

# Signal PROFILER™

## E7xx2B Series RF Analyzer



E7040B 4.4GHz Cable & Antenna Analyzer

E7060B 6.1GHz Cable & Antenna Analyzer

E7042B 4.4GHz RF Analyzer

E7062B 6.1GHz RF Analyzer

2MHz to 4.4/6.1GHz Cable & Antenna Analyzer

9kHz to 4/6GHz Spectrum Analyzer

2-Port Measurement

Interference Analyzer

Channel Scanner

Coverage Mapping

Signal Analysis

1MHz to 6GHz USB Smart RF Power Sensor

300MHz to 4GHz Inline Power Meter

USB Optical Microscope

Internal Optical Power Meter and VFL Option

Built-in GPS Option

Built-in WIFI Option

## Signal PROFILER™ E7XX2B Series RF Analyzer Overview

### Introduction

Signal PROFILER is the most trusted, reliable, and preferred RF Analyzer by outdoor and indoor coverage project installation and maintenance contractors, and wireless service providers.

DEVISER is proud to introduce the new Signal PROFILER™ E7XX2B, our 2nd generation handheld RF Analyzer. The E7XX2B is newly designed from the ground up. We took all of our experience, customer feedback, field trials, and the latest technology advancements, and developed the product with the features of low cost, field optimized, trusted, reliable, rugged, easy to use.



E7XX2B Signal PROFILER is easy to carry

### Signal PROFILER Highlights

- >6 hour battery life
- USB E-CAL Module
  - Fast, one connection calibration

- One calibration for all frequencies
- 9kHz to 4/6GHz Spectrum Analyzer
- 2-Port Measurement
- Interference Analyzer
- Channel Scanner
- Coverage Mapping
- 1MHz to 6GHz USB Smart RF Power Sensor
- 300MHz to 4GHz Inline Power Meter
- USB Optical Microscope
- Internal Optical Power Meter
- Internal VFL
- Built-in GPS
- Built-in WIFI
- Highest RF Immunity
- Backlit keypad
- Rugged and reliable
- Impact, dust and splash resistant
- Bagged and easy to carry

## **Easy to use**

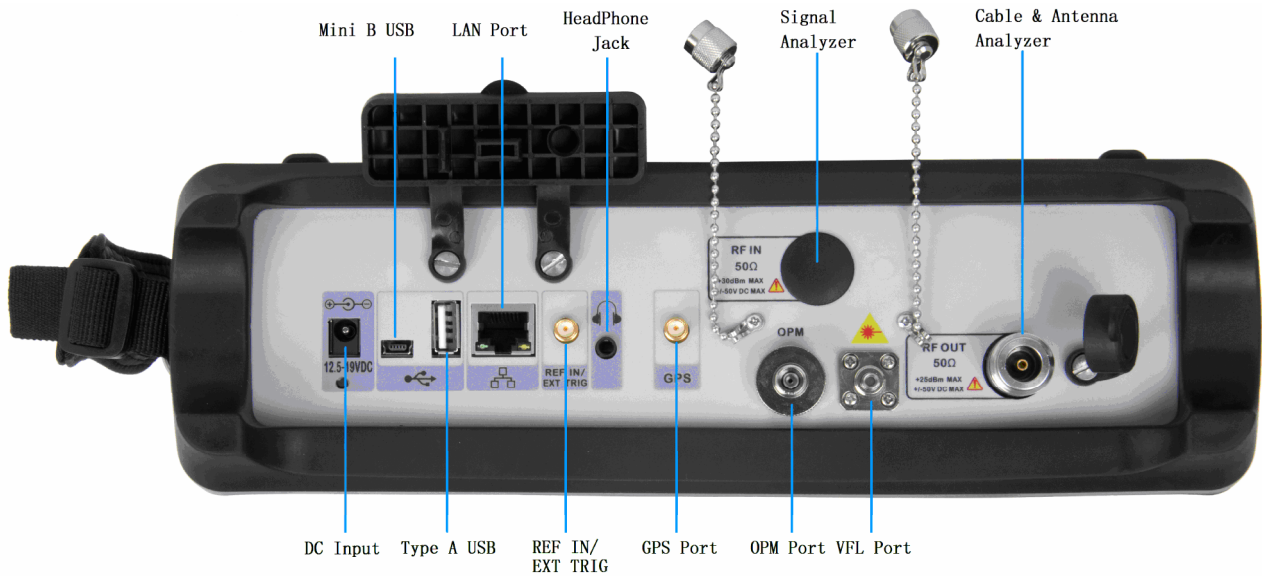
- 8.4" 800 x 600 TFT touch screen
- Android-like Operation Mode
- Integrated Help function
- USB port
- LAN port
- Built-in WIFI

## **Efficient data management**

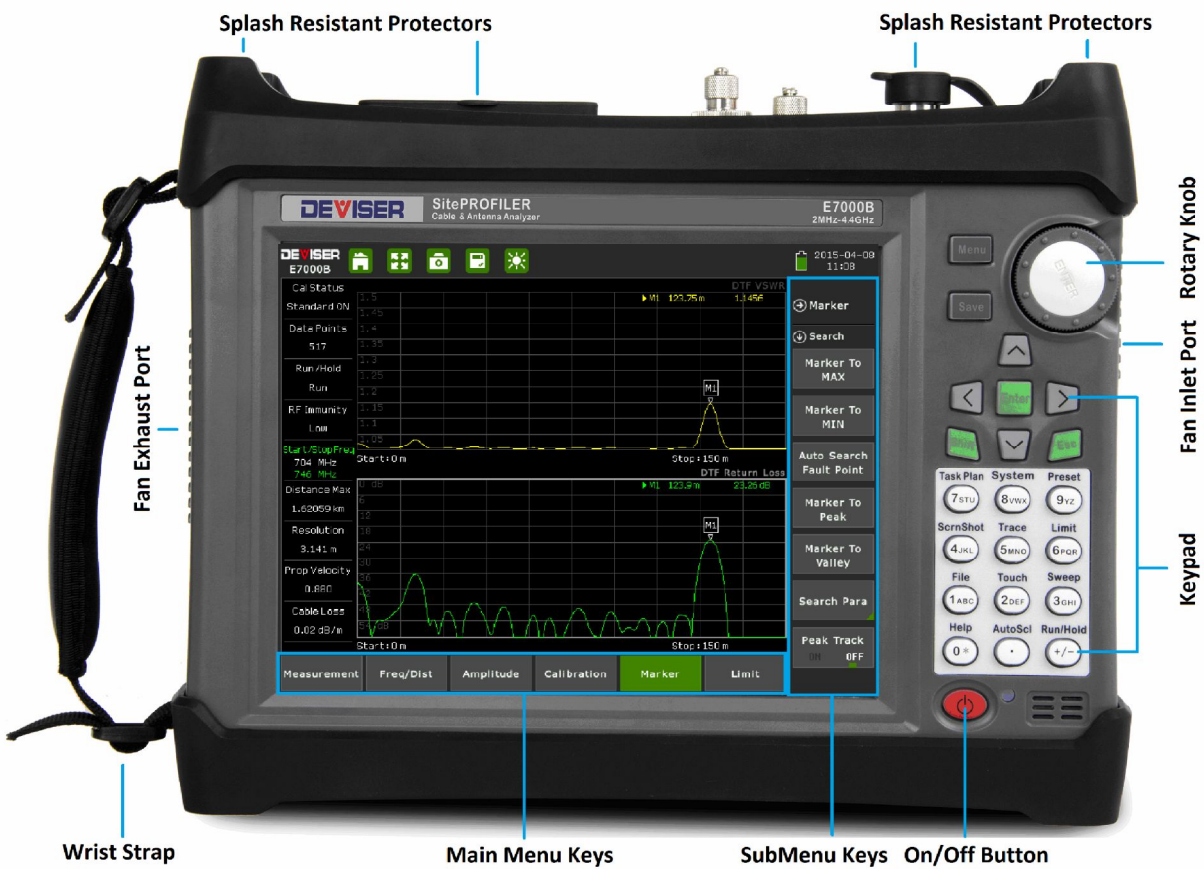
- Internally store >2000 files
  - Traces, setups, screenshots
- Fast preview of stored traces
- Site Workbench Software
  - Edit sweeps, rename, archive
  - Generate PDF reports
- Standard \*.bin and \*.csv trace file format

# Signal PROFILER™ E7XX2B Series RF Analyzer Information

## Physical Information



All Connectors are conveniently located on the top panel, leaving the sides clear for handheld use. Connectors have splash proof covers to provide additional protection.



8.4" Daylight Viewable Touch Screen

## Signal PROFILER™ E7XX2B Series Key Specifications

<b>Cable and Antenna Analyzer</b>		
Measurement	VSWR Return Loss Cable Loss Distance-to-Fault (DTF) Return Loss Distance-to-Fault (DTF) VSWR 1-Port Phase Smith Chart	
Frequency range	2MHz to 4.4GHz	2MHz to 6.1GHz
Frequency resolution	1Hz	
Frequency accuracy	±2 ppm	
Output power level	≥0dBm	
Sweep time	0.8mS/point (Return Loss) 1mS/point (DTF)	
Data points	130,259,517,1033,2065	
RF immunity	+10 dBm within ±10 kHz of the carrier frequency	
	+25 dBm @ >1.0 MHz from carrier frequency	
Corrected directivity	≤-42dB (after OSL calibration)	
	≤-38dB (after ECAL calibration)	
<b>Return loss</b>		
Range	0.00-60.00dB	
Resolution	0.01dB	
<b>VSWR</b>		
Range	1-65	
Resolution	0.01	
<b>Cable loss</b>		
Range	0.00-30.00dB	
Resolution	0.01dB	
<b>DTF</b>		
Return loss range	0.00-60dB	
VSWR range	1-65	
Length	$0 \text{ to } (\text{data points}-1)/(\text{span} \times 2) \times V_p \times C$ Span=frequency range	
Resolution (m)	$=V_p \times C /(\text{span} \times 2)$	
Data points	130,259,517,1033,2065	

## Signal PROFILER™ E7XX2B Series Key Specifications(Continued)

Spectrum Analyzer		
Frequency range	9kHz to 4GHz	9kHz to 6GHz
Frequency Reference		
Aging	$<\pm 1 \times 10^{-6}/\text{year}$	
Stability	$<\pm 0.5 \times 10^{-6}$ (0 to 50)°C	
Marker Counter Accuracy	(S/N 25 dB , RBW/SPAN = 0.01)	
Accuracy	$\pm 1 \times 10^{-6} \pm 1$	
Resolution	1Hz	
Frequency Span		
Range	0Hz(Zero Span) , 1KHz to 6000MHz	
Sweep and Trigger		
Range	20ms – 250s(Span $\geq$ 200 Hz) 10 $\mu$ s – 1000s(Span = 0 Hz) 1ms–250s(Fast Mode)	
Accuracy	$<\pm 0.2\%$	
Trigger	Free run , Single , Video , TV	
Resolution bandwidth		
Range	1Hz to 3 MHz about in 10% step	
Bandwidth Accuracy	$<\pm 10\%$	
Selectivity	(60dB/3dB bandwidth ratio) $< 5: 1$	
Video bandwidth		
Range	1Hz to 3 MHz about in 10% step	
Stability		
Phase noise	Typ. $< -105$ dBc/Hz @10 kHz offset from 1GHz CW signal	
Attenuator		
Range	0dB to 55dB	
Step	5dB( Option 1dB )	
Preamplifier		
Frequency range	1MHz to 6000MHz	
Gain	Typ. 25dB	
Noise figure	Typ. 4dB	
Damage input level	+30dBm ( Peak power / Attenuator $> 15$ dB )	
	50VDC	
TOI	Typ. $> 12$ dBm	
DANL (Input terminated , 0dB attenuator , 100Hz RBW , 100 Hz VBW , sample detector)		
Preamplifier OFF	$\leq -128$ dBm, 2 MHz~1GHz 50 $\Omega$	
	$\leq -122$ dBm, 1GHz~3.0GHz 50 $\Omega$	
	$\leq -123$ dBm, 3GHz~6GHz 50 $\Omega$	
Preamplifier ON	$\leq -145$ dBm, 10 MHz~1GHz 50 $\Omega$	
	$\leq -140$ dBm, 1GHz~3.0GHz 50 $\Omega$	

	≤-138dBm, 3GHz~6GHz 50Ω
<b>Spurious responses</b>	
Second harmonic	<-70 dBc -20dBm signal at input mixer, preamplifier OFF
Residual responses	( Input terminated , 0dB attenuator )
	≤-80dBm , 1MHz to 6000MHz
<b>Display range</b>	
LOG scale	0.1 -0.9 dB/DIV , in 0.1dB step
	1-40dB/DIV , in 1dB step
LIN scale	10 divisions
Scale unit	dBm , dBmV , dBμV , mV
Marker resolution	LOG : 0.03 dB
	LIN : 0.03% of REF level
Trace	3 traces
Detector	sample , posi-peak , neg-peak , normal , average
Marker functions	Peak , next peak , Marker->center , marker->reference
Marker display	Normal , delta , fix marker , frequency counter
Reference level	-130 dBm to +30dBm
Level accuracy	Typ. ≤ ±1dB @+25±5°C
RBW switch accuracy	Typ. < 0.1dB
ATT switch accuracy	Typ. < 0.3dB
<b>RF input</b>	
RF interface	N female
Impedance	50Ω
VSWR	Typ.<1.8 (10MHz to 3000MHz, ATT≥10dB)
	Typ.<2.0 (3000MHz to 6000MHz, ATT≥10dB)



## Signal PROFILER™ E7XX2B Series Key Specifications(Continued)

<b>USB Smart RF Power Sensor</b>	
Frequency range	1MHz~6GHz
Measurement Range	1μW~100mW(-30~+20dBm)
VSWR	1.1:1
Resolution	1dB, 0.1dB, 0.01dB, 0.001dB
Dimension:	124*44*24
Weight:	250g
Accuracy	Typ.: ±0.2dB
<b>Inline RF Power Meter</b>	
Frequency range	300MHz to 4000MHz
Measurement Range	0.15W to 150W
Insert Loss	0.1dB
VSWR	1.10
Directivity	30dB
Accuracy	±4%±0.05W(+15~+35°C) ±7%±0.05W(-10~+50°C)
Connector	Type N(f), 50 Ω
<b>USB Optical Microscope</b>	
Magnification	400x
Resolution Ratio	0.75μm
Video Output	PAL/NTSC
Weight	155g
Work/Storage	-20°C ~ +50°C / -30°C ~ +60°C
<b>Optical Power Meter</b>	
Accuracy	±0.25dB
Probe Type	InGaAs Φ300μm
Dynamic Range	-50dBm ~ +27dBm
Resolution	0.01 dBm, mW, uW, nW
Wave Length	850 nm、980 nm、1300 nm、1310nm、1490 nm、1550nm、1610 nm
Adaptor	FC\SC\ST
<b>VFL</b>	
Output Power	10mW
Adaptor	FC/PC
<b>General</b>	
RF output port	Nf type
Impedance	50Ω
Display	8.4" TFT LCD , 800*480 , touch screen
Interface	1 USB Type A 1 10M/100M Ethernet Port
Storage space	1GB memory , >2000 trace files , >2000 setup files , >2000 BMP files
Operation temperature	-10 ~ +55°C



Store temperature	-40 ~ +80°C
Weight	<3.37kg
Size(L×W×H)( mm)	280 × 220 × 90
Battery	11.1V, 5.2Ah
Continuous Work Time	Typ. 6 hours Cable and Antenna Analyzer Typ. 3 hours Spectrum Analyzer
AC adapter output	19VDC
AC adapter input	100-240VAC, 50-60Hz
Language	English, Chinese, French, extensible

## Signal PROFILER™ E7XX2B Series Order Information

### Standard Accessories

Part Name	Part Number	Description
E7040B	0130.7000.02	Cable and Antenna Analyzer , 2MHz to 4.4GHz
E7060B	0130.7100.00	Cable and Antenna Analyzer , 2MHz to 6.1GHz
E7042B	0130.7002.00	RF Analyzer 2MHz to 4.4GHz Cable and Antenna Analyzer 9kHz to 4GHz Spectrum Analyzer
E7062B	0130.7102.00	RF Analyzer 2MHz to 6.1GHz Cable and Antenna Analyzer 9kHz to 6GHz Spectrum Analyzer
Standard Accessories		
E7000-1000	2121.7000.28	USB E-CAL
E7000-702	6190.0501.03	1.5m, N(m) to N(f) , 6GHz , 50Ohm
E7000-007	6130.0600.24	Site Workbench Software and Documentation disc
E7000-008	6130.0600.25	Quick Guide
E8600-000	6190.0600.00	Soft Carrying Case
FSP065-RAB	6190.0700.06	FSP065-R AC Adapter
E8000-0400	6190.0700.14	Vehicle charger
A - MiniB	6290.0900.05	USB A/5-pin mini-B Cable
DS8831-706	6190.0500.19	Crossover LAN cable
		Three-year Warranty
E7000-002	6130.0600.01	Certificate of Calibration and Conformance
AE4000-730	6290.0900.01	Replacement Stylus with coiled tether
HYLB-1378 11.1V/5.2Ah	6190.0100.05	11.1V /5.2Ah Rechargeable Li-Ion Battery

### Signal PROFILER™ E7XX2B Series Options

Part Name	Part Number	Description
E7000-000	6130.0600.23	User Guide
E7000B-0010	2130.7000.00	2-Port Measurement
E7000B-0020	2130.7000.01	Interference Analyzer
E7000B-0030	2130.7000.02	Coverage mapping
E7000B-0040	2130.7000.03	Channel Scanner
E7000B-0050	2130.7000.04	Signal Analysis
E7000A-0050	2121.7000.31	Inline High Power Meter
E7000A-0040	2121.7000.30	USB Smart RF Power Sensor
E7000-209	2130.7000.34	USB Optical Microscope

OPM Model	2130.7000.29	Optical Power Meter and VFL Module
E7000-207	2130.7000.32	Built-in GPS Module
E7000-208	2130.7000.33	Built-in WIFI Module

## Signal PROFILER™ E7XX2B Series Optional Accessories

Part Name	Part Number	Description
<b>RF Test Port Cables</b>		
E7000-741	6190.0500.00	1.5m, N(m) to N(m) , 6GHz , 50Ohm
E7000-742	6190.0500.98	3.0m, N(m) to N(f) , 6GHz , 50Ohm
E7000-743	6190.0501.69	3.0m, N(m) to N(m) , 6GHz , 50Ohm
E7000-705	6190.0501.15	1.5m, N(m) to 7/16 DIN(f) , 6GHz , 50Ohm
E7000-706	6190.0501.16	1.5m, N(m) to 7/16DIN(m) , 6GHz , 50Ohm
<b>RF Phase-Stable Armored Test Port Cables</b>		
E7000-756	6190.0501.82	1.5m, N(m) to N(f) , 6GHz , 50Ohm
E7000-744	6190.0501.70	1.5m, N(m) to N(m) , 6GHz , 50Ohm
E7000-745	6190.0501.71	3.0m, N(m) to N(f) , 6GHz , 50Ohm
E7000-746	6190.0501.72	3.0m, N(m) to N(m) , 6GHz , 50Ohm
<b>Calibration Components</b>		
E7000-700	6190.0501.01	Precision “Y” OSL calibration kits , N(m) , 42dB , 6GHz , 50Ω
E7000-710	6190.0501.20	Precision “Y” OSL calibration kits , N(f) , 42dB , 6GHz , 50Ω
<b>Adapters</b>		
E7000-717	6190.0501.27	7/16 DIN(f) to N(m) , DC to 7.5GHz , 50Ω
E7000-718	6190.0501.28	7/16 DIN(f) to N(f) , DC to 7.5GHz , 50Ω
E7000-719	6190.0501.29	7/16 DIN(m) to N(f) , DC to 7.5GHz , 50Ω
E7000-720	6190.0501.30	7/16 DIN(m) to N(m) , DC to 7.5GHz , 50Ω
E7000-721	6190.0501.31	7/16 DIN(m) to 7/16 DIN(m) , DC to 7.5GHz , 50Ω
E7000-722	6190.0501.32	7/16 DIN(f) to 7/16 DIN(f) , DC to 7.5GHz , 50Ω
E7000-723	6190.0501.33	7/16 DIN(f) to 7/16 DIN(m) , DC to 7.5GHz , 50Ω
<b>Attenuators for use with Power Meter</b>		
E7000-747	6190.0501.73	20dB , 5W , DC to 6GHz , N(m) to N(f)
E7000-748	6190.0501.74	30dB , 5W , DC to 6GHz , N(m) to N(f)
E7000-749	6190.0501.75	20dB , 5W , DC to 18GHz , N(m) to N(f)
E7000-750	6190.0501.76	30dB , 5W , DC to 18GHz , N(m) to N(f)
E7000-751	6190.0501.77	30dB , 50W , DC to 8.5GHz , N(m) to N(f)
E7000-752	6190.0501.78	40dB , 100W , DC to 4GHz , N(m) to N(f)
E7000-753	6190.0501.79	40dB , 100W , DC to 8.5GHz , N(m) to N(f)
E7000-754	6190.0501.80	40dB , 150W , DC to 4GHz , N(m) to N(f)
E7000-755	6190.0501.81	40dB , 150W , DC to 8.5GHz , N(m) to N(f)