



Society for Electronic Transactions and Security (SETS), MGR
Knowledge City, CIT Campus, Taramani, Chennai – 113.

E-mail: murali@setsindia.net, purchase@setsindia.net

Website: www.setsindia.in

Ref.No. SETS/49/PUR/FY25-26/FMC DAUGHTER CARD

20.02.2026

QUOTATION CALL NOTICE

Sealed quotations are invited for engineering services of implementation of Pattern Generator IP Core and FMC Daughter Card for QKD system bring-up, testing, validation, and performance characterization. For this purpose, it is necessary to develop custom digital test instrumentation tightly coupled with the SETS-developed key distillation post-processing suite.

Last Date & Time for Submission of Quotation: 27.02.2026 at 13:00 PM

Quotation Call Notice

1	Quotation Call Notice (QCN) No.	:	SETS/49/PUR/FY25-26/FMC DAUGHTER CARD
2	QCN Document Issue Date	:	20-02-2026
3	Last Date & Time for Receipt of Quotation	:	27-02-2026, 13:00 PM
4	Date & Time of Opening of Sealed Quotation	:	27-02-2026, 15:00 PM
5	Description of Item	:	Engineering services of implementation of Pattern Generator IP Core and FMC Daughter Card for QKD system bring-up, testing, validation, and performance characterization. For this purpose, it is necessary to develop custom digital test instrumentation tightly coupled with the SETS-developed key distillation post-processing suite.
6	Validity of Offer	:	90 days from the date of opening
7	Estimated Value of QCN	:	Approx. Rs. 20,00,000/-
8	Security Deposit (for finalized vendor only)	:	(5% of Invoice Value) – Refundable after warranty period
9	Address for Submission	:	The Assistant (Purchase Officer) Society for Electronic Transactions and Security (SETS), MGR Knowledge City, CIT Campus, Taramani, Chennai – 600 113.

1. Specifications:

Society for Electronic Transactions and Security (SETS) has Requirement for Customized Implementation of Pattern Generator IP Core and FMC Daughter Card. In this regard, quotations are invited from the authorized dealers / suppliers / OEM.

Pattern Generator IPCore Specifications:

S No	Description	Specification details
1	Pattern Supported	PRBS, User Defined
2	Output Encoding	Non-Return to Zero
3	Line Rate	Up to 5.0 Gb/s (fixed per configuration) #
4	Control	CLI support
5	Rise / Fall Time	< 200 ps (limited by measuring instrument)
6	Output	Electrical (SMA-RF) or Optical (SFP*)
7	Reference Clock	On-board oscillator
8	Installation required	Yes
9	Support (in months)	6 Months
10	Comprehensive AMC required	No
11	Delivery Period	30 Days

FMC Daughter Card Specifications:

S No	Description	Specification details
1.	Compatibility	HPC/LPC connector
2.	Intensity Modulator Port	SMA, ~1 V
3.	Phase Modulator Port	SMA, ~1 V
4.	Single Photon Detector Gate	SMA, ~1 V
5.	Number of DAC Channels	4
6.	DAC Resolution	14 bits
7.	DAC I Voltage	0 to 1 V
8.	DAC II Voltage	0 to 12 V
9.	DAC III Voltage	0 to 12 V
10.	DAC IV Voltage	0 to 2.5 V
11.	ADC Channel	1
12.	ADC	16 bit, 1 MSPS
13.	Clock Input	SMB Port
14.	Auxiliary Output	SMB Port
15.	Time to digital Converter	TDC 7200 IC, 55 ps resolution
16.	TDC Input Level	LVTTL/NIM
17.	Input	12 V DC
18.	Warranty	3 months
19.	Software support	FPGA design for each sub-module
20.	Delivery	30 Days

For any clarification, please write mail to murali@setsindia.net can be contacted at Ph: 044-6632 505 within due time of the tender.

2. Required Items:

S No	Description	Qty
1	Vivado Design + SDK for custom FMC Card Interfaces (unencrypted)	02 Nos
	Custom FPGA Mezzanine Card (FMC) <ul style="list-style-type: none"> ✓ Tailored for QKD Applications with the following interfaces: <ul style="list-style-type: none"> ❖ Precision timing measurement with on-board TDC IC ❖ High-speed clock input for synchronising with an external device ❖ High-speed clock output for the Single Photon Detector Gate signal ❖ On board DACs, etc 	02 Nos
2	High Speed Pattern Generation IP Core <ul style="list-style-type: none"> ❖ IP designed for the Xilinx Zynq MPSoC ZCU102 FPGA Evaluation board ❖ Line Rate: up to 5 Gbps (fixed per configuration) ❖ User Defined, PRBS x pattern generation on electrical (SMA-RF) 	02 Nos

3. Terms and Conditions:

- The quotation must be in the format furnished by SETS and should be free from corrections/erasures. In case there is any unavoidable correction it should be properly attested. If not, the quotation will not be considered. Quotation written in pencil and incomplete will be rejected.
- You are invited to submit your most competitive quotation for the supply of goods/service according to the specifications and delivery terms as given.
- The Bidders have to submit manufacturers authorization Letter from OEM along with the quotation, otherwise offer will not be considered, the same will be rejected.
- Bidders may send the quotations in sealed covers with the quotation reference number and last date for receipt of quotations duly superscribed on the cover. Mention the company Contact Number / E-mail id on the cover.
- Quotation will be opened on due date at **27-02-2026 at 03.00 PM at VC Room / Board Room, SETS, Chennai** in presence of the tenderers or their representatives who may wish to be present.
(Any change in the date, time and venue of the quotation opening will be informed to the bidders through telephone / E-mail)
- **Purchase preference shall be given only to Micro and Small Enterprises (MSEs)** registered on the **UDYAM Portal or with NSIC**, as per the **Ministry's policy for MSEs. Valid documentary proof** shall be attached.
- **MSEs are exempted from submission of prior experience and turnover criteria**, as per applicable Government of India guidelines.
- **Startups are exempted from submission of prior experience and turnover criteria**, as per applicable Government of India guidelines.

- **The bidder shall submit the bids in sealed envelopes, with separate envelopes for the Technical Bid and the Price Bid. The bidder shall not club both envelopes in a single envelope. In case both envelopes are submitted in one envelope, the bids are liable to be rejected.**

4. Delivery Terms:

- Vendors shall submit quotations strictly in accordance with all specifications mentioned in Annexure-I
- Any delay in delivery shall attract a penalty of 0.5% per week, subject to a maximum of 10% of the total order value.
- The decision of SETS shall be final and binding in all matters related to delivery.
- Vendors are requested to clearly indicate the expected delivery period in their quotation.
- **Quantity to be Delivered:** The quantity indicated is tentative. SETS reserves the right to increase or decrease the quantity by up to 25% during the bid validity period, without assigning any reason. The bidder shall be deemed to have agreed to the same.
- SETS may issue subsequent supplementary Work Orders within twelve (12) months from the date of issue of the first Work Order, for a consolidated quantity not exceeding 50% of the initial Purchase Order quantity, at the same rates, terms, and conditions.

5. Payment Terms:

- No advance / part payment will be made.
- **95%** of the payment shall be made within 15 days upon delivery of the items in the required quantity in good condition followed by inspection, acceptance, and successful completion of Installation of the equipment at SETS. It is subjected to the satisfactory receipt of materials/equipment as specified in the Bill of quantity.

Following documents shall be produced by Supplier:

- i. Invoice
 - ii. Delivery challan
 - iii. Checklist
 - iv. Acceptance from SETS
- Remaining **5%** of the payment shall be made on completion of the Warranty period of as specified in the technical specifications or against bank guarantee equal to 5% value, valid for 3 months beyond warranty period.
 - **The invoice must contain:**
 - SETS GST No.: 33AACT56338P1ZY
 - Relevant Work Order (WO) Number

6. Cover-I: Technical Bid – Document Requirements

- (Under Single Stage Two-Bid System)
- The bidder must submit the following documents inside Cover-I (Technical Bid):

6.1 Experience Criteria:

- Manufacturer/Dealer/Supplier should have successfully completed similar supply during the past 3 years. Bidder should attach the relevant documents like work order, work completion certificates for completed Projects/Works/Supplies, end user certificates along with the tender document. The work order value of the completed similar projects should be either of the following (Values are exclusive of GST):
 - a. One similar completed supply costing not less than 80% of quoted value.
 - Or
 - b. Two similar completed supply each costing not less than 50% of quoted value.

6.2 Bidder Turnover:

- The average annual turnover of the bidder in the preceding Three (3) financial years as on bid opening date shall not be less than 70% of quoted value. (Scanned Copy of Certificate needs to be furnished).
- Audited Balance Sheet & Profit & Loss Statement for the last three financial years, duly certified by a Chartered Accountant.

6.3 OEM Certificate:

- The bidder shall submit a valid and current OEM Authorization Certificate for the offered model, issued by the Original Equipment Manufacturer.
- The certificate must clearly mention the model's name, authorization validity, and bidder's firm name.

6.4 Product Specification:

- The bidder shall provide a detailed compliance statement covering all technical specifications listed in Annexure-I.
 - The compliance statement prescribed in Annexure-I must be prepared on the bidder's official letterhead and duly signed and stamped by the authorized signatory.
 - Each specification parameter must clearly indicate "Complied / Not Complied" with supporting technical literature wherever applicable.
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7. Cover-II: Price Bid – Document Requirements (Annexure- II)

- The bidder shall submit the following inside Cover-II (Price Bid):

7.1 Price Bid:

- Duly filled-in Annexure-II.

7.2 All-Inclusive Price:

- Prices must include all charges such as:
 - Taxes
 - Duties
 - Installation
 - Transportation, etc.

7.3 No Conditions:

- The price bid shall enclose their specifications as mentioned in Annexure-I.
- No overwriting/corrections/deviations permitted.

7.4 Price Validity:

- Prices must remain valid for the period specified.

7.5 Signing and Sealing:

- The Price Bid must be signed and stamped by the authorized signatory.

8. Submission of Quotation:

8.1 Quotations must be submitted in sealed cover at the **Purchase Section, SETS**, on or before **27.02.2026, 13:00 PM**.

8.2 SETS reserves the right to extend the quotation submission deadline at its discretion.

8.3 Quotations received after the prescribed date and time **may not be considered** for evaluation.

8.4 Vendors may submit quotations as mentioned for Annexure-I, provided the items are readily available with them.

8.5 The quoted rates must remain valid for **90 days** from the last date of submission.

8.6 Submission of the following documents is **mandatory** under **Cover-I (Technical Bid)**.

Quotations without these documents **will not be considered**:

- Experience Criteria
- Bidder Turnover (Audited Financials)
- OEM Authorization Certificate
- Product Specification Compliance Annexure – I

9. Evaluation of Quotations

- Evaluation will be based on:
 - (a) Technical Specifications
 - (b) Reasonability of Price
 - (c) Delivery Period
- SETS may accept the quotation of the vendor whose price is lowest among technically compliant offers and suitable to SETS requirements.

10. SETS's Right to accept and to reject any or all proposals:

- Notwithstanding anything contained in this Tender Document, SETS reserves the absolute right to accept or reject any bid, annul the bidding process either fully or partially, modify the same, or reject all proposals at any time prior to the award of work, without assigning any reason and without incurring any liability whatsoever.

Please read all the terms and conditions carefully before submitting the bid.

This is issued with the approval of the Competent Authority.

Asst Purchase Officer
SETS

Detailed specifications

Detailed specification for Pattern Generator IP Core		
Particulars	Required specification	Offered specification
Pattern Supported	PRBS, User Defined	
Output Encoding	Non-Return to Zero	
Line Rate	Up to 5.0 Gb/s (fixed per configuration) #	
Control	CLI support	
Rise / Fall Time	200 ps (limited by measuring instrument)	
Output	Electrical (SMA-RF) or Optical (SFP*)	
Reference Clock	On-board oscillator	
Installation required	Yes	
Support (in months)	6 Months	
Comprehensive AMC required	No	
Delivery Period	30 Days	
Detailed specification for FMC Daughter Card		
Particulars	Required specification	Offered specification
Compatibility	HPC/LPC connector	
Intensity Modulator Port	SMA, ~1 V	
Phase Modulator Port	SMA, ~1 V	
Single Photon Detector Gate	SMA, ~1 V	
Number of DAC Channels	4	
DAC Resolution	14 bits	
DAC I Voltage	0 to 1 V	
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DAC III Voltage	0 to 12 V	
DAC IV Voltage	0 to 2.5 V	
ADC Channel	1	
ADC	16 bit, 1 MSPS	
Clock Input	SMB Port	
Auxiliary Output	SMB Port	
Time to digital Converter	TDC 7200 IC, 55 ps resolution	
TDC Input Level	LVTTL/NIM	
Input	12 V DC	
Warranty	3 months	
Software support	FPGA design for each sub-module	
Delivery	30 Days	

Format for Submission of Quotation
(Should be printed on letter head and duly signed by the Vendor)

To

The Assistant (Purchase Officer)
Society for Electronic Transactions and Security (SETS),
MGR Knowledge City,
CIT Campus, Taramani,
Chennai – 113.

Sub: Submission of Quotation for Engineering services of implementation of Pattern Generator IP Core and FMC Daughter Card for QKD system bring-up, testing, validation, and performance characterization. For this purpose, it is necessary to develop custom digital test instrumentation tightly coupled with the SETS-developed key distillation post-processing suite– Reg.

Ref: SETS QCN with ref.no: SETS/49/PUR/FY25-26/FMC DAUGHTER CARD, Dated: 20-02-2026.

S No	Description	Qty	Rate per Unit	Total Amount in INR
1	Vivado Design + SDK for custom FMC Card Interfaces (unencrypted)	02 Nos		
	Custom FPGA Mezzanine Card (FMC) <ul style="list-style-type: none"> ✓ Tailored for QKD Applications with the following interfaces: <ul style="list-style-type: none"> ❖ Precision timing measurement with on-board TDC IC ❖ High-speed clock input for synchronising with an external device ❖ High-speed clock output for the Single Photon Detector Gate signal On board DACs, etc 	02 Nos		
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	SUB Total			
	GST 18%			
Total Amount (Inclusive of GST)				
Total Amount in words:				

Statement of Declaration

I/We hereby declare that we have read and agreed for terms & conditions in the referred QCN and acknowledge that the above materials which are quoted by me will be delivered within the specified time as per QCN once after placing the order. I / We are authorised dealer / seller of and enclosed copy of in support of the same along with this quotation.

Signature with Seal:

Designation:

Name & Contact No: