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The goal of EPIC Technologies' is to maximize our collective value proposition to our end customers through world class supply chain management strategies and tactics. EPIC's Supplier Development process is to align the supply base with EPIC and ultimately to our end customers, thus maximizing our flexibility, responsiveness, material efficiency, quality and cost. The purpose of this guide is to serve as a high level summary of what we expect from our suppliers and how we will communicate. It is to be used for new suppliers as well as new personnel at our current partner suppliers as a first step toward developing mutual understanding which is the first foundation that is required for any effective supply chain relationship.

We work very closely with our customers to maintain a requirements forecast that most accurately represents the current consensus at any point in time. We all know that even the best of forecasts will be subject to sudden changes. The manufacturing floor is optimized to be able to respond to the overwhelming majority of customer 'pull' signals within 24 hours. EPIC Technologies operates under a synchronous flow, lean manufacturing strategy where jobs move from one operation to the next with a minimum of work in process delay. The limitation on our responsiveness, the bottleneck, is the ability of suppliers to respond to changes in schedule. In order to keep the lines running, buffers must be maintained throughout the chain in order to respond to increase 'opportunities' from our downstream customers.

EPIC Technologies' strategy, is to align ourselves with suppliers that can provide materials at the highest level of value measured in landed cost, quality and last but equally important, a demonstrated focus on delivering parts within a lean framework in support our "demand-flow", pull system. We seek out suppliers that are characterized by short total lead times, short manufacturing cycle times and low Work-In-Process inventories relative to their competition, who manage their manufacturing and supply chain processes with a "pull" (vs. "push") system, and consistently demonstrate a track record of high quality, continuous improvement and daily execution which is fundamental to any lean process.

We subscribe to the theory that the highest quality suppliers are also the lowest cost. We are in a thin margin business and can ill afford to leave any money "on the table". Our goal is to be your lowest cost customer, to conserve our mutual resources by not slaving them to the "administrivia" of the day, but to pro-actively avoid supply 'surprises' and work closely together toward ongoing continuous improvement. It goes without saying that we need your constant diligence toward perpetual cost reduction.

Our internal standard is to respond to your issues and concerns, as best we can, with the same urgency with which we expect ours to be handled by you. As you know, circumstances sometimes prevent us from resolving issues as quickly as we would like. In the event our response is unsatisfactory, I encourage you to raise the issue to the local Materials management, and then ultimately to me if ultimate resolution is not forthcoming.

On behalf of EPIC, I want to thank you in advance for your support and I look forward to working with you toward a mutually prosperous future.

Regards,

Steve McEuen  
Director, Commodity Management

## EPIC Supply Chain Management Policies and Principles

EPIC policy is to place Blanket Orders for ongoing production material requirements. The blanket order allows us to forward regular (weekly) forecasts through EDI or e-mail. Our preferred partner suppliers will use our forecast to buy components and/or build products in advance of shipping instructions which will come in the form of a release against the forecast.

EDI is strongly preferred for suppliers with more than a handful of parts. EPIC can send forecasts via EDI 830 transmission, or an e-mail with a tab-delimited text file that conforms to an EDI 830E format. The end item forecasts are updated the prior week, processed over the weekend and the new part forecasts go out every Sunday night. The EDI communication for the release is an 850. We expect suppliers to respond to an 850 with an 855 within no longer than two business days. Non-EDI blanket releases are confirmed by phone and/or e-mail and will be included in the weekly tab-delimited 830E file along with the forecast. For suppliers that are unwilling to produce or bond in advance of a firm release, we can also send a weekly file of firm releases, but the forecast will not be included unless a letter is signed that confirms how the forecast will be used.

While the EPIC process is the same at all facilities, there are some subtle differences in execution. Suppliers are given Blanket Order Numbers for a Part Number. Forecasts can be sent as EDI 830 or EDI 830E depending on what the supplier can accept. Forecast lines are designated by 'order type' = "S", and released lines are 'order type' = "R". Suppliers invoice against the blanket order number and a unique line number. Individual releases are given unique order numbers and this order number is what is invoiced against. All forecast goes out under the EDI 830E format.

Partner Suppliers on Bond or Pull agreements are expected to build or procure material to our forecast as if they had a hard release. EPIC will be responsible for custom or NCNR product over a competitive, agreed upon beforehand, total lead time which includes manufacturing and delivery times. Suppliers must treat the forecast as the extension of our blanket order contract. All advice from EPIC personnel to suppliers that is in opposition with the forecast should be advance warning to changes that will arise in the next forecast version. The forecast history is the sole basis for determination of EPIC obligation in case of delay or cancellation and judging supplier performance to the contract including responsibility for premium freight if it shows the supplier as being behind the forecast.

A Kanban card 'pull' is bar scanned in our facility. Full EDI (850) suppliers will receive a release directly from these scans, without human intervention in the vast majority of cases, within an hour of the scan. We offset the default due date for the released blanket purchase order line from the scan date by a pre-determined and mutually agreed upon lead-time and a cutoff time. Scans beyond the supplier's cutoff time will have one day added to the due date. This cutoff will be adjusted to the local EPIC time and backed up to allow for the maximum server processing latency (1 hour). We expect an 855 response that confirms all of the key 850 fields are acceptable (part, quantity, date, price and PO number) within two business days or a supplier 'red card' demerit is issued.

EPIC's material flow is governed by a kanban 'pull' system. Each release is the result of a card being pulled as a result of a bin being empty. Each delivery must correspond exactly to the bin size, no more or less. Prior to launch we will ask you to verify package sizes (inside box or bags, and outer shipping container as applicable) for all applicable containers to plan the kanban setup.

Pricing is expected to remain firm over the short and medium term. Requests for price increases must be given 60 days in advance. Approved price increases will take effect no sooner than the 1<sup>st</sup> of the month following approvals.

## **NCNR**

It is Epic's expectation that Standard products carry no liabilities and thus can be canceled or returned. For those Non-Standard items which carry liabilities the Supply must have a Non-Cancelable, Non-Returnable (NCNR) document signed by EPIC for EPIC to accept responsibility in the event of a cancellation. In order to lower our Customer's liabilities as well as our Supplies, NCNR's will not be tagged with a quantity, instead the liability will be tied to the forecasted over the lead time of the part. For custom products, EPIC will pay for the value add for work in process based upon a pre-arranged percentage of full price. For parts where EPIC is responsible for residual work-in-process and finished goods, Suppliers receiving instructions to 'hold' or 'stop' must provide detailed counts at each key stage of the process to start the obsolescence resolution process. EPIC will resolve obsolescence issues no later than they are resolved with our mutual end customer.

## **Premium Freight**

EPIC expects suppliers to take responsibility to build or procure to the forecast in good faith. If suppliers fail to do this and materials are required to be shipped in a high priority, premium freight mode, EPIC expects suppliers to accept responsibility to pay the freight. If demand increases inside of lead time and could not have been supported by normal production, EPIC will pay the freight. Suppliers must obtain a "Premium Freight Allowance" number (PFA) prior to shipping, invoice freight separately and include the PFA number to receive payment.

## **Supplier Material Pipeline Management**

One of the key differentiators for EPIC Technologies is our Synchronous Flow Manufacturing and Kanban material control. This is the foundation of our lean manufacturing philosophy which maximizes our responsiveness to our customers while keeping overall supply chain inventories to the lowest possible level with a minimum of waste. In order for this process to be effective, the entire supply chain must change its focus and employ different material strategies and tactics.

Kanban works best with short lead times. The size of the bins are determined by the amount that could be produced in the time it takes the supplier to replenish an empty bin. The longer the lead time, the larger the bin. All other things being equal, the shorter lead time supplier will get the business.

Forecast is just that, a forecast. We know it will change. The fact it changes, and often drastically, plays exactly to our strengths. We have virtually no WIP and little in terms of finished goods, so what is in our forecast is predominantly determined by our customer's forecast. We may smooth it a little, but that's it. Unlike a firm release, the quantity and dates are not nearly as important as the projected average weekly usage (AWU) over the lead time of the components. The AWU and the supply risk will determine the buffer stocks we ask our suppliers to carry to insure we can meet the most likely variations in our customer's demands.

All parts are not equal and some require larger buffers than others based on the supply risk. While there are many components of supply risk, we've found the strongest factors are the market and lead time. At the lowest end of the supply risk spectrum are parts that are widely used and often available from various manufacturers. We call this type of part "Common Bond". An example of this type of part would be a 0.1uF MLCC that are commonly sprinkled across almost every PCBA we manufacture. If one manufacturer or supplier runs into trouble, there are usually other manufacturers already qualified, or available for consideration at a high likelihood of being acceptable. A rotating buffer stock of four weeks of the average weekly usage (AWU) is sufficient for these kinds of parts.

At the other end of the spectrum are Unique parts. If we get into trouble, there are few if any options. These parts require larger buffers and the size of those buffers must be larger corresponding to the lead time. These parts require the same 4 weeks of AWU we ask for CB parts, plus another week of AWU for every additional 4 weeks in lead time (and round up). The table below illustrates this calculation.

Lead Time in Weeks	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Weeks of AWU in bond/buffer	5	5	5	5	6	6	6	6	7	7	7	7	8	8	8	8

### EPIC Consignment Program Overview

We encourage that suppliers maintain a portion of their material buffers at our facility and we operate an extensive consignment program with most all of our partner suppliers. A material buffer is most valuable nearer the point of use as it is not necessary to expend premium freight to use it should a 'spike' in demand occur. The objective is to maintain no less than 3 weeks of AWU in the consignment buffer, and no more than 6 weeks as a maximum to preserve space. Should the bonding formula equate to a number larger than 6 weeks, the balance of the bond should be maintained at the supplier's site.

EPIC provides weekly reports of the material received from the supplier's factory and placed in the supplier's location as well as the material withdrawn for our use. EPIC performs physical inventories at least twice per month on every part. Supplier-owned inventory is stored in a nettable location in our MRP system so the forecast quantities and dates represent additional material needs per the forecast, not consumption of material already in location. Our minimum order and order multiples will be set to the smallest package quantity associated with the part, and in some cases be set to 1 to allow suppliers to see our actual demand and thus better understand our demand pattern.

The simplest way to determine what needs to be sent to the consignment warehouse at any given time, is to sum the total quantity of soft orders appearing in the forecast over the next four weeks, and quickly deliver it to the facility. All soft orders are requirements above and beyond nettable inventory at any point in time. Soft orders for consignment parts falling inside the preferred buffer-week window (3 plus 1 for transit, or 4) indicates needs that are above and beyond what can be supplied by all current inventories.

### Supplier Scorecard

EPIC measures supplier performance along the following dimensions

**On-Time Delivery** - EPIC measures this as no more than 1 day early and zero days late to the original date on the 850.

**Quality Returns** – More than 1 return for any reason results in a demerit from full credit in this category. 8D's left open longer than 30 days will result in additional point subtractions.

**Red Card Log** – Red Card incidents are classified as anything that could cause the kanban system to jeopardize production. Any receipts that fall into the following categories will cause Red Card : "Overship", "Partial Shipment", "Quality Rejection", "Late" and "Early". If more than 2% of total receipts fall into any of "Red Card" categories, all points are lost and an 8D must be submitted by the supplier establishing corrective actions.



Responsiveness – This category is a subjective rating based on a consensus of the entire team. Full credit is received by suppliers that respond quickly and effectively to most all request no matter what the type without follow-up (asking again) by EPIC personnel.

Quote Responses – All quotes must be complete and on time. EPIC allows 5 business days for most all quotes. Common causes of rejected quotes are text entries in numeric fields (price and lead time in particular) and comments in other than the “Comment” field.

Logistics – This is a broad category and is intended for rewarding suppliers who most fully embrace the EPIC logistics system and preferred terms (FOB EPIC Location, Discounts, Net 60 or better) participating in EDI, producing to a forecast but delaying shipments until releases are given OR participating in a consignment program. Suppliers are rated on the number of acceptable EDI responses (855 received in less than 2 business days, all returned fields match those sent and coded as “Item Accepted” or “Item Accepted and Shipped”). Any other response requires manual processing and detracts from full score. Suppliers are expected to pipeline parts to keep out of “Red” bond report ratings. Those suppliers chronically in the “Red” will receive lower scores.