

# INTELLIGENT INTERACTIVE SYNTHESIZER

## SURFACE MOUNT MODEL: FSW100230-50

**WIDE BANDWIDTH**

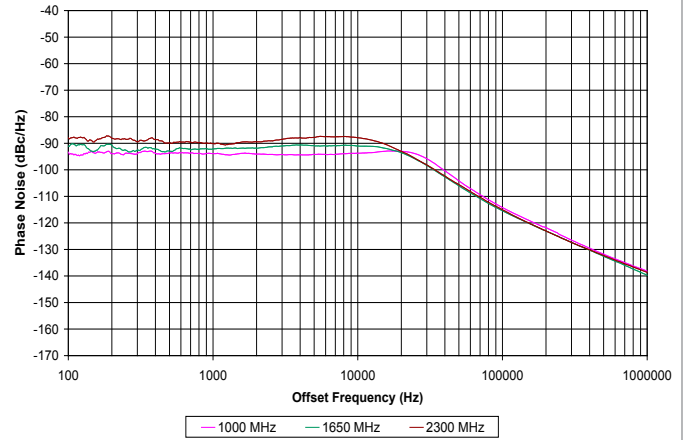
**1000 - 2300 MHz**

**FEATURES:**

- ▶ Exceptionally Low Phase Noise
- ▶ Interactive Communication
- ▶ Standard Programming Interface
- ▶ Ultra Wide Tuning Range
- ▶ Lead Free - RoHS Compliant
- ▶ Patented REL-PRO® Technology
- ▶ Small Size, Surface Mount
- ▶ Buffered Output



**Phase Noise**

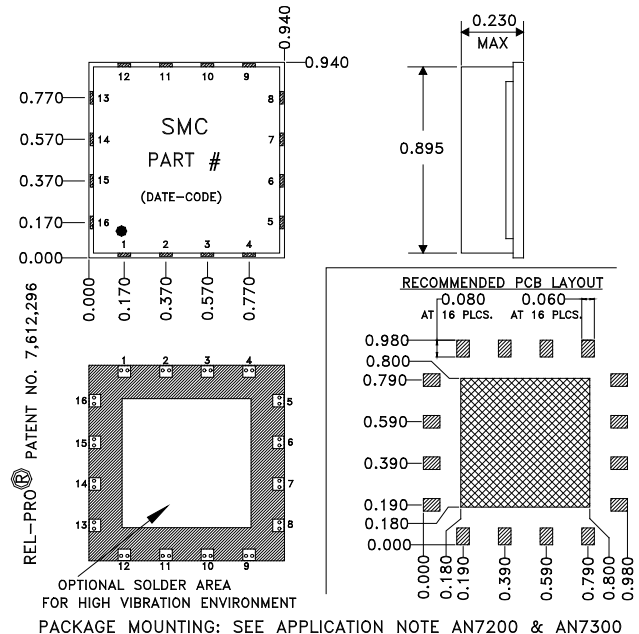


**SPECIFICATIONS (Rev. B 03/24/11)**

<b>Frequency</b>	1000 - 2300 MHz		
<b>Step Size</b>	500 kHz		
<b>Reference Input Frequency</b>	10 MHz <sup>1</sup>		
<b>Reference Input Voltage</b>	1 V p-p to 3.3 V p-p		
<b>Bias Voltage</b>	Vcc	V (Vdc)	I (mA Max.)
	Digital	+5	15
	VCO	+5	55
	Tune	+24	10
<b>Output Power</b>	+4 dBm (Min.)		
<b>Spurious Suppression</b>	90 dB (Typ.)		
<b>Harmonic Suppression</b>	18 dB (Typ.)		
<b>Settling Time</b>	3 mSec (Typ.) <sup>2</sup>		
<b>Output Impedance</b>	50 Ohms (Nom.)		
<b>Lock Detect Indicator</b>	CMOS 3.3 V		
<b>Typical Phase Noise</b>	Offset	Phase Noise	
	@ 1 kHz	-92 dbc/Hz	
	@ 10 kHz	-92 dbc/Hz	
	@ 100 kHz	-115 dbc/Hz	
<b>Operating Temperature Range</b>	-40 to +85 °C		
<b>Programming</b>	See Application Note: AN7100		

<sup>1</sup> Reference input frequency is programmable (see AN7100) in multiples of the step size, 10 MHz is the default setting. 150 MHz (Max.)  
<sup>2</sup> From the rising edge of LE to stable lock detect

**Package #** 273LF



**Absolute Maximum Ratings**

<b>Storage Temp. Range</b>	-55 to +125 °C
<b>Bias Voltage (Digital)</b>	+5.25 V
<b>Bias Voltage (Tune)</b>	+28 V
<b>Bias Voltage (VCO)</b>	+5.5 V
<b>DC Voltage Applied to RF Out</b>	±25 V

Port Configuration		
Pin 1,2,3 - NC	Pin 8 - Vcc (Tune)	Pin 16 - Clock In
Pin 4 - Error flag	Pin 9 - Vcc (VCO)	All Others - Ground
Pin 5 - Latch Enable In	Pin 13 - RF Out	
Pin 6 - Ref. In	Pin 14 - Lock Detect Out *	NC - No Connection
Pin 7 - Vcc (Digital)	Pin 15 - Data In	

\* High when locked (source/sink 500 uA)

This product is manufactured under one or more of the following patents: Approved: 5,160,810; 5,122,621; 5,390,349; 5,416,449; 5,650,754; 5,805,431; 6,525,623; 6,850,575; 7,088,189; 7,180,381; 7,196,591; 7,262,670; 7,265,642; 7,292,113; 7,365,612; 7,495,525; 2,548,311; 2,548,317; 7,545,229; 7,580,693; 7,586,381; 7,605,670; 7,636,021; 2,533,623 | Pending: 60/493075; 60/501371 & 60/501790; 60/527957 & 60/528670; 60/563481; 60/564173; 60/589090; 60/601823; 60/605791; EV31369834; 11/259766; 60/622485 & 60/710310; 10/937525/60/736901; 60/732787; 7,495,525; 2,548,311; 2,548,317; 7,545,229; 2,563,174; 7,580,693; 7,612,296; 2,524,751

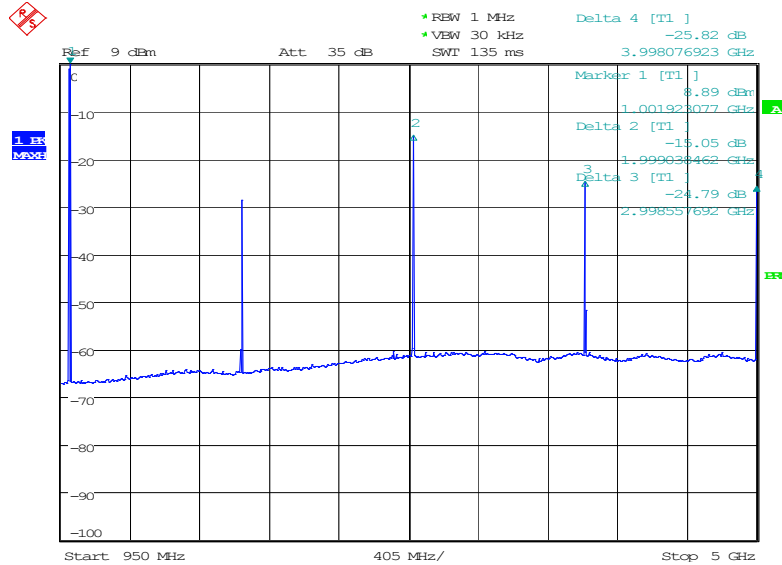
# INTELLIGENT INTERACTIVE SYNTHESIZER

## SURFACE MOUNT MODEL: FSW100230-50

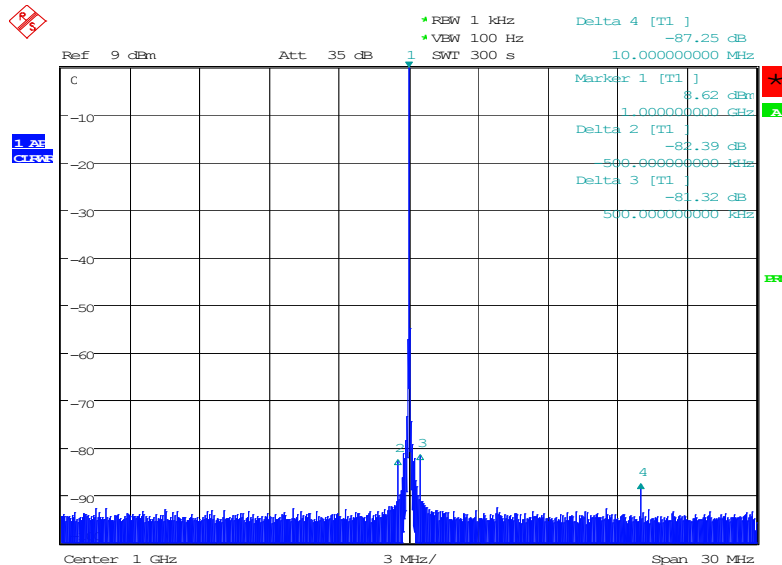
WIDE BANDWIDTH

1000 - 2300 MHz

### HARMONIC SUPPRESSION



### REFERENCE SIDEBAND SUPPRESSION



PERFORMANCE PLOTS

This product is manufactured under one or more of the following patents. Approved: 5,160,810; 5,122,621; 5,390,349; 5,416,449; 5,660,754; 5,805,431; 6,525,623; 6,850,575; 7,088,189; 7,180,381; 7,196,591; 7,262,670; 7,265,642; 7,495,525; 2,548,311; 2,548,317; 7,545,229; 7,580,693; 7,586,381; 7,605,670; 7,636,021; 2,533,623 | Pending: 60/493075; 60/501371 & 60/501790; 60/527957 & 60/528670; 60/563481; 60/564173; 60/589090; 60/601823; 60/605791; EV/31369834; 11/259766; 60/622485 & 60/710310; 10/937525/60/736901; 60/732787; 7,495,525; 2,548,311; 2,548,317; 7,545,229; 2,563,174; 7,580,693; 7,612,296; 2,524,751

Copyright © Synergy Microwave Corporation  
2011 McLean Boulevard • Paterson, New Jersey 07504 USA • Tel: (973) 881-8800 • Fax: (973) 881-8361  
E-Mail: sales@synergymwave.com • World Wide Web: http://www.synergymwave.com

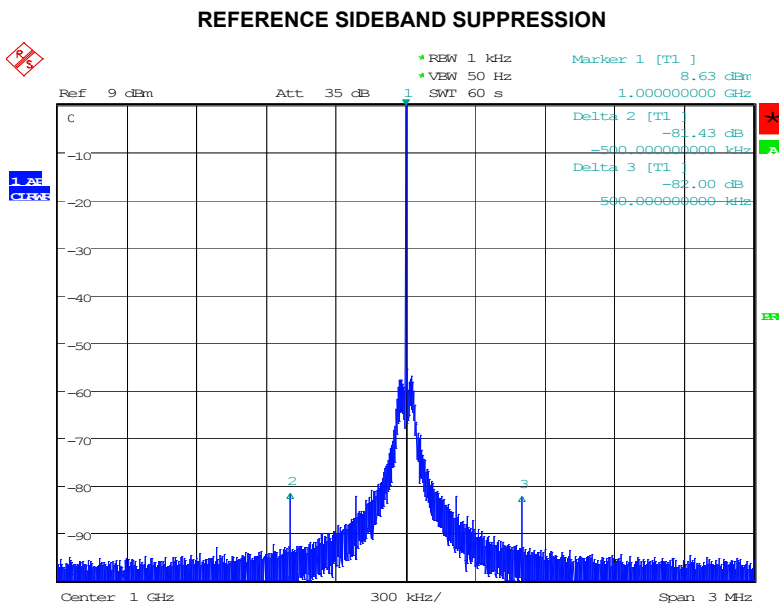


# INTELLIGENT INTERACTIVE SYNTHESIZER

## SURFACE MOUNT MODEL: FSW100230-50

WIDE BANDWIDTH

1000 - 2300 MHz



PERFORMANCE PLOTS

This product is manufactured under one or more of the following patents. Approved: 5,160,810; 5,122,621; 5,390,349; 5,416,449; 5,650,754; 5,805,431; 6,525,623; 6,850,575; 7,088,189; 7,180,381; 7,196,591; 7,262,670; 7,265,642; 7,292,113; 7,365,612; 7,495,525; 2,548,311; 2,548,317; 7,545,229; 7,580,693; 7,586,381; 7,605,670; 7,636,021; 2,533,623 | Pending: 60/493075; 60/501371 & 60/501790; 60/527957 & 60/528670; 60/563481; 60/564173; 60/589090; 60/601823; 60/605791; EV/31369834; 11/259766; 60/622485 & 60/710310; 10/937525/60/736901; 60/732787; 7,495,525; 2,548,311; 2,548,317; 7,545,229; 2,563,174; 7,580,693; 7,612,296; 2,524,751

Copyright © Synergy Microwave Corporation  
201 McLean Boulevard • Paterson, New Jersey 07504 USA • Tel: (973) 881-8800 • Fax: (973) 881-8361  
E-Mail: sales@synergymwave.com • World Wide Web: <http://www.synergymwave.com>



# INTELLIGENT INTERACTIVE SYNTHESIZER

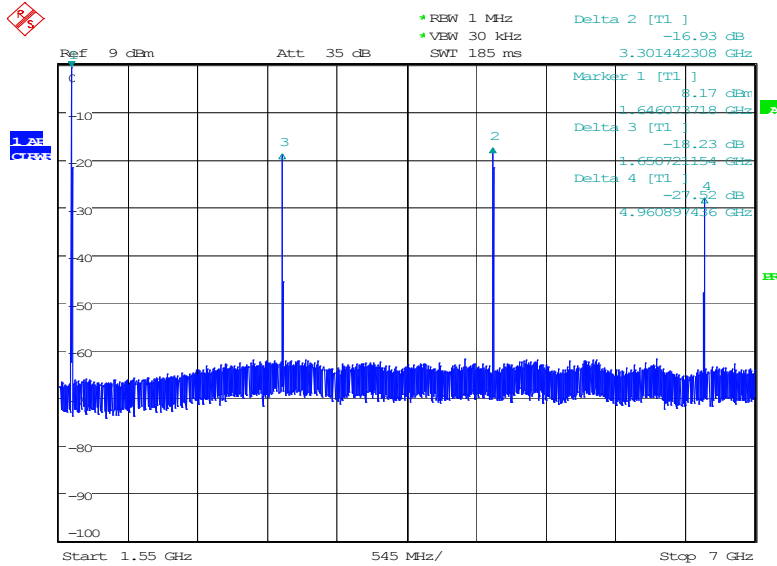
## SURFACE MOUNT MODEL: FSW100230-50

WIDE BANDWIDTH

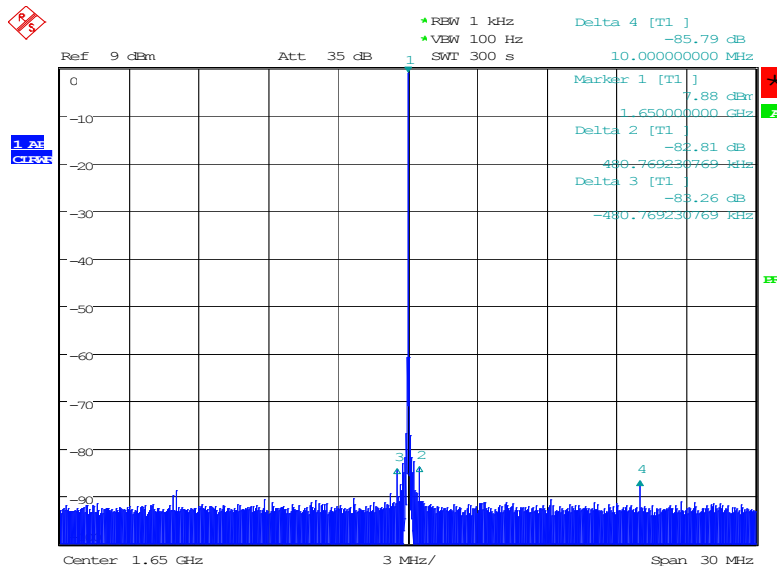
1000 - 2300 MHz

PERFORMANCE PLOTS

### HARMONIC SUPPRESSION



### REFERENCE SIDEBAND SUPPRESSION



Date: 14 Nov 2006 01:03:47

This product is manufactured under one or more of the following patents: Approved: 5,160,810; 5,122,621; 5,390,349; 5,416,449; 5,650,754; 5,805,431; 6,525,623; 6,850,575; 7,088,189; 7,180,381; 7,196,591; 7,262,670; 7,265,642; 7,292,113; 7,365,612; 7,495,525; 2,548,311; 2,548,317; 7,545,229; 7,580,693; 7,586,381; 7,605,670; 7,636,021; 2,533,623 | Pending: 60/493075; 60/501371 & 60/501790; 60/527957 & 60/528670; 60/563481; 60/564173; 60/589090; 60/601823; 60/605791; EV/31369834; 11/259766; 60/622485 & 60/710310; 10/937525/60/736901; 60/732787; 7,495,525; 2,548,311; 2,548,317; 7,545,229; 2,563,174; 7,580,693; 7,612,296; 2,524,751

Copyright © Synergy Microwave Corporation  
201 McLean Boulevard • Paterson, New Jersey 07504 USA • Tel: (973) 881-8800 • Fax: (973) 881-8361  
E-Mail: sales@synergymwave.com • World Wide Web: http://www.synergymwave.com



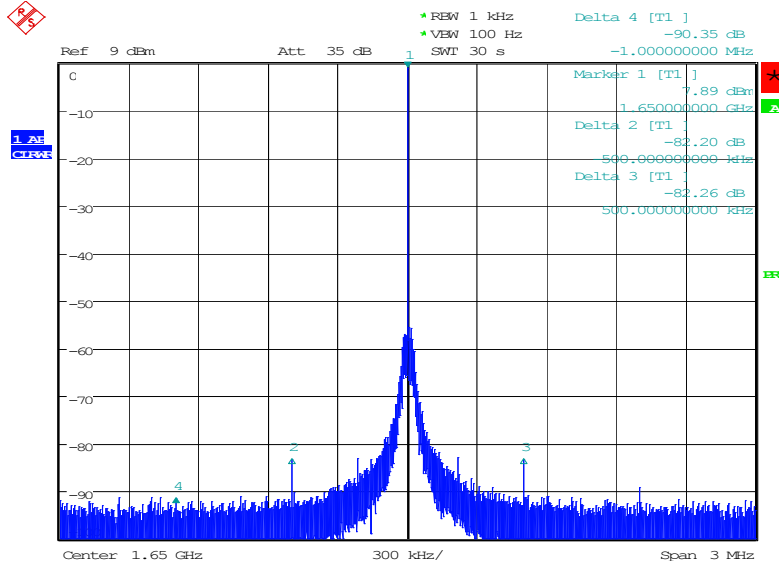
# INTELLIGENT INTERACTIVE SYNTHESIZER

## SURFACE MOUNT MODEL: FSW100230-50

WIDE BANDWIDTH

1000 - 2300 MHz

REFERENCE SIDEBAND SUPPRESSION



PERFORMANCE PLOTS

This product is manufactured under one or more of the following patents. Approved: 5,160,810; 5,122,621; 5,390,349; 5,416,449; 5,660,754; 5,805,431; 6,525,623; 6,850,575; 7,088,189; 7,180,381; 7,196,591; 7,262,670; 7,265,642; 7,292,113; 7,365,612; 7,495,525; 2,548,311; 2,548,317; 7,545,229; 7,580,693; 7,586,381; 7,605,670; 7,636,021; 2,533,623 | Pending: 60/493075; 60/501371 & 60/501790; 60/527957 & 60/528670; 60/563481; 60/564173; 60/589090; 60/601823; 60/605791; EV/31369834; 11/259766; 60/622485 & 60/710310; 10/937525/60/736901; 60/732787; 7,495,525; 2,548,311; 2,548,317; 7,545,229; 2,563,174; 7,580,693; 7,612,296; 2,524,751

Copyright © Synergy Microwave Corporation  
201 McLean Boulevard • Paterson, New Jersey 07504 USA • Tel: (973) 881-8800 • Fax: (973) 881-8361  
E-Mail: sales@synergymwave.com • World Wide Web: http://www.synergymwave.com



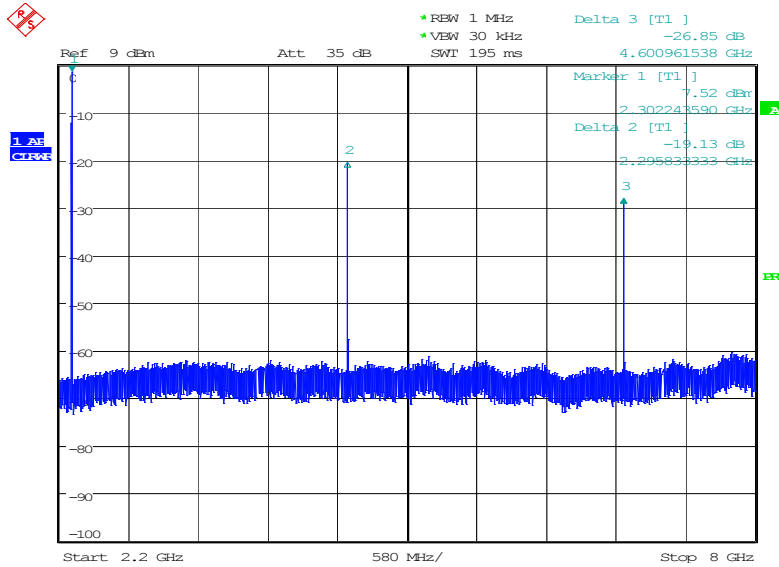
# INTELLIGENT INTERACTIVE SYNTHESIZER

## SURFACE MOUNT MODEL: FSW100230-50

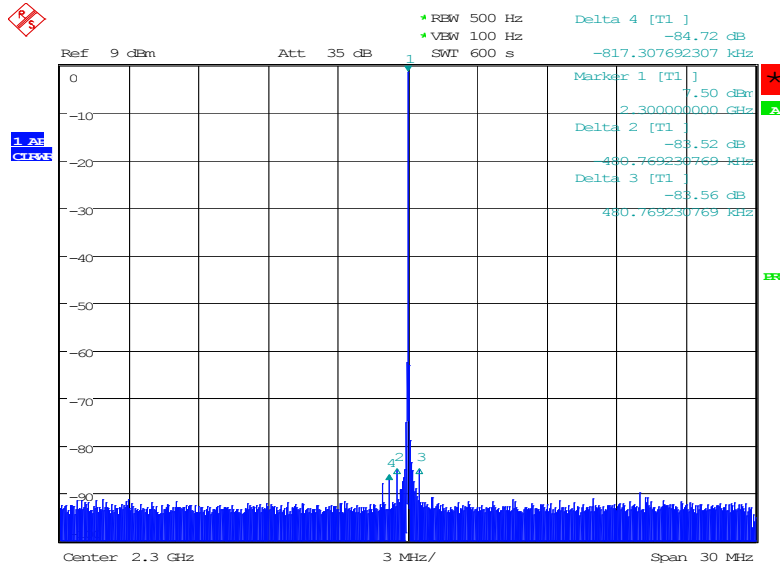
WIDE BANDWIDTH

1000 - 2300 MHz

### HARMONIC SUPPRESSION



### REFERENCE SIDEBAND SUPPRESSION



PERFORMANCE PLOTS

This product is manufactured under one or more of the following patents. Approved: 5,160,810; 5,122,621; 5,390,349; 5,416,449; 5,650,754; 5,805,431; 6,525,623; 6,850,575; 7,088,189; 7,180,381; 7,196,591; 7,262,670; 7,265,642; 7,292,113; 7,365,612; 7,495,525; 2,548,311; 2,548,317; 7,545,229; 7,580,693; 7,586,381; 7,605,670; 7,636,021; 2,533,623 | Pending: 60/493075; 60/501371 & 60/501790; 60/527957 & 60/528670; 60/563481; 60/564173; 60/589090; 60/601823; 60/605791; EV31369834; 11/259766; 60/622485 & 60/710310; 10/937525/60/736901; 60/732787; 7,495,525; 2,548,311; 2,548,317; 7,545,229; 2,563,174; 7,580,693; 7,612,296; 2,524,751

Copyright © Synergy Microwave Corporation  
201 McLean Boulevard • Paterson, New Jersey 07504 USA • Tel: (973) 881-8800 • Fax: (973) 881-8361  
E-Mail: sales@synergymwave.com • World Wide Web: http://www.synergymwave.com



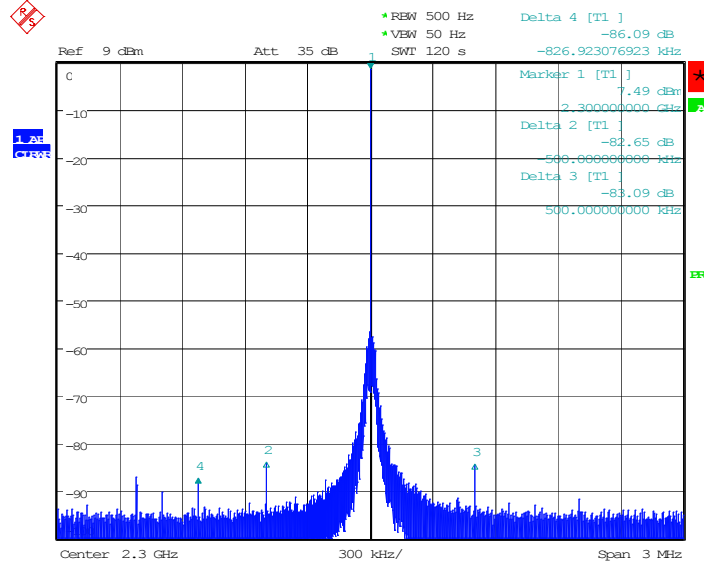
# INTELLIGENT INTERACTIVE SYNTHESIZER

## SURFACE MOUNT MODEL: FSW100230-50

WIDE BANDWIDTH

1000 - 2300 MHz

REFERENCE SIDEBAND SUPPRESSION



PERFORMANCE PLOTS

This product is manufactured under one or more of the following patents. Approved: 5,160,810; 5,122,621; 5,390,349; 5,416,449; 5,650,754; 5,805,431; 6,525,623; 6,850,575; 7,088,189; 7,180,381; 7,196,591; 7,262,670; 7,265,642; 7,292,113; 7,365,612; 7,495,525; 2,548,311; 2,548,317; 7,545,229; 7,580,693; 7,586,381; 7,605,670; 7,636,021; 2,533,623 | Pending: 60/493075; 60/501371 & 60/501790; 60/527957 & 60/528670; 60/563481; 60/564173; 60/589090; 60/601823; 60/605791; EV/31369834; 11/259766; 60/622485 & 60/710310; 10/937525/60/736901; 60/732787; 7,495,525; 2,548,311; 2,548,317; 7,545,229; 2,563,174; 7,580,693; 7,612,296; 2,524,751

Copyright © Synergy Microwave Corporation  
201 McLean Boulevard • Paterson, New Jersey 07504 USA • Tel: (973) 881-8800 • Fax: (973) 881-8361  
E-Mail: sales@synergymwave.com • World Wide Web: http://www.synergymwave.com

