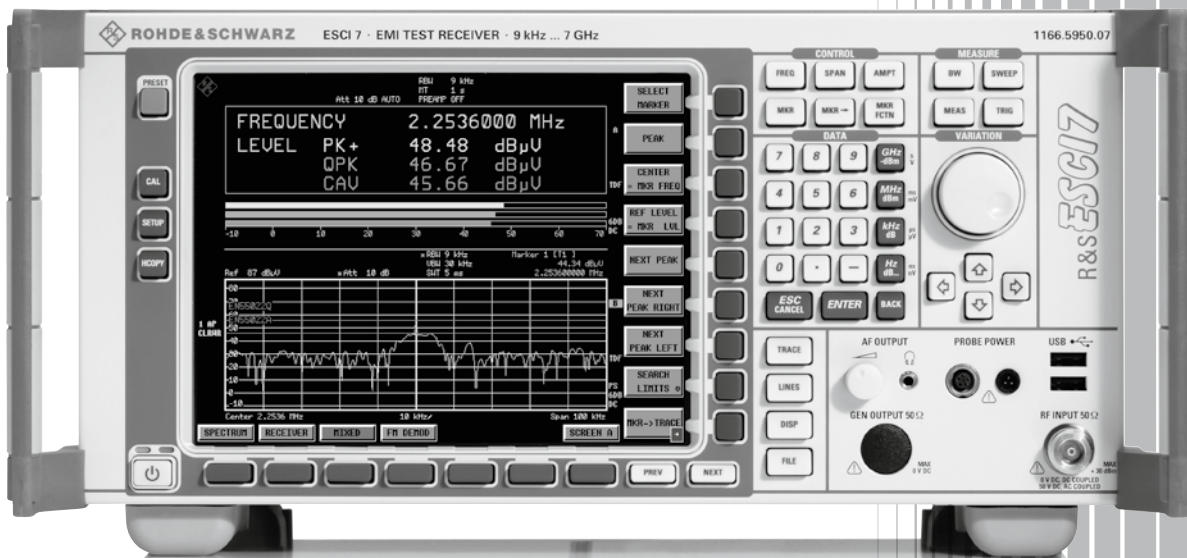


# R&S® ESCI/ESCI7 EMI Test Receiver Specifications



**75** Years of  
Driving  
Innovation



**ROHDE & SCHWARZ**

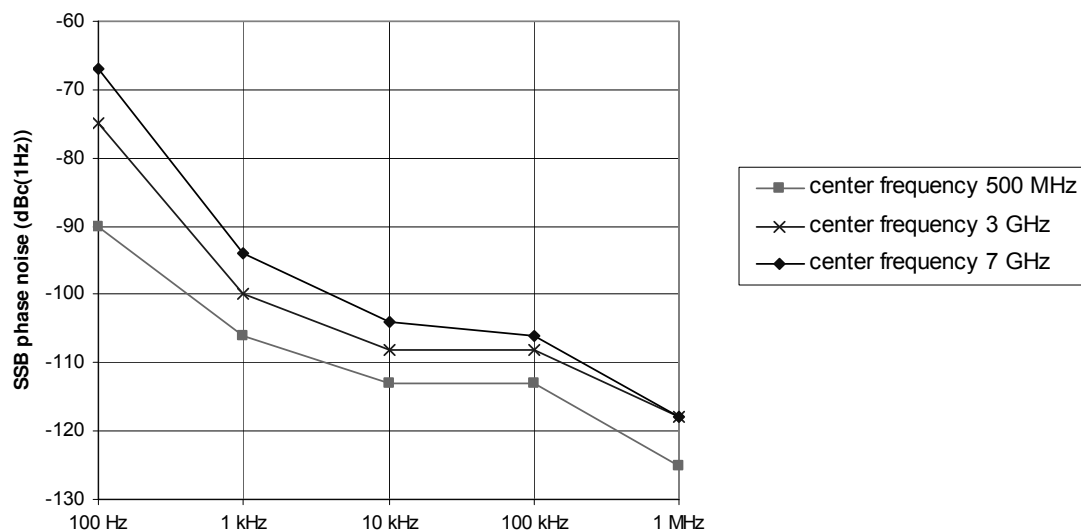
[www.valuetronics.com](http://www.valuetronics.com)

# Specifications

Specifications apply under the following conditions: 15 minutes warm-up time at ambient temperature, specified environmental conditions met, calibration cycle adhered to, and all internal automatic adjustments performed. Data without tolerances: typical values only. Data designated 'nominal' applies to design parameters and is not assured by Rohde & Schwarz.

## Frequency

<b>Frequency range</b>	R&S®ESCI	
	DC, AC coupled	9 kHz to 3 GHz
	R&S®ESCI7	
	DC coupled	9 kHz to 7 GHz
	AC coupled	1 MHz to 7 GHz
Resolution		0.01 Hz
<b>Internal reference frequency (nominal)</b>	standard	
Aging per year	after 30 days of continuous operation	$1 \times 10^{-6}$
Temperature drift	+5 °C to +45 °C	$1 \times 10^{-6}$
<b>Internal reference frequency (nominal)</b>	R&S®FSP-B4 option (OCXO)	
Aging per year	after 30 days of continuous operation	$1 \times 10^{-7}$
Temperature drift	+5 °C to +45 °C	$1 \times 10^{-8}$
<b>External reference frequency</b>		10 MHz
<b>Frequency display (receiver mode)</b>		numeric display
Resolution		0.1 Hz
<b>Frequency display (analyzer mode)</b>		with marker or frequency counter
Marker resolution		span/500
Max. deviation	sweep time > 3 × auto sweep time	$\pm(\text{marker frequency} \times \text{reference frequency error} + 0.5 \% \times \text{span} + 10 \% \times \text{resolution bandwidth} + \frac{1}{2} \text{ (last digit)})$
Frequency counter resolution	selectable	0.1 Hz to 10 kHz
Count accuracy	S/N > 25 dB	$\pm (\text{marker frequency} \times \text{reference frequency error} + \frac{1}{2} \text{ (last digit)})$
Display range of frequency axis	R&S®ESCI	0 Hz, 10 Hz to 3 GHz
	R&S®ESCI7	0 Hz, 10 Hz to 7 GHz
Max. deviation of display range		0.1 %
<b>Spectral purity, SSB phase noise</b>	f = 500 MHz, for f > 500 MHz see diagram	
	100 Hz	< -84 dBc (1 Hz), typ. -90 dBc (1 Hz)
	1 kHz	< -100 dBc (1 Hz), typ. -108 dBc (1 Hz)
	10 kHz	< -106 dBc (1 Hz), typ. -113 dBc (1 Hz)
	100 kHz, span > 100 kHz	< -110 dBc (1 Hz), typ. -113 dBc (1 Hz)
	1 MHz, span > 100 kHz	< -120 dBc (1 Hz), typ. -125 dBc (1 Hz)
	10 MHz	typ. -145 dBc (1 Hz)
Residual FM	f = 500 MHz, RBW = 1 kHz, sweep time = 100 ms	typ. 3 Hz



Typical phase noise at different center frequencies

## Scan (receiver mode)

Scan		scan of max. 10 subranges with different, independent settings
Measurement time per frequency	selectable	33 $\mu$ s to 100 s

## Sweep (analyzer mode)

Sweep time	in time domain, span = 0 Hz	1 $\mu$ s to 16000 s
	resolution	125 ns
	in frequency domain, span $\geq$ 10 Hz	2.5 ms to 16000 s
Max. deviation of sweep time		1 %

## Resolution bandwidths

<b>Sweep filters</b>		
3 dB bandwidths		10 Hz to 3 MHz, in steps of 1/3/10
Bandwidth accuracy	$\leq$ 100 kHz	< 3 %
	300 kHz to 3 MHz	< 10 %
Shape factor 60 dB:3 dB	$\leq$ 100 kHz	< 5
	300 kHz to 3 MHz	< 15
EMI bandwidths	6 dB bandwidths	200 Hz, 9 kHz, 120 kHz
	pulse bandwidth	1 MHz
Bandwidth accuracy	$\leq$ 120 kHz	< 3 %
	1 MHz	< 10 %
Shape factor 60 dB:6 dB	$\leq$ 120 kHz	< 5
	1 MHz	< 15

<b>Video bandwidths</b>	analyzer mode	1 Hz to 10 MHz, in steps of 1/3/10
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<b>FFT filters</b>		
3 dB bandwidths	analyzer mode	1 Hz to 30 kHz, in steps of 1/3/10
Bandwidth accuracy		5 %, nominal
Shape factor 60 dB:3 dB		2.5, nominal

<b>Channel filters</b>		
Bandwidths		100/200/300/500 Hz; 1/1.5/2/2.4/2.7/3/3.4/4/4.5/5/6/8.5/9/10/ 12.5/14/15/16/18 (RRC)/20/21/24.3 (RRC)/ 25/30/50/100/150/192/200/300/500 kHz 1/1.228/1.28 (RRC)/1.5/2/3/3.84 (RRC)/ 4.096 (RRC)/ 5 MHz (RRC = root raised cosine)

## Preselection

Preselection	can be switched off in analyzer mode	R&S <sup>®</sup> ESCI: 11 preselection filters R&S <sup>®</sup> ESCI7: 12 preselection filters
Bandwidths (–6 dB), nominal	R&S <sup>®</sup> ESCI, R&S <sup>®</sup> ESCI7	
	< 150 kHz	230 kHz, fixed-tuned lowpass filter
	150 kHz to 2 MHz	2.6 MHz, fixed-tuned bandpass filter
	2 MHz to 8 MHz	2 MHz, tracking bandpass filter
	8 MHz to 30 MHz	6 MHz, tracking bandpass filter
	30 MHz to 70 MHz	15 MHz, tracking bandpass filter
	70 MHz to 150 MHz	30 MHz, tracking bandpass filter
	150 MHz to 300 MHz	60 MHz, tracking bandpass filter
	300 MHz to 600 MHz	80 MHz, tracking bandpass filter
	600 MHz to 1 GHz	100 MHz, tracking bandpass filter
	1 GHz to 2 GHz	tracking highpass filter
	2 GHz to 3 GHz	fixed-tuned highpass filter
		R&S <sup>®</sup> ESCI7
	3 GHz to 7 GHz	tracking bandpass filter
Preamplifier	switchable, between preselection and 1st mixer	20 dB

## Level

Display range		displayed average noise level (DANL) to 30 dBm
Maximum input level		
DC voltage	DC-coupled	0 V
	AC-coupled	50 V
CW RF power	RF attenuation 0 dB	20 dBm
	RF attenuation $\geq 10$ dB	30 dBm
Pulse spectral density	RF attenuation 0 dB	97 dB $\mu$ V/MHz
Max. pulse voltage	RF attenuation $\geq 10$ dB, 10 $\mu$ s	150 V
Max. pulse energy	R&S <sup>®</sup> ESCI	
	RF attenuation $\geq 10$ dB, 20 $\mu$ s	10 mWs
	R&S <sup>®</sup> ESCI7	
	RF attenuation $\geq 10$ dB, 10 $\mu$ s	1 mWs
<b>Intermodulation</b>		
1 dB compression of input mixer	f > 200 MHz, RF attenuation 0 dB, preselection and preamplifier off	5 dBm, nominal
Third-order intercept (TOI)	RF attenuation 0 dB, level 2 $\times$ -30 dBm, $\Delta f > 5 \times$ RBW or 10 kHz, whichever is larger without preselection, without preamplifier	
	R&S <sup>®</sup> ESCI, R&S <sup>®</sup> ESCI7	
	20 MHz to 200 MHz	> 5 dBm
	200 MHz to 3 GHz	> 7 dBm, typ. 10 dBm
	R&S <sup>®</sup> ESCI7	
	3 GHz to 7 GHz	> 10 dBm, typ. 15 dBm
	with preselection, without preamplifier	
	R&S <sup>®</sup> ESCI, R&S <sup>®</sup> ESCI7	
	20 MHz to 200 MHz	> 0 dBm
	200 MHz to 3 GHz	> 2 dBm, typ. 5 dBm
	R&S <sup>®</sup> ESCI7	
	3 GHz to 7 GHz	> 10 dBm, typ. 15 dBm
	with preselection, with preamplifier	
	R&S <sup>®</sup> ESCI, R&S <sup>®</sup> ESCI7	
	20 MHz to 200 MHz	> -20 dBm
	200 MHz to 3 GHz	> -18 dBm, typ. -15 dBm
R&S <sup>®</sup> ESCI7		
3 GHz to 7 GHz	> -10 dBm, typ. -5 dBm	
Second harmonic intercept (SHI)	RF attenuation 0 dB, level -10 dBm, without preselection, without preamplifier	
	R&S <sup>®</sup> ESCI, R&S <sup>®</sup> ESCI7	
	< 100 MHz	typ. 25 dBm
	100 MHz to 1.5 GHz	typ. 35 dBm
	R&S <sup>®</sup> ESCI7	
	1.5 GHz to 3.5 GHz	typ. 70 dBm
	RF attenuation 0 dB, level -15 dBm, with preselection, without preamplifier	
	R&S <sup>®</sup> ESCI, R&S <sup>®</sup> ESCI7	
	4 MHz to 100 MHz	> 40 dBm
	100 MHz to 1.5 GHz	> 50 dBm
	R&S <sup>®</sup> ESCI7	
	1.5 GHz to 3.5 GHz	typ. 70 dBm
	RF attenuation 0 dB, level -35 dBm, with preselection, with preamplifier	
	R&S <sup>®</sup> ESCI, R&S <sup>®</sup> ESCI7	
	4 MHz to 100 MHz	> 25 dBm
	100 MHz to 1.5 GHz	> 35 dBm
R&S <sup>®</sup> ESCI7		
1.5 GHz to 3.5 GHz	typ. 10 dBm	

<b>Displayed average noise level (DANL) (analyzer mode)</b>	RF attenuation 0 dB, RBW = 10 Hz, VBW = 1 Hz, span = 0 Hz, trace average function over 20 sweeps, 50 Ω termination without preselection, without preamplifier, AC-coupled	
	R&S®ESCI	
	9 kHz	< -105 dBm, nominal
	100 kHz	< -110 dBm, nominal
	1 MHz	< -130 dBm, nominal
	10 MHz to 1 GHz	< -142 dBm, typ. -145 dBm
	1 GHz to 2.5 GHz	< -140 dBm, typ. -143 dBm
	2.5 GHz to 3 GHz	< -138 dBm, typ. -141 dBm
	R&S®ESCI7	
	1 MHz	< -128 dBm, nominal
	10 MHz to 1 GHz	< -140 dBm, typ. -143 dBm
	1 GHz to 2.5 GHz	< -138 dBm, typ. -141 dBm
	2.5 GHz to 3 GHz	< -136 dBm, typ. -139 dBm
	3 GHz to 7 GHz	< -138 dBm, typ. -141 dBm
	without preselection, without preamplifier, DC-coupled	
	R&S®ESCI	
	9 kHz	< -115 dBm
	100 kHz	< -120 dBm
	1 MHz	< -140 dBm, typ. -143 dBm
	10 MHz to 1 GHz	< -142 dBm, typ. -145 dBm
	1 GHz to 2.5 GHz	< -140 dBm, typ. -143 dBm
	2.5 GHz to 3 GHz	< -138 dBm, typ. -141 dBm
	R&S®ESCI7	
	9 kHz	< -115 dBm
	100 kHz	< -120 dBm
	1 MHz	< -138 dBm, typ. -141 dBm
	10 MHz to 1 GHz	< -140 dBm, typ. -143 dBm
	1 GHz to 2.5 GHz	< -138 dBm, typ. -141 dBm
	2.5 GHz to 3 GHz	< -136 dBm, typ. -139 dBm
	3 GHz to 7 GHz	< -138 dBm, typ. -141 dBm
	with preselection, without preamplifier, DC-coupled	
	R&S®ESCI	
	9 kHz	< -115 dBm
	100 kHz	< -120 dBm, typ. -140 dBm
	1 MHz	< -140 dBm, typ. -148 dBm
	10 MHz to 1 GHz	< -142 dBm, typ. -150 dBm
	1 GHz to 2.5 GHz	< -140 dBm, typ. -148 dBm
	2.5 GHz to 3 GHz	< -138 dBm, typ. -141 dBm
	R&S®ESCI7	
	9 kHz	< -115 dBm
	100 kHz	< -120 dBm, typ. -140 dBm
	1 MHz	< -138 dBm, typ. -146 dBm
	10 MHz to 1 GHz	< -140 dBm, typ. -148 dBm
	1 GHz to 2.5 GHz	< -138 dBm, typ. -146 dBm
	2.5 GHz to 3 GHz	< -136 dBm, typ. -139 dBm
	3 GHz to 7 GHz	< -138 dBm, typ. -141 dBm
	with preselection, with preamplifier, DC-coupled	
R&S®ESCI		
9 kHz	< -135 dBm	
100 kHz	< -140 dBm	
1 MHz	< -150 dBm, typ. -153 dBm	
10 MHz to 1 GHz	< -152 dBm, typ. -155 dBm	
1 GHz to 3 GHz	< -150 dBm, typ. -153 dBm	
R&S®ESCI7		
9 kHz	< -135 dBm	
100 kHz	< -140 dBm	
1 MHz	< -148 dBm, typ. -151 dBm	
10 MHz to 1 GHz	< -150 dBm, typ. -153 dBm	
1 GHz to 7 GHz	< -148 dBm, typ. -151 dBm	

<b>Noise indication (receiver mode)</b>	Nominal, calculated from DANL data, 0 dB RF attenuation, 50 $\Omega$ termination	
Average (AV) display	without preamplifier	
	R&S <sup>®</sup> ESCI, R&S <sup>®</sup> ESC17	
	9 kHz, BW = 200 Hz	< 5 dB $\mu$ V
	150 kHz, BW = 200 Hz	< 0 dB $\mu$ V
	150 kHz, BW = 9 kHz	< 16 dB $\mu$ V
	1 MHz, BW = 9 kHz	< -4 dB $\mu$ V
	10 MHz to 30 MHz, BW = 9 kHz	< -6 dB $\mu$ V
	30 MHz to 1 GHz, BW = 120 kHz	< 6 dB $\mu$ V
	1 GHz to 3 GHz, BW = 1 MHz	< 16 dB $\mu$ V
	R&S <sup>®</sup> ESC17	
	3 GHz to 7 GHz, BW = 1 MHz	< 20 dB $\mu$ V
	with preamplifier	
	R&S <sup>®</sup> ESCI, R&S <sup>®</sup> ESC17	
	9 kHz, BW = 200 Hz	< -15 dB $\mu$ V
	150 kHz, BW = 200 Hz	< -20 dB $\mu$ V
	150 kHz, BW = 9 kHz	< -4 dB $\mu$ V
	1 MHz, BW = 9 kHz	< -14 dB $\mu$ V
10 MHz to 30 MHz, BW = 9 kHz	< -16 dB $\mu$ V	
30 MHz to 1 GHz, BW = 120 kHz	< -4 dB $\mu$ V	
1 GHz to 3 GHz, BW = 1 MHz	< 6 dB $\mu$ V	
R&S <sup>®</sup> ESC17		
3 GHz to 7 GHz, BW = 1 MHz	< 3 dB $\mu$ V	
Increase of DANL relative to AV display	max peak	typ. +11 dB
	RMS	typ. +1 dB
	quasi-peak	
	band A	typ. +3 dB
	band B	typ. +4 dB
	bands C and D	typ. +6 dB
<b>Immunity to interference</b>		
Image frequency		> 70 dB
Intermediate frequency		> 70 dB
Spurious response	f > 1 MHz, 0 dB RF attenuation, without input signal	< -103 dBm
Other interfering signals	$\Delta f > 100$ kHz, mixer level < -10 dBm	< -70 dBc
RF shielding	field strength 3 V/m, 0 dB RF attenuation, 50 $\Omega$ termination, f $\neq$ f <sub>IF</sub>	level indication < 10 dB $\mu$ V, nominal

<b>Level display (receiver mode)</b>		
Level display	digital	numeric,
	resolution	0.01 dB
	analog	bargraph display separate for each detector
Spectrum	level axis	10 dB to 200 dB in steps of 10 dB
	frequency axis	linear or logarithmic selectable
Detectors	Three detectors can be switched on simultaneously.	average (AV), RMS, max peak, min peak, quasi-peak (QPK), CISPR-AV, CISPR-RMS
Units of level display		dB $\mu$ V, dBm, dB $\mu$ A, dBpW, dBpT
Measurement time	selectable	33 $\mu$ s to 100 s
<b>Level display (analyzer mode)</b>		
Screen		501 $\times$ 400 pixels (one measurement diagram); max. two measurement diagrams with independent settings
Logarithmic level display range		1 dB, 10 dB to 200 dB in steps of 10 dB
Linear level display range		10 % of reference level per level division, 10 divisions
Number of traces	one measurement diagram	3
	two measurement diagrams	6
Trace detectors		max peak, min peak, auto peak, sample, quasi-peak, average, RMS
Trace functions		clear/write, max hold, min hold, average
Number of measurement points	default value	501
	range	125 to 8001 in steps of approx. a factor of 2

Setting range of reference level	logarithmic level display	-130 dBm to 30 dBm in steps of 0.1 dB
	linear level display	70.71 nV to 7.07 V in steps of 1 %
Units of level axis	logarithmic level display	dBm, dBmV, dB $\mu$ V, dB $\mu$ A, dBpW
	linear level display	mV, $\mu$ V, mA, $\mu$ A, nW, pW
<b>Max. uncertainty of level measurement</b>		
Reference level uncertainty at 128 MHz	level = -30 dBm, RF attenuation 10 dB, RBW 10 kHz, reference level -25 dBm	
	without preselection/preamplifier	<0.2 dB ( $\sigma = 0.07$ dB)
	with preselection/preamplifier	<0.3 dB ( $\sigma = 0.1$ dB)
Frequency response referenced to 128 MHz	without preselection/preamplifier, AC-coupled	
	R&S <sup>®</sup> ESCI	
	9 kHz to 50 kHz	< +0.5 dB/-1 dB, nominal
	50 kHz to 3 GHz	< 0.5 dB ( $\sigma = 0.17$ dB)
	R&S <sup>®</sup> ESCI7	
	1 MHz to 3 GHz	< 0.5 dB ( $\sigma = 0.17$ dB)
	3 GHz to 7 GHz	< 2 dB ( $\sigma = 0.7$ dB)
	without preselection/preamplifier, DC-coupled	
	R&S <sup>®</sup> ESCI	
	9 kHz to 3 GHz	< 0.5 dB ( $\sigma = 0.17$ dB)
	R&S <sup>®</sup> ESCI7	
	9 kHz to 3 GHz	< 0.5 dB ( $\sigma = 0.17$ dB)
	3 GHz to 7 GHz	< 2 dB ( $\sigma = 0.7$ dB)
	with preselection/preamplifier, AC-coupled	
	R&S <sup>®</sup> ESCI	
	9 kHz to 50 kHz	< +0.8 dB/-1.3 dB, nominal
	50 kHz to 3 GHz	< 0.8 dB ( $\sigma = 0.27$ dB)
	R&S <sup>®</sup> ESCI7	
	1 MHz to 3 GHz	< 0.8 dB ( $\sigma = 0.27$ dB)
	3 GHz to 7 GHz	< 2 dB ( $\sigma = 0.7$ dB)
	with preselection/preamplifier, DC-coupled	
	R&S <sup>®</sup> ESCI	
	9 kHz to 3 GHz	< 0.8 dB ( $\sigma = 0.27$ dB)
	R&S <sup>®</sup> ESCI7	
9 kHz to 3 GHz	< 0.8 dB ( $\sigma = 0.27$ dB)	
3 GHz to 7 GHz	< 2 dB ( $\sigma = 0.7$ dB)	
Uncertainty of attenuator setting	f = 128 MHz, 0 dB to 70 dB, referenced to 10 dB RF attenuation	< 0.2 dB ( $\sigma = 0.07$ dB)
Uncertainty of reference level setting		< 0.2 dB ( $\sigma = 0.07$ dB)
Log/lin display nonlinearity	S/N > 16 dB	
	RBW $\leq$ 120 kHz	
	0 dB to -70 dB	< 0.2 dB ( $\sigma = 0.07$ dB)
	-70 dB to -90 dB	< 0.5 dB ( $\sigma = 0.17$ dB)
	RBW > 120 kHz	
	0 dB to -50 dB	< 0.2 dB ( $\sigma = 0.07$ dB)
	-50 dB to -70 dB	< 0.5 dB ( $\sigma = 0.17$ dB)
Bandwidth switching uncertainty	referenced to RBW = 10 kHz	
	10 kHz to 120 kHz	< 0.1 dB ( $\sigma = 0.03$ dB)
	300 kHz to 10 MHz	< 0.2 dB ( $\sigma = 0.07$ dB)
	FFT filter, 1 Hz to 3 kHz	< 0.2 dB ( $\sigma = 0.07$ dB)
Total measurement uncertainty (95 % confidence level)	Signal level 0 dB to -70 dB below reference level, S/N > 20 dB, RBW $\leq$ 120 kHz, DC-coupled	
	without preselection/preamplifier	
	< 3 GHz	0.5 dB
	3 GHz to 7 GHz	1.5 dB
	with preselection/preamplifier	
	< 3 GHz	1 dB
	3 GHz to 7 GHz	1.5 dB
Quasi-peak indication		in line with CISPR 16-1-1

## Trigger functions

Trigger		
Trigger source		free run, video, external, IF level
Trigger offset	span $\geq$ 10 Hz	125 ns to 100 s, resolution min. 125 ns (or 1 % of offset)
	span = 0 Hz	$\pm$ (125 ns to 100 s), resolution min. 125 ns, dependent on sweep time
Max. deviation of trigger offset		$\pm$ (125 ns + (0.1 % $\times$ trigger offset))

Gated sweep		
Gate source		video, external, IF level
Gate delay		1 $\mu$ s to 100 s
Gate length		125 ns to 100 s, resolution min. 125 ns (or 1 % of gate length)
Max. deviation of gate length		$\pm$ (125 ns + (0.1 % $\times$ gate length))

## Audio demodulation

AF demodulation modes		AM and FM
Audio output		loudspeaker and earphone jack
Marker hold time in analyzer mode	selectable	100 ms to 60 s

## Inputs and outputs (front panel)

RF input		
Impedance		50 $\Omega$
Connector		N female
VSWR	RF attenuation < 10 dB, DC-coupled	
	R&S <sup>®</sup> ESCI, R&S <sup>®</sup> ESCI7	
	9 kHz to 1 GHz	< 2.0, typ. 1.5
	1 GHz to 3 GHz	< 3.0, typ. 2.5
	R&S <sup>®</sup> ESCI7	
	3 GHz to 7 GHz	< 3.0, typ. 2.5
	RF attenuation $\geq$ 10 dB, DC-coupled	
	R&S <sup>®</sup> ESCI, R&S <sup>®</sup> ESCI7	
	9 kHz to 1 GHz	< 1.2
	1 GHz to 3 GHz	< 1.5
	R&S <sup>®</sup> ESCI7	
	3 GHz to 7 GHz	< 2.0
	RF attenuation < 10 dB, AC-coupled	
	R&S <sup>®</sup> ESCI	
	9 kHz to 100 kHz	2.5
	100 kHz to 1 GHz	2.0
	1 GHz to 3 GHz	3.0
	R&S <sup>®</sup> ESCI7	
	1 MHz to 5 MHz	2.5
	5 MHz to 1 GHz	2.0
1 GHz to 7 GHz	3.0	
RF attenuation $\geq$ 10 dB, AC-coupled		
R&S <sup>®</sup> ESCI		
9 kHz to 100 kHz	typ. 2.5	
100 kHz to 1 GHz	< 1.2	
1 GHz to 3 GHz	< 1.5	
R&S <sup>®</sup> ESCI7		
1 MHz to 5 MHz	typ. 2.5	
5 MHz to 1 GHz	< 1.2	
1 GHz to 3 GHz	< 1.5	
3 GHz to 7 GHz	< 2.0	
Setting range of attenuator		0 dB to 70 dB in steps of 5 dB

Probe power supply		
Supply voltages		+15 V DC, -12.6 V DC and ground, max. 150 mA, nominal



<b>Power supply for antennas, etc.</b>		
Supply voltages		±10 V DC and ground, max. 100 mA, nominal

<b>USB interface</b>		2 ports, type A plug, version 2.0
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<b>AF output</b>		
Connector		3.5 mm jack
Impedance		10 Ω
Open-circuit voltage		adjustable up to 1.5 V

## Inputs and outputs (rear panel)

<b>IF 20.4 MHz</b>		
Connector		BNC female
Impedance		50 Ω
Level	mixer level > -60 dBm	
	RBW ≤ 100 kHz or FFT	-10 dBm at reference level
	RBW > 100 kHz	0 dBm at reference level

<b>Reference frequency output</b>		
Connector		BNC female
Impedance		50 Ω
Output frequency		10 MHz
Level		0 dBm, nominal

<b>Reference frequency input</b>		
Connector		BNC female
Input frequency		10 MHz
Required level		0 dBm from 50 Ω

<b>Power supply for noise source</b>		
Connector		BNC female
Output voltage	switchable	28 V, nominal

<b>External trigger/gate input</b>		
Connector		BNC female
Impedance		> 10 kΩ
Trigger voltage		1.4 V (TTL)
<b>IEC/IEEE bus remote control</b>		
		interface in line with IEC 625-2 (IEEE 488.2)
Connector		24-pin Amphenol female
Command set		SCPI 1997.0
Interface functions		SH1, AH1, T6, SR1, RL1, PP1, DC1, DT1, C0

<b>Serial interface</b>		RS-232-C (COM), 9-pin D-Sub
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<b>Printer interface</b>		parallel (Centronics compatible)
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<b>USB interface</b>	upper connector	type A plug, version 1.1
	lower connector	type A plug, version 2.0

<b>External monitor (VGA)</b>		
Connector		VGA-compatible, 15-pin D-Sub

<b>User interface</b>		25-pin D-Sub
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## General data

<b>Display</b>		21 cm TFT color display
Resolution		640 × 480 pixel (VGA)
Pixel error rate		$< 2 \times 10^{-5}$

<b>Mass memory</b>		1.44 Mbyte 3½" disk drive, hard disk
Data storage	R&S®ESCI only	> 500 instrument setups and traces

<b>Temperature ranges</b>		
Operating temperature range		+5 °C to +40 °C
	with R&S®ESCI-B20 option	0 °C to +50 °C
Permissible temperature range		+5 °C to +45 °C
	with R&S®ESCI-B20 option	0 °C to +55 °C
Storage temperature range		-40 °C to +70 °C
Climatic loading		+40 °C at 95 % relative humidity (EN 60068-2-30)

<b>Mechanical resistance</b>		
Sinusoidal vibration		0.5 g from 5 Hz to 150 Hz, max. 2 g at 55 Hz, in line with EN 60068-2-6, EN 61010-1, MIL-T-28800D, class 5
Random vibration		10 Hz to 100 Hz, acceleration 1 g (rms)
	with R&S®ESCI-B20 option	10 Hz to 300 Hz, acceleration 1.9 g (rms)
Shock		40 g shock spectrum, in line with MIL-STD-810C and MIL-T-28800D, classes 3 and 5

<b>Recommended calibration interval</b>	operation with external reference	2 years
	operation with internal reference	1 year

<b>Power supply</b>		
AC supply		100 V to 240 V AC, 50 Hz to 400 Hz, 3.1 A to 1.3 A, class of protection I in line with VDE 411
Power consumption		typ. 70 VA
Safety		in line with EN 61010-1, UL 3111-1, CSA C22.2 No. 1010-1, IEC 1010-1
EMC		EMC Directive 2004/108/EC including: EN 61326 class B (emission), CISPR 11/EN 55011 group 1 class B (emission) EN 61326 table A.1 (immunity, industrial)
Test marks		VDE, GS, CSA, CSA-NRTL/C

<b>Dimensions and weight</b>		
Dimensions	W × H × D	412 mm × 197 mm × 417 mm (16.22 in × 7.76 in × 16.42 in)
Weight without options	R&S®ESCI	10.5 kg (23.15 lb)
	R&S®ESCI7	12.4 kg (27.34 lb)

## Ordering information

Designation	Type	Order No.
EMI Test Receiver 9 kHz to 3 GHz	R&S®ESCI	1166.5950.03
EMI Test Receiver 9 kHz to 7 GHz	R&S®ESCI7	1166.5950.07
<b>Accessories supplied</b>		
Power cable, operating manual, service manual		

## Options

Designation	Type	Order No.
Rugged Case, with carrying handle	R&S®FSP-B1	1129.7998.02
OCXO Reference Frequency	R&S®FSP-B4	1129.6740.02
TV Trigger/RF Power Trigger	R&S®FSP-B6	1129.8594.02
Internal Tracking Generator, I/Q Modulator	R&S®FSP-B9	1129.6991.02
External Generator Control	R&S®FSP-B10	1129.7246.03
LAN Interface 100BaseT	R&S®FSP-B16	1129.8042.03
Expanded Environmental Specifications	R&S®ESCI-B20	1155.1606.14
DC Power Supply	R&S®FSP-B30	1155.1158.02
Battery Pack	R&S®FSP-B31	1155.1258.02
Spare Battery Pack	R&S®FSP-B32	1155.1506.02

## Service Options

Designation	Type	Order No.
<b>R&amp;S®ESCI</b>		
One-Year Repair Service following the warranty period	R&S®RO2ESCI	1166.5950.S16
Two-Year Repair Service following the warranty period	R&S®RO3ESCI	1166.5950.S12
Four-Year Repair Service following the warranty period	R&S®RO5ESCI	1166.5950.S14
Two-Year Calibration Service	R&S®CO2ESCI	1166.5950.S15
Three-Year Calibration Service	R&S®CO3ESCI	1166.5950.S11
Five-Year Calibration Service	R&S®CO5ESCI	1166.5950.S13
<b>R&amp;S®ESCI7</b>		
One-Year Repair Service following the warranty period	R&S®RO2ESCI7	1166.5950.S26
Two-Year Repair Service following the warranty period	R&S®RO3ESCI7	1166.5950.S22
Four-Year Repair Service following the warranty period	R&S®RO5ESCI7	1166.5950.S24
Two-Year Calibration Service	R&S®CO2ESCI7	1166.5950.S25
Three-Year Calibration Service	R&S®CO3ESCI7	1166.5950.S21
Five-Year Calibration Service	R&S®CO5ESCI7	1166.5950.S23

For product brochure, see:

- PD 0758.1558.12 (ESCI)
- PD 5214.2762.12 (ESCI7)

and [www.rohde-schwarz.com](http://www.rohde-schwarz.com)

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## About Rohde & Schwarz

Rohde & Schwarz is an independent group of companies specializing in electronics. It is a leading supplier of solutions in the fields of test and measurement, broadcasting, radiomonitoring and radiolocation, as well as secure communications. Established 75 years ago, Rohde & Schwarz has a global presence and a dedicated service network in over 70 countries. Company headquarters are in Munich, Germany.

## Regional contact

Europe, Africa, Middle East

+49 1805 12 42 42\* or +49 89 4129 137 74

customersupport@rohde-schwarz.com

North America

1 888 TEST RSA (1 888 837 87 72)

customer.support@rsa.rohde-schwarz.com

Latin America

+1 410 910 79 88

customersupport.la@rohde-schwarz.com

Asia/Pacific

+65 65 13 04 88

customersupport.asia@rohde-schwarz.com

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## Rohde & Schwarz GmbH & Co. KG

Mühldorfstraße 15 | 81671 München

Phone +49 89 41 290 | Fax +49 89 41 29 121 64

[www.rohde-schwarz.com](http://www.rohde-schwarz.com)

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