

Wide Frequency Range

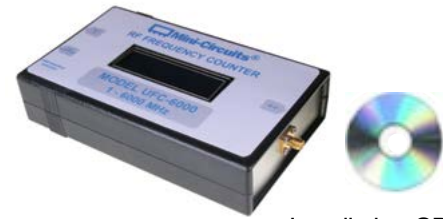
RF Frequency Counter

UFC-6000

1-6000 MHz

The Big Deal

- USB HID device compatible with 32/64 bit operating systems
- Wide Frequency Range
- Uses internal or External reference
- Supplied with proprietary GUI software and API objects for programmers.



Case Style: LJ1577

Installation CD with Software included

Product Overview

Mini-Circuits' UFC-6000 is a small, light weight Frequency Counter operating over the frequency range 1 to 6000 MHz. The counter is cased in a rugged shielded case (size of 6.16" X 3.68" X 1.38") with a 16x2 character LCD display, a reference input BNC(F) port and a signal input SMA(F) port. Using the USB interface allows remote display of measured frequencies, and eliminates the need for an additional power supply. The counter can also operate independently using an external power supply.

The UFC-6000 is supplied along with a software CD containing a graphical user interface program and programming APIs for 32 and 64 bit environments. Also included are a 2.7ft. USB cable and a power adaptor with a USB A female connector, suitable for US, EU, and other power systems - see page 4 for details. Longer USB cables and a mounting bracket are available as additional options.

Key Features

Feature	Advantages
USB HID (Human Interface Device)	Plug-and-Play (no need to install a driver for the device).
Wide frequency range	The UFC-6000 can measure the frequency of a signal from 1 to 6000 MHz
Operates with external or internal reference	The UFC-6000 can operate either synchronized with an external 10 MHz reference signal or independently, using its internal reference depending on user preference.
LCD display	16x2 character LCD display providing the frequency reading, and information on the frequency counter's status.
USB powered	Power to the UFC-6000 is supplied through the USB connector from either the USB bus or the supplied power adaptor with USB connector.
Software CD, USB cable and power adaptor included	A CD containing programming instructions for Linux® and Windows® operating systems, a GUI monitoring and control program and API objects for programmers is included with the UFC-6000. Also included are a 2.7ft. USB cable, and a 5V _{DC} AC/DC power adaptor suitable for US, EU and UK power systems with a USB type A female connector.

Trademarks: Windows is a registered trademark of Microsoft Corporation in the United States and other countries. Linux is a registered trademark of Linus Torvalds. Pentium is a registered trademark of Intel Corporation. Neither Mini-Circuits nor the Mini-Circuits UFC-6000 frequency counter are affiliated with or endorsed by the owners of the above referenced trademarks

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Wide Frequency Range

RF Frequency Counter

1 - 6000 MHz

1-6000 MHz

Features

- Small, light weight
- Wide frequency Range
- Uses external or internal reference
- Can be operated remotely using a PC with USB interface or independently
- 16X2 Character LCD display
- Easy installation and operation
- User friendly Windows® Graphical User Interface
- Supports a wide range of programming environments (See application note [AN-49-001](#) for details)
- Mounting bracket (Optional)

Applications

- Lab Test equipment
- Automated Test capability



Installation CD with Software included

UFC-6000

Order P/N	Description	Qty.
UFC-6000	Frequency Counter	(1-4)
FC-CD	Software CD	1
USB-CBL-AB-3+	2.7 ft. USB cable	1
USB-AC/DC-5	AC/DC 5V _{DC} Adapter	1

RoHS Compliant

See our web site for RoHS Compliance methodologies and qualifications

Mini-Circuits Frequency Counter Program for USB Frequency Counter



Electrical Specifications

Parameter	Test Conditions	Min.	Typ.	Max.	Units
Frequency range	-	1	-	6000	MHz
Frequency Resolution ¹	1 - 40 MHz	-	1	-	Hz
	40-190 MHz	-	10	-	
	190-6000 MHz	-	100	-	
Frequency Accuracy (@1 sec measurement sample time) ^{1, 2}	1 - 40 MHz	-	±2	-	Hz
	40-190 MHz	-	±20	-	
	190-1400 MHz	-	±200	-	
	1400 - 6000 MHz	-	±800	-	
Frequency Aging	Using internal Reference	-	-	±1.0	ppm/year
Sample time ³	-	0.1	1	3	Sec
Input Impedance	-	-	50	-	Ω
Input VSWR	1 - 1500 MHz	-	1.1	-	:1
	1500-6000 MHz	-	1.3	-	
Input Power	1 - 5 MHz	-23	-	+13	dBm
	5 - 4500 MHz	-28	-	+13	
	4500 - 6000 MHz	-15	-	+13	
Reference In Frequency	-	-	10	-	MHz
Reference In Impedance	-	-	50	-	Ω
Reference In Power	-	-5	-	+10	dBm
Supply Voltage	Supplied through the USB port	4.75	5	5.25	V _{DC}
USB current draw	-	-	275	350	mA

¹ The Frequency counter's default mode is 'Auto Range' which automatically selects the correct frequency range. When the frequency range is known, the user can improve response time by manually selecting the frequency range by a software function through the GUI interface, or user programming.

² Accuracy shown using external 10 MHz reference synchronized to test signal. Using Internal Reference adds 2 ppm of tested frequency to the accuracy values shown.

³ Software function set by user, default option 1 Sec.

Connections

Reference Input	(BNC-Female)
Signal Input	(SMA-Female)
USB Port	(USB B female)

Absolute Maximum Ratings

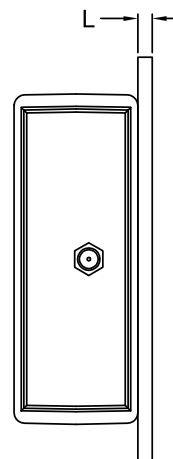
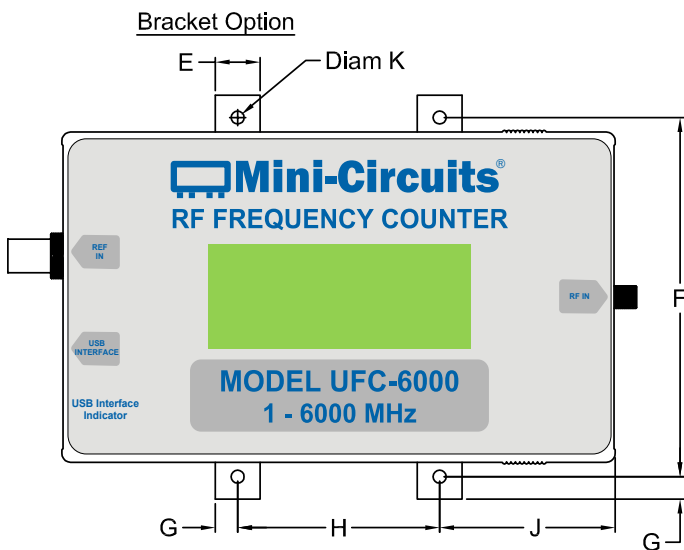
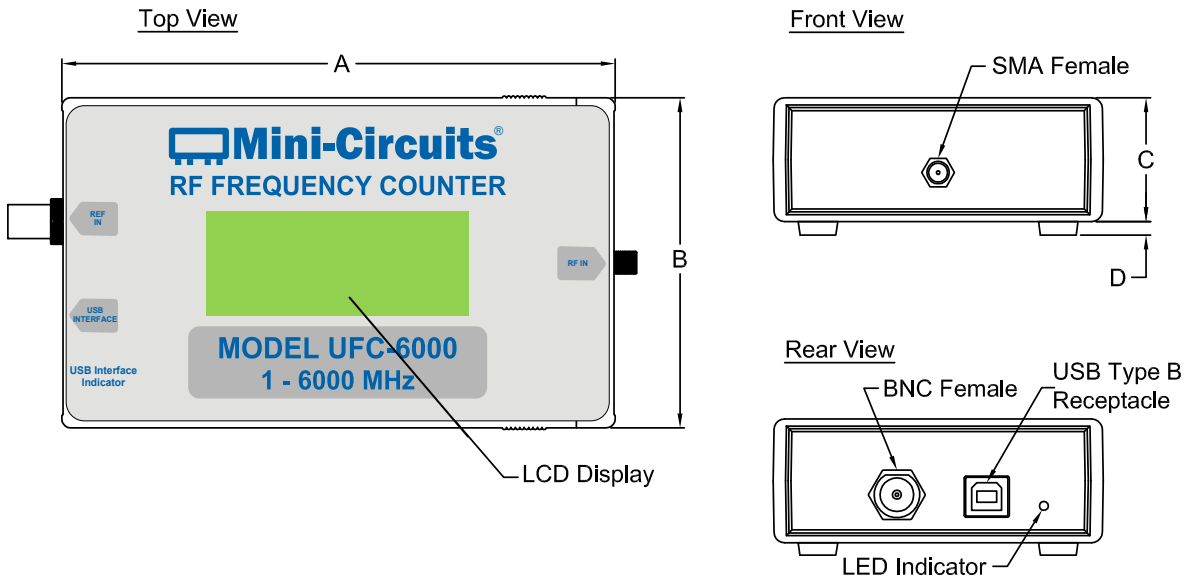
Parameter	Ratings
Operating Temperature	0°C to +50°C
Storage Temperature	-20°C to +60°C
Max. Supply Voltage (V _{USB})	6 V _{DC}
Max safe input power (Reference input).	+13dBm
Max safe input power (Signal input).	+16dBm
DC voltage input (Signal input)	-50V _{DC} to 50V _{DC}

Permanent damage may occur if any of these limits are exceeded. Operating in the range between operating power limits and absolute maximum ratings for extended periods of time may result in reduced life and reliability.

Minimum System Requirements (For remote operation)

Parameter	Requirements
Interface	USB HID
Host operating system	Windows 32/64 Bit operating system: Windows 98®, Windows XP®, Windows Vista®, Windows 7®, Windows 8®, Windows 10® Linux @ support: 32/64 Bit operating system
Hardware	Pentium® II or better

Outline Drawing (LJ1577)



INSTRUCTION FOR MOUNTING BRACKET:

TOOL REQUIRED:
PHILIPS HEAD SCREW DRIVER

STEP 1: REMOVE 6 FASTENERS FROM THE BOTTOM OF THE UNIT.




DO NOT DISCARD THE FASTENERS .

STEP 2: MOUNT THE BRACKET WITH THE FASTENERS REMOVED IN STEP 1, USING THE COUNTER BORE HOLES IN BRACKET.

Outline Dimensions ($\frac{\text{inch}}{\text{mm}}$)

A	B	C	D	E	F	G	H	J	K	L	WT. GRAMS
6.16	3.68	1.38	0.15	0.500	4.000	0.250	2.250	1.96	0.144	0.160	300
156.5	93.4	35.0	3.8	12.7	101.6	6.4	57.2	49.7	3.7	4.1	

Ordering Information

Included Accessories	Part No.	Description
	USB-AC/DC-5+	AC/DC Power Adapter with US, EU, IL, UK, AUS, and China two pin power plugs ⁴ . Operating temperature: 0°C to +45°C, AC Input: 100-240V, 47-63 Hz, DC Output 5±"B" V, I _{Max} =1A
	FC-CD	Software CD
	USB-CBL-AB-3+	2.7 ft (0.8 m) USB Cable: USB type A(Male) to USB type B(Male)

⁴ Power plugs for other countries are also available, if you need a power plug for a country not listed in the table please contact apps@minicircuits.com or check <http://www.minicircuits.com/contact/offices.html> for regional offices e-mail and phone numbers.

Optional Accessories	Description
USB-AC/DC-5 (spare)	AC/DC 5V _{DC} Power Adapter with US, EU, IL, UK, AUS, and China power plugs
USB-CBL-AB-3+ (spare)	2.7 ft (0.8 m) USB Cable: USB type A(Male) to USB type B(Male)
USB-CBL-AB-7+	2.7 ft (0.8 m) USB Cable: USB type A(Male) to USB type B(Male)
USB-CBL-AB-11+	2.7 ft (0.8 m) USB Cable: USB type A(Male) to USB type B(Male)
BKT-300-01+	Mounting Bracket

Calibration	Description
CALUFC-6000	Calibration Service Click Here

Additional Notes

- Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
- Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
- The parts covered by this specification document are subject to Mini-Circuits standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the Standard Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at www.minicircuits.com/MCLStore/terms.jsp