



TECHNOLOGIES GROUP

BIRD ELECTRONIC

TX RX SYSTEMS

X-COM SYSTEMS



**SIGNAL
BOOSTER III**



**SIGNAL
BOOSTER II**



**SIGNAL
BOOSTER I**

In-Building Coverage

YOU'RE HEARD, LOUD AND CLEAR.

IN-BUILDING COVERAGE

Signal Boosters & Accessories

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SIGNAL BOOSTER MODEL ORDER GUIDE (SBII FAMILY):

SAMPLE ORDER: 61-65-50 Series, 406-430 MHz Signal Booster II

Example Model option 1: 61-65-50-A0.8-G1 (406-430 MHz SBII, 80 dB, 800 KHz, Painted Steel NEMA 4 Housing)

61-65-50-#(X.X)-XX

# = Gain Designator	X.X=Passband	XX=Housing Option
A – 80 dB (High Gain)	0.8 – 800 KHz	G1 – Painted Steel NEMA 4
B – 60 dB (Mid Gain)	5.0 =5 MHz	G2 – Stainless Steel NEMA 4X
C – 45 dB (Low Gain)		RM – 19 inch Rack Mount

Note: All frequencies must be provided at time of order.

SIGNAL BOOSTERS

Legacy Technical Specifications

VHF LEGACY BOOSTER

Model Numbers	60-38-02-OLC-XX 60-38-02-OLC-CF-XX	
Frequency		132-174 MHz
Passband bandwidth	60-38-02-OLC-XX 60-38-02-OLC-CF-XX	1 MHz nominal 15 kHz, includes crystal filter
Minimum Gain (dB)	60-38-02-OLC-XX 60-38-02-OLC-CF-XX	+74 dB +66 dB
Gain Adjustment		3 and 6 dB pads
3rd Order Output Intercept Point		+42 dBm minimum, with no attenuation
RF Sampler		PA Output sampler ports
Noise Figure (without attenuation)		6.5 dB maximum
Operating Temperature Range		-30° C to +60° C
Nominal Impedance (Ω)		50
VSWR		<2.0:1
Input/Output Connectors		N(F)
RF Sampler Connectors		BNC (F)
AC Power Input		100-240 VAC; 50-60 Hz
Unit Power Consumption (AC/DC)		1.0 Amp AC / 1.0 Amp DC
Housing		Options: G1 - (Painted Steel - NEMA 4) G2 - (Stainless Steel - NEMA 4X) RM - (19" Rack Mount)
Nominal Size		20" x 16" x 6" (508 x 406.4 x 152.4 mm)
Net Weight		50 lbs. (22.68 kg.)
FCC Certification*		EZZ5PI860701

* Class B Type Booster. Type Acceptance under FCC Rules Part 90

SIGNAL BOOSTER I

62-83E-Series

Dual Band 700/800 MHz

Bird Technologies Group, TX RX Systems brand, SB I Series family of signal boosters provides an exceptional balance of performance and value for extended coverage of radio communications networks.



PROBLEMS

RF coverage is required for different building sizes and configurations

System monitoring is required

Need to eliminate potential interference and unwanted coverage

Reliable in-building communications is a must

Need to provide coverage for both 700 MHz and 800 MHz

SOLUTIONS

Bird SBI is available in two output power models:
 - High power model (+34 dBm)
 - Low power model (+25.5 dBm)

Alarm and sampler port are available

Gain is adjustable from 0 to 30 dB in 2 dB increments

Bird invented the signal booster and has been a leader in providing reliable in-building wireless solutions since 1980

SBI dualband provides coverage of both frequencies in one unit

APPLICATIONS

Cost effective in-building coverage solutions for applications in critical communications systems

Public Safety, Private Wireless networks

Excellent selectivity for operation in a shared frequency band

SPECIFICATIONS, ELECTRICAL

Gain (dB)		80 (min. attenuation)
Gain Flatness (dB)		+/- 1.5 (Max)
Noise Figure (dB)		5 (Max.) 4 (Typ)
Manual Attenuation Range (dB)		0 to 30 in 2-dB steps (Gain adjustment)
Output Composite Power (dBm)	62-83E-ADB-02-T3	+25.5 (Min.) - Uplink, +34 (Min.) - Downlink
	62-83E-ADB-04-T3	+25.5 (Min.) - Uplink, +25.5 (Min.) - Downlink
3rd Order Output Intercept Point (IP ₃) (dBm)	62-83E-ADB-02-T3	+41 (Min.) - Uplink, +50 (Min.) - Downlink
	62-83E-ADB-04-T3	+41 (Min.) - Uplink, +41 (Min.) - Downlink
Impedance (Ω)		50 (Input/Output)
VSWR Max.		1.5:1 (In/Out)
Propagation Delay		<1.0 (uSec)
AC Power Input		85-265 VAC (47-63 Hz) above 150V available, consult factory
Unit Power Consumption (AC/DC)		45 Watts
Finish		Corrosion Protection, Powder Coat (Taupe)
Dimensions		15.3" x 15.4" x 7.9"
Operating Temperature Range		-20°C to +50°C
Weight (lbs/kg)		33 (14.9)

MODEL OPTIONS

62-83E-ADB-02-T3	Low Power, Dual Band, 80 dB
62-83E-ADB-02-T3-ALS	Low Power, Dual Band with Alarm & Sampler, 80 dB
62-83E-ADB-04-T3	High Power, Dual Band, 80 dB
62-83E-ADB-04-TS-3-ALS	High Power, Dual Band with Alarm & Sampler, 80 dB

FREQUENCY (DUAL BAND)	UPLINK (MHZ)	DOWNLINK (MHZ)
700 MHz Band	794-806	746-776
800 MHz Band	806-824	851-869

SIGNAL BOOSTER I

62-89A-Series

LMR 800 MHz

SPECIFICATIONS, ELECTRICAL

Frequency Range (MHz)		806-824/851-869 MHz
Gain (dB)		80 (min. attenuation)
Gain Flatness [dB]		+/- 1.5 (Max)
Noise Figure [dB]		5 (Max)
Manual Attenuation Range [dB]		0 to 30 in 2-dB steps (Gain Adjustment)
Output Composite Power [dBm]	62-89A-A18-03-T3	+25.5 (Min.) - Uplink, +33 (Min.) - Downlink*
	62-89A-A18-01-T3	+25.5 (Min.) - Uplink, +25.5 (Min.) - Downlink**
3rd Order Output Intercept Point (IP ₃) [dBm] @ 2 tones +22 dBm ea.	62-89A-A18-03-T3	+41 (TYP.) - Uplink, +50 (TYP.) - Downlink
	62-89A-A18-01-T3	+41 (TYP.) - Uplink, +41 (TYP.) - Downlink
Impedance (Ω)		50
VSWR Max.		1.5:1 (In/Out)
Propagation Delay		<1.0 (uSec)
AC Power Input		85-265 VAC. (47-63 Hz) Above 150V available, consult factory
Unit Power Consumption (AC/DC)		45 watts

MODEL OPTION

62-89A-A18-01-T3	806-824/851-869 MHz,
62-89A-A18-03-T3	806-824/851-869 MHz,
62-89A-A18-01-T3-ALS	BDA, 806-869 MHz, 80 dB, 18 MHz with alarm and sampler
62-89A-A18-03-T3-ALS	BDA, 806-869 MHz, 80 dB, 18 MHz with alarm and sampler

SPECIFICATIONS, MECHANICAL

Enclosure Finish	Taupe (Corrosion Protection, Powder Coat)
Dimensions	15.3" x 15.4" x 7.9"
Operating Temperature Range	-30°C to +50°C
Weight (lbs/kg)	22 (9.97)

SIGNAL BOOSTER I

62-89B, 62-90A-Series

NPS PAC

SPECIFICATIONS, ELECTRICAL

Frequency Range (MHz)		806-809/851-854 MHz
Gain (dB)		80 (min. attenuation)
Gain Flatness (dB)		+/- 1.5 (max)
Noise Figure (dB)		5 (Max.)
Manual Attenuation Range (dB)		0 to 30 in 2-dB steps (Gain adjustment)
Output Composite Power (dBm)	62-89B-A03-03-T3	+25.5 (Min.) - Uplink, +33 (Min.) - Downlink
	62-90A-A03-03-T3	+25.5 (Min.) - Uplink, +25.5 (Min.) - Downlink
	62-89B-A03-01-T3	+25.5 (Min.) - Uplink, +25.5 (Min.) - Downlink
	62-90A-A03-01-T3	+25.5 (Min.) - Downlink
3rd Order Output Intercept Point (dBm) @ 2 tones +22 dBm each	62-89B-A03-03-T3	+41 (Typ.) - Uplink, +50 (Typ.) - Downlink
	62-90A-A03-03-T3	+41 (Typ.) - Uplink, +41 (Typ.) - Downlink
	62-89B-A03-01-T3	+41 (Typ.) - Uplink, +41 (Typ.) - Downlink
	62-90A-A03-01-T3	+41 (Typ.) - Downlink
Impedance (Ω)		50
VSWR, Max.		1.5:1 (In/Out)
Propagation Delay		<1.0 (uSec)
AC Power Input		85-265 VAC. (47-63 Hz) Above 150V available, consult factory
Unit Power Consumption (AC/DC)		45 watts

MODEL OPTION

62-89B-A03-03-T3	806-809/851-854 MHz, 80 dB, 3 MHz
62-89B-A03-01-T3	806-809/851-854 MHz, 80 dB, 3 MHz
62-89B-A03-03-T3-ALS	BDA, 806-809/851-854 MHz, 80 dB, 3 MHz with alarm and sampler
62-89B-A03-01-T3-ALS	BDA, 806-809/851-854 MHz, 80 dB, 3 MHz with alarm and sampler
62-90A-A03-03-T3	821-824/866-869 MHz, 80 dB, 3 MHz
62-90A-A03-01-T3	821-824/866-869 MHz, 80 dB, 3 MHz
62-90A-A03-01-T3-ALS	BDA, 821-824/866-869 MHz, 80 dB, 3 MHz with alarm and sampler
62-90A-A03-03-T3-ALS	BDA, 821-824/866-869 MHz, 80 dB, 3 MHz with alarm and sampler

SPECIFICATIONS, MECHANICAL

Finish	Corrosion Protection, Powder Coat (Taupe)
Dimensions	15.3" x 15.4" x 7.9"
Operating Temperature Range	-30°C to +50°C
Weight (lbs/kg)	22 (9.97)

*xxx (see model numbers)
89B = 806-809 / 851-854
90A = 821-824 / 866-869

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SIGNAL BOOSTER I

62-91-Series

Cellular A, B, & A/B Bands

SPECIFICATIONS, ELECTRICAL

Gain (dB)		80 (min. attenuation)
Gain Flatness (dB)		+/- 1.5 (max)
Noise Figure (dB)		3.5 (Max.)
Manual Attenuation Range (dB)		0 to 30 in 2-dB steps (Gain adjustment)
Output Composite Power [dBm]	62-91-AXX-03-T3 62-91-AXX-01-T3	+25.5 (Min.) - Uplink, +34 (Min.) - Downlink +25.5 (Min.) - Uplink, +25.5 (Min.) - Downlink
3rd Order Output Intercept Point [dBm] @ 2 tones +22 dBm ea.	62-91-AXX-03-T3 62-91-AXX-01-T3	+41 (Typ.) - Uplink, +50 (Typ.) - Downlink +41 (Typ.) - Uplink, +43 (Typ.) - Downlink
Impedance (Ω)		50
VSWR Max.		1.5:1 (In/Out)
Propagation Delay		<1.0 (uSec)
AC Power Input		85-150 VAC. (47-63 Hz) Above 150V available, consult factory
Unit Power Consumption (AC/DC)		45 watts
Maximum Comp. Power Level Input		-10 dBm w/o destruction
Finish		Corrosion Protection, Powder Coat (Taupe)
Dimensions		15.3" x 15.4" x 7.9"
Operating Temp Range		-30°C to +50°C
Weight (lbs/kg)		22 (9.97)

MODEL OPTIONS

High Power (+33 dB)	
62-91A-A11-03-T3	Cell A
62-91A-A11-03-T3-ALS	Cell A with Alarm & Sampler
62-91B-A14-03-T3	Cell B
62-91B-A14-03-T3-ALS	Cell B with Alarm & Sampler
62-91A-A25-03-T3	Cell A/B
62-91A-A25-03-T3-ALS	Cell A/B with Alarm & Sampler
Low Power (+25.5 dB)	
62-91-A11-01-T3	Cell A
62-91-A11-01-T3-ALS	Cell A with Alarm & Sampler
62-91B-A14-01-T3	Cell B
62-91B-A14-01-T3-ALS	Cell B with Alarm & Sampler
62-91A-A25-01-T3	Cell A/B
62-91A-A25-01-T3-ALS	Cell A/B with Alarm & Sampler

FREQUENCY BLOCKS	UPLINK (MHZ)	DOWNLINK (MHZ)
91	824-849 MHz	869-894 MHz
91A	824-835 MHz	869-880 MHz
91B	835-849 MHz	880-894 MHz

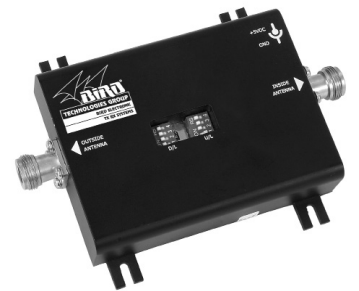
SIGNAL BOOSTER I

62-89A-D18-05-EXT

Line Extender

SPECIFICATIONS, ELECTRICAL

Model	62-89A-D18-05-EXT	SMRPS8
Frequency Band		806-869 / 851-869
	Uplink	806-824 MHz
	Downlink	851-869 MHz
Gain (Minimum attenuation) [dB]		30 dB min.
Noise Figure [dB]		5
Manual Attenuation Range [dB] - Gain adjustment		30 in 2 dB steps
Input/Output Impedance		50 ohm
Power Supply Provided		5VE.5A
Finish		Black
Net Weight		116 (0.454 kg)
Dimensions		4.5"x3.325"x1.0625" (114.3x84.46x27.05 mm)
Operating Temperature Range		-20C to +50C
Connectors		N Female
Linear Output Power		-15 dBm



SIGNAL BOOSTER I

62-91X-Series

For use in harsh Environments as the Oil, Mining and Construction Industries

Ideal for use at oil drilling rigs, gravel pits and quarries, construction and open pit mining sites.

PROBLEMS	SOLUTIONS
Poor AC power availability at site	Line voltage transit surge protection and AC line conditioning
Low Signal Strength at Site	High Sensitivity RF receiver
Remote cell tower is too far away for low power hand helds	High uplink composite power
Extreme Weather Conditions	Weatherproof NEMA 4 enclosure
Sagging Line Voltage	Flexible Input Voltage level tolerates 85-150 VAC



APPLICATIONS
Cost effective coverage solutions for use at off shore sites where coverage of cell bands are weak
Cost effective coverage solution for use at construction sites where signals cannot penetrate in shadowed areas
Provides coverage of full cellular B band or A/B bands of each band individually

MODEL NUMBERS	
62-91A-A14-03-TR-ALS	Cell B with Alarm & Sampler
62-91A-A25-03-TR-ALS	Cell A/B with Alarm & Sampler

SPECIFICATIONS, ELECTRICAL	
Gain Minimum attenuation [dB]	80
Gain Flatness (dB)	+/- 1.5 (max)
Noise Figure (dB)	3.5 (Max.)
Manual Attenuation Range (dB)	0 to 30 in 2-dB steps (Gain adjustment)
Output Composite Power (dBm)	62-91X-AXX-03-TR3 +25.5 (Min.) - Uplink, +33 (Min.) - Downlink
3rd Order Output Intercept Point (dBm) @ 2 tones +22 dBm ea.	62-91X-AXX-03-TR3 +45 (Typ.) - Uplink, +50 (Typ.) - Downlink
Impedance (Ω)	50 ohm
VSWR, Max.	1.5:1 (in/out)
Propagation Delay	<1.0 (uSec)
AC Power Input	85-150 VAC. (47-63 Hz) Above 150V available, consult factory
Unit Power Consumption (AC/DC)	45 watts
Maximum Comp. Power Level Input	-10 dBm w/o destruction

FREQUENCY BLOCK		
91A	Uplink	824-835 MHz
	Downlink	869-880 MHz
91B	Uplink	835-849 MHz
	Downlink	880-894 MHz

SPECIFICATIONS, MECHANICAL	
Finish	Corrosion Protection, Powder Coat (Taupe)
Dimensions	15.3" x 15.4" x 7.9"
Operating Temp °C	-30°C to +50
Weight (lbs/kg)	22 (9.97)

SIGNAL BOOSTER II

132-941 MHz

Bird Technologies Group, TX RX Systems brand, Signal Booster II bi-directional amplifiers provide Public Safety grade communications and reliability in disadvantaged RF locations for First Responders, Public Safety/Governmental agencies and Private system Users. Mission-critical communications are ensured in challenging environments such as:

- Basements
- Parking Garages
- Correctional Facilities
- Courthouses
- Hospitals
- High-rise Buildings
- Schools & Universities
- Airports
- Subways & Rapid Transit Systems
- Stadiums

FORWARD-THINKING FEATURES THAT AID THE INSTALLATION INCLUDE:

- Decoupled Test Points for Signal Level Detection
- Menu Driven Gain Setting
- Front Panel LED Status Indicators
- At-a-glance LED Bar Graph for Output Level Control (OLC)
- OLC Data Logging

OUTPUT LEVEL CONTROL (OLC) CIRCUIT MONITORS AND CONTROLS RF OUTPUT POWER

- Maintains maximum required output power while preventing damage and excessive emissions per FCC requirements
- Easy-to-read LED bar graph
- Unique OLC DataLog feature facilitates system maintenance and optimization

DECOUPLED RF TEST POINTS FOR SIMPLIFIED SERVICE

- Allow fast system measurements in both uplink and downlink directions
- Monitor signals for performance optimization
- Integrated design facilitates non-intrusive measurements

SECURE, NON-VENTED NEMA ENCLOSURE SUITABLE FOR EXTREME INDOOR AND OUTDOOR ENVIRONMENTS

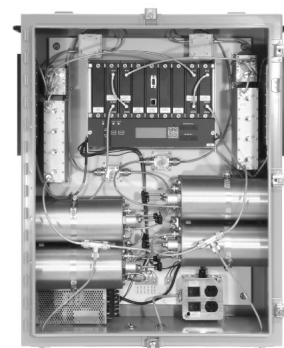
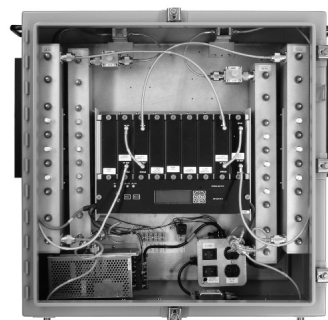
SIMPLE SETUP IS ACHIEVED VIA AN INTEGRAL, MAN-MACHINE INTERFACE

- No Tools Required

OPTIONAL FEATURES AVAILABLE

- Comm Card II for remote communications and control
- Fiber optic link interface
- Redundant PA configuration
- 48 VDC input
- Voice/pager dialer

DC BACKUP INTERFACE ACCEPTS +24 TO +27 VDC AND OPTIONAL -48 VDC



MICROPROCESSOR CONTROLLED FAULT MONITORING AND ALARMING ENSURES RELIABLE OPERATION AND FLEXIBLE CONFIGURATION

- Control system continuously monitors parameters including voltage, current, temperature and OLC activity
- LEDs on each module quickly annunciate source of fault
- Simple, back-lit liquid crystal display (LCD) and switch control
- Fault triggers annunciation on panel, alarm contact closure and internal recording of failed subsystem

CARD CAGE MODULARITY

- Easy "slide-in" replacement process
- Facilitates ease of service and system configuration

HIGH PERFORMANCE BANDPASS FILTERS

- Configured to customer requirements and addresses many specifications requiring custom passbands
- Models available with passbands that range from 3 MHz (NPSPAC with excellent out-of-band rejection) to 18 MHz for full band coverage

PROGRAMMABLE GAIN SETTING

- Ease of initial configuration via front panel
- When used in conjunction with OLC DataLog, simplifies post installation adjustments

THREE MAJOR GAIN RANGES AVAILABLE

- Low: + 45 dB, Medium: + 60 dB, High: + 80 dB

SIGNAL BOOSTER II

406-430/450-512 MHz

UHF GOVERNMENT BAND

Model Numbers	61-65-50-#0.8-XX 61-65-50-#5.0-XX	
Frequency	61-65-50-#0.8-XX 61-65-50-#5.0-XX	406-430 MHz 406-430 MHz
Passband bandwidth	61-65-50-#0.8-XX 61-65-50-#5.0-XX	0.9 MHz 5.0 MHz
Minimum Gain (dB)		45/60/80 dB (depending on model)
Gain Adjustment		Programmable 0-30 dB, 0.5 dB increments
3rd Order Output Intercept Point		+55 dBm minimum, with no attenuation
Maximum Input Power		0 dBm
Maximum Output Power		+32 dBm (single carrier)
RF Sampler		PA Output sampler port
Noise Figure (without attenuation)	61-65-50-#0.8-XX 61-65-50-#5.0-XX	8 dB max 3 dB max
Propagation Delay		<0.5 μ s
Operating Temperature Range		-30° C to + 50° C
Nominal Impedance (Ω)		50
VSWR		<1.5:1
Input/Output Connectors		N
RF Sampler Connectors		BNC
AC Power Input		100-240 VAC; 50-60 Hz
DC Input Voltage		+24 to 27 VDC, -48 VDC optional
Unit Power Consumption (AC/DC)		<150 VA
Housing*		See Note Below
Nominal Size	61-65-50-#0.8-XX 61-65-50-#5.0-XX	34" x 27" x 14" 39" x 32" x 14"
Net weight	61-65-50-#0.8-XX 61-65-50-#5.0-XX	130 lbs 205 lbs
FCC Typ Acceptance**		EZZ5PO616550 (See Note Below)
Industry Canada Certification**		1940A-PI616550 (See Note Below)

* Housing Options: Painted Steel NEMA 4, Stainless Steel NEMA 4X, 19 inch Rack Mount
 ** Class B Type Booster. Type Acceptance under FCC Rules Part 90 and Industry Canada Certification Part RSS-131.

*** Gain = #: A=80dB, B=60dB, C=45dB

UHF COMMERCIAL BAND

Frequency	61-70-50-#0.5-XX 61-70-50-#1.0-XX 61-70-50-#2.0-XX 61-71-50-#0.15-XX 61-71-50-#0.5-XX 61-72-50-#0.15-XX 61-72-50-#0.5-XX	450-470 MHz 450-470 MHz 450-470 MHz 470-490 MHz 470-490 MHz 488-512 MHz 488-512 MHz
Passband bandwidth	61-70-50-#0.5-XX 61-70-50-#1.0-XX 61-70-50-#2.0-XX 61-71-50-#0.15-XX 61-71-50-#0.5-XX 61-72-50-#0.15-XX 61-72-50-#0.5-XX	0.5 MHz 1 MHz 2 MHz 150 KHz 0.5 KHz 150 KHz 0.5 KHz
Minimum Gain***		45/60/80 dB (depending on model)
Gain Adjustment		0-30 dB, 0.5 dB increments
3rd Order Output Intercept Point		+54 dBm minimum, with no attenuation
Maximum Input Level		0 dBm
Maximum Output Power		+32 dBm (single carrier)
RF Sampler		PA Output sampler ports
Noise Figure (with-out attenuation)		8 dB (12 dB for low gain unit)
Propagation Delay	61-70-50-#2.0-XX	<3 μ s 2 μ s
Operating Temperature Range		-30° C to + 50° C
Nominal Impedance (Ω)		50
VSWR		<1.5:1
Input/Output Connectors		N
RF Sampler Connectors		BNC
AC Power Input		100-240 VAC; 50-60 Hz
DC Input Voltage		+24 to +27 VDC, optional -48 VDC
Unit Power Consumption (AC/DC)		<150 VA
Housing*		See Note Below
Nominal Size	61-70-50-#2.0-XX	30" x 24" x 12" 30" x 30" x 12"
Net Weight	61-70-50-#2.0-XX	130 lbs. 210 lbs.
FCC Certification**		EZZ5PI616850 (See Note Below)
Industry Canada Certification**		1940A-PI616850 (See Note Below)

* Housing Options: Painted Steel NEMA 4, Stainless Steel NEMA 4X, 19 inch Rack Mount
 ** Class B Type Booster. Type Acceptance under FCC Rules Part 90 and Industry Canada Certification Part RSS-131.

*** Gain = #: A=80dB, B=60dB, C=45dB

SIGNAL BOOSTER II

700 MHz/800 MHz Band

700 MHZ BAND	
Model Numbers	61-83B-50-#12-XX
Frequency	LF: 764-776 MHz, HF: 794-806 MHz
Passband bandwidth	12 MHz
Minimum Gain (dB)	45/60/80 (depending on model)
Gain Adjustment	Programmable 0-30 dB, 0.5 dB increments
3rd Order Output Intercept Point	+55 dBm min., with no attenuation
Maximum Input Level	0 dBm
Maximum Output Power	+33 dBm (single carrier)
RF Sampler	PA Output sampler ports
Noise Figure (without attenuation)	6.5 dB (3.5 dB for High Gain unit)
Propagation Delay	500 μ s
Operating Temperature Range	-30 to + 50° C
Nominal Impedance (Ω)	50
VSWR	<1.5:1
Input/Output Connectors	N
RF Sampler Connectors	BNC
AC Power Input	100-240 VAC; 50-60 Hz
DC Input Voltage	+24 to +27 VDC -48 VDC optional
Unit Power Consumption (AC/DC)	<150 VA
Housing*	Seen Note Below
Nominal Size (inches/mm)	24 x 24 x 8 (609.59 x 609.59 x 203.2)
Net Weight (lbs/kg)	<85 / < 38.5
FCC Certification**	EZZ5PI618350 (See Note Below)
Industry Canada Certification**	1940A-PI618350 (See Note Below)

* Housing Options: Painted Steel NEMA 4, Stainless Steel NEMA 4X, 19 inch Rack Mount

** Class B Type Booster. Type Acceptance under FCC Rules Part 90 and Industry Canada Certification Part RSS-131.

*** Gain = #: A=80dB, B=60dB, C=45dB

800 MHZ BAND	
Model Numbers	61-89A-50-#18-XX 61-89A-50-#15-XX 61-89A-50-#10-XX 61-89A-50-#06-XX 61-89A-50-#05-XX 61-89A-50-#03-XX
Frequency	806-869 MHz;
Passband bandwidth****	61-89A-50-#18-XX 18 MHz 61-89A-50-#15-XX 15 MHz 61-89A-50-#10-XX 10 MHz 61-89A-50-#06-XX 6 MHz 61-89A-50-#05-XX 5 MHz 61-89A-50-#03-XX 3 MHz
Minimum Gain (dB) ***	45/60/80 (depending on model)
Gain Adjustment	Programmable 0-30 dB, 0.5 dB increments
3rd Order Output Intercept Point	+55 dBm minimum, with no attenuation
Maximum Input Level	0 dBm
Maximum Output Level	+30 dBm (single carrier)
RF Sampler	PA Output sampler ports
Noise Figure (without attenuation)	6.5 dB max
Propagation Delay	<1 μ s
Operating Temperature Range	-30° C to +50° C
Nominal Impedance (Ω)	50
VSWR	<1.5:1
Input/Output Connectors	N (Female)
RF Sampler Connectors	BNC (Female)
AC Power Input	100-240 VAC; 50-60 Hz
DC Input Voltage	+24 to +27 VDC, -48 VDC optional
Unit Power Consumption (AC/DC)	<100 VA
Housing*	See Note Below
Nominal Size (inches/mm)	24 x 24 x 8 (609.59 x 609.59 x 203.2)
Net Weight (lbs/kg)	<85 / <38.5
FCC Certification**	EZZ5PI031202 (See Note Below)
Industry Canada Certification**	1940A-PI031202 (See Note Below)

* Housing Options: Painted Steel NEMA 4, Stainless Steel NEMA 4X, 19 inch Rack Mount

** Class B Type Booster. Type Acceptance under FCC Rules Part 90 and Industry Canada Certification Part RSS-131.

*** Gain = #: A=80dB, B=60dB, C=45dB

**** For 3 MHz NPSAP unit: Propagation delay: <1.5; Gain: +77 dB for High Gain unit; Max NF: 10 dB for low gain units; 8 dB for High and Mid Gain unit.

SIGNAL BOOSTER II

900 MHz Band

900 MHZ BAND

Model Numbers	61-88-50-#05-XX 61-88-50-#06-XX	
Frequency	61-88-50-#05-XX 61-88-50-#06-XX	LF: 869-901 MHz; HF: 935-940 MHz LF: 869-902 MHz; HF: 935-941 MHz
Passband bandwidth****	61-88-50-#05-XX 61-88-50-#06-XX	5 MHz 6 MHz
Minimum Gain (dB) ***		45/60/80 (depending on model)
Gain Adjustment		Programmable 0-30 dB, 0.5 dB increments
3rd Order Output Intercept Point		+55 dBm minimum, with no attenuation
Maximum Input Level		0 dBm
Maximum Output Level		+35 dBm (single carrier)
RF Sampler		PA Output sampler ports
Noise Figure (without attenuation)		6.5 dB maximum (3.5 dB for High Gain unit)
Propagation Delay		<1 μ s
Operating Temperature Range		-30 to +50° C
Nominal Impedance (Ω)		50
VSWR		<1.5:1
Input/Output Connectors		N
RF Sampler Connectors		BNC
AC Power Input		100-240 VAC; 50-60 Hz
DC Input Voltage		+24 to +27 VDC, -48 VDC Optional
Unit Power Consumption (AC/DC)		<150 VA
Housing*		See Note Below
Nominal Size (inches/ mm)		24 x 24 x 8 (609.59 x 609.59 x 203.2)
Net Weight		<85 lbs.
FCC Certification**		EZZ5PI618850 (See Note Below)
Industry Canada Certification**		1940A-PI618850 (See Note Below)

* Housing Options: Painted Steel NEMA 4, Stainless Steel NEMA 4X, 19 inch Rack Mount

** Class B Type Booster. Type Acceptance under FCC Rules Part 90 and Industry Canada Certification Part RSS-131.

*** Gain = #: A=80dB, B=60dB, C=45dB

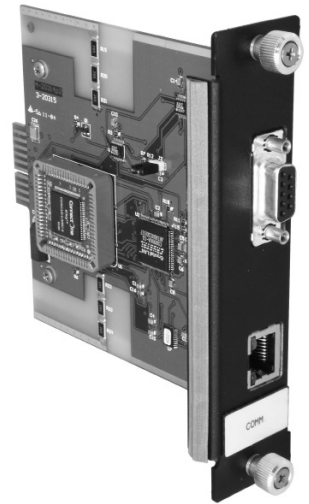
SIGNAL BOOSTER II

Remote Communication Card

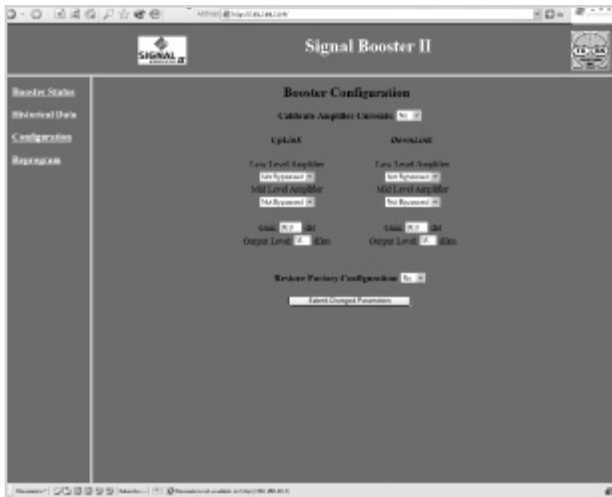
Model 6150-COM

ADDS COMPLETE REMOTE ACCESSIBILITY TO SIGNAL BOOSTER II

- Remote configuration and gain level adjustment
- Remote retrieval of 100 day OLC Datalog information
- Remote alarm and status monitoring
- Remote loading of software updates, revisions
- Data Ports: RS232 Port accommodates direct connection to local PC.
- RJ45 Port provides 10 Base T interface to private networks, internet or wireless (WiFi) networks.
- TCP/IP Network Protocol Compatibility Static or DHCP assigned IP address.
- HTTP 1.0/1.1 web compatible provides complete functionality using common web browsers.
- Currently supports FTP firmware update, email alert feature available in future software release.

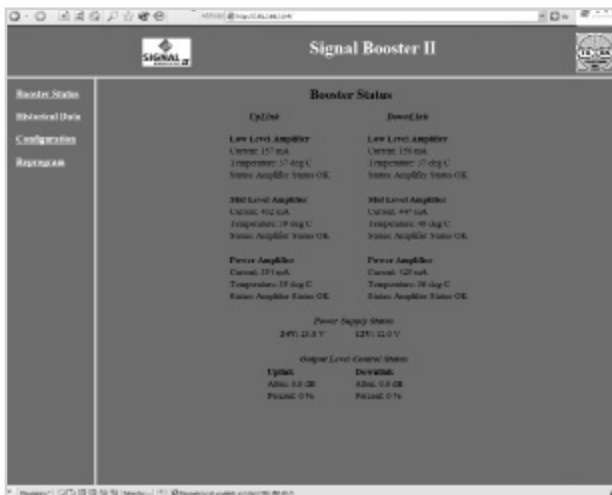


No PC Based Proprietary Software Required - Uses Common Web Browser



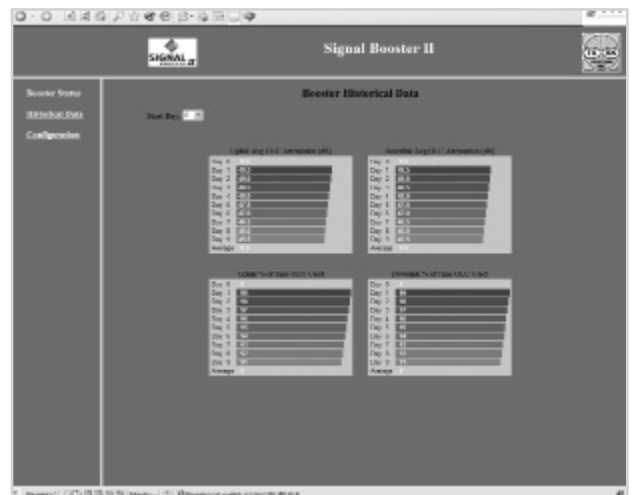
REMOTE CONFIGURATION OF CRITICAL OPERATING PARAMETERS

- Calibrate amplifier current to eliminate erroneous alarms
- Adjust gain via attenuation or bypass amplifiers when OLC datalog indicates consistent, strong signal activity through booster
- Configure desired output power



REMOTE ACCESS TO CRITICAL COMPONENT STATUS

- Amplifier Cards
- Power Amps
- Power System
- Output Level Control System



REMOTE ACCESS TO OLC (OUTPUT LEVEL CONTROL) DATALOG

- Access operational history for critical parameter adjustment
- Data exportable in text file format
- Datalog resolution can be as fine as hourly or as long as 100 days in duration. Consult factory for optional configurations

SIGNAL BOOSTER II

Automatic Voice/Pager Dialer Option

Model 6150-Page

ANOTHER REMOTE ACCESSIBILITY OPTION TO SIGNAL BOOSTER II

Provides reliable emergency notification 24 hours a day

Ideal for installations where Ethernet connection is not available, so that the Remote Communication Card cannot be used

Stand-alone AD-2000 Dialer with dry-contact interface to SBII

Extensively programmable, offering personalized customization



Bird Technologies Group, TX RX Systems brand, **6150-PAGE** automatic dialer features busy-line and no-answer detection to ensure prompt transmission of up to 4 prerecorded messages delivered sequentially to as many as 8 standard telephones, cellular phones, voice and/or numeric pagers. Messages to both local and long-distance calls can be transmitted. When activated, the dialer instantly begins calling the numbers in sequence, delivering each message 1 to 3 times in a row, in accordance with the pre-selected number of dialing attempts. Plain-English prompts walk the user through the programming process in a timely manner.



PROGRAMMING OPTIONS:

Store up to 8 telephone/pager numbers.

Choose 1- 9 calling efforts for the numbers dialed.

Select 1-3 message repeats.

Record a variable combination (maximum: 7) of instructional outgoing messages (total elapsed time: 51 seconds).

Program up to 4 separate input channels with individually enable/disable, entry/exit delay and activation options - Normally Open (N.O.), Normally Closed (N.C.), including momentary and continuous activation for each.

Further individualize each channel by selecting the delay times, telephone/pager numbers to be dialed and the specific outgoing messages to be played.

SIGNAL BOOSTER II

Redundant PA Configuration

Please Consult Factory

ADDS ANOTHER RELIABILITY FEATURE TO SIGNAL BOOSTER II

Automatically switches between Primary PA and Secondary PA

Automatically goes into "bypass" mode if both PA fail

PA status available from LED and front panel LCD screen

User can manually switch between the two PA

No impact on overall system specification

Compatible with other SBII features such as Remote Comm Card and Pager options

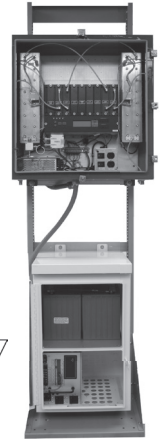


For customers of SBII with mission critical applications, the Redundant Power Amp option is yet another reliability feature we provide to ensure the uninterrupted in-building RF coverage. Our standard SBII unit already offers top-notch public-safety rated performance with state-of-the-art monitoring and alarming capabilities, and this new Redundant PA option brings another tool into our offering mix (with existing options such as 48 VDC hookup and Remote Communications Card) to satisfy the most demanding operational requirements.

RESCUELINE SIGNAL BOOSTER

800 MHz Series

Bird Technologies Group, TX RX Systems brand, RescueLine Signal Booster, the first such signal-booster system that fully complies with the IFC 2009 and NFPA 1 2009 codes which makes it the state-of-the-art electronic lifeline for first responders inside a new building. To comply with the new International Fire Code and National Fire Protection Association (IFC/NFPA) standards, the Bird RescueLine delivers on a key objective: ensuring that first responders have reliable radio communications in large structures. It features a 12-hour battery back-up and an alarm interface providing all five required alarm conditions, including antenna system failure (up or down link) and 70-percent low battery. The Bird RescueLine is compatible with standard fire-alarm panels.



PROBLEMS

Must be compliant with IFC/NFPA Codes

SOLUTIONS

- NEMA 4 cabinets
- Signal booster malfunction alarm
- AC/DC fail alarm
- Low battery alarm
- Antenna Circuit malfunction
- Supervised alarm Circuits
- Fire alarm compatability
- 12 hour battery option

APPLICATIONS

Valued for its ability to allow public-safety personnel to communicate during critical events even while power is unavailable

Delivers life-critical in-building radio communications in challenging environments

OUTPUT LEVEL CONTROL (OLC) CIRCUIT MONITORS AND CONTROLS RF OUTPUT POWER

Maintains maximum required output power while preventing damage and excessive emissions per FCC requirements

Easy-to-read LED bar graph

Unique OLC DataLog feature facilitates system maintenance and optimization

DECOUPLED RF TEST POINTS FOR SIMPLIFIED SERVICE

Allow fast system measurements in both uplink and downlink directions

Monitor signals for performance optimization

Integrated design facilitates non-intrusive measurements

SECURE, NON-VENTED NEMA ENCLOSURE SUITABLE FOR EXTREME INDOOR AND OUTDOOR ENVIRONMENTS

SIMPLE SETUP IS ACHIEVED VIA AN INTEGRAL, MAN-MACHINE INTERFACE

No Tools Required

OPTIONAL FEATURES AVAILABLE

Comm Card II for remote communications and control

Fiber optic link interface

Redundant PA configuration

-48 VDC input

DC BACKUP INTERFACE ACCEPTS +24 TO +27 VDC AND OPTIONAL -48 VDC

MICROPROCESSOR CONTROLLED FAULT MONITORING AND ALARMING ENSURES RELIABLE OPERATION AND FLEXIBLE CONFIGURATION

Control system continuously monitors parameters including voltage, current, temperature and OLC activity

LEDs on each module quickly annunciate source of fault

Simple, back-lit liquid crystal display (LCD) and switch control

Fault triggers annunciation on panel, alarm contact closure and internal recording of failed subsystem

CARD CAGE MODULARITY

Easy "slide-in" replacement process

Facilitates ease of service and system configuration

HIGH PERFORMANCE BANDPASS FILTERS

Configured to customer requirements and addresses many specifications requiring custom passbands

Models available with passbands that range from 3 MHz (NPSPEC with excellent out-of-band rejection) to 18 MHz for full band coverage

PROGRAMMABLE GAIN SETTING

Ease of initial configuration via front panel

When used in conjunction with OLC DataLog, simplifies post installation adjustments

SPECIFICATION

Frequency	806-869 MHz
Nominal Gain***	+80 dB
Gain Adjustment	Programmable attenuation, 0-30 dB, 0.5 dB steps
Output Level Control Dynamic Range	60 dB
3rd Order Output Intercept Point	+55 dBm minimum, with no attenuation
Maximum Input Level	0 dBm
Maximum Output Level	+30 dBm (single carrier)
RF Sampler	PA Output sampler ports
Noise Figure (without attenuation)	3.5 dB maximum
Propagation Delay	<1 μ s
Operating Temperature Range	-30 to +50° C
Nominal Impedance	50 ohms, <1.5:1 VSWR
Input/Output Connectors	N (F)
RF Sampler Connectors	BNC (F)
AC Power Input	100-240 VAC; 50-60 Hz
DC Input Voltage	+24 to +27 VDC, -48 VDC optional
Unit Power Consumption (AC/DC)	<100 VA
Nominal Size	24" x 24" x 8"
Net Weight	<85 lbs.
FCC Certification**	EZZ5PI031202
Industry Canada Certification**	1940A-PI31202

tel: 866.695.4569 fax: 716.549.4772 e: sales@bird-technologies.com

CHANNELIZED SIGNAL BOOSTER

611-70-Series

Bird Technologies Group (BTG), TX RX Systems Channelized Signal Booster operates in the 450-512 MHz range available in 1-30+ channels. Intuitive user interface allows booster to be easily configured for changing RF environments. Channel bandwidth is user selectable (12.5, 25, and 50 kHz standard or custom). Tone squelch capability is also available and individually configured per channel.



PROBLEMS

Noise and Interference that cause communication problems in a crowded spectrum.

Changes in RF environment.

System coverage is difficult to assess.

SOLUTIONS

- Channelized booster amplifies narrow band channels. Amplifying only the desired spectrum prevents interference to other users.

- Modular design facilitates fast and easy reconfiguration, expansion, and redundant capability. User interface also provides maximum flexibility to implement changes to the system such as output power, center frequency, filter shape, and group delay.

- Built-in test signal capability allows simple verification of booster coverage. The 1kHz FM modulated carrier allows simple SINAD qualification testing.

APPLICATIONS

The Channelized booster provides Public Safety grade reliability and coverage in challenging disadvantaged RF conditions.

Use as head end booster for a system that is donored "off the air" in an RF congested area

One channelized booster can connect to any number of broadband boosters (SBII or SBI)

Minimizes noise and interference potential in urban RF congested areas

OPTIONS

Channels	1-30+
High power	+39.5 dBm maximum per channel*

Hybrid Combining or Cavity Combining for higher power out

Higher Sensitivity on downlink	(already standard on uplink) -75 dBm in for full output instead of -57 dBm
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Filtering/Duplexing	3 MHz, 1 MHz, 0.5 MHz or custom
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Form-C summed alarm contacts either NO or NC

Internally generated high accuracy reference for very narrow (6.25 kHz) channels and filters

*Note: FCC Rules limit per-channel ERP to 5 watts. Standard hybrid combining provided will reduce actual output power to 5 watts or less.

OPERATING CHARACTERISTICS

Frequency Range	450-512 MHz
Number of Carriers per Channel Module	1 uplink, 1 downlink
Channel Bandwidth	Programmable standard filters include 12.5 kHz, 25 kHz, 50 kHz. Other custom filters can be programmed by the user or factory to meet specific system requirements.
Output Power per Channel (Uplink/ Downlink)	+17 dBm maximum dependent on system configurations (0.1 watts) nominal with min. -75 dBm Input
Maximum Input Level	-12 dBm maximum, dependent on system configuration
RF Input/Output impedance	50 Ohms
External RF Connectors	N - Female
Alarms	Form-C Contacts, Channel Module LED's
Interface	Control & Monitoring - Web host via ethernet connection
Power	90-250 VAC, 50/60 Hz or 27.5-29 VDC
Operating Temperature Range	-30 °C to +60 °C
Size**	19" Rack Mount, 7 RU (12.25 in.) x 30 in. deep
Weight**	90 lbs

**Based on configuration for 5 channel modules power supply and control card. Excludes duplexers and combiners.

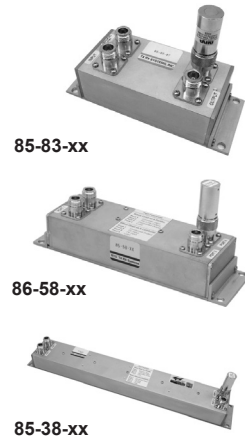
HYBRID DIRECTIONAL COUPLER

Bird Technologies Group, TX RX Systems brand has the most comprehensive line of Hybrid Directional Couplers for power division and signal distribution applications. The broad array of splits facilitates balanced signal distribution in the most comprehensive systems. Additionally, the Tri-Band products allow multi-band signal distribution via a single transmission line where multi-agency communication systems are required. They largely eliminate the near-far problem and maximize the cost-efficiency of the signal boosters. Bi-directional nature of the couplers allows them to be used for two-way communications with minimal loss above the desired coupling value.

Alodine Gold finish

Silver plated N female connectors with gold plated pins

Multiple load configurations (no load, 5W, or 25W) available for different power requirements



VHF, UHF & 800 MHz Harmonic 144 - 174 MHz, 450 - 530 MHz, 806 - 890 MHz

Decoupled Value (dB)	Thru-line Loss (dB)	Power Ratio Thru-line vs. Decoupled Ports	5-Watt Load		25-Watt Load		Load Deleted		Dimensions (in.)	
			Model No. (2.8 lbs.)	Model No. (3.2 lbs.)	Model No. (2.6 lbs.)	"A"	"B"			
-3.0 ± 0.7 dB	-3.0 ± 0.3 dB	50%/50%	85-05-01	85-05-0101	85-05-01-LT	18.5	17.875			
-4.8 ± 0.7 dB	-1.8 ± 0.3 dB	67%/33%	85-05-02	85-05-0201	85-05-02-LT	18.5	17.875			
-6.0 ± 0.7 dB	-1.2 ± 0.3 dB	75%/25%	85-05-03	85-05-0301	85-05-03-LT	18.5	17.875			
-7.0 ± 1.0 dB	-1.0 ± 0.2 dB	80%/20%	85-05-04	85-05-0401	85-05-04-LT	18.5	17.875			
-10.0 ± 1.0 dB	-0.5 ± 0.2 dB	90%/10%	85-05-05	85-05-0501	85-05-05-LT	18.5	17.875			
-15.0	-0.2	97%/3%	85-05-06	85-05-0601	85-05-06-LT	18.5	17.875			
-20.0	-0.2	99%/1%	85-05-07	85-05-0701	85-05-07-LT	18.5	17.875			
-30.0	-0.2	99.9%/0.1%	85-05-08	85-05-0801	85-05-08-LT	18.5	17.875			

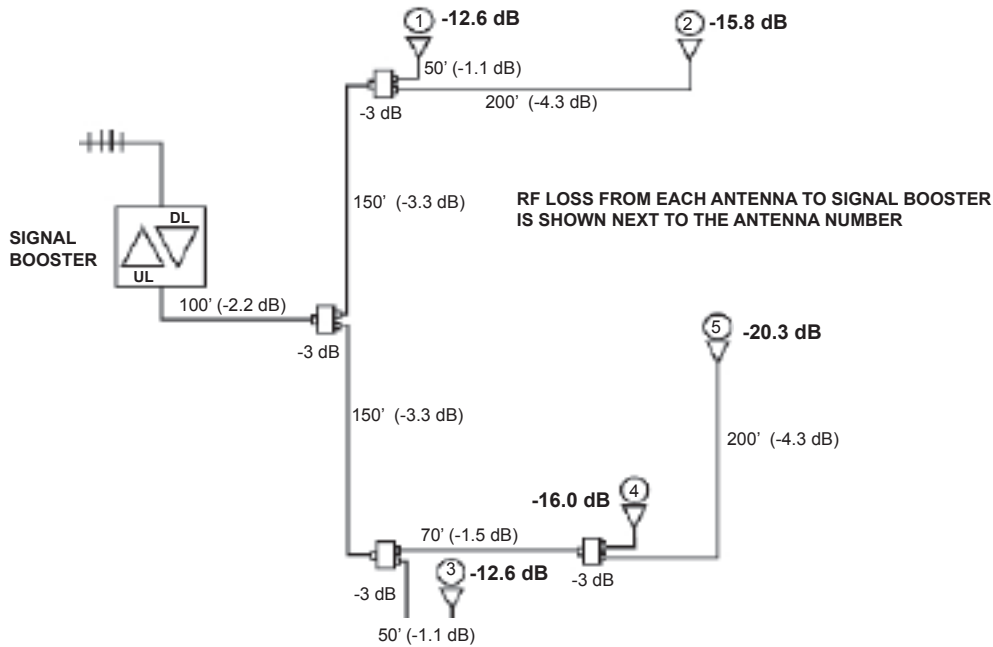
132 - 174 MHz

Decoupled Value (dB)	Thru-line Loss (dB)	Power Ratio Thru-line vs. Decoupled Ports	5-Watt Load		25-Watt Load		Load Deleted		Dimensions (in.)	
			Model No. (2.8 lbs.)	Model No. (3.2 lbs.)	Model No. (2.6 lbs.)	"A"	"B"			
-3.0 ± 0.7 dB	-3.0 ± 0.3 dB	50%/50%	85-38-01	85-38-0101	85-38-01-LT	18.5	17.875			
-4.8 ± 0.7 dB	-1.8 ± 0.3 dB	67%/33%	85-38-02	85-38-0201	85-38-02-LT	18.5	17.875			
-6.0 ± 0.7 dB	-1.2 ± 0.3 dB	75%/25%	85-38-03	85-38-0301	85-38-03-LT	18.5	17.875			
-7.0 ± 1.0 dB	-1.0 ± 0.2 dB	80%/20%	85-38-04	85-38-0401	85-38-04-LT	18.5	17.875			
-10.0 ± 1.0 dB	-0.5 ± 0.2 dB	90%/10%	85-38-05	85-38-0501	85-38-05-LT	18.5	17.875			

350 - 520 MHz

Decoupled Value (dB)	Thru-line Loss (dB)	Power Ratio Thru-line vs. Decoupled Ports	5-Watt Load		25-Watt Load		Load Deleted		Dimensions (in.)	
			Model No. (2.8 lbs.)	Model No. (3.2 lbs.)	Model No. (2.6 lbs.)	"A"	"B"			
-3.0 ± 0.7 dB	-3.0 ± 0.3 dB	50%/50%	85-58-01	85-58-0101	85-58-01-LT	9.0	8.375			
-4.8 ± 0.7 dB	-1.8 ± 0.3 dB	67%/33%	85-58-02	85-58-0201	85-58-02-LT	9.0	8.375			
-6.0 ± 0.7 dB	-1.2 ± 0.3 dB	75%/25%	85-58-03	85-58-0301	85-58-03-LT	9.0	8.375			
-7.0 ± 1.0 dB	-1.0 ± 0.2 dB	80%/20%	85-58-04	85-58-0401	85-58-04-LT	9.0	8.375			
-10.0 ± 1.0 dB	-0.5 ± 0.2 dB	90%/10%	85-58-05	85-58-0501	85-58-05-LT	9.0	8.375			
-15.0 ± 1.0 dB	-0.3 max.	97%/3%	85-58-06	85-58-0601	85-58-06-LT	9.0	8.375			
-20.0 ± 1.0 dB	-0.3 max.	99%/1%	85-58-07	85-58-0701	85-58-07-LT	9.0	8.375			
-30.0 ± 1.0 dB	-0.3 max.	99.9%/0.1%	85-58-08	85-58-0801	85-58-08-LT	9.0	8.375			

HYBRID DIRECTIONAL COUPLER



Example of An In-Building Distribution Network, with Splitters Only

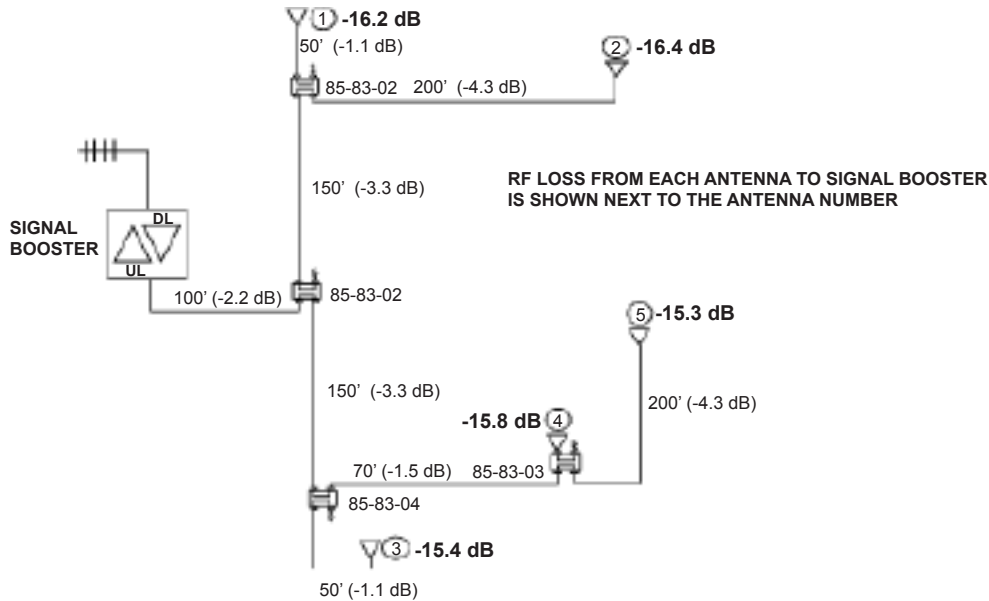
Numbers along the cable paths indicate signal levels relative to output of the booster: the farther the antenna is away from the booster, the lower the signal level

Signals from the portables at the far-away antennas will be overwhelmed by signals at the near antennas

System dynamic range is reduced with possible damage to signal booster amps

System coverage is reduced with possible need for additional in-line boosters

System coverage is not uniform throughout the facility



Same In-Building Distribution Network, with Couplers

Signal levels are all within 3 dB regardless of the locations of the antennas

System dynamic range is preserved

System coverage is optimized, less likely to need in-line boosters

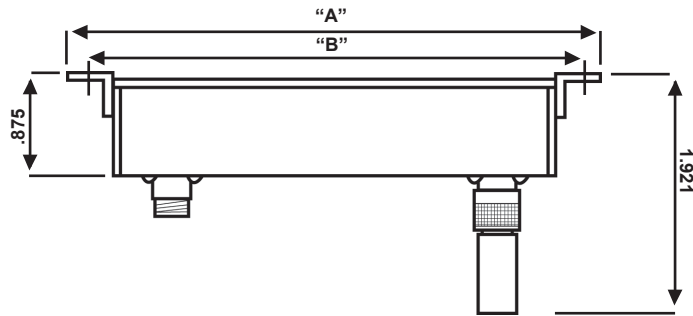
System coverage is much more uniform throughout the facility

xx: Termination Designator. No designator: 5W termination; 01: 25W termination;
LT: no termination (customer can buy larger loads for higher power applications).

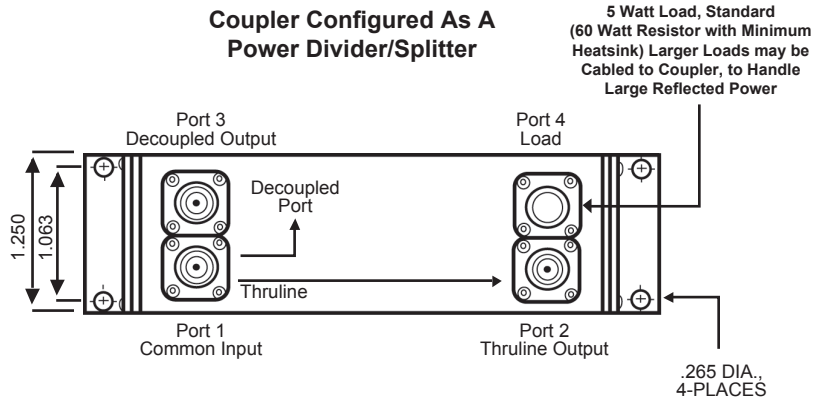
HYBRID DIRECTIONAL COUPLER

746 - 960 MHz

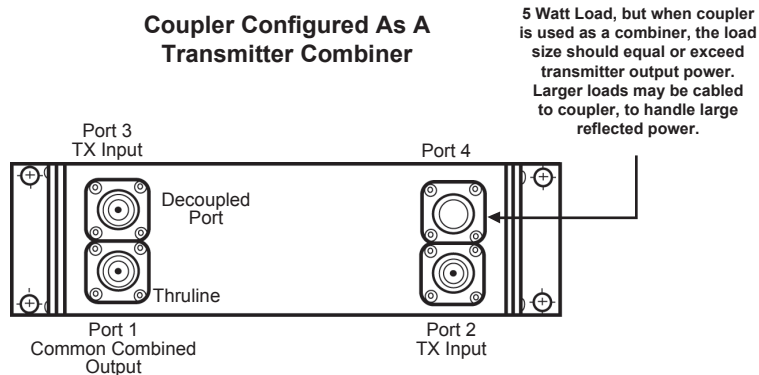
Decoupled Value (dB)	Thru-line Loss (dB)	Power Ratio Thru-line vs. Decoupled Ports	5-Watt Load Model No. (2.8 lbs.)	25-Watt Load Model No. (3.2 lbs.)	Load Deleted Model No. (2.6 lbs.)	Dimensions (in.)	
						"A"	"B"
-3.0 ± 0.7 dB	-3.0 ± 0.3 dB	50%/50%	85-83-01	85-83-0101	85-83-01-LT	6.5	5.875
-4.8 ± 0.7 dB	-1.8 ± 0.3 dB	67%/33%	85-83-02	85-83-0201	85-83-02-LT	6.5	5.875
-6.0 ± 0.7 dB	-1.2 ± 0.3 dB	75%/25%	85-83-03	85-83-0301	85-83-03-LT	6.5	5.875
-7.0 ± 1.0 dB	-1.0 ± 0.2 dB	80%/20%	85-83-04	85-83-0401	85-83-04-LT	6.5	5.875
-10.0 ± 1.0 dB	-0.5 ± 0.2 dB	90%/10%	85-83-05	85-83-0501	85-83-05-LT	6.5	5.875
-15.0	-0.2	97%/3%	85-83-06	85-83-0601	85-83-06-LT	6.5	5.875
-20.0	-0.2	99%/1%	85-83-07	85-83-0701	85-83-07-LT	6.5	5.875
-30.0	-0.2	99.9%/0.1%	85-83-08	85-83-0801	85-83-08-LT	6.5	5.875



Coupler Configured As A Power Divider/Splitter



Coupler Configured As A Transmitter Combiner



CROSSBAND COUPLERS

25-960 MHz

Bird Technologies Group, TX RX Systems brand, Crossband Couplers allow multi-band operation of tower transmission lines, reducing cost and tower loading. They are designed for transmit or receive operations with DC pass-thru models or tower mount Rx Systems. Models are available for specialized transmit and receive applications. Complete response curves are available on request.

Tunable capacitors are replaced with large area transmission line structure for greater reliability.

Cascading certain models will allow three frequency bands to use one transmission line.

Tower mount models consist of the base station unit, less rack bar, in a weatherproof fiberglass housing which is sealed with silicone rubber adhesive.



base station mount



weatherproof tower mount

MODEL NUMBER	FREQUENCY BANDS	TYPICAL	ISOLATION	POWER RATING	SEE NOTES	
WEATHERPROOF	BASE STATION	COUPLED (MHz)	LOSS (dB)	(dB)	WATTS	BELOW
80-05-01	80-05-02	406-512 MHz 806-960 MHz	0.20 0.20	40	750 500	
80-05-03	80-05-02	406-512 MHz 806-960 MHz	0.30 0.50	40	Receive Only	1
80-05-04	80-05-05	406-512 MHz 806-960 MHz	0.30 0.50	40	250 Receive Only	2
80-05-07	80-05-06	25-175 MHz 406-960 MHz	0.25 0.25	40	250 350	
80-05-09	80-05-08	25-175 MHz 406-960 MHz	0.30 0.50	40	Receive Only	3
80-05-10	---	406-512 MHz 806-960 MHz	0.30 0.35	40	Receive Only	4

COMMON SPECIFICATIONS

Temperature Range	-40° to +70°C
VSWR (50 ohm ref.)	1.25:1
Connectors	'N' female
Dimensions HxWxL [inches (mm)]	Weatherproof Models: 3.5 x 6 x 13.75 Base Station Models: 2 x 19 x 3

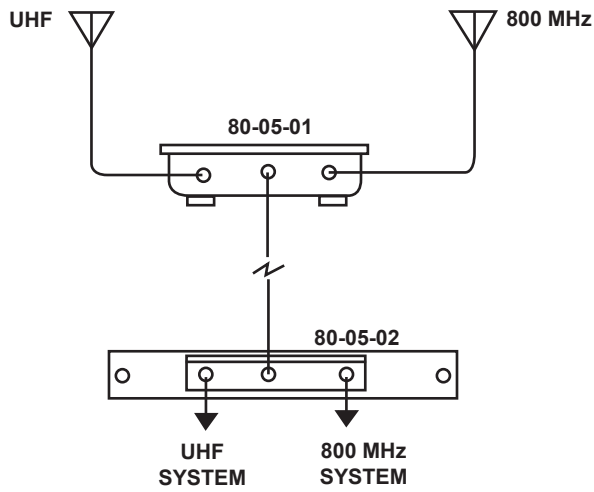
NOTES:

- 80-05-03 will pass DC power between center conductors of all three terminals for operating separate Tower Mount receive systems.
- DC will pass only between the transmission line terminal and the 800 MHz terminal for operating an 800 MHz Receive Tower Mount preamplifier. The UHF branch contains a series high current input capacitor to block DC and pass transmit power.
- DC power passes through UHF and is blocked from VHF to antenna terminal.
- DC power passes through UHF and is blocked from 800 MHz to antenna terminal.

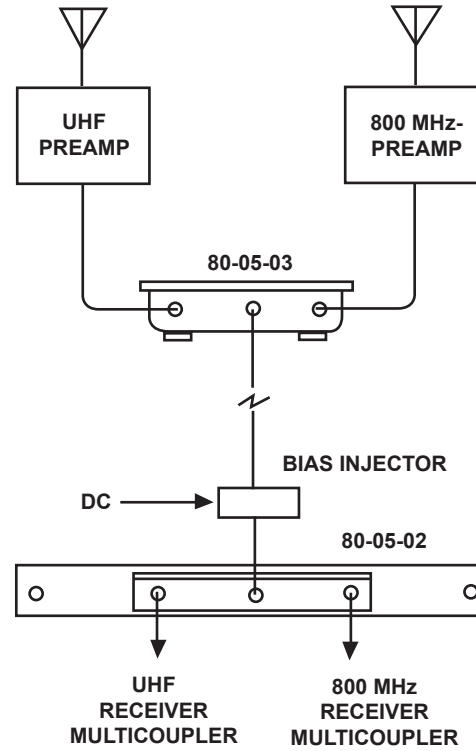
CROSSBAND COUPLERS

Typical Applications

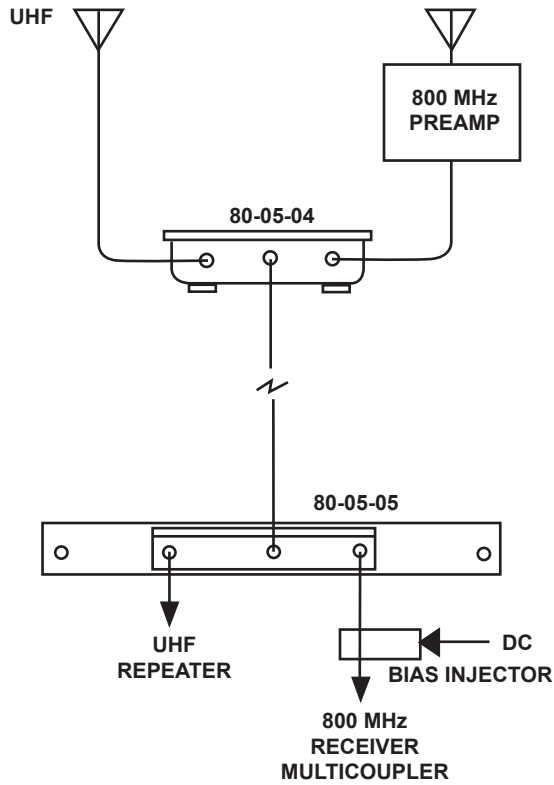
I. UHF/800 MHz Tx or Rx USE (NO DC POWER TRANSFER)



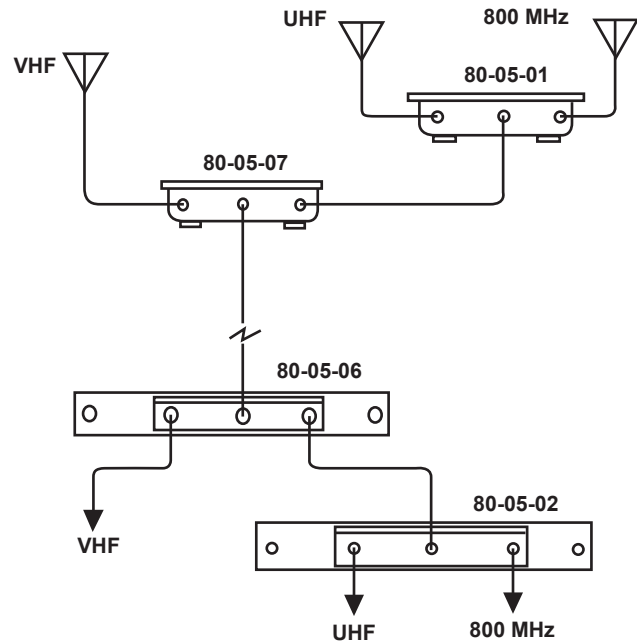
II. UHF/800 MHz TOWER MOUNTS



III. UHF TRANSMIT/800 MHz Rx TOWER MOUNT



IV. VHF/UHF/800 MHz



In this configuration, passing DC for Tower Mount Preamp is not a standard option.

SPLITTERS

Bird Technologies Group, TX RX Systems brand, power dividers are grouped into Hybrid/Wilkensen and Stripline/coaxial designs. Hybrid designs are characterized by port-to-port isolation of 20 dB or more and are typically used in receiver multicoupler or low power signal booster applications. Stripline splitters have no port-to-port isolation and are most typically used to feed transmitter power to multiple antennas for phased arrays or similar applications. The models below are characterized by low-loss above the splitting loss and wide bandwidths. N connectors are standard.



84-01-11

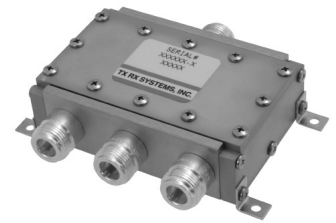
Can cover VHF and UHF, or 800-900 MHz bands.

Two types of construction for different types of applications.



84-01-12

Model Number	Frequency Range (MHz)	Number of Outputs (X-way splitter)	Power Rating (Input)	Insertion Loss	Ratio of Output/Input	Connectors
84-01-09*	10-512	2	125 W	-3.2 dB	50%	N male
84-01-11	25-512	2	Rx only	-3.2 dB	50%	N male
84-01-12	25-512	4	Rx only	-6.4 dB	25%	N female
84-37-01*	144-174	2	800 W	-3.2 dB	50%	N female
84-37-02	144-174	4	1000 W	-6.4 dB	25%	N female
84-58-01*	350-520	2	800 W	-3.2 dB	50%	N female
84-58-02	350-520	4	1000 W	-6.4 dB	25%	N female
84-83-01	746-960	2	Rx only	-3.2 dB	50%	N female
84-83-02	746-960	4	Rx only	-6.4 dB	25%	N female
84-83-12	746-960	3	500 W	-5.1 dB	33%	N female
84-83-14	746-960	2	500 W	-3.2 dB	50%	N female
84-83-17	746-960	4	500 W	-6.4 dB	25%	N female



84-01-13

* Coated version available. Add "C" at the end of the model number, e.g. 84-01-09C

SAMPLERS

Bird Technologies Group, TX RX Systems brand, signal samplers are non-directional taps for sampling RF signals from a main transmission line, with minimal effect to the power level of the signals on the main line. The sampled port can be connected to a Spectrum Analyzer for analysis and measurement, or connected to a low gain, distribution antenna in Signal Boosters systems to augment communications in buildings and tunnels. We offer a broad range of sampling levels to accommodate a wide variety of applications.

Signal samplers are used to check system performance while in-use.

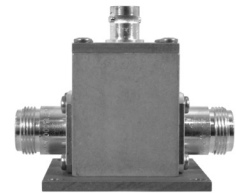
Extremely low insertion loss with sample values of 20, 30, 40 and 50 dB.



84-xx-xx-01



84-xx-xx-03



84-xx-xx-02

Model Number	Frequency Range	Coupling Loss [ThruLineSampled]	Power Split Ratio	VSWR*	Power Rating
84-38-10-xx	132-174 MHz	-0.9/-10 dB	10/90 %	<1.5:1	5W
84-38-15-xx	132-174 MHz	-0.3/-15 dB	3/97 %	<1.5:1	10W
84-38-20-xx	132-174 MHz	-0.1/-20 dB	1/99 %	<1.5:1	30W
84-38-30-xx	132-174 MHz	-0.1/-30 dB	0.1/99.9 %	<1.5:1	50W
84-38-50-xx	132-174 MHz	-0.1/-50 dB	0.001/99.999 %	<1.5:1	50W
84-58-10-xx	350-520 MHz	-0.9/-10 dB	10/90 %	<1.5:1	5W
84-58-15-xx	350-520 MHz	-0.3/-15 dB	3/97 %	<1.5:1	10W
84-58-20-xx	350-520 MHz	-0.1/-20 dB	1/99 %	<1.5:1	30W
84-58-30-xx	350-520 MHz	-0.1/-30 dB	0.1/99.9 %	<1.5:1	50W
84-58-50-xx	350-520 MHz	-0.1/-50 dB	0.001/99.999 %	<1.5:1	50W
84-83-10-xx	746-960 MHz	-1/-10 dB	10/90 %	<1.5:1	5W
84-83-15-xx	746-960 MHz	-0.3/-15 dB	3/97 %	<1.5:1	10W
84-83-20-xx	746-960 MHz	-0.2/-20 dB	1/99 %	<1.5:1	30W
84-83-30-xx	746-960 MHz	-0.1/-30 dB	0.1/99.9 %	<1.5:1	50W
84-83-50-xx	746-960 MHz	-0.1/-50 dB	0.001/99.999 %	<1.5:1	50W

xx: Connector designator. In the order of "Input/ThruLine/Sampled" ports:

01 is N female/N female/N female; 02 is N female/N female/BNC female; 03 is N female/N male/BNC female.

*: Maximum VSWR for the sampled port of 84-38-01-xx, 84-58-10-xx, 84-83-10-xx and 84-58-15-xx is 2.0:1.

YOU'RE HEARD,
LOUD AND CLEAR.

Bird Technologies Group (BTG) is an innovative global supplier of radio frequency products, systems, services and educational solutions. Combining the industry leading brands of **Bird® Electronic, TX RX Systems, and X-COM Systems** in one company reinforces the BTG commitment to providing our customers with industry leading RF test and measurement and infrastructure products and services.

Our portfolio includes hardware, software, components and services. Our products include Analyzers, Antennas, Combining Systems, Components, Duplexers and Triplexers, Field Services, Filters, Loads, Terminations and Attenuator's, Power Meters, Power Sensors, Power Monitors, Wattmeter's, Signal Boosters, Tower Top Amplifier and Receiver Multicouplers, RF data capture & storage, RF signal generation, and software analysis tools. We offer dependable engineering, calibration and educational services for land mobile radio, cellular, semiconductor, broadcast, medical, military and government applications.

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