Need a standalone or network solution to meet your QA reporting goals?

FINAL FINISH HOST
SOFTWARE BY CTI

- Spend less time managing and downloading test recipes to a variety of machines
- Set up an audit trail for recipes, limits, and results
- Easily collect and manage data from tire test machines provided by a variety of vendors
- Direct tire flow data based on manufacturing data
- Custom software saves IT and engineering resources from implementing out-of-the-box solutions

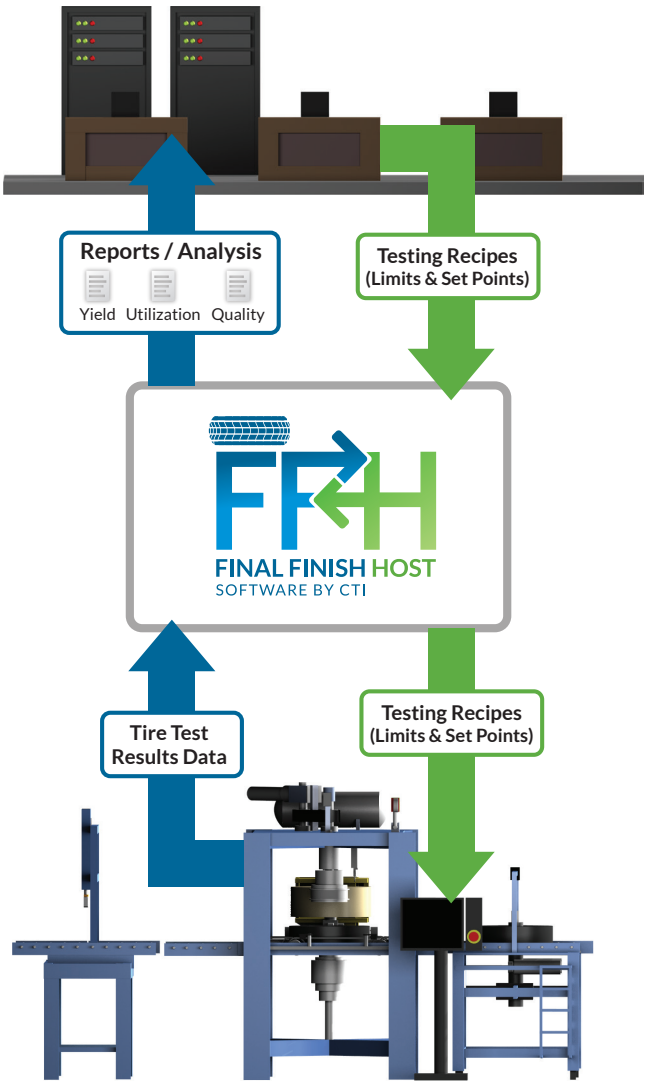
FFH converts tire test results into actionable data. The basic system includes:

Automated Data Collection
FFH collects, summarizes, and stores test results for tire uniformity, geometry, and balance machines.

Centralized Recipe Maintenance
Use a web browser to design recipes that include test sequence, grading limit, and machine setup parameters (such as servo positions), then download the recipes directly to the final finish machines.

Production and Uniformity Reporting
A variety of graphic and tabular reports display uniformity, repeatability, and machine utilization in PDF format.

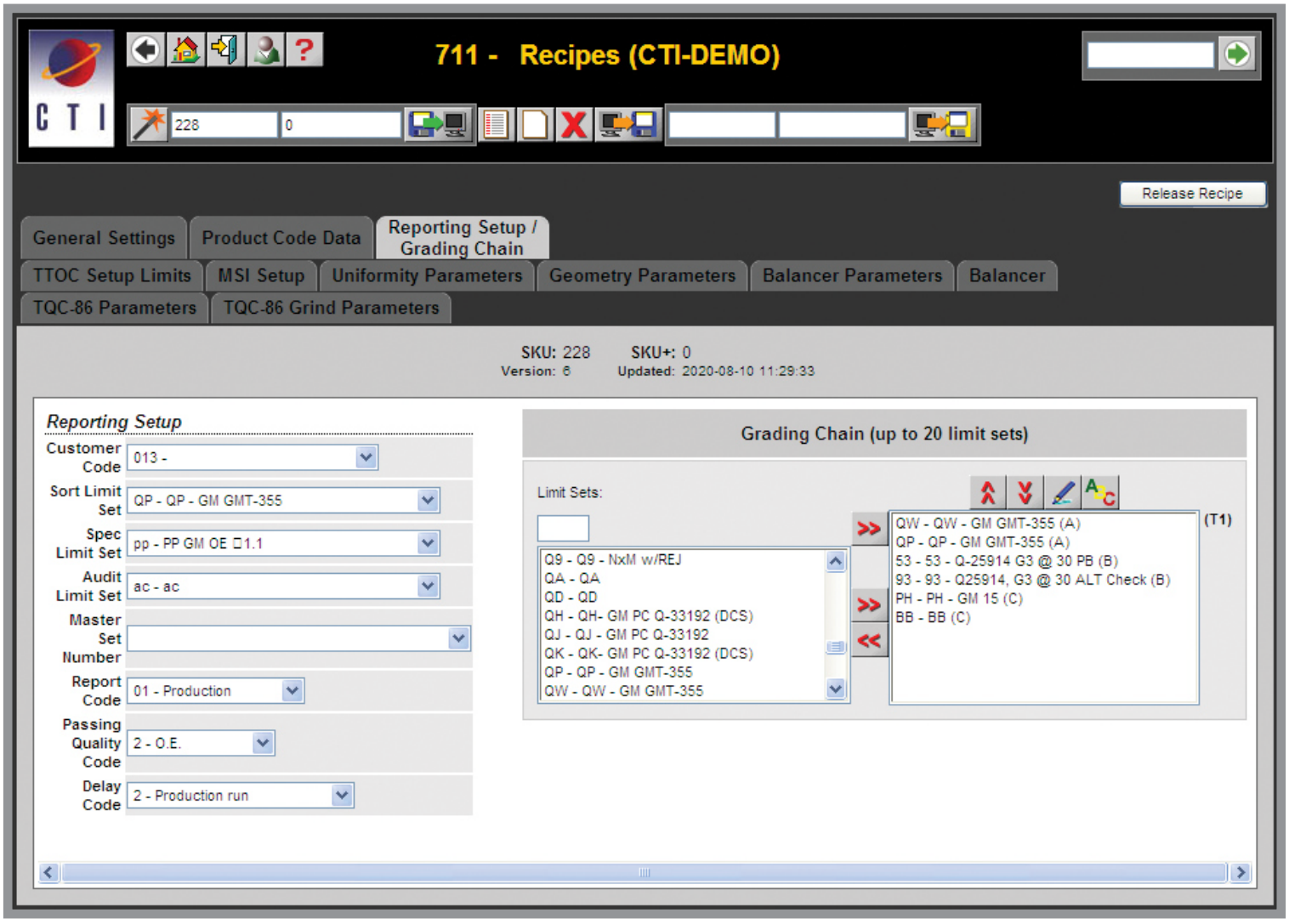
Like other CTI products, FFH provides extra value because we customize it to fit your particular machines, operations, and business requirements. We developed FFH specifically for tire manufacturing final finish to provide the data and reporting you need to satisfy both external and internal customers.



FFH has been customized for and successfully implemented at several global tire companies.

- Provides a single access point to control customer specs, analyze data, view machine performance, and schedule machine preventive maintenance
- Easily collects data on a 24x7x365 basis with transaction volumes exceeding 260,000 per day
- FFH integrates with existing proprietary or legacy systems to derive additional benefit from them
- FFH integrates with a material handling system so you can track and then route tires according to real-time and historical process data

a Poling Group company | +1 330.644.3059 | comtime.com | Sales@comtime.com | 2740 Cory Ave. Akron, OH 44314



FFH offers Centralized Recipe Management

Does your quality engineer have to manage recipes at individual test machines? The repetitive task of entering the same recipes into each test machine controller is a time-consuming task within a highly interrupted, distracting environment that often leads to human error.

With FFH, your quality engineer can modify a recipe from a company computer and directly download it to one or all machines in the final finish area. This methodology minimizes error and allows your quality engineer to spend more time identifying and correcting quality problems.

If multiple personnel manage recipes in your final finish area, you will appreciate the recipe versioning feature FFH provides. This tool enables the quality department to easily and accurately track recipe changes, adding an extra level of accountability to your quality operations.

The picture above features the grading setup for a typical recipe. We accommodate different methodologies for tire grading and can supply the methodology your personnel are most accustomed to using. We can also add "tabs" on the screen to include any setup parameter a machine in your facility can receive.

Controls at the top of the recipe screen allow the user to list all recipes, copy an existing recipe to a new one, create or delete recipes, or release a recipe. The release mechanism allows the quality engineer a controlled way of directing edited recipes to machines for grading purposes.

910 - Production Monitor

Last Update Time: **2021- 01-16 09:02:26**

Machine	SKU/SKU+	Version	Mode	Last Communication	TU Shift	TG Shift	TB Shift
1	277 / 0	72	Batch	2021-01-16 09:02:13	143	0	0
2	273 / 0	20	Batch	2021-01-16 09:02:11	67	67	0
3	178 / 0	55	Batch	2021-01-16 09:00:41	97	97	0
4	277 / 0	72	Batch	2021-01-16 08:53:50	173	0	0
5	348 / 0	48	Batch	2021-01-16 09:01:46	144	144	0
6	60 / 0	13	Batch	2021-01-16 09:00:41	38	0	0
7	188 / 0	41	Batch	2021-01-16 09:01:56	119	119	0
8	190 / 0	39	Batch	2021-01-16 09:02:22	165	165	0
9	348 / 0	48	Batch	2021-01-16 09:02:13	167	167	0
10	196 / 0	41	Batch	2021-01-16 09:01:50	111	111	0
11	298 / 0	20	Batch	2021-01-16 08:36:15	67	67	0
12	348 / 0	48	Batch	2021-01-16 09:01:56	80	80	0
13	277 / 0	72	Batch	2021-01-16 09:02:18	179	0	0
14	374 / 0	46	Batch	2021-01-16 09:01:29	76	0	0
15	166 / 0	29	Batch	2021-01-16 09:02:05	54	0	0
16	206 / 0	24	Batch	2021-01-16 09:02:22	116	116	0
17	497 / 0	16	Batch	2021-01-16 09:01:20	46	0	0
18	320 / 0	155	Batch	2021-01-16 09:02:11	102	0	0
19	66 / 0	22	Batch	2021-01-16 08:53:22	52	0	0
				Total	2682	3932	334
				Projected	10473	15354	1304

Dynamic Production Monitoring

The report above provides a real-time, dynamic picture of process flow in the final finish area. It shows a line of data for each machine that includes the product being processed (SKU/SKU+), mode of operation (Batch or Mixed), a timestamp related to the last test results received from the machine, and shift production counts. The last line on the report shows projected counts for the shift, based on the current rate at which test results arrive at FFH. The counts automatically reset at end of shift.

You can color-code a recipe or groups of recipes for display on the screen. For example, you can make all SKUs for a particular customer the same color. Or you could use color to indicate non-production processing—i.e., when the machine is processing experimental tires, processing master tires used for machine repeatability testing, or processing tires used to check upstream tooling changes.

FFH reserves the color red to indicate that a machine has not sent results to FFH for a configurable time. Machines that show red could be idle due to a lack of tires to process or because maintenance is being performed. Multiple red lines could indicate a plant network issue.

CTI offers low cost, real-time remote support for FFH

Our support staff can log in when necessary to economically and efficiently diagnose and solve problems, should they arise. We can also provide brief "fitness" inspections on a periodic basis to monitor database capacity and look for other conditions that could lead to future problems.

Final Finish Host

260 - Universal Report (Summary Data) (FFHDEMO)

Page: 1 / 1
Date: 2020-09-12 15:54:06

From: 2020-09-09
To: 2020-09-09

Tire Filter: All tires
Shift: All Shifts
Machines: All Machines

Product Description	RFPPcw (6) [lb]	RFPPccw (12) [lb]	RFH1 cw (7) [lb]	RFH1 ccw (13) [lb]	LFPPcw (9) [lb]	LFPPccw (15) [lb]	CONY (25) [lb]	RRO mx (2) [mil]	LRO mx (3) [mil]	BUL mx (4) [mil]	SBAL (14) [oz-in]	
271 / 0	23.6	23.6	12.4	12.4	22.0	22.0	13.3	0	120	43	0	Sort Upper Limit
P265/70 R 16 (Galatea Automotive)							-13.3					Sort Lower Limit
P265/70R-16 Vulcatrak XLT (BSW)	38%	39%	58%	57%	98%	97%	93%	100%	100%	99%	100%	% Sort
	446	463	679	665	1153	1135	1096	1173	1173	1157	17	Sort Quantity
	23.6	23.6	12.4	12.4	22.0	22.0	13.3	0	120	43	0	Spec Upper Limit
							-13.3					Spec Lower Limit
	38%	39%	58%	57%	98%	97%	93%	100%	100%	99%	100%	% Spec
	446	463	679	665	1153	1135	1096	1173	1173	1157	17	Spec Quantity
	25.9	25.8	12.0	12.2	12.0	12.2	0.6	40	34	4	16	Avg.
	19.4	19.6	19.2	19.4	12.5	13.9	21.0	72	27	28	28	3 Stdv.
	-0.12	-0.11	0.02	0.01	0.80	0.71	0.60	-0.56	3.25	1.39	-0.57	CPK
	Measured				1173 TU			1173 TG			17 TB	
348 / 0	45.0	45.0	12.3	12.3	0.0	0.0	16.9	0	120	33	40	Sort Upper Limit
P245/70 R 17 (Nereid Motors)							-16.9					Sort Lower Limit
P245/70R-17 Relia-Tread (BSW)	99%	100%	47%	74%	100%	100%	100%	100%	100%	99%		% Sort
	4222	4230	1991	3153	4249	4249	4244	4249	4249	4211	0	Sort Quantity
	45.0	45.0	12.3	12.3	0.0	0.0	16.9	0	120	43	40	Spec Upper Limit
							-16.9					Spec Lower Limit
	99%	100%	46%	74%	100%	100%	100%	100%	100%	100%		% Spec
	4222	4230	1971	3129	4249	4249	4244	4249	4249	4230	0	Spec Quantity
	23.3	20.3	14.2	11.7	7.0	7.3	-1.9	41	5	1		Avg.
	21.8	20.0	22.6	20.3	6.6	7.4	16.1	108	33	18		3 Stdv.
	1.00	1.23	-0.08	0.03	-1.06	-0.98	0.93	-0.38	3.43	2.32	N/A	CPK
	Measured				4249 TU			4249 TG			0 TB	
406 / 0	70.0	70.0	45.0	45.0	40.0	40.0	30.0	0	120	43	0	Sort Upper Limit
LT235/85 R 16 (Trade)							-30.0					Sort Lower Limit
LT 16-Inch ValueRide	100%	100%	98%	98%	100%	100%	100%	100%	100%	99%		% Sort
	767	768	753	751	768	768	768	768	767	764	0	Sort Quantity
	70.0	70.0	45.0	45.0	40.0	40.0	30.0	0	120	43	0	Spec Upper Limit
							-30.0					Spec Lower Limit
	100%	100%	98%	98%	100%	100%	100%	100%	100%	99%		% Spec
	767	768	753	751	768	768	768	768	767	764	0	Spec Quantity
	33.6	33.7	21.1	21.2	8.4	9.6	-0.6	25	31	5		Avg.
	28.9	28.9	30.8	30.7	8.1	9.4	11.1	19	31	25		3 Stdv.
	1.26	1.26	0.78	0.78	3.88	3.25	2.64	-1.30	2.85	1.51	N/A	CPK
	Measured				768 TU			768 TG			0 TB	

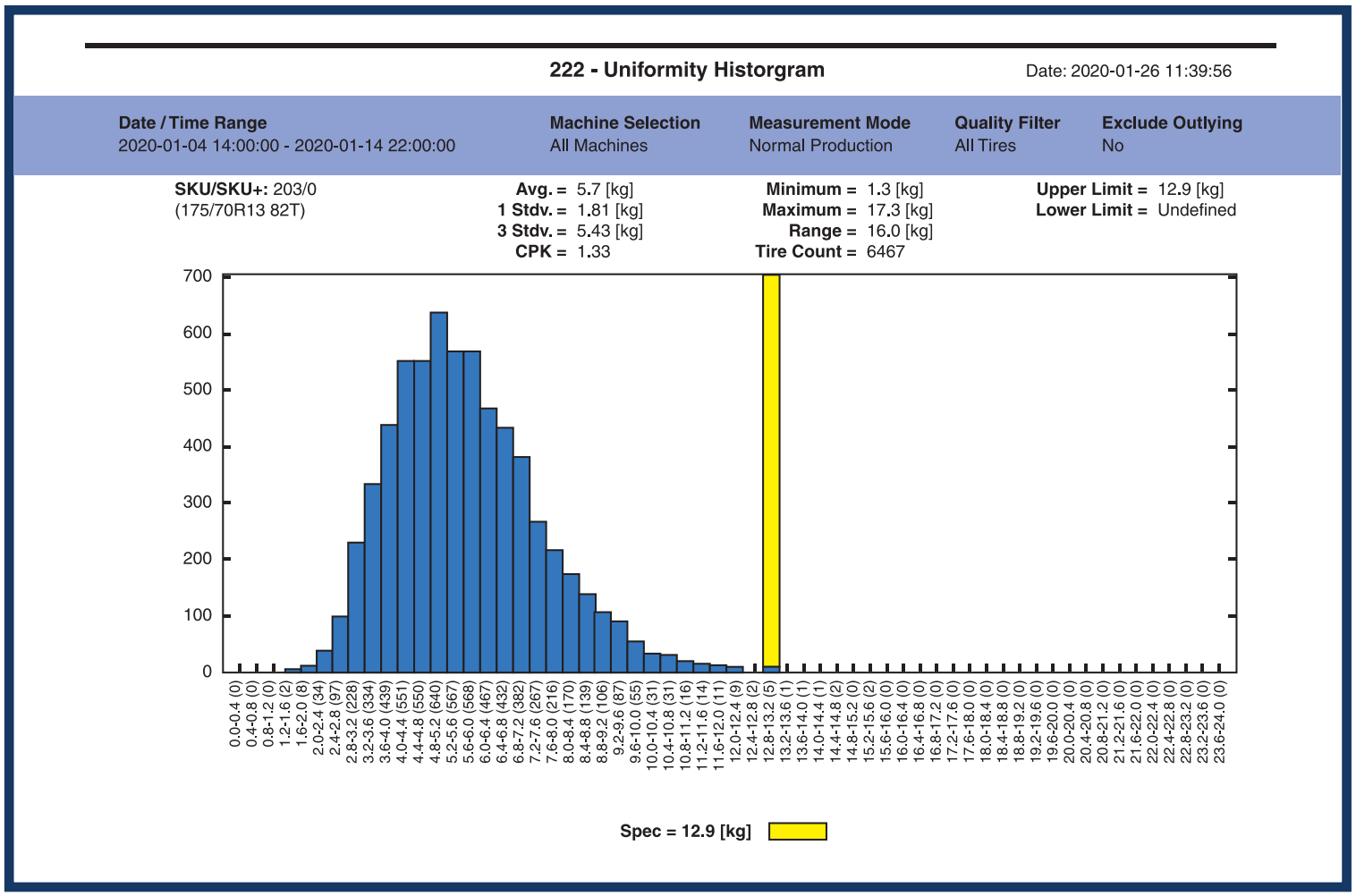
Data Collection & Reporting

FFH relieves quality engineers of the tedious task of pulling test data from different sources associated with a variety of machine types. With FFH, the uniformity engineer can combine results from balance, geometry and uniformity testing machines in a single report. While FFH has the capacity to store hundreds of different measurements provided by testing machines, users have the ability to pick and choose which ones display on any report.

FFH stores test results in individual and summary form to allow analysis of a single test or identification of general quality trends. You can also configure an automatic deletion schedule based on the volume of data generated in the final finish area—typically plants retain individual data for up to 18 months and actively maintain summarized results for up to 5 years. We also work with your IT department to develop a backup and restoration scheme that works best for your storage media and transaction volume.

The report shown above provides typical quality statistics. You can choose different report populations based on time, machine, product, and processing. In addition, you can select different statistical calculations and group the output in different ways (for example, group by SKU or machine). While FFH consistently stores measurements in SI units (regardless of how a machine provides them), you control the specific units of measure to display on a report.

Because FFH uses recipe versioning, statistical calculations performed on historical results do not change with subsequent changes to a recipe. But if you need “what if” analysis, FFH provides it with a report that allows you to vary limits related to historical results so you can analyze the effect of proposed specification changes.



Graphic Reports

FFH provides graphic reports to illustrate trends of interest to the quality engineer. The report above is an example of a graphic report that demonstrates the Weibull nature of the measurement distribution. The specification limit displays to provide a useful reference.

To generate a report, you select measurements, products, times, and machines of interest. After selecting report parameters, click a single button to display the report in PDF format on the screen. Once displayed, the report can be saved, printed, or emailed.

To save time selecting parameters for frequently used reports, FFH provides a report template feature. Once you create a template you simply retrieve the report settings, make minor changes (if needed) and then click a button to display the results. You can share report templates among users; they also allow you to automatically generate and email reports on a daily, weekly, or other periodic basis. You can even configure specific report templates to generate automatically at the completion of machine repeatability check or when the last tire of an experimental or check tire group has been processed.

We know you can choose from many statistical packages, but consider this: can they collect and report test result data unique to tire manufacturing? When you choose FFH, you get an application suite designed for tire manufacturers and supported by software engineers with experience and expertise—we ask the right questions and ensure that you get the value from your tire data that you expect and deserve.

Email or Call CTI today to learn more and set up a consultation meeting about FFH (Final Finish Host)