BK PRECISION°

USER'S MANUAL



2640 2.0GHz RF Field Strength Analyzer

Safety Term and Symbols



Danger statements identify condition or practices that could result in injury or loss of life.



Caution statements identify conditions or practices that could result in damage or fire.



Ground statements identify conditions or practices that could connect protective conductor.

Caution for safety

Prohibiting to removal the cover



Do not remove the instrument cover to access the internal components. Only B&K Precisions' Service technician with knowledge of the instruments' condition and dangerous voltages can repair the instrument.

Instruments that appear damaged or defective should be made inoperative and secured against unintended operation until they can be repaired by qualified service personnel.

Keep the clean on power insert



Instrument's power insert should remain dust free.

Clean the power insert regularly. Dust could result in damage to this instrument.

Continually clean the dust on input terminal of RF frequency counter.

Clean the input terminal regularly. Dust could result in damage to the instrument.

RF in/output rating



Rating of RF input and output connector

Maximum DC voltage rating

RF input connector (socket): N type female, 50Ohms

Maximum RF input power: 5Vrms

Caution: Do not use over 5Vrms supplied and/or (-) power could result in damage to this instrument

Do not operate this instrument if there is any doubt it is functioning properly: if operating personnel feels the instrument is not operating properly, return this instrument to B&K Precision for service and repair to ensure the safety features are maintained.

DC Power



The operating Personnel must use the DC adaptor supplied with this instrument. Other adaptors could result in damage to this instrument and it is the limitation of warranty Exterior DC input connector should be matched with polar. DC connector tip must attach with (+) polar grounding.

The operating personnel must use grounded power Restore this instrument

• Instrument care



- * Avoid direct light
- * Keep away the heating system
- * Avoid high temperature (Ex. Inside of the car during the summer time)
- * Keep away from liquids
- * Avoid high moisture and/or poor ventilation
- * Keep away from dust and/or smoke
- * Avoid extremely low temperature

B&K Precision 2640 Ni-MH battery is rechargeable. Charging is controlled from the power of the battery cell and the temperature of the battery. Ni-MH Rechargeable battery is going to increase temp slowly until the temperature is extremely higher. Battery charging is finished automatically by checking the degree of the temperature (dT/dt). For battery protection, when the power of Battery cell is increased, comparing regular temperature and/or exterior temperature degree of when the temperature increases over 50 degrees, battery charging will be finished automatically.

Operating personnel must use Ni-MH Rechargeable Battery and do not operate in an explosive atmosphere.

- The battery usage time can change due to the using term, environment and temperature.
- When battery consumption is large battery-running time will decrease.

Operating personnel should phase in a new battery when battery-running time is less than half of the initial operating time.

- Operating personnel should not use this instrument and/or keep the battery in place for long periods of time, which could result in discharge of the battery.
- To avoid damages to battery, when battery is low, this instrument will turn off automatically.

Warranty

Limited One-Year Warranty

B&K Precision warrants to the original purchaser that its products and the component parts thereof, will be free from defects in workmanship and materials for a period of one year from date of purchase from an authorized B&K Precision distributor.

B&K Precision will, without charge, repair or replace, at its option, defective product or component parts. Returned product must be accompanied by proof of the purchase date in the form of a sales receipt.

To obtain warranty coverage in the U.S.A., this product must be registered by completing the warranty registration form on www.bkprecision.com within fifteen (15) days of purchase.

Exclusions: This warranty does not apply in the event of misuse or abuse of the product or as a result of unauthorized alterations or repairs. The warranty is void if the serial number is altered, defaced or removed.

B&K Precision shall not be liable for any consequential damages, including without limitation damages resulting from loss of use. Some states do not allow limitations of incidental or consequential damages. So the above limitation or exclusion may not apply to you.

This warranty gives you specific rights and you may have other rights, which vary from state-to-state.

B&K Precision 22820 Savi Ranch Parkway Yorba Linda, CA 92887 www.bkprecision.com

Accessories (included)



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Introduction (section 1)

Overview

The B&K Precision 2640 handheld RF Field Strength Analyzer is optimized to analyze signals from many different source for multiple applications. The B&K Precision 2640 has adopted a synthesizer method and has a wideband reception range of 100 kHz to 2,000 MHz. The characteristic of frequency response of the B&K Precision 2640 is calculated by memorized calculation data from a "look up table", and so it enables the B&K Precision 2640 to measure accurate levels and make easy analysis of a wide range of frequency bands.

The B&K Precision 2640 provides various functions and user-friendly interface which makes it easy to use. The handheld RF Field Strength Analyzer is ideal for users to test, install and maintain Mobile Telecommunications Systems, Cellular and Cordless Phone, CB Paging, Paging Systems, Cable and Satellite TV Systems as well as antenna site measurements and maintenance. The B&K Precision 2640 supports RS 232C serial communication and has separate GUI software. So, user can control the B&K Precision 2640 easily after connecting the B&K Precision 2640 with a personal computer, and can utilize the analyzed data variously after converting or saving numerical value or graph.

Features (section 2)

Main features

- 100 kHz to 2,000 MHz measurement range
- Frequency Spectrum Analyzing Function and Frequency Counter Function
- Measure and demodulate N-FM, W-FM, AM, SSB signalsN-EM (M-EM) (M-EM) (SSB)
- Built-in 2 GHz Frequency Counter
- Accurate Signal Level Measurement
- Marker/Delta Marker/Squelch Adjustment Function
- PLL tuning system for precise frequency tuning
- Built-in Speaker
- 192 Pixels X 192 Pixels Back Light LCD
- Menu selection method for Function selection
- RS-232C Interface
- User-friendly Icon Display
- Maintenance of Wireless Telecommunications Equipments
- General Usage for Installation and Maintenance of Telecommunications Equipments
- Installation and Maintenance of Cable
- RFID Tag RF Strength Measurement
- Installation and Maintenance of Satellite Antenna
- Detection of Tapping and Hidden Camera

Functions (section 3)

RF Field Strength Analyzer

- Spectrum: Peak Search, Marker to Center, Channel Power Function
- Internal Attn.: The input range can be extended by internal Max 10 dB Attn. function.
- Sweep Mode: Single Run, Free Run, Squelch Run Selectable
- Squelch Function: The Squelch Level may be adjusted to any value from the reference level to Full Scale.
- Copy Function: The Copy Set mode allows the contents of the Channels edit Setup and Data memories to be copied to an external device. Data may also be written into these memories from external device

Frequency Counter

■ Frequency range: 35 MHz to 2,000 MHz

■ No. of digits: 7 digits

■ Resolution: 1 kHz

Frequency

Frequency Range	100 kHz to 2,000 MHz
Resolution	Min. 6.25KHz Multiples
Accuracy	TXO:±3PPM/Display:±1.5PPM
W-FM / N-FM / AM / SSB	Wide FM : Approx. 180 kHz @-6 dB Narrow FM : Approx. 12.5 kHz @-6 dB AM/SSB : Approx. 2.4 kHz @-6 dB
Step Range	AM, SSB, Narrow FM: 6.25kHz, 12.5kHz Wide FM: 6.25~125kHz (Multiple of 6.25 kHz) 125~2500kHz (Multiple of 125 kHz)
Span Range	AM, SSB, Narrow FM: 1MHz, 2MHz Wide FM: 1~20MHz (Multiple of 1 MHz) 20~400MHz (Multiple of 20 MHz)
Frequency Selection Mode	Center, Start/ Stop, Span

Amplitude

Measurement Range	-45 dBm to –110 dBm
Average noise Level	Wide FM : -100 dBm Max. Narrow FM : -110 dBm Max. AM/SSB : -100 dBm Max.
Amplitude Units	dBm, dBmV, dBuV
Reference Level Accuracy Reference Level	±3.0 dB @ under 600KHz ±2.0 dB @ over 600KHz 0 dBm to -80 dBm
Range Log Scale	0.2 dB/DIV min, in 0.25 dB Span (5 Display Division)
Internal Attn	10 dB
Internal Attn Accuracy	±1.0 dB (@25 °C)

ер	Speed	Min. 500 msec
	Trigger Source	Narrow FM / Wide FM / AM / SSB
	Trigger Mode	Free Run / Single Run / Continuous Wave / Squelch Run
	Trigger Level	TTL Level
	Marker Mode	Maker / Delta Maker
ory	Trace & Setup Storage	Max 100 Waveforms and 100 States
ay	Туре	Mono STN LCD
	Display Resolution	192 Pixels X 192 Pixels
	LCD Light	On / Off
ency	Frequency Range	35 MHz to 2,000 MHz
er	Resolution	7 Digits
	Accuracy	±50 PPM ±1 COUNT
	Sampling Time	1 sec
	Input Sensitivity	35 MHz to 2,000 MHz : 150 mVrms 20 MHz to 1,000 MHz : 100 mVrms
	Input Impedance	50 Ohms
		5 Vrms Max.
	Max. Input Voltage	: 5 Vrms Max

Spectrum input Port



RF Input Connector	N type Female, 50 Ohms
Max Input Level	Max. +10 dBm, 5Vrms

Operation Environment



Operating Temperature	0 °C to 40 °C
Humidity	35 RH to 85 RH
Storage Temp.	10 °C to 50 °C

Power Source



Battery Power	AA Type Ni-MH Rechargeable Battery × 6
Source	PCS
Battery	AA Type 1.2 V, 2,700 mAh Rechargeable
Specification	Nickel Metal Hydride Battery
Adapter	SMPS Type AC Adapter (DC 12 V Output)
	Car-Adapter (DC 12 V Output)
Auto Power On/Off	Off/ 5 min./ 10 min./ 20 min./30 min.

The B&K Precision 2640 can be quickly recharged using Ni-MH Rechargeable Batteries. The Recharged method of Ni-MH Battery is controlled by the voltage of the Battery Cell and the temperature of Battery. The external temperature of Ni-MH Rechargeable Battery is gradually increased and then quickly increased in some point of time. The B&K Precision 2640 closes charging quickly after checking the increased amount (dT/dt) of external temperature of Battery for a unit time. Also, for Battery protection, the recharging is compulsory closed by built-in temperature sensor in case that the voltage of Battery Cell will be increased to more than some specified level or the external temperature of Battery will be going up to over 50C. For safe usage, it is strongly recommended to use Ni-MH Rechargeable battery, and please do not use in the place with high temperature or high humidity during recharging.

Physical	
Specification	ns

Dimension	4 "(W)×9 "(H)×1.8 "(D)
Weight	Approx. 0.66 Kg(1.45 lbm)
	(including Antenna, except Battery)

Standard Accessories

Antenna (Receive Only), SMPS Type AC Adapter, Fuji-AA type NI-MH Rechargeable Battery (6 PCS, 1.2 V 2,700 mAh), Manual, Coaxial Cable, Earphone, Carrying Case, Carrying Belt, RS-232C Cable, Adapter(N-BNC), Software for PC Application

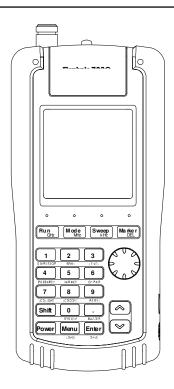
Specifications and information is subject to change without notice.

For the most current product information please visit www.bkprecision.com

Instrument overview (section 4)

Front Panel

Front Figure



LCD

The LCD screen can display the signal input level, frequency and amplitude values, and the relative system data

Key Pad

Power Key

Key to turn ON/OFF the system

- Run / Mode / Sweep / Marker Key
- Run

Key to run the Scanning or input the GHz unit for frequency value input

Front Panel

■ Mode

Key to set up the Reception Mode or input the MHz unit for frequency value input

■ Sweep

Key to set up the Sweep Mode or input the kHz unit for frequency value input

■ Marker

Key to select the Marker Function:

Marker, Delta Marker, Squelch Marker, Peak Search, Marker to Center, and Channel Power

■ Numeric Key

Key to input the frequency value

■ Menu Key

Key to set up the required functions of system

■ Up/Down Key

Key to select the Menu or Frequency Value

■ Knob Key

The function of Knob key is same as the Up/Down keys

Rear Figure



■ Belt Clip

User can yoke the B&K Precision 2640 on a belt.

■ Speaker

User can use the speaker to output the modulated audio from RF signal level.

■ Reset Key

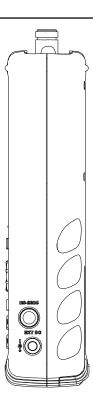
User can use this Reset key for system malfunctions or memory reset.



Battery

Note the polarity of batteries at inserted battery compartment. And user must use the AA type Ni-MH Rechargeable batteries for battery charging

Side Figure





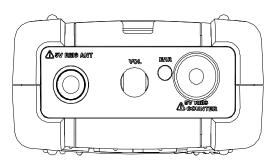
■ DC Input Jack

User can use this DC input jack for power supply and battery charging with SMPS type AC/DC Adapter or Car Adapter.

■ RS-232C Connector (8 pin mini DIN connector)

User can use this RS-232C connector for PC communication with serial cable.

Top Figure



■ Input Connector for Signal Level

User can connect the antenna or coaxial cable to this connector on the system. The maximum input voltage is 5 Vrms.

■ Input Connector for Frequency Counter

User can connect the signal source to be measured to this connector. The maximum input voltage is 5 Vrms.

■ Volume Control

User can control the volume of audio output. To increase the volume of audio output, turn the Volume Control to clockwise direction.

■ Earphone Jack

Basic operation (section 5)

Before Power ON

How to insert and charge the AA Type Ni-MH rechargeable batteries? For the insertion of batteries, please release the screw on the battery cover on the bottom of the instrument. And put in AA Type Ni-MH rechargeable batteries (Total 6 PCS).

To charge the batteries after inserting batteries, connect the DC cable plug of SMPS type adaptor to DC jack of system (DC output: 12V).

Battery charging will begin after DC cable in connected.

At this time, if user turns on the power of system, the battery icon on the display window is displayed and blinking. And if the charging of batteries is finished, the blanking of battery icon will stop and only be displayed.

Connection for Input Level

To measure the input level of RF signal, connect the antenna or coaxial cable to N-type connector of system (marked ANT)



■ Input Connector for RF Signal Level:

User can connect the antenna or coaxial cable to this connector on the system. The maximum input voltage is 5 Vrms

■ Input Connector for Frequency Counter:

User can connect the signal source to be measured to this connector. The maximum input voltage is 5 Vrms.

To turn on the system power, Press the Power key.

The system power is ON. The last displayed screen from the previous usage will be displayed (Previous setup status).

This system supports the simple manipulation with frequently used function keys. To use this simple manipulation, push the shift key and push the numerical key. The frequently used function is marked on the numerical key below.

The upper right icons are the basic 2640 mode and the 5HIFT mode.

User can select the shift mode or basic 2640 mode by pressing the shift key.

If the LCD screen is not readily visible, user can adjust the LCD contrast to see LCD screen.

To adjust the LCD contrast, push the shift key. And push the No. 8

(LCD Contrast) 8 key. Until user's desired LCD contrast is adjusted, use the Up/Down keys and Knob key.

To turn on the LCD light, push the Shift key. And push the No. 7 (LCD Light) key. Then the LCD light is turned on.

And to turn off the LCD light, push the shift key. And push the No. 7 (LCD Light) 7 key (Toggle ON/OFF).

For the LCD display, refer to below figure.

Turn on power of instrument

Pov	ver	On	

STEP 1

- Push the $\stackrel{\text{Power}}{}$ Key.

STEP 2 (Adjust to LCD Contrast)

- Push the Puth Key.
- Push the **LCD CONTRAST (No.8)** 8 Key.
- Adjust to desired **LCD Contrast** using the **Up/Down** Keys or **Knob** Key.

STEP 3

- Push the **Dot** ... Key and will be taken out of Menu.

STEP 4 (LCD Light On/Off)

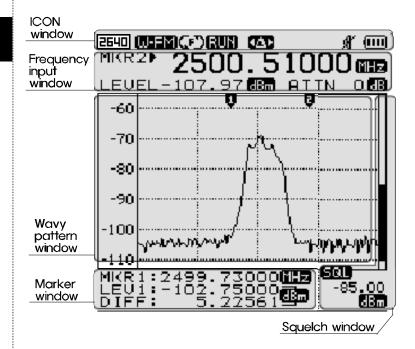
- Push the Shift Put Key

STEP 5

- Push the **No. 7 (LCD Light)** 7 Key

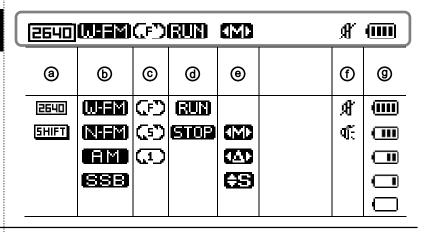
Description of operating screen



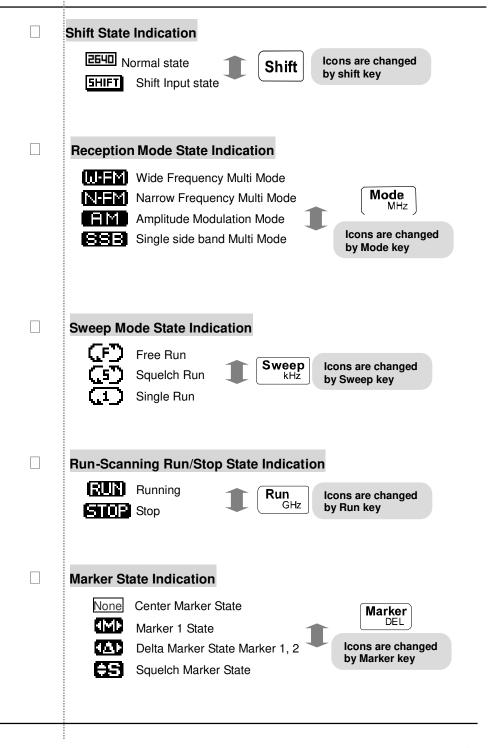


- 1. ICON window
- 2. Frequency Input window
- 3. Wavy pattern window
- 4. Squelch window
- 5. Marker window

1. ICON window



Description of operating screen



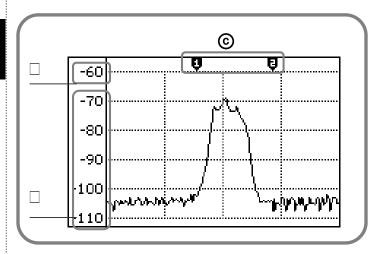
Description of operating screen **Buzzer On/off Indication** 雅 Buzzer Off Icons are changed by Dot(Buzzer) key ₫Ë Buzzer On 9 **Battery Residual Indication** \mathbf{m} Full **Empty** 2. Frequency CENT 2000.00000 🕮 Input window 0.00 LEVEL MKR1▶ **Frequency Value Indication** MKR2▶ **FCNT**▶ **©** LEVEL **ATTN** dВ dВ dBmV dB₄U

Description of operating scene

	CENT Center Frequency Indication NONE
	MICR 1 ▶ Maker 1 Frequency Indication
	MKR2▶ Maker 2 Frequency Indication Δ▶
	FCNT▶ Frequency Counter Value Indication ECNT
	- Indication of Frequency Value of each Mode
	Level Value Indication
	Indication of Level Value of each Mode
©	Level Unit dB dBmV dB4V
	Can be established in Menu.
	[Please refer to Menu Level Unit establishment for further details]
	Atten. Establish Value
	Indicate established Atten. Value.
	(Internal + External Atten. Value) [Please refer to Menu Level Unit
	establishment for further details]
	Frequency Unit
	Every Frequency Unit is indicated in MHz

Description of operating screen

3. Wavy pattern window



Indication Reference Indication to Vertical Level Value of Value of Screen Wavy pattern window. Level Value Resolution of Screen Level Value

[Please refer to Screen Level establishment in Basic operation Explanation for further details]

	Marker Indication					
	Ģ	Center				
		Marker	Every Marker can control the Up/Down keys or Knob			
	•	Marker 1				
	₽	Marker 2	్ట్రీ Key.			

Description of operating screen

4. Marker Window



☐ Center Marker, Marker 1, When Squelch Marker						
CENT	Center Frequency					
SPAN Span Frequency		MHz				
STEP	Step Frequency					
□ When Delta Marker						
MKR1 Marker 1 Frequency		MHz				
LEV1	Marker 2 Level Value					
DIFF Marker1- Marker2 Level Value		dBm				

Reception Mode

Reception Mode has a total of (4) four modes the Demodulation will receive.

Wide-FM	Wide Frequency Modulation
(W-FM)	Wide FM RBW(Resolution Bandwidth) 180 kHz
Narrow-FM	Narrow Frequency Modulation
(N-FM)	Narrow RBW(Resolution Bandwidth) 12.5 kHz
AM	Amplitude Modulation
(AM)	SSB /AM RBW(Resolution Bandwidth) 2.4 kHz
SSB	Single Side Band Modulation
SSB	SSB /AM RBW(Resolution Bandwidth) 2.4 kHz

Wide FM should be used to interpret a large Signal of Band width, Narrow FM should be used to interpret a narrow Bandwidth Signal. AM and SSB can used irrespective of Bandwidth.

Push **Mode (MHz)** Key to establish the reception mode and then the top-left ICON will be changed to WFM FM, NFM NFM, AM SSB order. When inputting Frequency like Start/Stop, Span etc, the **Mode (MHz)** Key is used.

RBW is fixed in each Mode as follows.

Wide FM RBW (Resolution Bandwidth) 180 kHz Narrow RBW (Resolution Bandwidth) 12.5 kHz SSB/AM RBW (Resolution Bandwidth) 2.4 kHz STEP 1

Reception Mode Establishment

- Push the **Mode (MHz)** Mode Key.

STEP 2

- Push the **Mode (MHz)** Key and t the top left ICON will change to WFM W-FM, NFM N-FM, AM FM and SSB SSB order.

Sweep Mode

Sweep Mode is used to set up operation characters which interpret Input.

Every each operation character is same as follows.

FD Free Run	Analyzing execution consecutively
Single Run	Only 1 time Execution
Squelch Run	Run by higher than Squelch level (Similar Trigger Mode of Oscilloscope)

Establish this mode by pushing the Sweep (kHz) Key and then the top left ICON will be changed to FREE Run Superior Squeep (kHz) Sweep (kHz) Key is used as input Start/Stop, Span and Input Frequency Unit into kHz Unit.

After input is finished Frequency, FREE Run continues to execute Run-Scanning operation automatically.

Squelch Run operation will stop Run-Scanning in case of Signal Level Value is getting higher than Squelch Level Value. But, If Signal Level is getting lower than Squelch Level, restart to Run- Scanning.

After input is finished Start/Stop Frequency, Single Run execute Run-Scanning just a once. In addition, if it is desired to Run-Scanning, push the Run (GHz) Key and then execute Run-Scanning once

Sweep Mode Establishment

STEP 1

- Push the **Sweep (kHz)** Sweep Key

STEP 2

- Push the **Sweep (kHz)** Sweep Key, and the top-left ICON will be changed to FD FREE Run, 50 SQUELCH Run and 10 SINGLE Run order.

Set up Span

The span is able to be set 1MHz to 400MHz. It has two settings – 1MHz step up to 20MHz and 20MHz step from 20MHz to 400MHz. If other numeral keys than MHz unit key is pushed, the input unit will be set to the nearest times by rising automatically.

- Ex 1) When span input is 9.25Mhz, span will be 10MHz.
- Ex 2) When span input is 48MHz, span will be 60MHz.

First, push the **Shift** [2414] Key (Shift icon is upside-down) in order to set up Span. The top-left ICON is changed [2540] to [541FT]

After that, push the Numerical Key. So then Frequency Input window changes the Span Input State.

Enter the Input Frequency and then input the Unit to use for this **Run** (GHz) Run Mode(MHz) Or Sweep (kHz) Key would be set up Span.

Regardless of Frequency Input State, upper Keys are only used the input units.

Set up Span Mode

STEP 1

- Push the Shift Shift Key

STEP 2

- Push the No. 2 2 Key
- When the **Sweep (kHz)** Sweep (kHz) Key is pressed, the top-left ICON is changed to FD FREE Run, SQUELCH Run and SINGLE Run order.

Frequency Input

Chosen Reception Mode, Sweep Mode and Span are showed on the top center of LCD. At first, choose Reception Mode and Sweep Mode to get a sense of the Frequency Bandwidth and a specific feel for analyzing. Choosing Frequency Value is a way to inputting Center and Start/Stop Frequency. To order to input Center Frequency just pushes the numeral keys. Press the key when Frequency Input Window is a CENT state. Push the **Shift** Shift Key to input Start/Stop Frequency. Push the **Shift** Shift Key to input Frequency you would like to analyze. Push the **No. 1(Start/Stop)** 1 Key, to inputted Start Frequency in Frequency Input Window. Input Frequency by using the No. 0 0 to 9 9 Kevs. Dot (Buzzer) Key, MARKER (DEL) Marker Key and Run (GHz) Run GHz as Unit Input Key, Mode (MHz) Mode and SWEEP (kHz) Sweep KHz Key. Execution will be done automatically, after inputting the last Unit in the Frequency, according to a given Sweep Mode of Run-Scanning Mode. If the mode is Single Run , push the Run (GHz) Run Key and then execute Run-Scanning again. A wrong inputting content can be erased by using the MARKER (DEL) Marker Kev. The MARKER (DEL) Marker Kev operates like the Back space on PC <u>Inputting Frequency in out of Frequency Input Mode:</u> Frequencies can be deleted by pushing the MARKER (DEL) several times. Erase inputted Frequency and then push the Marker (DEL) Key one more time, you are now out of Frequency Input Mode.

Frequency Input

Window Display

STEP 1

Check the state of Frequency Input Window.
 You can input Center Frequency when state of Frequency Input Window is CENT CENT).

STEP 2

- Input a desired Center Frequency

STEP 3

- Input Unit by using the **Run** Run Mode Mode and **Sweep** Key

Start/Stop Frequency Input

STEP 1

- Push the Shift Shift Key

STEP 2

- Push the **No. 1** 1 Key

STEP 3

STEP 4

- Input Unit to use the **Run** Run Mode Mode and **Sweep** Key

STEP 5

Change Frequency Input Window to Stop Input Mode.
 Input a desired Frequency using the numeral keys and **Dot** Key.

STEP 6

Input Unit to use the **Run** Run Mode Mode and **Sweep** Sweep Key.

Adjust screen Level

Settle Top Level- Reference Level and Level Resolution to be Display on scene.

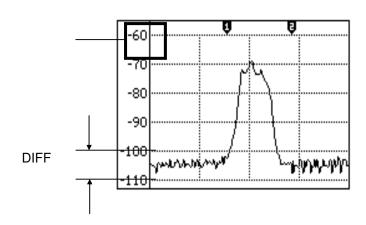
"RLEV" is an abbreviation of Reference Level.

Choose through the **Up/Down** Keys and establish to use the **Enter** Key. Top Level in verticality axis would be changed established Value.

"DIFF" is an abbreviation of Difference.

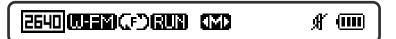
Choose through the **Up/Down** Keys and establish to use the **Enter** Key. Level Step in verticality axis would be changed established Value

RLEV	Choose through the Up/Down Keys and push the Enter Key.
DIFF	Choose through the Up/Down Keys and push the Enter Key.



Run-Scanning

Run-Scanning is a process interpreting Frequency according to established Frequency Bandwidth and Span. And Run-scanning processes operate by establishing Sweep Mode



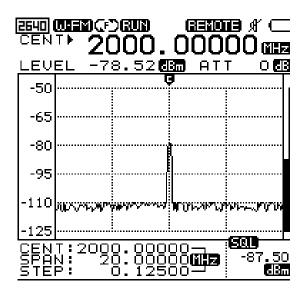
Run-Scanning process would be accomplished by establishing Reception Mode and Sweep Mode (See above)

Marker

B&K Precision 2640 has Center Marker, Marker 1, Delta Marker (Marker1 and Marker2) and Squelch Marker. Each Marker Mode can define a state of Marker ICON into the top-left Marker Mode ICON.

Marker Mode ICON	Marker ICON	
Center Marker No ICON	Ġ	
Marker 1	Ũ	You can settle Marker 1 in this state.
Marker 2	ō ē	You can settle Marker 2 in this state.
Squelch Marker		Fix the volume when listening by making a multiple Signal to audible Frequency Bandwidth to use FM/AM/SSB and then fix Basic Signal of Squelch Run.

Center Marker

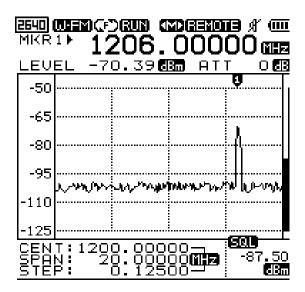


Center Marker is not a Mode the user will choose when using Mark Mode in Basic operation. When inputting Start Frequency and Stop Frequency, Center Frequency information will appear automatically.

The state is not indicated on the Mode ICON is Center Mode.

Frequency and Level on Center Frequency will be indicated on Frequency Input Window.

Marker 1



To use Marker 1 MKR 1, press the Marker(DEL) key in Center Marker status. When it turns to Marker 1 mode, Marker mode icon is changed to MARKER 1. And frequency input window is changed to Center Marker to Marker 1 MKR 1.

To move the Marker 1, use the **Up/Down** keys, or the **Knob** key. Then the frequency value and level value are displayed on frequency input window

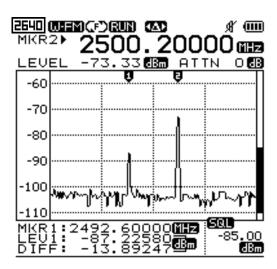
STEP 1

- Press the Marker (DEL) Marker Key.
- Check the Marker 1 mode in display window

STEP 2

- To move the Marker 1 to wanted plot point, please use the **Up/Down** keys, or **Knob** keys.
- Then the frequency value and level value are displayed in the frequency input window

Delta Marker



Press the **Marker (DEL)** Marker Key until the Marker mode icon is changed to Delta Marker in the display window. And in this case, Marker 2 is added.

The Marker mode is the total four modes. And the changed order of Marker mode is as below:

Center → Marker 1 → Delta Maker → Squelch Marker



To handle the Marker 1, user can set up the marker 1 in Marker mode 1

To handle the Marker 2, user can set up the marker 2 in Delta Marker

When user set up the Delta Marker, the frequency value and level value of Marker 2 are displayed in the frequency input window. The frequency value and level value of Marker 1, and the difference level value between Marker 1 and Marker 2 are displayed in the Marker window

STEP 1

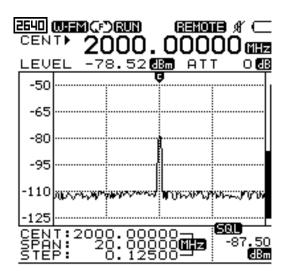
- Press the Marker (DEL) Marker Key.
- Check the Delta Marker mode in the display window

STEP 2

- To move the Marker 1 to wanted plot point, please use the **Up/Down** keys, or **Knob** keys.
- Then, the frequency value and level value of Marker 2 are displayed in the frequency input window.

The frequency value and level value of Marker 1, and the difference level value between Marker 1 and Marker 2 are displayed in the Marker window. Then the frequency value and level value are displayed in the frequency input window

Squelch Marker



To know the magnitude of frequency, user can use the Squelch Marker. And the Squelch Marker is the right Marker on the vertical axis of the display window.

Also, user can set up the Squelch Marker for setting the Squelch Level of Sweep mode and speaker output for a larger signal than Squelch Level through modulation for audio frequency range. (Modulation: Frequency modulation, Amplitude modulation, and SSB Modulation)

User can hear the radio using upper method.

Press the **Marker (DEL)** Key until the Marker mode icon is changed to the Squelch Marker in the display window.

Marker

STEP 1

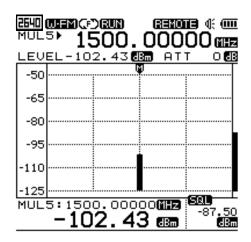
- Press the Marker Marker key.
- Check the Squelch Marker 🕶 mode.

STEP 2

- Move the Squelch Marker to wanted point using the **Up/Down** Keys or **Knob** Key.
- The squelch value is displayed in the lower right display window.



Single Power Meter Function



To use the Single Power Meter Function, at first push the **Shift** and then check the icon that is changed.

Please push the numeral 4(Single) key. After inputting the frequency to measure, input the unit.

STEP 1

- Push the **Shift** Push Key.

STEP 2

- Push the **NO.4(SINGLE)** 4 Key.

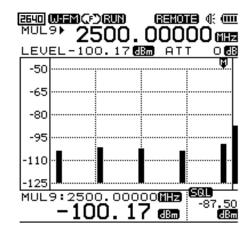
STEP 3

- Input the frequency to measure..

STEP 4

- Input the units using **RUN** Run Mode Mode and **Sweep** sweep k+tz keys.

Multi Power
Meter
Function



To use the Multi Power Meter Function, at first push the **Shift** (ariticle) key and then check the icon that is changed.

Please push the **No. 5(MULTI)** key. Assign any number of frequencies to measure within 1 to 9. After inputting the frequency to measure, input the unit.

STEP 1

- Push the **Shift** Push Key.

STEP 2

- Push the No.5 (MULTI) 5 key.

STEP 3

- Input a number within 1 to 9

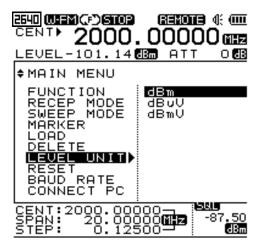
STEP 4

- Input frequency to measure.

STEP 5

- Input the units using RUN $\frac{\text{Run}}{\text{C-Hz}}$, Mode $\frac{\text{Mode}}{\text{M-Hz}}$ and Sweep $\frac{\text{Sweep}}{\text{KHz}}$ keys.

UNIT Change Function



STEP 1

- Push the **Shift** [2114] Key.

STEP 2

- Push the No.6 (UNIT) key.

STEP 3

- Using the **Up/Down** Key or **knob** key, move to the measuring unit and then set up by **Enter** key.

Setting of Attenuator

The internal attenuator is used for maximum input signal -45dBm with Setting for Menu function. Internal or To set the internal attenuator, press the Shift aput key to change the External upper right icon 2640 to 5HIFT. And press the No. 9 (ATTN) 9 key. To adjust the value of internal attenuator, press the Up/Down Kevs or rotate the **Knob** kev. And Press the **Enter** kev. If the input signal is larger than -20dBm (ex. -10dBm, 0dBm, and etc), user can use the user's external attenuator. Setting of the EXT. ATTEN. is as below Push the **No. 9(ATTN)** 9 key. INT. ATTEN in system is set up. Push the **Dot** bey and then move the previous menu. After selecting the EXT ATTEN using the Up/Down Keys or rotate the **Knob** key, push the **Enter** key. After selecting requested ATTEN using the Up/Down Kevs or rotate the **Knob** key, push the **Enter** key

The LCD Light is designed to ease the use of the instrument in a dark location.

Press the **Shift** Shift key to change the upper right icon 5HIFT.

And press the **No. 7 (LCD Light)** 7 key.

*The Power ON/OFF of the LCD Light is toggle

STEP 1

- Press the **Shift** shift key

STEP 2

- Press the No. 7 (LCD Light) 7 key



If the LCD light is ON, the current of battery is relatively larger than when LCD light OFF. In other words using time of system is shorter



The function of LCD contrast is to adjust the contrast for the remained battery capacity.

Push the Shift Rey to change the upper right icon to SHIFT

And push the No. 8 (LCD Contrast) 8 key.

The LCD contrast is adjusted by using the Up/Down keys or **Knob** Wey. And push the **Enter** key.

STEP 1

- Press the **Shift** shift key

STEP 2

- Press the No. 8 (LCD Contrast) 8 key

STEP 3

- To adjust the LCD contrast, use the Up/Down keys or Knob
 - key and press the Enter key

Buzzer ON/OFF

User can set the Buzzer ON/OFF (Toggle ON/OFF)
Push the Shift Shift Key. Then the Icon E540 of left upper window is
changed to shift icon 5HIFT
And press the Dot Key.
And press the Dot . Key. STEP 1
- Press the Shift key
STEP 2

Save/Load

The function of Save/Load is for the Waveform and Setup Statuses.

The function of Save is for concurrently saving the Waveform and Setup Status in memory.

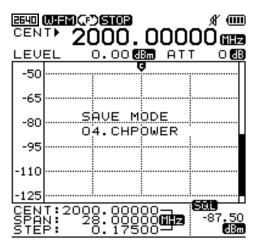
And the saved Setup Status in memory includes the following information: Reception mode, Sweep mode, Frequency range, Step value, and Span value. User can use this with Menu or Multi key.

The function of Load is for loading the saved Waveform and Setup Status in memory.

If user only wants the Setup Status, please load the saved file for desired Setup Status. And press the Run key. Then this measuring instrument will complete the Run-scanning operation. User can only use this in Menu.

The function of Delete is for deleting the saved file. Also User can only use this in the Menu.

Save



STEP 1

- Press the **Shift** shift key

STEP 2

- Press the **Enter** [Enter] key

STEP 3

- To save the waveform or setup status, a name with at least 7 characters is required.
- To select the first character. Use the **Up/Down** keys. And press the **Enter** key
- If want to save the file name fewer than 10 characters, press the "END' on stated inputted file name.

STEP 4

- To delete the character, press the Marker Marker key

STEP 5

- When all 7 characters included blank are typed, press the **Enter** key. Then, output message for SAVE OK is displayed.

"SAVE OK"

 If user does not type the all 7 characters included blank, the function of save is not completed

STEP 6

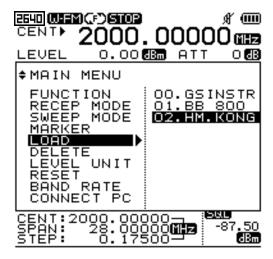
- To cancel the Save, press the **Marker** key until the first character is deleted. And additionally press the **Marker** key one time.
- Then the Save is canceled and the output message is displayed as below.

"SAVE FAILED"

- The values to be saved are signal and system setting values. Buzzer,

Save/Load

Load



STEP 1

- Press the Shift Print key

STEP 2

- Press the **Enter** lenter key

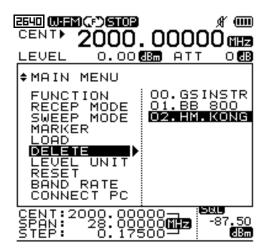
STEP 3

- To save the waveform or setup status, a name with at least 7 characters is required.
- To select the first character. Use the **Up/Down** keys. And press the **Enter** key

The function of Load is to load the saved waveform and setup status. If user only wants to load only setup status, load the user's saved data and press the **Run** Run key.

Then system will run in loading setup status. (Run-scanning)

Delete



STEP 1

- Press the **Menu** Menu key

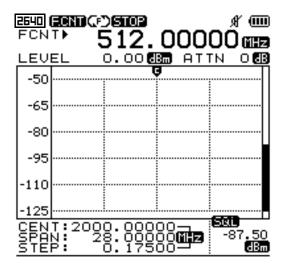
STEP 2

- To select the DELETE, use the **Up/Down** keys or **Knob** key and press the **Enter** key

STEP 3

- To delete the saved data, select the user's saved data using the Up/Down keys or Knob key. And press the Enter key. Then the saved data will be deleted

Frequency Counter



Select the F.counter under Main Menu - function

The input connector for the frequency counter is BNC connector.

When the input level is inputted into the Frequency Counter, the measured frequency value is displayed in the frequency input window

Input level is same as below.



35 MHz to 2,000 MHz : 150m Vrms 20 MHz to 1,000 MHz : 100m Vrms

STEP 1

- Press the **Menu** key

STEP 2

- To select the FUCTION, use the Up/Down keys or Knob key and press the Enter key.
- Then sub menu is opened.

STEP 3

- To select the F. COUNTER (Frequency Counter), use the **Up/Down** keys or **Knob** key and press the **Enter** key

STEP 4

- The icon **ECKII** is displayed from the other icon. The FCNT is displayed in the frequency input window

STEP 5

- When the input level is inputted in the Frequency Counter using BNC connector, the measured frequency value is displayed in the frequency input window

STEP 6

- To change the Frequency Counter mode to Spectrum mode, run the upper Step 1 to Step 3. At this time, select the SPECTRUM not F. COUNTER in Step 3

Power Source

Checking for Battery

To check the battery's remained capacity Battery, user can refer to the battery icon in the upper area of display window



· How to use and replace the battery

The power system of B&K Precision 2640 uses the Ni-MH rechargeable batteries. Then, the power system supports fast charging. The charger for the Ni-MH batteries is controlled by the voltage and temperature of the battery cells.

The Ni-MH rechargeable batteries must be used for the safe and stable power source. And if the charging is required, please avoid the site with high temperature or high humidity

Setting of the Unit

The setting for level unit can be set up in the Menu.

The level unit can be set up as below

- \Box dBm
- $\ ^{\square}\ dBuV$
- □ dBmV

STEP 1

- Push the **Menu** Menu key

STEP 2

- To select the LEVEL UNIT, use the Up/Down keys or Knob

key and push the **Enter** key.

Then sub menu is opened.

STEP 3

- To select the user's wanted level unit, use the **Up/Down** keys or **Knob** key and push the **Enter** key

The function of Reset is for initializing the memory or system.

The three kinds of resets are supported. And these resets are run through the Menu

Preset

System Reboot for initial setup status.

(Center Frequency, Span Frequency, Marker and etc)

Memory CLR

The user's saved data will be cleared. (Memory Cleared)

System INIT

The upper two resets (PRESET and MEMORY CLR) are run.

Then, system reboot for initial setup status and the user's saved data will be cleared

STEP 1

- Push the **Menu** Menu key

STEP 2

- To select the RESET, use the **Up/Down** keys or **Knob** key and push the Enter key.
- Then, sub menu is opened.

STEP 3

- To run the wanted Reset, use the **Up/Down** keys or **Knob** key and push the **Enter** key.
- Then, the selected reset will be run

Baud Rate

Setting of the Baud Rate

The setting of the baud rate is for the transmission speed.

The Baud Rate between PC and system is same as below.

115,200 BPS (Default)

57,600 BPS

38,400 BPS

19,200 BPS

9,600 BPS

4,800 BPS

STEP 1

- Push the **Menu** Menu key

STEP 2

- To select the BAUD RATE, use the **Up/Down** keys or **Knob**
- key and push the **Enter** key.

Then, sub menu is opened.

STEP 3

- To select the wanted baud rate value, use the **Up/Down** keys or **Knob** key and push the **Enter** key

Connection for PC

Setting of the Connection for PC The function of CONNECT PC is for connecting to a PC.

First, the GUI program is run on the PC. And the serial cable is connected between PC and B&K Precision 2640.

Next, run the REMOTE PC from Menu.

- NONE
- REMOTE PC

STEP 1

- Press the **Menu** Menu key

STEP 2

- To select the CONNECT PC, use the Up/Down keys or Knob
- key and press the **Enter** key.

Then, sub menu is opened.

STEP 3

- To select the REMOTE PC, use the Up/Down keys or Knob
- key and press the **Enter** key.

Then, the connection between the PC and the system is running.

The Auto Power function should be used to conserve system power.

When the power OFF time is enabled ("NONE" is not selected), the power source will be turned off automatically if the user dose not use the system for the auto power OFF period of time.

The auto power OFF time is same as below

NONE

05MINUTES

10MINUTES

20MINUTES

30MINUTES

STEP 1

- Push the **Menu** Menu key twice

STEP 2

- To select the AUTO POWER, use the Up/Down keys or Knob
- key and push the **Enter** key.

Then, sub menu is opened.

STEP 3

- To select the auto power time, use the **Up/Down** keys or **Knob** key and push the **Enter** key

Level Offset compensates for any loss due to the cabling.

Offset adds the value of +Offset to all values of measurement.

STEP 1

- Press the **Menu** Menu key twice

STEP 2

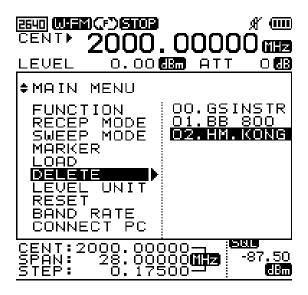
- Move the cursor on PC Connect using the **Up/Down** Keys or **knob** Key.

STEP 3

- Push the **Enter** Enter Key and then move the submenu.
- Move the dB value of Offset.
- Push the **Enter** Enter Key

STEP 4

- Push the **Menu** Menu Key one more time to exit the System



There are two modes. One is Multi key function with the **Shift** Rey and the other is to select other functions.

It can select the functions using multi key and in Menu.

The functions that could be selected in Menu mode is as blow

Level Unit

Reset

Band Rate

Connect PC

To exit from Menu or System, push the **Menu** Key or push the Dot key. These keys will move through the menu either lower or higher.

STEP 1

- Push the **Menu** Menu key twice

STEP 2

- To select wanted function, use the **Up/Down** Keys or the **Knob** Key.

STEP 3

- Push the Enter Enter Key

STEP 4

- After selecting function of lower item or On/Off, push the **Enter** Key

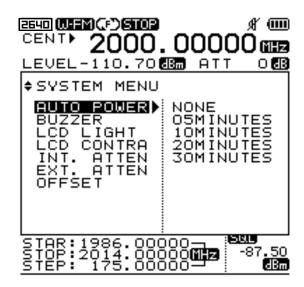
STEP 5

- Exit the Menu after pushing the **Menu** Menu Key twice.
- When the **Menu** Menu Key is pushed one time, you are in System

Function	Spectrum	 Set up the functions of
	Frequency Counter	Spectrum and frequency
	TEST Mode	counter. (note: TEST Mode is for Factory use only)
	Single Power Meter	
	Multi Power Meter	,,
Reception Mode	N-FM	Set up the Reception Mode.
	W-FM	It's possible to set up with
	SSB	the Shift PHE Key (Shift button is upside-down
	AM	please check all buttons to confirm they are correct.)
Swoon	Free Run	Set up the Sweep Mode.
Sweep Mode	Squelch Run	It could be set up with the
IVIOGE	Single Run	Shift PHI Key.
	None	Marker or function using
Marker	Marker	the Marker.
marko:	Delta MKR	The mode can be set up
	Squelch MKR	with the Shift [21/14] Key.
Save	Save Data	The mode can be set up with the Shift PHIF Key.
Load	Load Data	The mode can be set up with the Shift epure Key.
Level Unit	dBm	
	dBuV	
	dBmV	

Menu

		1
Reset	Pre Reset	Restarting the System and clear all parameters for set up
	Memory CLR	Delete the stored data
	System INI	All Reset – restarting the system and delete the stored data
Band Rate	115,200 BPS	Select the speed of serial communication between the unit and PC
	57,600 BPS	
	38,400 BPS	
	19,200 BPS	
	9,600 BPS	
	4,800 BPS	
Connect PC	None	
	Remote PC	Select the connection to PC



There are modes that select the function of Multi key using the **Shift** Shift Key and the other functions.

Functions can be selected using the multi key and the Menu.

The functions that can be selected in Menu mode are as blow.

To exit from Menu or System, push the Menu Key or push the Dot key, this will move you to lower menu items or to higher menu items.

STEP 1

- Press the Menu Menu Key

STEP 2

- Press the **Menu** Menu Key once more.

STEP 3

- To select desired function, use the $\mathbf{Up}/\mathbf{Down}$ Keys or the \mathbf{Knob} Key

STEP 4

- Press the **Enter** Enter Key

STEP 5

- After selecting a lower item function or On/Off, push the **Enter** Key

STEP 6

- Push the **Menu** Menu Key once to exit the System

Auto Power	None 05 Minutes 10 Minutes 20 Minutes 30 Minutes	Select auto power saving mode.
Buzzer	ON OFF	Select Buzzer On/Off. It could be set up with the Shift [21-14] Key (Shift Key Icon is upside down. Please check all
		icons to fix this.)
LCD Light	ON OFF	Select LCD Light On/Off. It could be set up with the Shift [2PIE] Key.
LCD Contrast	1 to 10 Step	
	0 dB	
	10 dB	
INT. Atten.	20 dB	
	30 dB	
	35 dB	
EXT. Atten.	0 dB to 90 dB	
Offset	-99.0 dB to 99.0 dB	
Default save	SAVE	During booting, save default value to be applied.
		When Saving the values, all values will be saved except Signal.

Description of key operating (section 6)

Run GHz

Run [GHz]

Instruction to start scanning frequencies

After power on, this button will work as it did under the most recent setup, or when Squelch Run 50 or Single Run 50 functions are active.

[Please refer to the **Scan** in description of basic operation details if needed]

 Units input function can be used to set up Start/ Stop/ Scan/ Center frequencies.

After inputting the frequency values, push the k GHz key to view the units.

Mode [MHz]

Mode MHz

Selecting Reception Mode

The following Reception Modes can be selected WFM WFM, NFM NFM AM THIS and SSB SSB.

[Please refer to the Reception Mode section for detailed description of basic operation.]

 Units can be entered when setting up Start/Stop/Scan/Center frequencies.

Push the MHz key after inputting the frequencies to view the values.



Selecting Sweep Mode

This button selects the Sweep Mode such as FREE Run FD, SQUELCH Run FD and SINGLE Run FD.

[Please refer to the **Sweep Mode** section for a detailed description of basic operation.]

 The units input function can be used to set up Start/ Stop/ Scan/ Center frequencies.

After input the value of frequency, push the key of kHz for the units its.

Marker [DEL

Marker DEL

Selecting Marker functions.

After pushing this button, please select Marker functions such as Center Marker, Marker 1, Delta Marker and Squelch Marker.

[Please refer to the **Marker** section for a description of basic operation for more detail.]

 This is the Delete function when setting up Start/Stop/Scan/Center frequencies.

When inputting the frequency values, the **Marker** Marker Key can be used as the **Delete** Key.

This key functions as a backspace key on a PC.

Press the No. 1 key to input the value of 1.

To input the value of numeral 1 in the Start/Stop/Scan/Center frequencies, please use the **No. 1** 1 Key.

• Pressing No, 1 key and the Shift [2014] Key will active the Input function for Start/Stop Mode.

Select the Start/Stop Mode by pushing the **Shift** Shift Shift Key and than push the numeral 1 Key.

[Please refer to the **Frequency Input** section for a description of basic operation if more detail is needed.].

No. 2 [Span]

2

Press the No. 2 key to input the value of 2.

Input the value of numeral 2 in the Start/Stop/Scan/Center Mode by pressing the **No. 2** Key.

• Span Frequency Input function can be activated by pushing Shift Shift Key

By pushing the **Shift** Shift Key and than pushing the **No. 2** Key, the Span Mode can be activated.

[Please refer to the **Span** section for a detailed description of basic operation if required.]

• Push the No. 3 3 key to input the value of 3.

• Display Level Adjustment Function by pushing Shift (2)144 Key.

On pushing the **Shift** Shift Key and then push the **No. 3** 3 Key, Basic Level of vertical axis and Level Step on display could be adjusted.

[Please refer to the **Display Level Adjustment** section for a detailed description of basic operation if need.]

No. 4 [SINGLE]

4

Push the No. 4 4 key to input the value of 4.

In order to input the value of numeral 4 in the Start/Stop/Scan/Center frequencies, push the **No. 4** 4 Key.

• Single Power Meter Adjustment Function by pushing Shift EPHE Key

After pushing the **Shift** Push key on, if **No. 4** key is pushed, Single Power Meter function will be selected.

[Please refer to the section for **Single Power Meter** using the Power Meter for detailed description of basic operation if needed.]

• Push the No. 5 5 key to input the value of 5.

• Multi Power Meter Adjustment Function after pushing Shift (2PH)

Key

On pushing the **Shift** ey and then pushing the **No. 5** key is pushed, Multi Power Meter function can be selected

[Please refer to the **Multi Power Meter** section for a details description for using the Power Meter if needed.]

No. 6 [UNIT

6

Push the No. 6 6 key to input the value of 6.

• Level Unit Adjustment Function after pushing Shift PHE Key

By pushing the **Shift** [2PJH] key and then pushing **No.6** 6 key, Level Unit function can be selected.

[Please refer to the **Level Unit** section for a detailed description of basic operation if needed.]

Push the No. 7 key to input the value of 7.

• LCD Light Function after pushing the Shift (2) Key

By pushing the **Shift** Shift key and then pushing the **No. 7** Key, LCD Light function can be selected.

[Please refer to the **LCD Light** section for details about basic operation if needed.]

No. 8 [LCD CONT; LCD Contrast]

8

Push the No. 8 key to input the value of 8.

To input the value of numeral 8 in the Start/Stop/Scan/Center frequencies, the **No. 8** 8 Key is used.

• LCD Contrast Function after pushing the Shift PHE Key

By pushing the **Shift** shift key and then pushing the **No. 8** Key, LCD Contrast function can be selected.

[Please refer to the **LCD Contrast** section for details on basic operation.]

Push the No. 9 key to input the value of 9.

To input the value of numeral 9 in the Start/Stop/Scan/Center frequencies, the **No. 9** 9 Key is used

• Attenuator Setup Function after pushing the Shift (2) Key

By pushing the **Shift** shift key and then pushing the **No. 9** 9 Key, Attenuator function can be selected.

[Please refer to the **Attenuator Setup** section for details about basic operation.]

No. 0 [System]

0

Push the No. 0 key to input the value of 0.

• System Setup Function after pushing the Shift [21/44] Key

By pushing the **Shift** shift key and then pushing the **No. 0** System Setup function can be selected.

[Please refer to the **System Setup** section for details about basic operation.]

Shift

Using the Function Key

The **Shift** Shift Key dose not performs any function by itself.

The Shift Key can be used with functions printed below the numeral keys.

If the shift key is pressed twice, CENT/SPAN located on bottom of display is changed to START/STOP.

Dot [Buzzer]

•

• The Dot ___ key should be used to input a decimal point

When input the value of Decimal Point in the Start/Stop/Scan/Center frequencies, this key is used.

• Buzzer Setup Function after pushing the Shift [2144] Key

By pushing the **Shift** shift key and then pushing the **Dot** . Key, Buzzer On or OFF can be selected.

[Please refer to the **Buzzer** section for details on basic operation.]

Return Function on Menu and System

Return Function is used to return from lower Menu to higher Menu on Menu and System.

Menu [Load]

Menu

Menu Function

Various functions can be selected after entering Menu item.

At the Menu item, pushing the **Menu** Menu Key once more; will activate the System item.

[Refer the section of **Menu and System** of basic operation if need more detail]

Load Function after pushing the Shift ⁽²⁾ Key.

By pushing the **Shift** shift key and then pushing the **Menu** Key, stored Data can be loaded.

[Please refer to the **Store Mode** section for details of basic operation.]

Enter [Save]

Enter

Enter Function

The Enter Key is used to select Menu or System items.

• Save/Load Function after pushing Shift EPHH Key

By pushing the **Shift** shift key and then pushing the **Menu** Enter Key, Data can be saved.

[Please refer to the **Save/Load** section for details about basic operation.]

Up/Down Keys and Knob Key





Up/Down △ Yeys and Knob ○ Key Functions

Movement of Marker, Menu items and System After setting the Span, the Span can be changed using the Up/Down key. After setting the Reference level, the Reference level can be changed using Up/Down key.

Service Information

Warranty Service: Please return the product in the original packaging with proof of purchase to the address below. Clearly state in writing the performance problem and return any leads, probes, connectors and accessories that you are using with the device.

Non-Warranty Service: Return the product in the original packaging to the address below. Clearly state in writing the performance problem and return any leads, probes, connectors and accessories that you are using with the device. Customers not on open account must include payment in the form of a money order or credit card. For the most current repair charges please visit www.bkprecision.com and click on "service/repair".

Return all merchandise to B&K Precision with pre-paid shipping. The flat-rate repair charge for Non-Warranty Service **does not** include return shipping. Return shipping to locations in North American is included for Warranty Service only. For overnight shipments and non-North American shipping fees please contact B&K Precision.

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Include with the returned instrument your complete return shipping address, contact name, phone number and description of problem.

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