

## TSQA-1X8PE

8 Channel Precise 10 W RF Power Source, 300 MHz...6000 MHz

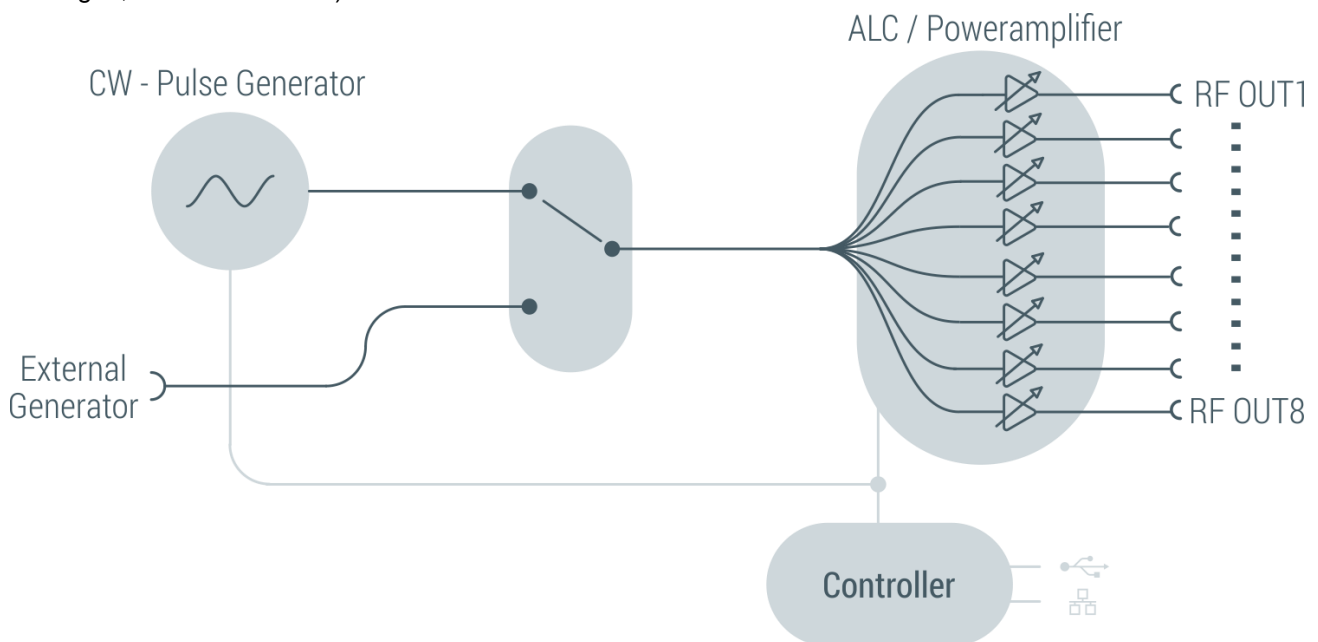
### Features

- very high stability over long periods
- high output level accuracy
- ALC (Automatic Level Control)
- GUI (Graphical User Interface)
- CW (Continuous Wave) and pulse operation (option)
- optimized power consumption
- compact 19", 3 U design



### Applications

- qualification of active and passive cellular and wireless front-end components
- research and development (R&D)
- quality assurance (new designs, batch verification)



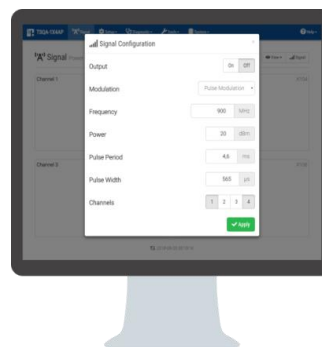
### Scope

TSQA-1X8PE is a compact, high power multi source with 8 output channels suitable for the frequency range 300 MHz...6000 MHz. The device offers output power up to 10 W per channel over the full frequency range. Each channel has an ALC for precise output power stability over long periods. The TSQA-1X8PE is equipped with an internal CW RF signal source. Optional an internal pulse generator additional to the CW source is available.

The TSQA-1X8PE implements software for automatic level control to ensure precise RF output levels with long term stability. A adaptive harmonic filter reduce power in harmonics. A typical application of this system is to perform HTOL RF testing (High Operating Lifetime testing) of RF components.

## Flexible control interfaces

Physical remote interfaces: LAN or USB.  
TSQA-1X8PE is controllable via GUI (Graphic User Interface) without any additional effort of application software development and regardless of location. Alternatively, the system offers the control via an SCPI inspired ASCII string protocol for ATE (Automatic test Equipment) applications.



## Integrated RF signal source

The integrated signal source generates CW- and optional pulsed signals over the full frequency range with high frequency stability.

## Optimized power consumption

The power consumption and efficiency are optimized as a function of RF output power level. This minimizes heat generation and cooling needs.

## Software functionalities

### - GUI (Graphic User Interface)

Additional to commanding via remote interface parameters like operating frequency, output level pulse length and pulse period are settable via a GUI.

For taking into account losses of external RF connecting cables, type and length of the cables can be entered. The software calculates the output power level related to the end of the cable.

### - System self-monitoring

The system can run without human intervention during entire test periods of multiple months. It contains automatic self-checking like current consumption, module temperature and logging of errors.

### - ALC (Automatic Level Control)

The RF power levels at the RF outputs are monitored continuously in each channel. The power level will be kept constant automatically. To avoid level overshoots, the ALC algorithm uses a smooth transition.

### High port isolation

The TSQA-1X8PE multi power source offers high isolations between the RF output ports. A mismatch at a port should not have any influence to the other ports. The TSQA-1X8PE offers very high isolation between ports to avoid this effect.

### High precision of RF output level

Each output channel provides a very precise RF output level with closed-loop level control (ALC), and virtually no visible steps. As a consequence, the symmetry between the 8 outputs as well as the long stability is guaranteed. Also, the control loop's smooth characteristic guarantees avoidance of overshoot.

## RF Specifications

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
impedance	$Z_{in} / Z_{out}$		50		Ohm	
number of outputs	$n_{DUT}$		8			
low frequency	$f_{min}$			300	MHz	
high frequency	$f_{max}$	6000			MHz	
min. output power	$P_{MIN}$			+20	dBm	
max. output power	$P_{MAX}$	+39			dBm	
	$P_{MAX}$	+40	+42		dBm	$0.7 \text{ GHz} \leq f \leq 3 \text{ GHz}$
ALC resolution	$\Delta P_{OUT}$			0,05	dB	
output power accuracy	$dP_{OUT}$		$\pm 0.2$		dB	within agreed power/frequency ranges tbd
harmonics	d		-30		dBc	$P_{out} \leq +37\text{dBm}$
output isolation	$S_{23}$		-60		dB	adjacent channels, full gain
RF connectors			SMA female			outputs and inputs
<b>CW RF Generator</b>						
frequency range	$f_{GEN}$	600		6000	MHz	
resolution	$\Delta f_{GEN}$		10		kHz	
accuracy	$df_{GEN}$		$\pm 2.5$		ppm	
<b>Option O1: Pulse Modulator</b>						
pulse length	$t_W$	577		2300	ms	
period	$t_P$	4.6		1000	ms	



## Common Specifications

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition	
power supply	$u_{AC}$	90	230	260	V	50 / 60 Hz	
power consumption	P		500		W		
power plug		type „F“ CEE7/4					
dimensions	W x H x D	approx. 483 x 133 x 431			mm	19", 3 U	
weight			10		kg		
remote interface		RJ45 10/100BaseT				ASCII commands	
operating temp. range	$T_o$	+ 20		+ 30	°C	within specification	
storage temp. range	$T_s$	- 40		+ 70	°C		
EMC		EN61326-1:2013				according directions: 2014/30/EU	
safety		EN61010-1:2010				according directions: 2014/35/EU	
Ordering information	P/N	1804.6502.1	TSQA-1X8PME		RF connectors front side		
	P/N	1804.6502.2	TSQA-1X8PME		RF connectors on right side		
	P/N	1804.6502.3	TSQA-1X8PME		RF connectors on left side		
	P/N	1804.6502.O1	TSQA-PM-PULSE		Option: pulse Generator		

## Appearances



TSQA-1X8PE with RF ports on right side



TSQA-1X8PE with RF ports and power/remote

## Related Products

Product	Description	P/N
TSQA-1X4AP	4 Channel Precise 16 W RF Power Source 300 MHz...3000 MHz	1606.1202
TSQA-1X8XE	8 Channel Precise 500 mW RF Power Source, 300 MHz...6000 MHz	1804.6402