

icanqa®

RF Components for
**Wireless
Infrastructure**

About iCana

iCana is a fabless semiconductor component supplier specializing in design and manufacturing of RF components for wireless communication. We focus on RF products for 5G sub-6 GHz wireless infrastructure. By managing the end-to-end process from IC design through mass production, we are committed to providing exceptional performance, quality and reliability. Headquartered in Taiwan, we have R&D centers in Taiwan and Singapore.

Partnership

We understand that partnership and collaboration are key to success in the fast-paced 5G era. For this reason, iCana collaborates with multiple global partners to deliver its differentiated products.

Contact us at sales@icana-rf.com if you would like to explore opportunities for working and creating value together.

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Wireless Infrastructure

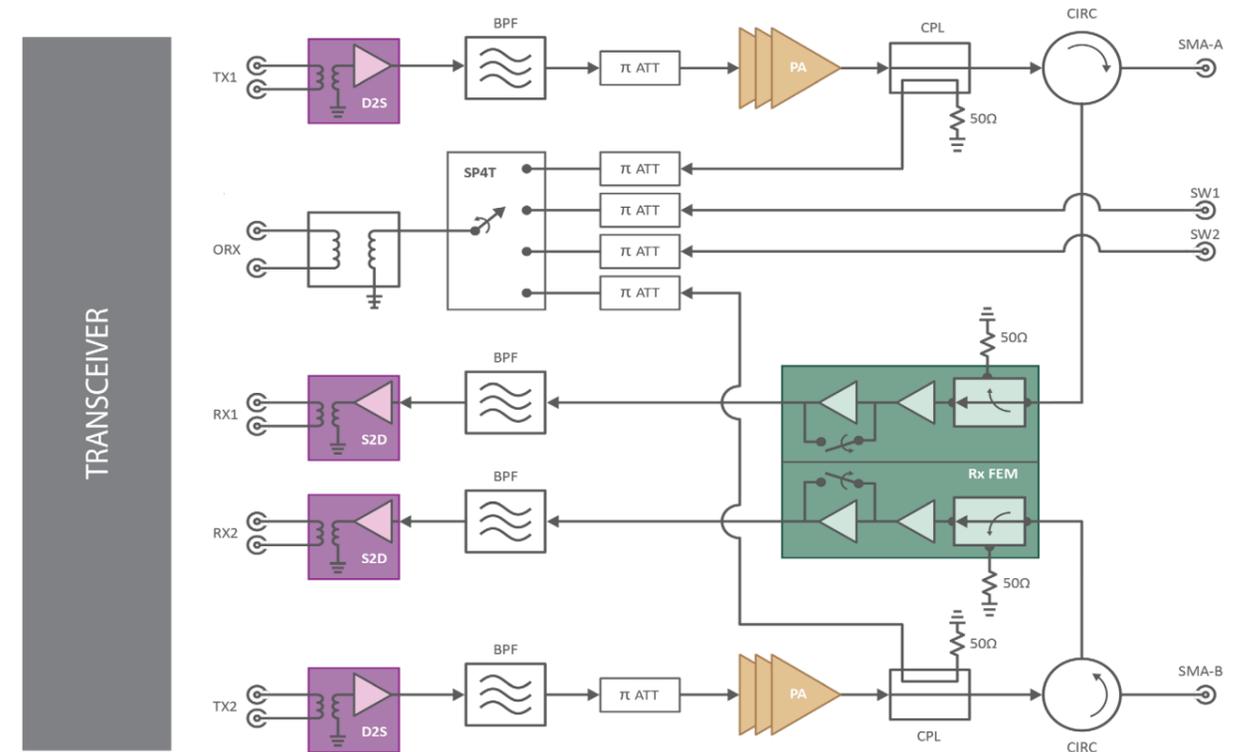
At iCana, we are dedicated to providing cutting-edge RF components needed to create robust and efficient 5G networks. Our components offer wide bandwidth, high efficiency and high linearity, making them ideal for use in a range of applications covering all major 5G frequency bands in the 5G NR FR1 (Sub-6 GHz) frequency range.

Our products include all the active RF components used in small cell front-end designs including power amplifiers, gain amplifiers, and receiver front-end modules. Reference designs that include our full sub-6 GHz RF front-end that pair with key transceiver and baseband partners designs are available.



5G Sub-6 GHz RF Front-End Solution

iCana's sub-6 GHz product portfolio is comprised of high-efficiency power amplifiers, differential gain amplifiers, and receiver front-end modules.



- High-efficiency power amplifiers for maximum power savings
- Differential gain amplifiers to interface directly with the transceiver
- Receiver front-end modules for low noise amplification of the incoming signal

5G Sub-6 GHz Products

iCana offers a wide range of 5G sub-6 GHz products for wireless infrastructure, including 28, 30, and 33 dBm high-efficiency power amplifiers, differential gain amplifiers, and dual-channel receiver front-end modules.

		n77				n78		n79	
*Average Power		n3	n1	n40	n7/n41	n78		n79	
	2 W Power Amplifier					ICASP3338-20A	ICASP3540-20A	ICASP4450-20A	2 W Power Amplifier
	1 W Power Amplifier					ICASP3338-8	ICASP3542-8	ICASP4450-8	1 W Power Amplifier
	1/2 W Power Amplifier	ARQSP1819-4	ARQSP2122-4	ARQSP2324-4	ARQSP2527-4	ARQSP3336-4 ARQSP3437-4	ARQSP3742-4	ARQSP4450-4	1/2 W Power Amplifier
	Gain Amplifier			ICASD2328-D2S ICASD2328-S2D		ICASD3338-D2S ICASD3338-S2D		ICASD4450-D2S ICASD4450-S2D	Gain Amplifier
	Dual Channel Rx FEM				ARQSF2442-RX-A		ARQSF3753-RX-A		Dual Channel Rx FEM

Power Amplifiers

5G Sub-6 GHz

- Average output powers of 28, 30, and 33 dBm**

Targeted for indoor and outdoor small-cells from 24 dBm (0.25 W) to 30 dBm (1 W) at the antenna port

- Extremely rugged**

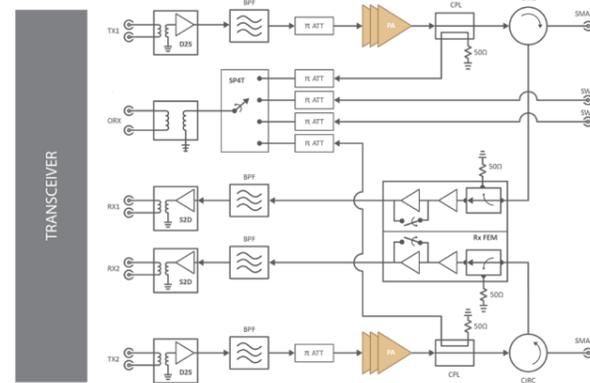
Withstands output VSWR mismatch of up to 10:1 for safe continuous operation

- High linearity and efficiency**

Excellent ACLR of -50 dBc with commercially available DPD platforms

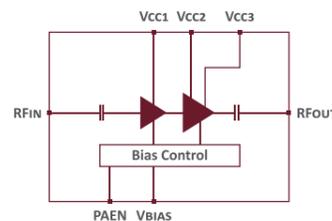
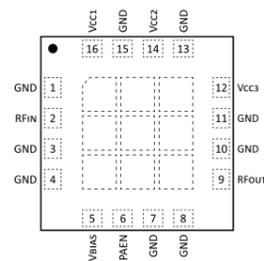
- Pin-to-pin compatibility**

Pin-to-pin compatibility between 28 dBm and 30 dBm PA families



1/2 W High-Efficiency Power Amplifiers

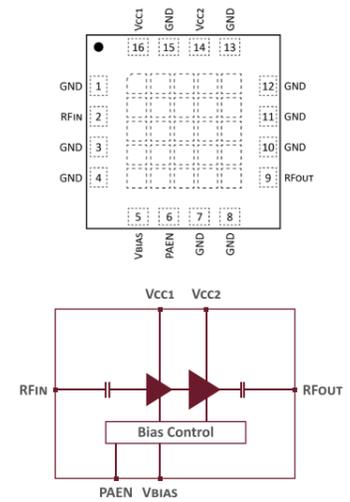
- 28 dBm (0.6 W) average output power at 8.5 dB PAR
- Ultra rugged: can withstand 10:1 VSWR
- -50 dBc ACLR with DPD (28 dBm, 8.5 dB PAR)
- Excellent PAE with wide IBW
- 5V operation (GaAs)
- 5x5 mm² pin-to-pin compatible package for 1/2 W and 1 W PA families
- 50 Ω in/out



Part Number	Frequency	Band	Gain (dB)	Psat (dBm)	PAE (%)	iBW (MHz)
ARQSP1819-4	1.8-1.9 GHz	n3, n39	39.5	36	30	60
ARQSP2122-4	2.1-2.2 GHz	n1	38	36.2	32	60
ARQSP2324-4	2.3-2.4 GHz	n30, n40	40	35.4	31	100
ARQSP2527-4	2.5-2.7 GHz	n7, n38, n41, n90	37.1	35.5	35.2	100
ARQSP3336-4	3.3-3.6 GHz	n77, n78	38.1	35.2	21.2	100
ARQSP3437-4	3.4-3.7 GHz	n48 (CBRS), n77, n78	37.6	35.4	23.9	100
ARQSP3742-4	3.7-4.2 GHz	n77	37	35.6	20.5	100
ARQSP4450-4	4.4-5.0 GHz	n79	32.7	34.6	22.8	100

1 W High-Efficiency Power Amplifiers

- 30 dBm (1 W) average output power at 9.5 dB PAR
- Ultra rugged: can withstand 10:1 VSWR
- -50 dBc ACLR with DPD (30 dBm, 9.5 dB PAR)
- Wide bandwidth: 400 MHz IBW
- High efficiency: > 25% PAE
- 5V + 12 V operation (GaAs)
- 5x5 mm² package pin-to-pin compatible between iCana 1/2 W and 1 W PA families
- 50 Ω in/out

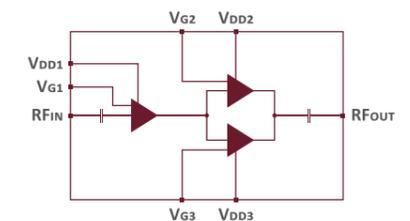
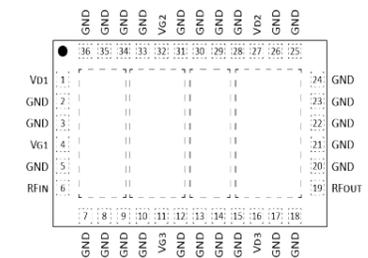


Part Number	Frequency	Band	Gain (dB)	Psat (dBm)	PAE (%)	iBW (MHz)
ICASP3338-8*	3.3-3.8 GHz	n48 (CBRS), n77, n78	36	39	25	400
ICASP3542-8*	3.45-4.2 GHz	n77, n78	36	39	25	400
ICASP4450-8*	4.4-5.0 GHz	n79	36	39	24	400

*Coming soon

2 W High-Efficiency Power Amplifiers

- 33 dBm (2 W) average output power at 9.5 dB PAR
- Ultra rugged: can withstand 10:1 VSWR
- -50 dBc ACLR with DPD (33 dBm, 9.5 dB PAR)
- Wide bandwidth: 400 MHz IBW
- High efficiency: > 40% PAE
- 28 V operation (GaN)
- 6x10 mm² package pin-to-pin compatible family
- 50 Ω in/out



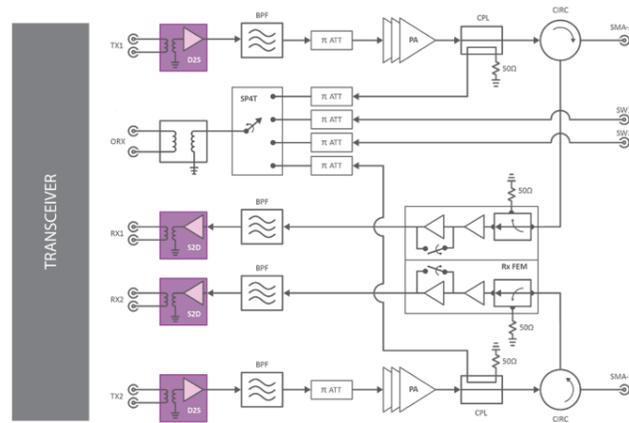
Part Number	Frequency	Band	Gain (dB)	Psat (dBm)	PAE (%)	iBW (MHz)
ICASP3338-20	3.3-3.8 GHz	n48 (CBRS), n77, n78	28	45	30	100
ICASP3338-20A*	3.3-3.8 GHz	n48 (CBRS), n77, n78	30	43	40-45	200
ICASP3540-20A	3.45-4.0 GHz	n77, n78	30	43	40-45	200
ICASP4450-20A*	4.4-5.0 GHz	n79	30	43	40-45	200

*Coming soon

Gain Amplifiers

5G Sub-6 GHz

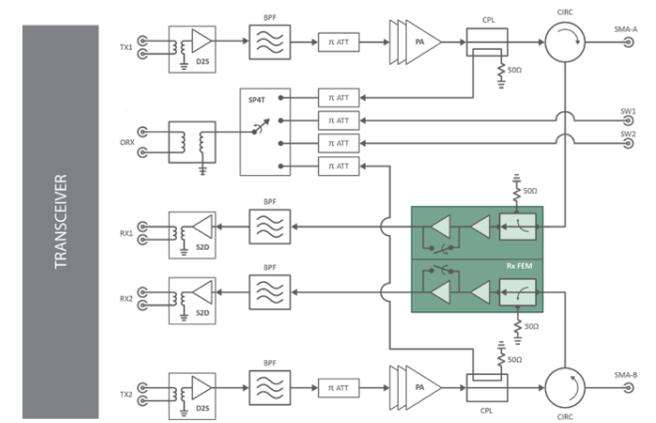
- **Differential to single-ended (D2S) and Single-ended to differential (S2D)**
 - Integrated balun design reduces component count, PCB size, and BOM cost
 - Differential interface compatible with common transceivers
- **Small footprint**
2x2 mm² pin-to-pin compatible family



Receiver Front-End Module

5G Sub-6 GHz

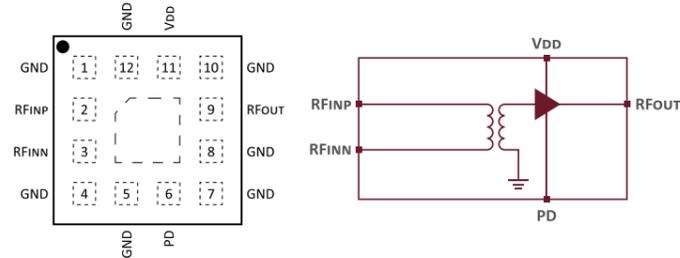
- **Dual channel FEMs**
Integrated bypass switch for optimized gain
Dual channel for reduced board size and BOM cost
- **High channel isolation**
40 dB channel isolation in a small footprint
- **High power handling**
41 dBm average input power handling for small cells and mMIMO
- **Fully matched 50 Ω input and output**
Pin-to-pin compatible product families



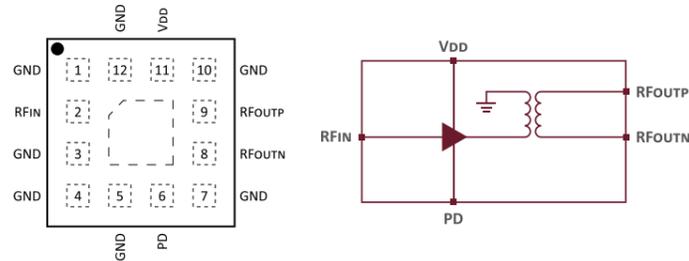
D2S / S2D Gain Amplifiers

- Transmit chain (D2S): 100 Ω in / 50 Ω out
- Receive chain (S2D): 100 Ω in / 50 Ω out
- Integrated balun reduces BOM complexity and PCB footprint
 - No external choke inductor needed
- 5 V operation (GaAs)
- 2x2 mm² pin-to-pin compatible family

D2S

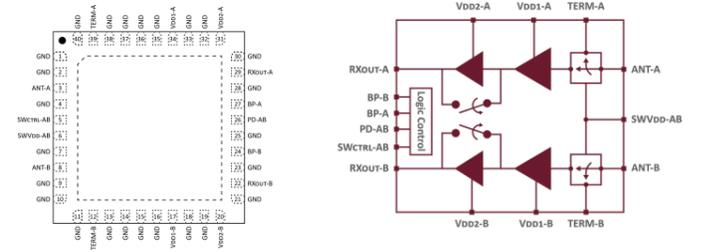


S2D



Dual Channel Receiver Front-End Modules

- Includes a silicon SPDT switch and a two-stage GaAs LNA with bypass
- High Gain (HG) and Low Gain (LG) modes
- 5 V operation with 1.8/3.3 V control
- 6x6 mm² package
- Pin-to-pin compatible families
- 50 Ω in/out



Part Number	Configuration	Frequency	Band	Gain (dB)	OP1dB (dBm)	OIP3 (dBm)	NF (dB)
ICASD3338-D2S	D2S	3.3-3.8 GHz	n48 (CBRS), n77, n78	17.5	18	34	2.7
ICASD4450-D2S	D2S	4.4-5.0 GHz	n79	16.5	17	33	3.6
ICASD2328-S2D	S2D	2.3-2.8 GHz	n7, n30, n38, n40, n41	19	17.5	33	1.6
ICASD3338-S2D	S2D	3.3-3.8 GHz	n48 (CBRS), n77, n78	18.8	17	33	1.8
ICASD4450-S2D	S2D	4.4-5.0 GHz	n79	18	15.8	27	2.0

Part Number	Configuration	Frequency	Band	Gain (dB)		OIP3 (dBm)		NF (dB)	
				HG	LG	HG	LG	HG	LG
ARQSF2442-RX-A	Dual	2.4-4.2 GHz	n41, n48 (CBRS), n77, n78	37	16.5	34	25	1.4	1.3
ARQSF3753-RX-A	Dual	3.7-5.3 GHz	n77, n79	37	16	29.5	28.5	1.6	1.6

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