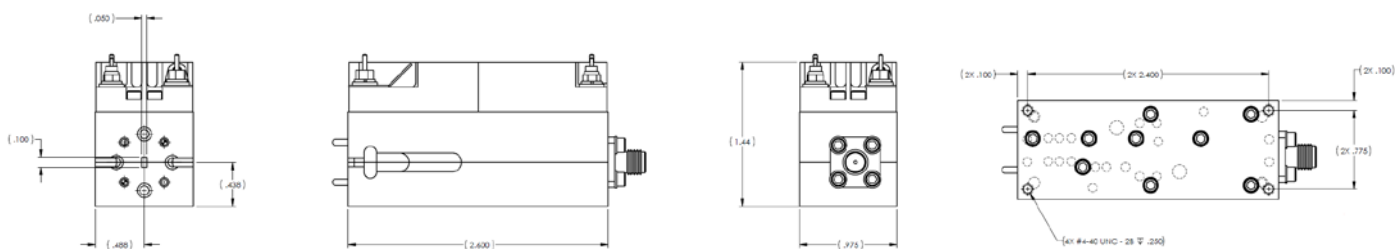
**FIGURE 5**



**FIGURE 6**



**FIGURE 7**



**All dimensions are in inches and [mm].**



## SPECIFICATIONS

Part Number	Input Connector	Output Connector		Figure
		Waveguide	Flange	
AMC-KK-CFH00	K-female	K-female	N/A	5
AMC-28-SFH00	SMA	WR-28	MIL.F-3922/54-002*	1
AMC-22-RFH00	SMA	WR-22	MIL.F-3922/67B-006	2
AMC-19-RFH00	SMA	WR-19	MIL.F-3922/67B-007	2
AMC-15-RFH00	SMA	WR-15	MIL.F-3922/67B-008	3
AMC-12-RFH0A	SMA	WR-12	MIL.F-3922/67B-009	4
AMC-10-RFH00, RFHB0, RNHB0	SMA	WR-10	MIL.F-3922/67B-010	3
AMC-10-RFHMP	SMA	WR-10	MIL.F-3922/67B-010	6
AMC-10-RNHB3	SMA	WR-10	MIL.F-3922/67B-010	7
AMC-08-RFH00	SMA	WR-08	MIL.F-3922/67B-M08	3

- With #4-40 threaded

## HEATSINKS

Please refer to our Heat Sink (HSK) information sheet:  
<http://www.millitech.com/pdfs/specsheets/IS000111-HSK.pdf>

## HOW TO ORDER

Specify Model Number AMC-XX-ABCDØ
<b>XX</b> = Output Waveguide <b>WR</b> – KK : KK <b>WR</b> – 28 : 28 <b>WR</b> – 22 : 22 <b>WR</b> – 19 : 19 <b>WR</b> – 15 : 15 <b>WR</b> – 10 : 10 <b>WR</b> – 12 : 12 <b>WR</b> – 08 : 08
<b>A</b> = Flange <b>C</b> – coaxial (K/2.92mm) <b>R</b> – round <b>S</b> – square (WR-28)
<b>B</b> = Bandwidth <b>F</b> – fullband <b>N</b> – narrowband ( $\leq 5$ GHz)*
<b>C</b> = Heatsink <b>Ø</b> – not provided <b>H</b> – provided
<b>D</b> = Other <b>X</b> – See table on page 2
<b>*Please specify frequency range for all narrowband units.</b>