Test Equipment Solutions Ltd specialise in the second user sale, rental and distribution of quality test & measurement (T&M) equipment. We stock all major equipment types such as spectrum analyzers, signal generators, oscilloscopes, power meters, logic analysers etc from all the major suppliers such as Agilent, Tektronix, Anritsu and Rohde & Schwarz.

We are focused at the professional end of the marketplace, primarily working with customers for whom high performance, quality and service are key, whilst realising the cost savings that second user equipment offers. As such, we fully test & refurbish equipment in our in-house, traceable Lab. Items are supplied with manuals, accessories and typically a full no-quibble 2 year warranty. Our staff have extensive backgrounds in T&M, totalling over 150 years of combined experience, which enables us to deliver industry-leading service and support. We endeavour to be customer focused in every way right down to the detail, such as offering free delivery on sales, covering the cost of warranty returns BOTH ways (plus supplying a loan unit, if available) and supplying a free business tool with every order.

As well as the headline benefit of cost saving, second user offers shorter lead times, higher reliability and multivendor solutions. Rental, of course, is ideal for shorter term needs and offers fast delivery, flexibility, try-before-you-buy, zero capital expenditure, lower risk and off balance sheet accounting. Both second user and rental improve the key business measure of Return On Capital Employed.

We are based near Heathrow Airport in the UK from where we supply test equipment worldwide. Our facility incorporates Sales, Support, Admin, Logistics and our own in-house Lab.

All products supplied by Test Equipment Solutions include:

- No-quibble parts & labour warranty (we provide transport for UK mainland addresses).
- Free loan equipment during warranty repair, if available.
- Full electrical, mechanical and safety refurbishment in our in-house Lab.
- Certificate of Conformance (calibration available on request).
- Manuals and accessories required for normal operation.
- Free insured delivery to your UK mainland address (sales).
- Support from our team of seasoned Test & Measurement engineers.
- ISO9001 quality assurance.

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Spectrum Analyzers

Measurement For Digital Mobile Communications

R3465/3463

For PHS, PDC and NADC Standards (GSM/DCS1800/DCS1900/DECT/CDMA Measurement Optional)

- Dual Mode Analysis
  - Spectrum Analyzer Mode
  - Digital Transmission Tester Mode

- Built-In Digital Modulation Analysis Function

- Menu Operation
  - Automatically Set Standard Parameters:
    - STD Mode and Measurement Function Keys
  - Compact, Lightweight (17 kg)
  - 6.5 Inch TFT Color LCD
  - 2 Slots Memory Card Drive

R3465/3463

Modulation Spectrum Analyzers

Recently, digital mobile communication systems have been the focus of much attention. The R3465/3463 are new modulation spectrum analyzers for testing these new communication systems. In addition to the functions offered by conventional spectrum analyzers, the R3465/3463 have functions for analyzing digital modulated signals such as modulation accuracy and transmission speed. The units have an easy-to-use 'one key solutions' design that anyone can use. There are independent keys for STD mode which automatically sets PHS, PDC and NADC standard parameters and OBW, ACP and harmonic distortion measurement.

DDS (Direct Digital Synthesizer) technology enables the R3465/3463's excellent basic specifications to fit into a compact size 17 kg. These specifications include a frequency range of 9 kHz to 8 GHz (R3465) or 9 kHz to 3 GHz (R3463), highly stable narrow band sweep and high-speed measuring made possible by the newly-developed high speed settling synthesizer.

The R3465/3463 provide total support for digital mobile communication equipment in applications ranging from radio systems development to production line adjustment and testing.

Automatic Setting of Standard Parameters

The cumbersome parameter settings required for measuring digital radio system standards such as PHS, PDC and NADC (GSM, DCS1800, DCS1900, DECT and CDMA optional), are set automatically for each measurement item. See the options table for each standard measurement.

Dual Mode Analysis

As well as CW mode, for conventional spectrum analysis, the R3465/3463 have a TRANSIENT mode for digital transmission analysis of modulation accuracy and transmission speed. The unit also employs the FAST function, a newly-developed measuring algorithm which greatly reduces the measurement time.

Menu Operation

The R3465/3463 have a 'one key solutions' design for simple operation. Basic measurement and analysis functions can be easily started by selecting the desired measurement item.

High Performance Spectrum Analyzer Functions

The R3465/3463 are high performance spectrum analyzers with ample basic functions for waveform analysis in minute detail. The newly-developed high speed settling synthesizer has greatly improved blanking time during narrow-band sweep (span ≤ 5 MHz), providing high-speed measurement. The units have a frequency span accuracy of 1% or less, residual FM 3 Hz p-p or less /0.1 sec, and drift 20 Hz or less (span ≤ 5 MHz). The R3465 also enables high frequency measurements with a dynamic range of 90 dBc using a 1.7 GHz (min.) built-in preselector.
1. **Selection of Digital Radio Systems**
The R3465/3463 can easily switch between radio systems such as PHS, PDC and NADC (GSM, DCS1800, DCS1900, DECT and CMDA optional).

2. **Selection of Measurement Items:**
   - **Menu Operation**
   The operation of R3465/3463 is simple. Measurement can be simply started by selecting the desired measurement items.

3. **Executing Measurement**
   - **REPEAT SINGLE**
   - **START**
   - **TRANSIENT menu screen**

### NADC Standard Measurements

<table>
<thead>
<tr>
<th>Measured Item</th>
<th>NADC (IS-55)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency stability</td>
<td>Yes</td>
</tr>
<tr>
<td>Transient transmission</td>
<td>Yes</td>
</tr>
<tr>
<td>characteristics</td>
<td>Yes</td>
</tr>
<tr>
<td>RF power output</td>
<td>Yes</td>
</tr>
<tr>
<td>Power transition time</td>
<td>Yes</td>
</tr>
<tr>
<td>Carrier on state</td>
<td>Yes</td>
</tr>
<tr>
<td>Modulation accuracy</td>
<td>Yes</td>
</tr>
<tr>
<td>Adjacent channel leakage power</td>
<td>Yes¹</td>
</tr>
<tr>
<td>Out of band power due to</td>
<td>Yes</td>
</tr>
<tr>
<td>switching</td>
<td></td>
</tr>
<tr>
<td>Spurious emissions, conducted</td>
<td>Yes</td>
</tr>
<tr>
<td>(at antenna terminal)</td>
<td></td>
</tr>
<tr>
<td>Spurious emissions, radiated</td>
<td>Available option²</td>
</tr>
</tbody>
</table>

Notes:

*1. The gated sweep function and the trigger detector necessary for measurement are built in the R3465/3463.

*2. A wideband antenna and a standard signal generator (SG) are required.

### Modulation Accuracy/Frequency Error (Phase Tracking Method) Measurement
High speed modulation accuracy function is provided as standard. It enables highly stable measurements

### Constellation and Other Waveform Analysis Functions (Options 75, 76)
Powerful support of PHS, PDC and NADC digital modulation analysis such as constellation display, EYE pattern display and demodulated data display...etc.
Spectrum Analyzers

Measurement For Digital Mobile Communications

R3465/3463

R3465/3464 Options Table

<table>
<thead>
<tr>
<th>Option</th>
<th>Option</th>
<th>R3465/R3465+</th>
<th>R3465+51</th>
<th>R3465+52</th>
<th>R3465+56</th>
<th>R3465+57</th>
<th>R3465+58</th>
<th>R3465+56+57</th>
<th>R3465+58+61</th>
<th>R3465+57+61</th>
</tr>
</thead>
<tbody>
<tr>
<td>PDC/PHS/NA/DC Tx Analysis</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>PDC/PHS/NA/DC Constellation (option 75)</td>
<td>Available option</td>
<td>Available option</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Available option</td>
<td>No</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PDC/PHS/NA/DC Graphics (option 76)</td>
<td>Available option</td>
<td>Available option</td>
<td>Available option</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Available option</td>
<td>No</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Rx Control (for R3560, option 8)</td>
<td>Available option</td>
<td>Available option</td>
<td>Available option</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Available option</td>
<td>No</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>GSM/DCS1800/DCS1900 Tx Analysis (options 51, 56, 58)</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>GSM/DCS1800/DCS1900 Tx Analysis (option 77)</td>
<td>No</td>
<td>Available option</td>
<td>No</td>
<td>Available option</td>
<td>No</td>
<td>Available option</td>
<td>No</td>
<td>Available option</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>DECT Tx Analysis (options 52, 57, 58)</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>CDMA Tx Analysis (option 61)</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Available option</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>CDMA Test Source Control (for R3461, Option 91)</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Available option</td>
<td>Available option</td>
<td></td>
</tr>
<tr>
<td>FM Deviation (option 73)</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Program Loader (option 15)</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>5 x 10^-9/Day Crystal (option 21)</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
</tr>
</tbody>
</table>

GSM/DCS1800/DCS1900 Tx Analysis

(Options 51, 56, 58, R3465 Only)

The GSM Option (options 51, 56, 58) provides a burst envelope function for measurement of the ON/OFF characteristics of TDMA format digital modulated signals and a burst spectrum function, enabling spectrum analysis in the burst ON interval. GMSK signal frequency error, phase error and power measurement can be done at the touch of a button.

Applicable Communication Systems

GSM, DCS1800 (PCN), DCS1900 (PCS) (MS/BTS)

Measurement Items

- Burst envelope measurement (1 burst/1 frame/Zoom mode)
- Power measurement
- Power vs time measurement
- Frequency error/Phase error measurement
- Burst spectrum measurement
- Modulation spectrum measurement
- Switching spectrum measurement
- Spurious emission intensity (in-band)

GSM/DCS1800/DCS1900 Graphics Option (option 77)

Analysis Functions

- Bit frequency display
- Phase error display
- Phase error of FFT display
- Trellis display
- Demodulated data display
DECT Tx Analysis (Options 52, 57, 58, R3465 Only)

The DECT Option (options 52, 57, 58) enables burst envelope measurement and burst spectrum measurement, conforming to various physical packets at the touch of a button. The GFSK modulation analysis function also enables measurements of Tx power, power vs time and FM deviation.

- Applicable Communication Systems
  DECT: RFP (Radio fixed part)/PP (Portable part)

- Measurement Items
  - Burst envelope measurement
  - Power measurement
  - Power vs time measurement
  - FM deviation measurement
  - Emission due to modulation measurement
  - Emission due to transient measurement
  - Timing jitter measurement
  - Spurious emission measurement
  - Graphics display

CDMA Tx Analysis (Option 61)

The CDMA option (option 61) enables measurements of the CDMA transmitter characteristics including waveform quality analysis (such as RHO) and code domain power measurements as specified by IS-95/J-STD-008. US/KOREA-cellular, US/KOREA-PCS, Japan-cellular and China-cellular base and mobile stations can be covered by a single unit.

- Measurement Items
  - Burst envelope measurement
  - Gated output power measurement
  - Channel power measurement
  - ON/OFF ratio measurement
  - OBW measurement
  - Waveform quality measurement (Rho, t, others)
  - Code domain power measurement
  - Spurious emission measurement
  - Graphics display
Spectrum Analyzers

Measurement For Digital Mobile Communications

R3465/3463

Specifications

Measuring Functions:
- CW mode: Spectrum measurement, OBW, ACP, HARM measurement
- Digital modulation analysis

Frequency
- Frequency range:
  - 9 kHz to 8 GHz (R3465)
  - 9 kHz to 3 GHz (R3463)
- Built-in YIG synchronous prescaler at 1.7 to 8 GHz (R3465)

Frequency reading accuracy:
(Start, stop, center frequency, marker frequency) ± (frequency read × frequency reference accuracy + span × span accuracy + 0.15 × RBW + 10 Hz)

Marker frequency counter:
- Resolution: 1 Hz to 1 kHz
- Accuracy (S/N ≥ 25 dB): ±(marker frequency × frequency reference accuracy + 5 Hz + 1 LSD)*
- Delta counter: ±(frequency × frequency reference accuracy + 10 Hz × 2 LSD)*
  * LSD: Least significant digit

Frequency reference accuracy:
±2 × 10⁻¹⁰/day, ±1 × 10⁻⁵/year

Frequency span:
- Linear; 1.25 kHz to 8 GHz, zero span
- Log; 10, 5, 2, 1, 0.5/div
- DC input: 0 V

Frequency span Range:
- 9 kHz to 8 GHz, zero span
- <20 Hz × sweep rate (minutes)

Spectral purity:
<100 dBc/Hz (10 kHz offset)
<110 dBc/Hz (1 kHz offset)

Frequency span:
- Linear span: 2 kHz to 8 GHz, zero span
- Accuracy: ±4% (span × 5 MHz)
  ±1% (span ≤ 5 MHz)

Resolution bandwidth (3 dB):
- Range: 300 Hz to 3 MHz, 5 MHz (1, 3, 10 sequence)
- Accuracy: ±20% (RBW 1 kHz to 1 GHz)
  ±30% (RBW 300 Hz, 3 MHz, 5 MHz)
- Selectivity: ±<5:1 (300 Hz to 5 MHz)

Video bandwidth:
- Range: 1 Hz to 3 MHz, 5 MHz (1, 3, 10 sequence)

Frequency sweep:
- Sweep time: 50 ms to 1000 s (CW mode, spectrum measurement)
- Accuracy: ±5%
- Sweep trigger: Free run, line, single, video, external
- Trace speed: 10 times/sec

Gate sweep:
- Gate position: resolution 1 μs to 65 ms/1 μs
- Gate width: resolution 2 μs to 65 ms/1 μs
- Trigger: Internal IF detection, external

Amplitude
- Measuring range: ±30 dBm to avg. display noise level
- Maximum safe input:
  - Avg. continuous power (input ATT ≥ 10 dB): ±30 dBm (1 W)
  - DC input: 0 V
- Display range: 10 × 10 div
- Log: ±0.5, ±1, ±2, 0.5/div
- Linear: 10% of reference range/div

Reference level range:
- Log: ±105 dBm to ±60 dBm (0.1 dB steps)
- Linear: 1.25 μV to 223 V (approx. 1% of full-scale steps)

Input attenuator range:
- 0 to 70 dB (10 dB steps)

Dynamic Range

Average display noise level:
(Resolution bandwidth 1 kHz, 0 dB input attenuator, video bandwidth 1 Hz)

<table>
<thead>
<tr>
<th>Frequency range</th>
<th>Frequency band</th>
<th>Displayed average noise level</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 kHz</td>
<td>0</td>
<td>±10 dB</td>
</tr>
<tr>
<td>100 kHz</td>
<td>±10 dB</td>
<td>0</td>
</tr>
<tr>
<td>1 MHz to 10 kHz</td>
<td>±10 dB</td>
<td>0</td>
</tr>
<tr>
<td>10 kHz to 8 GHz</td>
<td>±10 dB</td>
<td>0</td>
</tr>
<tr>
<td>100 kHz to 8 GHz</td>
<td>±10 dB</td>
<td>0</td>
</tr>
</tbody>
</table>

1 dB gain compression: >10 dB (input mixer level)

Spurious response:
- Second harmonic distortion:
  [Frequency range] Second harmonic distortion | Mixer level
  - 0 kHz to 3 GHz | ±<10 dB | ><10 dB |
  - 0 kHz to 10 GHz| ±<30 dB | ><30 dB |

Third order distortion (1.25 kHz separation, 300 Hz resolution bandwidth, video bandwidth 3 Hz max.):
- Frequency/Phase | Unspecified/Unspecified | Mixer level
  - 0 kHz to 3 GHz | ±<10 dB | ><10 dB |
  - 0 kHz to 10 GHz| ±<30 dB | ><30 dB |

Integrated/Unintegrated out of band response:
10 MHz to 8 GHz < -70 dBc
Residual response: (no input signal, input ATT 0 dB, 50 Ohm termination)
1 MHz to 3.0 GHz < -100 dBm
300 kHz to 8 GHz < -90 dBm

Amplitude Accuracy

Frequency response (10 dB input ATT):
- In-band flatness:
  [Frequency range] Frequency response | Frequency band
  - 9 kHz to 8 GHz | ±1.5 dB | 0 |
  - 10 MHz to 3 GHz | ±1.5 dB | 0 |
  - 1.25 GHz to 8 GHz | ±1.5 dB | 2 |

Band switching error (calibration signal reference):
≤ 3 dB (9 kHz to 8.0 GHz)
Calibration signal accuracy (30 MHz): ±0.3 dB
IF gain uncertainty (after automatic calibration, at 1 kHz to 5 MHz RBW):
0 to 50°C ±0.3 dB
0 to 50°C ±0.5 dB

Scale display accuracy (after automatic calibration):

<table>
<thead>
<tr>
<th>Scale display accuracy</th>
<th>0 to 50°C</th>
<th>0 to 50°C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Log</td>
<td>±0.2 dB</td>
<td>±0.3 dB</td>
</tr>
<tr>
<td>Linear</td>
<td>±0.2 dB</td>
<td>±0.3 dB</td>
</tr>
</tbody>
</table>

Input attenuator switching error (with 10 dB input attenuator, at 20 to 70 dB):
- Frequency range: 9 kHz to 8.0 GHz, ±1.1 dB/10 dB steps, maximum 2.0 dB
- RBW switching error (RBW: 300 kHz resolution, after automatic calibration, 3 x RBW 2 span):
  - RBW  | 0 to 50°C | 0 to 50°C |
    10 kHz | ±0.2 dB   | ±0.3 dB   |
    20 kHz | ±0.3 dB   | ±0.5 dB   |
Digital Modulation Analysis Function Provided Standard

R3465/3463

Pulse quantization error
(PRF > 500/sweep in time in pulse measurement mode):
Log: 1.2 dBp-p (RBW ≤ 1 MHz)
3 dBp-p (RBW = 3 MHz)
Linear: 4% of reference level (RBW ≤ 1 MHz)
12% of reference level (RBW = 3 MHz)

Time Domain Measurement
Amplitude resolution: 12 bits
Sweep time: 50 µs to 2 s
Trigger: Free run, single, video, IF detection, external
Hold time: 200 ns to 650 ms

Analog Demodulation
Spectrum demodulation:
Modulation type: AM and FM
Audio output: Internal speaker, headphone jack, adjustable volume
Marker pause time: 100 ms to 1000 s

Digital Modulation Analysis
Applicable modulation system: 4QPSK (PHS, PDC, NADC)
Input range: 10 MHz to 7.5 GHz, -30 to +30 dBm
Average power: (after calibration, automatic setting)
Measurement accuracy: (Transient mode)
± 0.8 dB (in PHS, PDC, NADC bands, ±15 to ±35°C)
± 1.0 dB (in PHS, PDC, NADC bands, 0 to ±30°C)
OBW: (900 kHz offset)
± 0.5% ± (measured value)
μs to 2 s

Modulation analysis:
Frequency error
Range: ±13 kHz
Accuracy: ± 1.4 kHz
Reference accuracy: ± 0.4 kHz
Reference frequency: ± 5 kHz
Modulation accuracy Range: 0 to 30%
Accuracy: ± 0.1% x measured value ± 0.2%
0 to 10%
± 0.5% x (measured value) ± 0.2%
Transmission measurement Accuracy
µs, ± measured value ± 2% 4 ppm

GPS/IEEE 488 bus connector, rear panel
RS232: D-SUB 9 pin, rear panel
P-IA: D-SUB 25 pin, rear panel
EXT key: DIN, front panel

General Specifications
Temperature: Operating temperature 0 to 50°C, 85% RH max.
Power supply: AC 100 to 220 V, 220 to 240 V
Power consumption: 300 VA (max.)
Frequency: 50/60 Hz
Weight: 17 kg max. (R3465), 16.5 kg (R3463), (excluding options, front cover and accessories)
External dimensions: Approx. 177 (H) x 350 (W) x 420 (D) mm (excluding handle, feet and front cover)
Memory card drive: 2 slots, front panel
Connector: JEIDA Ver. 4.2/PCMCIA 2.1

Accessories
Power cable: A01412
Input cable: MC-61
Converter adapter: JUG-281 A/U
Power fuse: 21806.3 (6.3 A)

Options
Option 08 Rx Control Option (for R3560)
Option 09 CDMA Test Source Control Option (for R3561L)
Option 15 Program Loader Option
Option 21 × 5 × 10°/Day Xtal Option
Option 53 GSM Option
Option 52 DETC Option
Option 56 GSM Only Option
Option 57 DETC Only Option
Option 58 GSM/DECT Only Option
Option 61 CDMA Option
Option 73 FM Deviation Measurement Option
Option 77 Constellation Option (for PDC/PHS/NADC)
Option 78 Graphics Option (for PHS/PHS/NADC)
Option 79 PHS/GSM Graphs Option
Option 80 RG-6 JIS Rack Mount Set
Option 86 R3465 Rack Mount Set

Option 09 requires additional measurement instruments and system calibration.
Option 15 requires additional measurement instruments and system calibration.

Application Software
PR34650120-IC PHS Option (manual mode)*1
PR34650121-IC PHS Option (remote mode)*1
PR34650122-IC PHS Option (remote mode)*1

*1: Requires the R3560 Test Receiver. Earlier versions of the R3465/3463 firmware may not support this software. Inquire for details.
*2: Option can only be set on R3465.
*3: GSM option covers GSM, DCS1800, and DCS1900 (PCS1900 in the U.S).
*4: This software is for manual mode. This software requires additional measurement instruments and system calibration. Inquire for details.
*5: Requires the R3560 Test Receiver. Earlier versions of the R3465/3463 firmware may not support this software. Inquire for details.

OPTION 86 EIA Rack Mount Set
Option 85 JIS Rack Mount Set
Option 77 Option 78 Option 79 Option 80
Option 78 Option 79 Option 80
Option 79 Option 80
Option 80
Option 79
Option 80
Option 78
Option 77
Option 76
Option 75
Option 74
Option 73
Option 72
Option 71
Option 70
Option 69
Option 68
Option 67
Option 66
Option 65
Option 64
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Option 61
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Option 48
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Option 44
Option 43
Option 42
Option 41
Option 40
Option 39
Option 38
Option 37
Option 36
Option 35
Option 34
Option 33
Option 32
Option 31
Option 30
Option 29
Option 28
Option 27
Option 26
Option 25
Option 24
Option 23
Option 22
Option 21
Option 20
Option 19
Option 18
Option 17
Option 16
Option 15
Option 14
Option 13
Option 12
Option 11
Option 10
Option 9
Option 8
Option 7
Option 6
Option 5
Option 4
Option 3
Option 2
Option 1

Digital Modulation Analysis

Frequency error
Range: ±13 kHz
Accuracy: ± 1.4 kHz
Reference accuracy: ± 0.4 kHz
Reference frequency: ± 5 kHz

Modulation accuracy Range: 0 to 30%
Accuracy: ± 0.1% x measured value ± 0.2%
0 to 10%
± 0.5% x (measured value) ± 0.2%

Transmission measurement Accuracy
µs, ± measured value ± 2% 4 ppm

1) Frequency error measurement only in high sensitivity.