

**Rate Contract**  
**Government of India**  
**Directorate General of Supplies & Disposals**  
**Jeevan Tara Building, 5 Sansad Marg**  
**New Delhi-110001**  
**Tel Number 23360610/23360537**

Rate Contract no. S\_ANA/IT-4/RC-D2060000/0212/84/F0709/1518  
Dated 25-FEB-11

To,

SYNERGY MEASUREMENT TECHNOLOGIES PVT. LTD.  
25/C, Nicholson Road, Tarbund, Secunderabad - 500 009 AP

Email: sales@synergytech.in, debashis@synergytech.in  
Tele No. 040-4444 4040 / 50 / 35, Mr. Debashis - 09830067183

Sub: Rate Contract for supply of Spectrum Analyzer & Signal Analyzer  
Validity: From 01-APR-11 To 31-MAR-12 .

Ref:(1) This Office Tender Enquiry No. S\_ANA/IT-4/RC-D2060000/0212/84  
Opened on 16-NOV-10.  
(2) Your Quotation No. And Dated

Dear Sir,

You are hereby informed that your above referred tender read with subsequent letters mentioned above for the Stores specified in the Schedules annexed has been accepted. This rate contract will be governed by the terms and conditions brought in the Form no. DGS&D 1001 available from dgs&d sales counter on payment of Rs. 50/- .The Rate Contract and the schedules annexed here to shall be the sole repository of this Rate Contract/Transaction.

**SCHEDULES ANNEXED**

- 1.Schedule "A" Description of stores,prices,duties/taxes.
- 2.Schedule "B" special conditions of contract / Other information.
- 3.Schedule "C" Information to DDOs about parallel rate contracts.
- 4.Annexure - Technical Specification

Yours Faithfully,

(  )

Assistant Director(S)/Section Officer/Dy.Director  
For and on behalf of the purchaser named in the Form DGS&D 1001.

**COPY TO:**

- 1.The Chief Controller of Accounts,Department of commerce,New Delhi/  
COA Mumbai/COA Kolkata,COA Chennai.  
(Through authentication cell) This issues with the approval of competent authority.
- 2.Deputy Director General of Supplies & Disposals,Chennai -10 copies each
- 3.Deputy Director General of Supplies & Disposals,Kolkata -10 copies each
- 4.Deputy Director General of Supplies & Disposals,Mumbai -10 copies each
- 5.Deputy Director General (QA),Kolkata -10 copies each
- 6.Deputy Director General (QA),Chennai -10 copies each
- 7.Deputy Director General (QA),Mumbai -10 copies each
- 8.Deputy Director General (QA),DGS&D -10 copies each
- 9.Inspection Authority ADG(QA) DGS&D New Delhi - 110001.
- 10.Quality assurance Officer Director (QA) Delhi Directorate/ Mumbai,Chennai/Kolkata.
- 11.Concurrent Audit
- 12.MIS Cell
- 13.Ledger clerk
- 14.O.L.Section
- 15.All Direct Demanding Officers as per mailing list maintained by DGS&D.



Assistant Director (S) / Section Officer / Deputy Director  
FOR DIRECTOR GENERAL OF SUPPLIES & DISPOSALS



## SCHEDULE - A

1. Rate Contract No.: -S\_ANA/IT-4/RC-D2060000/0212/84/F0709/1518  
Dated 25-FEB-11 For the Supply of Spectrum Analyzer & Signal Analyzer

2. Advance Rate Contract No.: - Nil  
Dated

3.(a) Name and Full Address of the Firm :-

SYNERGY MEASUREMENT TECHNOLOGIES PVT.  
LTD.  
25/C, Nicholson Road, Tarbund, Secunderabad - 500 009  
AP

Email: sales@synergytech.in, debashis@synergytech.in  
Tele No. 040-4444 4040 / 50 / 35, Mr. Debashis -  
09830067183

ANDHRA PRADESH - 500 015  
Tel. No. - 040 27990486  
Fax - 040 27794388  
Email - sales@synergytech.in

(b) Name and Full Address of Manufacturer :-

Agilent Technologies Microwave Products (M) Sdn Bhd  
Bayan Lepas Free Industrial Zone,  
Bayan Lepas 11900, Penang, Malaysia

(c) Brand: Agilent Technologies

4. Validity of Rate Contract: 01-APR-11 To 31-MAR-12

5. Description of Item, Specification, Unit, Rate

Item Model No. No. Rs.)	Store Description	Description	Unit	Rate (in
1 Agilent N9000A with Option 503	Spectrum Analyzers	Description: Spectrum Analyzer 3 GHz	NOS.	782450 Rs. SEVEN LAKHS EIGHTY- TWO THOUSAN D FOUR HUNDRED FIFTY ONLY

6-Terms of Delivery:

Free delivery at consignee's premises including installation,  
commissioning.

7-Excise Duty:	N.A.
8-Sales Tax:	CST / VAT extra @4%.
9-Delivery Period:	12-16 Weeks or earlier from the date of receipt of order/Custom Duty Exemption Certificate / End user certificate / Road Permit / Octroi Exemption wherever applicable. In case of CD Exemption certificate, delivery period will be counted from the date of receipt of CDEC.
10(a)-Annual Turnover:	Without Limit
(b)-Monetary Limit(In Rs.):	Without Any Limit
11-Payment Terms:	As per Schedule B
12-Slab Discount Clause:	Applicable
13-Prices:	FIXED
14-Quantity Offered:	NA
15-Minimum Quantity in Single Supply Order:	Without Limit
16-Minimum order Value in Single Supply Order:	Without Limit
17-Status of the RC Holding Firm:	LSI
18-Paying Authority:	The Deputy Controller of Accounts, Deptt. of Supply Shastri Bhawan, 26, Haddows Road Chennai - 600006
19-Inspection Authority:	For Civil ADG(QA),Jeevan Tara Building,Parliament Street New Delhi
20-Quality Assurance Officer:	For Civil Office of the Director of Quality Assurance, Kendriya Sadan,Sultan Bazar, Hyderabad ANDHRA PRADESH -500195
21-Place where the Stores are to be Tendered for Inspection:	25/C, Nicholson Road, Tarbund, Secunderabad - 500 009 AP
22-R/C is DDOs Operated:	Yes

With effect from First October two thousand eight ( 01-10-2008 ),all supply order(s) against this Rate Contract must be placed by Direct Demanding Officer(s) on-line through D.G.S&D web site (www.dgsnd.gov.in) (indentor's page) only. Supply order(s) in any other form placed on or after 01-10-2008 shall not be valid and shall not be acted upon by the contractor or any other concerned agencies.

DDO shall download the supply order and send an ink signed copy to the concerned paying authority specified in the rate contract through Registered / speed post immediately after on-line placement of Supply Order(s).

23-Packing & Specification : see annexure





Asstt. Director (S) / Section Officer / Dy. Director  
For and behalf of the purchaser named in the Form DGS&D 1001.

All the R/C particulars including prices in respect of individual R/Cs are available on DGS&D website which can be accessed by all. The DGS&D website is <http://dgsnd.gov.in>



## SCHEDULE - B

RC Specification:RC Specification: Refer Annexure- A for detailed specifications, make & models.

All DDOs / Indentors are advised to place their orders on R/C holding firm only, otherwise DGS&D shall not be responsible for any contractual complications including, quality & completeness of the materials ordered. A copy of online supply order duly ink-signed and stamped shall be forwarded to COA Chennai and Supplier.

1a. Insurance: As per DGS&D standard transit insurance clause, it will be responsibility of supplier for safe arrival of stores in full and good conditions at user's point and purchaser will not pay separately for transit insurance clause.

1b. Country of Origin: Malaysia

1c.Name and Full Address of Manufacturer :

(i) PRINCIPAL: Agilent Technologies Singapore (Sales) Pte. Ltd. No. 1, Yishun Avenue, 7, Singapore 768923

(ii) MANUFACTURING PLANT: Agilent Technologies Microwave Products (M) Sdn Bhd,Bayan Lepas Free Industrial Zone, Bayan Lepas 11900, Penang, Malaysia

1d. Name and Full Address of the Firm :

(i) Corporate Office: (Address for all correspondence)

SYNERGY MEASUREMENT TECHNOLOGIES PVT. LTD. 25/C, Nicholson Road, Tarbund, Secunderabad Ꞥ 500 009 AP

Email: sales@synergytech.in, debashis@synergytech.in

Tele No. 040-4444 4040 / 50 / 35 Mr. Debashis - 09830067183

Fax: 040-2779 4388 / 040-2795 0190

(ii) Registered Office: SYNERGY MEASUREMENT TECHNOLOGIES PVT. LTD. Plot No. 100/2, Road No. 1, S.P. Colony, Trimulgherry, Secunderabad Ꞥ 500 015 ANDHRA PRADESH

2. WARRANTY: Standard 1 year Warranty. Additional 2 years of comprehensive service support will be provided free of cost

3. Payment terms :

98% payment would be payable against proof of inspection and provisional consignee receipt certificate issued by consignee for having received the stores on said to contain basis. The balance 2% after successful demonstration and acceptance of stores by consignee in good condition and on submission of Bank Guarantee for balance 2% value of order valid till 2 months beyond the warranty period of 1 year indemnifying the purchaser against all losses incurred by the purchase during the guarantee/warranty.

4. Demonstration will be carried out free of cost.

5. No assistance for import of finished product or raw material will be provided.

6. 'NIL' against Octroi Exemption Certificate to be provided by the indenter along with order otherwise extra, if applicable.

7. Octroi Duty and Local Taxes:

Normally materials to be supplied to Govt. Department against Govt. contracts are exempted from levy of town duty, Octroi duty, terminal tax and other levies of local bodies. The local Town/Municipal Body regulations at times, however, provide for such exemption only on production of such exemption certificate from any authorized officer. Contractors should ensure that stores ordered against contracts placed by this office are exempted from levy of town duty/Octroi duty, Terminal tax or other local taxes and duties. Wherever required, they should obtain the exemption certificate from the purchase officer or indenter concerned, to

avoid payment of such local taxes or duties. Octroi, entry tax etc. on buyers account in absence of relevant exemption certificate.

8. Supply of Road Permits/ Way bill by the indentor/consignees:

In all such cases where the requirement of Road Permit/Way Bills for entry of goods into a particular State is mandatory, the following provisions shall be strictly followed: -.

(a) The supplier shall request the indentor/consignee for providing Road permit/ Way bill within 10 days of the receipt of the Supply order. The supplier shall furnish all the necessary information and documents in this regard to Indentor/consignee.

(b) On receipt of the above request from the supplier, the indentor/consignee concerned shall arrange to provide the Road permit/Way Bill in the prescribed form to the supplier within a maximum period of two weeks so that the same reaches the supplier before the dispatch of the stores. However, in cases where the Road permit/Way Bill is issued on proof of actual invoice of the material, the consignee shall arrange to provide the Road permit/Way Bill from appropriate authorities within a maximum period of 5 days from the receipt of invoice.

(c) The supplier shall not be held responsible for any delay in supply due to non- supply/delayed supply of Road permit/Way bill by the indentor/consignee.

(d) All cases of abnormal delay in providing requisite details/ documents by the supplier or issue of Road permit/Way bill by indentor/consignee, the same shall be reported to DGS&D.

9. Signing of Inspection Notes issued by QA Wing of DGS&D : Instructions to Indentors/Consignees.

Advance Payment Copy of Inspection Note for claiming 98% payment (copy No.1):

This is a provisional receipt. It only be tokens the receipt of stores by the consignee and is without prejudice to his rights of inspection and rejection under the general condition to contact. It is issued on said to contain basis the Contractor remaining responsible for proving the total quantities actually delivered. Consignee mentioned in the Inspection Notes should sign (in INK) & put his official rubber stamp on the Advance Payment Copy of Inspection Notes IMMEDIATELY on the receipt of the material and handover the same to the company's authorized representative. Where this is not possible or inconvenient, it should be signed (in INK) by an official authorized by the consignee in that behalf. In such cases, the official signing the receipt certificate should indicate his designation and the official on whose behalf he is signing; and put his official rubber stamp.

Balance payment & Accounts Copy of Inspection Note (Copy no 2& 5) for claiming 2% balance payment.

Within 90 days from the date of material received, Consignee mentioned in the Inspection Notes should sign (in INK) & put his official rubber stamp on the Balance & Accounts office copy of Inspection Notes and should fill up the columns of Receipt Voucher No.

In cases where the supply is incomplete or defective or the supplier do not carry out commissioning/demonstration of the stores within the period as per (i) above, the consignee shall report such cases immediately to the supplier and DGS&D.

In cases where the consignees do not release copy 2 and 5 of I/Notes within the period as (i) above for the reasons which are considered not valid by the supplier, they may approach DGS&D with complete details for authorization of balance payment without copy 2 and 5 of I/Notes and the same shall be considered by DGS&D on merits of each case..

10. CDE Discount Clause: We offer the following discount against valid Custom duty exemption Certificates on Spectrum Analyzers.

a) 17.7% for Defence customers (where present rate custom duty is nil as per custom notification 39/96) against valid CDE certificate.

b) 10% for other customers like education & R&D Labs (where present rate custom duty is 9.3% as per custom notification



51/96) against valid CDE certificate. In case, there is any change in custom duty structure, these discounts will be revised accordingly

#### Schedule -D

#### Special Instructions to R/C holders:

Rate contract holders are advised that before entertaining the supply order, they should ensure the availability of following certificates from DDO's.

- a) That they are Central Government Department drawing funds from consolidated fund of India.
- b) The expenditure involved for the purchase has received the sanction of the competent financial authority.
- c) The funds are available under the proper head in the sanctioned budget allotment for the year.
- d) They have been fully authorized by the department to sign the supply order and incur the liability in respect of stores being ordered.

  
( Shashi K. Sud )

ASSISTANT DIRECTOR (S)

For and on behalf of the purchasers named in the schedule/Form DGS&D-1001

#### ANNEXURE A: DETAILED SPECIFICATIONS, FEATURES, MAKE & MODEL

Item No. 1: Agilent N9000A with Option 503:

Item No. 5: Agilent N9000A with Options 507, W9068A (Phase noise) & W9063A (Analog Demod)

#### A. Key Specifications of N9000A CXA

1. Frequency Range: 9 kHz to 3 GHz with option 503, 9 kHz to 7.5 GHz with option 507
2. Aging Rate:  $\pm 1 \times 10^{-6}$  / year
3. Frequency Counter
  - 3 a. Counter Resolution: 0.001Hz
  - 3 b. Frequency span (FFT & swept mode): 0 Hz (zero span), 10Hz to 3 GHz
4. Spectral Purity
  - 4 a. SSB Phase Noise (1GHz, 10kHz offset): -99dBc/Hz
  - 4 b. Harmonics @ -40dBm level: -66dBc
5. Sweep time
  - 5 a. Span = 10 Hz: 1ms to 4000s
  - 5 b. Span = 0Hz: 1  $\mu$ s to 6000s
6. Band width
  - 6 a. Resolution Bandwidth (-3dB): 1 Hz to 3 MHz (10% steps), 4, 5, 6, 8 MHz
  - 6 b. Video Bandwidth: 1 Hz to 3 MHz (10% steps), 4, 5, 6, 8 MHz, and wide open
7. Amplitude
  - 7 a. Max input level for Protection: Avg total power: +30 dBm (1 W) Peak pulse power: +50 dBm (100W) AC Coupled:  $\pm 50$  Vdc
  - 7 b. Max. input level for Measurement: +23 dBm
  - 7 c. Level measurement uncertainty: =1dB
  - 7 d. Displayed average noise level: = -130 dBm
8. Markers: Normal and delta
9. Trigger: Free run, line, video, external, RF burst, periodic timer
10. Display: 1024 x 768 XGA resolution LCD color display
11. Interface: USB, LAN, GPIB and XGA output (VGA compatible) for external monitor

#### B. Key Features of N9000A CXA

10 MHz Analysis Bandwidth standard (Upgradeable to 25MHz Analysis Bandwidth)

Fast measurement speed, Superior RF performance and Scalable measurement applications  
W-CDMA ACLR dynamic range: 63 dB (66dB with noise correction ON)  
Built-in PowerSuite for easy one-button power measurements  
Save and recall the instrument state, display image  
Connect USB devices through convenient front-panel ports  
PC function keys allow operation without a mouse or keyboard  
Help: Context-sensitive help to answer questions quickly  
Bright, high-resolution 21.4 cm XGA color display for easy signal identification  
Trace points: 1 to 40,001 (All spans)

Item No. 3: Agilent N9010A with Options 513, EMC, N9068A & N9063A

Item No. 4: Agilent N9010A with Options 526, EMC, N9068A & N9063A

#### A. Key Specifications of N9000A CXA

1. Frequency Range: 9 kHz to 13.6 GHz with option 513; 9 kHz to 26.5 GHz with option 526
2. Aging Rate:  $\pm 1 \times 10^{-6}$  / year
3. Frequency Counter
  - 3 a. Counter Resolution: 0.001Hz
  - 3 b. Frequency span (FFT & swept mode): 0 Hz (zero span), 10Hz to 3 GHz
4. Spectral Purity
  - 4 a. SSB Phase Noise (1GHz, 10kHz offset): -99 dBc/Hz
  - 4 b. Harmonics @ -40dBm level: -82 dBc
5. Sweep time
  - 5 a. Span = 10 Hz: 1ms to 4000s
  - 5 b. Span = 0Hz: 1  $\mu$ s to 6000s
6. Band width
  - 6 a. Resolution Bandwidth (-3dB): 1 Hz to 3 MHz (10% steps), 4, 5, 6, 8 MHz
  - 6 b. Video Bandwidth: 1 Hz to 3 MHz (10% steps), 4, 5, 6, 8 MHz, and wide open
7. Amplitude
  - 7 a. Max input level for Protection: Avg total power: +30 dBm (1 W)
  - 7 b. Max. input level for Measurement: +23 dBm
  - 7 c. Level measurement uncertainty: =1dB
  - 7 d. Displayed average noise level: = -143 dBm
  - 7 e. Quasi Peak Detector: Meets CISPR 16-1-1 (2007) standards
8. Markers: Normal and delta
9. Trigger: Free run, line, video, external 1, external 2, RF burst, periodic timer
10. Traces: 6 traces
11. Display: 1024 x 768 XGA resolution 8.4 inch LCD color display
12. Interface: USB, LAN, GPIB and XGA output (VGA compatible) for external monitor
13. Operating Temperature: 0 to 55°C

#### B. Key Features of N9000A CXA

10 MHz Analysis Bandwidth standard (Upgradeable to 25MHz / 40 MHz)  
Basic Pre compliance measurement capability available, including CISPR 16-1-1 bandwidths, detectors, amplitude correction factor, band preset, tune & listen at marker, and limit lines  
-73 dB W-CDMA ACLR dynamic range (with noise correction ON)  
LXI class C compliant, SCPI and IVI-COM  
Common X-Series user interface / Open Windows® XP operating system  
Built-in Power Suite for easy one-button power measurements  
Powerful features like Auto tune, Built-in help, Advanced trace math, 6 independent traces, 12 independent markers (24 delta pairs),  
5-ms peak search, analog demodulation etc.

Fastest Measurement Throughput, Highest Yields and Broadest Set of Tools made EXA as the Best choice in its class

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## SCHEDULE - C

### List of Parallel Rate Contract For Spectrum Analyzer & Signal Analyzer

Sr.No.	NAME & FULL ADDRESS OF FIRM	R/C NO & DATE
1	AGMATEL INDIA PVT LTD E-366, 2nd Floor, Nirman Vihar, Vikas Marg, Delhi 110092 Mr. A.K.Aggarwal- 9810054742, E- mail:aka@agmatel.com Mr.Vijay Malhotra- 9810054741/ 43064306  DELHI 110092	S_ANA/IT-4/RC- D2060000/0212/84/F0198/1519 25-FEB-11
2	SYNERGY MEASUREMENT TECHNOLOGIES PVT. LTD. 25/C, Nicholson Road, Tarbund, Secunderabad - 500 009 AP  Email: sales@synergytech.in, debashis@synergytech.in Tele No. 040-4444 4040 / 50 / 35, Mr. Debashis - 09830067183  ANDHRA PRADESH 500 015	S_ANA/IT-4/RC- D2060000/0212/84/F0709/1518 25-FEB-11
3	SRB INSTRUMENTS PVT. LTD. B-28/34 Subhash Chowk, Laxmi Nagar, Delhi- 110092  Tele No. 011-22413422 / Fax: 011-22459443 Rakesh Pandita: 0-9810190551/ mail: rakesh@srb- instruments.com Vinod Pandita: 09810445563  DELHI 110092	S_ANA/IT-4/RC- D2060000/0212/84/F0364/1524 14-MAR-11
4	MEERA AGENCIES PVT. LTD Plot No. 526, Udyog Vihar, Phase-V, Gurgaon- 122016 Ph- 0124-4226990/ Fax: 0124-4226991 E-mail: pnkaushik@meeraagencies.com/ wwwmeeraagencies.com Mob: 09811309591/ 09873904575  HARYANA 122016	S_ANA/IT-4/RC- D2060000/0212/84/F0368/1523 14-MAR-11

#### NOTE:

(1) Before placing supply order, DDOs are advised to check with DGS&D or on the website whether any further RCs

have been awarded or amendments to Rate Contract have been issued.

(2) All the R/C particulars including prices in respect of individual R/C's are available on DGS&D website, which can be accessed by all. The access code of DGS&D website is <http://dgsnd.gov.in>.

A handwritten signature in blue ink, appearing to be 'S. S.', is written over a horizontal line.

## ANNEXURE

Common requirements for all main equipments:-

1. The supply shall include one set of operation and maintenance manual for each equipment.

2. Type test reports for each model shall be from a govt. lab. Type testing shall consist of verification of all the features & functional requirements including environmental tests. The environmental tests sequence will be as under:-

Dry Heat Test : For 16 hrs. at a temp. of 55 degree C in accordance with IS:9000/part-3/section-5/1977 (reaffirmed in 2004).

Cold Test : For 4 hrs. at a temp. of (-)10 degree C in accordance with IS:9000/part-2/section-4/1977 (reaffirmed in 2004).

Damp Heat Test : For 2 Cycles of 24 hours (12+12h) each at a temp. of 40 degree C & 95 % RH in accordance with IS:9000/part-5/section-2/1981 (reaffirmed in 2004).

The analyzer shall be checked for all the functional requirements before and after 1-2 hours recovery period of the above environmental tests sequence.

There shall be no deterioration in the functional parameters.

OEM Type Test reports with environmental testing to an equivalent International Standard shall also be acceptable in this case.

Supplier shall certify that the equipment shall be suited to Indian Environmental Conditions as above.

3. The analyzers shall be as per ISO:14001 certification regarding Environmental Management.

### Spectrum Analyzers

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Specification:-

(A) Spectrum Analyzer 3 GHz

- |  |                                    |
|--|------------------------------------|
| 1. Frequency Range   | : 9 kHz to 3 GHz                   |
| 2. Aging Rate  | : $1 \times 10^{-6}$ /year         |
| 3. Frequency Counter                                       |                                    |
| (a) Resolution   | : 1 Hz Min.                        |
| (b) Frequency span   | : 0 Hz (Zero span), 1 kHz to 3 GHz |
| 4. spectral Purity   |                                    |
| (a) SSB Phase Noise @ 10 KHz offset                        | : $< -90$ dBc/Hz at 1 GHz          |
| (b) Harmonics, @ -40dBm level                              | : -60 dBc                          |
| 5. Sweep time  |                                    |
| (a) span $\geq 1$ kHz                                      | : 100 ms to 1000 s                 |
| (b) span = 0 Hz  | : 100 micro s to 20 s              |
| 6. Bandwidth   |                                    |
| (a) Resolution Bandwidth (-3dB)                            | : 100 Hz to 3 MHz in steps         |
| (b) video Bandwidth  | : 30 Hz to 1 MHz in steps          |
| 7. Amplitude   |                                    |
| (a) Max.Input level for Protection                         | : +30 dBm                          |
| (b) Max.input level for Measurement                        | : +20 dBm                          |
| (c) Level measurement uncertainty                          | : $\leq 2$ dB                      |
| (d) Displayed average noise level, (300 Hz RBW, 10 Hz VBW) | : $\leq -110$ dBm                  |
| 8. Markers   | : Normal and delta                 |
| 9. Trigger   | : Free run, Video, External        |

- 10. Display : TFT color display
- 11. Interface : USB
- 12. Software : For transfer of screen shot/  
measurement data / to PC
- 13. Operating Temperature : 0 to 45 degree C temperature and  
80% RH at 40 degree C
- 14. Power Requirement : 230 +/- 10% VAC,50 Hz

(B) Spectrum Analyzer 6 GHz

- 1. Frequency Range : 9 kHz to 6 GHz
- 2. Aging Rate :  $1 \times 10^{-6}$ /year
- 3. Frequency Counter
- (a) Resolution : 1 Hz Min.
- (b) Frequency span : 0 Hz (Zero span), 1 kHz to 6 GHz
- 4. Spectral Purity
- (a) SSB Phase Noise @ 10 KHz offset : <-90 dBc/Hz at 1 G Hz
- (b) Harmonics, @ -40dBm level : -60 dBc
- 5. Sweep time
- (a) span  $\geq 1$  kHz : 100 ms to 1000 s
- (b) span =0 Hz : 100 micro s to 20 s
- 6. Bandwidth
- (a) Resolution Bandwidth (-3dB) : 100 Hz to 3 MHz in steps
- (b) video Bandwidth : 30 Hz to 1 MHz in steps
- 7. Amplitude
- (a) Max.Input level for Protection : +30 dBm
- (b) Max.input level for Measurement : +20 dBm
- (c) Level measurement uncertainty :  $\leq 1$ dB
- (d) Displayed average noise level, :  $\leq -110$  dBm  
(300 Hz RBW,10 Hz VBW)
- 8. Markers : Normal and delta
- 9. Trigger : Free run, Video, External
- 10. Display : TFT color display
- 11. Interface : USB
- 12. Software : For transfer of screen shot /  
measurement data / to PC
- 13. Measurement features : C/N RATIO , AM % , Time domain  
Power Measurement, Channel Power  
Measurement,Phase Noise Measurement,  
TOI, OBW
- 14. Operating Temperature : 0 to 45 degree C temperature and 80%  
RH at 40 degree C
- 15. Power Requirement : 230 +/- 10 % VAC,50 Hz

(C) Spectrum Analyzer 13 GHz

- 1. Frequency Range : 9 kHz to 13 GHz
- 2. Aging Rate :  $1 \times 10^{-6}$ /year
- 3. Frequency Counter
- (a) Resolution : 1 Hz to 10 KHz
- (b) Frequency span : 0 Hz (Zero span), 100 Hz to 13 GHz
- (c) Max. Span Accuracy : 3%
- 4. Spectral Purity
- (a) SSB Phase Noise @ 10 KHz offset : <-90 dBc/Hz at 1 GHz
- (b) Harmonics, @ -40dBm level :  $\leq -60$  dBc
- 5. Sweep time
- (a) span  $\geq 10$  Hz : 100 ms to 1000 s

(b) span =0 Hz : 100 micro s to 20 s

6. Bandwidth

(a) Resolution Bandwith (-3dB) : 10 Hz to 3 MHz in steps

(b) video Bandwidth : 10 Hz to 1 MHz in steps

7. Amplitude

(a) Max.Input level for Protection : +30 dBm

(b) Max.input level for Measurement : +20 dBm

(c) Level measurement uncertainty : 2.5 dB

(d) Displayed average noise level, : <-130 dBm for 10 MHz to 3 GHz  
(100 Hz RBW,1 Hz VBW) <-125 dbm for 3 GHz to 13 GHz

(e) Quasi Peak Detector : EMI b/w(6dB), 9 Khz,120 KHz

8. Markers : Normal and delta

9. Trigger : Free run, Video, External

10. Traces : Max. 3

11 Display : Colour TFT displaying with provision for 3 traces

12. Interface : USB

13. Measurement features : C/N RATIO, AM % ,Adjacent Channel Power and occupied Bandwidth, Channel Power Measurement,Phase Noise Measurement

14. Operating Temperature : 0 to 45 degree C temperature and 80% RH at 40 degree C

15. Power Requirement : 230 +/- 10 % VAC,50 Hz

(D) Spectrum Analyzer 26.5 GHz

1. Frequency Range : 9 kHz to 26.5 GHz

2. Aging Rate :  $1 \times 10^{-6}$ /year

3. Frequency Counter

(a) Resolution : 1 Hz to 10 kHz

(b) Frequency span : 0 Hz (zero span),100 Hz to 26.5 GHz

(c) Max. Span Accuracy : 1%

4. Spectral Purity

(a)SSB Phase Noise @ 10KHz offset : <-90 dBc/Hz at 1 GHz

(b)Harmonics, @ -40dBm level : </=-60 dBc

5. Sweep time

(a) span>/= 10 Hz : 2.5 ms to 1000 s

(b) span = 0 Hz : 10 micro s to 2000 s

6. Bandwidth

(a) Resolution Bandwith (-3dB) : 10 Hz to 3 MHz in steps

(b) video Bandwidths : 30 Hz to 1 MHz in steps

7. Amplitude

(a) Max.Input level for Protection : +30 dBm

(b) Max.input level for Measurement : +20 dBm

(c) Level measurement uncertainty : 2.5 dB

(d) Displayed average noise level, : <-110 dBm for 10 MHz to 3 GHz  
(300 Hz RBW,10 Hz VBW) <-105 dBm for 3 GHz to 13 GHz  
< -95 dBm for 13 GHz to 26.5 GHz

(e) Quasi Peak Detector : EMI b/w(6dB),9kHz,120 kHz

8. Markers : Normal and delta

9. Trigger : Free run, Video, External

10. Traces : Max.3

11. Display : TFT color display with provision for 3 Traces

- 12. Interface : USB
- 13. Measurement features : C/N RATIO, Adjacent Channel Power and occupied Bandwidth, Channel Power measurement, Phase Noise Measurement.
- 14. Operating Temperature : 0 to 45 degree C temperature and 80% RH at 40 degree C
- 15. Power Requirement : 230 +/- 10 % VAC, 50 Hz

(E) Spectrum Analyzer 7 GHz

- 1. Frequency Range : 9 kHz to 7 GHz
- 2. Aging Rate :  $1 \times 10^{-6}$ /year
- 3. Frequency Counter
  - (a) Resolution : 2 Hz Min.
  - (b) Frequency span : 0 Hz (Zero span), 1 kHz to 7 GHz
- 4. Spectral Purity
  - (a) SSB Phase Noise @ 10 KHz offset :  $< -90$  dBc/Hz at 1 GHz
  - (b) Harmonics, @ -40dBm level : -60 dBc
- 5. Sweep time
  - (a) span  $\geq 1$  kHz : 100 ms to 1000 s
  - (b) span  $\leq 0$  Hz : 100 micro s to 20 s
- 6. Bandwidth
  - (a) Resolution Bandwidth (-3dB) : 10 Hz to 3 MHz in steps
  - (b) video Bandwidth : 30 Hz to 1 MHz in steps
- 7. Amplitude
  - (a) Max. Input level for Protection : +30 dBm
  - (b) Max. input level for Measurement : +20 dBm
  - (c) Level measurement uncertainty :  $\leq 1$  dB
  - (d) Displayed average noise level, (300 Hz RBW, 10 Hz VBW) :  $\leq -110$  dBm
- 8. Markers : Normal and delta
- 9. Trigger : Free run, Video, External
- 10. Display : TFT color display
- 11. Interface : USB
- 12. Software : For transfer of screen shot / measurement data / to PC
- 13. Measurement features : C/N RATIO, AM % , Time domain Power Measurement, Channel Power Measurement, Phase Noise Measurement, TOI, OBW
- 14. Operating Temperature : 0 to 45 degree C temperature and 80% RH at 40 degree C
- 15. Power Requirement : 230 +/- 10 % VAC, 50 Hz

(F) Spectrum Analyzer 40 GHz

- 1. Frequency Range : 9 kHz to 40 GHz
- 2. Aging Rate :  $1 \times 10^{-6}$ /year
- 3. Frequency Counter
  - (a) Resolution : 1 Hz to 10 kHz
  - (b) Frequency span : 0 Hz (zero span), 100 Hz to 40 GHz
  - (c) Max. Span Accuracy : 1%
- 4. Spectral Purity
  - (a) SSB Phase Noise @ 10KHz offset :  $< -90$  dBc/Hz at 1 GHz
  - (b) Harmonics, @ -40dBm level :  $\leq -60$  dBc
- 5. Sweep time

- (a) span  $\geq$  10 Hz : 2.5 ms to 1000 s
- (b) span = 0 Hz : 10 micro s to 2000 s
- 6. Bandwidth
  - (a) Resolution Bandwidth (-3dB) : 10 Hz to 3 MHz in steps
  - (b) video Bandwidths : 30 Hz to 1 MHz in steps
- 7. Amplitude
  - (a) Max.Input level for Protection : +30 dBm
  - (b) Max.input level for Measurement: +20 dBm
  - (c) Level measurement uncertainty : 2.5 dB
  - (d) Displayed average noise level, : <-110 dBm for 10 MHz to 3 GHz  
(300 Hz RBW,10 Hz VBW) <-105 dBm for 3 GHz to 13 GHz  
< -95 dBm for 13 GHz to 40 GHz
  - (e) Quasi Peak Detector : EMI b/w(6dB),9kHz,120 kHz
- 8. Markers : Normal and delta
- 9. Trigger : Free run, Video, External
- 10. Traces : Max.3
- 11. Display : TFT color display with provision for 3 Traces
- 12. Interface : USB or RS 232 Interface and GPIB
- 13. Measurement features : C/N RATIO, Adjacent Channel Power and occupied Bandwidth, Channel Power measurement, Phase Noise Measurement,
- 14. Operating Temperature : 0 to 45 degree C temperature and 80% RH at 40 degree C
- 15. Power Requirement : 230 +/- 10 % VAC, 50 Hz

Add-on items for Spectrum Analyzers

Specification :-

1. Tracking generator for 3 GHz Spectrum Analyzer
  - (a) Frequency range : 1 MHz to 3 GHz,
  - (b) Output level : -20 dBm to -2 dBm
2. Tracking generator for 6/7 GHz Spectrum Analyzer
  - (a) Frequency range : 1 MHz to 6/7 GHz,
  - (b) Output level : -20 dBm to 0 dBm
3. Gated sweep for Spectrum Analyzers 3 GHz, 6 GHz, 7 GHz, 13 GHz, 26.5 GHz & 40 GHz.
  - (a) Gated Sweep : External, IF level, Video
  - (b) Gate Delay : 1 us to 100s
  - (c) Gate Length : 1 us to 100s

LIST OF ALL AMENDMENTS

For RC No. S\_ANA/IT-4/RC-D2060000/0212/84/F0709/1518

Sr No.	Amendment No.	Amendment Date	Effective From	Amendment In
1	<a href="#">S_ANA/IT-4/RC-D2060000/0212/84/F0709/1518/35315</a>	14-MAR-11	01-APR-11	Amendment in Rate

