

**SATCOM TRANSMITTER**

# Up-Converter

## X-band Up-Converter

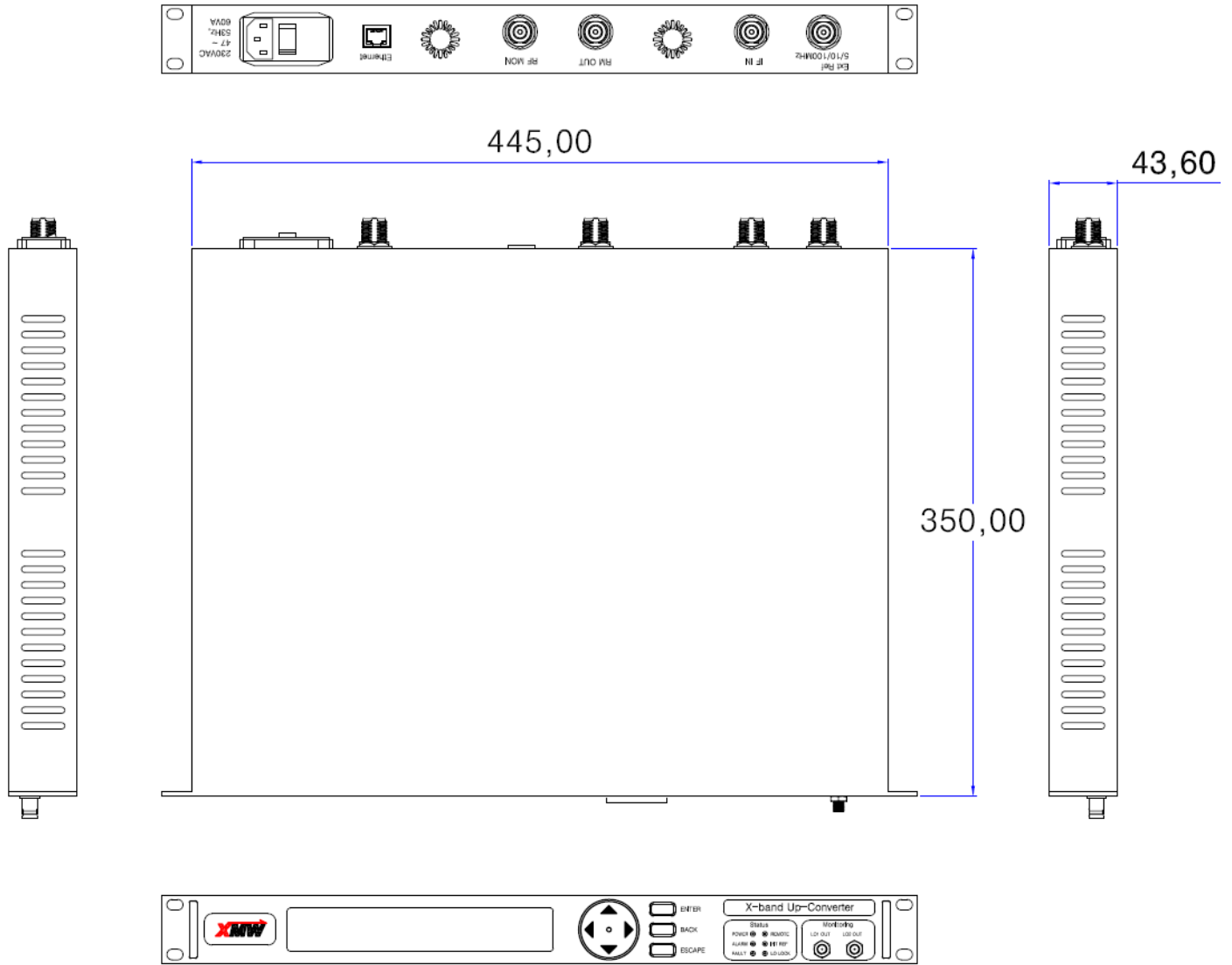
### UC7000

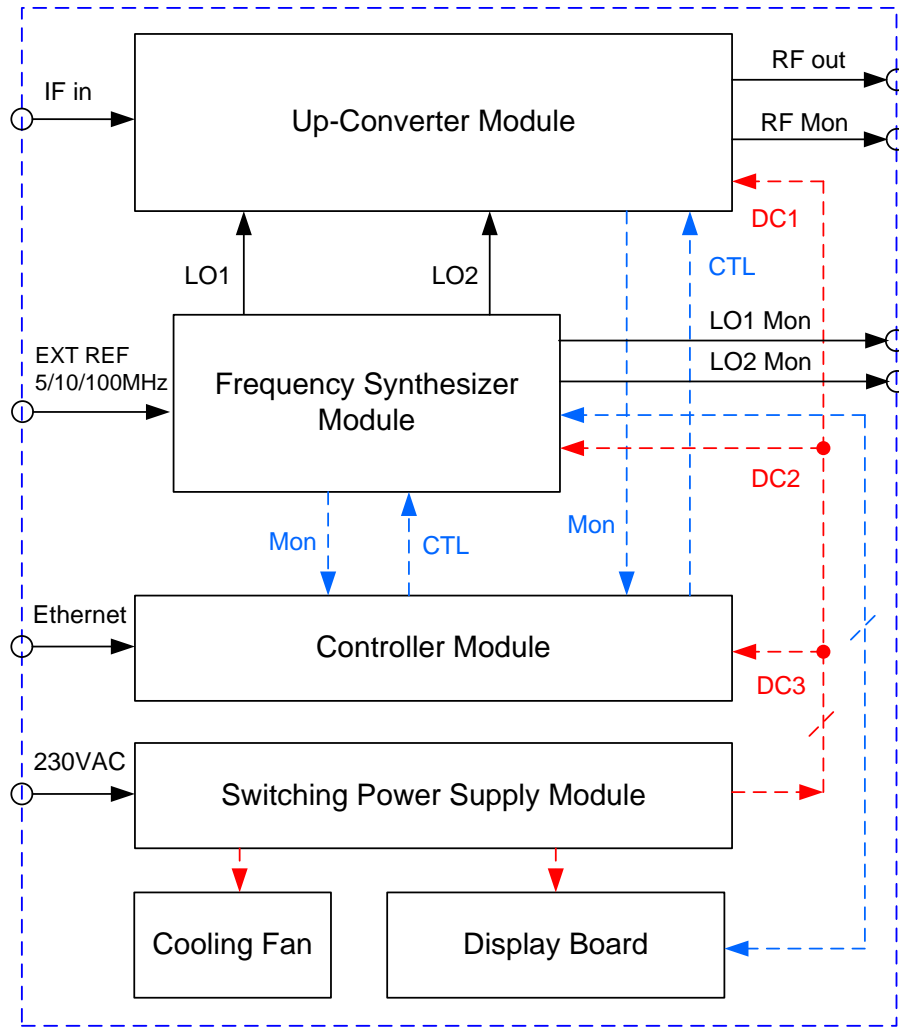
#### TYPICAL SPECIFICATIONS

<b>[Frequency]</b>		<b>Phase Stability</b>	5 degree (22±3 Deg. C)
<b>Input frequency range</b>	Type A: 230±4 MHz, Type B: 70±4 MHz	<b>[Local oscillator characteristics]</b>	
<b>IF bandwidth (3dB)</b>	Total 20MHz	<b>LO frequency step</b>	1KHz
<b>Output frequency range</b>	7145 - 7235 MHz in 1KHz step	<b>LO spurious</b>	
<b>Conversion</b>	Double conversion, No inversion	<b>Related to frequency</b>	-60dBc max
		<b>Other</b>	-70dBc max
<b>[IF input characteristics]</b>		<b>Phase noise</b>	-77dBc/Hz max @100Hz
<b>IF input level</b>	-30 - 0 dBm (Dynamic range) +5dBm max (No damage)		-89dBc/Hz max @1KHz
<b>LO leakage (Input port)</b>	-70dBm max		-98dBc/Hz max @10KHz
<b>Input VSWR</b>	1.3:1 max	<b>Internal reference</b>	
		<b>Frequency</b>	10MHz
<b>[RF output characteristics]</b>		<b>Stability</b>	2x10 <sup>-8</sup> over temperature
<b>Output level</b>		<b>External reference</b>	
<b>Range</b>	-7 - +13 dBm (20dB attenuation range)	<b>Frequency</b>	Type A: 5/10/100MHz (selectable)
<b>Output P1dB</b>	+13dBm	<b>Input level</b>	Type B: 5/10MHz (selectable)
<b>Level adjust</b>	0.5dB step within output level range		-3 - +5 dBm
<b>Automatic Level Control</b>	Selectable output level vs. IF input level	<b>[Monitoring &amp; Control]</b>	
<b>Spurious</b>		<b>Remote control (Rear panel)</b>	TCP/IP (Ethernet 100-base T, RJ-45)
<b>In-band</b>	-60dBc max	<b>Control &amp; Monitoring</b>	Output frequency, Output level, Ext. ref. indication, Alarms/Faults, Local/Remote, IP address
<b>Out-band</b>	-75dBm max		
<b>Rx-band (8.4 - 8.5 GHz)</b>	-100dBm max (Including LO, Spurious & harmonics)	<b>[General]</b>	
<b>Output VSWR</b>	1.35:1 max	<b>Input voltage</b>	230 ±10% VAC, 47 - 53 Hz
<b>[Transfer characteristics]</b>		<b>Dimensions</b>	1U, 19 inch rack mountable Suitable slides and handles
<b>Gain range</b>	0 - 20 dB, 0.5dB step	<b>Interface</b>	
<b>Gain stability</b>	0.5dBp-p (22±3 Deg. C)	<b>IF input connector</b>	N-female (50 Ohm, rear panel)
<b>Gain flatness</b>	±0.5dB over 20MHz	<b>RF output connector</b>	N-female (50 Ohm, rear panel)
<b>Gain slope</b>	0.1dB/MHz	<b>Ext. Ref. input connector</b>	N / BNC-female (50 Ohm, rear panel)
<b>Noise figure</b>	14dB max at maximum gain 16dB max at 15dB gain	<b>LO monitor connector</b>	SMA / N-female (front panel)
		<b>RF monitor connector</b>	SMA / N-female (rear panel)
<b>Group delay</b>		<b>Temperature</b>	5 - 45 Deg. C
<b>Linear</b>	0.5ns/MHz	<b>Humidity</b>	0 - 95% relative
<b>Parabolic</b>	0.1ns/MHz <sup>2</sup>	<b>Cooling</b>	Forced air
<b>Ripple</b>	1.0ns p-p (Center frequency±10MHz)	<b>MTBF</b>	50,000hrs
<b>Stability</b>	2ns (22±3 Deg. C)		

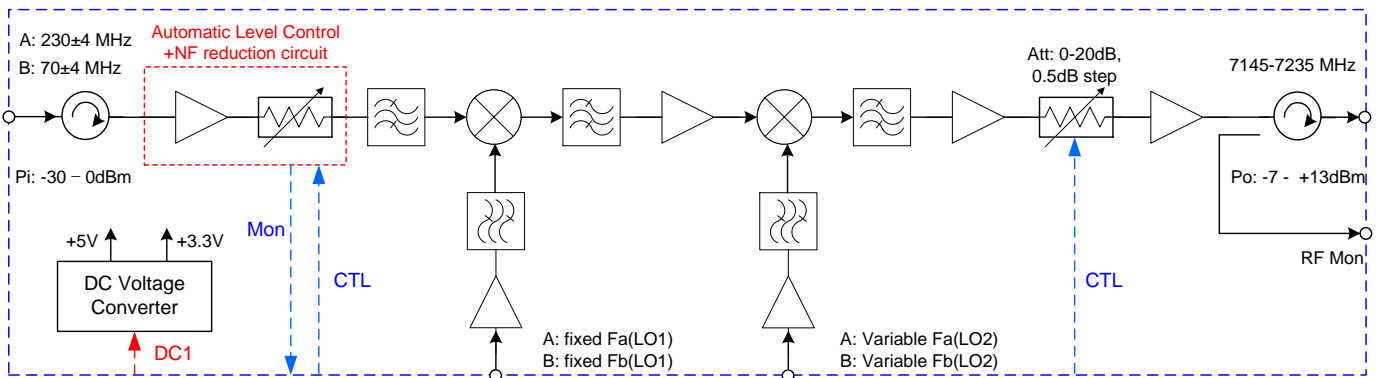
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**OUTLINE DRAWING**





< X-band Up-converter Structure >



< X-band Up-converter Module Block Diagram >

