

LINEAR POWER AMPLIFIERS

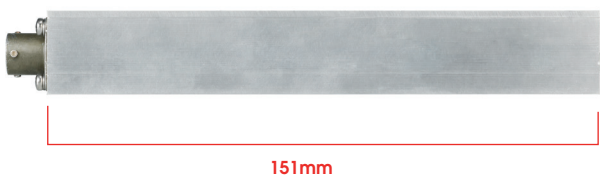
SARAS Technology Limited designs and manufactures linear and ultra-linear power amplifiers for civil and military systems that require high power in a robust and compact package. SARAS's high power amplifiers are used in applications such as Tactical Communications, Surveillance & Broadcast Equipment using higher ordered modulation schemes such as COFDM.

SARAS's range of linear high power amplifiers bring a new level of performance and reliability to microwave transmission of digitally modulated signals. Linearisation technology is used to minimise distortion and provide superior signal quality for complex multi-carrier modulations while minimizing the DC power consumption.

These amplifiers are designed to meet the stringent requirements of the DVB-T spectral mask and can be used for COFDM, QPSK, QAM, CW and similar applications. The RF input and output ports provide excellent return loss for filter matching. In addition, reverse polarity protection, short/open circuit protection are standard features.

Key features:-

- Designed for Digital Modulation - COFDM, QPSK, BPSK, QAM
- Ultra linear or saturated operation
- Compliance to DVB-T spectral mask
- High efficiency
- Various operating gains available
- RF ports are open and short protected
- Short circuit/over-voltage protection
- Reverse polarity protection
- 12 - 18 Vdc Power Supply range



Following examples illustrate SARAS's current capabilities in the design and manufacture of High Power Solid State Amplifiers to 20GHz.

0.5W, 1W and 2W COFDM Power Amplifiers

These amplifiers have an average output power capability shown in the table below and come with Thermal protection, auto reset and TTL ON/OFF as standard. A fast switching option is also available for TDD applications where the RF mute time is <1uS. A common envelope of 96mm x 49mm x 12.5mm (approx) excluding connectors is used for all the amplifiers. The part numbering used consists of the frequency range, gain (dB) and P1dB in dBm.

Our standard products are listed in the table below. We also carry out customisation to achieve the specifications required by our Customers.

SARAS Type Code	Frequency Range (MHz)	Minimum Gain (dB)	P1dB (dBm)	COFDM Power (W)	DC Supply (V)
SPA0345-7-35	300-450	7	35	0.5	10-16
SPA1015-7-35	1000-1500	7	35	0.5	10-16
SPA1520-7-35	1500-2000	7	35	0.5	10-16
SPA2025-7-35	2000-2500	7	35	0.5	10-16
SPA3035-7-35	3000-3500	7	35	0.5	10-16
SPA4450-7-35	4400-5000	7	35	0.5	10-16
SPA0307-12-37	300-700	12	37	1	10-16
SPA0408-12-37	400-800	12	37	1	10-16
SPA1025-11-37	1000-2550	11	37	1	10-16
SPA3035-11-37	3000-3500	11	37	1	10-16
SPA0203-12-37	210-250	12	37	1	10-16
SPA0304-11-37	340-470	11	37	1	10-16
SPA4450-12-39	4400-5000	12	39	1	10-16
SPA5560-12-39	5500-6000	12	39	1	12
SPA8186-12-39	8100-8600	12	39	1	12
SPA0304-13-40	340-470	13	40	2	10-16
SPA1015-13-40	1000-1500	13	40	2	10-16
SPA2025-13-40	2000-2500	13	40	2	10-16
SPA1624-13-40	1600-2400	13	40	2	10-16
SPA4450-13-40	4400-5000	13	40	2	10-16
SPA8186-13-40	8100-8600	13	40	2	12
SPA0304-16-42	340-470	16	42	3	12

5W and 10W COFDM Power Amplifiers

SARAS has extended its range of power amplifiers to include applications requiring even higher average output powers; the following table shows a few more examples. A common envelope of 190mm x 101mm x 23mm (approx) excluding connectors is used for these amplifiers. The part numbering used consists of the frequency range, gain (dB) and P1dB in dBm.

SARAS Type Code	Frequency Range (MHz)	Minimum Gain (dB)	P1dB (dBm)	COFDM Power (W)	DC Supply (V)
SPA0304-18-47	340-470	18	47	5	10-16
SPA1014-18-47	1000-1400	18	47	5	10-16
SPA2025-30-47	2000-2500	30	47	5	10-16
SPA3035-18-47	3000-3500	18	47	5	10-16
SPA4450-18-47	4400-5000	18	47	5	12-16
SPA1015-30-50	1000-1500	30	50	10	12-16
SPA2025-30-50	2000-2500	30	50	10	12-16
SPA4450-20-50	4400-5000	20	50	10	12-16