TELLUSTECH
TellusTech Co.Ltd

TellusTech
Catalog vol.1

고객님에게 최고 성능의 제품을 제공하겠습니다

ADVANTEST.

ROHDE&SCHWARZ

HUBER+SUHNER

HL
HERMON LABORATORIES

Tektronix

Agilent Technologies

AEROFLEX

FLIR

(주)아이에스피
ISP Co., Ltd.

Anritsu
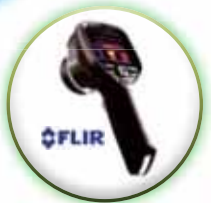
Tellustech Instruction

㈜ 텔러스테크

저희 회사는 무선 통신과 관련된 계측기를 유통/렌탈/수리하는 업체로써 2010년에 설립된 이후 LG전자, 팬택 계열 등의 국내 주요기업 및 RF 관련된 30여 개의 중소기업과 비즈니스를 진행 하고 있습니다. 미국, 중국 , 일본, 유럽 등에 약 100개의 비즈니스 파트너 들을 통하여 보다 양품의 제품을 보다 매력적인 가격으로 제공하는 것이 저희 회사의 최대 장점이며 2011년 신용보증기금에서 기금을 유치하여 8월 부터는 본격적으로 계측기 수리사업을 진행하고 있습니다.

앞으로 2013년 하반기부터, 베트남에 현지법인을 설립하여 현지에 진출해 있는 국내 고객 및 베트남 현지딜러 및 End-user들을 대상으로 한국제품의 소개/유통 및 중고제품의 매매/임대/수리 사업을 확장할 계획입니다.

Company

업체명	㈜텔러스테크
전화/Fax	02-7092-0111 / 02-2635-0113
대표자	이 정 상
설립일	2010 . 06 . 04
종업원수	본사 5명 / 베트남 4명
주요사업	신품/중고 계측기 매각 / 매입 / 렌탈 / 수리
사업자등록번호	113-86-39805
업종	도소매 서비스
본사	서울특별시 금천구 가산동 550-1외 3필지 롯데 IT캐슬 1동 315호

주 경영진

대표	이정상 / ㈜텔러스테크 대표 무선통신 계측기 분야 경력 14년
해외 영업	박성근 / 베트남 텔러스 법인장 일본어, 중국어 가능 무선통신 계측기 분야 경력 5년
국내 영업	이경석 / 국내영업 담당, 계측기 분야 경력 3년
재경	이애영 / 재경팀 팀장, 재경분야 경력 7년
기술팀	이광명 / 재고 관리 및 기술지원 담당

경영이념

"Tell us what you want"

고객이 필요로 하는 것은 무엇이든 충족 시킨다

연 혁

2010년 6월 설립
2010년 7월 LG전자 평택공장 수리 서비스 실시(무선 통신 계측기 분야)
2010년 12월 LG전자 평택 공장 계측기 임대 서비스 실시
2011년 2월 신용보증기금 시설기금 유치
2011년 6월 팬택 계열사 계측기임대 및 서비스 실시
2011년 8월 수리센터 설립
2011년 11월 무역의날 백만불 수출의탑 수상
2012년 2월 Hermon Lab 총판계약 체결
2012년 8월 HUBER+SUHNER 대리점 계약 체결
2012년 8월 J&D 4억 규모의 무선통신설비 구축계약 체결
2012년 12월 무역의날 오백만불 수출의탑 수상
2012년 12월 대표이사 지식경제부장관 표창장 수상
2012년 12월 베트남 지사 설립완료
2013년 5월 ISP 총판계약 체결(베트남)

100%
80%
60%
40%   20%   0%

TELLUSTECH
TellusTech Co.Ltd

TellusTech Guide

Contents

Test & Measurement

Hidden Champion

㈜텔러스테크 이정상 대표

속이 강한 세계적 기업으로 도약

"혼자서 할 수 없는 일도 함께라면 할 수 있습니다"

정밀기기 산업에서는 1nm의 오차도 허용하지 않는 정밀 계측기가 필요하다. 잘못된 계측으로 뜻하지 않는 결과가 나오거나 모든 상품이 쓸모없어지기 때문이다. 때문에 정밀 계측기를 다루는 작업장은 계측기에 대한 신뢰와 기술력을 중시한다. 산업이 고도화 되고 정밀 산업이 발전함에 따라 계측기의 중요성이 증대되는 가운데 신뢰할 수 있는 제품을 대여하고 꾸준한 관리로 고객의 인정을 받고 있는 회사가 있어서 화제다. ㈜텔러스테크의 이정상 대표와 직원들은 부단한 노력과 관심으로 국내·외의 인정을 받으며 2013년 새로운 도약을 준비하고 있다. 취재/홍성오 기자

잠들지 않는 기업, 고객과의 소통은 가장 큰 힘

중고매매 및 임대산업의 가장 큰 화두는 신제품과 같은 품질을 항상 유지하는 것이다. 때문에 중고품을 다루는 전문 업체들은 중고라는 인식을 불식시키기 위해 부단한 노력을 이어왔다. ㈜텔러스테크도 선배기업들의 인식개선의 노력을 이어받아 항상 최고의 품질을 유지할 수 있도록 이정상 대표와 직원들은 고객들의 소리에 귀를 기울이고 있다. 이런 노력들이 빛을 발해 제 48회 100만 불 수출 탑 수상에 이어 제 49회 500만 불 수출 탑, 지식경제부장관표창 수상의 명광을 누렸다. 그는 "고객들이 만족할 수 있도록 가장 최신의 정보와 기기들을 확보하는 것이 우선입니다"라며 "고객과의 신뢰는 무수한 제품뿐만 아니라 회사의 노력이 크게 작용합니다"라고 강조했다. 인터뷰 하

는 동안 쉬지 않고 울리는 전화를 받는 이 대표의 모습을 보며 고객을 우선하는 그의 모습을 볼 수 있었다. 하루하루 바쁜 생활을 이어가는 그이기에 오늘의 ㈜텔러스테크가 있을 수 있다는 것을 엿볼 수 있었다. 고객과의 인연을 소중하게 여긴다는 그는 고객이 먼저 자신들의 노력을 인정해 줄 때 가장 큰 만족을 느낀다. 새로운 고객을 소개시켜주고 최신 기기들의 정보를 알려주는 데 있어서 기존의 고객들이 스승이 되어주고 있다는 지론에서다. 노력의 일환으로 이 대표는 시차가 다른 나라에서 온 메일에 즉각 답변을 하기 때문에 가끔씩 고객들로부터 '잠도 없는 대표'라는 우스갯소리도 듣는다. 하지만 자신의 답변이 곧 신용이라고 생각하는 그이기에 피곤함을 잊고 메일에 즉시 답변한다. 그는 "제가 편하게 지내면 그 시간동안 피해를 볼 고객들이 걱정이 됩니다. 저에게는 잠시 시간이지만 고객에게는 아주 긴 시간처럼 느껴지지 않을까요?"라며 호탕하게 웃었다. 고객을 우선하는 경영을 지향하는 그이기에 허투루 들을 수 없는 답변이었다. 그를 따르는 직원들도 이 대표를 이어 자신을 개발하고 고객과의 신뢰를 쌓는데 여념이 없다. 항상 묵묵히 자신의 옆자리를 지켜주는 직원이 있기에 값진 성과를 낼 수 있었다는 그에게 직원들은 보석과 같은 존재다. 일례로, 현재 ㈜텔러스테크는 LG전자와 유지보수, 중고매매 및 임대사업을 진행했었지만, 올해 11월부터 무선통신관련 제품들의 품질검사 시에 사용되는 RF케이블을 납품하고 있다. 이는 베트남지사로 파견 나가 있는 박성근 법인장의 성과이다. LG전자의 담당자들과 끊임없이 교류한 박 법인장의 노력과 ㈜텔러스테크의 품질과 관련된 고집스러운 집착이 나은 결과가 아닐 수 없다. 현재 RF케이블 사업은 LG전자뿐만 아니라 무선통신 측정관련 업체들로 매출을 확대하고 있으며, 이는 2013년 ㈜텔러스테크의 전망을 밝게 해주는 대목이다. ㈜텔러스테크는 베트남과 더불어, 동남아 시장이 IT와 관련된 또 하나의 거대한 신흥시장이 될 것이라고 판단하고 현재 베트남에 지사를 설립했다. 현지에 있는 한국 또는 다국적기업들이 필요로 하는 중고계측기 매매·임대·유지보수 서비스를 제공하고, IT와 관련된 대한민국의 고품질의 대표브랜드를 베트남에 소개하고자 하는 노력에 여념이 없다. 성공에 대한 확실한 신념으로 달려오고 있는 이정상 대표가 생각하는 성공하는 기업이란 무엇일까?

작은 성공에 집착하라, 그 길 끝에 답이 있다

취업난을 우려한 국가 정책의 뒷받침으로 창업의 문을 두드리는 이들이 많다. 한해에도 천개가 넘는 기업들이 만들어지고 소리소문 없이 사라진다. 이정상 대표는 무엇보다 자신이 이뤄낼 수 있는 작은 성공에 노력하라는 조언을 한다. 시작은 비록 작은 성공일지라도 이를 발판으로 한 단계 한 단계 도약하는 계기가 될 수 있기 때문이다. 무턱대고 성공만 쫓아 자신의 능력만을 믿고 아무런 준비 없이 창업하려는 이들에게 하는 일침이다. 기업은

▲ ㈜텔러스테크의 직원들은 임성 묵묵히 이정상 대표의 옆자리를 지키며 세계 속에서 값진 성과를 내고 있다.

◀ (좌) 현반홍 주임, (우) 박성근 베트남 법인장

결코 혼자만의 노력으로 되지 않는다는 것을 몸소 느낀 그이기에 할 수 있는 말이다. 자신의 부족함을 직원들이 채워주고 서로 협력하지 않았다면 지금의 성공을 이뤄낼 수 없었다는 그는 무엇보다 타인의 말을 소중히 여기라고 전한다. 그는 "언제나 스승은 주위에 많습니다. 타인의 말에 귀 기울이고 협력하는 것이 중요합니다"라며 이어 "자신이 할 수 있는 능력을 알고 끊임없이 도전하는 것이 성공을 위한 지름길입니다"라고 전했다. ㈜텔러스테크의 이런 기업 이념은 이 회사가 걸어온 발자취와 앞으로 걸어갈 미래를 잘 반영하고 있다. 과거 중고계측기 매매를 통하여 임대 및 유지보수로 사업을 확대하고, 현재는 RF케이블로 신품 사업을 시작했다. 2013년부터 기존의 사업과 더불어, 2012년 12월에 완료한 이스라엘의 Hermon Lab,사의 국내 총판권의 계약을 바탕으로 유선통신 품질검사 분야로 사업을 확대하고, 베트남 지사를 통하여 글로벌화를 준비하고 있다.

기계를 이루는 아무리 작은 톱니바퀴도 허투루 다룰 부품은 없다. 더군다나 국가 경쟁력을 높이고 있는 기업들은 더욱 그러할 터. 이 대표는 "자신의 기업이 국가경제를 책임지고 있다는 생각을 가지고 노력을 이어간다면 성공은 당연히 따라옵니다"라고 전하며 인터뷰를 마쳤다. ㈜텔러스테크도 역시 국가 경쟁력의 일익을 담당하며 미래를 향해 나가고 있다. 추후 덩치가 큰 기업보다 속이 강한 기업을 만들고 싶다는 이정상 대표를 통해 많은 기업의 멘토가 되고 조력자가 될 ㈜텔러스테크를 기대해 본다. ▮

ISP Co., Ltd.

XRF 형광 분석 기기

iEDX-100A / iEDX-150T / iEDX-150WT / iEDX-200AT

X-Ray 구성 및 원리

XRF

XRF(X-ray Fluorescence Spectroscopy)　X　　　　　　　　X-
　　(K,L)　　　　　　　　　X-
　　　　　　　.

Sample

AutoSampler

PreAmp

Filter
Changer

35kV
X-Ray
Tube

Peltier
Si-detector

Heat
Exchanger

Peltier
Controller

Safety
Interlock

System
Controller

Control
Panel
Interface

HV
Power
Supply

PC-Computer w/Windows OS
Pulse Processor, Bias,
ADC, & MCA in EISA Slot

RS-232 & Analog

N

M

L

K

E_2

e^-

E_1

E_O

X-Ray
$\triangle E = E_2 - E_O = K\beta$

X-Ray
$\triangle E = E_1 - E_O = K\alpha$

e^-
$\triangle E = E - E_O$

Energy
X-Ray
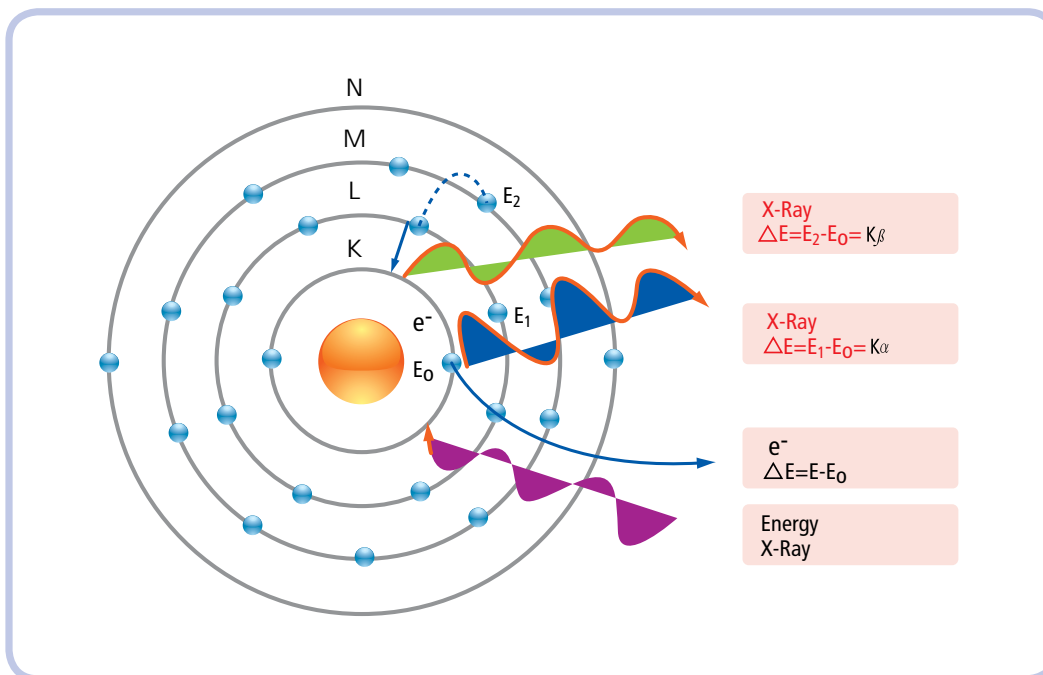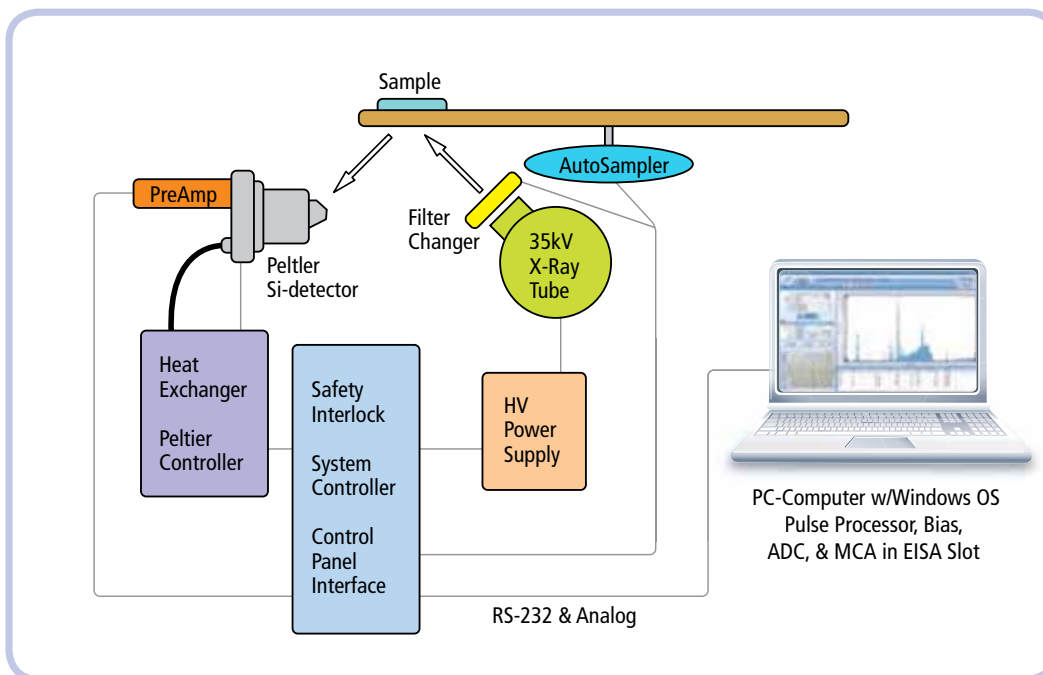
iEDX-100Λ Series
- 유해물질분석
- Type : sp, mp

X선발생기	Rh Target, 50kVp 1mA
검출기	Si-Pin Diode(Peltier System), (Option : SDD)
분해능	145eV FWHM at Mn Kα
고전압발생기	제조사 : 미국 Spellman
X선조사범위	1, 3, 5mm Auto Change (Option : 10ch, 12ch, Auto Sampler)
측정범위	Al(13) − U(92)
시료형태	Solid / Liquid / Powder
시료챔버 크기	310X284X100 (W X D X H)
주요 특징	· Halogen Free + RoHS 동시 측정 · 공존원소 정략 분석 · 원격지원 (실시간) · 하드웨어 A/S는 익일지원
카메라 배율	20배
방사능 안전차단 장치	자동 3중 차단 장치 (센서, 필터, 블럭구조)
유해물질 성적서 레포트종류	· Word, Excel, PDF파일 저장, 출력 · 사용자 지정 양식
주요 장점	· 시료전처리 과정이 불필요한 비파괴검사 · 동시 다원소 분석(Solids, Liquids, Powder) · 고감도, 고정밀도 분석기기
응용 분야	· 국제환경규제에 효과적으로 대응하기 위한 부품, 제품검사분야(RoHS, WEEE, ELV대응) · 귀금속, 액세서리, 장난감에 함유된 유해물질검사 · 자원재활용, 환경오염물질 분석 · 연구용, 교육용 원소성분 분석 · 전지, 전자, 자동차, 귀금속, 사출, 도금, 포장 등

iEDX-150T Series
- 도금두께측정
- Type : sc, mc, sp, mp

X선발생기	W Target, 50kVp 1mA
검출기	Proportional counter(Option : Si-Pin Diode, SDD)
분해능	500eV at Mn-Kα
고전압발생기	제조사 : 미국 Spellman
X선조사범위	0.05, 0.1, 0.2, 0.3, 0.5, 1mm Auto Change
측정범위	Al(13) − U(92)
시료형태	Solid / Liquid / Powder, Multi-Layer
시료챔버 크기	500X450X185 (W X D X H)
주요 특징	· 원격지원 (실시간) · Auto / Manual Stage Mode · 일반도금, Rh, Pd, Au, Ag, Sn, Ni 두께측정 · 다층 박막 두께 측정(최대5층)
카메라 배율	500만 화소CCD Camera (40배)
방사능 안전차단 장치	자동 3중 차단 장치 (센서, 필터, 블럭구조)
유해물질 성적서 레포트종류	· Word, Excel, PDF파일 저장, 출력 · 사용자 지정 양식
주요 장점	· 다층박막 두께 측정(최대 5Layer) · 편리한 스테이지 컨트롤 · 멀티포인트 측정가능 · 유해물질 측정 추가 가능(Option)
응용 분야	· 국제환경규제에 효과적으로 대응하기 위한 부품, 제품검사분야(RoHS, WEEE, ELV대응) · 자동차 부품, 전자회로보드(PCB), 커패시터 등 도금 분석 · 단층, 복층, 합금 도금 분석 · 도금두께 측정시 정확한 함량 분석

iEDX-150WT Series

- 도금두께측정
- Type : sc, mc, sp, mp
- 대형 PCB

X선발생기	W Target, 50kVp 1mA
검출기	Proportional counter(Option : Si-Pin Diode, SDD)
분해능	500eV at Mn-Kα
고전압발생기	제조사 : 미국 Spellman
X선조사범위	0.05, 0.1, 0.2, 0.4, 0.5, 1, 5mm Auto Change
측정범위	Al(13) - U(92), Air
시료형태	Multi-Layer, Wide PCB
시료챔버 크기	500X450X185 (W X D X H)
주요 특징	· 원격지원 (실시간) · Auto / Manual Stage Mode · 일반도금, Rh, Pd, Au, Ag, Sn, Ni 두께측정 · 다층 박막 두께 측정(최대5층)
카메라 배율	500만 화소CCD Camera (40배)
방사능 안전차단 장치	자동 3중 차단 장치 (센서, 필터, 블럭구조)
유해물질 성적서 레포트종류	· Word, Excel, PDF파일 저장, 출력 · 사용자 지정 양식
주요 장점	· 다층박막 두께 측정(최대 5Layer) · 편리한 스테이지 컨트롤 · 멀티포인트 측정 가능 · 유해물질 측정 추가 가능(Option) · 대형 PCB판 측정 기능
응용 분야	· 국제환경규제에 효과적으로 대응하기 위한 부품, 제품검사분야(RoHS, WEEE, ELV대응) · 자동차 부품, 전자회로보드(PCB), 커패시터 등 도금 분석 · 단층, 복층, 합금 도금 분석 · 도금두께 측정 시 정확한 함량 분석

iEDX-200AT

- 유해물질분석
- CIGS 박막 태양전지 분석 시스템
- 도금두께측정

X선발생기	W Target, 50kVp 1mA
검출기	SDD(Silicon Drift Detector)
분해능	125eV FWHM at Mn-Kα
고전압발생기	제조사 : 미국 Spellman
X선조사범위	0.05, 0.1, 0.2, 0.3, 0.5, 1mm Auto Change
측정범위	Al(13) - U(92)
시료형태	Solid / Liquid / Powder, Multi-Layer Wide PCB
시료챔버 크기	500X470X200 (W X D X H)
주요 특징	· RoHS / WEEE / EVL 적부성 검사 · Halogen Free 적부성 검사 · Auto . Manual Stage Mode · 다층 박막 두께 측정 (최대6층) · Solar Cell Layer, Lead Frame 분석
카메라 배율	CCD Camera (500만 화소)
방사능 안전차단 장치	자동 3중 차단 장치 (센서, 필터, 블럭구조)
유해물질 성적서 레포트종류	· Word, Excel, PDF파일 저장, 출력 · 사용자 지정 양식
주요 장점	· Layer 별 두께 측정, CIGS 정량분석 · 비파괴 분석을 통한 시료 전처리 최소화 · 유해물질 동시검사 · 데이터 측정시간 최소화
응용 분야	· 국제환경규제에 효과적으로 대응하기 위한 부품, 제품검사분야(RoHS, WEEE, ELV대응) · Solar Cell 층 분석 · Lead Frame 층 분석 · 도금두께 측정시 정확한 함량 분석

RoHS 분석 소프트웨어 SmartRay

○
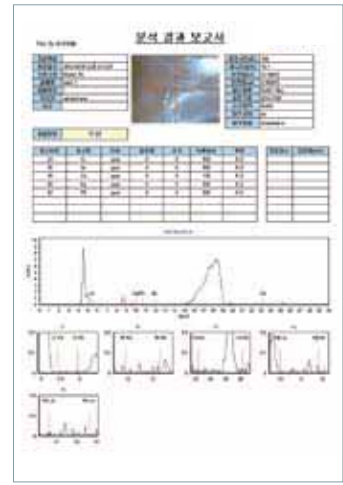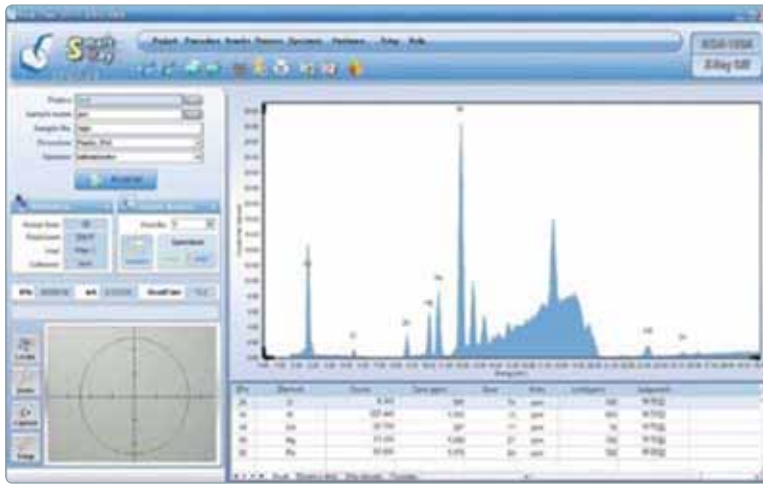
• RoHS/WEEE/ELV	• Cr, Pb, Hg, Br, Cd ,
• (,)	• Database
•	• PDF, EXCEL

도금두께 분석 소프트웨어 MultiRay

○

•	• (FP), ,
•	• Layer
•	• PDF, EXCEL

Test & Measurement Guide

TellusTech

표준 시편 샘플

액세서리

◆FLIR®

FLIR E-시리즈
산업용 열화상 카메라

YEAR 2 제품 보증
YEAR 10 디텍터 보증

CE | IPS4 | METER LiNK Bluetooth
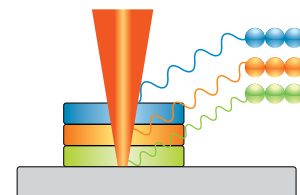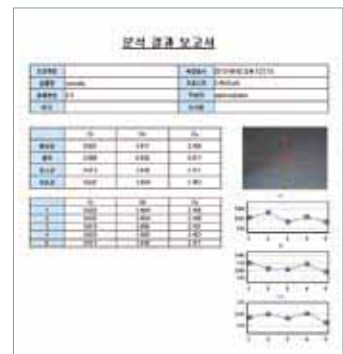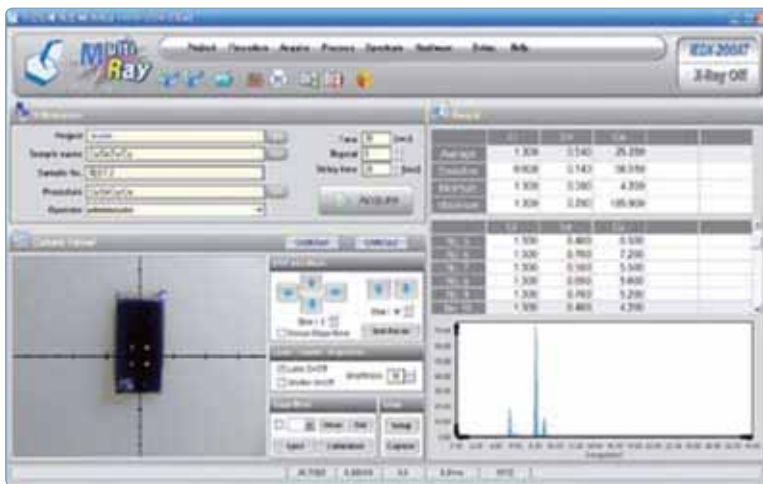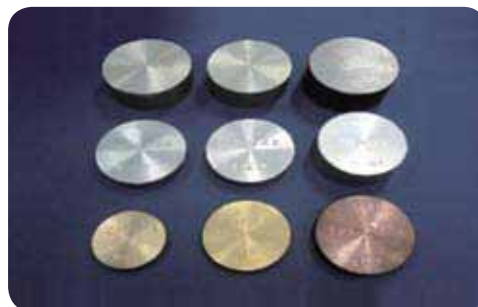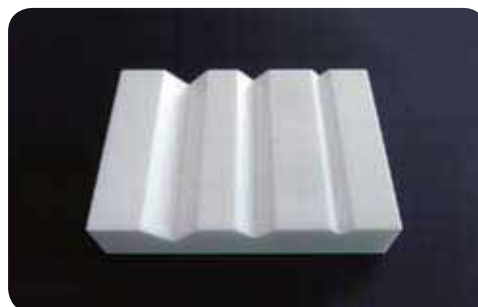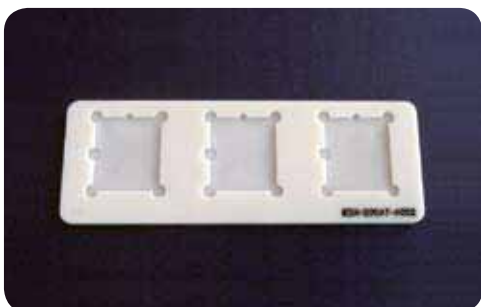
*제품등록시, 열화상 카메라의 보증기간은 2년, 디텍터 보증기간 10년으로 연장돼드립니다.

열화상 카메라의 진정한 가치와 품격의 차별화

- 파격적인 성능과 경제성
- 탁월한 포인트 및 열화상 측정 성능
- 이동기기와 WiFi 연결 가능
- 내장 디지털 실화상 카메라 및 레이저 포인터
- 대형 고해상도의 터치 스크린

FLIR E-시리즈 규격

이미징 및 광학 데이터	E30	E40	E50	E60
시야각(FOV)/최소 초점거리	25° × 19° / 0.4 m (1.3 ft.)	25° × 19° / 0.4 m (1.3 ft.)	25° × 19° / 0.4 m (1.3 ft.)	25° × 19° / 0.4 m (1.3 ft.)
공간 분해능(IFOV)	2.72 mrad	2.72 mrad	1.82 mrad	1.36 mrad
온도분해능/NETD	100 mK / 0.1°C 이하	70 mK / 0.07°C 이하	50 mK / 0.05°C 이하	50 mK / 0.05°C 이하
이미지 주파수	60 Hz	60 Hz	60 Hz	60 Hz
초점	수동	수동	수동	수동
줌		1~2x 연속, 디지털 줌, 팬 기능 포함	1~4x 연속, 디지털 줌, 팬 기능 포함	1~4x 연속, 디지털 줌, 팬 기능 포함
초점면 배열 (FPA) / 파장지역	비냉각 마이크로볼로미터/7.5~13 μm	비냉각 마이크로볼로미터/7.5~13 μm	비냉각 마이크로볼로미터/7.5~13 μm	비냉각 마이크로볼로미터/7.5~13 μm
적외선 해상도	160 × 120 픽셀	160 × 120 픽셀	240 × 180 픽셀	320 × 240 픽셀
이미지 프레젠테이션				
디스플레이	터치 스크린, 3.5 인치 LCD, 320 × 240 픽셀	터치 스크린, 3.5 인치 LCD, 320 × 240 픽셀	터치 스크린, 3.5 인치 LCD, 320 × 240 픽셀	터치 스크린, 3.5 인치 LCD, 320 × 240 픽셀
이미지 모드		열화상, 실화상, 실화상 내 열화상 삽입 썸네일 갤러리	열화상, 실화상, 실화상 내 열화상 삽입 썸네일 갤러리	열화상, 실화상, 실화상 내 열화상 삽입 썸네일 갤러리
실-열화상 합성			실화상 내에 일정 온도 범위 이상, 이하 또는 사이의 적외선 열화상 합성	실화상 내에 일정 온도 범위 이상, 이하 또는 사이의 적외선 열화상 합성
실화상 내 열화상 삽입		실화상 내 열화상 삽입	실화상 내 열화상 삽입(사이즈 조절가능)	실화상 내 열화상 삽입(사이즈 조절가능)
측정				
대상 온도 범위	-20°C ~ +120°C / 0°C ~ +250°C	-20°C ~ +120°C / 0°C ~ +650°C	-20°C ~ +120°C / 0°C ~ +650°C	-20°C ~ +120°C / 0°C ~ +650°C
정확도	±2°C 또는 ±2% 이내	±2°C 또는 ±2% 이내	±2°C 또는 ±2% 이내	±2°C 또는 ±2% 이내
측정치 분석				
스팟미터(Spotmeter)	1	3	3	3
영역	1개 박스 (최고/최저/평균)	3개 박스 (최고/최저/평균)	3개 박스 (최고/최저/평균)	3개 박스 (최고/최저/평균)
자동 고온/저온 감지	최고/최저 온도 및 위치를 영역에 표시	최고/최저 온도 및 위치를 영역에 표시	최고/최저 온도 및 위치를 영역에 표시	최고/최저 온도 및 위치를 영역에 표시
등온선	이상/이하/간격 감지	이상/이하/간격 감지	이상/이하/간격 감지	이상/이하/간격 감지
온도 차이		측정 함수 사이의 델타 온도	측정 함수 사이의 델타 온도	측정 함수 사이의 델타 온도
방사율(Emissivity) 보정	0.01 ~ 1.0 범위에서 가변	0.01 ~ 1.0 범위에서 가변	0.01 ~ 1.0 범위에서 가변	0.01 ~ 1.0 범위에서 가변
외부 광학장치/윈도우 보정	반사 온도입력에 의한 자동 보정	반사 온도입력에 의한 자동 보정	반사 온도입력에 의한 자동 보정	반사 온도입력에 의한 자동 보정
측정치 보정	반사 온도, 광학장치 투과, 대기 투과 등에 대한 보정	반사 온도, 광학장치 투과, 대기 투과 등에 대한 보정	반사 온도, 광학장치 투과, 대기 투과 등에 대한 보정	반사 온도, 광학장치 투과, 대기 투과 등에 대한 보정
설정				
컬러 팔렛	Arctic, Gray, Iron, Lava, Rainbow 및 Rainbow HC	Arctic, Gray, Iron, Lava, Rainbow 및 Rainbow HC	Arctic, Gray, Iron, Lava, Rainbow 및 Rainbow HC	Arctic, Gray, Iron, Lava, Rainbow 및 Rainbow HC
설정 명령	단위, 언어, 날짜와 시간 표시 방식 등 지역 별로 설정 가능	단위, 언어, 날짜와 시간 표시 방식 등 지역 별로 설정 가능	단위, 언어, 날짜와 시간 표시 방식 등 지역 별로 설정 가능	단위, 언어, 날짜와 시간 표시 방식 등 지역 별로 설정 가능
사용가능한 언어	21	21	21	21
이미지 저장				
이미지 저장	표준 JPEG - 측정 데이터 포함	표준 JPEG - 측정 데이터 포함	표준 JPEG - 측정 데이터 포함	표준 JPEG - 측정 데이터 포함
이미지 저장 방식		열화상 및 실화상 동시 저장	열화상 및 실화상 동시 저장	열화상 및 실화상 동시 저장
디지털 카메라				
내장 디지털 카메라		3.1 Mpixel (2048 × 1536 픽셀), LED 조명	3.1 Mpixel (2048 × 1536 픽셀), LED 조명	3.1 Mpixel (2048 × 1536 픽셀), LED 조명
내장 디지털 렌즈 데이터		FOV 53° × 41°	FOV 53° × 41°	FOV 53° × 41°
데이터 통신 인터페이스				
인터페이스	USB-mini, USB-A, 콤포지트 비디오	USB-mini, USB-A, 콤포지트 비디오	USB-mini, USB-A, 콤포지트 비디오	USB-mini, USB-A, 콤포지트 비디오
USB	USB-A: 외부 USB 장치 연결 USB Mini-B: PC와 데이터 통신 /스트리밍 MPEG-4	USB-A: 외부 USB 장치 연결 USB Mini-B: PC와 데이터 통신 /스트리밍 MPEG-4	USB-A: 외부 USB 장치 연결 USB Mini-B: PC와 데이터 통신 /스트리밍 MPEG-4	USB-A: 외부 USB 장치 연결 USB Mini-B: PC와 데이터 통신 /스트리밍 MPEG-4
비디오 출력	콤포지트(Composite)	콤포지트(Composite)	콤포지트(Composite)	콤포지트(Composite)
전원 계통				
배터리	Li Ion, 4 시간 (사용시간 기준)	Li Ion, 4 시간 (사용시간 기준)	Li Ion, 4 시간 (사용시간 기준)	Li Ion, 4 시간 (사용시간 기준)
충전 시스템	카메라 내부/AC 어댑터 또는 차량 12 V 전원	카메라 내부/AC 어댑터 또는 차량 12 V 전원	카메라 내부/AC 어댑터 또는 차량 12 V 전원	카메라 내부/AC 어댑터 또는 차량 12 V 전원
소비 전력 관리	자동 꺼짐 및 슬립 모드	자동 꺼짐 및 슬립 모드	자동 꺼짐 및 슬립 모드	자동 꺼짐 및 슬립 모드
사용 환경				
사용 온도 범위	-15°C ~ +50°C	-15°C ~ +50°C	-15°C ~ +50°C	-15°C ~ +50°C
보관 온도 범위	-40°C ~ +70°C	-40°C ~ +70°C	-40°C ~ +70°C	-40°C ~ +70°C
습도(사용 및 보관)	+25°C ~ +40°C / 2 cycles	+25°C ~ +40°C / 2 cycles	+25°C ~ +40°C / 2 cycles	25°C ~ +40°C / 2 cycles
방수/방진 특성	IP 54 (IEC 60529)	IP 54 (IEC 60529)	IP 54 (IEC 60529)	IP 54 (IEC 60529)
충격	25g (IEC 60068-2-29)	25g (IEC 60068-2-29)	25g (IEC 60068-2-29)	25g (IEC 60068-2-29)
진동	2g (IEC 60068-2-6)	2g (IEC 60068-2-6)	2g (IEC 60068-2-6)	2g (IEC 60068-2-6)
물리적 사양				
카메라 무게, 배터리 포함	0.825 kg (1.82 lb.)	0.825 kg (1.82 lb.)	0.825 kg (1.82 lb.)	0.825 kg (1.82 lb.)
카메라 치수, L × W × H	246 × 97 × 184 mm (9.7 × 3.8 × 7.2 in.)	246 × 97 × 184 mm (9.7 × 3.8 × 7.2 in.)	246 × 97 × 184 mm (9.7 × 3.8 × 7.2 in.)	246 × 97 × 184 mm (9.7 × 3.8 × 7.2 in.)
삼각대	UNC ¼" -20 (어댑터 필요)	UNC ¼" -20 (어댑터 필요)	UNC ¼" -20 (어댑터 필요)	UNC ¼" -20 (어댑터 필요)

사양과 규격은 사전통지 없이 변경될 수 있습니다.

Microwave cables and assemblies

HUBER+SUHNER

Excellence in Connectivity Solutions

SEMI-RIGID – the form-stable Microwave Cable

Product description

The semi-rigid cable is unique in that it is easily bent to finished shape and still maintains its set after bending. This property makes it ideal for use with automated bending equipment as well as hand forming by bending tools.

There are hundreds of proven applications which include: low-noise amplifiers, a full range of microwave components, aeronautical and space applications and a variety of high-performance laboratory instrumentation. The semi-rigid cables provide greatly extended environmental parameters. The cables exhibit highly favourable electrical characteristics, particularly an impedance tolerance as low as 0.5 Ohm for a .141" diameter cable with nominal impedance of 50 Ohm.

Features and benefits

• Excellent electrical performance: impedance tolerance as low as 0.5 Ohm; minimum VSWR, smooth attenuation vs. frequency curve; minimum change in impedance and attenuation

• Easy to form, strip and solder, making for convenient installation

• Small sizes permit use in high-density areas

• MIL-C-17 qualified

HUBER+SUHNER cable type	Item no.	Operating frequency (GHz)	Temperature range		Outer dia. (mm)	Nom. attenuation 18 GHz, 25°C (dB/m)	Bending radii		More information see page
			minimum (°C)	maximum (°C)			static (mm)	dyn. (mm)	
EZ_47_TP_M17	22810504	40	−40	+100	1.19	5.1	3.18	n/a	18
EZ_47_AL_TP	22810510	40	−40	+100	1.19	5.4	1.27	n/a	20
EZ_86_TP_M17	22810175	40	−40	+125	2.20	3.2	3.18	n/a	22
EZ_86_AL_TP_M17	22810167	40	−40	+125	2.20	3.3	1.78	n/a	24
EZ_118_TP	22810073	40	−40	+125	2.95	1.8	9.53	n/a	26
EZ_141_TP_M17	22810043	33	−40	+125	3.58	2.1	6.35	n/a	28
EZ_141_AL_TP_M17	22810015	33	−40	+125	3.58	2.2	3.18	n/a	30
EZ_250_TP_M17	22810705	18	−40	+90	6.35	1.5	9.52	n/a	32
EZ_250_AL_TP	22810708	18	−40	+90	6.35	1.5	6.35	n/a	34

SUCOFORM – the handformable Alternative to SEMI-RIGID

Product description

SUCOFORM microwave coaxial cables offer distinct mechanical advantages over semi-rigid cables. They are based on the same design as the standard PTFE-insulated semi-rigid cables, but have a tin-soaked copper braid for the outer conductor, giving them outstanding hand-formability. These cables combine the excellent characteristics of semi-rigid cables with those of flexible coaxial cables.

Thanks to their small bending radii, they allow space-saving routing and packaging.

Features and benefits

- Excellent properties: low loss, high screening effectiveness, high operating frequency, high temperature range

- Due to the high phase stability over every production run, SUCOFORM is especially suitable for delay lines

- Good flexibility: easy hand forming without tooling; fits into the smallest systems

- Comprehensive connector range; use of standard semi-rigid connectors

- Quick and easy assembly

- Available in long lengths and various versions

HUBER+SUHNER cable type	Operating frequency (GHz)	Temperature range		Outer dia. (mm)	Nominal attenuation 18 GHz, 25°C (dB/m)	Bending radii		More information see page
		minimum (°C)	maximum (°C)			static (mm)	repeat. (mm)	
SUCOFORM_47_CU	40	−65	+165	1.20	5.4	3.18	–	44
SUCOFORM_86	40	−65	+165	2.10	3.4	6	20	46
SUCOFORM_141	33	−65	+165	3.58	2.2	8	40	48
SUCOFORM_141_CU	33	−65	+165	3.58	2.2	8	40	50
SUCOFORM_250-01	18	−65	+165	6.35	1.4	30	120	54

MULTIFLEX – the flexible alternative to SEMI-RIGID

Product description

MULTIFLEX microwave cables are the flexible alternative to semi-rigid cables. They are used in commercial and military RF and microwave airborne systems, communications systems, cellular base stations, satellite ground systems - in brief: anywhere a "flexible semi-rigid-cable" is required.

Features and benefits

- Comparable electrical performance as corresponding semi-rigid cable types; high screening

- High flexibility: no 3D drawings required for design and manufacture

- Semi-rigid connectors can be used; quick and easy assembly

- Resistant to chemicals, oils, lubricants, humidity, etc.

HUBER+SUHNER cable type	Item no.	Operating frequency (GHz)	Temperature range		Outer dia. (mm)	Nom. attenuation 18 GHz, 25°C (dB/m)	Bending radii		More information see page
			minimum (°C)	maximum (°C)			static (mm)	dyn. (mm)	
MULTIFLEX_86	22511965	40	−65	+165	2.65	3.6	6	20	64
MULTIFLEX_141	22511964	33	−65	+165	4.14	2.1	10	40	66

S-SERIES – the economical, low loss microwave cable

Product description

The S-SERIES is a line of cost-efficient, low-loss micro-wave cables. It covers technically demanding requirements in a wide range of applications, preferably in fixed installations. These versatile cables are characterised by their very low insertion loss across a wide frequency range.
S-SERIES cables are easy to assemble and are made of environmentally friendly, halogen free materials.

Features and benefits

- Low insertion loss

- Excellent screening effectiveness

- Wide frequency range

- Quick and easy to assemble

- Halogen free

- Comprehensive connector range

- Cost-efficient, environmentally friendly solution for a wide range of applications

- Low Smoke Free of Halogen (LSFH) version available (S04262_B-01)

HUBER+SUHNER cable type	Item no.	Operating frequency (GHz)	Temperature range minimum (°C)	maximum (°C)	Outer dia. (mm)	Nom. attenuation 18 GHz, 25°C (dB/m)	Bending radii static (mm)	dyn. (mm)	More information see page
S_04272_B	22511622	18	−40	+85	5.50	1.6	25	90	74
S_04212_B	22511855	18	−40	+85	5.30	1.6	25	90	76
S_04262_B-01	84000918	18	−40	+85	5.50	1.6	25	90	78

SUCOTEST 18 – for the highest standard of measurement

Product description

SUCOTEST_18 cable assemblies feature excellent electrical performance (low insertion loss combined with unique loss stabilitiy and escellent return loss). SUCOTEST_18 is ideal for daily use in components and assembly shops, test labs and automatic test equipment applications.

Product assortment

	Item no.
SUCOTEST_18/SMAm/SMAm/36″	84002061
SUCOTEST_18/Nm/Nm/36″	84002060
SUCOTEST_18/SMAm/Nm/36″	84004594
SUCOTEST_18/SMAm/SMAm/48″	84003373
SUCOTEST_18/Nm/Nm/48″	84003372
SUCOTEST_18/SMAm/Nm/48″	84004006
SUCOTEST_18/SMAm/SMAm/72″	84004007
SUCOTEST_18/Nm/Nm/72″	84004070
SUCOTEST_18/SMAm/Nm/72″	84004595

Outstanding Features

- Applicable up to 18.0 GHz

- Low insertion loss

- Excellent VSWR

- Unique loss stability

- There is no cable spring back during measurement procedures; the assembly stays in position.

SUCOFLEX® 100 – the high performance microwave cable assembly

Product description

SUCOFLEX_100 series flexible microwave cable assemblies offer superior electrical and mechanical performance for static and dynamic applications.
This series is a high-end product designed to provide optimal performance up to 50 GHz, where stringent electrical requirements – in particular stability and low loss – are important. Their mechanical and climate resistance properties surpass those of standard flexible cables. This cable type is ideally suited to test and measurement applications (as test leads) and used in aerospace and defence systems.

Features and benefits

- The cable maintains stable electrical characteristics when exposed to bending and temperature, enabling reliable test results

- A balanced range of connectors is available, including types which feature NWA-specific interfaces

- Can be provided with various ruggedisations to protect the assembly against different environmental influences

- Available as assembly only

HUBER+SUHNER cable type	Operating frequency (GHz)	Temperature range minimum (°C)	maximum (°C)	Outer dia. (mm)	Nominal attenuation 18 GHz, 25°C (dB/m)	Bending radii static (mm)	dyn. (mm)	More information see page
SUCOFLEX_101	50	–55	+125	3.65	2.0	11	20	92
SUCOFLEX_101_P	50	–55	+125	3.65	3.0	11	20	94
SUCOFLEX_101_PE	50	–40	+85	3.65	3.0	11	20	96
SUCOFLEX_102	46	–55	+125	4.00	1.7	12	20	100
SUCOFLEX_103	33	–55	+125	4.60	1.3	13	22	106
SUCOFLEX_104	26.5	–55	+125	5.50	1.1	16	25	110
SUCOFLEX_104_P	26.5	–55	+125	5.50	1.6	16	25	112
SUCOFLEX_104_PE	26.5	–40	+85	5.50	1.6	16	25	114
SUCOFLEX_106	18	–55	+125	7.90	0.8	24	40	120
SUCOFLEX_106_P	18	–55	+125	7.90	1.3	24	40	122

SUCOFLEX® 300 – the light weight, high performance cable assembly

Product description

The SUCOFLEX 300 lightweight, low-loss flexible microwave cable assemblies are high-end products designed to meet the stringent needs of space flights systems (e.g. satellites) and aerospace systems (aircraft, helicopters, missiles), which are subjected to extremely severe operating conditions.
The 300 series offers a consistently outstanding mechanical and electrical performance, stability and reliability up to 18 GHz. The added feature of this SUCOFLEX type is a weight reduction of up to 40% compared to our conventional products.

Features and benefits

For space applications
- Assemblies produced in a clean environment room
- Specifically designed lightweight connectors
- Extensive testing of assemblies
- High-end assemblies approved by Europe's leading satellite manufacturers
- Ruggedisations available on request

For defence applications
- Lightweight reduces overall system weight and aids portability
- Rugged connectors made for easy serviceability
- Specialised range of connectors, which is being continuously extended
- Comprehensive tested product range
- High-end product approved for Europe's most sophisticated military aircraft
- Additional armours provide increased crush and abrasion resistance
- Ruggedisations available on request

HUBER+SUHNER type	Operating frequency (GHz)	Temperature range		Outer diameter (mm)	Nom. attenuation 18 GHz/25°C (dB/m)	Bending radii	
		minimum (°C)	maximum (°C)			static (mm)	dyn. (mm)
SUCOFLEX_301	18	-55	+125	3.5	2.0	15	20
SUCOFLEX_302	18	-55	+125	3.7	1.9	20	30
SUCOFLEX_304	18	-55	+125	5.4	1.2	20	50

Please contact your local HUBER+SUHNER partner for more specific information.

HERMON LAB

**All-in-one conformance testing solution for telecom Equipment according to world-wide standards**

TCA 8200 **replaces over 20 test instruments** providing a unique 'lab-in-a-box' solution that significantly **reduces test times and costs.**

HERMON LABORATORIES

Solutions

- Analog FXS & FXO
- Acoustics
- Cellular phones
- Analog & Digital phones
- VoIP
- xDSL
- T1/E1
- ISDN PRI
- Physical layer testing
- VF & TIMS analysis
- Signaling
- Voice Quality testing
- Protocol testing

Features

- Compliance testing according to major world standards
- Fully automated testing & documentation
- Built-in standards and general-purpose tests
- Supports signaling and remote EUT control
- User defined tests, test suites, and projects
- Manual operation for development and debugging testing
- Comprehensive online help
- Powerful management, display and analysis features
- Modular design – tailored to your needs

Applications

- Compliance testing
- R&D testing
- QA testing
- Production testing

Key Standards

- ETSI ES 203 021
- TBR 21
- TBR 38
- TBR 4
- TBR 12, TBR 13
- TBR 10
- FCC Part 68, TIA-968-A
- CS-03
- AS/ACIF S002, S003
- S004, S016, S038
- S041, S043.2
- ITU-T G.703
- G.823, G.824
- G.992.1, G.992.3, G.991.2
- G.992.5, G.993.1
- P.313, P.340, P.342
- P.862
- ETSI TS 102 027 / RFC 3261
- TIA-810A/B, TIA 920/A
- 3GPP TS 26.131, TS 26.132
- 3GPP TS 51.010-1
- 3GPP2 C.S0056-0 / TIA-1042
- ETSI EN 300 903

TCA 8200 test configuration examples
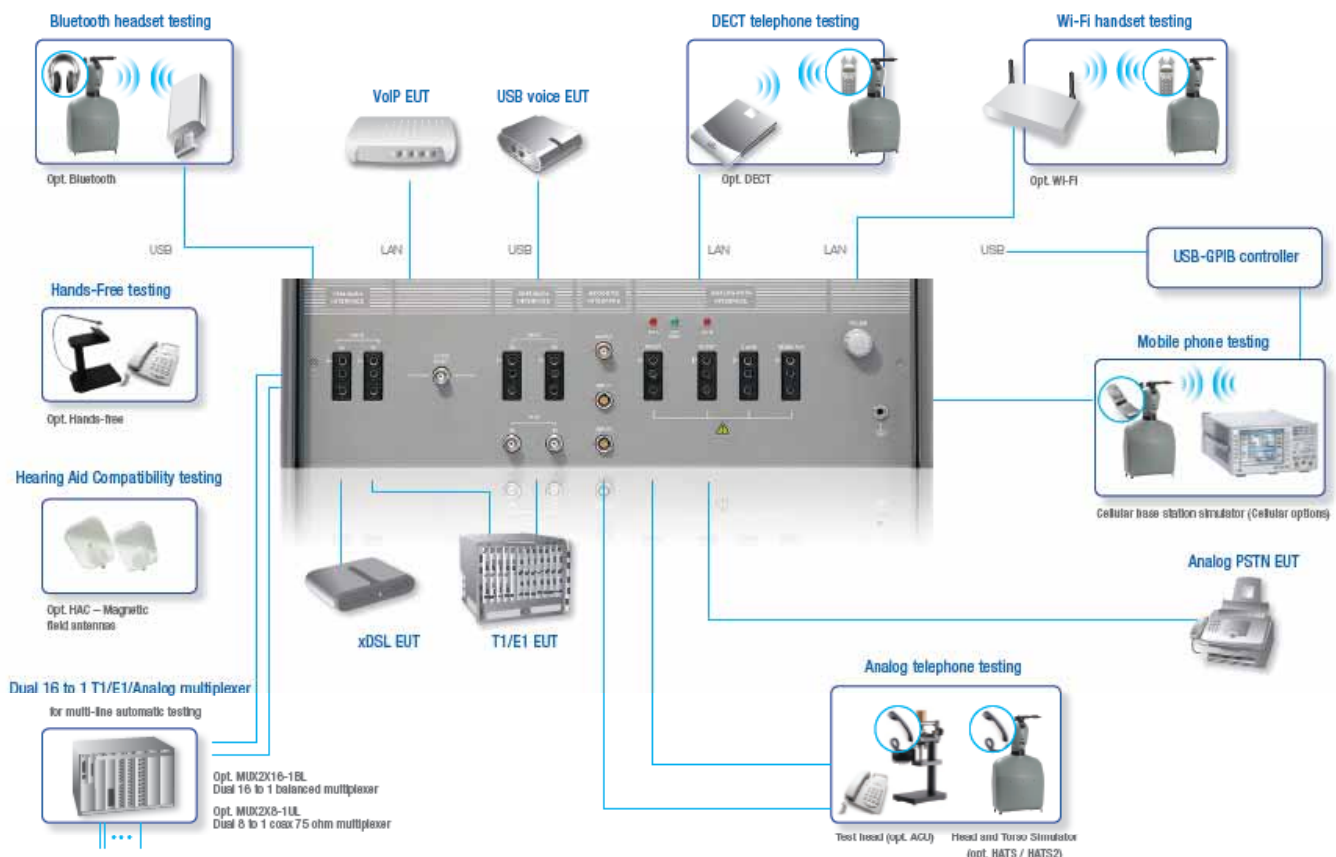
Next generation testing

Tests repeated for multiple settings/configurations

Current results, user prompts and overall test verdict displayed continuously

Multiple result plots with user-defined colors and styles displayed on single or split screen in Time, Frequency, Amplitude and Phase domains

User-defined limit lines and masks

Linear or Log X and Y axis

Multiple numeric and status results with limits and verdicts displayed in a table

Test execution paused/resumed, automatically swept or manually stepped/tuned or run continuously at single or multiple test points (e.g. frequency)

Real-time line error and alarm indication facilitates setup and EUT monitoring

On-the-fly control of test parameters for debugging and development testing

Measured results analyzed with zoom, peak search and markers

Programmable signaling and remote EUT control for fully automated testing

User annotations and automatic Time & Date stamp

Professional on-line tech support and training for both novice and advanced users

TCA 8200 replaces over 20 test systems and instruments

On-line help and support

TCA 8200 features a comprehensive context-sensitive online help with examples and step-by-step guidance.

The tests are thoroughly documented with EUT connection and configuration instructions, test specification and measurement uncertainty data.

TCA 8200 user interface accommodates the needs of both novice and advanced users. Step-by-step wizards are provided together with straightforward shortcut operations. Remote configuration, user guidance and training can be provided over the internet via remote operation of the TCA 8200. Hermon Laboratories customer support is comprised of a professional team of engineers knowledgeable with the equipment operation and standards.

Low cost of ownership

TCA 8200 comes with a price significantly lower than the total cost of equipment and systems it can replace such as: a digital oscilloscope, spectrum and network analyzers, digital transmission and jitter analyzer,

line and cable simulators, power supplies, protocol, frame, signaling analyzers, various test bridges and a PC. Achieving automation requires further investment in integration and software development or buying expensive third-party solutions.

Modular design and upgradeability

TCA 8200 offers a modular design enabling you to buy only what you need, You then have the flexibility to upgrade the instrument later for additional options.

Testing capabilities are easily extended to cover new standards by defining new user test suites using the GUI or by obtaining updates from Hermon Laboratories.

High Accuracy

TCA 8200 achieves and even surpasses the accuracy required by the supported standards through careful hardware & software design, testing automation, and by taking into consideration various signal path factors, and automatic self-calibration & extensive calibration procedures.

ROHDE & SCHWARZ

ADVANTEST

AEROFLEX

Agilent Technologies

Tektronix

Spectrum Analyzer
PRODUCT INFORMATION

Model	Description	Specification	Remark
Agilent N9020A	MXA Signal Analyzer 20 Hz ~ 26.5 GHz	· **Dynamic Range :** +30 dBm - -153 dBm · **Frequency Range :** 20 Hz - 26.5 GHz · **Input Impedance :** 50 ohm · **Other Features :** -112 dBc/H · **Residual FM :** -90 dBc/Hz · **Resolution Bandwidth :** 10 Hz - up to 25 MHz · **Video Bandwidth :** 30 Hz - 3 MHz	
Agilent E4405B	ESA Spectrum Analyzer 9 kHz ~ 13.2 GHz	· **Frequency Accuracy :** 8.4090E-09% · **Zero Span :** Yes · **Min. Sweep Time :** 5 ms · **Resolution BW :** 10 Hz ~ 5 MHz · **Resolution BW Steps :** 1/3/10 · **Max. Dynamic Range :** 90 dB	
Agilent E4404B	ESA Spectrum Analyzer 9 kHz ~ 6.7 GHz	· **Dynamic Range :** +30 dBm - -166 dBm · **Input Impedance :** 50 ohm · **Other Features :** -112 dBc/H · **Residual FM :** -90 dBc/Hz · **Resolution Bandwidth :** 10 Hz - 5 MHz · **Video Bandwidth :** 30 Hz - 3 MHz	
Agilent E4440A	PSA Spectrum Analyzer 3 Hz ~ 26.5 GHz	· **Dynamic Range :** +30 dBm - -156 dBm · **Input Impedance :** 50 ohms · **Other Features :** type N Female · **Resolution Bandwidth :** 1 Hz - 3 MHz · **Video Bandwidth :** 1 Hz - 3 MHz	
Agilent E4445A	PSA Spectrum Analyzer 3 Hz ~ 13.2 GHz	· **Dynamic Range :** +30 dBm - -155 dBm · **Input Impedance :** 50 ohms · **Residual FM :** <(1HzxN)p-p in 1 s · **Resolution Bandwidth :** 1 Hz - 3 MHz · **Video Bandwidth :** 1 Hz - 3 MHz	
Agilent E4443A	PSA Spectrum Analyzer 3 Hz ~ 6.7 GHz	· **Dynamic Range :** +30 dBm - -155 dBm · **Input Impedance :** 50 ohms · **Residual FM :** <(1HzxN)p-p in 1 s · **Resolution Bandwidth :** 1 Hz - 3 MHz · **Video Bandwidth :** 1 Hz - 3 MHz	
Agilent 8564E	Portable Spectrum Analyzer 9 kHz ~ 40 GHz	· **Input Impedance :** 50 MOhm · **Span :** 100 Hz ~ 40 GHz · **Sweep Time :** 50 ms ~ 2000 s · **Resolution Bandwidth :** 1 Hz ~ 1 MHz · **Video Bandwidth :** 3 MHz · **Max. Dynamic Range :** 148 dB	
Agilent 8563EC	Portable Spectrum Analyzer 9 kHz ~ 26.5 GHz	· **Input Impedance :** 50 MOhm · **Span :** 100 Hz ~ 40 GHz · **Sweep Time :** 50 ms ~ 2000 s · **Resolution Bandwidth :** 1 Hz ~ 1 MHz · **Video Bandwidth :** 3 MHz · **Max. Dynamic Range :** 148 dB	
HP 8563E	Microwave Spectrum Analyzer 9 kHz ~ 26.5 GHz	· **Dynamic Range :** +30 dBm - -151 dBm · **Input Impedance :** 50 ohm · **Other Features :** HP-IB · **Residual FM :** <1Hz pk-pkxN^9 in 20ms · **Resolution Bandwidth :** 1 Hz - 1 MHz · **Video Bandwidth :** 1 Hz - 3 MHz	
HP 8561E	Portable Spectrum Analyzer 30 Hz ~ 6.5 GHz	· **Dynamic Range :** +30 dBm - -151 dBm · **Input Impedance :** 50 ohm · **Other Features :** HP-IB · **Residual FM :** <1Hz pk-pkxN^9 in 20ms · **Resolution Bandwidth :** 1 Hz - 1 MHz · **Video Bandwidth :** 1 Hz - 3 MHz	
R&S FSIQ7	Spectrum Analyzer	· **RBW :** 1 Hz to 10 MHz · **Video BW :** 1 Hz to 10 MHz · **Amplitude Range :** 20 Hz to 7 GHz · **Frequency :** 20 Hz to 7 GHz · **Amplitude Accuracy :** 20 Hz	
HP 8595E	Portable Spectrum Analyzer 9 kHz ~ 6.5 GHz	· **Dynamic Range :** +30 dBm - -127 dBm · **Frequency Range :** 9 kHz - 6.5 GHz · **Input Impedance :** 50 ohms · **Other Features :** -105 dBc/H · **Residual FM :** -90 dBc/Hz · **Resolution Bandwidth :** 1 kHz - 3 MHz · **Video Bandwidth :** 30 Hz - 1 MHz	
Advantest R3271A	Spectrum Analyzer 100 Hz ~ 26.5 GHz	· **Dynamic Range :** +30 dBm - -130 dBm · **Input Impedance :** 50 ohm · **Other Features** GPIB · **Residual FM :** -114 dBc/H - -100 dBc/H · **Resolution Bandwidth :** 10 Hz - 3 MHz · **Video Bandwidth :** 1 Hz - 3 MHz	
Advantest R3267	Spectrum Analyzer 100 Hz ~ 8 GHz	· **Dynamic Range :** +30 dBm - -125 dBm · **Input Impedance :** 50 ohms · **Residual FM :** <3 HzxHarmOrdp-p/.1sec · **Resolution Bandwidth :** 10 Hz - 10 MHz · **Video Bandwidth :** 1 Hz - 10 MHz	

Spectrum Analyzer
PRODUCT SELECTION

Frequency	Manufacturer Agilent	R&S	Anritsu	ADVANTEST	Tektronix	AEROFLEX
1.5G	E4401B					
	8568A					
	8567A					
1.8G	8591E	FSAP	MS2670A		7L13	
	8590B/L	FSAC			495P	
					2714	
					2712	
					2710	
2.0G			MS610B			
2.2G		FSQ	MS2601A	U4941		
2.4G				R3261A		
2.6G				R3361C		
				R3261D		
2.7G					2398	
2.9G	8594A/E					
	8560E/EC					
3G	E4403B	FSP3	MS2711A/B	U3741	RSA3303A	
	E4402B	FSL3	MS2651B	U3641	RSA2203A	
		FSH3		R3641N		
		FS300		R3463		
		SMIQ03B		R3263		
		SML03		R3132/N		
		SME03		R3131/A		
3.5G		FSEA20/30		R4131B/D		
		FEIQ3				
3.6G		FSU3				
6G		FSL6			H600	
		FSH6			SA2600	
6.2G	8561E				RSA6106A	
6.7G	8595E E4443A					
	E4404B					
7G		FSP7				
		FSEB20/30				
7.1G					497P	
					2797	
7.8G			MS2683A			

Frequency	Manufacturer Agilent	R&S	Anritsu	ADVANTEST	Tektronix	AEROFLEX
8G		FSU8		U3751	RSA3300B	
		FSQ8		R3465	RSA3400B	
				R3365		
				R3265A		
				R3162		
8.5G			MS2602A			
12.4G					491	
12.8G	8596E					
13G		FSP13		R3671		
13.2G	E4445A					
	E4405B					
	8562E/EC					
RSA6114A			R3477			
18G	8593E	FSL18				
		FSH18				
20G			MS2724B			
21G					494A	
					492	
					2792	
					2754P/55P/56P	
22G	8593E					
	8566B					
	8562A					
23G			MS710A			
26.5G	E4440A	FSU26		U3661	2792	
	E4408B	FSIQ26		R3273		
	E4407B	FSEM30		R3272		
		FSEK26		R3271		
	8563A/E					
30G			MS2667C			
32G				U3771		
33G					2782	
40G	8564E	FSP40		R3182	491	
		FSEK30				
43G				U3772		
44G	E4447A E4446A					
46G		FSU46				
50G	E4448A 8565E	FSU50				
60G					7L18	

Spectrum Analyzer
OPTION INFORMATION

N9020A MXA Signal Analyzer — Agilent

Frequency range

N9020A-503	Frequency range, 20 Hz to 3.6 GHz
N9020A-508	Frequency range, 20 Hz to 8.4 GHz
N9020A-513	Frequency range, 20 Hz to 13.6 GHz
N9020A-526	Frequency range, 20 Hz to 26.5 GHz

Analog baseband IQ inputs

N9020A-BBA	I/Q baseband inputs, analog

Analysis bandwidth

Standard	10 MHz analysis bandwidth
N9020A-B25	25 MHz analysis bandwidth
N9020A-S40	Baseband analysis bandwidth, 40 MHz/channel

Frequency reference

Standard	Frequency reference
N9020A-PFR	Precision frequency reference

Attenuator

Standard	Mechanical attenuator
N9020A-EA3	Electronic attenuator up to 3.6 GHz

Preamplifier

N9020A-P03	Preamplifier, 100 kHz to 3.6 GHz
N9020A-P08	Preamplifier, 100 kHz to 8.4 GHz
N9020A-P13	Preamplifier, 100 kHz to 13.6 GHz
N9020A-P26	Preamplifier, 100 kHz to 26.5 GHz

Optional features

N9020A-EMC	Basic precompliance EMI features

Alternative data storage

N9020A-HDD	Additional removable hard drive
N9020A-SSD	Removable solid state drive substitution

Measure application S/W and license type

N9061A-2FP	Remote language compatibility for 856xE/EC
N9063A-2FP	Analog demodulation measurement application
N9068A-2FP	Phase noise measurement application
N9069A-1FP	Noise figure measurement application
N9051A-2FP	Pulse measurement software
N9071A-2FP	GSM/EDGE measurement application
N9071A-3FP	EDGE Evolution measurement application
N9071A-XFP	Single acquisition combined GSM/EDGE measurement
N9072A-2FP	cdma2000® measurement application
N9073A-1FPW-	CDMA measurement application
N9073A-2FP	HSDPA / HSUPA measurement application
N9075A-2FP	802.16 OFDMA Single acq. combined W-CDMA (Fixed)
N9075A-2TP	802.16 OFDMA Single acq. combined W-CDMA (Transportable)
N9073A-XFP	802.16 OFDMA Single acq. combined W-CDMA (Fixed)
N9073A-XTP	802.16 OFDMA Single acq. combined W-CDMA (Transportable)
N9076A-1FP	1xEV-DO measure. application (Fixed)
N9076A-1TP	1xEV-DO measure. application (Transportable)

N9079A-1FP	TD-SCDMA measure. application (Fixed)
N9079A-1TP	TD-SCDMA measure. application (Transportable)
N9079A-2FP	HSPA/8PSK measure. application (Fixed)
N9079A-2TP	HSPA/8PSK measure. application (Transportable)
N9080A-1FP	LTE measure. application (Fixed)
N9080A-1TP	LTE measure. application (Transportable)
N9074A-XFP	Single acq. combined Fixed WiMAX measure app. (Fixed)
N9074A-XTP	Single acq. combined Fixed WiMAX measure app. (Transportable)
N9077A-XFP	Single acq. combined WLAN measure. application (Fixed)
N9077A-XTP	Single acq. combined WLAN measure.application (Transportable)
N6149A-2FP	iDEN/WiDEN/MotoTalk measure. application (Fixed)
N6149A-2TP	iDEN/WiDEN/MotoTalk measure. application (Transportable)
N6153A-2FP	DVB-T/H measurement application (Fixed)
N6153A-2TP	DVB-T/H measurement application (Transportable)
N6156A-2FP	DTMB measurement application (Fixed)
N6156A-2TP	DTMB measurement application (Transportable)
89601A	89600 VSA software (Fixed)
89601A	89600 VSA software (Transportable)
89601X VXA	ector signal analyzer measure. application (Fixed)
89601X VXA	vector signal analyzer measure. application (Transportable)
89601XFP-205 VXA	VXA Basic VSA-Lite (Fixed)
89601XTP-205 VXA	VXA Basic VSA-Lite (Transportable)
89601XFP-333 VXA	X-Series connectivity (Fixed)
89601XTP-333 VXA	X-Series connectivity (Transportable)
89601XFP-AYA VXA	vector modulation analysis (Fixed)
89601XTP-AYA VXA	vector modulation analysis (Transportable)
89601XFP-B7R VXA	WLAN modulation analysis (Fixed)
9601XTP-B7R VXA	WLAN modulation analysis (Transportable)
N6171A-M01	MATLAB®- Basic Signal Analysis Package
N6171A-M02	MATLAB - Standard Signal Analysis Package
N6171A-M03	MATLAB - Advanced Signal Analysis Package

Add options

89601A-200	Basic VSA software
89601A-300	Hardware connectivity
89601A-AYA	Flexible vector modulation analysis
89601A-B7N	3G modulation analysis bundle
89601A-B7T	cdma2000/1xEV-DV modulation analysis
89601A-B7U	W-CDMA/HSPA (enhanced) modulation analysis
89601A-B7W	1xEV-DO modulation analysis
89601A-B7X	TD-SCDMA modulation analysis
89601A-B7R	WLAN modulation analysis
89601A-B7S	IEEE 802.16-2004 OFDM modulation analysis
89601A-B7Y	IEEE 802.16 OFDMA modulation analysis
89601A-BHA	TEDS modulation analysis and test
89601A-BHC	RFID modulation analysis
89601A-BHD	LTE modulation analysis
89601A-105	Link to ADS software

89601A-106	Link to MathWorks Simulink Simulation and Model-Based Design

Instrument configuration

N9020A-PRC	Portable configuration

Accessories

N9020A-MLP	Minimum loss pad, 50 to 75 Ω
N9020A-EFM	USB storage device (1 GB, blank)
N9020A-DVR	USB DVD-ROM/CD-R/RW drive
N9020A-KYB	Keyboard, USB interface
N9020A-KB2	US 65 Key USB keyboard
N9020A-BAG	Accessory pouch
N9020A-HTC	Hard transit case
N9020A-1CP	Rack mount with handles
N9020A-1CN	Front handles
N9020A-1CM	Rack mount
N9020A-1CR	Rack slide

Localized starting guides

N9020A-AB1	Getting Started Korean
N9020A-ABD	Getting Started German
N9020A-ABF	Getting Started French
N9020A-ABJ	Getting Started Japanese
N9020A-AKT	Getting Started Russian

Warranty length

R-51B-001-C	1-year return-to-Agilent warranty and service (Standard)
R-51B-001-3C	3-year return-to-Agilent warranty and service
N9020A-UK6	Commercial calibration certificate with test data
N9020A-1A7	ISO 17025 Compliant Calibration
N9020A-A6J	ANSI Z540 Compliant Calibration
R-50C-011-3	Calibration service: Agilent upfront support plan, 3-year term
PS-S10-100	Service: remote scheduled productivity assistance
PS-S20-01	Service: 1-day start-up assistance
PS-S20-100	Service: productivity assistance
PS-X10-100	Service: custom engineering service

Instrument upgrade:

N9020AK-B25	Increase analysis bandwidth from 10 MHz to 25 MHz
N9020AK-PFR	Upgrade to the precision frequency reference
N9020AK-EA3	Add an electronic attenuator, 3.6 GHz
N9020AK-P03	Add preamplifier, 3.6 GHz
N9020AK-P08	Add preamplifier, 8.4 GHz
N9020AK-P13	Add preamplifier, 13.6 GHz
N9020AK-P26	Add preamplifier, 26.5 GHz
N9020AK-BBA	Add analog baseband IQ inputs
N9020AK-S40	Increase baseband analysis bandwidth from 10 MHz to 40 MHz
N9020AK-SU1	Increase baseband analysis bandwidth from 25 MHz to 40 MHz
N9020AK-EMC	Basic precompliance EMI features
N9020AK-PC2	Upgrade to dual core processor with removable hard drive
N9020AK-HDD	Additional removable hard drive

Spectrum Analyzer
OPTION INFORMATION

N9020AK-SSD Additional removable solid state drive

N9020AK-EFM USB storage device, 1 GB

N9020AK-DVR USB DVD-ROM/CD-R/RW drive

N9020AK-KYB Keyboard, USB interface

N9020AK-KB2 US 65 Key USB keyboard

N9020AK-BAG Accessory pouch

N9020AK-HTC Hard transit case

N9020AK-1CP Rack mount and handle kit

N9020AK-1CN Front handle kit

N9020AK-1CM Rack mount kit

N9020AK-1CR Rack slide kit

N9020AK-PRCP Ortable configuration

N9020AK-MLP Minimum loss pad, 50 to 75 Ω

N9020AK-CVR Front panel protective cover

N9020AK-SWM Software media kit

N9020AK-MS1 System memory upgrade (2 GB)V

E440XB series ESA Spectrum Analyzer — Agilent

042 Gray spectrum analyzer backpack

044 Yellow spectrum analyzer backpack

060 Reduced emissions

0B0 Do not include manual set

0B1 English manual set

0BV Service documentation, component level

0BW Service documentation, assembly level

106 Bluetooth FM demodulator

120 ACPR dynamic range extension

1AX RS-232 and Centronics interface

1CP Rackmount and handle kit

1D5 High stability frequency reference

1D6 Time-gated spectrum analysis

1D7 50 -75 ohm minimum loss pad(s)

1DN Tracking generator

1DR Narrow resolution bandwidths

1DS Preamp

219 Noise Figure Measurement Personality and Hardware

225 Cable fault location personality

226 Phase noise measurement personality

227 Cable TV measurement personality

228 Bluetooth measurement personality

229 Modulation Analysis meas. Personality

230 BenchLink web remote control software

231 ESA to 89600 series software link update

252 EDGE upgrade to GSM Measurement Personality

266 HP8568/8566B code compatibility

290 859x programming code compatibilty

304 Bluetooth premium opt. Bundle

545 Standard Frequency Reference

A4H GPIB and Centronics interface

A4J IF and sweep ports

A5D 12 Vdc power cable

AB0 Taiwan - Chinese localization (includes English manual set)

AB1 Korea - Korean localization (includes English manual set)

AB2 China - Chinese localization (includes English manual set)

ABD Germany - German localization (includes English manual set)

ABE Spain - Spanish localization (includes English manual set)

ABF France - French localization (includes English manual set)

ABJ Japan - Japanese localization (includes English manual set)

ABZ Italy - Italian localization (includes English manual set)

AKT Russia - Russian localization (includes English manual set)

AXT Add transit case

AYQ FM demodulation and quasi peak detector

AYT Gray soft carrying/operating case

AYU Yellow soft carrying/operating case

AYX Fast time-domain sweep

B70 BenchLink spectrum analyzer S/W

B74 RF and digital communications hardware

B75 Performance opts. Bundle

B7B TV trigger and picture on screen

B7D Digital signal processing and fast ADC

B7E RF communications hardware

B7K Cable fault measurement kit

BAA FM demodulation

BAC cdmaOne measurement personality

BAH GSM/GPRS measurement personality

COM Communication test analyzer (1D5, 1DR, B7D, B7E, BAA)

CST Custom configuration

H11 Wireless LAN spectrum analyzer 2-3GHz and 5-6GHz

H70 70MHz IF out

HYQ Quasi peak detector

J36 FM deviation personality - enhanced

RMKT Agilent Refurbished Product

STD Standard analyzer (AYX, BAA)

STG Standard analyzer with tracking generator (1DN, AYX, BAA)

UK6 Commercial cal. Certificate w/test data

UK9 Front panel cover

UKB 100 Hz low frequency extension

8593E/94E/95E/96E Portable Spectrum Analyzer — Agilent

004 Precision frequency reference -Refurbished Item-

009 LO and sweep+tune outputs on rear panel -Refurbished Item-

010 Built-in 100 kHz - 2.9 GHz tracking generator, 50 ohm output -Refurbished Item-

012 DECT source -Refurbished Item-

015 Tan soft carrying case -Refurbished Item-

016 Yellow soft carrying case -Refurbished Item-

021 GPIB interface -Refurbished Item-

026 Frequency extension to 26.5 GHz, APC 3.5 connector -Refurbished Item-

027 Frequency extension to 26.5 GHz, Type-N connector -Refurbished Item-

040 Front panel protective cover with storage -Refurbished Item-

041 GPIB and Parallel dual interface -Refurbished Item-

042 Gray spectrum analyzer backpack -Refurbished Item-

043 RS-232 and Parallel dual interface -Refurbished Item-

044 Yellow spectrum analyzer backpack -Refurbished Item-

050 Improved amplitude accuracy for NADC/PCS -Refurbished Item-

051 Improved amplitude accuracy for PDC -Refurbished Item-

052 Improved amplitude accuracy for PHS -Refurbished Item-

053 Improved amplitude accuracy for cdmaOne -Refurbished Item-

0B0 Do not include any manuals -Refurbished Item-

101 Fast time domain sweeps -Refurbished Item-

102 AM/FM demod w/ speaker and TV sync trigger -Refurbished Item-

103 Quasi-peak detector, AM/FM demod w/ speaker -Refurbished Item-

105 Time-gated spectrum analysis -Refurbished Item-

107 TV receiver/video tester -Refurbished Item-

111 Group delay measurement card -Refurbished Item-

112 DECT demodulator card -Refurbished Item-

119 Noise figure card -Refurbished Item-

130 Narrow resolution bandwidths -Refurbished Item-

140 Narrow resolution BW and precision frequency reference -Refurbished Item-

151 Digital demod downconverter / fast ADC -Refurbished Item-

160 Mobile Comm firmware and DSP for Opt 151 hardware -Refurbished Item-

163 GSM/DCS DSP F/W board for opt. 151 hardware -Refurbished Item-

180 TV picture on screen -Refurbished Item-

301 TV sync, fast time-domain sweeps, AM/FM -Refurbished Item-

711 50/75 ohm matching pad with DC block -Refurbished Item-

908 Rackmount kit without handles -Refurbished Item-

909 Rackmount kit with handles -Refurbished Item-

910 Additional set of manuals -Refurbished Item-

915 Service manual and component level info -Refurbished Item-

AB0 Taiwan - Chinese localization -Refurbished Item-

AB2 China - Chinese localization -Refurbished Item-

ABD Germany -German localization -Refurbished Item-

ABE Spain - Spanish localization -Refurbished Item-

ABF France - French localization -Refurbished Item-

ABJ Japan - Japanese localization -Refurbished Item-

ABZ Italy - Italian localization -Refurbished Item-

B70 BenchLink spectrum analyzer software -Refurbished Item-

RMKT Agilent Refurbished Product -Refurbished Item-

AUK6 Commercial calibration certificate with test data -Refurbished Item-

Spectrum Analyzer
OPTION INFORMATION

856XE/EC Portable Spectrum Analyzer	Agilent

001	Add Second IF output; rear panel connector
005	Add alternate sweep output
008	Add signal identification
042	Gray spectrum analyzer backpack
044	Yellow spectrum analyzer backpack
0B0	Delete Manual Set
103	Delete precision frequency reference
104	Do not include mass memory module
1BP	Mil std 45662A calibration w/ test data
908	User installable rackmount kit without handles
909	User installable rackmount kit with handles and flanges
910	Extra User's manual set
915	Service Guide
916	Extra pocket-size Quick Reference Guide
944	Mass memory module manual - U.S. - English
946	Mass memory module manual - Japanese localization (includes U.S. - English)
AB2	China - Chinese localization (includes U.S. - English)
ABD	Germany - German localization (includes U.S. - English)
ABE	Spain - Spanish localization (includes U.S. - English)
ABF	France - French localization (includes U.S. - English)
ABJ	Japan - Japanese localization (includes U.S. - English)
ABZ	Italy - Italian localization (includes U.S. - English)
B70	BenchLink spectrum analyzer S/W
C90	Factory installed rackmount kit with handles and flanges
C91	Factory installed rackmount kit without handles and flanges
RMKT	Agilent Refurbished Product
UK6	Commercial cal. certificate w/ test data
UKS	Certificate of Calibration

R3267 Spectrum Analyzer	Advantest

01	Modulation Analysis Unit
02	Memory Card Drive
08	Rx Control
09	CDMA Test Source Control
10	PDC Level Tune
11	3GPP Level Calibration
12	3GPP Level Calibration
21	High Stability X'tal
22	3X1/(10) 10 X'tal
23	Rubidium Frequency Reference Source
25	Reference Converter
61	CDMA-One Analysis
62	W-CDMA Analysis
63	GSM/DECT Analysis
64	PDC/PHS/IS-136 Analysis
65	CDMA2000 Analysis
66	Bluetooth Analysis
67	HDR Measurement
69	HDR Measurement BS&MS
73	AMPS/JTACS/NTACS Analysis
74	Tracking Generator w/Att
86	EIA Rack Mount Set

R3273/71A Spectrum Analyzer	Advantest

01	Modulation Analysis Unit
02	Memory Card Drive
08	Rx Control
11	3GPP Level Calibration
16	Ext. Mixer 26GHz-40GHz
17	Ext. Mixer 40GHz-60GHz
21	High Stability X'tal
22	3X1/(10) 10 X'tal
25	Reference Converter
61	CDMA-One Analysis
62	W-CDMA Analysis
63	GSM/DECT Analysis
64	PDC/PHS/IS-136 Analysis
65	CDMA2000 Analysis
66	Bluetooth Analysis
67	HDR Measurement
69	HDR Measurement BS&MS
73	AMPS/JTACS/NTACS Analysis
74	Tracking Generator w/Att
86	EIA Rack Mount Set

Signal Generator
PRODUCT INFORMATION

Model	Description	Specification	Remark
Agilent N5182A	MXG Vector Signal Generator	· **Frequency Range :** 100 kHz to 3 or 6 GHz · **Frequency Resolution :** 0.01 Hz · **+23 dBm output power @ 1GHz** · **≤ -121 dBc/Hz (typ) phase noise at 1 GHz and 20 kHz offset**	
Agilent E8257D	PSG Analog Signal Generator	· **Frequency Range :** Opt. 520 : 250 KHz ~ 20 GHz 　　　　　　　　　　　 Opt. 540 : 250 kHz ~ 40 GHz · **Frequency Resolution :** CW: 0.001 Hz · **Output Range :** Opt. 520 : -20 dBm ~ +13 dBm 　　　　　　　　　 Opt. 540 : -20 dBm ~ +9 dBm	
Agilent E8247C	PSG CW Signal Generator	· **Frequency Range :** 250 kHz ~ 20 or 40 GHz · **Frequency Resolution :** CW: 0.001 Hz	
Agilent 83712B	Synthesized CW Generator	· **Frequency Range :** 10 MHz ~ 20 GHz · **Frequency Resolution :** 1 kHz · **Output Range :** -4 dBm ~ +13 dBm	
Agilent E8244A	PSG-L Series Performance Signal Generator	· **Frequency Range :** 250 kHz ~ 40 GHz · **Frequency Resolution :** 0.01 Hz	
Agilent E8257C	PSG Analog Signal Generator	· **Frequency Range :** 250 kHz ~ 20 or 40 GHz · **Frequency Resolution :** 0.001 Hz · **Output Range :** +16 dBm, +24 dBm (Opt.)	
Agilent E4436B	ESG Digital RF Signal Generator	· **Frequency Range :** 250 kHz ~ 3 GHz · **RF modulation bandwidth up to 35 MHz** · **Frequency Resolution :** 0.01 Hz · **Output Range :** -136 dBm ~ +10 dBm · **Input Impedance :** 50 Ω	
Agilent E4433A	ESG Digital RF Signal Generator	· **Frequency Range :** 250 kHz ~ 4 GHz · **Frequency Resolution :** 0.01 Hz · **Input Impedance :** 50 Ω	
Agilent E4433B	Digital RF Signal Generator	· **Frequency Range :** 250 kHz ~ 4 GHz · **Frequency Resolution :** 0.01 Hz · **Input Impedance :** 50 Ω · **Output Range :** -136 dBm ~ +7 dB**m** · **RF modulation bandwidth :** up to 35 MHz	
Agilent 8665B	RF Signal Generator	· **Frequency Range :** 100 kHz ~ 6 GHz · **Frequency Resolution :** 0.01 Hz · **Output Range :** -139.9 dBM ~ +13 dBm	
Agilent E4432B	ESG Digital RF Signal Generator	· **Frequency Range :** 250 kHz ~ 3 GHz · **Frequency Resolution :** 0.01 Hz · **Output Range :** -136 dBm ~ +10 dBm · **Input Impedance :** 50 Ω	
Agilent E4437B	ESG Digital RF Signal Generator	· **Frequency Range :** 250 kHz ~ 4 GHz · **Frequency Resolution :** 0.01 Hz · **Output Range :** -136 dBm ~ +13 dBm m	
Agilent 83623B	High Power Swept-Signal Generator	· **Frequency Range :** 10 MHz ~ 20 GHz · **Frequency Resolution :** 1 kHz, 1 Hz (Opt.008) · **Output Range :** -20 dBM ~ +17 dBm	
Agilent E4438C	ESG Vector Signal Generator	· **Frequency Range :** 250 kHz ~ 1,2,3,4,6 GHz · **Frequency Resolution :** 0.01 Hz · **Output Range :** -136 dBm ~ +17 dBm (w/Opt.UNB) · **160MHz RF Modulation Bandwidth**	
Agilent E4428C	Signal Generator 250 kHz - 3 GHz	· **Frequency Range :** 250 kHz ~ 3 or 6 GHz · **Frequency Resolution :** 0.01 Hz · **Output Range :** -136 dBm ~ +17 dBm · **Built-in modulation source for complex waveform**	

Signal Generator
PRODUCT SELECTION

Frequency	Manufacturer					
	Agilent	R&S	Anritsu	ADVANTEST	Tektronix	AEROFLEX
1G	E4430B	SMX	MG3670B		SG504	2022/A/C
	8657A/D	SMY01	MG3641A			2019A
	8656A/B	SMLU	MG3601A			2017
	8648A	SML01				
	8647A	SMS				
	8644B	SMG				
1.2G	8662A					2023A
1.3G			MG655A			2030
1.5G		SMT02				
		SME42				
2G	E4431B	SMY02	MG3642A			3412
	8657B	SMH	MG3632A			2023A/B
	8648B		MG3602A			2017
2.2G		SML02	MG3670B			
		SMIQ02				
		SMGU				
2.4G					AWG706XB	2026Q
						2024
2.5G	8663A					2025
2.6G	8657B					
2.75G			MG3672A			2041
			MG3671B			2031
			MG3660A			
			MG3633A			
3G	N5182A	SMU200	MG3681A			3413
	E4438C	SME03				
	E4432A/B	FSQ3				
	E4425B					
	E4421A/B					
	8664A					
3.2G	8648C					
3.3G		SMV03				
		SMT03				
		SML03				
		SMIQ03				
3.8G						
4.0G	E4438C					3414
	E4437B					
	E4433A/B					
	8648D					
4.3G		SMHU58				
		SMHU52				
4.4G		SMIQ04B				
4.5G	8665A				AWG7121B	

Frequency	Manufacturer					
	Agilent	R&S	Anritsu	ADVANTEST	Tektronix	AEROFLEX
5.4G						2042
						2032
6G	N5182A	SMT06				3416
	E4438C					
	8665B					
6,4G		SMIQ06B				
7G		FSIQ7				
7.2G			MG724D			
8G		FSQ8	69317C			6057
8.4G			69117B			
			68317B/C			
			68117C			
8.5G			MG8604A			
9.6G			MG724F		AWG7122B	
11.8G			MG724S			
20G	E8257D		69347B			
	83752A/B		69337B			
	83751A/B		69247A			
	83732A/B		69147B			
	83731A/B		69137B/C			
	83712A/B		69047B			
	83711A/B		68347C			
	83624A/B		68337C			
	83623A/B					
	83622A/B					
	83621A/B					
	83620A/B					
26.5G	83630A/B/L	FSIQ26				
27G		SMP03				
40G	E8257D	SMR40	MG3694B			
	83640A/B/L	SMP04	69367B			
			69167B			
			68369A			
			68367C			
			68167C			
50G	83651A/B	SMR50	69377B			
	83650A/B/L		69177B			
			68377C			
			68177C			
			68077B			
60G			69387C			
			68387C			
			68187B/C			
65G			69397B			
			68397C			
			68197B/C			

Signal Generator
OPTION INFORMATION

N5182A MXG RF Vector Signal Generator	Agilent

Frequency option

503   Frequency range from 100 kHz to 3 GHz

506   Frequency range from 100 kHz to 6 GHz

Performance enhancement options

UNZ   Fast switching

UNT   AM, FM, phase modulation

UNU   Pulse modulation UNW

UNW   Narrow pulse modulation UNU

UNV   Enhanced dynamic range

1EQ   Low power (< –110 dBm)

006   Instrument security

1EA   High output power

099   Expanded license key upgradeability

012   LO In/Out for phase coherency

Baseband generator options

651   Internal baseband generator (30 MSa/s, 8 MSa)

652   Internal baseband generator (60 MSa/s, 8 MSa)

654   Internal baseband generator (125 MSa/s, 8 MSa)

019   Upgrade baseband generator memory to 64 MSa

Signal studio and embedded S/W

221–229   Waveform License 5-packs 1 to 9

250-259   Waveform License 50-packs 1 to 10

403   Calibrated AWGN

430   Multitone and two-tone

431   Custom digital modulation

432   Phase noise impairments

N7600B   Signal Studio for 3GPP W-CDMA FDD

N7601B   Signal Studio for 3GPP2 CDMA

N7602B   Signal Studio for GSM/EDGE

N7606B   Signal Studio for Bluetooth

N7611B   Signal Studio for Broadcast Radio

N7612B   Signal Studio for TD-SCDMA

N7613A   Signal Studio for 802.16-2004 (WiMAXTM)

N7615B   Signal Studio for 802.16 WIMAX

N7616B   Signal Studio for 802.11 WLAN

N7621B   Signal Studio for multitone distortion test

N7622A   Signal Studio toolkit

N7623B   Signal Studio for digital video

N7624B   Signal Studio for 3GPP LTE

N7625B   Signal Studio for 3GPP LTE TDD

Input/output options

1EM   Move all connectors to rear panel

1EL   Differential I/Q outputs

1ER   Flexible reference input (1-50 MHz)

Accessories and documentation

1CM   Rackmount kit

1CN   Front handle kit

1CP   Rackmount kit with front handles

1CR   Rack slide kit

AB1   Printed copy of user's guide – Korean localization

AB2   Printed copy of user's guide – Chinese localization

ABJ   Printed copy of user's guide – Japanese localization

AKT   Printed copy of user's guide – Russian localization

0BW   Service documentation, assembly level

AXT   Hard transit case

800   Customer service kit front panel connector configuration

801   Customer service kit rear panel connector configuration

Warranty and calibration option

R-51B-001-3C   1 year Return-to-Agilent warranty extended to 3 years

R-51B-001-5C   1 year Return-to-Agilent warranty extended to 5 years

R-50C-011-3   Return-to-Agilent Calibration Upfront Support Plan 3 year

R-50C-016-3   Return-to-Agilent 17025 Calibration Upfront Support Plan

R-50C-021-3   Return-to-Agilent Z540 Calibration Upfront Support Plan 3 year

R-52A-001-3   3 year license Agilent Commercial Calibration Software

R-52A-002-3   3 year license Agilent ISO 17025 an ANSI Z540 Calibration software

UK6   Commercial calibration certificate with test data

Start up assistance options

PS-S10   Remote scheduled assistance 1-999 hours

PS-S20   Daily productivity assistance

PS-T10-ASG   Signal generator and source basics; .05 day, max. 8 students on site

PS-X10   Custom services to be qualified by Agilent

Available options and upgrades

N5182AK-006   Instrument security

N5182AK-012   LO in/out for phase coherency

N5182AK-019   Increase baseband generator memory to 64 MSa

N5182AK-099   Expanded license key upgradability

N5182AK-1EA   High power

N5182AK-1EL   Differential I/Q outputs

N5182AK-1EQ   Low power (<-110 dBm)

N5182AK-1ER   Flexible reference input (1-50 MHz)

N5182AK-221   Waveform License 5-Pack

N5182AK-250   Waveform License 50-Pack

N5182AK-403   Calibrated AWGN

N5182AK-430   Multitone and two tone

N5182AK-431   Custom digital modulation

N5182AK-432   Phase noise impairment

N5182AK-651   Internal baseband generator (30 MSa/s, 8 MSa)

N5182AK-652   Internal baseband generator (60 MSa/s, 8 MSa)

N5182AK-654   Internal baseband generator (125 MSa/s, 8 MSa)

N5182AK-670   Upgrade baseband generator from 30 MSa/sec to 60 MSa/sec

N5182AK-671   Upgrade baseband generator from 30 MSa/sec to 125 MSa/sec

N5182AK-672   Upgrade baseband generator from 60 MSa/sec to 125 MSa/sec

N5182AK-ALB   LXI Class B functionality

N5182AK-UNT   AM, FM, phase modulation

N5182AK-UNU   Pulse modulation

N5182AK-UNW   Narrow pulse modulation

N5182AK-UNV   Enhanced dynamic range

N5182AK-UNZ   Fast Switching

N5182A-0BW   Service documentation, assembly level

N5182A-1CM   Rackmount kit

N5182A-1CN   Front handle kit

N5182A-1CP   Rackmount and front handle kit

N5182A-1CR   Rack slide kit

N5182A-AB1   Printed copy of MXG family user's guide - Korean localization

N5182A-AB2   Printed copy of MXG family user's guide - Chinese localization

N5182A-ABA   Printed copy of MXG family English documentation set

N5182A-ABJ   Printed copy of MXG family user's guide - Japanese localization

N5182A-AKT   Printed copy of MXG family user's guide - Russian localization

N5182A-AXT   Hard transit case

N5182A-CD1   CD-ROM containing the English documentation set

N5182AK-800   Customer Service Kit - N5182A front panel RF connector configuration

N5182AK-801   Customer Service Kit - N5182A rear panel RF connector configuration

N5182AK-R2C   Revision to current, core instrument FW enhancements

Signal Generator
OPTION INFORMATION

E8257D PSG Analog Signal Generator — Agilent

Frequency range

E8257D-520 Frequency range from 250 kHz to 20 GHz

E8257D-521 v 1 Ultra high power, frequency range from 10 MHz to 20 GHz

E8257D-532 Frequency range from 250 kHz to 31.8 GHz

E8257D-540 Frequency range from 250 kHz to 40 GHz

E8257D-550 Frequency range from 250 kHz to 50 GHz

E8257D-567 Frequency range from 250 kHz to 67 GHz

Modulation

Standard CW Signal generation

E8257D-UNT AM, FM, phase modulation, and LF output

E8257D-UNU Pulse modulation

E8257D-UNW Narrow pulse modulation Generates pulse modulated signals

E8257D-1SM Scan modulation

Step attenuator

E8257D-1E1 Step attenuator

High output power

Standard Standard

E8257D-1EU High output power

Spectral purity

Standard Standard purity

E8257D-UNX Ultra low phase noise frequency offsets ranging from 1 Hz to 10 kHz

E8257D-1EH Improved harmonics below 2 GHz frequencies below 2 GHz

Ramp sweep

E8257D-007 Analog ramp sweep of frequency and amplitude

Instrument security

E8257D-008 Removable flash memory

Special options

E8257D-H30 Add internal mixer for upconversion capability in the 20 GHz and 40 GHz

E8257D-H60 Add internal mixer on the rear panel, the 50 GHz and 67 GHz

E8257D-H65 Add upconverting mixer on the rear panel. RF 20 to 65 GHz, LO 5 to 30 GHz

E8257D-HCC Add input and output of phase reference LO

E8257D-H1S Add 1 GHz external frequency reference input and output

Instrument connector and accessories

E8257D-1ED Type-N (f) RF output connector

E8257D-1EM Moves all front panel connectors to the rear panel

E8257D-C09 Moves all front panel connectors to the rear panel except the RF output connector

E8257D-1CM Rackmount flange kit

E8257D-1CN Front handle kit

E8257D-1CP Rackmount kit with front handles

E8257DS15 OML Inc. model number S15MS-AG

E8257DS12 OML Inc. model number S12MS-AG

E8257DS10 OML Inc. model number S10MS-AG

E8257DS08 OML Inc. model number S08MS-AG

E8257DS06 OML Inc. model number S06MS-AG

E8257DS05 OML Inc. model number S05MS-AG

E8257DS03 OML Inc. model number S03MS-AG

Z5623AKxx Distribution network

Documentation

E8257D-CD1 CD-ROM containing the English documentation set

E8257D-ABA Printed copy of the English documentation set

E8257D-AB2 Printed copy of the Chinese User's Guide

E8257D-ABD Printed copy of the German User's Guide

E8257D-ABJ Printed copy of the Japanese User's Guide

E8257D-0BW Printed copy of the assembly-level service guide

E8257D-UK6 Commercial calibration certificate and test data

Warranty and calibration

R-51B-001-C Standard 1-year Return-to-Agilent warranty and service

R-51B-001-3C 1 year Return-to-Agilent warranty extended to 3 years

R-51B-001-5C 1 year Return-to-Agilent warranty extended to 5 years

R-50C-001-3 Return-to-Agilent Calibration Upfront Support Plan 3 year

E8257D-UK6 Commercial calibration certificate and test data

Start up assistance

PS-S10 Remote scheduled assistance 1-999 hours

PS-S20 Daily productivity assistance

PS-T10-ASG Signal generator and source basics; .5 day, Max. 8 students on site

PS-X10 Custom services to be qualified by Agilent

Upgradeable Options

E8257DK-007 Enables fully synthesized continuous analog frequency & power sweeps.

E8257DK-008 Adds 8 GB removable flash memory.

E8257DK-1E1 Attenuator to provide calibrated min.output power levels of -135 dBm

E8257DK-1EA Provides increased output power performance up to 67 GHz

E8257DK-1EDR eplaces the opt. 520 std. PC 3.5 mm RF output connector

E8257DK-1EH Harmonic distortion performance for carrier freq. ranging from 10 MHz to 2 GHz

E8257DK-1EU Adds high output power for SN prefix greater than or equal to 4928.

E8257DK-2E1 Adds a step attenuator for SN prefix greater than or equal to 4928.

E8257DK-2EH Adds improved harmonics below 2 GHz for units with Opt. 1EU or SN prefix

E8257DK-2EU dds high output power (Option 1EU) for SN prefix less than 4928

E8257DK-2NX Adds ultra-low phase noise performance for SN prefix

E8257DK-2NW Adds narrow pulse modulation for units with Option 1EU or SN prefix

E8257DK-3EU Adds high output power (Option 1EU) for SN prefix

E8257DK-UNX Adds improved close in phase stability and phase noise at offsets

E8257DK-UNT AM, FM and ØM signals and an internal low frequency modulation generator (LF)

E8257DK-UNU Adds standard pulse modulation.

E8257DK-UNW Adds narrow pulse modulation.

E8257C/47C`PSG Analog & CW MW Signal Generator — Agilent

Signal generator with frequency range

E8247C-520 PSG CW 250 kHz to 20 GHz

E8257C-520 PSG analog 250 kHz to 20 GHz

E8247C-540 PSG CW 250 kHz to 40 GHz

E8257C-540 PSG analog 250 kHz to 40 GHz

Attenuator

E8247C-1E1 Adds output step attenuator down to –135 dBm

E8257C-1E1 Adds output step attenuator down to –135 dBm

Output power

E8247C-1EA High RF output power

E8257C-1EA High RF output power

Enhanced phase noise

E8247C-UNR Enhanced phase noise performance

E8257C-UNR Enhanced phase noise performance

Pulse modulation

E8257C-1E6 Provides narrow pulse modulation >500 MHz

Ramp sweep

E8247C-007 Provides ramp sweep, scalar interface, Z-axis blanking, and markers

E8257C-007 Provides ramp sweep, scalar interface, Z-axis blanking, and markers

Accessory options

E8247C-1ED Type-N (f) connector

E8257C-1ED Type-N (f) connector

E8247C-1EM Move all connectors to rear panel

E8257C-1EM Move all connectors to rear panel

E8247C-1CM Rack mount kit

E8257C-1CM Rack mount kit

E8247C-1CN Front handle kit

E8257C-1CN Front handle kit

E8247C-1CP Rack mount kit with front handle kit

E8257C-1CP Rack mount kit with front handle kit

83554A Millimeter-wave source module R-band

83555A Millimeter-wave source module Q-band

83556A Millimeter-wave source module U-band

83557A Millimeter-wave source module V-band

83558A Millimeter-wave source module W-band

8120-8806 Master/slave interface cable

Manuals

E82x7C-ABA English manual set (hardcopy – no CD)

Signal Generator
OPTION INFORMATION

E82x7C-ABD	German localized supplemental user's guide (hardcopy – no CD)
E82x7C-ABF	French localized supplemental user's guide (hardcopy – no CD)
E82x7C-ABJ	Japanese localized supplemental user's guide (hardcopy – no CD)
E82x7C-ABA	Korean localized supplemental user's guide (hardcopy – no CD)
E82x7C-CD1	CD-ROM: user's guide, calibration guide, service quide,

SCPI command reference guide, error messages, key reference guide, and additional product literature

E82x7C-OBW	Adds the service manual (assembly level)

E4438C ESG Vector Signal Generator	Agilent

Frequency range

E4438C-501	250 kHz to 1 GHz frequency range
E4438C-502	250 kHz to 2 GHz frequency range
E4438C-503	250 kHz to 3 GHz frequency range
E4438C-504	250 kHz to 4 GHz frequency range
E4438C-506	250 kHz to 6 GHz frequency range

Phase noise performance

UNJ Enhanced phase noise performance:

Attenuator

UNB High output power with mechanical attenuator

Baseband generator

601	Internal baseband generator, 8 MSa memory
602	Internal baseband generator, 64 MSa memory
005	6 GB hard drive for non-volatile

Signal creation software

221-229	Waveform License 5-packs 1 to 9
250-259	Waveform License 50-packs 1 to 10
400	3GPP W-CDMA FDD Personality
401	cdma2000® and IS-95-A Personality
402	TDMA Personality
403	Calibrated Noise (AWGN) Personality
407	Signal Studio for S-DMB
409	Multi-satellite GPS Personality
419	Signal Studio for 3GPP WCDMA HSPA
SP1	Signal Studio for Jitter Injection
N7600B	Signal Studio for 3GPP W-CDMA FDD
N7601B	Signal Studio for 3GPP2 CDMA
N7602B	Signal Studio for GSM/EDGE
N7606B	Signal Studio for Bluetooth
N7611B	Signal Studio for Broadcast Radio
N7612B	Signal Studio for TD-SCDMA
N7613A	Signal Studio for 802.16-2004 (WiMAXTM)
N7615B	Signal Studio for 802.16 Mobile WIMAX
N7616B	Signal Studio for T-DMB
N7617B	Signal Studio for 802.11 WLAN

N7620A	Signal Studio for Pulse Building
N7621B	Signal Studio for Multitone Distortion
N7622A	Signal Studio toolkit (free download)
N7623B	Signal Studio for Digital Video
N7624B	Signal studio for 3GPP LTE
N7625B	Signal studio for 3GPP LTE TDD

BER analyzer

UN7	Internal bit-error-rate analyzer
300	GSM/EDGE base station loopback BER test capability

Aaccessories

003	Enables ESG digital output connectivity
004	Enables ESG digital input connectivity
1EM	Moves all front panel connectors to rear panel
1CM	Rack mount without handles
1CP	Rack mount kit with handles
1CN	Handle kit

Documentation

CD1	CD-ROM - English documentation set(standard)
0BW	Service documentation, assembly level (hardcopy)
0BV	Service documentation, component level (hardcopy)
UK6	Commercial calibration certificate with test data (hardcopy)
ABA	United States - English documentation set (hardcopy)
AB0	Taiwan - Chinese localization (hardcopy)
AB1	Korean - Korean localization (hardcopy)
AB2	China - Chinese localization (hardcopy)
ABF	French - French localization (hardcopy)
ABJ	Japanese - Japanese localization (hardcopy)

E4406A Vector Signal Analyzer	Agilent

0B0	Do not include manuals
0B1	English manual set
0BV	Service documentation, component level
0BW	Service documentation, assembly level
1CM	Rackmount kit
1CN	Handle kit
1CP	Rackmount and handle kit
1CR	Rack slide kit
202	EDGE w/ GSM measurement personality
204	1xEV-DO measurement personality
210	HSDPA measurement personality
214	1xEV-DV measurement personality
300	321.4 MHz IF output
AB0	Taiwan - Chinese localization (includes English manual set)

AB1	Korea - Korean Localization (includes English manual set)
AB2	China - Chinese localization (includes English manual set)
ABD	Germany - German localization (includes English manual set)
ABF	France - French localization (includes English manual set)
ABJ	Japan - Japanese localization (includes English manual set)
B78	cdma2000 measurement personality
B7C	I/Q Inputs
BAC	cdmaOne measurement personality
BAE	NADC,PDC measurement personality
BAF	W-CDMA measurement personality
BAH	GSM measurement personality
H54	Reduced LO emissions at RF input
HB4	Rear panel connectors for RF input and external trigger
HN1	IDEN measurement personality
RMKT	Agilent Refurbished Product
UK6	Commercial calibration certificate w/ test dat

8665B/A, 8664A Signal Generator	Agilent

001	High-stability time-base
003	Moves all front panel connectors to rear panel
004	Enhanced spectral purity
008	Pulse modulation
010	Reduced RF leakage configuration
907	Front handle kit
908	Rack flange kit
909	Front handle and rack flange kit
ABJ	Japan - Japanese localization
HK6	Provides commercial test data on unit
RMKT	Agilent Refurbished Product
UN8	No pulse modulation
UNM	Standard front and rear panel connector configuration
UNQ	Standard stability time-base

Network Analyzer
PRODUCT INFORMATION

Model	Description	Specification	Remark
Agilent N5230A	PNA-L Microwave Network Analyzer	· **Frequency Accuracy :** 300 kHz ~ 50 GHz · **2 or 4 Test Port** · **System Impedance :** 50 Ω · **ECal support** · **Measurement Speed:** 18 ms	
Agilent E8362B	PNA Network Analyzer	· **Frequency Accuracy :** 10 MHz ~ 20 GHz · **2 Test Port** · **System Impedance :** 50 Ω · **ECal support** · **Measurement Speed:** 64 ms	
Agilent E5071C	ENA Network Analyzer	· **Frequency Range :** 9 kHz ~ 20 GHz · **2 or 4 Test Port** · **System Impedance :** 50 Ω · **ECal support** · **Measurement Speed :** 8.8 ms	
Agilent 8720ES	S-parameter Network Analyzer	· **Frequency range :** 50 MHz ~ 20 GHz · **Frequency Resolution :** 1Hz · **Frequency accuracy :** 10 ppm · **Display 4 parameters at the same time** · **Up to 105 dB dynamic range**	
Agilent 8719ES	Microwave Network Analyzer	· **Frequency range :** 50 MHz ~ 13.5 GHz · **Frequency Resolution :** 1 Hz · **Frequency accuracy :** 10 ppm · **Source Power(Std.) :** -70 dBm (Min.) ~ +5 dBm (Max.) · **Up to 105 dB dynamic range**	
Agilent 8510C	Microwave Network Analyzer	· **Frequency range :** 45 MHz ~ 110 GHz · **0.001 dB, 0.01 degree, 0.01 ns measurement resolution** · **Time-domain analysis** · **Up to 100 dB dynamic range**	
Agilent E5071B	ENA RF Network Analyzer	· **Frequency range :** 300 kHz ~ 8.5 GHz · **2,3 or 4 test port** · **System Impedance:** 50 Ω · **ECal support** · **Measurement Speed:** 8 ms	
Advantest R3767CG	Network Analyzer	· **Frequency range:** 300 kHz ~ 8 GHz · **4 S-parameters display** · **Frequency accuracy:** 3 ppm · **Source Power:** -10 dBm (Min.) ~ +10 dBm (Max.) · **Up to 100 dB dynamic range**	
Agilent E5062A	ENA-L RF Network Analyzer	· **Frequency range:** 300 kHz ~ 3 GHz · **2 test port** · **System Impedance:** 50 Ω or 75 Ω · **ECal support** · **Measurement Speed:** 35 ms	
Agilent E5070B	ENA RF Network Analyzer	· **Frequency range:** 300 kHz ~ 3 GHz · **Frequency Resolution :** 1 Hz · **ECal support** · **System Impedance:** 50 Ω · **Output Power Range :** -15 dBm ~ 10 dBm	
Agilent 8753ES	S-Parameter Network Analyzer	· **Frequency range:** 3 or 6 GHz · **Frequency Resolution :** 1 Hz · **Integrated 2 test port** · **ECal support** · **System Impedance:** 50 Ω · **Output Power Range :** -85 dBm ~ +10 dBm	
Agilent 8753E	RF Network Analyzer	· **Frequency range:** 3 or 6 GHz · **System Impedance:** 50 Ω · **Display 4 S-parameters** · **Up to 100 dB dynamic range** · **Output Power Range :** -85 dBm ~ +10 dBm	

Network Analyzer
PRODUCT SELECTION

Frequency	Manufacturer				
	Agilent	(R&S)	Anritsu	ADVANTEST	AEROFLEX
1.3G	8712B/C/ET/ES				
	8711A/B/C				
	8505A				
1.6G		ZWOB			
2.5G			S251B		
3G	E8356A	ZVL3	MS4662A/B		
	E5070A/B		MS4661A		
	E5062A		37211A		
	8753A/B/D/E/ET/ES				
	8752B/C				
	8714C/ET/ES				
	8713A/B/C				
	8702D				
3.6G				R3763A	
				R3762AH/B	
3.8G				R3765AH/BG/CG/CH	
4G		ZVR61			
		ZVR60			
		ZVB4			
4.5G	E5071C				
6G	E8358A	ZVL6	MS4623A/B		
	E8357A				
8G		ZVRE	MS2781A	R3963A	
		ZVC60		R3962A	
		ZVB8		R3768	
		ZVA8		R3767BH/CG	

Frequency	Manufacturer				
	Agilent	(R&S)	Anritsu	ADVANTEST	AEROFLEX
8.5G	E5071A/B/C				
8.6G			37317C		
			37217C		
9G			MS4624B		
13.5G	8719A/B/C/D/ES		37325C		
			37225C		
18G					6500
20G	N5230A/C	ZVM-System1/2	37347A/C	R3770	6230A
	E8362A/B	ZVB20	37347C		6200B
	8720A/B/C/D/ES		37247C		
			37247B		
			37147C		
24G		ZVA24			
26.5G	8510C system				6233A
40G	N5230A		37369A/C/D		
	E8363A/B		37347A		
	8722A/C/D/ES		37269B		
			37247B		
			37169C		
50G	E8364A/B		37377C		
	8510C system		37277C		
65G			37397C		
			37297C		
110G	8510C system		56100A		

Network Analyzer
OPTION INFORMATION

N5230C PNA-L MW Network Analyzer — Agilent

Frequency range and test set

020	300 kHz–6 GHz 2-port standard test set
025	300 kHz–6 GHz 2-port configurable test set and extended power range
120	300 kHz–13.5 GHz 2-port standard test set
125	300 kHz–13.5 GHz 2-port configurable test set and extended power range
140	300 kHz–13.5 GHz 4-port standard test set
145	300 kHz–13.5 GHz 4-port configurable test set and extended power range
146	300 kHz–13.5 GHz 4-port configurable test set, extended power range
220	10 MHz–20 GHz 2-port standard test set
225	10 MHz–20 GHz 2-port configurable test set and extended power range
240	300 kHz–20 GHz 4-port standard test set
245	300 kHz–20 GHz 4-port configurable test set and extended power range
246	300 kHz–20 GHz 4-port configurable test set, extended power range
420	10 MHz–40 GHz 2-port standard test set
425	10 MHz–40 GHz 2-port configurable test set and extended power range
520	10 MHz–50 GHz 2-port standard test set
525	10 MHz–50 GHz 2-port configurable test set and extended power range

Measurement applications

010	Time domain for 6 GHz model
010	Time domain for 13.5, 20, 40 or 50 GHz model
080	Frequency offset measurements
082	Scalar-calibrated converter measurements
550	4-port measurement application
551	N-port capabilities for 6, 13.5 or 20 GHz model
551	N-port capabilities for 40 or 50 GHz model

Accessories

1CM	Rack mount kit without handles
1CP	Rack mount kit with handles
N4688A	USB CD R/W drive
N4689A	USB hub

Calibration documentation

1A7	ISO 17025 compliant calibration
A6J	ANSI Z540 compliant calibration
UK6	Commercial calibration certificate with test data

Calibration software for self-maintainers

897	Perpetual license for built-in performance test software
898	Perpetual license for built-in performance test software

E5071C` ENA Network Analyzer — Agilent

Frequency range & test ports

E5071C-240	9 kHz to 4.5 GHz, 2-port
E5071C-440	9 kHz to 4.5 GHz, 4-port
E5071C-245	100 kHz to 4.5 GHz, 2-port
E5071C-445	100 kHz to 4.5 GHz, 4-port
E5071C-260	9 kHz to 6.5 GHz, 2-port
E5071C-460	9 kHz to 6.5 GHz, 4-port
E5071C-265	100 kHz to 6.5 GHz, 2-port
E5071C-465	100 kHz to 6.5 GHz, 4-port
E5071C-280	9 kHz to 8.5 GHz, 2-port
E5071C-480	9 kHz to 8.5 GHz, 4-port
E5071C-285	100 kHz to 8.5 GHz, 2-port
E5071C-485	100 kHz to 8.5 GHz, 4-port
E5071C-2D5	300 kHz to 14 GHz, 2-port
E5071C-4D5	300 kHz to 14 GHz, 4-port
E5071C-2K5	300 kHz to 20 GHz, 2-port
E5071C-4K5	300 kHz to 20 GHz, 4-port

Time base

E5071C-1E5	High stability time base
E5071C-UNQ	Standard stability time base

Hard disk drive

E5071C-017	Removable hard disk drive Standard hard disk drive

Additional options

E5071C-008	Frequency offset mode
E5071C-010	Time-domain analysis
E5071C-790	Measurement Wizard Assistant software

Accessories

E5071C-1CM	Rack mount kit,
E5071C-1CN	Front handle kit
E5071C-1CP	Rack mount and front handle kit
E5071C-810	Adds a keyboard
E5071C-820	Adds a mouse

Certification documentation

E5071C-1A7	ISO 17025 compliant calibration
E5071C-A6J	ANSI Z540 compliant calibration

E5071B ENA RF Network Analyzer — Agilent

Test ports and source power range

214	2-port S-parameter test set
314	3-port S-parameter test set
414	4-port S-parameter test set

Additional feature

008	Frequency-offset measurement
010	Time domain analysis capability
790	Measurement Wizard Assistant (MWA) Software

Display

015	Standard color LCD
016	Touch screen color LCD

Frequency stability

1E5	High stability time base
UNQ	Standard stability time base

Accessories

1CM	Rack mount kit
1CN	Front handle kit
1CP	Rack mount and front handle kit
810	Adds a keyboard
820	Adds a mouse

E5071A ENA RF Network Analyzer — Agilent

Test ports and source power range

213	2-port S-parameter test set, (-15 dBm to 0 dBm)
214	2-port S-parameter test set, (-50 dBm to 0 dBm)
313	3-port S-parameter test set,(-15 dBm to 0 dBm)
314	3-port S-parameter test set, (-50 dBm to 0 dBm)
413	4-port S-parameter test set, (-15 dBm to 0 dBm)
414	4-port S-parameter test set, (-50 dBm to 0 dBm)

Display

016	Touch screen color LCD

Frequency stability

1E5	High stability time base

Accessories

1CM	Rack mount kit
1CN	Front handle kit
1CP	Rack mount kit with front handles
1A2	Delete keyboard
1CS	Delete mouse

Documentation

ABA	Add English manual set
ABJ	Add Japanese manual set
0B0	Delete manual set
800	Extra English manual set
801	Extra Japanese manual set

Certification

A6J	ANSI Z540 compliant calibration

Network Analyzer

OPTION INFORMATION

8753xx series Network Analyzer	Agilent	

002	Add harmonic measurement capability	
003	30 kHz to 3 GHz	
006	30 kHz to 6 GHz	
010	Add time domain capability	
011	50 Ohm without test set	
014	Test set extended configuration, receiver access	
075	75 Ohm standard test set	
0B0	Do not include any printed manuals	
0BV	Component level information (CLIPS)	
0BW	Service documentation, assembly level	
1CM	Rack mount kit for installation without handles	
1CP	Rack mount kit for installation with handles	
1D5	High stability frequency reference	
311	Material for combo of options 011 and 003	
5B1	Add extra English manual for 8753ES Option 011, VNA without test set	
611	6 GHz without test set (combo 006 and 011)	
700	Test set standard configuration	
800	Include all standard manuals	
911	Add service guide for 8753ES opt. 011	
AB0	Taiwan- Chinese manual set	
AB1	Korea - Korean manual set	
AB2	China - Chinese manual set	
ABD	Germany - German manual set	
ABF	France - French manual set	
ABJ	Japan - Japanese manual set	
H68	6.8 GHz frequency range	
RMKT	Agilent Refurbished Product	
UK6	Commercial calibration certificate with test data	

8720x / 8719x Network Analyzer	Agilent	

007	Mechanical Transfer Switch	
010	Add time domain capability	
012	Adds direct sampler access	
085	High power test set: automatically includes mechanical transfer switch and direct sampler access	
089	Frequency off-set mode for mixer measurement capability	
0B0	No prog/service/user guide (no manuals at all)	
0B1	Extra manual set, English	

0BV	Add Copy of Documentation,assembly level
0BW	Service documentation,assembly level
1CM	Rack mount kit for installation without handles
1CP	Rack mount kit for installation with handles
1D5	High stability frequency reference
400	Adds fourth Sampler and TRL calibration firmware
700	Standard Test Set Configuration
701	Three Sampler Test Set
702	Standard solid state transfer switch
703	No sampler access
704	Standard configuration with no mixer measurement capability
800	Standard prog/service/user
860	Additional material required for combination #704 and #700
861	Additional material required for combination #085 and #704
862	Additional material required for combination #089 and #700
863	Additional material required for combination #085 and #089
864	Additional material required for combination #700 and #701
865	Additional material required for #703 and #700
ABF	France - French localization
ABJ	Japan - Japanese localization
RMKT	Agilent Refurbished Product
UK6	Commercial cal. certificate w/ test data
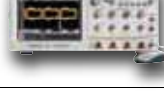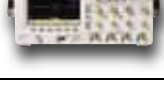
8714 ES RF Network Analyzer	Agilent	

050	50 Ohm test set
099	Standard features
0B0	Do not include any manuals
0B1	Documentation (program/service/user), English
0BV	Clip set
100	Add fault location / SRL
101	Add fault location / SRL plus transport case
1CL	Add keyboard
1CM	Rackmount kit
1EC	75 Ohm test set
1FP	Recalibration software
800	Include standard program/service/user guide
AB0	Taiwan - Chinese localization
AB2	China - Chinese localization

ABD	Germany - German localization
ABE	Spain - Spanish localization
ABF	France - French localization
ABJ	Japan - Japanese localization
ABZ	Italy - Italian localization
AFN	Economy 50 ohm cable with N(f)-N(f) adapter
AFP	Economy 75 ohm cable with N(f)-N(f) adapter
B20	Precision 50 ohm cable
B21	Precision 75 ohm cable
B22	Substitute economy with precision cable - 50 Ohm
B23	Substitute economy with precision cable - 75 Ohm
RMKT	Agilent Refurbished Product
UK6	Commercial calibration certificate with test data

Oscilloscope
PRODUCT INFORMATION

Model	Description	Specification	Remark
Agilent DSO81304A	High Performance Infiniium Oscilloscope	· **13 GHz Bandwidth** · **4 Channels** · **20 ~ 40 GSa/s** · **Standard Memory:** 0.25 ~ 0.5M · **Noise:** 3.3 mV · **Timebase Range:** 5 ps/div ~ 20 s/div	
Agilent DSO81004B	High Performance Infiniium Oscilloscope	· **10 GHz Bandwidth** · **4 Channels** · **20 ~ 40 GSa/s** · **Standard Memory:** 0.25 ~ 0.5M · **Noise:** 2.3 mV · **Timebase Range:** 5 ps/div ~ 20 s/div	
Agilent DSO80804B	High Performance Infiniium Oscilloscope	· **4 GHz Bandwidth** · **4 Channels** · **20 ~ 40 GSa/s** · **Standard Memory:** 0.25 ~ 0.5M · **Noise:** 1.4 mV · **Timebase Range:** 5 ps/div ~ 20 s/div	
Agilent 54832D	Mixed-Signal Infiniium Oscilloscope	· **1 GHz Bandwidth / 16 channel Logic** · **Channels Scope + Timing: 4 +16** · **Sampling :** 4 GSa/s · **Max. Memory :** up to 16 M · **MegaZoom**	
Agilent 54855A	Infiniium Oscilloscope	· **6 GHz Bandwidth** · **4 Channels** · **Sampling :** 20 GSa/s · **Max. Memory :** 1 M 32 Mpts · **MegaZoom**	
Agilent 54854A	Infiniium Oscilloscope	· **1.5 GHz Bandwidth** · **4 Channels** · **Sampling :** 8 GSa/s · **Max. Memory :** 64 K	
Agilent 54853A	Infiniium OScilloscope	· **2.5 GHz Bandwidth** · **4 Channels** · **Sampling :** 20 GSa/s · **Max. Memory :** 1 M/32 Mpts · **MegaZoom**	
Agilent DSO80804A	High Performance Infiniium Oscilloscope	· **8 GHz Bandwidth** · **4 Channels** · **Sampling :** 40 GSa/s · **Up to 2 Mpts MegaZoom deep memory**	
Agilent DSO81004A	High Performance Infiniium Oscilloscope	· **10 GHz Bandwidth** · **4 Channels** · **Sampling:** 40 GSa/s · **Up to 2 Mpts MegaZoom deep memory**	
Agilent 54846B	Infiniium Oscilloscope	· **2.25 GHz Bandwidth** · **4 Channels** · **Sampling:** 8 GSa/s · **Max. Memory :** 64 K	
Agilent 54845A	Infiniium Oscilloscope	· **1.5 GHz Bandwidth** · **4 Channels** · **Sampling:** 8 GSa/s (2 Ch), 4 GSa/s (4 Ch) · **Max. Memory:** 64 K (2 Ch), 32 K (4 Ch)	
Agilent MSO6054A	Mixed Signal Oscilloscope	· **500 MHz Bandwidth** · **4 Scope + 16 Digital Channels** · **Sampling:** 4 GSa/s · **Standard 8 Mpts MegaZoom III deep memory**	
Agilent DSO8064A	Infiniium Oscilloscope	· **600 MHz Bandwidth** · **4 Channels** · **Sampling:** 4 GSa/s · **128 Mpts MegaZoom deep memory**	

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Bandwidth	Agilent	Sampling	Channel	Recommended Probes
50M	54200D	200 MSa/s	2Ch	10433B
	54200A	200 MSa/s	2Ch	10433B
60M	DSO3062A	1 GSa/s	2Ch	N2862A / 63A
	DSO1004A	2 GSa/s	4 CH	N2862
	DSO1002A	2 GSa/s	2 CH	N2862
	54621D	200 MSa/s	2 + 16 CH	10074C
	54621A	200 MSa/s	2 Ch	41800A, 10074C
	54603B	20 MSa/s	2 CH	10074C
75M	1707B	Analog	2 CH	10432A
100M	MSO7014A	2 GSa/s	4+16CH	10073C
	DSO7012A	2 GSa/s	4CH	10073C
	DSO6014A	2 GSa/s	4CH	10073C
	DSO6012A	2 GSa/s	2CH	10073C
	DSO5014A	2 GSa/s	4CH	N2863A
	DSO5012A	2 GSa/s	2CH	N2863A
	DSO3102A	1 GSa/s	2CH	N2862A
	DSO1014A	1 GSa/s	4CH	N2862A
	DSO1012A	1 GSa/s	2CH	N2862A
	54645D	200 MSa/s	2 + 16 CH	10074C
	54645A	200 MSa/s	2CH	10074C
	54624A	200 MSa/s	4CH	10074C
	54622D	200 MSa/s	2 + 16 CH	10074C
	54622A	200 MSa/s	2CH	10074C
	54601B	20 MSa/s	4CH	10074C
	54601A	20 MSa/s	4CH	10074C
	54600B	20 MSa/s	2CH	10074C
	54600A	20 MSa/s	2CH	10074C
	54501A	10 MSa/s	4CH	10433B
	54112D	400 MSa/s	4CH	10441B
	1980B	Analog	2CH	10433B
	1741A	Analog	2CH	10436B
	1740A	Analog	2CH	10436B
150M	DSO3152A	1 GSa/s	2CH	N2862A
	54602B	20 MSa/s	4CH	10074C
	54602A	20 MSa/s	4CH	10074C
	1710A	Analog	2CH	10432A
200M	DSO3202A	1 GSa/s	2CH	N2863A
	DSO1024A	1 GSa/s	4CH	N2862
	DSO1022A	1 GSa/s	2CH	N2862
	1715A	Digital	2CH	10433B
250M	54510A	1 GSa/s	2CH	10441B
275M	1727A	Digital	2CH	10433B
	1726A	Digital	2CH	10433B
	1725A	Analog	2CH	10433B
	1722A	Analog	2CH	10433B
	1720A	Digital	2CH	10432A
300M	DSO6034A	2 GSa/s	4CH	10073
	DSO6032A	2 GSa/s	2CH	10073
	DSO5034A	2 GSa/s	4CH	N2863A
	DSO5032A	2 GSa/s	2CH	N2863A
	54512B	1 GSa/s	4CH	10441B
	54510B	1 GSa/s	2CH	10441B
	54510A	1 GSa/s	2CH	N2863A
	54505B	500 MSa/s	2CH	10441B
	54201D	200 MSa/s	2CH	10433B
	54201A	200 MSa/s	2CH	10433B

Bandwidth	Agilent	Sampling	Channel	Recommended Probes
350M	MSO7034A	2 GSa/s	4+16CH	10073C, N2873A
	MSO7032A	2 GSa/s	2+16CH	10073C, N2873A
	DSO7034A	2 GSa/s	4CH	10073C, N2873A
	DSO7032A	2 GSa/s	2CH	10073C, N2873A
	54641D	2 GSa/s	2+16CH	10073C
	54641A	2 GSa/s	2CH	10073C
400M	54504A	200 MSa/s	2CH	10441A
	54502A	400 MSa/s	2CH	10073C, 10441A
500M	MSO7054A	4 GSa/s	4+16CH	10073C, N2873A
	MSO7052A	4 GSa/s	2+16CH	10073C, N2873A
	MSO6054A	2 GSa/s - 4 GSa/s	4+16CH	10073C
	MSO6052A	4 GSa/s	2+16CH	10073C
	DSO7054A	4 GSa/s	4CH	10073C, N2873A
	DSO7052A	4 GSa/s	2CH	10073C, N2873A
	DSO6054A	4 GSa/s	4CH	10073C
	DSO6052A	4 GSa/s	2CH	10073C
	DSO5054A	4 GSa/s	4CH	10073C
	DSO5052A	2 GSa/s	2CH	10073C
	54825N	2 GSa/s	4CH	1165A
	54825A	2 GSa/s	4CH	1160A, 1164A
	54820A	2 GSa/s	2CH	1160A, 1164A
	54815A	1 GSa/s	4CH	1160A, 1164A
	54810A	1 GSa/s	2CH	1160A, 1164A
	54642D	2 GSa/s	2 + 16 CH	10073C
	54642A	2 GSa/s	2CH	10073C
	54616C	2 GSa/s	2CH	10073C
	54616B	2 GSa/s	2CH	10073C
	54615B	1 GSa/s	2CH	10073C
	54615A	1 GSa/s	2CH	10073C
	54610B	20 MSa/s	2CH	10073C
	54610A	20 MSa/s	2CH	10073C
	54542C	2 GSa/s	4CH	10441B
	54542A	2 GSa/s	4CH	10441B
	54540C	2 GSa/s	4CH	10441B
	54540A	2 GSa/s	4CH	10441B
	54522C	2 GSa/s	2CH	10441B
	54522A	2 GSa/s	2CH	10441B
	54520C	500 MSa/s	2CH	10441B
	54520A	1 GSa/s	2CH	10441B
	54503A	1 GSa/s	2CH	10073C
	54111D	1 GSa/s	2CH	10073C
600M	MSO9064A	20 GSa/s	4CH	N2862
	MSO8064A	4 GSa/s	4 + 16 CH	10073C
	DSO8064A	2 GSa/s - 4 GSa/s	4CH	10073C, 1165A
	54831D	4 GSa/s	4 + 16 CH	10073C, 1165A / 10: 1
	54831B	4 GSa/s	4CH	10073C, 1165A / 10: 1
	54830D	4 GSa/s	2 + 16 CH	10073C, 1165A / 10: 1
	54830B	4 GSa/s	2CH	10073C, 1165A / 10: 1
1G	MSO9104A	20 GSa/s	4CH	N2862
	MSO8104A	4 GSa/s	4 + 16 CH	10073C
	MSO7104A	4 GSa/s	4 + 16 CH	10073C
	MSO6104A	2 GSa/s - 4 GSa/s	4 + 16 CH	10073C
	MSO6102A	2 GSa/s - 4 GSa/s	2 + 16 CH	10073C
	DSO8104A	4 GSa/s	4CH	10073C
	DSO7104A	4 GSa/s	4CH	10073C
	DSO6104A	2 GSa/s - 4 GSa/s	4CH	10073C

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Bandwidth	Agilent	Sampling	Channel	Recommended Probes
1G	DSO6102A	4 GSa/s	2CH	10073C
	54835A	4 GSa/s	2CH	1161A
	54833D	4 GSa/s	2 + 16 CH	1165A
	54833A	4 GSa/s	2CH	1165A
	54832D	4 GSa/s	4 + 16 CH	1165A
	54832B	4 GSa/s	4CH	1165A
	54721A	4 GSa/s	2CH	1141A
	54110D	40 MSa/s	2CH	1141A
	54100D	40 MSa/s	2CH	1141A
	54100A	40 MSa/s	2CH	1141A
1.5G	54845B	8 GSa/s	4CH	1161A
	54845A	8 GSa/s (2CH)-4 GSa/s (4CH)	4CH	1161A
	54720A	4 GSa/s	4CH	1163A, 1141A
	54710A	2 GSa/s	2CH	1163A, 1141A
2G	DSO80204B	20 GSa/s - 40 GSa/s	4CH	1130A
	54852A	10 Gsa/s	4CH	1130A
	54722A	8 Gsa/s	2CH	1141A
	54720D	8 Gsa/s	4CH	1141A
	54710D	4 Gsa/s	2CH	1141A
2.25G	54846B	8 Gsa/s	4CH	1161A
	54846A	8 Gsa/s	4CH	1161A
2.5G	MSO9254A	20 GSa/s	4CH	1130A
	DSO90254A	20 Gsa/s	4CH	1130A
	DSA90254A	20 Gsa/s	4CH	1130A
	54853A	20 Gsa/s	4CH	1130A
3G	DSO80304B	20 GSa/s - 40 GSa/s	4CH	1131A
4G	MSO9404A	20 Gsa/s	4CH	N2862
	DSO90404A	20 Gsa/s	4CH	54006A
	DSO80404B	20 GSa/s - 40 GSa/s	4CH	1132A
	DSA90404A	20 Gsa/s	4CH	54006A
	DSA80404B	20 GSa/s - 40 GSa/s	4CH	1132A
	54854A	20 Gsa/s	4CH	1132A
6G	DSO90604A	20 Gsa/s	4CH	54006A
	DSO80604B	20 GSa/s - 40 GSa/s	4CH	54006A
	DSA90604A	20 Gsa/s	4CH	54006A
	54855A	20 Gsa/s	4CH	1134A
7G				
8G	DSO90804A	40 Gsa/s	4CH	1134A
	DSO80804B	20 GSa/s - 40 GSa/s	4CH	1134A
	DSO80804A	20 GSa/s - 40 GSa/s	4CH	1134A
	DSA90804A	40 Gsa/s	4CH	1134A
10G	DSO81004B	40 Gsa/s	4CH	1168A
	DSO81004A	20 GSa/s - 40 GSa/s	4CH	1168A
12G	DSO91204A	40 Gsa/s	4CH	1169A
	DSO81204B	20 GSa/s - 40 GSa/s	4CH	1169A
	DSO81204A	20 GSa/s - 40 GSa/s	4CH	1169A
	DSA91204A	40 Gsa/s	4CH	1169A
12.4G	54122T	20 Gsa/s	4CH	1141A
13G	DSO91304A	40 Gsa/s	4CH	1169A
	DSO81304B	20 GSa/s - 40 GSa/s	4CH	1169A
	DSO81304A	20 GSa/s - 40 GSa/s	4CH	1169A
	DSA91304A	40 Gsa/s	4CH	1169A
20G	54121T	20 Gsa/s	4CH	1141A
	54120T	20 Gsa/s	4CH	1141A
	54120B	20 Gsa/s	4CH	1141A
50G	54124T	40 Gsa/s	4CH	1141A

Bandwidth	Tektronix	Sampling	Channel	Recommended Probes
50M	TDS310	200 MSa/s	2Ch	P6109B
	TAS250	200 MSa/s	2Ch	P6103B
	2225	200 MSa/s	2Ch	P6103B
	2211	20 MSa/s	2Ch	P6109
	2210	200 MSa/s	2Ch	P6101B, P6103B
	2205	1 GSa/s	2Ch	P6101B, P6103B
	453	400 MSa/s	2Ch	P6105A
60M	TDS210	1 GSa/s	2Ch	P2100
	TDS2004B	1 GSa/s	4Ch	P6101B
	TDS2002B	1 GSa/s	2Ch	P6101B
	TDS2002	1 GSa/s	2Ch	P6101B
	TDS1002B	1 GSa/s	2Ch	P6101B
	TAS455	1 GSa/s	2Ch	P6109B
	453A	2 GSa/s	2Ch	P6101B
	2216	1 GSa/s	4Ch	P6122
	2215A	1 GSa/s	2Ch	P6122
	2215	1 GSa/s	2Ch	P6122
	2213A	1 GSa/s	2Ch	P6122
	2213	1 GSa/s	2Ch	P6122
	2212	20 MSa/s	2Ch	P6109B
	224	10 MSa/s	2Ch	9850
100M	TDS340A	500 MSa/s	2Ch	P6109B
	TDS340	500 MSa/s	2Ch	P6109B
	TDS320	500 MSa/s	2Ch	P6109B
	TDS3014C	5 GS/s	4Ch	P6139A
	TDS3014B	1.25 GS/s	4Ch	P3010
	TDS3014	1.25 GSa/s	4Ch	P3010
	TDS3012C	5 GS/s	2Ch	P6139A
	TDS3012B	1.25 GS/s	2Ch	P3010
	TDS3012	1.25 GS/s	2Ch	P3010
	TDS224	1 GSa/s	4Ch	P2100
	TDS220	1 GSa/s	2Ch	P2220
	TDS2014B	1 GSa/s	4Ch	P2220
	TDS2014	1 GSa/s	4Ch	P2220
	TDS2012	1 GSa/s	2Ch	P2220
	TDS1012	1 GSa/s	2Ch	P6101B
	TAS485	1 GSa/s	4Ch	P6111B
	TAS475	Analog	4Ch	P6109B
	TAS465	1 GSa/s	2Ch	P6109B
	DPO3014	2.5 GS/s	4Ch	P6139A
	465B	Analog	2Ch	P6105A
	465	Analog	2Ch	P6105A
	466	Digital	2Ch	P6105A
	2247A	Analog	4Ch	P6109
	2246A	Analog	4Ch	P6109
	2246	Analog	4Ch	P6109
	2245A	Analog	4Ch	P6109
	2245	Analog	4Ch	P6109
	2336	Digital	2Ch	P6108A
	2235	Analog	2Ch	P6108A
	2232	100 MSa/s	2Ch	P6109
	2230	100 MSa/s	2Ch	P6109
	2221A	100 MSa/s	2Ch	P6109
	2221	100 MSa/s	2Ch	P6109
	2252	Analog	4Ch	P6109
150M	TDS420	100 MSa/s	4Ch	P6138A
	TDS410	100 MSa/s	2Ch	P6138A
	2445B	Analog	4Ch	P6133
	2445A	Analog	4Ch	P6133
	2445	Analog	4Ch	P6131
	2430A	100 MSa/s	2Ch	P6133
	2430	100 MSa/s	2Ch	P6133
200M	TDS475	100 MSa/s	2Ch	P6138A
	TDS420A	100 MSa/s	4Ch	P6138A
	TDS410A	100 MSa/s	2Ch	P6138A
	TDS360	1 GSa/s	2Ch	P6111B
	TDS350	1 GSa/s	2Ch	P6111B
	TDS3024B	2.5 GS/s	4Ch	P6139A

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Bandwidth	Tektronix	Sampling	Channel	Recommended Probes
200M	TDS2024B	2 GSa/s	4Ch	P2220
	TDS2024	2 GSa/s	4Ch	P2220
	TDS2022	2 GSa/s	2Ch	P2220
	DPO2024	1 GSa/s	4Ch	P2220
	475	Analog	2Ch	P6106A
250M	475A	Analog	2Ch	P6106A
	2455B	Analog	4Ch	P6131, P6136
300M	TDS3034C	5 GSa/s	4Ch	P6139A
	TDS3034B	2.5 GS/s	4Ch	P6139A
	TDS3034	2.5 GS/s	4Ch	P6139A
	TDS3032C	5 GSa/s	2Ch	P6139A
	TDS3032B	2.5 GS/s	2Ch	P6139A
	TDS3032	2.5 GS/s	2Ch	P6139A
	DPO3034	2.5 GS/s	4Ch	P6139A
	2465DMS	Analog	4Ch	P6136
	2465CTS	Analog	4Ch	P6136
	2465ADM	Analog	4Ch	P6136
	2432A	250 MSa/s	2Ch	P631, P6137
	2431L	250 MSa/s	2Ch	P6136
	2465	Analog	4Ch	P6101A
	2440	500 MSa/s	2Ch	P6137
350M	TDS5034B	5 GSa/s	4Ch	P5050
	TDS5034	5 GSa/s	4Ch	P5050
	TDS5032B	5 GSa/s	2Ch	P5050
	TDS460	100 MSa/s	4Ch	P6138A
	MSO4034	2.5 GS/s	4Ch	P6139A
	DPO4034B	2.5 GS/s	4Ch	P6139A
	DPO4034	2.5 GS/s	4Ch	P6139A
	DPO4032	2.5 GS/s	2Ch	P6139A
	2465ACT	Analog	4Ch	P6136
	2465A	Analog	4Ch	P6136
	2467	Analog	4Ch	P6136
	485	Analog	2Ch	P6106A
400M	TDS460A	100 MSa/s	4Ch	P6138A
	TDS430A	100 MSa/s	2Ch	P6138A
	TDS380	2 GSa/s	2CH	P6114B
	TDS3044B	5 GSa/s	4Ch	P6139A
	2467BHD	Analog	4Ch	P6137
	2467B	Analog	4Ch	P6137
	2465BHD	Analog	4Ch	P6137
	2465BDV	Analog	4Ch	P6137
	2465BCT	Analog	4Ch	P6137
	2465B	Analog	4Ch	P6137
500M	TDS754D	2 GSa/s	4CH	P6139A
	TDS754C	2 GSa/s	4CH	P6139A
	TDS754A	2 GSa/s	4CH	P6139A
	TDS744A	2 GSa/s	4CH	P6139A
	TDS724D	2 GSa/s	2CH	P6139A
	TDS724A	1 GSa/s	2CH	P6139A
	TDS714L	500 MSa/s	4CH	P6139A
	TDS7054	5 GSa/s	4CH	P6139A
	TDS654C	5 GSa/s	4CH	P6243
	TDS644B	2.5 GSa/s	4CH	P6243
	TDS644A	2 GSa/s	4CH	P6139A
	TDS640A	2 GSa/s	4CH	P6139A
	TDS640	2 GSa/s	4CH	P6139A
	TDS620B	2.5 GSa/s	2CH	P6139A
	TDS620A	2 GSa/s	2CH	P6139A
	TDS544B	1 GSa/s	4CH	P6139A
	TDS544A	1 GSa/s	4CH	P6139A
	TDS540D	2 GSa/s	4CH	P6139A
	TDS540C	2 GSa/s	4CH	P6139A
	TDS540B	1 GSa/s	4CH	P6139A
	TDS540A	1 GSa/s	4CH	P6139A
	TDS540	1 GSa/s	4CH	P6139A
	TDS524A	500 MSa/s	2CH	P6139A
	TDS520D	2 GSa/s	2CH	P6139A
	TDS520C	500 MSa/s	2CH	P6139A

Bandwidth	Tektronix	Sampling	Channel	Recommended Probes
500M	TDS520B	500 MSa/s	2CH	P6139A
	TDS520A	500 MSa/s	2CH	P6139A
	TDS520	500 MSa/s	2CH	P6139A
	TDS510A	500 MSa/s	4CH	P6139A
	TDS5054BE	5 GSa/s	4CH	P5050
	TDS5054B	5 GSa/s	4CH	P5050
	TDS5054	5 GSa/s	4CH	P5050
	TDS5052B	5 GSa/s	2CH	P5050
	TDS5052	5 GSa/s	2CH	P6247
	TDS3054C	5 GSa/s	4CH	P6139A
	TDS3054B	5 GSa/s	4CH	P6139A
	TDS3054	5 GSa/s	4CH	P6139A
	TDS3052C	5GSa/s	2CH	P6139A
	TDS3052B	5 GSa/s	2CH	P6139A
	TDS3052	5 GSa/s	2CH	P6139A
	MSO4054	2.5 GSa/s	4CH	P6139A
	DPO7054	10 GSa/s	4CH	P6139A
	DPO4054	2.5 GSa/s	4CH	P6139A
	DPO3054	2.5 GSa/s	4CH	P6139A
	7904	1 GSa/s	2CH	P6139A
600M	TDS3064B	5 GSa/s	4CH	P6139A
1G	TDS784D	4 GSa/s	4CH	P6139A
	TDS784C	4 GSa/s	4CH	P6139A
	TDS784A	4 GSa/s	4CH	P6139A
	TDS7104	10 GSa/s	4CH	P6248
	TDS684C	5 GSa/s	4CH	P6139A
	TDS684B	5 GSa/s	4CH	P6139A
	TDS684A	5 GSa/s	4CH	P6139A
	TDS680C	5 GSa/s	2CH	P6139A
	TDS680B	5 GSa/s	2CH	P6139A
	TDS580D	4 GSa/s	4CH	P6139A
	TDS5104B	5 GSa/s	4CH	P5050
	TDS5104	5 GSa/s	4CH	P6139A
	MSO4104	5 GSa/s	4 + 16 CH	P6139A
	DPO7104	20 GSa/s	4CH	P6139A
	DPO4104	5 GSa/s	4CH	P6139A
1.5G	TDS7154B	20 GSa/s	4CH	P7225
	TDS7154	20 GSa/s	4CH	P7225
2G	TDS794D	4 Gsa/s	4CH	P6139A
2.5G	TDS7254B	20 GSa/s	4CH	P7225
	TDS7254	20 GSa/s	4CH	P7225
	DPO7254	40 GSa/s	4CH	P6139A
3G	TDS694C	10 GSa/s	4CH	P6330
3.5G	DPO7354	40 GSa/s	4CH	P7240
4G	TDS7404B	20 Gsa/s	4CH	P7240, P7260
	TDS7404	20 Gsa/s	4CH	P7240, P7260
	TDS6404	20 Gsa/s	4CH	P7240, P7260
	DPO70404B	50 Gsa/s	4CH	P7240
	DSA7404B	20 Gsa/s	4CH	P7240, P7260
	CSA7404	20 Gsa/s	4CH	P7240, P7260
6G	TDS6604B	20 Gsa/s	4CH	P7240, P7260
	TDS6604	20 Gsa/s	4CH	P7240, P7260
	DSA70604	50 Gsa/s	4CH	P7240
	DPO70604	50 Gsa/s	4CH	P7240
7G	TDS7704B	20 Gsa/s	4CH	P7240, P7260
8G	TDS6804B	20 Gsa/s	4CH	P7260
	DSA70804B	50 Gsa/s	4CH	P7260
	DPO70804B	50 Gsa/s	4CH	P7260
12G	TDS6124C	20 Gsa/s	4CH	P6150
12.5G	DPO71254	50 Gsa/s	4CH	P6150
15G	TDS6154C	40 Gsa/s	4CH	P7516
16G	DSA71604B	50 Gsa/s	4CH	P7516
	DPO71604B	50 Gsa/s	4CH	P7516
20G	DSA72004B	50 Gsa/s	4CH	P7516
	DSA72004	50 Gsa/s	4CH	P7516
	DPO72004	50 Gsa/s	4CH	P7516
50G	TDS8000	Digital	8CH	P7516
70G	TDS8000B	Digital	8CH	P7516
80G	DSA8200	Digital	8CH	P6150, P8018

Oscilloscope
Option Information

86100C Infiniium DCA-J Wideband Oscilloscope — Agilent

11898A	Extender module for plug-in modules
54006A	6 GHz Passive Divider Probe Kit
001	Enhanced Trigger, 13 GHz BW
090	Removable Hard Drive
200	Enhanced Jitter Analysis Software
201	Advanced Waveform Analysis Software
202	Enhanced Impedance and S-Parameter Software
300	Advanced Amplitude Analysis/RIN/Q-Factor
701	Standard trigger 3.2 GHz BW (Default Option)
AFP	Module Slot Filler Panel
AX4	Rack mount kit without handles
AXE	Rack mount kit with handles
UK6	Commercial calibration certificate with test data
400	PLL and Jitter Spectrum Measurement SW
401	Advanced EYE Analysis Software
N1020A	TDR Probe
N1021B	18 GHz Differential TDR/TDT Probe Kit
N1022A	Probe Adapter
N4688A	USB CD R/W drive, an external read/write CD drive with a USB cable
N9355CK01	DC coupled limiter

86100B/A Infiniium DCA Wideband Oscilloscope — Agilent

001	12.5 GHz Trigger bandwidth
701	2.5 GHz Trigger bandwidth
AX4	Rack mount kit without handles
AXE	Rack flange kit with handles
RMKT	Agilent refurbished product
UK6	Commercial cal. Certificate w/test data

54855A Infiniium Oscilloscope — Agilent

001	1M MegaZoom memory/ch upgrade for 5485XA oscilloscopes, includes 32M Megazoom memory/ch
002	EZJIT jitter analysis software package for Infiniium 54855A (installed)
003	Serial Data Analysis software for Infiniium 5485xA oscilloscopes (installed at the factory)
004	EZJIT Plus software
006	Application Integration Package (Installed)
008	7 GHz Enhanced Bandwidth Software Option
017	Removable hard drive for Infiniium 54850 series oscilloscopes
018	Standard hard drive for Infiniium 54850 series oscilloscopes

(continued)

021	Low-Speed SDA (installed)
1CM	Rackmount Kit
600	89601A Vector Signal Analysis Software with options 200-300
601	89601A Vector signal analysis software with options 200-300-AYA
602	89601A Vector signal analysis software with options 200-300-AYA-105
A6J	ANSI Z540 Compliant Calibration
ABJ	Japan - Japanese localization
RMKT	Agilent refurbished product

54852A Infiniium Oscilloscope — Agilent

001	1M Memory/CH Upgrade
002	EZJIT jitter analysis software package for Infiniium 54852A (installed)
003	High-Speed SDA and Clock Recovery (installed)
004	EZJIT Plus software
006	Application Integration Package (Installed)
017	Removable hard drive for Infiniium 54850 series oscilloscopes
018	Standard hard drive for Infiniium 54850 series oscilloscopes
021	Low-Speed SDA (installed)
1CM	Rackmount Kit
A6J	ANSI Z540 Compliant Calibration
ABJ	Japan - Japanese localization
RMKT	Agilent refurbished product

54846B/A Infiniium Oscilloscope — Agilent

001	Provides 2 1161A Probes
002	Provides 1 1162A Probe
003	Provides 1 1163A Probe
004	Provides 4 1161A Probes
008	1153A 200 MHz Differential Probe
009	1154A 500 MHz Differential Probe
010	1159A 1 GHz Differential Probe
014	1158A 4 GHz Active Probe
100	Communications Mask Test Kit
1CM	Rackmount Kit
200	Voice Control for Infiniium Oscilloscopes
A6J	ANSI Z540 Compliant Calibration
AB0	Taiwan - Chinese User's Guide
AB1	Korean User's Guide
AB2	PRC - Chinese User's Guide
ABD	German User's Guide
ABE	Spanish User's Guide

(continued)

ABF	French User's Guide
ABJ	Japanese User's Guide
ABZ	Italian User's Guide
B30	USB Test Option
B31	Low/Full SQiDD Probe Board
RMKT	Agilent Refurbished Product
UL5	Touch Pad (Glidepoint)
UL9	Cordless Trackball

54832D/B Mixed-Signal Oscilloscope — Agilent

001	Add Two 1165A Probes
002	Add One Each 1162A Probe
003	High-Speed SDA and Clock Recovery (installed)
004	Add Four 1165A Probes
005	Add Logic Probe Kit
006	Application Integration Package (My Infiniium installed)
007	Add Wedge Kit
008	Provides 1153A Probe
009	Provides 1154A Probe
010	Provides 1159A Probe
011	Provides 1155A Probe
012	Provides 1156A Probe
015	EZJIT jitter analysis software package (installed)
016	Easy Probe Positioner
017	Removable hard drive for Infiniium 54830 series oscilloscopes
018	Standard hard drive for Infiniium 54830 series oscilloscopes
019	1.5 GHz InfiniiMax differential probe (includes E2675A)
021	Low-Speed SDA (installed)
040	Memory Upgrade 2M/CH to 4M/CH
080	Memory Upgrade 2M/CH to 8M/CH
0B3	Service Guide
0BF	Programmer's Guide
100	Communications Mask Test
160	Memory Upgrade 2M/CH to 16M/CH
1CM	Rackmount Kit
200	Voice Control Option
320	Memory Upgrade 2M/CH to 32M/CH
640	Memory Upgrade 2M/CH to 64M/CH
A6J	ANSI Z540
AB2	PRC - Chinese Manual Option
ABJ	Japanese Manual Option
B30	USB Option
B31	Low/Full SQUIDD Probe Board
RMKT	Agilent refurbished product

Component Test / RF Communication
PRODUCT INFORMATION

Component Test	Description	Specification	Remark

Agilent 4284A	Precision LCR Meter	· **Test Frequency**
		  20 Hz ~ 1 MHz
		· **Basic accuracy**
		  C and L: 0.05%, D: 0.0005%
		· **Impedance Range**
		  0.01 MΩ ~ 99.9999 MΩ
		· **20 Impedance parameters signal level**
		· **20 Vrms test**	

Agilent 4286A	RF LCR Meter	· **Test Frequency**
		  1 MHz ~ 1 GHz
		· **1% Basic accuracy**
		· **High-speed measurements**
		  15ms
		· **1 m/3 m errorless cable with APC-3.5 test head**	

Agilent 4352B	VCO/PLL Signal Analyzer	· **Frequency Range : 10 MHz - 3 GHz/26 G** · **Frequency Resolution : 1 kHz** · **Phase noise performance : -157dBc / Hz**	
Agilent 4287A	RF LCR Meter	· **Test Frequency :** 1 MHz ~ 3 GHz · **Wide impedance measurement range: 200 m ohm ~ 3 k ohm** · **High-speed measurements:** 9ms · **Frequency Resolution:** 100 kHz	

RF Communication	Description	Specification	Remark
Agilent E6607A	EXT Wireless Communications Test Set	· Standards-based transmitter measurements and modulation analysis capability are based on proven Agilent X-Series signal analyzers · Tests new and existing radio formats including LTE, HSPA+, W-CDMA/HSPA, cdma2000®/1xEV-DO, GSM/EDGE/EDGE-EVO, WiMAXTM, Bluetooth®, GPS/GNSS and more	
Agilent E6621A	PXT Wireless Communications Test Set	· System-rate network and base station emulation · LTE TDD and FDD options · RF parametric measurements, Functional test, Multi-PDN, IPv6, IMS/SIP options, handovers · Transmission modes 1-4 and 6 · End-to-end IP data testing up to Cat 3	
R&S CMW500	Wideband Radio Communication Tester	· **The R&S®CMW500 is a compact solution for fast and precise production testing of current and future wireless devices from basic mobile phones to the most sophisticated PDAs.** · **LTE TDD & FDD, WiMax, CDMA,W-CDMA,GSM,GPRS,EGPRS, Bluetooth,WLAN a/b/g/n,**	
Anritsu MT8820C	Radio Communication Analyzer	· **Supports LTE as well as 3G and 2G signaling** · **Market-Leading TD-SCDMA functionality including HDSPA and HSUPA** · **Supports all manufacturing processes including no-call calibration and functional test** · **Utilizes Parallelphone™ Measurement for 2X line throughput**	
Agilent E5515C	Wireless Communication Test Set	· **Automated testing of today's most popular wireless formats** · **Supports** cdma2000, IS-95, W-CDMA, HSDPA, HSUPA, GPRS, GSM, EGPRS, IS-136(TDMA), AMPS, 1xEVDO	
R&S CMU200	Universal Radio Communication Tester	· **User-friendly R&S CMUgo remote control S/W** · **Automatic setting of attenuation values** · **Automatic start of test sequences matched to the DUT** · **Supports:** cdma2000/AMPS, WCDMA(3GPP-FDD), GSM/HSCSD/GPRS/EGPRS	
R&S CMD80	Digital Radio Communication Tester	· **N/W Standards & Frequency Bands covered by CMD80** *(see table below)*	
Anritsu MT8815A	Radio Communication Analyzer	· **W-CDMA, Transmitter, Receiver, and Performance Tests** · **GSM/GPRS/EGPRS Measurement** · **cdma2000 1X Measurement** · **cdma2000 1xEV-DO Measurement** · **AMPS Audio Board** · **PDC Measurement** · **PHS Measurement** · **Real-Time Voice Encoding and Decoding**	

N/W Standards & Frequency Bands covered by CMD80

Network std.	Specification	Country	Freq. band
CDMA	IS95	US Cellular	800 MHz
CDMA	J-STD-008 (Upbanded IS95)	US PCS	1900 MHz
CDMA	J-STD-008	Korea PCS	1700 MHz
AMPS	IS55	US Cellular	800 MHz

VQT/DECT	Description	Specification	Remark

R&S CMD60	Communication Test Set	· **Std.**
		  DECT Europe (1880 & 1900 MHz)
		· **Opt.**
		  GSM900(900 MHz), R-GSM, GSM North America, PCN(1800 MHz),
		  DECT Latin America	

R&S CMD65	System Communication Test Set	· **Std.**
		  GSM900(900 MHz), PCN(1800 MHz), DECT Europe (1880 & 1900 MHz),
		· **Opt.**
		  R-GSM, GSM North America, DECT Latin America	

R&S CTS60 / CTS65	Digital Radio Tester	· **GSM900 (Europe) for CTS65** · **GSM1800 (PCN,Europe) for CTS65** · **GSM1900 (PCS, USA) for CTS65** · **DECT Europe** · **DECT Latin America**	
Agilent J1981B	Voice Quality Tester(VQT)	· **Test voice clarity using PESQ, PSQM, PAMS** · **Delay, Echo, Echo Doubletalk** · **Signal Loss** · **DTMF distortion** · **Test 150 different voice samples in different languages**	
Agilent MPU-P1		**Sub-equipment for VQT enhancement** - Measuring VoIP(Quality for IP phone) - Measuring mobile voice quality	

Agilent 8923B	DECT Test Set	· **RF Carrier Frequency Range**
		  1880 ~ 1900 MHz
		· **RF Carrier Level Range**
		  -100 dBm ~ -10 dBm	

Data/Telecom	Description	Specification	Remark
Agilent 34970A	Data Acquisition Switch Unit	· **3-slot data acquisition & switching mainframe** · **Built-in GPIB and RS232 interfaces** · **6 1/2-digit (22bit) internal DMM** · **8 switch and control plug-in modules** · **11 built-in measurement function** · **BenchLink data logger S/W included**	
Spirent GSS6560	Multi-Channel Fully Flexible GPS/SBAS Simulation System	· **12 channels of GPS L1 C/A code** · **Scenario generation using Spirent's SimGEN for Windows®** · **Full user control of GPS constellation, errors and atmospheric effects** · **Control of vehicle motion, antenna modeling and terrain modeling** · **Interactive run time control** · **Up to 4 RF outputs to support differential and attitude testing**	
Spirent STR-4500	Multi-Channel Scenario Reply GPS/SBAS Simulation System	· **GPS L1 C/A code and SBAS generation** · **12 independent signal channels** · **Wide range of scenario test cases covering basic GNSS test needs** · **On-line scenario generation tool** · **High fidelity, accuracy, repeatability and dynamics** · **Multiple vehicle types with comprehensive error effects** · **Assistance data extract utility provided for users working in A-GPS arena** · **Capture receiver data plus simulation truth data in NMEA-0183 format**	

Wireless Lan	Description	Specification	Remark
Agilent N4010A	Wireless Connectivity Test Set	· **Covers Bluetooth, WLAN, and ZigBee** · **Multiple Wireless Connectivity w/ One Test Platform** · **Evaluating Wireless Format in the 2.4 GHz or 5 GHz Bands**	
Agilent E1852B	Bluetooth Test Set	· **Frequency Range :** 2401 MHz ~ 2480 MHz · **Output Power Range:** -95 dBm ~ -35 dBm · **Power Measurement Range:** -55 dBm ~ +23 dBm · **Frequency Counter Input Range:** 10 kHz ~ 15 MHz	
TESCOM TC-3000B	Spectrum Analyzer 100 Hz ~ 8 GHz	· **Resolution Bandwidth Range :** 1 Hz - 8 MHz · **Max. Sensitivity :** 155dBm (DANL) · **Dynamic Range :** 81db W-CDMA ACLR	

OPTIC / Logic Analyzer / Noise Figure Analyzer
PRODUCT INFORMATION

OPTIC	Description	Specification	Remark
Agilent 86146B	Optical Spectrum Analyzer	· **Amplitude accuracy :** 0.5 dB · **Stability :** 10mdB · **Low Polarization dependence:** 50mdB · **Wide Wavelength Range :** 600nm to 1700nm · **Highest Wavelength Accuracy :** 10pm · **Resolution Bandwidth :** 60pm ~ 10nm	
Agilent 86105C	9 GHz Optical / 20 GHz Electrical Sampling Module	· **Wavelength Range :** 750 ~ 1600 nm · **Max. Input Power :** 0.5 mW · **Max. input signal :** ± 2 Vdc	
Agilent 86100C	DCA-J Wideband Sampling Oscilloscope	· **Mainframe slots for two modules** · **Trigger bandwidth :** up to 13 GHz · **Clock recovery with adjustable loop bandwidth** · **MATLAB signal filtering and Measurement Automation S/W**	
Agilent 83496B	Optical/Electrical Clock Recovery Module with Phase Noise Analysis Capability	· **Optical clock recovery (option 101 only)** - In & outputs: 9/125 μm (single) to 62.5/125 μm (multi) - Wavelength range: 1250-1650 nm (single), 750-1330 nm (multi) - Min. Optical Modulation Amplitude: -11 dBm, -10 dBm, -8 dBm · **Electrical clock recovery (option 100 only)** Inputs: single-ended or differential, 3.5 mm connectors) Outputs: single-ended or differential, 3.5 mm connectors) Min. Electrical Input Level: 75 mVpp	
Agilent 8163A	Lightwave Multimeter System	· **Display :** Graphical Display, 190 x 300 points, mono · **Display Resolution :** 0.0001dB/dBm, 0.01pW to 10pW · **Trigger :** true synchronous (all channels) · **Supports modules of the 816xxx and 815xxx series**	
Agilent 81640A	Tunable Laser Module	· **Wavelength Range :** 1510nm to 1640nm · **Max. Output Power :** 4dBm · **Wavelength Accuracy (abs.) :** ±0.015nm · **Wavelength repeatability (typ.) :** ±0.5pm	
Agilent 83437A	Broadband Light Source	· **300 kHz ~ 20 GHz modulation frequency** · **850, 1300 or 1550 nm operation** · **RIN measurements to -165 dB/Hz** · **Interferometer for laser linewidth and chirp measurements**	
Agilent 8164A	Lightwave Measurement System	· **Display :** Graphical active color, 640 x 480 · **Trigger :** True synchronous on all channels - Max. 100 kHz triggering - 1 MHz for external digital modulation	

Logic Analyzer	Description	Specification	Remark
Agilent 1680AD	Logic Analyzer	· **136 Channels** · **Max. State Clock :** 200 MHz · **Max. State Data Rate :** 200 Mb/s · **Max. Timing Sampling Rate :** 800 MHz (1.25 ns)/400 MHz (2.5 ns) · **Max. Transitional Timing Rate :** 200 MHz	
Agilent 16702B	Logic Analysis System	· **5-slot modular system** · **800 x 600 color touch screen** · **1 emulation slot or 1 multi-frame module**	
Agilent 16702A	Logic Analysis System	· **Built-in 800x600 display** · **4 GHz timing and 2 GHz scope option** · **Simultaneous measurement up to 1,020 Ch.** · **5-slot modular system** · **2 emulation slot**	
Agilent 1672G	Logic Analyzer	· **68 Channels** · **Max. State Clock :** 150 MHz · **Max. State Data Rate :** 150 Mb/s · **Max. Timing Sampling Rate :** 500 MHz (2 ns)/250 MHz (4 ns) · **Max. Transitional Timing Rate :** N/A	

Noise Figure Analyzer	Description	Specification	Remark
Agilent N8973A/N8974A/N8975A	Noise Figure Analyzer	· **Options Selection** N897x-1D5 High-stability frequency reference N897x-A6J ANSI Z540 compliant calibration with test data N897x-1CP Rack mount and handle kit N897x-UK9 Additional front-panel cover N897x-1FP Calibration, performance verification, and adjustment software	

Option Information

N8975A/4A/3A Noise Figure Analyzer — Agilent

N897x-1D5	High-stability frequency reference
N897x-A6J	ANSI Z540 compliant calibration with test data
N897x-1CP	Rack mount and handle kit
N897x-UK9	Additional front-panel cover
N897x-1FP	Calibration, performance verification, and adjustment software

K-Series block downconverters

N8975AZ-K40	26.5 GHz to 40.0 GHz
N8975AZ-K50	36.5 GHz to 50.0 GHz
N8975AZ-K63	50.0 GHz to 63.0 GHz
N8975AZ-K75	61.5 GHz to 75.0 GHz
N8975AZ-K88	75.0 GHz to 88.5 GHz
N8974AZ-K98	86.5 GHz to 100.0 GHz
N8975AZ-K99	96.5 GHz to 110.0 GHz

Noise Source

N4000A	10 MHz – 18 GHz Smart Noise Sources
N4001A	10 MHz – 18 GHz Smart Noise Sources
N4002A	10 MHz – 26 GHz Smart Noise Sources
346A	10 MHz – 18 GHz Traditional Noise Sources
346B	10 MHz – 18 GHz Traditional Noise Sources
346C	10 MHz – 26 GHz Traditional Noise Sources
346CK01	1 GHz – 50 GHz Traditional Noise Sources
Q347B	33 GHz – 50 GHz High Frequency Noise Sources
R347B	26.5 GHz – 40 GHz High Frequency Noise Sources

Special Noise Source Option

346B-H01	APC 3.5 (m) connector with 21 dB nominal ENR
346C-H01	APC 3.5 (m) connector with 21 dB nominal ENR
346C-K01	10 MHz to 50 GHz 346 Series noise source nominal ENR 21 dB

Documentation

N897XA-0B1	Additional NFA series manual set (English version)
N897XA-0B2	Additional NFA series user manual (English version)
N897XA-0BF	Additional NFA series programmer reference (English version)
N897XA-AB0	NFA series manual set for Taiwan -Chinese localization
N897XA-AB1	NFA series manual set - Korean localization
N897XA-AB2	NFA series manual set - Chinese localization
N897XA-ABE NFA	Series manual set - Spanish localization
N897XA-ABF NFA	Series manual set - French localization
N897XA-ABZ NFA	Series manual set - Italian localization
N897XA-ABD NFA	Series manual set - German localization
N897XA-ABJ NFA	Series manual set - Japanese localization
N897XA-0B0	Delete hard copy manual set

86120B/C Multi-Wavelength Meter — Agilent

021	Straight non-angled contact interface PC
022	Angled contact interface - APC
412	External attenuator 10 dB FC/PC
417	External attenuator 10 dB FC/APC
AXE	Rack flange kit with handles
H50	Multimode input for the 86120B using an internal multimode cable
IA4	Rack mount kit without handles

RMKT	Agilent Refurbished Product
UK5	Carrying case
UK6	Commercial calibration certificate with test data
UK7	Hard carrying case

86105C 9 GHz Optical / 20 GHz Electrical Sampling Module — Agilent

012	Standard FC/PC optical connector (2.5 mm keyway)
100	Common low rate filter hardware
110	155 Mb/s filter
120	622 Mb/s filter
130	1.063 Gb/s filter
140	1.250 Gb/s filter
150	2.125 Gb/s filter
160	2.488 Gb/s and 2.500 Gb/s filter
170	2.666 Gb/s filter
180	3.125 Gb/s filter
190	4.25 Gb/s filter
193	5.0 Gb/s
195	6.25 Gb/s
197	8.5 Gb/s
200	Multi 9G filters - 9.953 Gb/s, 10.3125 Gb/s, 10.518 Gb/s, 10.66 Gb/s, 10.709 Gb/s, 11.1 Gb/s, 11.3 Gb/s"
300	Combination of low data rate filters and multi 9G filters
H93	4.25Gb/s filter then upgrade 5Gb/s filter no charge at later date.(RMA required)
H95	6.25 Gb/s filter
H97	Agilent 86105C option H97 provides the 8.5 Gbs filter rate
RMKT	Agilent refurbished product
UK6	Commercial calibration certificate with test data

83496B Optical/Electrical Module — Agilent

100	Electrical inputs, 50 Mb/s - 7.1 Gb/s
101	Optical and electrical inputs, 50 Mb/s - 7.1 Gb/s
200	Rate, extend maximum, from 7.1 GB/S TO 13.5 GB/S
201	Data rate, shift to 7.1-13.5 Gb/s only, no low range
300	Bandwidth, adjustable loop
H04	Auxiliary port, photodector signal output
H05	Splitter, internal electrical signal
UK6	Commercial calibration certificate with test data

837XX Series CW Generator — Agilent

0B0	Do not include documentation set
0B2	Include standard documentation set
0BV	Service documentation, component level
0BW	Service documentation, assembly level
1CM	Rack mount flange kit
1CP	Rack mount flange kit with handles
1CR	Rack slide kit
1E1	Add step attenuator
1E5	Add high stability timebase
1E7	Type-N RF output connector
1E8	Add 1 Hz frequency resolution

1E9	3.5mm RF output connector
ABD	Germany - German localization
ABE	Spain - Spanish localization
ABF	France - French localization
ABJ	Japan - Japanese localization
ABZ	Italy- Italian localization
C04	RF output connector moved to rear panel
C05	BNC and RF connectors moved to rear panel
RMKT	Agilent Refurbished Product -Refurbished Item-
UK6	Commercial calibration certificate with test data

81110A/11A Pattern Generator — Agilent

0B0	Do not include any manuals
0B1	English Manual Set (Reference Guide and Quick Start Guide)
0BW	Service Documentation, assembly level (English)
1CM	Rackmount kit
1CN	Handle kit
1CP	Rackmount and handle kit
1CR	Rack slide kit
AB0	Taiwan - Chinese Quick Start Guide (includes English Manual Set)
AB1	Korean Quick Start Guide (includes English Manual Set)
AB2	China - Chinese Quick Start Guide (includes English Manual Set)
ABF	French Quick Start Guide (includes English Manual Set)
ABJ	Japanese Quick Start Guide (includes English Manual Set)
NOC	No Output Channel
RMKT	Agilent Refurbished Product
UFJ	1 MB SRAM memory card
UK6	Commercial cal. certificate w/ test data
UN2	Rear Panel Connectors

8110A Pulse Pattern Generator — Agilent

011	Front Panel Connectors
013	Front and Rear Panel Connectors (front connected)
014	Front and Rear Panel Connectors (rear connected)
0B0	Do not include any manuals
0BV	Service Documentation, component level (English)
0BW	Service documentation, assembly level (English)
1BP	Mil std 45662A calibration with test data
1CM	Rackmount kit
1CN	Handle kit
1CP	Rackmount and handle kit
1CR	Rack slide kit
AB0	Taiwan - Chinese Operation Manual (includes English Operation Manual)
ABD	German Operation Manual (includes English Operation Manual)
ABE	Spanish Operation Manual (includes English Operation Manual)
ABF	French Operation Manual (includes English Operation Manual)
ABJ	Japanese Operation Manual (includes English Operation Manual)
ABZ	Italian Operation Manual (includes English Operation Manual)
RMKT	Agilent Refurbished Product
UK6	Commercial cal. certificate w/ test data
UN2	Rear Panel Connectors

Option Information

53152A CW MW Frequency Counter — Agilent

000	Standard Timebase
001	High Stability Oven Timebase
002	Internal Battery and DC Power Input
007	Soft Carrying Case
1CM	Rackmount Kit
700	Option 000
701	Option 001
702	Option 000 & 002
703	Option 001 & 002
A6J	ANSI Z540 Compliant Calibration
AB1	Korean Operating Guide, English Programming and Service Guides
AB2	Chinese Getting Started Guide and English Manual Set
AB9	Portuguese Operating Guide, English Programming and Service Guides
ABA	Standard English Manual Set (Operating, Programming, and Service Guides)
ABF	French Operating Guide, English Programming and Service Guides
ABJ	Japanese Getting Started Guide and English Manual Set
RMKT	Agilent Refurbished Product

53132A Frequency Counter — Agilent

000	Standard Timebase
001	Medium Stability Oven Timebase
010	High Stability Oven Timebase
012	Ultra High Stability Oven Timebase
030	Add 3.0 GHz Channel 3 to standard 225 MHz Channels 1 and 2
050	Add 5.0 GHz Channel 3 (N connector) to standard 225 MHz Channels 1 and 2
060	Chan.1 and 2 rear inputs in parallel with front inputs
061	Chan.1 and 2 rear inputs in parallel with front inputs, Chan. 3 input rear only
062	Chan.1 and 2 rear inputs in parallel with front inputs, Chan. 3 input front only
0B0	Do not include any manuals
124	Add 12.4 GHz Channel 3 (N connector) to standard 225 MHz Channels 1 and 2
1CM	Rackmount Kit
225	Standard 225 MHz Channels 1 and 2, with no Channel 3
A6J	ANSI Z540 Compliant Calibration
AB0	Taiwanese Getting Started Guide and English Manual Set
AB1	Korean Getting Started Guide and English Manual Set
AB2	Chinese Getting Started Guide and English Manual Set
ABA	Standard English Manual Set (Operating, Programming, and Service Guides)
ABD	German Getting Started Guide and English Manual Set
ABE	Spanish Getting Started Guide and English Manual Set
ABF	French Getting Started Guide and English Manual Set
ABJ	Japanese Operating Guide, English Programming and Service Guides

53131A Frequency Counter — Agilent

000	Standard Timebase
001	Medium Stability Oven Timebase
010	High Stability Oven Timebase
030	Add 3.0 GHz Channel 3 to standard 225 MHz Channels 1 and 2
050	Add 5.0 GHz Channel 3 (N connector) to standard 225 MHz Channels 1 and 2
060	Chan.1 and 2 rear inputs in parallel with front inputs
061	Chan.1 and 2 rear inputs in parallel with front inputs, Chan. 3 input rear only
062	Chan.1 and 2 rear inputs in parallel with front inputs, Chan. 3 input front only
0B0	Do not include any manuals
124	Add 12.4 GHz Channel 3 (N connector) to standard 225 MHz Channels 1 and 2
1CM	Rackmount Kit
225	Standard 225 MHz Channels 1 and 2, with no Channel 3
A6J	ANSI Z540 Compliant Calibration
AB0	Taiwanese Getting Started Guide and English Manual Set
AB1	Korean Getting Started Guide and English Manual Set
AB2	Chinese Getting Started Guide and English Manual Set
ABA	Standard English Manual Set (Operating, Programming, and Service Guides)
ABD	German Getting Started Guide and English Manual Set
ABE	Spanish Getting Started Guide and English Manual Set
ABF	French Getting Started Guide and English Manual Set
ABJ	Japanese Operating and Programming Guides, English Service Guide
ABZ	Italian Getting Started Guide and English Manual Set
H14	US Navy CLIP and English Manual Set
PCUSB	PC IO connectivity

4156C Semiconductor Parameter Analyzer — Agilent

010	Delete 4x kelvin triaxial cables
020	Delete Windows Controller for Parametric Analysis and Characterization
0KN	Self paced training
200	1.5m interlock, 4x coaxial, 4x kelvin triaxial cables
230	3.0m interlock, 4x coaxial, 4x kelvin triaxial cables
A6J	ANSI Z540 compliant calibration
ABA	U.S. English localization
ABJ	Japan - Japanese localization
L25	Int opt I/CV 3.0 Parallel Security Key
L26	Int opt I/CV 3.0 USB Security Key
L27	Not 4156C-DIV 3.0
L28	Not 4156C-DIV 3.0 (Japanese Localize)
L90	Int opt 100V TEST
L91	Int opt 120V TEST
L92	Int opt 220V TEST

Also (continued from 53131A block):

ABZ	Italian Getting Started Guide and English Manual Set
H03	Add 10MhZ channel to rear input terminal

(4156C continued):

L93	Int opt 240V TEST
PAR	Parallel Security Key
RMKT	Agilent Refurbished Product
UK6	Commercial cal. certificate w/ test data

34401A Digital Multimeter — Agilent

001	Standard
0B0	No manual set
100	100-volt ac line selection
102	Double-dipped epoxy transformer for UK MOD special
120	120-volt ac line selection
1CM	Rackmount Kit
220	220-volt ac line selection
240	240-volt ac line selection
A6J	ANSI Z540 compliant calibration
ADF	Custom front panel for Australian Defense Force

33120A Function/ Arbitrary Waveform Generator — Agilent

001	10 MHz TCXO timebase / phase-lock option
0B0	No manual set
100	100-volt ac line selection
120	120-volt ac line selection
1CM	Rackmount Kit
220	220-volt ac line selection
240	240-volt ac line selection
A6J	ANSI Z540 compliant calibration
AB0	Taiwan - Chinese manual set
AB1	Korea - Korean manual set
AB2	China - Chinese manual set
ABA	English - English manual set
ABD	Germany - German manual set
ABE	Spain - Spanish manual set
ABF	France - French manual set
ABJ	Japan - Japanese manual set
ABZ	Italy - Italian manual set
STD	Standard 10 MHZ timebase

16702B Logic Analyzer — Agilent

001	Add 17" Monitor 1280x1024 Monitor and Cable
003	256 Mbyte System RAM 4 Mbyte Video RAM
006	Add Demo Kit
008	18 GB External Data Drive
009	External Removable Hard Drive
012	Multiframe Module
0B3	Service Guide - English
100	Consignment Configurations-Turn On Toolsets
AXC	Equipment Shelf - Rackmount Kit
RMKT	Agilent Refurbished Product

Power Supply

Volts	Amps	☀ Agilent
5V	100A	62971M
	875A	6680A
5.5V	8A	6384A
6V	100A	N5741A
	180A	N5761A
7.5V	3A	6203A
	5A	6281A
8V	3A	E3610A
	5A	6611C
	6A	E3614A
	10A	6631B
	20A	6541A/6641A
	50A	6551A/6651A
	90A	N5742A
	165A	N5762A
	220A	6571A/6671A
	580A	6681A
10V	1A	6214A/B/C
	2A	6113A
	10A	6282A
	100A	6260B
12V	2A	87421A
12.5V	60A	N5743A
15V	3.3A	87422A
	200A	6453A
	440A	6690A
18V	1A	235A/6237B
	15A	6124A/B
20V	1.5A	6201B
	2A	6825A
	2.5A	6236A/B
	3A	6253A/6284A
		/E3615A/E3640A
	5A	6632A/B/E3642A
	8A	E3644A
	10A	6263B/6286A
		/6542A/6642A
	20A	6264B
	25A	6552A/6652A
	30A	6023A/6033A
	38A	N5744A
	50A	6261B
	100A	6572A/6672A
	120A	6011A/6031A
21V	240A	6682A
25V	0.2A	6234A
	0.4A	6215A/6216A/C
	1A	E3620A
	2A	6227B
30V	25A	N5745A
	220A	6691A
32V	160A	6683A
35V	1.7A	E3616A
	6A	6543A/6643A
	15A	6553A/6653A
	60A	6573A/6673A

Volts	Amps	☀ Agilent
36V	3A	6244A
	10A	6433B
	100A	6456B
40V	0.3A	6205A
	0.5A	6112A
	0.6A	6205B/C
	0.75A	202A/B
	1.5A	6255A/6256B/6289A
	2A	6114A
	3A	6265B
	5A	6266B/6291A
	10A	6267B
	19A	N5746A
	25A	6434B
	30A	6268B
	50A	6269B
	128A	6684A
50V	0.2A	6217A/6218A
	1A	6228B/6826A
	2A	6633A/B
	10A	6002A
60V	0.8A	E3641A
	1A	6294A/E3617A
	1.4A	E3643A
	2.2A	E3645A
	3A	6296A
	3.5A	6544A/6644A
	9A	6554A/6654A
	10A	6024A/6028A /6034A/L/6038A
	110A	6692A
	12.5A	N5747A
	15A	6274A/B/6439B
	35A	6574A/6674A
	50A	6012A/B/6032A
64V	50A	6459A
	150A	6472C
80V	9.5A	N5748A
	30A	E4356A
100V	0.1A	6212A/B
	0.2A	6106A
	0.5A	6827A
	1A	6634A/B
	7.5A	N5749A
120V	1.5A	6545A/6645A
	2.5A	6443B
	4A	6555A/6655A
	18A	6575A/6675A
150V	5A	N5750A
160V	0.2A	6207B
200V	17A	6010A/6030A
300V	2.5A	N5751A
320V	0.1A	6209B
500V	5A	6015A/6035A
600V	1.3A	N5752A
	1.5A	6448B

About Tellustech

TELLUSTECH
TellusTech Co.Ltd

Stock

Stock

Packing system

Meeting room

Test

Repair

Keeping

Part & ACCY's

Test&Repair system

Tellustech Suggestion

1. **Lower repair cost : 70% of mnfr's cost**
   - **Even lower for E5515C and all power supply**

2. **The Lowest Annual support contract**
   - **for E5515C and power supply**

3. **7days TAT (No charge if over)**

4. **Free replacem't during repair**

5. **Standard repair/calibration system**
   - **$300K test/cal. System and instruments**
   - **2 repair experts and 1 test experts**

▶ **재 불량의 원인 조사**

수리 후, 표준교정시스템 및 표준Spec에 의거한 정밀한 calibration의 부재.
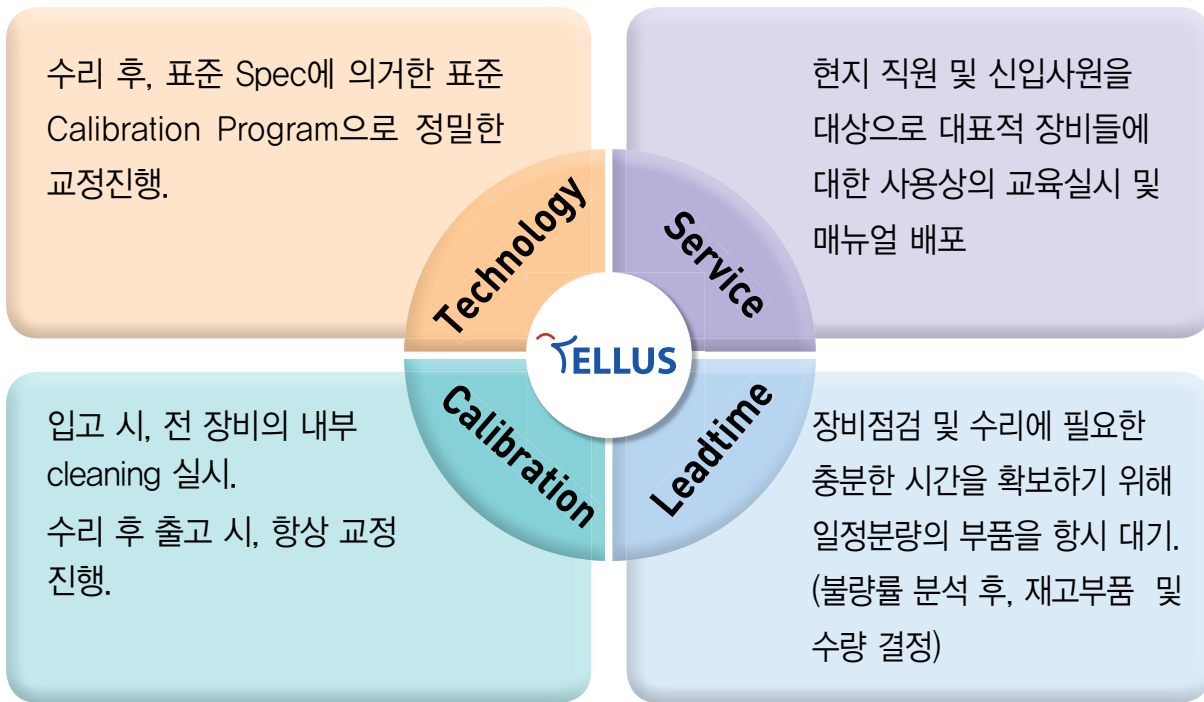
장비 사용 상의 교육부족 및 그로 인한 부주의

재불량의 원인

장비의 노화. (이물질/ 먼지 등으로 인한 불량발생)

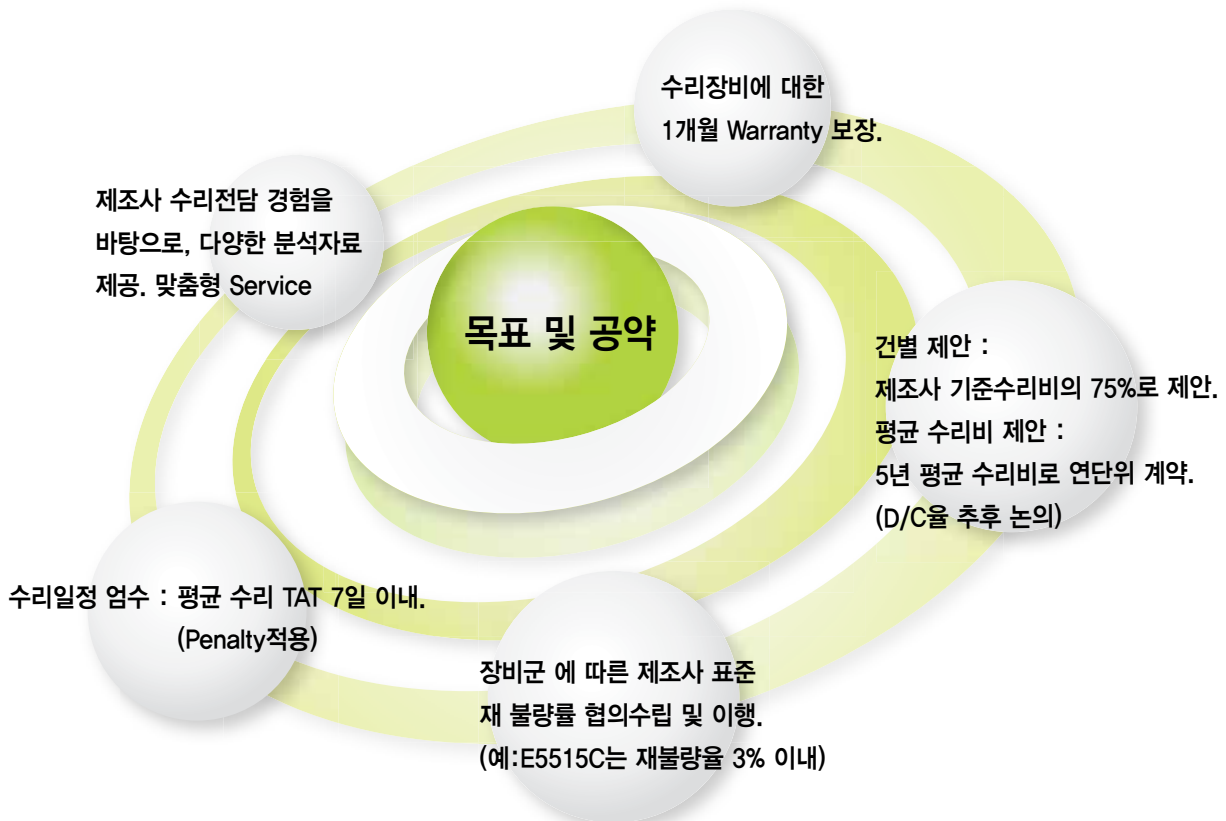장비의 수리보다는 불량보드 및 부품의 Sourcing에 많은 시간을 소요. (정밀한 증상 및 문제분석 이 불가능)

→ **고객의 불만**

Test&Repair system

수리 후, 표준 Spec에 의거한 표준 Calibration Program으로 정밀한 교정진행.

현지 직원 및 신입사원을 대상으로 대표적 장비들에 대한 사용상의 교육실시 및 매뉴얼 배포

Technology

Service

TELLUS

Calibration

Leadtime

입고 시, 전 장비의 내부 cleaning 실시.
수리 후 출고 시, 항상 교정 진행.

장비점검 및 수리에 필요한 충분한 시간을 확보하기 위해 일정분량의 부품을 항시 대기.
(불량률 분석 후, 재고부품 및 수량 결정)

▶ **신속하고 저렴한 가격으로 수리 서비스를 제공**

수리장비에 대한
1개월 Warranty 보장.

제조사 수리전담 경험을
바탕으로, 다양한 분석자료
제공. 맞춤형 Service

목표 및 공약

건별 제안 :
제조사 기준수리비의 75%로 제안.
평균 수리비 제안 :
5년 평균 수리비로 연단위 계약.
(D/C율 추후 논의)

수리일정 엄수 : 평균 수리 TAT 7일 이내.
　　　　　　　(Penalty적용)

장비군 에 따른 제조사 표준
재 불량률 협의수립 및 이행.
(예:E5515C는 재불량율 3% 이내)
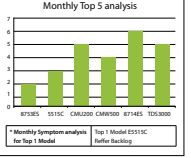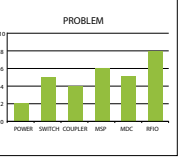
Relevant Document

Repair document

Repair request

TellusTech Vietnam Co.,Ltd.
Address : No1, Nguyen Gia Thieu Street, Bac Ninh Province, Vietnam
Tel :
Fax :

TELLUSTECH TellusTech Co.Ltd

* 1. Request date	MM / DD / YY	
* 2. Request Company	Company name	
* 3. Request Person	Name	Telephone number

* 4. Please, fill in the below blank

No	Model #	Serial Number	Symptom

Delivery Note

TellusTech Vietnam Co.,Ltd.
Address : No1, Nguyen Gia Thieu Street, Bac Ninh Province, Vietnam
Tel :
Fax :

TELLUSTECH TellusTech Co.Ltd

* 1. Delivery date	MM / DD / YY	* 3. Delivery type (Please, fill "O" In the below blank)				
		Sales	Rental	Demo.	Repair	Others
* 2. Return date	MM / DD / YY					

1. We/I have full respoinsibility on compensation or replacement of the property with same function and the same brand/model once this is lost, damaged or We/I are not able to return the units at any reason by/until expected return date.
2. Warranty seal must be kept in normal. If broken, then we/I heve full responsibility of the property's working condition. Once the property is not working as it's delivered, we/I pay for repair cost in order to make it normal condition.
3. We/I hereby accept above condition and sign here.

* 4. Company name _____ Person name _____ (sign)

    * 5. TellusTech staff name _____ (sign)

* 6. Please, fill in the below blank

No	Model	Serial Number	Category	Remark

Backlog

Receipt Date	Quote Date	PO Date	Complete Date	Delivery Date	Customer	Category	Brand	Model #	S/N	Simptom	Quote #	How to fix	Quote price

Monthly Analysis Note

TellusTech Vietnam Co.,Ltd.
Address : No1, Nguyen Gia Thieu Street, Bac Ninh Province, Vietnam
Tel :
Fax :

TELLUSTECH TellusTech Co.Ltd

■ **Monthly Analysis Note**

| * 1. Issue date | MM / DD / YY |
| * 2. Data for DEC | MM / DD / YY |

* 3. Company name _____
  Person name _____
* 4. TellusTech VINA staff name _____
         (091-405-0512)

* 5. Please, refer below data
* TAT : Receipt => Delivery (10days)
* TAT : PO => Delivery (7days)
* Monthly Quote #
* Monthly PO #
* Quote versus PO analysis
* Monthly Category analysis

Category — Oscilloscope, Spectrum Analyzer, Network Analyzer, Signal Generator, Wireless
* Monthly Top 5 analysis   Reffer Backlog

Monthly Top 5 analysis — 8753ES, 5515C, CMU200, CMW500, 8714ES, TDS3000
* Monthly Symptom analysis for Top 1 Model   Top 1 Model E5515C   Reffer Backlog

PROBLEM — POWER, SWITCH, COUPLER, MSP, MDC, RFIO

Cable calibration docuement

Type

Available Types
N-SMA / N-N / SMA-SMA --- 3m , 2m , 1.5m , 1m , 0.5m , 0.3m

RF Cable	Type	3m : N-SMA	3m : N-N	3m : SMA-SMA
RF Cable	Type	2m : N-SMA	2m : N-N	2m : SMA-SMA
RF Cable	Type	1.5m : N-SMA	1.5m : N-N	1.5m : SMA-SMA
RF Cable	Type	1m : N-SMA	1m : N-N	1m : SMA-SMA
RF Cable	Type	0.5m : N-SMA	0.5m : N-N	0.5m : SM A-SMA
RF Cable	Type	0.3m : N-SMA	0.3m : N-N	0.3m : SMA-SMA

Cable Data

Cacle Num	cand	Loss	VSWR	impedance	Cal data			Measure data		
E-1 S21	DCN (850 MHz)	-0.18	1.01	49.74	-0.02	1.01	50.15	-0.20	1.01	49.74
	K-PCS (1800 MHz)	-0.26	1.02	49.39	-0.04	1.00	49.88	-0.30	1.02	49.39
	U-PCS (1900 MHz)	-0.27	1.02	49.32	-0.04	1.00	49.86	-0.31	1.02	49.32
	GSM (900 MHz)	-0.19	1.01	50.21	-0.02	1.01	50.33	-0.21	1.01	50.21
	DCS (1800 MHz)	-0.26	1.02	49.39	-0.04	1.00	49.88	-0.30	1.02	49.39
	PCS (1900 MHz)	-0.27	1.02	49.32	-0.04	1.00	49.86	-0.31	1.02	49.32
	WCDMA (2200 MHz)	-0.29	1.02	49.36	-0.04	1.01	49.80	-0.33	1.02	49.36
	LTE cand7 (2600 MHz)	-0.33	1.04	48.93	-0.04	1.01	50.06	-0.37	1.04	48.93
E-1 S12	DCN (850 MHz)	-0.18	1.02	50.21	-0.02	1.02	50.62	-0.20	1.02	50.21
	K-PCS (1800 MHz)	-0.27	1.04	50.03	-0.03	1.02	49.49	-0.30	1.04	50.03
	U-PCS (1900 MHz)	-0.27	1.04	49.27	-0.04	1.02	49.34	-0.31	1.04	49.27
	GSM (900 MHz)	-0.18	1.01	50.13	-0.02	1.02	50.51	-0.20	1.01	50.13
	DCS (1800 MHz)	-0.27	1.04	50.03	-0.03	1.02	49.49	-0.30	1.04	50.03
	PCS (1900 MHz)	-0.27	1.04	49.27	-0.04	1.02	49.34	-0.31	1.04	49.27
	WCDMA (2200 MHz)	-0.29	1.04	48.93	-0.04	1.02	49.16	-0.33	1.04	48.93
	LTE cand7 (2600 MHz)	-0.33	1.07	49.85	-0.04	1.01	49.43	-0.37	1.07	49.85

Tellustech Instruction

Location

찾아 오시는 길

〈한국 본사〉

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