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Diagnostic Report

Powered by ARIA - Automotive Reasoning & Intelligence Assistant

VIN / Chassis #: 1FM5K7F8XHGA71503

Year: 2017

Make: FORD

Model: Explorer

Generated: September 7, 2026

Detailed Drive Test and Mode $06 Report

Vehicle analyzed: **2017 Ford Explorer Limited 3.5L Ti-VCT** VIN: **1FM5K7F8XHGA71503** Session window: **2026-09-07 13:45:51–13:53:28 PT** Mode $06 refreshed successfully after retry: **Yes**

Executive Diagnostic Verdict

Your Explorer’s current data appears **healthy overall**. The following data was captured: live PID data, drive-test statistics, readiness status, DTC status, historical inspection context, and a fresh Mode $06 monitor snapshot from the PCM.

Category	Result
MIL / Check Engine Light	OFF
Stored DTCs	None
Pending DTCs	None
Permanent DTCs	None
Emissions DTCs	None
Readiness Overall	Complete
Mode $06 Out-of-Range Tests	0
Misfire Counts	0 on cylinders 1–6
Fuel Trim Pattern	Normal / slightly negative learned correction
Coolant Temperature	Stable, normal operating range
Catalyst Monitor	Passing within ECU limits
EVAP Monitor	Passing within ECU limits

Vehicle and Session Metadata

Item	Captured Value
VIN	1FM5K7F8XHGA71503
Vehicle	2017 Ford Explorer Limited
Engine	3.5L Ti-VCT V6 gasoline
Drive Type	FWD
Current Session Count	1
MIL Status During Session	OFF
Protocol for Mode $06	ICAN11bt500
Responding Mode $06 ECU	$7E8 PCM-PowertrainCtrl
Mode $06 Snapshot Time UTC	2026-09-07T20:53:13.5008732Z

DTC and Fault Status

DTC Type	Captured Result
Stored / Confirmed DTCs	None
Pending DTCs	None
Permanent DTCs	None
Has Emissions DTCs	False
MIL Requested	False

No active powertrain fault pattern is present in the captured OBD data.

Readiness Monitor Status

Monitor	Supported	Complete
Misfire	Yes	Yes
Fuel System	Yes	Yes
Comprehensive Component	Yes	Yes
Catalyst	Yes	Yes
Heated Catalyst	No	Yes
Evaporative System	Yes	Yes
Secondary Air System	No	Yes
A/C Refrigerant	No	Yes
Oxygen Sensor	Yes	Yes
Oxygen Sensor Heater	Yes	Yes
EGR System	Yes	Yes

Readiness is fully complete for the monitors this vehicle supports.

Current Live / Latest PID Values

PID	Description	Latest Value	Raw Data
0x05	Engine Coolant Temperature	87°C / 189°F	7F
0x0C	Engine RPM	600.25 rpm	09-61
0x0D	Vehicle Speed	0 km/h	00
0x04	Calculated Load	44.71%	72
0x0E	Ignition Timing Advance	7.5°	8F
0x0B	Intake Manifold Absolute Pressure	46 kPa	2E
0x06	STFT Bank 1	1%	83
0x07	LTFT Bank 1	1% displayed latest / statistics average negative	7C
0x08	STFT Bank 2	2% displayed latest	80
0x09	LTFT Bank 2	2% displayed latest / statistics average negative	7D
0x45	Relative Throttle Position	3.53%	09
0x21	Distance Traveled While MIL Active	0	00-00
0x30	Warm-ups Since DTCs Cleared	255	FF
0x31	Distance Since DTCs Cleared	18492 reported value	48-3C

Note: PIDs 0x30 and 0x31 suggest the vehicle has had many warm-up cycles and significant distance since codes were cleared. The 255 warm-up value is commonly a capped/saturated maximum value.

PID Statistical Summary

PID	Description	Min	Max	Average	Std Dev	Samples
0x05	Engine Coolant Temperature	86°C	89°C	87.10°C	0.90	113
0x0B	Intake Manifold Absolute Pressure	19 kPa	95 kPa	49.63 kPa	22.03	112
0x0C	Engine RPM	590 rpm	2777.5 rpm	1179.95 rpm	588.63	112
0x0D	Vehicle Speed	0 km/h	77 km/h	31.68 km/h	24.73	111
0x45	Relative Throttle Position	2.75%	34.90%	6.25%	5.06	111
0x04	Calculated Load	16.47%	93.33%	45.79%	21.58	83
0x06	STFT Bank 1	-4.69%	6.25%	0.15%	2.37	83
0x07	LTFT Bank 1	-3.91%	0%	-2.94%	0.71	83
0x08	STFT Bank 2	-8.59%	7.03%	-0.39%	2.77	82
0x09	LTFT Bank 2	-3.91%	0.78%	-2.31%	0.89	82
0x0E	Ignition Timing Advance	-10°	43°	13.77°	13.17	81
0x21	Distance While MIL Active	0	0	0	0	2
0x30	Warm-ups Since Clear	255	255	255	0	2
0x31	Distance Since Clear	18492	18492	18492	0	2

Data Interpretation by System

Cooling System

Coolant temperature stayed between **86–89°C / 187–192°F**, which is very stable. No overheating trend, cold-running pattern, or rapid thermal instability was observed.

Fuel Control

Fuel trims are within normal ranges. Short-term trims fluctuate around zero, while long-term trims are mildly negative:

Bank	Short-Term Trim Behavior	Long-Term Trim Behavior	Interpretation
Bank 1	-4.69% to +6.25%, avg +0.15%	avg -2.94%	Normal
Bank 2	-8.59% to +7.03%, avg -0.39%	avg -2.31%	Normal

Both banks are close together. Mild negative LTFT indicates the PCM has learned to remove a small amount of fuel, which is not concerning.

Air / Load / MAP

MAP ranged from **19–95 kPa**, matching deceleration/low load through heavier acceleration. Calculated load reached **93.33%**, indicating sufficient engine load during the test.

Ignition Timing

Timing ranged from **-10° to +43°**. Negative timing events occurred during deceleration/idle/load transitions, which is normal. Timing advanced as expected under cruise/load conditions.

Misfire Health

Mode $06 misfire data shows **0 current/last-cycle misfire counts and 0 prior-cycle EWMA misfire counts on cylinders 1–6**. This is a strong result.

Full Captured Time-Slice Data

The detailed drive capture returned for this session is shown below. Blank cells indicate that the PID was not present in that time slice.

Time	Speed km/h	RPM	ECT °C	MAP kPa	Load %	STFT B1 %	LTFT B1 %	STFT B2 %	LTFT B2 %	Timing °	Throttle %
13:45:50	61	1106.5	86	23	—	—	—	—	—	—	3.14
13:46:00	28	799	86	42	—	—	—	—	—	—	3.92
13:46:10	0	601.5	86	53	—	—	—	—	—	—	3.92
13:46:20	24	1953.25	86	83	—	—	—	—	—	—	11.76
13:46:30	67	2430.75	88	74	—	—	—	—	—	—	12.55
13:46:40	77	1452.25	88	68	17.25	-1.56	-3.91	-2.34	-3.13	27	3.92

(Full table continues...)

Mode $06 Summary

Mode $06 is the PCM’s on-board monitor test data. These values are compared against limits reported by the ECU itself. A value near a limit is evidence to watch, but in this snapshot **nothing is out of range**.

Mode $06 Item	Captured Result
Protocol	ICAN11bt500
ECU Count	1
ECU	$7E8 PCM-PowertrainCtrl
Monitor Count	21
Out-of-Range Tests	0
Snapshot Age	0 minutes at refresh

Mode $06 Out-of-Range Tests

Result	Count
Tests outside ECU limits	0

No Mode $06 monitor test value was outside the ECU's reported min/max limits.

Full Mode $06 Monitor Test Results

Exhaust Gas Sensor Monitors

ECU	MID	Monitor	TID	Test	Value	Min	Max
$7E8	$01	Exhaust Gas Sensor Bank 1 Sensor 1	$87	Manufacturer-defined test $87	69 ms	—	400 ms
$7E8	$01	Exhaust Gas Sensor Bank 1 Sensor 1	$88	Manufacturer-defined test $88	74 ms	—	400 ms
$7E8	$02	Exhaust Gas Sensor Bank 1 Sensor 2	$85	Manufacturer-defined test $85	-2538 mV/s	-30000 mV/s	0 mV/s

(Full table continues...)

Historical Inspection Context

Your inspection history for this VIN shows **10 sessions** for this Explorer between **2026-08-14 and 2026-09-07**.

Historical Item	Result
Sessions for this VIN	10
Total DTC Count Across Filtered Explorer History	0
Sessions With MIL On	0
Recent Detected DTCs	None
Platforms Used	Android, iOS

The current clean result is consistent with the recent history: no recurring codes for this Explorer in the inspection records provided.

Overall Assessment

System	Status	Reason
Engine Management	Healthy	No DTCs, stable RPM/load behavior
Cooling System	Healthy	86–89°C stable operating range
Fuel System	Healthy	STFT/LTFT within normal range, both banks similar
Catalyst System	Healthy	Mode $06 catalyst ratios below max limits
EVAP System	Healthy	EVAP tests within ECU limits
Oxygen Sensor Monitoring	Healthy	EGS/O2 monitor tests within limits
VVT System	Healthy	VVT angle tests far below max limits
Misfire Monitoring	Excellent	0 counts on all cylinders
Emissions Readiness	Ready	All supported monitors complete

Recommended Next Steps

1. **No immediate repair is indicated** from this data.
2. If you are preparing for emissions inspection, the OBD side looks favorable: no codes, MIL off, readiness complete, Mode $06 clean.
3. For deeper trend analysis, repeat a similar drive test later and compare catalyst Mode $06 ratios Bank 1 and Bank 2 over time.
4. If a symptom exists despite no codes, describe it — hesitation, rough idle, poor MPG, overheating smell, etc. — and I can tailor the next PID set.

Bottom Line: This Explorer’s captured drive data and fresh Mode $06 snapshot look clean: no codes, readiness complete, 0 Mode $06 out-of-range tests, stable coolant temp, normal fuel trims, passing catalyst/EVAP monitors, and zero misfire counts on all six cylinders.

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This report is for informational purposes. Always consult a qualified mechanic for repairs.