

## Specifications

### Frequency

Frequency range (RF input 1):	9 kHz to 8 GHz
Frequency band:	9 kHz to 3.1 GHz (band 0) 3 to 8 GHz (band 1)
Preamplifier:	10 MHz to 8 GHz
Frequency range (RF input 2):	10 MHz to 31.8 GHz (U3771) 10 MHz to 43 GHz (U3772)
Frequency band:	10 MHz to 3.1 GHz (band 0 (N=1)) 3.0 to 8.0 GHz (band 1 (N=1)) 7.8 to 14.573 GHz (band 2 (N=2)) 14.4288 to 28.0 GHz (band 3 (N=4)) 27.8 to 31.8 GHz (band 4 (N=6)) (U3771) 27.8 to 43.0 GHz (band 4 (N=6)) (U3772)
Frequency readout accuracy:	$\pm(\text{Marker readout} \times \text{Frequency reference accuracy} + \text{SPAN} \times \text{SPAN accuracy} + \text{Residual FM})$
Frequency reference	
Aging:	$2 \times 10^{-6}/\text{year}$
Temperature stability:	$2.5 \times 10^{-5}$ (0 to 50°C)
Frequency counter	
Resolution:	1 Hz to 1 kHz (RBW: <100 kHz; mixer level: >-50 dBm; CW and single signal)
Accuracy:	$\pm(\text{Counter readout} \times \text{Frequency reference accuracy} + \text{Residual FM} + 1\text{LSB})$
Frequency stability	
Residual FM (zero-span):	<60 Hz x N p-p/100 ms (internal frequency reference)
Frequency span	
Range:	5 kHz to full, zero-span
Accuracy:	< $\pm 1\%$
Spectrum purity:	(-85 + 20 logN) dBc/Hz offset: 10 kHz; span: <200 kHz
Resolution bandwidth	
Range:	100 Hz to 3 MHz (1-3 step)
RBW accuracy:	< $\pm 12\%$
Video bandwidth	
Range:	10 Hz to 3 MHz (1-3 step)

### Sweep

Sweep time	
Sweep time:	20 ms to 1000s (spectrum mode) 50 $\mu$ s to 1000 s (zero-span)
Accuracy:	< $\pm 2\%$ (zero-span)
Sweep mode:	REPEAT, SINGLE
Trigger	
Source:	Free, Video, EXT, IF

### Amplitude range

Measurement range	
RF input 1:	Noise to +30 dBm
RF input 2:	Noise to +10 dBm
Maximum input level	
RF input 1:	+30 dBm (attenuator: $\geq 10$ dB; preamplifier off) +13 dBm (attenuator: 0 dB; preamplifier on) $\pm 15$ VDC max.
RF input 2:	+10 dBm (attenuator: 0 dB) $\pm 25$ VDC max.
Input attenuator range	
RF input 1:	0 to 50 dB (10 dB step)
RF input 2:	0 to 30 dB (10 dB step)
Display range:	100, 50, 20, 10, 5 dB, Linear
Unit:	dBm, dBmV, dB $\mu$ V, dB $\mu$ Vemf, dBpW, W, V
Reference level range	
RF input 1:	-140 dBm to +40 dBm
RF input 2:	-140 dBm to +20 dBm
Detector:	Normal, Posi-peak, Nega-peak, Sample, Average (RMS, Video)

## Amplitude accuracy

Calibration signal	
Frequency:	20 MHz
Level:	-20 dBm
Accuracy:	$\pm 0.3$ dB
Scale fidelity	
Log:	$\pm 0.5$ dB/10 dB $\pm 0.5$ dB/80 dB $\pm 0.2$ dB/1 dB
Level measurement accuracy:	After calibration, image suppression: off; preamplifier off; temperature range: 20 to 30 °C; input attenuator: 10 dB; Ref: 0 dBm; and input signal level: -10 to -50 dBm
RF input 1	
Band 0:	$\pm 0.8$ dB (frequency: 10 MHz to 3.1 GHz)
Band 1:	$\pm 1$ dB (frequency: 3.1 to 8 GHz) $\pm 1.5$ dB (frequency: 9 kHz to 10 MHz)
RF input 2	
Band 0:	$\pm 0.8$ dB (frequency: 10 MHz to 3.1 GHz)
Band 1:	$\pm 1$ dB (frequency: 3.1 to 8 GHz)
Band 2:	$\pm 3.0$ dB (frequency: 7.8 to 14.573 GHz)
Band 3:	$\pm 3.5$ dB (frequency: 14.4288 to 28.0 GHz)
Band 4:	$\pm 4.5$ dB (frequency: 27.8 to 31.8 GHz) (U3771) $\pm 4.5$ dB (frequency: 27.8 to 43 GHz) (U3772)

### Dynamic range

Displayed average noise level:	Frequency: >10 MHz; Ref level: <-45 dBm; and RBW: 100 Hz
RF input 1	
Band 0, preamplifier off:	-123 dBm + 2f (GHz) dB
Band 1, preamplifier off:	-122 dBm + 1.2f (GHz) dB
Band 0, preamplifier on:	-138 dBm + 3f (GHz) dB
Band 1, preamplifier on:	-139 dBm + 1.4f (GHz) dB
RF input 2	
Band 0:	-121 dBm + 2f (GHz) dB
Band 1:	-120 dBm + 1.5f (GHz) dB
Band 2:	-111 dBm (typical: -118 dBm)
Band 3:	-109 dBm (typical: -117 dBm)
Band 4:	-105 dBm (typical: -112 dBm)
Gain compression (1 dB):	Frequency: >10 MHz
Preamplifier off:	>-8 dBm
Preamplifier on:	>-25 dBm
Second harmonic distortion:	Preamplifier off
RF input 1:	<-70 dBc (mixer level: -40 dBm; frequency: >200 MHz) <-75 dBc (typical) (mixer level: -30 dBm; frequency: >300 MHz)
RF input 2:	-40 dBc (mixer level: -30 dBm; frequency: >300 MHz)
Third order intermodulation:	-50 dBc (frequency: >10 MHz; preamplifier: off; mixer level: -20 dBm; and 2-signal separation: 1 MHz)
Image/Multiple/Out-of-band response:	<60 dBc (image suppression: on; SPAN: <5 GHz)
Residual response:	-80 dBm (frequency: >10 MHz; preamplifier off)

## Inputs/Outputs

<b>RF input 1</b>	
Connector:	N type female
Impedance:	50Ω (nominal)
VSWR:	<1.7 : 1 (Band 0, input attenuator: >10 dB) <2.0 : 1 (Band 1, input attenuator: >10 dB)
<b>RF input 2</b>	
Connector:	K type female
Impedance:	50Ω (nominal)
VSWR:	<1.7 : 1 (typical) (Band 0, input attenuator: >10 dB) <2.0 : 1 (typical) (Band 1, Band 2, Band 3, input attenuator: >10 dB) <2.5 : 1 (typical) (Band 4, input attenuator: >10 dB)
<b>Calibration output</b>	
Connector:	BNC female
Impedance:	50Ω (nominal)
Frequency:	20 MHz
Level:	-20 dBm
<b>Frequency reference input</b>	
Connector:	BNC female
Impedance:	50Ω (nominal)
Frequency:	1, 1.544, 2.048, 5, 10, 12.8, 13, 13.824, 14.4, 15.36, 15.4, 16.8, 19.2, 19.44, 19.6608, 19.68, 19.8, 20, 26
Level:	0 to +16 dBm
<b>External trigger input</b>	
Connector:	BNC female
Impedance:	10 kΩ (nominal), DC coupled
Trigger level:	0 to +5 V
<b>21.4 MHz IF output</b>	
Connector:	BNC female
Impedance:	50Ω (nominal)
Level:	Approx. mixer input level: +10 dB at 20 MHz
<b>Battery mount</b>	
Connector:	Antonbauer QR mount
<b>External DC input</b>	
Connector:	XLR-4
Voltage range:	+11 to +17 V
GPIB:	IEEE-488 bus connector
USB:	USB1.1
<b>Video output</b>	
Connector:	D-sub 15 pin female
<b>LAN</b>	
Connector:	RJ45 type, 10/100 base -T

## General specifications

<b>Operating environment range</b>	
Temperature:	0 to +50°C
Humidity:	Relative humidity: 85% or less (without condensation)
<b>Storage environment range:</b>	-20 to +60°C, relative humidity: 85% or less
<b>AC input power source:</b>	Automatic switching to 100 VAC or 200 VAC 100 VAC: 100 to 120 VAC, 50/60Hz 200 VAC: 200 to 240 VAC, 50/60Hz
<b>DC power input:</b>	+11 to +17 VDC
<b>Power consumption:</b>	100 VA or less (A.C. operation) 70 W or less (D.C. operation)
<b>Mass:</b>	6 kg or less (without option)
<b>Dimensions:</b>	Approx. 308 (W) x 175 (H) x 209 (D) mm (without protrusion) Approx. 337 (W) x 190 (H) x 307 (D) mm (with feet and handles)

## OPT.20 High stability frequency reference

<b>Reference frequency stability</b>	
Aging:	±2 x 10 <sup>-8</sup> /day ±1 x 10 <sup>-7</sup> /year
<b>Warm-up drift (nominal):</b>	±5 x 10 <sup>-8</sup> (+25°C, 10min. after turning power on)
<b>Temperature drift:</b>	±5 x 10 <sup>-8</sup> (0 to +40°C, with reference to 25°C)

## OPT.74 Tracking Generator

<b>Frequency range:</b>	10 MHz to 3 GHz
<b>Frequency offset</b>	
Range:	0 to 1 GHz
Resolution:	1 kHz
Accuracy:	±200 Hz
<b>Output level range:</b>	0 to -30 dBm (0.5 dB step)
<b>Output level accuracy:</b>	±0.5 dB (20 MHz, -10 dBm, +20 to +30 °C)
<b>Output level flatness:</b>	Reference signal level: -10 dBm; frequency: 20 MHz ±1.0 dB (10 MHz to 1 GHz) ±1.5 dB (10 MHz to 3 GHz)
<b>Output level</b>	
switching uncertainly:	Reference level: -10 dBm ±1.0 dB (10 MHz to 1 GHz) ± 2.0 dB (10 MHz to 2.6 GHz)
<b>Frequency offset off:</b>	±3.0 dB (10 MHz to 3 GHz)
<b>Frequency offset on:</b>	±5.0 dB (10 MHz to 3 GHz)
<b>Spurious output:</b>	Output level: -10 dBm
Harmonic:	≤-20 dBc
Non-harmonic:	≤-25 dBc (frequency offset off)
<b>TG leakage:</b>	≤-80 dBm (input attenuator: 0 dB)
<b>Output impedance:</b>	50Ω (nominal)
<b>VSWR:</b>	≤2.0 : 1 (output level: ≤-10 dBm)
<b>Maximum allowable input:</b>	+10 dBm, ±10 VDC

## Ordering information

<b>Main units</b>	
Spectrum analyzer:	U3771
Spectrum analyzer:	U3772
<b>Accessories</b>	
Power cable:	A01402
N-BNC adapter:	JUG-201A/U
K-K adapter:	HE-A-PJ
Input cable:	A01036-0300
BNC-SMA adapter:	HRM-517
<b>Options</b>	
High-stability frequency reference crystal:	OPT.20
Tracking generator:	OPT.74
<b>Accessories (optional)</b>	
Battery pack:	A870008
50Ω-75Ω impedance converter:	ZT-130NC
Carrying bag:	A129001
Charger:	A870009
DC power cable:	A114020
Transit case:	A129002



Please be sure to read the product manual thoroughly before using the products.  
Specifications may change without notification.