

# INSTRUCTION

# MANUAL

## SINGLE CHANNEL ANALYSER



**TYPE : SC530**

### NUCLEONIX SYSTEMS PRIVATE LIMITED

Plot No: 162A&B, PHASE II, I.D.A. Cherlapally, Hyderabad-500051, INDIA

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## UNPACKING

This unit has been thoroughly tested and is despatched in ready to operate condition. However, on unpacking and prior to operation, it is advisable to check visually and make sure that there is any visible damage caused in transit.

If any damage to the instrument be observed, do not switch ON the unit and report the matter immediately to :

Customer Support Division  
Nucleonix Systems Private Limited  
Plot No: 162 A & B, PHASE II,  
I.D.A.Cherlapally,  
Hyderabad - 500 051.

Ph : 91-040-27263701/30918055, FAX : 91-040-27262146, e-mail : [info@nucleonix.com](mailto:info@nucleonix.com)

In all correspondence regarding the instrument, please mention the serial numbers of the unit, month and year of purchase of the unit.

# CHAPTER - I

## INTRODUCTION

NUCLEONIX Single Channel Analyser Type : SC 530 has been designed primarily to be a constituent unit of Modular Gamma Ray Spectrometer Type : GR611M.

**Single Channel Analyser** is essentially used for pulse height analysis. SCA accepts Gaussian or Semi-gaussian, uni-polar or bi-polar pulses from pulse shaping amplifiers such as Linear Amplifier LA520 or Active Filter Amplifier & generates digital pulse output in accordance with the MODE of operation selected. It has **THREE modes** of operation namely : **INTEGRAL, NORMAL** and **WINDOW**. In 'INT' mode, for each of the input signals above the LLD level, SCA gives TTL output. In 'NORMAL' mode, for each of the input signals above LLD but below ULD an SCA output will be generated. In WINDOW mode - LLD is called BASE LINE & ULD is called WINDOW. WINDOW will be 1.0V for ten turns of dial i.e. for each one turn it will be 100 mV. Window always overrides on the base line.

In WINDOW mode, for each of the input signals lying above base line & within the window set (above base line) SCA give TTL output. In Gamma Ray Spectrometer the detector pulse output (amplified) is proportional to the incident Gamma Energy and hence accurate measurement of pulse height by Single Channel Analyser when operated in WINDOW mode will give the photopeak energy information.

FRONT PANEL



REAR PANEL



## CHAPTER - II

### SPECIFICATIONS

Input	:	Positive unipolar or bipolar 0-10V linear range.
Input Impedance	:	10K Ohm
Pulse Pair Resolution	:	Better than 1 micro second
Output	:	4V positive pulse of 0.5 micro sec width available
Output Impedance	:	Less than 100 ohms
Lower Level Discriminator	:	Variable from 0 to 10V by means of ten turn helipot.
LLD Output	:	4V positive pulse of 0.5 micro sec width available on on the rear panel
LLD Output Impedance	:	Less than 100 ohms
Upper Level Discriminator	:	Variable from 0-10V when on NORMAL mode. Variable from 0-1V when on WINDOW mode. It is ineffective when on INTEGRAL mode.
Non-linearity	:	Less than 0.25% of full scale for both discriminators.
Window width Constancy	:	Better than 25 mV variation over the Linear 0-10V range.
Maximum Zero Offset	:	Less than 0.5% of full scale for both the discriminators.
Power requirements	:	+12V 20mA +12V 180mA -12V 60mA -12V 5mA
Dimensions	:	Standard single width module
Module connector	:	Amphenol Connector Type : 26-159-24P-H (24 Pin Type) or NIM Standard as per AEC specifications TID 20893 (Rev) Type : AMP 204186-5

## **CHAPTER - III**

### **INSTALLATION**

The Single Channel Analyser Type : SC 530 is intended to be used primarily as a constituent unit of the NUCLEONIX modular (Nuclear) Gamma Ray Spectrometer System housed in the Minim Instrumentation Bin & Power Supply MB403.

#### **A. INSERTING THE MODULE INTO THE BIN :**

The Bin is fitted with guides (S.S.Rods) at the top and bottom to help guide and position the modules.

To insert the module into the Bin the projected edges at the top and bottom right hand side of the module should be positioned into the S.S.rod channel grooves and the unit pushed right-in until the 24 pin / 42 pin power connectors of the bin and module fully engage. The captive screws on the modules should then be tightened.

#### **B. POWER TO WORK THE MODULE :**

The input power to work the module is fed through the connector at the rear side of the module. This connector mates with one of the output connector sockets of MB403.

## CHAPTER - IV

### OPERATING INSTRUCTIONS

#### B. OPERATIONAL CONTROLS : (Controls on front panel)

**Mode** : Three way rotary controls to select any one of the three modes of operation

**INT** : In the integral mode the pulses of amplitude exceeding the LLD setting will be made available at the output

**WINDOW** : In the window mode the unit is operated as high resolution narrow window of 1 volt analyser. ULD functions as window control (WIN) with a range of (0-1V) for ten turns. The window overrides on the base line (LLD). SCA releases output for each of the input signals lying between base line (LLD) and window setting, above baseline.

**NORMAL** : In this mode of the upper level and lower level helical potentiometers are independently variable from 0 to 10V and an output is generated for pulses analysed between the two levels. This mode is useful for wide window applications.

#### **Lower level discriminator / baseline :**

Ten turn potentiometer to vary the LLD from 0 to 10V.

#### **Upper level discriminator / window :**

Ten turn helical potentiometer to vary the ULD/WINDOW width as follows :

- a. In the "WIN" mode the total window variation is 1V, for ten turns & is 100mV for one turn.
- b. In the "NORMAL" mode the ULD level is variable by 10V irrespectively of the LLD setting.

**INPUT** : BNC connector providing the input to the analyser.(unipolar or positive bipolar)

**OUTPUT (SCA)** : BNC connector providing the output of the analyser (TTL)

#### **CONTROLS ON THE REAR PANEL :**

**i. LLD OUTPUT (optional)** : An output BNC socket on rear panel. An output is generated when the input amplitude is above the LLD dial reference. This is a TTL pulse of 0.5 micro sec wide (on rear panel)

**ii. OUTPUT (on front panel) BNC** : A 4V TTL pulse of 0.5 micro sec wide is present

a) in INT mode: If input amplitude is greater than LLD reference.

b) in NOR mode : If input amplitude is greater than LLD and less than ULD set

c) in WIN mode : If the input amplitude is above the BASELINE (LLD) set but within the WINDOW which is overriding on BASELINE.

**C. HOW TO OPERATE THE UNIT :**

1. Install the module into the bin.
2. Switch ON the mains supply to the MINIBIN and power supply MB403. Allow 10 minutes for warm-up & stabilisation.
3. Feed the input (to be analysed) to the input BNC connector.
4. Feed the output directly to the Counter Timer CT541A.
5. Select the mode of operation as desired.

**Integral Mode :** In the "INT" mode output is available for input pulse amplitude exceeding the LLD setting. Output on the rear panel (optional) and at the 'LLD output' is also available additionally. In the NOR/WIN mode, integral output from LLD will be available at the rear connector and for pulse above the LLD setting.

**Normal Mode :** In the "NORMAL" mode output on the front panel will be available for all the pulses lying above LLD setting but below ULD setting. LLD & ULD operate from 0-10V range.

**Window Mode :** Window Mode is the one which is quite often used for Gamma Ray Spectrometer operation for scanning the spectrum of a given isotope. In this mode SCA output is released whenever the input pulse amplitude lies between baseline (LLD) and (LLD+WINDOW). That is window settings always overrides on the baseline.



## CHAPTER - V

### BLOCK DIAGRAM DESCRIPTION

SCA is a module which accepts analog pulse (uni-polar or bi-polar signal) and gives digital output (TTL), in three modes of operation it provides.

**INT (Integral mode)** : It gives TTL output for each of the input signals above LLD set value, independent of ULD setting.

**NOR (Normal mode)** : It gives a TTL output for each of the input signals above LLD & below ULD.

**WIN (Window mode)** : In this mode it gives output for each input signal lying above LLD (base line) and within the WINDOW set i.e. (Ten turns of ULD - correspond to 1.0 volt window & one turn corresponds to 0.1V (100mV) window.

**Block diagram description** : Input signal received at the input of SCA is typically from the output of a Linear Amplifier or Spectroscopy Amplifier. It is a uni-polar or bi-polar pulse with amplitude in the range of (0 to 8 or 10 Volts). This is attenuated by R1-R2 at the input of SCA & is fed to a op.amp buffer (U1) with unity gain.

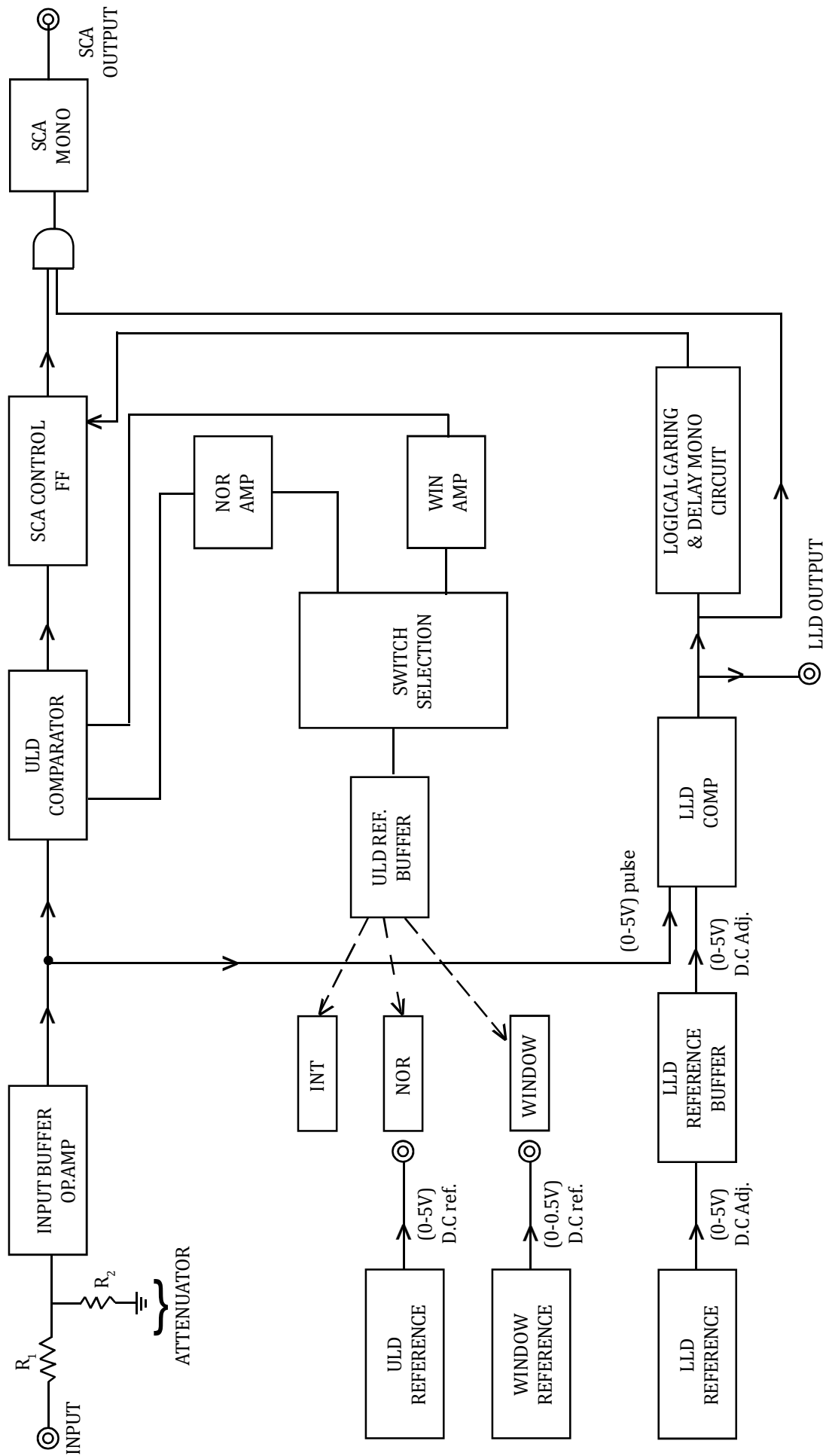
Output from this is fed to two comparators namely LLD (U5) and ULD (U11).

The other part of the comparator for LLD is a LLD reference - a front panel ten turn helipot / dial which generates (0 to 5.0) volts for ten turns. This is buffered through op.amp (U9) & fed to LLD comparator. LLD comparator goes to trigger a LLD mono (U2B) to give 'LLD OUT'.

Further LLD output goes through logical gating & delay monostable and is gated to give SCA output through SCA mono (U2A) provided ULD has not triggered.

Input signal parallelly goes to ULD comparator. The reference input for comparison for ULD comparator is either from ULD ref (0 to 5V) in NORMAL mode or through window ref (0 to 0.5V) in window mode. Appropriate reference is applied to ULD comparator which triggers and gives ULD output if the signal is above ULD or WINDOW set, at U11. This ULD comparator output, triggers 'SCA control FF', to set & its Q to 'LO' state ----- preventing the 'SCA mono' to release SCA output.

# BLOCK DIAGRAM OF SC530



## CHAPTER - VI

### CALIBRATION PROCEDURE

#### A. CALIBRATION IN "INT" MODE :

Make the calibration setup and connections between tailpulse generator, Linear Amplifier, Single Channel Analyser & oscilloscope (50 / 100 MHz) as shown in diagram.

Feed an accurately measured gaussian shaped pulse from tail pulse generator such as BH-1 of BNC make and Linear Amplifier LA520 combination. Normalize the pulser dial so that output amplitude of the Linear Amplifier and pulser dial setting tally. Now select the "MODE" switch on Single Channel Analyser to "INT" (integral) position. Adjust potentiometer P4 on the SCA-PCB so that the SCA output just disappears when the LLD is at +5V that is the LLD and SCA output shall be present from 0V to 5V and just above 5V it disappears.

Cross check the validity of calibration at 2V and 7V amplitude.

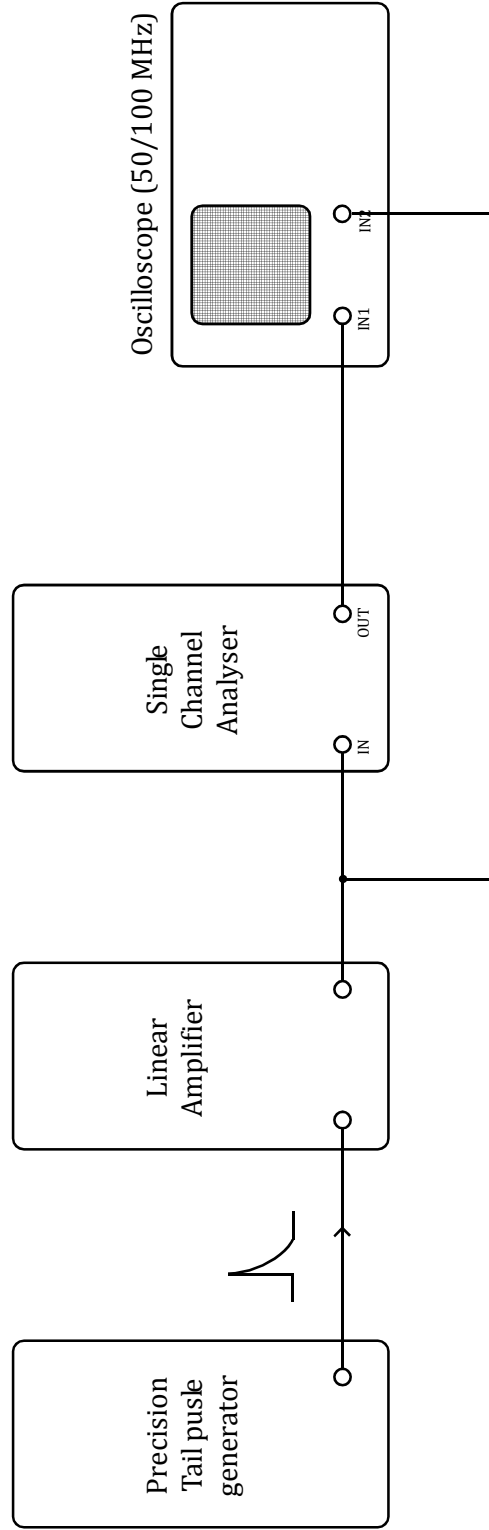
#### B. CALIBRATION IN "NORMAL" MODE :

- i. Set the mode switch to "NORMAL" position.
- ii. Feed 5V pulse to SCA. Set the LLD dial at say 1V. Set ULD dial at 5.00 and adjust potentiometer P11 of Normal op.amp to make the output just appear above the 5.00 ULD setting and below 5.00 ULD setting, SCA output shall disappear.
- iii. Move ULD dial to 10V and take LLD dial to 5V from 0V, the SCA output shall appear from 0V to 5V dial setting of LLD and just above 5.00 dial of LLD, SCA output disappears.
- iv. Feed different amplitude pulses and cross check the output accordingly.

#### C. WINDOW CALIBRATION :

- i. Switch to "WIN" mode.
- ii. Feed 5V input pulse.
- iii. Keep LLD control to 5.00 ULD/WIN to 1.00. Now output should just appear.
- iv. Reduce LLD control from 5.00 to 4.90 and adjust P9 (lower window adj.) so that output is present from 5.00 to 4.90 of LLD (Baseline) setting. Output shall just disappear for LLD setting is just below 4.90.
- v. Now for same 5V input, set ULD to 10.00 and reduce LLD gradually to 4.00 and the output shall be present between 5.00 to 4.00. If LLD (Baseline) setting and just below 4.00 output just vanishes, if it is not OK, then adjust P3 (for high window span) to get this condition.
- vi. Now go back to step (IV) repeat steps (IV) and (V) till the calibration is OK.

## CALIBRATION SETUP



Typical settings

- a. on BH-1 : \_\_\_\_\_
- b. on Linear Amplifier : \_\_\_\_\_
- c. on Single channel analyser appropriate mode of operation for each calibration
- d. on oscilloscope measure exact input pulse height to SCA and also check the presence of SCA output (TTL).

## CHAPTER - VII

### AVAILING OF MAINTENANCE/ CALIBRATION SERVICES AND WARRANTY CLAUSE (with in India)

#### 7.1 GENERAL

As per the warranty clause of the company, we provide one year warranty during which period we provide free service at our works. Hence in case of any mal-function in our instruments, you are requested to send the unit back to our works by RPP/COURIER/SPEED POST PARCEL/GATI/XPS/door delivery. We shall arrange immediate rectification/replacement within two weeks from the date of receipt of the equipment at our place. Please note that the equipment will be serviced at our works only.

The equipment is to be sent to:

The Servicing Department  
NUCLEONIX SYSTEMS PRIVATE LIMITED  
Plot No: 162 A & B, PHASE II, I.D.A. Cherlapally,  
Hyderabad - 500 051 Ph: 040-27263701/329145448/32918055  
E-mail: info@nucleonix.com www.nucleonix.com

For all the Radiation monitoring equipment, detectors built-in or external probes will not have one-year warranty, but only inspection warranty at the time of supply is provided. Since detectors will / may have fragile glass construction, we do not provide warranty. In case of failure of these components, Nucleonix will supply detector replacement at cost-cost price.

**Note:** In respect of all types of portable radiation monitors, it may be necessary to checkup and recalibrate the equipment once a year at our works.

#### 7.2 EQUIPMENT REPAIRS / SERVICING POLICY (WITH IN INDIA)

##### (a) During Warrantee

The following procedure is to be followed by the customers with in India for availing services/ repairing facility during warrantee period.

- 1 Equipments are to be sent to our works for availing free repair services during warrantee, after the customer receives approval from the customer support division, by sending an e-mail.
- 1 For all equipments, costing less than 6.0 lakhs one year warrantee & free service is offered, when the equipments are sent to our works only. For larger systems such as installed systems, networked systems, specialized systems, costing more than 6.0 lakhs during one year warrantee, free service is offered at site. Field service Engineer will be deputed subject to warrantee terms & conditions.
- 1 This does not include personal computer related problems, for which local computer service provider of the PC vendor is to be contacted. Also for software related problems online support will be provided. Software support doesn't include cleaning of virus problems etc.
- 1 When the equipments are sent to our works for warrantee services, they are to be properly packed with adequate cushion to prevent any transportation damages. Nucleonix Systems is not responsible for damages or loss during transportation.
- 1 Packing / Freight charge is to be borne by customer when he sends the equipment to our works. However when we return after servicing packing will be Nucleonix responsibility & Freight charges will be to your account. Only services are free.
- 1 Please indicate in your correspondence equipment model & serial number.
- 1 All the equipments are to be sent to our works only on door delivery basis.
- 1 For Door Delivery Transportation contact XPS/GATI cargo in your city / town or a reliable courier service to pick the consignment from your place. For their nearest local address & phone no's look into their websites. Transit insurance if the customer feels is necessary it is to be covered.
- 1 Nucleonix Systems will not receive the equipments sent by other modes of transportation, such as Rail/ Road.
- 1 After servicing, equipments will be sent back by same mode of transport such as XPS/GATI/COURIER/RPP.

- 1 All types of Radiation detectors, glass ware, PMTs etc which are fragile are not covered in warrantee, if the failure is due to physical damage, external or internal due to shock, dropping, miss-handling etc. If the failure is due to a natural fault then only it is covered under warrantee for a limited period of three months. However complete electronics is covered for 1 year warrantee.
- 1 You can also send the equipment personally to our works for repairs either during or after warrantee, after fixing up with our service dept (Customer Support Division). If possible we may repair on same day or your person can stay for a day or two & get it repaired & or calibrated.

**(b) After warrantee Services**

- 1 On expiry of 1yr warrantee if you like to send the equipment (low cost less than 6.0 lakhs) for repairs to our works, you may please observe the following procedure.
- 1 Send an e-mail with details mentioning that you agree to pay service charges which includes: Basic service charges per unit / module in the range of Rs: 2500 to Rs : 10,000 depending on the sophistication of the unit calibration charges ( if applicable for your equipment) + cost of components + packing charges + Return Freight charges @ actual.
- 1 Once our customer support department responds & requests you to despatch the equipment to our works for repairs, you may do so by following the steps given below.
- 1 Followed by this you can send the equipment straight away if it is within 5 yrs old. If the equipment is beyond 5 yrs old, then also you can send it for repairs, however only after you receive confirmation from Customer Support Division, that it is repairable & is not an obsolete model. If the design is obsolete then customer support division (CSD) may give you 'buy back' offer to replace with new model or upgrade it with electronic circuit boards & enclosure.
- 1 For all installed equipments costing above Rs: 6.0 lakhs which are larger in size & for which field servicing only is recommended, you can obtain a quotation with relevant details by sending an e-mail & avail the services accordingly.
- 1 For all field servicing jobs, since we need to depute engineers, it is likely, to take time & also it will cost more which includes Engineer's TA & DA etc., apart from basic service charges + cost of spares etc. Please note that basic service charges will be different for different products depending upon sophistication.
- 1 Also in some cases it may not be possible to fix-up the problems in the field itself, in such cases we may advise you to send them to our works.
- 1 For all jobs to be serviced in the field, customer is requested to provide adequate details on the nature of problems, to enable our engineer to come prepared with adequate spares.
- 1 For any additional information send an e-mail to info@nucleonix.com, Atten: Customer support division.

**7.3 EQUIPMENT REPAIRS / SERVICING POLICY (FOR EXPORTS)**

Equipments, manufactured & exported are subjected to a well defined quality assurance (QA) plan & Factory acceptance tests (FAT). Nucleonix systems has the following policy to provide maintenance support to overseas customers either directly or through international dealers / distributors.

**(a) During & after warranty:**

- 1 For minor problems, which can be handled by customers, servicing tips have been provided in the user manual / servicing manual.
- 1 Also most of the equipments have built-in fault diagnostic features which will indicate to the user nature of problem in the equipment. Based on the visual indication in the instrument Display, user can take corrective action or contact Nucleonix systems by email for help.
- 1 Nucleonix systems will guide in localizing the defective part / module or sub-system by interacting with the customer if required. Skype will be used for communication.
- 1 During warranty free replacement of sub-system or board (PCB) will be done. However customer has to send defective sub-system back to Nucleonix system with-in 15 days on arranging replacement
- 1 During & after warranty, any Freight charges & customs clearance charges are to be borne by customers, both ways.
- 1 If it is a manufacturing defect, then Nucleonix system will bear the replacement cost of sub-system / unit. However any Freight charges & customs clearance charges in their country are to be borne by customer.
- 1 After warranty, services will be similar to that of services during warranty. However, customer will have to pay for cost of parts replaced, freight charges both ways & customs clearance charges in both the countries. Nucleonix systems plans to introduce audio visuals on web or on CDs to facilitate product demonstration, installation & minor maintenance very soon.

#### 7.4 HOW TO AVAIL CALIBRATION SERVICES (FOR INDIAN CUSTOMERS)

Nucleonix Systems offers radiation calibration services to its customers. Calibration services are provided for Nucleonix Systems manufactured products only, in general, as a company policy.

How to avail calibration services:

It is best advised that each of the Radiation monitors including Area monitors are calibrated once in a year. When you want to send your Radiation monitor / Area monitor / Contamination monitor for calibration to our works. You may send the equipment for calibration, by following the steps given below:

1. Our standard calibration charges per equipment (All types of Radiation monitors including portable survey meters, contamination monitors & Area Gamma Monitors) are Rs: 2500 + Packing + Freight charges. You can email a 'work order' accepting these charges.
2. Email your work order and despatch / send the equipment to our works if it is 5 years old or less including details of mode of transport sent with docket particulars.
3. Also mention in your work order & clearly indicate that you will agree to pay calibration charges & also equipment repair charges additionally if the unit is faulty & requires repairs before one can take it up for calibration.
4. You are requested to ensure good packing to avoid any transportation damages. Especially if there are external detector probes, they are to be packed with sufficient soft foam to ensure no damage in transportation.
5. Use only the specified following mode of transportation system for dispatching on door delivery basis. XPS/GATI cargo / Courier/RPP/Speed Post parcel etc. Send the equipment on freight paid basis. (Equipments sent by other methods such as Rail/Road etc will not be collected). Also you can cover for transit insurance both ways if you wish. Nucleonix system is not responsible for any transportation damages or loss during transportation both ways.
6. Immediately on receipt of the equipment, we will send an acknowledgement & also a proforma bill by email/ post.
7. Based on the proforma bill, once we receive the payment, equipment will be dispatched back by similar mode of transportation as mentioned above.

#### 7.5 HOW TO AVAIL CALIBRATION SERVICES (FOR FOREIGN CUSTOMERS)

Foreign customers can calibrate Nucleonix make Radiation monitors/equipments in their country at any of their accredited Radiation calibration labs. Nucleonix systems will be happy to provide any help and guidance if needed, for calibration. Alternatively if you send the equipment here to India we can also provide calibration services.

Calibration Standards Lab & Facility:

We have two calibration labs.

- i. Low Level Calibration Lab.
- ii. High Dose Rate Calibration lab.

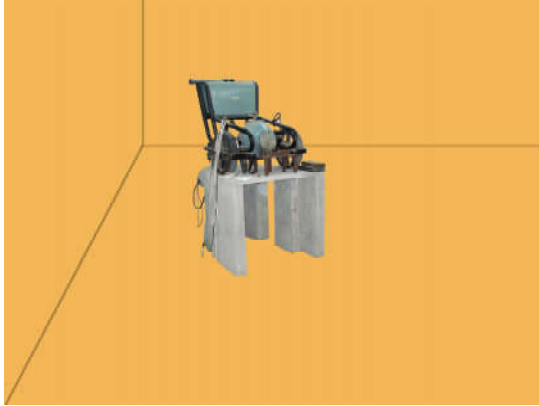
**Low Level Calibration Lab:** This has a Cs-137, 165 mCi standard. "Gamma Survey Instruments Calibrator" from Amersham.

This calibration service has NIST Traceability standard. Calibration of all portable radiation monitors, survey meters, contamination monitors, Area monitors etc., is carried out in this lab upto 1 R/hr max dose rates.



Gamma Survey instruments calibrator has Cs-137 source 161.5 mCi as on 05 Aug 2002. It is basically a gamma survey instruments calibrator procured from AEA Technologies UK/USA. Has NIST traceability accuracy within +/- 7%

Gamma Survey instruments calibrator has Cs-137 source 161.5 mCi as on 05 Aug 2002. It is basically a gamma survey instruments calibrator procured from AEA Technologies UK/USA. Has NIST traceability accuracy within +/- 7%



CRC-2 camera has Co-60 standard obtained from Bhabha Atomic Research Centre, Mumbai. It is a certified source.

## 7.5 ANNUAL MAINTENANCE CONTRACT (AMC)

### **Annual maintenance contract (AMC) services:**

For all sophisticated instruments & systems and also for installed monitors & networked systems in a nuclear facility or a Radiological lab or in a Medical cyclotron facility where no. of instruments are networked, it is advised that customer enters into an economical Annual maintenance contract with Nucleonix system.

Detailed AMC proposal can be obtained from our customer support division (CSD), by giving required inputs.

### **Inputs required by our CSD to send you AMC proposal:**

- 1 Name, year & date of purchase, Sl. Nos. of equipments, Model No's, No. of equipments for which AMC is required. Additionally no. of calls per annum required for preventive & breakdown maintenance may also be indicated.

### **Advantage of entering into AMC:**

- 1 Equipment services offered will be prompt & timely
- 1 Nucleonix systems maintain required spares, spare tested PCBs, detectors & other critical components which may become obsolete.
- 1 Obsolescence in electronics is quite rapid. If you enter into AMC guaranteed service for the period of AMC will be the responsibility of Nucleonix Systems.
- 1 Nucleonix Systems will maintain Engineers at your disposal to attend to AMC calls on time
- 1 Without AMC prompt service calls are not guaranteed.
- 1 If some critical components become obsolete, then Nucleonix systems may request you to upgrade the product with new model or new electronics which may be expensive if you are not under AMC.

### **Training on maintenance / servicing:**

- 1 To a limited extent, we offer training on maintenance / repairs at our works to customers on chargeable basis. Details can be obtained from our customer support division, by customers who may require such services.



## CHAPTER –VIII

### CONTACT US FOR AVAILING SERVICES

#### Postal/Mailing Address (Phone / Fax / Email)

Nucleonix Systems Pvt Ltd.  
Plot No. 162 A&B, Phase II, I.D.A.,  
Cherlapally, Hyderabad - 500 051, Telangana, India.  
Phone: + 91-40-27263701, 040-27262146, 68888777  
Mobile: 7331104480, 7331104481, 7331104482  
Fax : + 91-40 - 27262146  
Email : info@nucleonix.com

**For any information, Contact by email is always appreciated.  
(This will help us to respond to you quickly)**

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#### Marketing Department :

##### a) Sales / Commercial Information / Field installation and servicing

For any Commercial, Price information, Product information, customer coordination & quotation

of our products customer related commercial services, please contact front office marketing staff through the listed Email Ids or Phone Nos. given below

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#### Whom to Contact:

<b>Business Executives:</b>	<b>Contact Numbers</b>	<b>Contact by E-mail ID</b>
1. <b>R.Maniram</b> (Sr. Business Executive)	Mob:7331104481, Ph-040-27263701	info@nucleonix.com
2. <b>CH.Gayatri</b> (Business Executive)	Mob:7331104481, Ph-040-27263701	info@nucleonix.com
3. <b>K. Swapna</b> (Business Executive)	Mob:7331104481, Ph-040-27263701	info@nucleonix.com

**Note:** Our business executives will also connect you to concerned Engineer or General Manager for any technical clarifications if required

**b) Factory Services**

For **Servicing and Calibration** factory services & follow up on the above jobs including dispatch related/payment related issues of serviced & calibrated items please contact

**Ms. .S**

**Mob:**7331104482

**E-mail:** info@nucleonix.com

**(Executive services)**

She will also connect you to concerned engineer or general manager if required, for any clarifications & deficiencies in services

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**c) Dispatch Related Issues (Production Items)**

For dispatch related issues of your ordered equipments, including delays, purchase order related document deficiencies, payment proofs, dispatch docket details and bills etc.,contact

**Ms.V.Anusha / Renuka**

**Ph:**040-27263701, Ex-26

**E-mail:** info@nucleonix.com

**Devi (Executive Dispatch)**

---

**d) Product Technical Information / Clarifications**

**Whom To Contact:**

Contact any front office "Business Executive"- He/She will take your details and connect you to concerned product engineer for any technical clarifications. Best thing is to email your technical queries and obtain the reply, rather than on telephone.

You can also contact General Manager or Director (Tech) if required.

**e) Marketing Manager**

On business matters for all your marketing services / techno commercial requirements about Nucleonix Products contact:

**Bhaskara I.V.**

**Mob:**8019662500

**Land lines :** 91-40-27263701, 91-40-68888777

**Email:** info@nucleonix.com

**f) General Manager**

**Dr.M.S.R.Murthy PhD (Nuclear physics)**

**Land line: 91-40-27263701, 91-40-68888777**

**Email: info@nucleonix.com**

Contact General Manager for all sales / servicing and technical information including customer support related issues, on the delays, gaps & lapses by our staff. Contact G.M. regarding field installations & field servicing jobs schedule etc.

---

**g) H.R -Incharge**

Contact her regarding, job vacancies, sending resume for employment, H.R. related issues etc. contact

**Ms. M.Swarna Jyothi**

**Mob:7331104480**

**Email: recruit@nucleonix.com**

---

**h) Director -Technical**

**Mr. J. Dheeraj Reddy**

**Email: jdreddy@nucleonix.com**

**Mobile No :+91-7674009005**

Contact him for, any Technical Information and clarifications on products, which cannot be answered by General Manager / Customer support executives.

For any technical deficiencies in products, related issues & suggestions on product improvements you may contact by email or telephone. This will help the company to improve the product & serve you better.

Dealer's complaints, on commercials, lapses by our commercial staff, or any other discrepancy, or you like to give any feedback on any Nucleonix staff doing any wrong thing against cleaner / ethical business principles / practices can be complained to any of the directors or managing director.

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**i) Director - IT**

**Mr. J. Nishanth Reddy**

**Email: nishureddy@yahoo.com; info@nucleonix.com**

**Mobile No. +91-9966691000**

For any deficiencies in product software's, related issues, & any suggestions or improvisations in software's can be contact by email or telephone. This will help the company to improve the product & serve you better.

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**j) Managing Director**

**Shri. J.Narender Reddy (Managing Director)**

**Email : jnreddy@nucleonix.com; info@nucleonix.com**

**Contact Managing Director for,** Foreign relations, International Business co-operation, Joint ventures, Exports, Dealership in other countries, Policy matters, Technology tie-ups etc.

**k) Dealers Complaints :**

Dealers complaints, on commercials, lapses by our commercial staff, or any other discrepancy, or you like to give any feedback on any Nucleonix staff doing any wrong thing against cleaner / ethical business principles / practices can be complained to any of the directors or managing director.

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**An innovative company working towards excellence  
in the field of Nuclear Instrumentation**



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