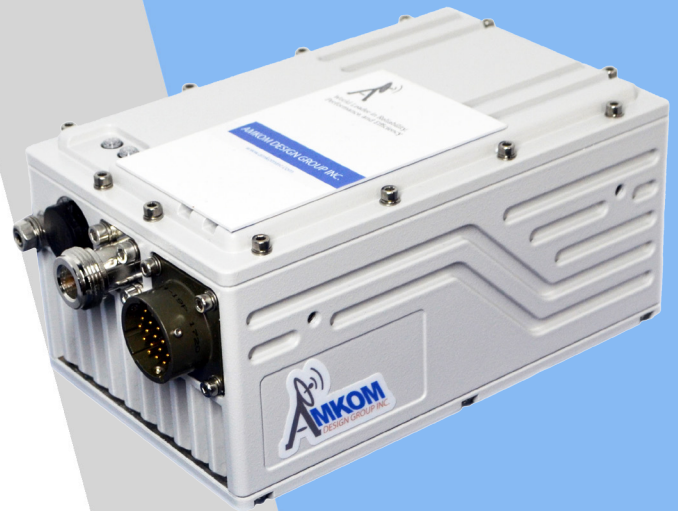# STEP ELECTRONICS
A Division of Av-Comm

Amkom AMKU16
16W Ku-Band BUC
Data Sheet

Features:

♦ Hyper-Light Package Design Only 3.1lbs (1.4kg)

♦ Extreme Stability, Reliability and Performance

♦ Built-in HPA Overdrive Circuit Protection

♦ High Temperature Mode - up to + 70°C

♦ Built-in Optimized Linearization

♦ Built-in Ultra Receive Band Reject Filter

♦ Built-in Anti Vibration Technology

♦ Built-in DC Input Noise Suppression Filter

♦ Extreme GaN Linearity and Efficiency

♦ Exceeds ALL IESS-308/309 Phase Noise Standards

♦ Triple protection sealed waveguide output

♦ Field Replaceable IP69K Rated Fans

♦ Fully Assembled and Rigorously Tested in the USA

♦ 3 Year Warranty

Design Overview:

The "MINI BRICK" series Extended (13.75 - 14.5GHz) Ku-Band BUCs are the next generation of the World's Smallest feed-horn & boom-arm mountable BUCs in the industry, weighing-in only at 3.1lbs (1.4kg) and handling output power of 16W PSAT (min) at the Extended Ku-Band frequencies. We've picked the best of both worlds as we implemented the most mature, proven efficient and reliable GaAs + GaN High Power Amplifiers with internal overdrive protection. We've chosen an absolute and "No Corner Cutting" concept in our design. Its weatherproof and robust Hyper-Light package is constructed with the most advanced mechanical precision engineering in mind. We've taken absolutely no compromises during each of the design stages using only the toughest aerospace grade aluminum based metal with the most efficient heat disposal properties. Each unit is vigorously tested at our California facility according to our ATP (acceptance testing procedure).

TECHNICAL SPECIFICATIONS	
Operating RF Frequency	13.75 - 14.50 GHz
Operating IF frequency	950 to 1700 MHz
Local Oscillator	12.80 GHz
Rated Output Power | Linear Power SR @ -26dBc	16W 42dBm PSAT (min) | 13W 41 dBm PLIN (min)
IF Connector	N-type (50 Ohm) | F-type (75 Ohm)
Prime Power via IF or MS Connector (Universal)	+ 16 - 55 VDC 110W PSAT & 85W @ P-LINEAR
10MHz External Ref. (Internal High Stability Optional)	10MHz Reference Level: 0dBm +/- 5dBm
Output Interface	WR75 Grooved
Gain (Temperature Compensated)	64dB(min) 68 dB(typ.)
TX Gain variation 50MHz	± 0.5 dB
TX Gain variation 500MHz	± 1.5 dB
Built-in Receive Reject Filter	Suppression by +60dB (min)
Stealth Linear Operation Mode (optional)	LED Shut-Off | Silenced fans
TX Gain Flatness	± 0.75 dB max. over 40 MHz
IMD3 (two tones) 3dB off rated Power	-25 dBc max. 2 signal 5MHz apart at P-LINEAR
In-Band/Out-band Spurious	-60dBc max.
Input VSWR	1.5:1
Output VSWR	1.3:1
Spectral Regrowth Linearized at P_{LINEAR} (QPSK at 1.5x and OQPSK at 1.0x symbol rate off-set with 2dB back-off from rated power)	-30 dBc
Group Delay	Ripple 1 nsec point to point max.
AM/PM Conversion	1.0°/dB max. at 3 dB output backoff
Noise Power Density (TX)	-85dBm/Hz
Noise Power Density (RX)	-155dBm/Hz (10.95 - 12.75 GHz)
Phase Noise (Up Converter) | (Ext. Ref.)	-55 dBc/Hz @ 10 Hz | -115dBc/Hz -65 dBc/Hz @ 100 Hz | -135dBc/Hz -75 dBc/Hz @ 1 kHz | - 150dBc/Hz -85 dBc/Hz @ 10 kHz | -155dBc/Hz -95 dBc/Hz @ 100 kHz |-160dBc/Hz
Monitor & Control (Optional)	Ethernet Web Page Based, RS232/485 (opt.)
Environmental MIL-STD Vibration MIL-STD	Compliant with MIL-STD810E MIL-STD810F, Method 514.5 C-2 Transport
Operating Temperature Range	- 40° C to + 70°C
Storage Temperature Range	- 60°C to + 85°C
Fan Rating / Field Replaceable	IP 69K, Field Interchangeable
Humidity	100% Condensing, IP67 Rated
Shock	20 g peak, 11 msec, 1/2 sine
Altitude	21,500ft, 6,500m
Dimensions	6" x 3.7" x 2.91" (152x94x74 mm) Not including connectors
Weight	3.1lbs (1.4kg)

MECHANICAL DRAWING
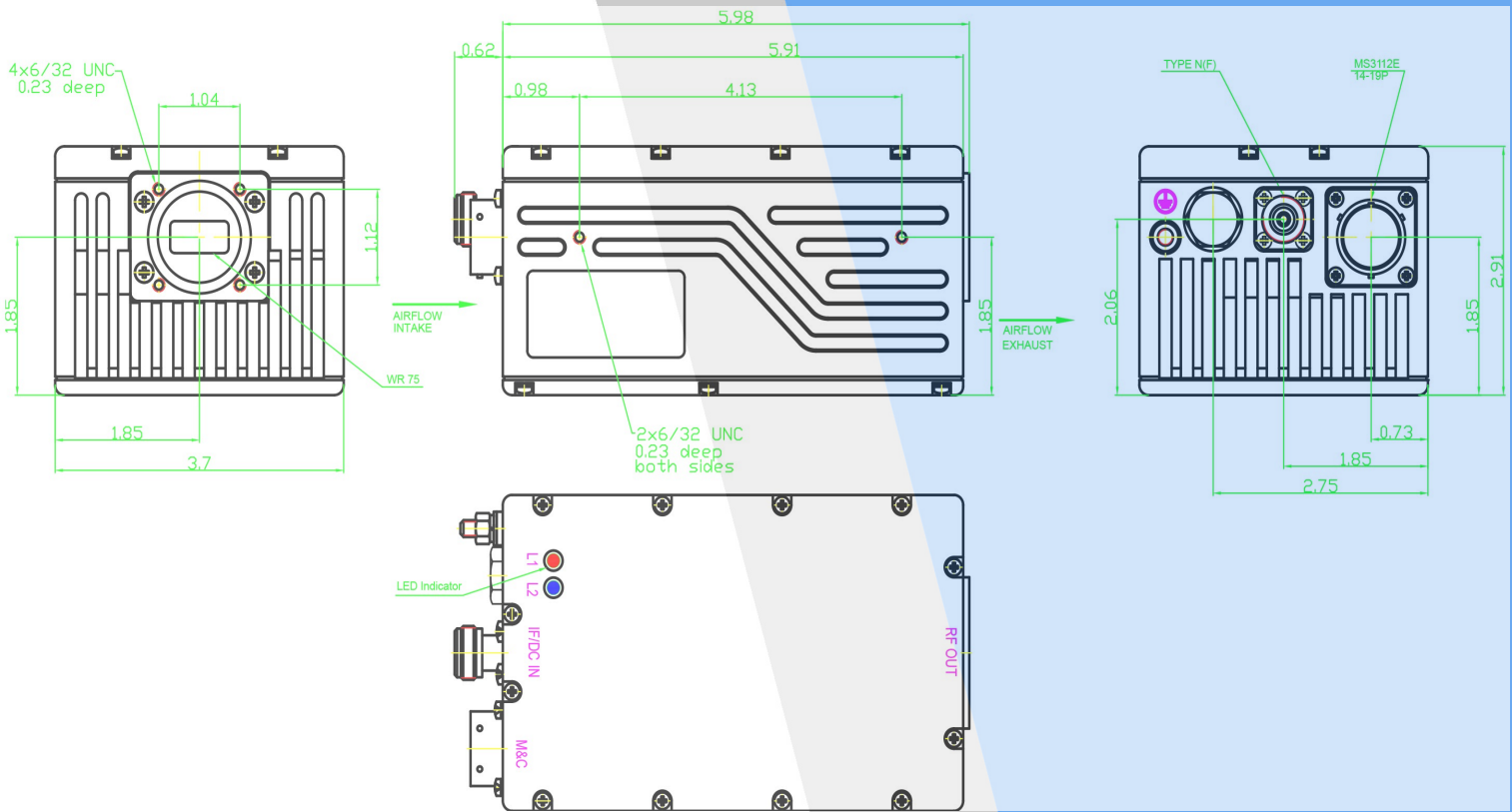
PART NUMBERING SYSTEM

AM - "MINI BRICK" MODEL SERIES

KU - Universal Ku-Band 13.75 - 14.50 GHz

KS - Standard Ku-Band 14.0 - 14.50 GHz

KL - Low Ku-Band 12.75 - 13.25 GHz

16 | 20 | 25 | 30 - Rated PSAT Power in Watts

N - 50 Ohm IF Input Connector Type | **F** - 75 Ohm IF Input Connector Type

M - M&C Option - RS232/485 + Ethernet

S - Stealth Linear Mode

E - Ethernet Only

R - 10 MHz Ref. Auto Sense | Internal Reference

C - Custom option availability

Example: AMKU16NMR