



# Indian Institute of Technology Madras

I.I.T.P.O., MADRAS-600 036  
STORES & PURCHASE SECTION

Ref.No.

CEC	HOC	20-21	01
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Date: 06/01/2021

Dear Sirs,

DUE DATE: 25/01/2021

1. Tender for **Supply of Fast Transient Burst Simulator - 1No**  
(Detailed specification given in Annexure: 1)
2. **The Quotations are to be in two bid system as : Technical bid and Commercial bid. Two parts of the offer are to be clearly marked on the envelopes. The two parts of the offer in a separate envelop must enclosed in the one bigger envelop duly sealed and superscribed with reference number and due date and, should be addressed to the undersigned so as to reach him on or before the due date stipulated above. A blank price quote (identical to the Commercial bid with numbers removed) should be enclosed with the Technical Part.**
3. The Quotations should be valid for sixty days from the due date and the period of delivery required should also be clearly indicated.
4. Relevant literature pertaining to the items quoted with full specifications (and drawing, if any) should be sent along with the Quotations, wherever applicable. Samples if called for, should be submitted free of charges, and collected back at the supplier's expenses.
5. Local Firms : Quotations should be for free delivery to this Institute. If Quotations for Ex-Godown delivery charges should be indicated separately.
6. Firms Outside Madras : Quotations should be for F.O.R. Madras. If F.O.R. consignor station, freight charges by passenger train / lorry transport must be indicated. If Ex-Godown, packing, forwarding and freight charges must be indicated.
7. The rate of sales / General Taxes and the percentage of such other taxes legally leviable and intended to be claimed should be distinctly shown along with the price quoted. Where this is not done, no claim for Sales / General Taxes will be admitted at any stage and on any ground whatsoever. The taxes leviable should take into consideration that we are entitled to have concessional Sales Tax applicable to non Government Educational Institutions run with no profit motive for which a concession. Sales Tax Certificate will be issued at the time of final settlement of the bill.
8. Goods should be supplied carriage paid and insured.
9. Goods shall not be supplied without an official supply order.
10. Payment : Every attempt will be made to make payment within 30 days from the date of receipt of bill / acceptance of goods, whichever is later
11. The tender should be submitted to the following address before due date:

**The Head,  
Central Electronics Centre,  
IIT Madras,  
Chennai – 600 036.**

Yours faithfully

  
प्रोफे. वी. जगदीश कुमार  
Prof. V. JAGADEESH KUMAR  
अध्यक्ष / Head  
केन्द्रीय इलेक्ट्रॉनिक्स केंद्र  
Central Electronics Centre  
आई.आई.टी. मद्रास, चेन्नई - 600 036  
IIT Madras, Chennai - 600 036.

## Technical Specification for Fast Transient Burst Simulator - 1No

Fast Transient Burst Simulator		
S.No	Description	Specification
1	Output voltage	200 to 5000 V, 10 V Step
2	Polarity	Positive or negative, polarity alternation possible per burst
3	Repetition frequency	0.1 kHz to 2000 kHz (0.1 kHz to 1 kHz / 0.01 kHz step, Tolerance $\pm 5\%$ 1.0 kHz to 10 kHz / 0.1 kHz step, Tolerance $\pm 5\%$ 10 kHz to 100 kHz / 1 kHz step, Tolerance $\pm 5\%$ 100 kHz to 1000 kHz / 10 kHz step, Tolerance $\pm 5\%$ 1000 kHz to 2000 kHz / 100 kHz step, Tolerance $\pm 10\%$ )
4	Number of pulses	1 to 1000 at a step of 1 pulse
5	Burst duration	Scope of manually setting value for burst duration: 0.01 to 999 ms
6	Burst period	10 to 1000ms $\pm 10\%$ , 10ms steps (500ms or more for polarity alternate mode)
7	Polarity alternate function	Output polarity alternated between positive and negative at each burst period Setting condition: the burst period is 500ms or more and the burst pause period [(burst period) - (burst duration)] is 100ms or more Should support test time for 10 minutes
8	Continuous Pulse output	Up to 1000 V-10kHz or less, to 2000V-4kHz or less, to 5000V-1kHz or less. Should support test time for each case for 10 minutes
9	Frequency modulation	Frequency is shifted continuously between set frequency and approximately -10% from the set frequency. The modulating wave is triangular wave of approximately 20Hz
10	External trigger	External trigger input invokes 1 burst output in synchronization with the trigger input. Trigger specification: Hi (+ 5V) $\rightarrow$ Lo (0 V) triggers one burst period.
11	Pulse waveform (at 50 $\Omega$ load)	Pulse peak voltage: (set voltage / 2) $\pm 10\%$ Rise time: 5 ns $\pm 30\%$ Pulse width: 50 ns $\pm 30\%$
12	Pulse waveform (at 1 k $\Omega$ load)	Pulse peak voltage: (set voltage $\times 0.95$ ) $\pm 20\%$ Rise time: 5 ns $\pm 30\%$ Pulse width: 35 to 150 ns
13	DC blocking capacitor	10nF $\pm 20\%$
<b>CDN Specification</b>		
14	Power capacity	Single phase AC 240 V / 20 A, DC 125 V / 20 A (10 A for PE)
15	Applied phase	L / N / PE
16	Injection mode	Common mode
17	EUT Line input/output	$\phi 6$ mm safety socket
18	Coupling capacitor	33nF
19	Output waveform specification	Pulse peak voltage: (set voltage) / 2 $\pm 10\%$ Rise time: 5.5 ns $\pm 1.5$ ns Pulse width: 45 ns $\pm 15$ ns Set voltage $\pm 4000$ V, frequency specified from 5 kHz to 100 kHz
20	Input residual voltage	10% or less of setting pulse voltage EUT line input is 50 $\Omega$ termination, line output is defined as open
21	AC Line Sync	Synchronous and asynchronous setting should be available. Setting phase angle: 0 to 360 $^{\circ}$ $\pm 10^{\circ}$ , 1 $^{\circ}$ Step Synchronizable voltage: AC 85 V to rated voltage

		Reference phase: between L-N
<b>Other specifications</b>		
22	emergency stop	Push lock type switch (Test stop, EUT line OFF)
23	EUT FAIL function	FAIL signal from external (Hi → Lo) detected during test FAIL signal specifications V <sub>LO</sub> : 0 V, V <sub>HI</sub> : +5V
24	External interface	REMOTE (For external PC control), CDN I/F (For external CDN), INDICATOR (For Warning Lamp or indicator lamp) EUT FAIL INPUT (For temporary pause at EUT failure event)
25	Power supply	AC100 to 240V ± 10% 50 Hz

*cc 2/2/2023*

  
 प्रोफे. वी. जगदीश कुमार  
 Prof. V. JAGADEESH KUMAR  
 अध्यक्ष / Head  
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